



2010 Zoo Review

Annual Report of the North of England Zoological Society
for the year ended 31st December 2010



Our Vision

A diverse, thriving and sustainable natural world.

Our Mission

To be a major force in conserving biodiversity worldwide.

Chairman's Statement

A year of change

2010 has been a year of significant change for the Society, most notably with the retirement of Professor Gordon McGregor Reid as only the third Director General in the 76 year history of Chester Zoo. Having overseen a transformational period in the development of the Society, both in terms of the zoo itself and its conservation work around the globe, he announced his intention to step down before last year's AGM. Gordon intends to remain active in biodiversity conservation, combining an ambassadorial role for Chester Zoo with his activities as Professor of Conservation Research at the University of Liverpool and a Scientific Research Associate at the British Museum of Natural History. I am sure that all members would wish to join me in thanking Gordon for all he has done for the Society throughout his 15 years at the helm and in wishing him well for the future.

The future of the zoo remains in good hands as Dr Mark Pilgrim assumed the role of Director General on Gordon's departure. Mark will be familiar to members as he has been with the zoo for 23 years, most recently in the capacity of Director of Conservation and Education. Working alongside Mark is Barbara Smith, who we are delighted to have recruited to the post of Managing Director from her previous position at Edinburgh Castle. With the new management team now complete the Society is in an extremely strong position to move forward with its Natural Vision redevelopment programme.

This ambitious scheme passed some important milestones in 2010. Revisions have been made to the project following the withdrawal of NWDA grant funding and the team recently announced that they are bringing forward an exciting new 'Islands' development, which had previously been planned as a later stage of Natural Vision.

In the meantime, a number of smaller scale redevelopments, and interesting additions to the collection, helped the zoo attract an overall total of 1.276 million visitors in these difficult financial times. Among these is the new giant otter (*Pteronura brasiliensis*) exhibit, on the site of the old California sealion (*Zalophus californianus*) pool, which is proving extremely popular with visitors.

Chester Zoo continued with its strong tradition of garnering awards in 2010. Locally it received the 'Sustainable Tourism Award' in the Visit Chester & Cheshire Tourism Awards and nationally in the prestigious BIAZA ACE Annual Awards it won the 'Best Sustainable Zoo and Aquarium' and the 'Best Educational Project: Public and General Visitor' awards, together with commendations in the 'Best Field Conservation' and 'Best Research Project' categories.

Brian Child and Robert Mee stepped down upon completing their terms as elected Trustees. However, because of their specialist expertise they were requested to continue as co-opted Trustees while issues relating to the financing of the Natural Vision project are resolved, and they kindly agreed to do so.

Following their election, the board welcomed two new Trustees, namely David Pickering and Bruce Ursell, in addition to Professor Stefan Buczacki, previously a co-opted member, and Professor Malcolm Bennett, returning to serve as a Trustee. Last year I had the honour to take over as Chairman of the Trustees from Tony Williams, under whose excellent stewardship the Council has discharged its responsibilities over the last six years. I would personally like to thank Tony for all he has contributed during his two successive terms as Chairman, and for ensuring the transition was a smooth one.



Professor Peter Wheeler, Chairman, North of England Zoological Society



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Cover: Giant otter (*Pteronura brasiliensis*). This page: Jaguar (*Panthera onca*). © Stuart Robinson.

Director General's Review

A year of change, Dr Mark Pilgrim

From the very first time I came to Chester Zoo, some 23 years ago now, I knew this place was something very special indeed and I desperately wanted to be involved.

I have seen many changes in that time – and 2010 was certainly no different! With this in mind, it is with enormous pride that I write as the new Director General. In my days as a keeper never, in my wildest dreams, did I imagine that one day I would have the honour of holding this post. I feel privileged to be at the helm of such a special place.

Our Chairman Professor Peter Wheeler has talked of the outstanding achievements of my predecessor, Professor Gordon McGregor Reid. Having worked closely with Gordon for the past 18 years I am very aware of how influential he has been in the tremendous advancement of the Society and the zoo. I owe a huge debt of thanks to Gordon, both personally and professionally.

My first winter in charge seemed to come round quickly and we were faced with severe weather conditions, the likes of which we hadn't seen for many years. It is testament to how much improvement there has been over the last few years in our winter animal facilities that even the very extreme cold temperatures were not a problem for the animals. For the keepers, however, the frozen water pipes meant carrying huge amounts of water long distances across the zoo. It was tough work but they are a dedicated group who care for the animals no matter what.

On a national level 2010 also brought change with a new coalition Government in the UK. The recession and the state of the country's finances meant the Government had to make some very difficult economic decisions early on. It soon became clear that the Regional Development Agencies would no longer exist and with them, so too went the in-principle funding for the Heart of Africa phase of our Natural Vision masterplan. Every cloud has a silver lining and during the latter part of the year, thanks to the hard work and enormous support from a large number of staff, friends and supporters of the zoo, planning permission was granted. This was a hugely significant milestone for the Society and the executive team quickly began work to evaluate how we could achieve a major, exciting development of the zoo without the need for major public funding. Great strides have been made towards this and our exciting plans are outlined on pages 10 and 11.

It is my intention that this annual review gives a flavour not only of the tasks and projects that were carried out in 2010 but also an insight to the people who make all of the complexities of running a zoo happen. Throughout the following pages there are quotes from staff expressing in their own words what working for the Society means to them. Many of our staff get involved in activities which really show them to be walking the talk! The number of staff signed up to our Green Travel to work scheme is now nearly 100.

There has also been a real focus on rhinos during 2010. A very intrepid band of energetic zoo staff achieved an incredible feat by climbing Mount Kilimanjaro in Tanzania to raise money for our black rhino programme. They were also able to see our conservation work in action at Mkomazi National Park.

Staff also put their best foot forward and took part in our first ever 5km family fun run and turned out in force to go ten pin bowling, all to raise funds for the same rhino project. It was wonderful to see brightly coloured rhinos all around the Chester area during the summer as part of the public art event, Rhino Mania. This support is much needed as sadly 2010 saw the numbers of rhino poached across Africa at its highest for many years.

I am very fortunate to have the occasional opportunity to see first hand how our charitable activities in the field have a really positive impact on wildlife and, increasingly, the people who live and work in the areas we support. I was proud to see our work in action in China as part of the Sichuan biodiversity project. Our achievements come through education initiatives, sustainable living practices for local people and training and infrastructural improvements for the local rangers. This is gradually creating a network of protected areas which contain some of the most bio-diverse temperate forests anywhere in the world. It would be a tragedy to see this disappear. More details of this project can be found on page 16.

As always in a zoo of our size, every year brings changes in the animal and plant collection and the highlights of these are reported later. The arrival of our wonderful, playful pair of giant otters *Xingu* and *Icana* and how quickly they became firm favourites of our staff and visitors alike was a particular highlight for me.

One of my first tasks as Director General was to be involved in the recruitment for the new post of Managing Director and I am delighted that Barbara Smith accepted the role. We instantly struck up a great working relationship.

2010 was indeed a year of change and despite a difficult external climate, the foundations were laid down for the Society's future – foundations upon which we can build and prosper.

We are fortunate here that our zoo is steeped in history. We are the result of George Mottershead's vision and determination. We have a fabulous heritage and our story is told so charmingly in George's daughter June's book 'Reared in Chester Zoo'. As we move forward into an exciting future, it will serve us well to look back and emulate the dedication, innovation and determination that brought about the birth of this very special place.



Above: Now Director General, Dr Mark Pilgrim with a colleague from the Parrot Society, 1990, earlier in his Chester Zoo career.

Below: Brightly painted rhinos go head-to-head at the Rhino Mania auction, raising funds for our black rhino conservation programme.



Highlights of the Year

2010 at a glance



JANUARY

Our zoo Nutritionist organised and hosted the 6th European Zoo Nutrition Conference in Barcelona, Spain.

FEBRUARY

As part of a project in collaboration with the Conwy County Borough Council, our Horticulture and Botany team re-introduced 40 common juniper (*Juniperus communis*) plants on the Great Orme, north Wales. These are plants that have been raised from cuttings taken on the Great Orme in 2008 and grown at the zoo.

MARCH

Male giant otter *Xingu* arrives at Chester Zoo.
New male greater one horned rhino (*Rhinoceros unicornis*) *Baabuu* arrives.
Bronze elephant statue, which is a gift from Chester Zoo to the city of Chester, is unveiled.

APRIL

Xingu is joined by female giant otter *Icana*.
Chester Zoo in partnership with EcoSystems-India received a second Darwin Initiative grant for our successful Assam Haathi Project. This grant will enable the project to expand its successful work to more areas.

MAY

A new exhibition, Vets – The Inside Story, is launched in the Joseph Banks room.
The zoo held its first ever zoo staff ten-pin bowling event, raising over £1,000 for Chester Zoo's black rhino (*Diceros bicornis*) conservation programme.

JUNE

Chester Zoo won the Sustainable Tourism Award at Visit Chester & Cheshire's annual award ceremony.

Chester Zoo's 7th annual 'Dreamnight' for terminally ill children and their families.

JULY

Male Asian elephant (*Elephas maximus*) calf *Nayan* is born.

Public art event Rhino Mania kicked off with 70 fibre glass rhinos stampeding through the streets of Chester city centre for 10 weeks.

AUGUST

Chester Zoo's new website was launched.
Caribbean Steel band stage five performances a day to our visitors throughout the month.
Our third litter of meerkats (*Suricata suricatta*) to be born this year arrived, bringing the total to nine pups born in 2010. This is the first time meerkats have bred at the zoo for a number of years.

SEPTEMBER

Chester Zoo staff team 'Rhino Maniacs' scaled Mount Kilimanjaro to raise awareness and funds for black rhino conservation.
'Run for the Wild', Chester Zoo's 5km charity fun run, took place with funds raised going towards our black rhino conservation programme.



OCTOBER

Dr Mark Pilgrim is appointed as Chester Zoo's new Director General and Barbara Smith joins the zoo as Managing Director.

Rhino Mania auction held, with over £26,000 of the proceeds donated to Chester Zoo's black rhino conservation programme.

NOVEMBER

Natural Vision planning application received formal planning consent, which lasts for five years, from Cheshire West & Chester Council.
Chester Zoo won five awards at the BIAZA annual Awards ceremony. These included Commendations under the categories of Best Research Project and Best Field Conservation Project and Merits under the categories of Best Sustainability Project and Best Education Project: Public and General Visitor.

DECEMBER

Chester Zoo catering goes into partnership with Heathcotes Outside to develop our catering outfit and drive the improvement and creation of new operating procedures and food concepts.
Chester Zoo's Research Officer organised and hosted the Primate Society of Great Britain's, Winter meeting 'Gombe 50' at ZSL. This internationally-attended conference was held in celebration of 50 years of primatological research inspired by Gombe, Tanzania, and included a plenary lecture by Dr Jane Goodall DBE.

Top left: Caribbean steel band.
Top right: Baby Asian elephant (*Elephas maximus*) *Nayan*.

Reflections on the Year

From the executive team



1. Mark Pilgrim
Director General

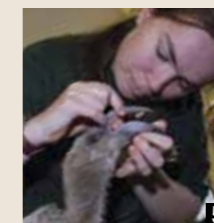
"So many memorable events happen at the zoo during any one year that it is difficult to single out just one. Of course one reflection has to be the huge privilege and honour of becoming Director General. Additionally, the arrival of our fabulous pair of giant otters and seeing our visitors reaction to their antics was also very special".

2. Barbara Smith
Managing Director

"2010 was a life changing year for me, moving from Scotland to take up the new role as Managing Director at Chester Zoo. I feel honoured and privileged to have joined the zoo at such an exciting time in its history, and have been very impressed by the warmth and dedication of all the teams in the short time since my arrival".

3. Alasdair McNea
Director of Corporate Services

"Although the weather and the economy were both bleak during 2010, the zoo again rose to the challenge and weathered the storm. The second half of the year saw a modest growth in visitors but the biggest boom came from the launch of our new website leading to a growth in online sales. Further development in 2011 will see us expand the website's functionality to include a members' only area".



4. Simon Mann
Development Director

"2010 was a milestone year in which we finally secured planning consent for the Natural Vision masterplan in November; the culmination of 12 years of planning. This year has been focused on developing and sharing the Natural Vision concept for the zoo's future across the region, despite withdrawal of NWDA grant funding, with it now recognised by all major stakeholders as the key transformational project for North West tourism".

5. Stephanie Sanderson
Head of Conservation Medicine and Research
"2010 has been an outward looking year with the instigation of many collaborative projects for the good of the wider zoo community. These have included the launch of an international zoo animal contraception database, production of guidelines for managing zoonotic disease risk in zoos, the development of diet management software and organising two important zoo research conferences".

6. Roger Wilkinson
Head of Field Programmes

"Our field conservation continues to develop through the work of our committed and excellent staff, partners and supporters. We took major strides forward in assessing our conservation impact and developing new avenues of funding, thus ensuring Chester Zoo really does make a difference to saving species and habitats at home and worldwide".

7. Stephen McKeown
Head of Discovery and Learning
"Receiving the Sandford Award from HRH the Earl of Wessex in recognition of the excellence of our education service set a pleasant tone for the rest of the year. It recognised the whole team's contribution to setting very high standards in helping achieve our mission".



8. Lynne Walker
Head of Guest and Business Operations

"2010 was immensely satisfying as we realised the fruition of a number of plans that have been long in the making. Highlights include a new catering partnership, a retail strategy for the future, the launch of a suite of Gifts and Animal Experience packages and increasing Gift Aid at the gates. Being able to play a part in all of this has been a joy and an opportunity I will always treasure".

9. David Littler
Head of Human Resources

"In this, my first full year at the zoo, I have been struck by the enormous pride and commitment staff have for the zoo. I'm confident we can develop and build on our success in the future".

10. Steve O'Brien
Head of Estates

"2010 saw continued capital development in the zoo and although on a reduced budget, high quality design has been maintained. Utilising an existing facility, we developed a new and refreshing exhibit for our giant otters – an attraction that meets both animal welfare and visitor enjoyment".

11. Alan Sykes
Head of Finance

"The effect of the UK recession on the zoo lagged the financial economy by a year, lasting from June 2009 to June 2010. During this time, visitor numbers fell by about 8%, but have been stable since. Due to incredible teamwork, we were able to reduce our core costs by £1.4 million in 2009, and have managed to retain most of this saving throughout 2010".



North of England Zoological Society Strategy 2007-2012

A shared vision for a winning team

Throughout 2010, the Trustee-approved strategy 'A Shared Vision' informed and guided the management team in planning, achieving and developing our Mission and supporting business activities.

Overarching strategic statement

To develop a substantial, expanding role in conservation of global biodiversity and habitat enhancement; and to support this through sustainable commercial activities, including managing the zoo as a world class visitor attraction. To achieve this we will:

Strategic objective

1

Focus conservation activity to achieve greatest impact.



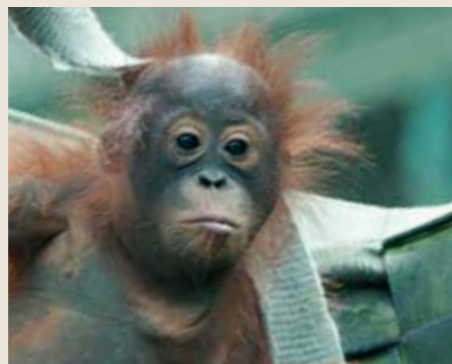
Meaning:

- achieve greatest possible conservation benefit with available resources, and develop a SMART (key performance indicator) system to identify, assess, plan, prioritise, implement and evaluate programmes/projects; this may include targeted and well-audited charitable giving to projects or partners;
- forge partnerships with appropriate bodies and local communities, where doing so will maximize impact. Partnerships should be developed for substantial conservational, educational, scientific, business/marketing or sustainability benefits. This might sometimes include partnerships for animal welfare, combating climate change or for human development and poverty alleviation, but only where closely linked to our conservation mission;
- ensure partnerships are only with those that share our strategic purpose and closely relate to our, ethics, values, programmes and policies.

Strategic objective

2

Make clear, fundamental links between in-zoo activities and our field programmes worldwide.



Meaning:

- make the zoo a 'living showcase' or 'mirror' for our work in natural habitats at home and abroad, including through naturalistic and well-interpreted 'immersion' exhibits;
- develop relevant and explicit zoo-field linkages to generate practical conservation action and promote public understanding of and empathy for the natural world;
- facilitate staff exchanges between the zoo and field projects and develop complementary techniques for conservation, education, science and animal health;
- explain the work we do and why we do it – to ensure beneficial links are evident to our Trustees, staff, visitors and wider stakeholders, including overseas.

Strategic objective

3

Promote, support and sustain our conservation work.



Meaning:

- be dynamic, proactive, forward-thinking and innovative in education, research, marketing and general communication activities, where all our staff become ambassadors portraying a positive image;
- achieve more, both scientifically and educationally, for conservation purposes – including through advocacy, developing the evidence base for decision-making and by giving lectures at home and abroad, or organizing/supporting lecture programmes, conferences and conservation workshops; and working to generally enhance public understanding, attitudes and behaviour through emotional engagement;
- communicate more effectively through the media, IT links, popular articles, general zoo publications, peer-reviewed research publications and technical reports;
- engage with local, regional, national and international communities (including through 'zoo twinning') and represent the zoo's interests on appropriate boards, committees and collaborative ventures; actively participate (or, where appropriate, lead) in external strategic exercises and conservation campaigns (e.g. networking via IUCN, WAZA, EAZA and BIAZA).

Strategic objective

4

Make Chester Zoo the wildlife attraction of choice in the UK.



Meaning:

- ensure zoo visitors gain through innovative animal exhibits and excellent guest services a very high-quality, distinctive, memorable, exciting and fun experience – so encouraging loyalty and repeat visits;
- become a nationally and internationally recognised 'quality brand' and key reference point for external stakeholders – such as potential partners for conservation, education (schools, technical colleges, universities), research, business, sponsorship and awards; and for media promotions (TV, radio, press, etc);
- be an even more attractive proposition in terms of staff recruitment.

Strategic objective

5

Manage our people, work and activities to ensure long-term sustainability.



Meaning:

- effectively recruit, manage, train, develop, retain, recognise and reward our people (the 'human resource') and ensure good succession management;
- efficiently manage healthy, stable, self-sustaining populations of zoo-bred animals and plants, so minimising dependency on externally sourced livestock and to increase the long-term prospects for species survival and, where appropriate, reintroductions to the wild;
- achieve financial and environmental sustainability for us and future generations – where income matches needs and expenditure and activities are organized to remove or minimize any negative impacts on the environment;
- ensure routine implementation of 'best practice' and/or 'green values' (reduce consumption, reuse, recycle) in the areas of public and staff safety, health and the environment ('SHE'); and in our procurement (e.g. 'Fair Trade'), operation (e.g. ISO 14001 environmental management standard) and construction (e.g. BREAM standard).

Strategic objective

6

Develop resource streams in support of our mission.



Meaning:

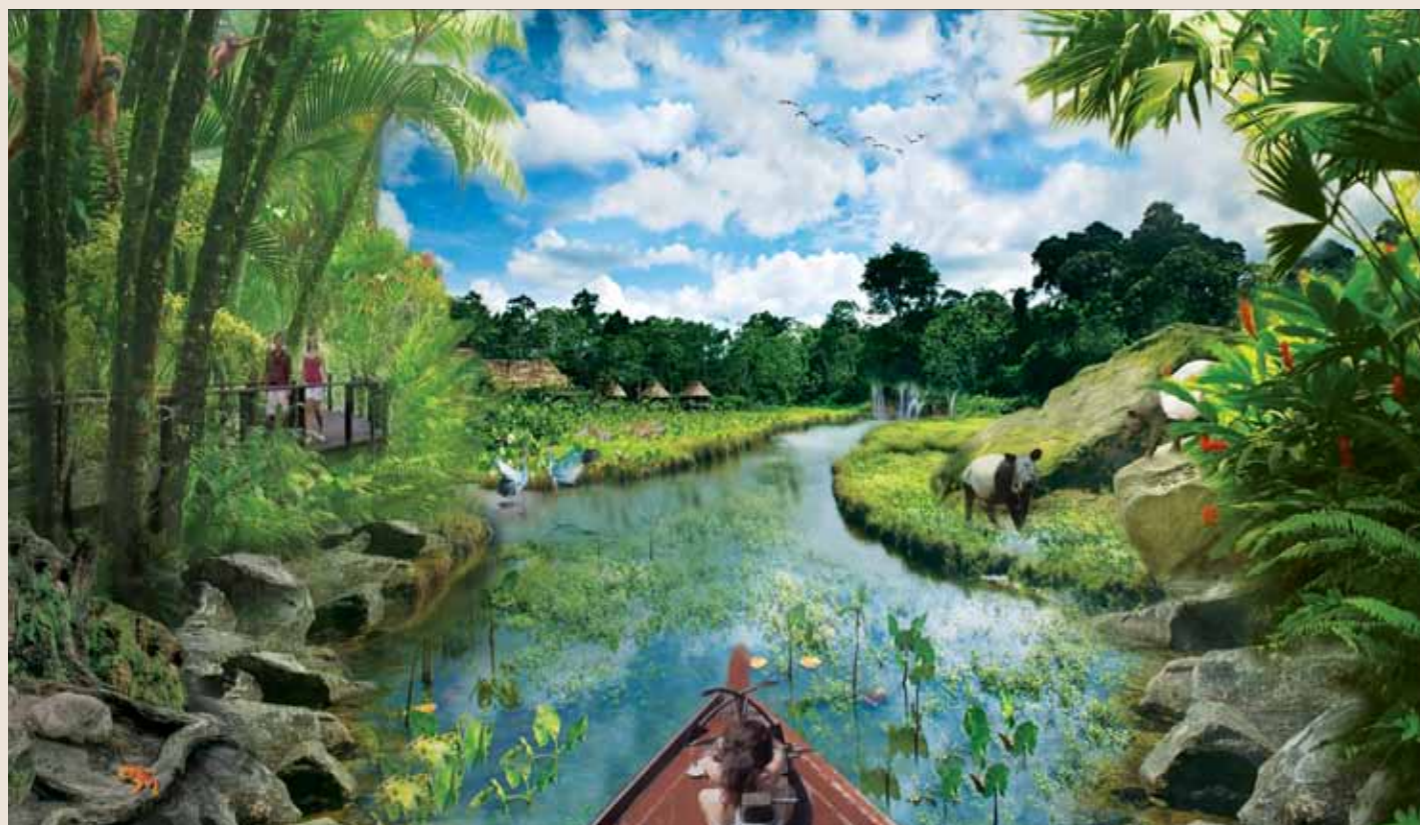
- maximise existing income – including from paid-for zoo visits, catering, retail; and ensure rigorous audit and cost-control with cost-efficient procurement of contracts, supplies and services;
- reduce financial dependency on paid-for zoo visits – because this can be an unreliable source of income, fluctuating yearly from aspects outside of our control, such as weather and external economy; additional streams can be financial, materials 'in kind', labour or voluntary work and would also include better economic use of the wider zoo land holdings (as in the case of the Natural Vision project);
- develop other means of funding (or 'in kind' benefits) such as diversification of retail and catering, web-based sales, commercial events and external investment; and fundraising through corporate events, sponsorship, donations, gifts, trust funds, legacies and conservation grants or other awards.

Supporting strategic objectives:



Natural Vision Project

Development during 2010



Following submission of a hybrid planning application in December 2009, the zoo executive team was delighted to receive formal planning consent from Cheshire West & Chester Council in November 2010.

Planning approval

The Natural Vision planning application was prepared in two distinct parts:

- A detailed application for the Heart of Africa biodome on the Birds of Prey field to the north of the existing zoo, a new entrance building and extensive re-modelling of the car park with the formation of a second access road off the A41.
- An outline application for expansion to the south west of the existing zoo plus extensive remodelling of the present zoo setting a series of development parameters.

The early part of 2010 saw ongoing liaison with the Planning Officer as the application was reviewed at Cheshire West & Chester Council and the zoo continued its dialogue with local councillors and residents which resulted in some further changes to the application.

The hybrid planning application was heard at Cheshire West & Chester Council's Strategic Planning Committee Meeting on 16th September 2010 and after much debate was approved by nine votes to two. Shortly after the Committee meeting Cheshire West & Chester unitary authority referred the approved application to the Government Office for the North West, who reviewed the application on behalf of the Secretary of State. This is a standard requirement for all planning applications in the green belt.

In early November 2010 we were delighted to be notified that the application would not be called in by the Secretary of State and on 4th November 2010 we received formal approval from Cheshire West & Chester Council. The planning approval for both the outline and detailed applications lasts for five years.

NWDA funding

In the first half of 2010 the Development team continued work on the major funding application with the North West Development Agency, having received an approval in principle of up to £40m funding in June

2009. However, in June 2010, the Coalition Government confirmed that all Regional Development Agencies are to be closed down by March 2012 and that any funding grants would need to be expended by this date. This effectively excluded us from any major NWDA grant going forward for the Natural Vision project.

Urban Land Institute

In November 2010, following the favourable planning outcome, senior staff at the zoo contributed to the Urban Land Institute Review of Chester city and were pleased to see Chester Zoo and Natural Vision highlighted as crucial elements in the future regeneration of Chester.

"Chester needs to develop an entrepreneurial and innovative environment in the city built on formal links between heritage assets, the University, College and Chester Zoo."
ULI Review, November 2010.

Masterplan phase one

In the light of limited public funding being available for the short to mid-term, the zoo executive team has reviewed the current financial landscape and funding strategy

for the Natural Vision development. We are currently planning a re-phasing of the masterplan to ensure we maintain the strong momentum that has been built up for the project and retain the firm support gained from stakeholders within the region.

Given the non-availability of NWDA grant funding and the consequent re-working of the masterplan, the Society has made full provision for impairment in respect of the £2,788,000 assets in course of construction (see page 52, note 11).

The zoo team has now begun to develop in detail the initial phases of the masterplan, the first phase of which is scheduled for delivery in 3 years time (financed from our own resources) and will be the most significant single project within a zoo in UK history.

We are exploring a new zonal approach. Rather than inserting smaller discrete exhibits into spaces within the zoo envelope, the intention is to create bold, immersive environments that link the zoo's conservation programmes and a range of animal species and visitor experiences in a rich, naturalistic landscape with a single overarching theme.

The first such zone has the working title 'Islands' and will showcase the vulnerable habitats and diverse ecosystems of Madagascar, the Mascarenes, the Philippines, Borneo, Sumatra and Komodo. This zone is scheduled to open in 2014.

In addition, the beautiful 19th century manor house, stable block and ancillary buildings around which the original 1930's zoo evolved will be fully refurbished to form the core of a 'Cheshire Heritage' zone, with linked attractions including native wildlife areas, 'ancient breeds' exhibit, and retail and catering

experiences offering locally sourced produce and an insight into the culture and history of the region. It is anticipated that this zone will expand operations into the evening to cater to a different visitor market.

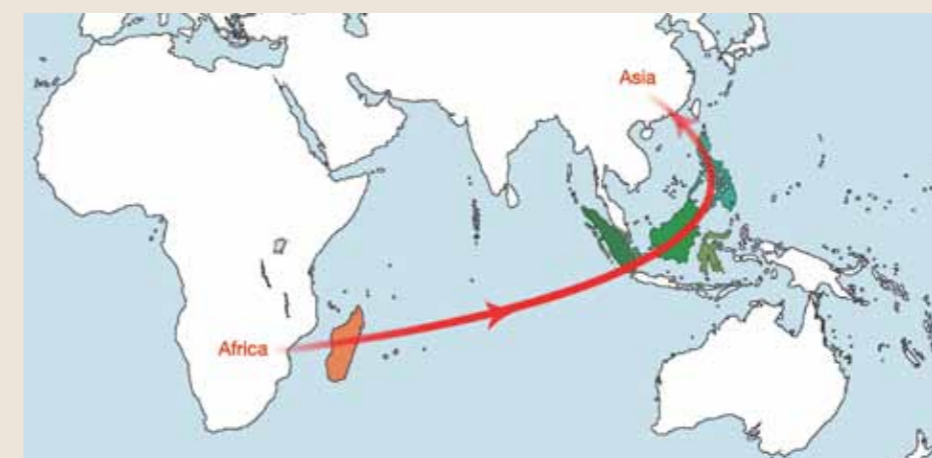
To service another entirely new audience, the main entrance area is to be redeveloped – pushing back the boundary of the zoo to create a spacious entrance plaza, with free restaurant and gift shop access for business and leisure visitors seeking a unique venue. This scheme will offer glimpses of the zoo's animals, as well as an attractive environment for a casual visit or formal dining experience.

Green Travel Plan

As a conservation organisation we are committed to sustainability in its widest sense. One of the conditions of the planning approval is to maintain the Green Travel Plan developed during the application and achieve targets to reduce the carbon footprint of our visitors and staff.

2010 saw the formation of a working group to deliver the objectives of the Green Travel Plan and during the year the group has developed links with public transport companies, cycling, walking and environmental groups and other organisations across the region. This has helped us provide staff and visitors with the widest possible range of sustainable options for their journeys to and from the zoo.

The free shuttle bus linking the zoo and Chester train station ran for an extended period of 18 weeks in 2010, carrying over 7,000 visitors. The zoo is committed to improving links with Chester city centre and the wider transport network in order to draw visitors wishing to make the most of the variety of attractions in the local area.



STAFF QUOTE
“The best thing is coming to work in the morning and knowing anything could happen. You get the chance to see amazing things, help plan towards new projects and meet people from all over the world.”

More information on green travel options was added to our new website in 2010. This included a discount on admission for visitors arriving by bicycle and better promotion of the combined travel and admission ticket which brings around 8,000 visitors into the zoo by bus and train from Wirral and Liverpool each year.

Zoo staff also benefited from many new offers including car sharing, discounted public transport fares and even free loan bicycles for their commute as part of a challenge run by Cycle Chester for local organisations.

Far left: A visualisation of the Islands project, which represents a vision focusing on creating an authentic, natural and immersive atmosphere.

Bottom left: 'Islands' will take you on an emotional journey through the fantastic and wonderful diversity of life of the islands of the Indo-Pacific.

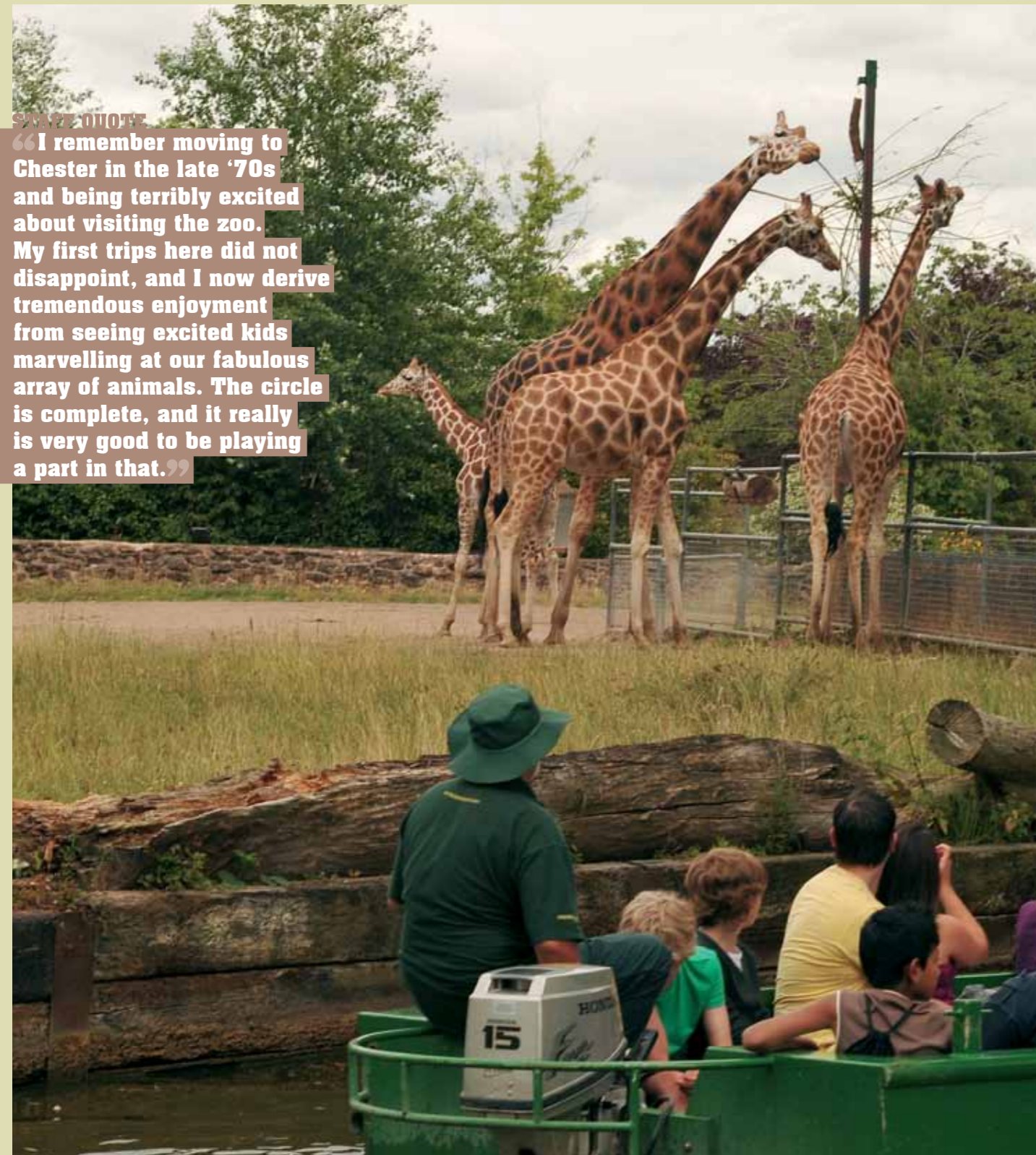
Bottom right: Driving Challenge, June 2010.



Conservation, Science, Education and Animal Welfare

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Progressing our Mission Conservation around the world



STAFF QUOTE
 “I remember moving to Chester in the late ‘70s and being terribly excited about visiting the zoo. My first trips here did not disappoint, and I now derive tremendous enjoyment from seeing excited kids marvelling at our fabulous array of animals. The circle is complete, and it really is very good to be playing a part in that.”



With so much of the world's flora and fauna facing unprecedented threats and challenges, NEZS has a big task on its hands.

Our mission 'to be a major force in conserving biodiversity worldwide' is a bold statement. It clearly sets out our stall – a promise to deliver when it comes to conserving biodiversity and an assurance that we will lead from the front in doing so.

We are beginning to make big strides towards delivering those promises – for ourselves and for the wide number of species who are depending on us, both here at home and further afield.

There are a number of ways that we are using the expertise of Chester Zoo to achieve our all-important mission. Most directly we deliver our mission through our 10 field programmes, which we have supported for some time. Nine of those programmes are overseas and one is based locally here in the North West. The outstanding work we do within these programmes is a great source of pride and so we can target our efforts where they are most needed in the future, we have begun to scrutinise the conservation impact that each has.

This gives us the evidence by which we can measure the progress of our field programmes.

The scope of our short-term field conservation projects grows yearly and, although different from our long-term programmes in terms of approach and impact, they play a very important role in ensuring we achieve our mission. During 2010 we supported more

than 60 projects in over 50 countries worldwide, which involved species as diverse as the giant panda (*Ailuropoda melanoleuca*) and the Cuban long-nosed toad (*Bufo longinasus*).

But conservation is as important at home as it is abroad.

Conservation also happens within the zoo grounds. Breeding rare and endangered animals in a zoo is not necessarily 'conservation' unless it is done as part of well managed breeding programme. These are seen as important for the conservation of that species by external agencies such as IUCN. These are the species that we assign a conservation – *ex situ* breeding role to as part of our collection plan. During 2010, 33 species had an *ex situ* breeding role at Chester Zoo including, Bali starling (*Leucopsar rothschildi*), Sulawesi crested macaque (*Macaca nigra*), radiated tortoise (*Astrochelys radiata*), mountain chicken (*Leptodactylus fallax*) and Pacific tree snails (*Partula* spp.). A further 26 species are assigned a conservation – *in situ* support role within our collection. The zoo supports the conservation of these species in the wild and their presence in our collection helps to raise funds and awareness.

Our Discovery and Learning staff have identified six key conservation messages as part of our overall strategy, which appear in our collection planning process as species roles (Appendices 8 - 14).

The other ways that we strive to make progress on achieving our mission may be, for example, where we have Chester Zoo staff on external bodies such as Curator of Lower Vertebrates and Invertebrates, Richard Gibson on the Amphibian Ark, Curator of Horticulture and Botany, Mark Sparrow on the World Land Trust, and Zoo Nutritionist, Andrea Fidgett on the EAZA Nutrition Group.

Influencing our guests and visitors by inspiring them about the wonderful wildlife with which we share our planet is crucial, as only when enough people care enough about protecting biodiversity will it be given the priority it deserves by Governments and decision makers around the world.

Throughout the pages of this 2010 review, the various ways in which we are making great progress to achieve our mission are demonstrated; however we still have a lot to do in order to claim to be a major force in conserving biodiversity worldwide.

Far left: Visitors watching Rothschild's giraffe (*Giraffa camelopardalis rothschildi*) feed from the waterbus.

Top left: Mother and baby lion-tailed macaque (*Macaca silenus*). © Steve Wilson.

Below: Introducing a monarch butterfly (*Danaus plexippus*) to a young visitor.



Supporting strategic objectives:



Realm of the Red Ape

Conserving orangutans in Borneo and Sumatra

With only around 60,000 Bornean orangutans (*Pongo pygmaeus*) and 7,000 Sumatran orangutans (*Pongo abelii*) remaining in the wild conservation action for these species is a priority. We support conservation initiatives at Chester Zoo and in the wild for both species.

The Kinabatangan Orangutan Conservation Programme, in Sabah, Borneo combines education, research, training and habitat protection to achieve sustainable solutions for both orangutans and the people who live alongside them. The programme receives important core support through funds from our 'Keeper for a Day' scheme.

Although hunting and trade are factors in the decline of orangutans, the main threat is habitat loss due to agricultural expansion, especially for oil palm plantations. A major objective of our support is effective habitat protection to maintain enough connected forest to sustain current orangutan populations. Towards this end, wildlife wardens work to control threats such as human encroachment and illegal logging.

Orangutans will not cross deep water unless via the forest canopy. Major encroachment means that forest patches and remaining orangutan sub-populations on either side of the Kinabatangan River are now small. To maintain genetic diversity it is important

to assist orangutans to cross the river. Rope bridges were erected in 2003 and the first photographic evidence of orangutans using these bridges was captured last year. All locations in Kinabatangan where rope bridges could re-connect populations have now been identified for future work. Community led reforestation projects are also making good progress with 5,000 seedlings planted and maintained in 2010.

Environmental awareness has also grown into a major focus area. More than 1,500 children participated in various initiatives during 2010. Our Education Programmes Manager visited the programme in August, assisting with the development of activities and piloting monitoring and evaluation techniques.

The 2011 EAZA Ape Campaign, with the objectives of making 'a significant and lasting contribution to the continued survival of apes and their habitats', launched this year. We will be involved in activities throughout 2011, raising funds and awareness for this campaign.

Staff involvement in the Realm of the Red Ape Programme continued with our Veterinary Officer travelling to Sumatra to organise the Orangutan Conservancy Veterinary Workshop. This involved lecturing and facilitating discussions on veterinary aspects of orangutan reintroductions.



Other ongoing support includes a project focusing on the conservation of the eight species of hornbill found in the Kinabatangan floodplain, and the community based 'Ketambe Reforestation and Ecotourism Development Initiative' in Sumatra.

In the zoo

With both of our orangutan species having such a good breeding year in 2009, we were not expecting any births in 2010. Our primary objective for the year was to allow the young to grow up in a well balanced group. The only change made was that our oldest sub-adult male Sumatran orangutan *Padang* was moved to a brand new facility in Prague in the autumn, to set up a new breeding pair.

The aquarium team increased efforts to breed the Endangered Sarasin's duck billed fish (*Xenopoecilus sarasinorum*). Although the species has been in the collection for many years there had been little reproduction and the group was ageing rapidly. Removing them to an off-show breeding tank where spawning and clutch care could be monitored more closely allowed the separation of fry from their parents. This led to significant success and the future of this threatened Indonesian fish is now assured in the collection.

The Endangered Banggai cardinal fish (*Pterapogon kauderni*) also bred successfully again and their tiny babies, miniature replicas of the parents, can regularly be seen skulking between the spines of the sea urchins (*Diadema antillarum*), which share their tank specifically for this purpose.

Bottom left: The Endangered Banggai cardinal, which bred successfully again in 2010.

Top right: Our Education Programmes Manager assisting with the development of education activities as well as pilot monitoring and evaluation techniques.

Supporting strategic objectives:



Reducing Human-Elephant Conflict

Working with communities in South Asia



Assam Haathi project

The state of Assam in northeast India witnesses some of the most extreme human-elephant conflict in the world. This increasing problem is driven by habitat loss and degradation caused by a rapidly growing human population. Chester Zoo's and EcoSystems-India's successful Assam Haathi Project received a second Darwin Initiative grant in 2010 in order to expand its work to more areas.

So far, the project has increased the capacity of local people to defend their communities, and the extent of crop damage by Asian elephants (*Elephas maximus*) has been reduced by up to 78%. The project works directly with 32 villages via eight members of field staff, who have trained over 150 community members in mitigation techniques. Self-sufficiency is a key goal and many households now contribute to, and manage their own conflict mitigation funds. The project has also conducted alternative livelihood training workshops for 300 people.

The Assam Haathi Project works with communities, helping them to alleviate the worst impacts of human-elephant conflict and establish long-term conservation solutions. A state-wide survey currently underway aims to map conflict hotspots across Assam. Once this survey is complete, new project villages will be identified.



Left: During their work with communities involved in the Assam Haathi Project, Chester Zoo staff visit the main stronghold of the greater one horned rhino, Kaziranga National Park, Assam.

Above: Major upgrade of our outside Asian elephant paddock. Much of the old substrate was removed and replaced with nearly 2,000 tons of sand.

The Assam team visited Chester Zoo in July in order to progress the project strategy. During their visit, Chester Zoo's latest addition to the elephant herd was born. The Assam team helped choose his name, *Nayan*, which means 'eye' in Assamese. Conversely, our Conservation Researcher, Education Programmes Manager and Nutritionist visited Assam in November to provide technical support, progress components of the education project and advise on elephant nutrition research.

2010 also saw further distribution of our handbook 'Living with elephants in Assam'. The impact of the handbook is being evaluated, and preliminary results suggest that people's tolerance towards elephants increased alongside their confidence to deal with elephants using non-harmful techniques. A number of publications on this project have been produced throughout the year, including articles in BIAZA magazine, IUCN's *Gajah* and Chester Zoo's own publications. After a successful 2010, the Assam Haathi Project is set to expand and continue to flourish in 2011.

Sumatra: living with elephants

Chester Zoo continues its partnership with the Wildlife Conservation Society in its Darwin Initiative elephant conservation project in Sumatra. The Sumatran field team visited the

Assam Haathi Project during 2010 and a reverse visit is planned for 2011. The project has been identifying priority areas for work across Sumatra, preparing a self-help handbook for villagers, deploying law enforcement patrols and training government staff in the use of CITES tools to monitor illegal killing and trade of elephants.

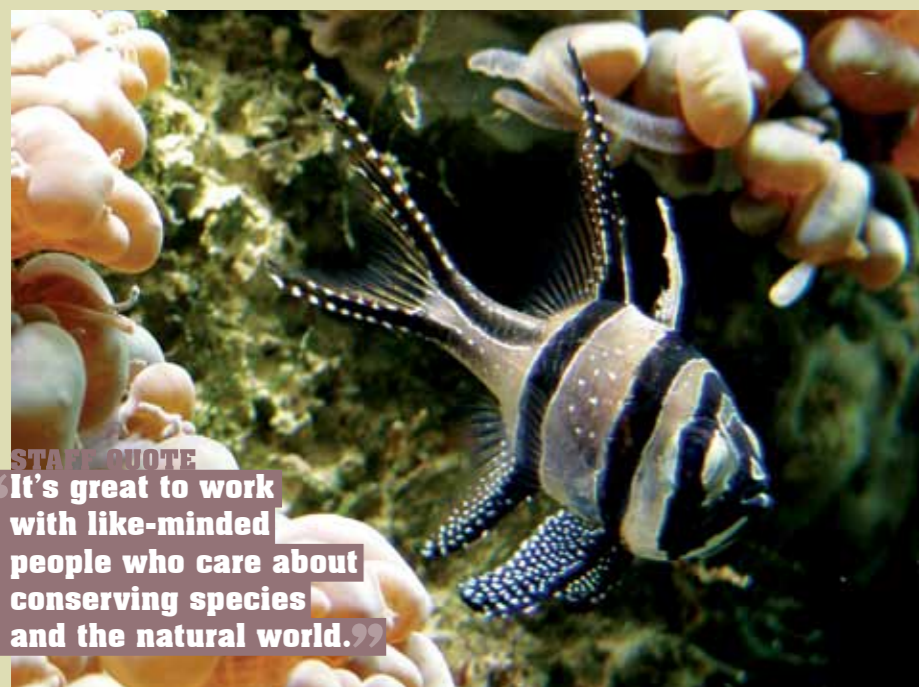
In the zoo

Our main focus this year was to upgrade the outside of our Asian elephant paddock. Much of the old substrate was removed and replaced with nearly 2,000 tons of sand. The paddock was also terraced and upright logs were added for the elephants to scratch and rub against. This will allow us to consider using these as either shelter or feeding areas in the future.

The paddock upgrade has proved a great success, with the elephant herd using more of their enclosure and showing some fantastic, natural, dusting and foraging behaviour.

In July, we were delighted to announce the arrival of male calf *Nayan*, born to *Sithami*. At the end of the year, we were still awaiting the birth of a second calf, this time to *Thi-hi-way*. Her calf, *Jamilah*, was born on 22nd January 2011 and is doing well.

The other major event of the year was the transfer of *Tunga*, our young bull elephant to Bellewaerde in Belgium, where he will join another young bull elephant.



STAFF QUOTE
 "It's great to work with like-minded people who care about conserving species and the natural world."

Supporting strategic objectives:



Protecting China's Forests

Focus on Sichuan biodiversity



The Sichuan Province, southwest China, contains extensive broadleaf forests and is home to several endemic and highly threatened species. Human expansion and development pose an ever growing concern. Major threats include the collection of firewood, livestock grazing and expanding agriculture.

The largest component of Chester Zoo's China conservation programme is the Sichuan Forest Biodiversity Project. Working closely with partners such as the Sichuan Forest Department, this project is successfully establishing a network of key protected forest areas. The project has a holistic sustainable approach incorporating training and infrastructure improvements for the local forest rangers, and community education and sustainable development initiatives. Last year the project became a WAZA (World Association of Zoos and Aquaria) recognised branded project.

Conservation action is based on comprehensive research. In 2010 research surveys showed increases in key species including the Endangered Sichuan partridge (*Arborophila rufipectus*); evidence of the successful protection of these forests. Community projects we support have also made significant advances. The installation of biogas and fuel-efficient stoves in surrounding communities has seen drops of up to 95% in firewood use. Beehives we provided now produce 400kg of honey each year, increasing the annual income of targeted families by up

to a third. The conservation return from this is a reduced impact on forest resources and a greater willingness of communities to assist conservation action. Villagers now provide significant assistance to local ranger's patrols, particularly during high threat periods such as the bamboo shoot collection season.

Working together with staff from the Chengdu Giant Panda Base we also focus on building the capacity of education staff in the region and developing a localised and comprehensive conservation education curriculum. Chester Zoo's education staff have a huge amount of experience in this area and visited the project in 2010 to provide technical support. Staff from China will visit Chester Zoo in 2011 for further training.

In 2010, Chester Zoo's support to specific research projects included important investigations into immune development in giant panda cubs. The research at Chengdu Giant Panda Base will establish the first record of immune development and help determine when protection from infectious pathogens for the cubs is particularly critical.

Chester Zoo and partners also support ongoing work to conserve the Critically Endangered blue-crowned laughingthrush (*Garrulax courtoisi*). The project protects and monitors the handful of sites that are the last refuges for the 200 remaining birds, and continues the search for further undiscovered sites.

In the zoo

Our red pandas (*Ailurus fulgens*) successfully bred in 2010, with a single female cub being



born. This is the first female from this pairing and a much needed addition to the European Endangered Species Breeding Programme (EEP). She will leave the collection in the spring to form a new pairing, allowing us to hopefully breed again in 2011.

Chester Zoo remains one of only a handful of zoos that regularly and consistently breed the Critically Endangered blue-crowned laughingthrush. This year was no exception and three young were raised by their parents in the Tropical Realm.

Two new Chinese pheasant species were added to the zoo's collection during 2010; the Temminck's tragopan (*Tragopan temminckii*), which is native to the bamboo and rhododendron forests of Sichuan, and the beautiful Cabot's tragopan (*Tragopan caboti*), an Endangered species found in southeast China.

The herpetology department was lucky enough to receive a second adult female Chinese three-striped box turtle (*Cuora trifasciata*); a species literally 'worth its weight in gold' in the traditional Chinese medicine market, making it one of the most threatened species on the planet. This brings our adult total to three and we hope for renewed breeding success in 2011.

Top left: Chester Zoo education staff teaching biodiversity conservation to local school children.

Bottom right: Critically Endangered Chinese three-striped box turtle (*Cuora trifasciata*).

Supporting strategic objectives:



Philippines Conservation

Helping islands in danger

Due to its unique biogeography the Philippines has an amazing wealth of species, many of which are found nowhere else. However, a rapidly increasing human population means threats to wildlife are intense. Chester Zoo's Philippines Programme targets key species and habitats under threat.

The zoo has been supporting work in the West Visayan region for many years, specialising in the conservation breeding of threatened endemic species including the Philippine spotted deer (*Cervus alfredi*), Visayan warty pig (*Sus cebifrons*) and Luzon bleeding heart pigeon (*Gallicolumba luzonica*). Activities also include surveys and protection of the region's key biodiversity areas.

We also work in the Luzon region on the island of Polillo where Local Community Areas have been initiated, encompassing 13% of Polillo's land area. This project promotes community involvement in conservation and has seen a major decrease in illegal wildlife activities. In 2010 tree planting in one area covered almost 3 hectares, with the planting of more than 4,000 saplings. It is also in the Luzon region that Chester Zoo supports a field study of endemic parrots and the Philippine crocodile (*Crocodylus mindorensis*) conservation efforts of the Mabuwaya Foundation, which recently included the reintroduction of crocodiles to Dicitian Lake.

In Palawan we support the conservation of the endemic Philippine forest turtle



STAFF QUOTE
 "The specialist knowledge that comes from the staff when working together in projects, never fails to impress me."

(*Siebenrockiella leytenensis*). This Critically Endangered species is heavily exploited for food and the pet trade. Research outputs will provide essential information to help in the fight to save this species.

A large proportion of our support is focused on the protection of Philippine hornbills and the Philippine cockatoo (*Cacatua haematuropygia*), work which spans all regions and also benefits many other threatened species. Activities focusing on threatened endemic hornbills have made remarkable progress assessing species, implementing conservation action plans and protecting numerous core habitats. Nest guards for the Visayan writhed-billed hornbill (*Aceros waldeni*) have seen fledgling rates of almost 100%. Previously over 50% of the nests would have fallen foul of poachers.

A maximum of 1,245 Philippine cockatoos exist in the wild. Chester Zoo contributes to activities in five project sites, which protect a significant majority of this population. Active protection of the birds and their habitat is coupled with conservation breeding, reintroduction, education and community aspects to meet conservation objectives. 2010 saw an important new site added to the list of those protected and despite severe El Nino weather conditions the project was able to rescue several hatchlings and successfully release them back into the wild.

In the zoo

Both of our groups of Endangered Visayan warty pigs bred and reared all of their young this year. Unfortunately however, one of our adult male pigs died and we will be looking to bring in a new male for 2011.

Both pairs of Visayan tarctic hornbills (*Penelopides panini*) nested during 2010 and the pair in the Tropical Realm successfully reared four young. These birds, two males and two females will be sent to other institutions as part of the EEP recommendations for this Endangered Philippine species and will help form the foundations for a viable captive breeding programme for this species.

In the Tropical Realm, our precious pair of Critically Endangered Philippine crocodiles clashed repeatedly on introduction, but finally mated successfully when we taped their mouths closed to prevent injuries! Several anxious months of waiting resulted in nothing more than some half-hearted digging by the female and a fasting-period we anticipated indicated pregnancy. We hope for better luck in 2011!

Top right: Visayan warty piglets (*Sus cebifrons*).

Bottom left: Mabuwaya Foundation releasing Philippine crocodile (*Crocodylus mindorensis*). © M van Weerd.

Supporting strategic objectives:



Saving Species in the Mascarenes

Working in the 'land of the dodo'

In the last 20 years the Mascarene Islands have been at the forefront of species conservation. Through projects led by the Mauritius Wildlife Foundation the Mauritius kestrel (*Falco punctatus*), pink pigeon (*Nesoenas mayeri*) and echo parakeet (*Psittacula eques*) are a few examples of species saved from the brink of extinction.

Chester Zoo partners several projects providing financial and technical support in many areas, from horticulture and bird husbandry to education planning. In 2010 several Chester Zoo staff again visited Mauritius to provide their support and skills, with a continued focus on endemic threatened birds. Three members of the Bird Department spent time in Mauritius this year, hand-rearing Mauritius fody (*Foudia*



STAFF QUOTE

“One of the things I love is feeling part of a team. We might do different jobs but we're all working towards the same goals.”

rubra) on the predator-free Island of Ile aux Aigrettes. Largely due to the successful establishment of a second population on Ile aux Aigrettes, the Mauritius fodies was down-listed in 2009 from Critically Endangered to Endangered. This population is now at maximum density and 2010 saw a major, and successful, focus on management protocols to reduce disease risk. Chester Zoo staff also assisted with the first trial release of this species onto a second translocation site, Round Island, which is also an off-shore island free from introduced predators.

At least seven wild olive white-eyes (*Zosterops chloronothos*) successfully fledged this season, a significant boost to the wild population. Despite some disease outbreak setbacks, the conservation breeding component was also successful with new birds increasing the genetic diversity of the reintroduced Ile aux Aigrettes population. The birds already on Ile aux Aigrettes also bred well with eight pairs of fledging chicks, the highest number so far. The echo parakeet also had a record year with 134 wild chicks fledged. What was once the world's rarest parrot now has a healthy population of around 500 individuals.

The nature trail on Ile aux Aigrettes, 'Le Sentier du Dodo', which Chester Zoo helped to establish allows visitors, local people and

especially school children the opportunity to see what pristine Mauritius was once like. Over 3,000 Mauritian students completed the nature trail in 2010 and we continue to support trail improvements with an emphasis this year on the pink pigeon experience.

Reforestation and horticulture support also continued. The Critically Endangered plant project is now propagating 40 different species and re-establishing populations back into the wild. The restoration of Grande Montagne on Rodrigues, also continues with 8 hectares of forest now restored. In 2010 over 20,000 seedlings of 33 different species were propagated and planted. Project capacity was enhanced with Mauritian horticulture staff visiting Chester Zoo to receive training.

Additional support continued for the Rodrigues fruit bat (*Pteropus rodricensis*) conservation project and for a PhD researching pink pigeon populations.

Top right: The Critically Endangered Mauritius olive white-eye (*Zosterops chloronothos*).
Left top: Nature trail 'Le Sentier du Dodo' nature trail, Ile aux Aigrettes.
Left bottom: Chester Zoo staff construct aviaries on Round Island.



Supporting strategic objectives:



Black Rhinos Back from the Brink

Rising to the challenge in Africa



2010 has been an extremely challenging year for black rhino (*Diceros bicornis*). An escalation in poaching has seen hundreds of rhino killed for their horn. To meet this challenge, two high profile fundraising events were hosted in 2010 to ensure that we can continue, and increase, our much needed support.

One of the projects that will benefit from this support is the Mkomazi project in Tanzania. Security at Mkomazi is currently being increased in response to local poaching pressures. Chester Zoo has supported improvements to essential patrol communication systems, which help protect this important rhino population. We also continued to support the successful Rafiki wa Faru ('friend of rhino' in Swahili) education programme and over 750 children and teachers made trips into Mkomazi National Park on the project bus in 2010.

The Maasailand Preservation Trust rangers in Chyulu have also faced increased threats as poaching activity has increased dramatically. Poaching arrests were up 35% on 2009 and 2,651 snares were confiscated – up nearly 400% from last year. This year, Chester Zoo support included funds for new administrative buildings from which the work of the rangers is coordinated. 2010 also

saw a much needed water hole successfully drilled in Chyulu National Park, an outcome of the comprehensive action plan formulated last year. The rangers in Chyulu now have 'police reserve' status and receive improved equipment and training.

Elsewhere, in an emergency response to the poaching threat, we provided support for major translocations of black rhino in Zimbabwe. Fifty-three rhino were moved from areas of high poaching activity to more secure locations. We also contributed to an emergency fund in the Laikipia District. This district holds a large percentage of Kenya's black rhino managed as a population across several ranches. The fund will support emergency movements of rhinos such as capturing and treating injured individuals.

Outside of Africa, Chester Zoo also continues to support Sumatran rhino (*Dicerorhinus sumatrensis*) conservation in Way Kambas National Park, Indonesia, and the translocation of greater one horned rhino (*Rhinoceros unicornis*) to Manas National Park in Assam.

In the zoo

We continued to upgrade our black rhino enclosures this year by constructing four shelters and feeding areas in different paddocks. This allowed our rhinos to spend more time outside. We have also successfully

mixed two pairs of rhino with the intention of breeding from these pairs in 2012.

Work has started on the painted dog (*Lycaon pictus*) enclosure to consolidate our African theme in the west side of the zoo. African porcupines (*Hystrix africaeaustralis*) and yellow mongoose (*Cynictis penicillata*) will further enhance this exhibit in a nearby enclosure. We have also brought into quarantine a pair of rock hyrax (*Procavia capensis*), which will be an interesting addition to our Tsavo area.

Also in 'Africa', our gemsbok (*Oryx gazella*) have bred well and are now an impressive sight in their paddock. Our dik-dik (*Madoqua kirkii*) have also produced a calf for the second year in a row.

The Tsavo African Bird Safari Aviary continues to develop and during 2010 four species; white-faced whistling duck (*Dendrocygna viduata*), Hottentot teal (*Anas hottentota*), village weaver (*Ploceus cucullatus*) and hamerkop (*Scopus umbretta*), all successfully reared young.

Top left: female black rhino (*Diceros bicornis*) and calf, Mkomazi.

Below: The Maasailand Preservation Trust rangers in Chyulu.

Bottom: Rafiki wa Faru (friend of rhino) education programme.



Supporting strategic objectives:



Saving Chimpanzees in Nigeria

Research driven conservation



Gashaka Gumti is Nigeria's largest National Park. The park is rich in biodiversity, and is particularly renowned for its primate populations. It is home to the only remaining viable population of the Nigerian chimpanzee (*Pan troglodytes vellerosus*).

STAFF QUOTE

“As a freelancer, usually working at various commercial organisations, it's refreshing to work with real world objectives and with people passionate about their work.”

The backbone for the park's ongoing success is the Gashaka Primate Project. Chester Zoo's core support over many years has seen the project grow to become a major study site for primates and one of the largest conservation projects in West Africa. In 2010, the publication of the book "Primates of Gashaka: socioecology and conservation in Nigeria's biodiversity hotspot"

was published and Chester Zoo's annual bursaries provided the opportunity for eight Nigerian wildlife biologists to conduct research and receive training at Gashaka. In addition, Chester Zoo supported two research projects on the 'energetics and life history of olive baboon' (*Papio anubis*) and on the 'conservation genetics of Nigerian chimpanzees'.

The project works closely with the government rangers who patrol and protect the park, and past zoo support has allowed demarcation of the park's boundary, greatly increasing patrol efficacy. In 2010, we supported additional solar powered radio communication posts at six remote ranger stations and improvements to boundary roads, again increasing the capacity of the rangers to effectively protect this important area. The project has huge benefits for local communities. Twelve local villagers are employed and trained as guides for researchers. Local community projects help raise awareness of conservation issues and develop sustainable livelihoods.

The Nigerian Montane Forest Project is another important component of Chester Zoo's Nigeria Programme. This project works



closely with the Gashaka Primate Project at the neighbouring site of Ngel Nyaki. This area is exceptionally rich in endemic taxa and several new species have been discovered over the last few years. The area also contains a small population of Nigerian chimpanzee. This project promotes the conservation of Nigeria's montane forests by inspiring excellence in research and empowering local communities and is the driving force protecting the Ngel Nyaki Forest Reserve. In 2010, three peer reviewed scientific papers were published and a number of Nigerian students and scientists received training in forest conservation. The project employs and trains local field assistants and provides education through conservation clubs that visit schools and also take children on forest reserve visits. This most importantly generates a sense of local ownership and pride in their forests amongst surrounding communities.

Top left: Mother and baby Chimpanzees (*Pan troglodytes*) at the zoo. © Steve Wilson.

Top right: Local assistant conducting field surveys. © Volker Sommer.

Supporting strategic objectives:



Spirit of the Jaguar

Resolving jaguar-rancher conflict

Conflict with people is a serious and widespread threat for the survival of most of the world's large cats. There are few pristine areas of habitat remaining for most big cat species, with many areas being encroached upon by people and their livestock. This inevitably leads to livestock, or in some cases people, being killed by these predators and in response they are then persecuted by people.

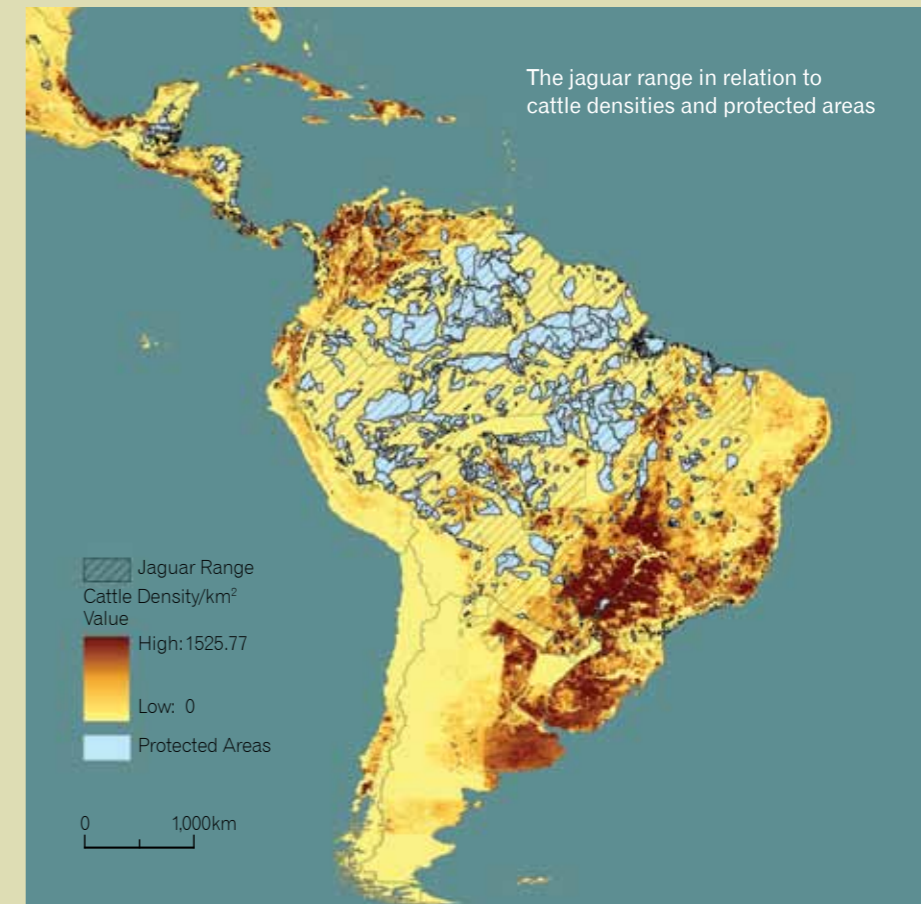
Such conflict is the biggest threat to jaguars and today there are very few areas in which jaguar (*Panthera onca*) can survive that are protected from the influences and threats presented by human populations. Sixty-five percent of the remaining 11 million square kilometres of jaguar range is outside of protected areas, and it is here that they come into contact with livestock, on which they occasionally prey, leading to retaliatory killing by farmers.

In partnership with the Wildlife Conservation Research Unit and Oxford University, Chester Zoo is conducting extensive research into the factors that shape human-jaguar conflict, including geography and human land-use patterns. Using GIS software, we are modelling areas of highest risk. Around 85% of the jaguar range has some overlap with livestock and therefore some potential for conflict with people.

We have also further developed the Jaguar Conservation Network website (www.jaguarnetwork.org) initiated by Chester Zoo, which is a trilingual portal for information and collaboration among jaguar researchers, conservationists, and people affected by predation on livestock.

Chester Zoo also continues to provide grants to other organisations working on jaguar conservation. In Guatemala, we provided support for a project helping to implement livestock husbandry practices designed to mitigate human-jaguar conflicts in the ranches and villages of La Selva Maya. This year we also supported a project in Costa Rica, which is working in Central America's largest remaining forest area, the Osa region. Here communities regularly experience jaguar predation upon their livestock. This project works closely with schools and communities to increase empathy and understanding towards jaguars, and attempts to change negative attitudes and behaviours.

Right: Sofia in our Spirit of the Jaguar enclosure, Chester Zoo.



Supporting strategic objectives:



Frogs to the Fore

Tackling the global amphibian extinction crisis



Chester Zoo's Amphibian Programme focuses on three Critically Endangered species projects, each of which has both *in situ* and *ex situ* research and conservation components. The newest of these species projects is for the mountain chicken, a huge and charismatic frog clinging to a precarious existence in Montserrat and Dominica in the Eastern Caribbean. Having once been abundant enough to be collected as a food item by island residents, the now infamous chytrid fungus has decimated populations on both islands to the point of near extinction. Chester Zoo is one of four zoos collaborating with the Montserrat and Dominican governments to save this unique amphibian. During 2010 the zoo installed a third dedicated conservation breeding unit to devote to this species and the zoo's Team Leader of Herpetology helped survey a remote forest patch in Montserrat to determine the presence or absence of the deadly fungus with a view to carrying out future reintroductions.

The zoo also sent staff to Belize to assist with continued research on the black-eyed tree frog (*Agalychnis moreletii*). This species is the focus of a Manchester University/Chester Zoo collaborative PhD project investigating the role of dietary carotenoids in colour, health and reproductive success. Breeding these animals in the zoo is an integral part of the PhD study and zoo staff also collected field data on habitat preferences and environmental parameters to help inform the husbandry of the species.



STAFF QUOTE
 "No two days are the same; you're always kept on your toes!"

To improve our understanding of the species' distribution and conservation status the zoo is supporting additional research into the population genetics of the species throughout Belize, Guatemala and Honduras.

In Costa Rica, the zoo continued to support monitoring of the green-eyed frog (*Lithobates vibicarius*) breeding pond in Chutas near Monte Verde. This enigmatic frog continues to persist at this stronghold and has recently been re-discovered at two or three other ponds suggesting, it might be making a slow recovery since the population crash in 1987, thought to have been brought about by chytrid fungus.

In addition to these core projects the zoo continued to support conservation research on Darwin's frog (*Rhinoderma darwinii*) in Chile, funded a pilot study on distribution and natural history of caecilians in northern Sumatra and has initiated a second collaborative PhD study with Manchester University, this time looking at the benefits of providing ultra-violet lighting to amphibians held in *ex situ* conservation breeding programmes.

The zoo's Curator of Lower Vertebrates and Invertebrates continued to dedicate time to the Amphibian Ark, organising and facilitating an Amphibian Conservation Needs Assessment workshop for Argentinean amphibians in Buenos Aires and lecturing at the first Amphibian Bio-banking Symposium in London.

Details of our Amphibian Programme are now included on a dedicated insert within the zoo's Conservation Prospectus.

In the zoo

Chester Zoo operates three independent amphibian conservation breeding and research units known as Amphibian Pods (APODs). Each is dedicated to one of the Amphibian Programme's three focal species. The Herpetology team achieved extraordinary success in breeding black-eyed tree frogs in support of the tree frog nutrition PhD and for the first time, mountain chickens were raised to metamorphosis by their mothers and on to maturity by our team. Though the latter individuals are not part of the conservation breeding population, the experience gained by staff will stand them in good stead for breeding with new, wild-caught founder mountain chickens rescued from Montserrat in 2009 and due to arrive in early 2011.

Frustratingly, the third and final APOD resident, the Costa Rican green-eyed frog, has refused to breed despite complex seasonal and social manipulations and working closely with our veterinary department to attempt hormone-assisted reproduction.

Top left: One of the few wild mountain chickens (*Leptodactylus fallax*) to survive the chytrid fungus.

Top right: Chester Zoo continues to support the monitoring of the green-eyed frog (*Lithobates vibicarius*) in Costa Rica. © Mark Wainwright.

Supporting strategic objectives:



Conserving British Wildlife

Acting locally in the UK

2010 was the second year of the Count Me In! (CMI!) project run in partnership with RECORD: the local biological centre serving Cheshire, Halton, Warrington and the Wirral. The project exceeded its targets with 27 events and 1,399 participants.

CMI! has been very successful in its aim of creating 'Wildlife Recorders of the Future'. As momentum has grown, people of different ages and skill levels have been able to interact and share experiences, producing a real pride and sense of ownership in the project, and a commitment to its purpose.

A bid to the HLF Skills For the Future fund in partnership with Cheshire Wildlife Trust was successful. This will enable eight work placements, each a year-long, for 'biodiversity trainees' over the four years starting in 2011.

Our research on hazel dormice (*Muscardinus avellanarius*) continued with partners in Cheshire and North Wales. Significantly, surveys of the Welsh population continue to show this to be one of the largest UK dormouse populations currently being monitored.

A zoo Wildlife Audit was started through RECORD, with the focus in 2010 being on

areas of the zoo not previously surveyed, and on poorly recorded invertebrates. The survey was undertaken between February and October and a total of 200 hours were spent in the field. More than 900 species were recorded, some 400 of which had not been recorded within the zoo grounds previously. The total number of species recorded at the zoo is now 1,600. Protected species recorded included great crested newt (*Triturus cristatus*) and lesser silver water beetle (*Hydrochara caraboides*), plus several invertebrates with a restricted distribution in the Cheshire region.

Projects receiving our Native Species Grants in 2010 included a red squirrel (*Sciurus vulgaris*) reintroduction project on Anglesey, a marine recording project in Liverpool bay, and an important genetic project on black poplar trees (*Populus nigra*) that will assist local replanting schemes to preserve genetic diversity.

The range of UK plant conservation projects continues to increase, with work in the zoo and in the field. Current reintroduction projects include black poplar trees, common juniper (*Juniperus communis*), and limestone woundwort (*Stachys alpina*) and other work continues on threatened native, aquatic plants, dune denizens and the very range-restricted Welsh cotoneaster (*Cotoneaster cambricus*).

In the zoo

There was a return to form in sand lizard (*Lacerta agilis*) breeding in 2010 owing to a new strategy of catching gravid females and confining them to smaller enclosures for egg deposition. The eggs can then be artificially incubated and the young reared in isolation from potentially cannibalistic adults. As a result we were able to release 24 youngsters onto the dunes at Ynyslas on the west coast of Wales, as part of the national recovery plan for this regionally threatened Biodiversity Action Plan species.

Clockwise from top: Our research on hazel dormice (*Muscardinus avellanarius*) continued in 2010. © Wendy Northrop; Wild adult male sand lizard (*Lacerta agilis*); CMI! moth trapping; CMI! beach recording group.



Supporting strategic objectives:



Chester Zoo Conservation Grants

Providing support for conservation projects across the globe



STAFF QUOTE
 “I love working with our animals and striving to ensure we provide the best husbandry we can, making their lives as natural as possible.”

This year, Chester Zoo has supported a wide variety of conservation projects worldwide, with over 60 projects successfully applying for conservation grants. In 2010 a new method for the evaluation of conservation impact was implemented for all projects awarded grants, aiming to create a more rigorous tool for the zoo's assessment and review process.

Requests for grant support continue to rise each year. When compared to 2009, the average funds awarded and total spend on new grants increased this year. A selection of some of the grants awarded in 2010 is as follows:

Mammals

We continue to provide ongoing assistance to the N/a'an ku sê Carnivore Research Project, a project focusing up on the reduction of human-carnivore conflict in Namibia. Using camera trap technology the project has captured rare footage of cheetahs (*Acinonyx jubatus*), which is providing further insight into their daily activity (see back cover).

Funding was also provided for continued work with lowland tapir (*Tapirus terrestris*) in Brazil, where camera traps are being utilised to investigate the nocturnal behaviours of tapir and other wildlife.

Birds

Chester Zoo has continued support for a variety of hornbill projects including the Budo Hornbill Conservation and Education Centre in Thailand and the Mabula Ground Hornbill Project where our backing assists with the continued monitoring of the Endangered southern ground hornbill (*Bucorvus leadbeateri*) in South Africa.



Grants were also awarded to the grey-breasted parakeet (*Pyrrhura griseipectus*) project in Brazil for the monitoring of artificial nest cavities and the development of community education against wildlife trade; and for the blue-throated macaw (*Ara glaucogularis*) project in Bolivia to fund a new field and conservation centre.

Reptiles, amphibians and invertebrates

Support for *in situ* conservation of the Komodo dragon (*Varanus komodoensis*) and Pacific tree snail was continued this year, and a grant was awarded to a new project assessing the conservation status of amphibious caecilians found in northern Sumatra.

Fish

Support for the Mexico Fish Ark was continued in 2010 to maintain current *ex situ* conservation for numerous threatened species. This year the project was also able to extend efforts to the development of *in situ* species and habitat conservation. New grants were also awarded to a project carrying out DNA analysis of fishes found in the peat swamps of Sumatra and for the conservation of fishes found in the Sofia River, Madagascar.

Botanical

After the provision of financial and technical assistance for the assessment of conservation status of cacti in Mexico, Chester Zoo has extended its support to evaluate the conservation status of cactus species found within the Andes and on the Galapagos Islands.

We also assisted a new project for the restoration of wetland forest at the REGUA

STAFF QUOTE
 “Seeing that Chester Zoo really does make a difference to the conservation effort on the ground. Our partners are always so appreciative of our efforts and really do value our contributions to their conservation work.”

reserve in Brazil, where work is focusing on the reintroduction of a variety of orchids into the reserve.

Studentships

Following a large number of applications, Chester Zoo awarded ten Zoological/Veterinary Studentships in 2010. These included projects evaluating the impacts of climate change on UK butterflies, assessment of hormone monitoring for wild black rhinos in Kenya, population and habitat ecology of the Rodrigues fody (*Foudia flavicans*) and monitoring of pine recovery in the Turks and Caicos Islands.

In addition, the Richard Hughes Scholarship is offered to projects which focus on elephant management, welfare or conservation. This year the scholarship was awarded to two elephant welfare projects. One project evaluated stress and thyroid hormones of captive elephants in Nepal. The second investigated behavioural development of elephant calves in relation to welfare.

Please see Appendix 7: Worldwide Conservation activities for a comprehensive list of projects support in 2010.

Far left: Komodo dragon (*Varanus komodoensis*).
Bottom left: Educational activities at the Budo Hornbill Education centre, Thailand.
Top centre: Blue-throated macaw (*Ara glaucogularis*), Bolivia
 © Ross Macleod-Armonia.

Supporting strategic objectives:



Global Partnerships for Progress

Working with zoo associations, wildlife organisations and conservation agencies worldwide

World and regional zoo associations

Throughout the year, more than 10 Chester Zoo staff attended and participated in annual and mid year meetings of the World Association of Zoos and Aquariums, European Association of Zoos and Aquariums and the British and Irish Association of Zoos and Aquariums. Professor Gordon McGregor Reid was awarded EAZA's prestigious Lifetime Achievement Award at its 26th Annual Conference in Verona, Italy and was appointed an Honorary Associate of BIAZA at their Annual Conference in Belfast Zoo. Staff also participated in various Taxon Advisory Group meetings throughout the year.

European zoo nutrition

In her capacity as Chair of the EAZA Nutrition Group, Chester Zoo Nutritionist, Andrea Fidgett, chaired the 6th European Zoo Nutrition Conference, Barcelona, Spain, in partnership with ConZOOlting and the EAZA Executive Office. More than 100 participants and speakers from 20 countries attended this highly successful conference and heard/viewed almost 60 oral and poster presentations, including four submissions from Chester Zoo.

International Congress of Zookeepers

From its inception in 2000, the International Congress of Zookeepers (ICZ) has had one goal – to improve the professionalism of zookeepers worldwide, which would in turn improve animal welfare in zoos throughout the world. To assist in achieving

ICZ's objectives, Chester Zoo supported a strategic planning meeting held in Singapore, facilitated by the IUCN Conservation Breeding Specialist Group. The ICZ and its 6,000 members will use the strategic plan made at this workshop to direct their organisational objectives in improving professional animal care, animal welfare, and increasing the professionalism and global network of the world's zookeepers, while also reaffirming their commitment to the conservation of wildlife and their habitats.

IUCN SSC/Wetlands International Freshwater Fish Specialist Group

Chester Zoo continued to support and host a part-time Programme Officer for the IUCN/WI Freshwater Fish Specialist Group for the third year.

In November, Chester Zoo hosted the 4th public aquaria husbandry symposia, entitled 'Global Freshwater Fish Conservation: linking *ex situ* and *in situ* actions', which was jointly organised by Chester Zoo, the FFSG and ZSL, with support from the European Union of Aquarium Curators and endorsement from the World Association of Zoos and Aquaria. This international meeting, the first of its kind, was attended by 55 freshwater conservation biologists, research scientists, and zoo and aquarium specialists, from 21 countries; providing an unprecedented opportunity for this diverse mix of experts to gather together. The primary aim of the meeting was to encourage relationships and identify

STAFF QUOTE
“I feel very privileged to have a job I truly love! I have a great deal of freedom in my job and Chester Zoo has always been very supportive of my work.”

potential freshwater fish conservation initiatives in collaboration between the zoo and aquarium and international science and conservation communities.

Action for amphibians

Chester Zoo is among the world's most prominent supporters of amphibian conservation. Not only has it developed a programme of *ex situ* conservation breeding in dedicated Amphibian Pods (see page 22), but it continues to be a major champion of the Amphibian Ark (AARK). As part of its support, Chester Zoo contributes 20% of Curator Richard Gibson's time to operate as AARK Taxon Officer; a role whereby he helps to develop and implement a system of 'conservation needs assessment' for the world's amphibians. This system is executed through facilitated workshops where every frog, toad, newt, salamander and caecilian species of the region is assessed by local experts as to what needs to be done to ensure their survival. During his time at Chester Zoo, Richard has facilitated workshops in South Africa, Brazil, Sri Lanka, Chile and most recently Argentina, helping to assess the conservation needs of more than 1,400 species.

Chester Zoo is also a founding, funding and steering committee member of the Amphibian Survival Alliance (ASA), a new enterprise tasked with generating the hundreds of millions of dollars required to fund and then deliver the international Amphibian Conservation Action Plan. This is an extremely ambitious international initiative with major collaborators including the IUCN, Conservation International (CI), Smithsonian Institution, The Princes' Rainforest Trust, WAZA and a number of leading zoos and universities.

Left: Professor Gordon McGregor Reid is presented with EAZA's Lifetime Achievement Award.



Supporting strategic objectives:



Keeper for a Day Scheme

Staff involvement in worldwide conservation



Chester Zoo operates a Keeper for a Day scheme, where people can come and work alongside our highly experienced staff to experience what it's like to be a zookeeper. Funds raised through this scheme support our conservation programmes both in the zoo and overseas. With part of the monies raised, we operate a Keeper for a Day Staff Project Fund. This aims to support staff in conservation, education and welfare initiatives in line with the zoo's mission. Through applications to the fund, it provides staff with opportunities for gaining experience and getting involved with projects outside of the zoo.

In 2010, our Keeper for a Day Staff Project Fund supported nine of our staff in various activities around the world.

Safari Ranger, Becca Biddle, visited Maasai and local communities in Laikipia, Kenya, to experience how community conservation and sustainable development, implemented by Laikipia Wildlife Forum, can aid lives and protect wildlife. Becca visited groups of local women, who with the help of LWF, have set up tourist

lodges and protected local wildlife. Becca also delivered paints to Mugie Ranch School as part of Chester's Rhino Mania project.

Primate keepers, Mark Wylie and Kate Brice, attended a five day course on the captive care for callitrichids and lemurs at Durrell, Jersey. The course included practical work on animal sections to gain insight into husbandry management techniques for gorillas (*Gorilla gorilla gorilla*), orangutans, aye-aye (*Daubentonia madagascariensis*) and various other lemur and callitrichid species. Lectures and workshops covered a variety of themes including species selection, enclosure design, ecology and behaviour, husbandry, enrichment, population management, and health care.

Tanya Curnow, from our Conservation Medicine department, visited the JG-Eden Umhloti Game Reserve, South Africa, to provide veterinary expertise during the 8th Annual Pan African Survival Alliance Veterinary Healthcare Workshop. Tanya says "the best part about my trip was the training of veterinarians and healthcare workers at

PASA member sanctuaries to help develop their skills. I also found attending talks and practical sessions very beneficial as I learnt a lot about primate behaviour and some new diagnostic techniques".

Elephant keeper, Richard Fraser, attended the First European Elephant Management School in Hagenbeck, Germany, with the aim of gaining further knowledge regarding all aspects of elephant management. Numerous topics, including training techniques and enrichment ideas, were covered. Information was also presented on wild population management and the latest elephant research being carried out.

Giraffe keeper, Lizze Bowen, visited Burgers' Zoo, Beekse Bergen and Rotterdam Zoo in Holland, to see how they successfully manage giraffes in mixed species exhibits. Lizze discussed individual and group giraffe management and enclosure design. She learnt which species had been successfully mixed with giraffes and also about problems encountered. Lizze says "this was a really insightful trip and the knowledge I have gained will be useful when considering exhibit developments at Chester Zoo in the future".

Carnivore keeper, Laura Kelly, visited Dortmund Zoo to gain knowledge on giant otter husbandry. Dortmund Zoo has been extremely successful breeding this species and has produced husbandry guidelines for them. Laura has subsequently implemented a number of methods into the husbandry routine for our giant otters at Chester Zoo.

Research Officer, Sonya Hill, participated in the 2010 International Gorilla Workshop, Oklahoma City Zoo and Botanical Garden. The workshop brought together gorilla keepers, researchers and field staff to discuss issues and solutions facing gorillas today. Sonya gave a presentation reviewing the current status of gorilla welfare research. Sonya says she is very grateful for the Keeper for a Day scheme's support to attend this workshop and has subsequently been following up new research opportunities.

Other projects supported included visiting the Mauritius Wildlife Foundations passerine projects and carrying out conservation education in Chengdu, China.

Top: Giraffe keeper Lizze Bowen with *Thorn*.

In-zoo Developments in 2010

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Supporting strategic objectives:



Developing the animal and plant collection

A major change to the mammal division was the departure of our California sealions. The decision to no longer keep this species at the zoo was taken after EAZA guidelines were updated, advising that these marine mammals should be kept in sea water pools. Once alternative suitable facilities were found for our sealions, work immediately began on improving the enclosure to hold giant otters. This is the first time Chester Zoo has held this species and our new pair has proved incredibly popular with both public and staff alike. Another major new mammal arrival for the year was a pair of giant anteaters (*Myrmecophaga tridactyla*) who will eventually share a paddock with the vicuna (*Vicugna vicugna*) and rheas (*Rhea americana*).

We now have a fantastic herd of Rothschild's giraffe, including our most recent baby, *Tula*. Our last two hybrid giraffes were relocated during 2010 and two pure-bred females from Germany and Holland were brought in.

Two of our most sensitive callitrichid species, pied tamarins (*Saguinus bicolor*) and black lion tamarins (*Leontopithecus chrysopygus*), were moved off show in 2010 to a quieter environment, to encourage breeding. Several other tamarin and marmoset species can still be viewed by visitors at Miniature Monkeys.

Two new bird species were added to the collection during 2010; the superb fruit dove (*Ptilinopus superbus*) and brown-breasted barbet (*Lybius melanopterus*). Both species bred successfully

during their first year in the zoo, each rearing three chicks. Our pair of black storks (*Ciconia nigra*) also reared a chick for the first time and a Victoria crowned pigeon (*Goura victoria*) was hatched in the zoo, the first in many years.

The Herpetology Department completed a project to modernise reptile and amphibian exhibits throughout the zoo. Many old enclosures were decommissioned and a number of other exhibits were renovated or modified and some new exhibits were constructed.

In the Tropical Realm, the radiated tortoises and Galapagos giant tortoises (*Chelonoidis nigra*) both enjoy greatly enlarged and improved enclosures and new 'invisible' enclosures for dart frogs were nestled among the vegetation. The caiman lizard (*Dracaena guianensis*) enclosure was over-hauled and re-landscaped, improving animal welfare and visitor experience, and two smaller exhibits were re-landscaped for emerald tree boas (*Corallus caninus*) and rhinoceros rat snakes (*Rhynchophis boulengeri*) respectively.

In the Islands in Danger building, the smaller Komodo dragon enclosure was converted for mountain chicken frogs and three species of Caribbean iguanas, while extensive planting and enhanced ultra-violet lighting has greatly improved the larger dragon enclosure for visitors and dragons alike.

New to the reptile collection are two species of Asian forest angle-headed dragons. All animals are youngsters who are currently doing well in our quarantine facilities. We look forward to getting these extraordinary lizards on show in the Realm of the Red Ape exhibit in early 2011.



Bali, our giant reticulated python (*Python reticulatus*), was once again wrestled from her enclosure for her annual medical check-up and enclosure renovation. Unlike last year she was ready for us this time which prolonged and complicated the initial capture somewhat! However everything went smoothly and she is fit and well, measuring about 24ft long and weighing around 15 stone. The associated media coverage spanned the globe.

Notable breeding firsts for the Herpetology team included Critically Endangered black-eyed tree frogs and mountain chickens, splendid leaf frogs (*Cruziohyla calcarifer*), aquatic caecilians (*Typhlonectes natans*), king ratsnakes (*Elaphe carinata*), rhinoceros ratsnakes (*Rhynchophis boulengeri*), eyelash vipers (*Bothriechis schlegelii*), and Critically Endangered Utila island iguanas (*Ctenosaura bakeri*).

In the Aquarium the Roti Island snake-necked turtles (*Chelodina mccordi*) finally made it on show in the former Australian lungfish (*Neoceratodus forsteri*) aquarium where they are proving to be highly active and very popular with our visitors. There was renewed breeding success with red-lined torpedo barb (*Puntius denisonii*); a species very rarely bred in other aquariums. Chester Zoo also supports a field project in south-west India for this species.

Supporting the animal collection

Zoo Programmes and Conservation Medicine staff work closely together and with external partners to ensure excellent standards of animal health, welfare and husbandry. Their activities are audited by the Animal Health, Welfare and Husbandry Sub-Committee of the Conservation and Education Committee – a committee of the Zoo's Council. Some key highlights from 2010 include:

Veterinary service

Chester Zoo's in-house vet team provide clinical care to the collection. As well as providing care for sick animals, the vet team manage a comprehensive preventative health care programme. This provided the theme for the major Joseph Banks room exhibition for 2010.

Animal records

After training staff to use ARKS and to improve record keeping in 2009, data submission continues to increase in volume. Over three times more information was submitted in 2010 compared to in 2008. During 2010, we have continued to refine and consolidate our records in preparation for our transfer to ZIMS in 2011.

Animal moves

Over 1,500 animals were moved in 2010. As well as the logistics of arranging their safe transport, animal health certificates must be obtained and regulations met. On arrival all animals go through quarantine and our state of the art quarantine facilities have proven invaluable in allowing us to import animals from outside the EU in support of international breeding programmes.

Endocrine service

Now in its third year, the endocrine service has run several thousand faecal and urine samples for a variety of taxa. Routine monitoring of reproductive hormones has enabled us to accurately time breeding in our black rhinos and elephants and also to diagnose pregnancy and parturition in these and other species, enabling us to adapt our husbandry practices to support animals better through pregnancy, birthing and the post-partum period.

Animal feeding programme

During 2010, we continued to focus on providing animal diets as cost effectively as possible, aided in part through the ongoing development of new stock management and nutrition software with a team of international colleagues.



Developing and operating the zoo attraction

The Commercial Division continues to work towards its goal of eradicating palm oil from the products it uses and sells. During 2010 we sourced a supplier who provides palm oil free bread and sandwiches. Around 80% of our cake offer is now palm oil free and the aim for 2011 is to achieve 100%.

Much work and liaison with Animal Division throughout 2010 enabled us to launch a range of Chester Zoo Animal Experiences and Gifts. We are now offering a range of three animal feeds, a zookeeper experience and a junior keeper experience, in addition to packaged gift tickets. We have also relaunched the Beastie in a Box range and link the orangutan and elephant boxes to our field conservation programmes.

In December, we began a new partnership with Heathcotes Outside, part of the Lindley catering group. We will be tapping into their expertise to develop our catering outfit and drive the improvement and creation of new operating procedures and food concepts. This was a most pleasing and successful conclusion to a year of intense planning and a development strategy that aims to improve our catering offer across the zoo site.

In order to build on our customer service skills, a zoo wide customer care training programme was delivered to more than 100 staff and managers in all from across the zoo during 2010.

Much enthusiasm and energy from the Guest Services team and a major sales change to the entrance donation and Gift Aid process has pleasingly resulted in additional revenue being achieved at main gates during 2010.

The zoo hosted a number of events during 2010. Barnado's Toddle saw some 1,500 under three's stroll one mile around the zoo! Sensory awareness days provided a range of rare experiences for our guests, with sensory activities including animal feeding, touch tables and meet the keeper.

The annual mid-summer cycle again enjoyed great weather and a good turnout on the night of the first England world cup game! A Caribbean steel band played on site for a month and despite the constant rainfall the band attracted much attention and dancing, with the limbo dancer keeping spirits high.

In 2010 we launched 'Run for the Wild', a 5km fun run, which will become an annual feature of the zoo calendar. This year some 150 runners, consisting of family members of all age ranges, ran through and around the zoo site raising just over £3,000 for our black rhino conservation programme.

STAFF QUOTE

“I enjoy sharing my passion for species conservation with our visitors. If I can pass on just a little of my enthusiasm so they go home wanting to do more to help, I feel like I'm doing a good job.”

Left page, top: Asian forest angle-headed dragon (*Gonocephalus doriae*) – new to the collection in 2010.

Far left: Zoo staff with *Bali* our 24ft long, 15 stone reticulated python (*Python reticulatus*) © Pete Byrne/Press Association.

This page, top: Young visitors meet pirate Big Todd, the Barnardo's Big Toddle mascot.



Supporting strategic objectives:

1 3 5

In-zoo Science and Research

Investigations and evidence in support of conservation and welfare

The research components of Chester Zoo's field programmes and in-zoo investigations go from strength to strength. There is ongoing growth and development of the in-zoo scientific research, involving zoo staff as principal investigators, active collaborators, academic supervisors and examiners for first and higher-level degrees. Several of our staff members are also recognised by honorary positions within academic institutions, including the University of Liverpool. Research collaborations with our key partners help us in our mission to conserve biodiversity worldwide. During 2010, Chester Zoo staff and associates published or contributed to over 120 scientific and technical publications (see Appendix 6 for a list of some of our key publications).

Many zoo staff also co-ordinate zoo breeding programmes, manage studbooks, write and review scientific papers and reports, participate in various scientific animal management and conservation committees for internal and external bodies and present their work at national and international conferences and workshops. In July 2010, Chester Zoo staff organised and hosted the 12th Annual BIAZA Research Symposium, in the zoo's Lecture Hall, at which several members of staff also gave oral or poster presentations about their research. Our in-zoo research staff expertise is in the fields of (but not limited to) applied ethology, veterinary research, nutrition,

endocrinology, and environmental education; and projects regularly use a combination of inter-departmental expertise and methods. Whether studying our animals or visitors, our in-zoo research can be used to answer applied and pure research questions to enable us to make evidence-based management decisions. Results help us maintain high standards in our conservation outcomes, animal welfare, and visitor experience.

This year saw some exciting new developments for our in-zoo research. The transfer of the Research Department from the Field Conservation to the Conservation Medicine Division has seen the creation of a new research group; reflecting all areas of our *in* and *ex situ* research expertise. This research group facilitates greater opportunities for our staff to collaborate with and support each other in their research activities. In 2010, we launched an updated version of the NEZS Research Policy and in-zoo research application form, to assist Chester Zoo and its Ethical Review Committee in the assessment of applications.

A small selection of in-zoo research projects carried out in 2010, in which our staff have been involved, include:

Applied ethology

The Nuffield Foundation awarded Science Bursaries to two local A-level students, who carried out behavioural research projects in the zoo. A project focusing on time budgets,

enclosure use and visibility of giant otters has been put through to the finals in the Senior category of the Science/Maths stream of the National Science and Engineering Competition, to be held at the Big Bang: UK Young Scientists and Engineers Fair, in 2011.

Chester Zoo's Project Liaison Officer, Nick Davis received a commendation at the BIAZA Research Awards, for his PhD on 'Social and environmental influences on the welfare of zoo-housed spider monkeys'.

Endocrinology

The endocrine lab has begun supporting research carried out by the Al Wabra Wildlife Preservation team on Spix's macaws (*Cyanopsitta spixii*). The species has proven difficult to breed in captivity; hormone analysis is currently being used to help understand the difference between successful and unsuccessful breeding pairs.

Nutrition

In collaboration with the University of Manchester, our Nutritionist continues to supervise PhD research on the effects of dietary supplement and ultraviolet lighting regimens on South American tree frogs. This research is funded by grants from the Natural Environment Research Council (NERC), the Biotechnology and Biological Sciences Research Council (BBRSC), and NEZS.

Veterinary

The zoo's veterinarians have been involved in investigating internal nematode parasites in our primates and hoofstock (in partnership with the Liverpool School of Tropical Medicine); surveillance of amphibian parasites at Chester Zoo, and PCR development for investigation of avian renal trematodes (both in partnership with the Natural History Museum; and surveillance of respiratory pathogens in non human apes (in partnership with Micropathology Ltd).

Visitor studies

Discovery and Learning staff have been investigating visitor interest in zoo animals, to answer questions such as 'which animals do our visitors find most interesting and why?' The project received a Commendation at the BIAZA Awards and has been published in a peer-reviewed journal.

Left: Veterinary research and endocrinology are just two focus areas of Chester Zoo's research.



Supporting strategic objectives:

2 3 4

Discovery and Learning

Engaging people with nature

In 2004 we became the first zoo ever to receive the Sandford Award in recognition of the excellence of our education service for schools. In 2009 we had to go through a rigorous evaluation including a site visit and a series of staff interviews to retain the award for the next five years. We were successful again and two of the Discovery and Learning staff attended a glittering awards ceremony in February in Windsor Castle, presided over by HRH the Earl of Wessex. Of course zoo education is about much more than what we do with schools, but this remains a vital part of how we achieve conservation by giving young minds the opportunity to explore new ways of interacting positively with the natural environment.

On the international zoo education scene, our Head of Discovery and Learning stepped down as President of the International Zoo Educators Association after a four year term of office.

One of the final decisions made at the 2010 IZE Conference in Disney Animal Kingdom in Florida was that Chester Zoo would host the next conference in 2012. Therefore, a huge amount of work started at the end of 2010 in preparation for this and will continue through 2011 and 2012 to make sure this important conference is a success.



In November we were delighted to receive the BIAZA award for Best Education Project – public and general visitor for our Learning Together project. Supported by funding from the National Lottery, this project brought single parents and their children together at Chester Zoo for planned educational experiences which exposed them to environmental education that focused on zoos acting as catalysts for behaviour change.

The end of the year brought the excellent news that Maggie Esson, our Education Programmes Manager was awarded an EdD; a specialist Doctorate in the field of Social Sciences by Liverpool John Moores University. The title of Maggie's thesis is 'The evolution of zoos as environmental education providers: the challenges of instilling behaviour change in visitors.'

Our Safari Ranger Service had a very successful year with 10,500 students in 72 schools receiving an educational visit with a difference. Thanks to generous sponsorship we were able to offer the service completely free of charge and at the end of the year BMW confirmed the offer of a brand new, eco-friendly Safari Ranger car for use in 2011. The good news for schools is that the Safari Ranger visits will continue to be free during the next year.

Presenters provided a range of daily public talks at animal exhibits in all weathers throughout the year and staffed the popular 'Vets – the inside story' exhibition in the Joseph Banks room, which attracted just under 30,000 visitors and will run during much of 2011 as well.

Much research continued to be done into the way visitors interact with the exhibits in the zoo, resulting in various publications in peer-reviewed journals testifying to the professionalism of our studies (see page 30 and Appendix 6 for more information).

One of our biggest challenges is maintaining all the interpretation around the zoo throughout the year at the same time as creating materials for new exhibits. The results of our latest big interpretation project will be available for inspection in April 2011 when the new painted dogs exhibit is open.

Top: 'Vets – the inside story' exhibition in the Joseph Banks room.

Below top: Receiving the Sandford Award from HRH the Earl of Wessex in Windsor.

Below bottom: BMW provide a brand new, eco-friendly Safari Ranger car for use in 2011.

Supporting strategic objectives:



Marketing and Public Relations

Widening the catchment area and increasing guest engagement



Chester Zoo's new arrivals provided the key messages communicated in marketing and public relations activity during 2010. The arrival of giant otters in April, coupled with the birth of baby meerkats, featured heavily in marketing material during the first part of the year.

The arrival of baby elephant *Nayan* became the focus of marketing activity in summer with press and radio adverts running alongside the existing Chester Zoo television advertisement. Partner channels of communication were also used to maximise exposure.

To encourage people living within a 1.5 - 2 hour drive time to visit the zoo, we distributed inserts through the Sunday Express, Sunday Mail and Daily Mirror newspapers, entitling the holder to one free child place with a full paying adult. A significant return was seen.

A short breaks campaign was implemented in Yorkshire and the surrounding areas. In

conjunction with Visit Chester and Cheshire, the campaign encouraged families and couples to combine an overnight stay in Chester with a visit to Chester Zoo. An i-guide was created detailing discounted deals and an online campaign comprising of banner advertising and email marketing was used to drive traffic to it. Also, an affiliation with Late Rooms began in September 2010. A webpage operated by Late Rooms and skinned to look like the Chester Zoo website can be accessed from Chester Zoo's homepage.

One of the biggest projects completed during 2010 was the re-launch of the Chester Zoo website, the aims of which were to create a website that would compete with other day out visitor destinations and to improve the visitor journey resulting in an increase in online revenue. Following the re-launch, online bookings increased by 141%.



On other digital platforms, the zoo finished the year with a database of over 70,000 recipients of its e-newsletter and 13,754 Facebook friends.

The zoo welcomed 54,445 group visitors during 2010. It was also another record year for ticket agents, with 38,000 tickets purchased.

Girlguiding UK celebrated its 100th birthday in 2010 and to celebrate we held a Rainbows Go Wild event which brought 4,737 extra group visitors.

Driven by a number of promotional activities, zoo membership grew to an all time high of 36,891 members in April 2010. A quarterly direct debit payment scheme was also introduced to help retention levels, we closed the year with 36,181 members.

The arrival of *Nayan* also helped to make the headlines for the public relations team. *Nayan*, along with a number of new born animals, generated column inches and airtime for public relations.

Rhino Mania and the donation of the bronze elephant to Chester city centre also gained wide spread coverage. Other notable highlights were a health check for flamingos, a Halloween special for Blue Peter and several radio broadcasts, including two live broadcasts from the zoo itself.

Doubling the public relations resource also enabled the team to explore and develop opportunities in other areas, with increased focus on conservation, targeting key media.

There were weightier issues too during the year including the development of Natural Vision and the appointment of Director General Dr Mark Pilgrim and Managing Director Barbara Smith.

The combined efforts of our in-house PR team has generated publicity with an advertising cost equivalent (as measured by Durrants Media Coverage Reports) of £3.8 million, excluding broadcast media.

Top left: Rainbows celebrate Girlguiding UK's 100th birthday in the zoo.
Left: Chester Zoo's new website; marketing through Late Rooms.

Supporting strategic objectives:



Trusts, Grants and Sponsorships Received

Gaining substantial support from external stakeholders



It is not widely appreciated that the Society is a conservation charity and much of our vital work could not happen without the generous support and contributions of our partners, donors, sponsors, lifetime supporters and volunteers. Our sincerest thanks go to all who have supported our work during 2010.

During tough economic conditions we have continued to attract new grant funding and to develop a number of partnerships. This year also saw the end of two multi-year projects; Learning Together, which was our education project funded entirely by the Big Lottery Fund's Family Learning Programme, and our volunteer wildlife recording project Count Me In! funded by Heritage Lottery Fund and Esmée Fairbairn Foundation.

In 2010, we were successful with a bid to Heritage Lottery Fund's Skills for the Future scheme. This grant will entirely fund our four year Biodiversity Trainees project, which we will start to deliver in 2011. The project will

be managed in partnership with Cheshire Wildlife Trust and RECORD and will aim to provide eight unique training placements.

We have continued to develop our partnerships with Airbus UK, Hill Dickinson and Urenco. Our children's affinity account with Cheshire Building Society, The Big Cat Junior Saver, continued to go from strength to strength this year.

This year also saw the launch of our first ever Run for the Wild, a 5km family fun run event helping raise money for our black rhino conservation programme. The event was a success with both runners and walkers enjoying the unique experience.

Finally, the highlight of the year was the Rhino Mania auction, delivered by Chester Renaissance and Wild in Art. This followed on from the public art event that took place in and around Chester during the summer. The Society was a beneficiary of the auction and a significant sum was raised for our rhino conservation projects in Kenya and Tanzania.

Sincere thanks go to the following major donors and supporters:

- Airbus
- Brian Wilson Charitable Trust
- Carplan
- Cheshire Building Society
- Chester Renaissance
- Darwin Initiative
- Eleanor Rathbone Charitable Trust
- Esmée Fairbairn Foundation
- Heritage Lottery Fund
- Hill Dickinson LLP
- Home Bargains
- Low Carbon Buildings Programme
- Marguerite Stainsby (legacy)
- Miss E L Rathbone Charitable Trust
- North West Development Agency
- Oglesby Charitable Trust
- Philip Barker Charity
- Rhino Maniacs
- The Rt Hon Baroness Rendell of Babergh, CBE
- The Big Lottery Fund
- The Eric and Dorothy Leach Charitable Trust
- The Ernest Cook Trust
- The Michael Marks Charitable Trust
- The William Dean Trust
- Wild In Art



Top left: Ecco, painted by Michael Snowdon, designed by Marc Ecco.
Above: Run for the Wild event participants.



Supporting strategic objectives:

4 5

Human Resources

Staffing, organisation, structure and training

We believe that managing our people effectively is just as important to success as the control of financial and capital resources. The Human Resources Division has introduced processes and implemented initiatives to improve the management and development of zoo staff, helping to make a positive difference to the success of the organisation during 2010.

Resourcing

This year we established better manpower controls by introducing the 'Manpower Plan' for the first time. The Society is now better able to control costs and we took action to introduce a recruitment ban for the second half of the year to ensure we achieved payroll targets for 2010.

This year also saw the completion of all weekly staff moving to monthly pay, thereby simplifying administration processes. For all new hires, recruitment and selection processes have been improved to ensure line management apply fairness and consistency when hiring the best candidates. We also introduced this year, an improved Induction Programme for all staff to enable new starters to better understand the Society and take up their roles more effectively.

Staff relations

Our Human Resources Department continues to coach and support line managers to better manage their staff. We provide a contact point to help resolve any concerns staff may have and work closely with our Staff Association ensuring we apply best practice solutions. Listening to our staff is always high on our agenda and we recognise the value of good communication. This year a new process to regularly update our staff on progress and plans for the future has been conducted through quarterly All Staff Briefings. Our staff have responded well to hearing first-hand from Directors what is happening and can have their say on important issues with management taking note of their views.

As we look forward to developing the organisation, our staff will play a major role in meeting our challenging strategic and operational goals. Recognising the positive impact that employee engagement can have, the Society undertook its first Staff Attitude Survey in 2010.

Engagement

The Staff Attitude Survey achieved a 78% response rate, with 248 responses from 317 staff. Considering this was the first survey of its kind, we are very happy with this level of



support; giving us a good degree of confidence in the results. The findings, which will be communicated next year, will provide a focus on how to better engage our workforce and enable us to develop and prepare action plans to deliver improvement to scores when the next survey is arranged.

Reward

This year we also undertook a major job evaluation exercise. The last time job evaluation was undertaken was in 2002 and the new job evaluation process will replace the old job relativity scheme from 2011. This large project has been successful due to the commitment of staff in generating their own job descriptions and with job evaluators drawn from a cross section of the organisation together with the full co-operation of the Staff Association, to see all of this through. Creating an open approach, using regular newsletters to track progress, and agreeing and sticking to these processes have proved vital before fully implementing the new staff graded pay structure in 2011.

Training and development

During this year, training spend has been carefully managed through our Strategic

STAFF QUOTE
"I never get tired of walking through the zoo and seeing the animals out and the visitors enjoying them."

Improvement Planning process. Learning and development has largely focused on supervisory training and development. During the second half of the year we made significant progress on three key initiatives which were:

- Institute of Leadership Management (ILM) Team Leader Training NVQ Level 2 run in collaboration with local education provider West Cheshire College.
- Chartered Institute of Environment and Health NVQ Level 3 run in-house in conjunction with specialist providers.
- Spectator Safety NVQ Level 2 training delivered by specialist providers in-house.

Efforts were made to secure European funding wherever possible, for these and other initiatives, which resulted in significant cost savings.

Our Human Resource Department is committed to ensuring effective performance management processes are in place. This year we have reviewed the appraisal process and re-issued it top down to ensure we have a workforce that fully responds to the challenges the Society faces. In 2010 we chose a new external occupational health provider to assist us in managing absence and deal with capability issues and reduce potential problems affecting our staff. We are moving towards promoting a concept of 'wellness' as a preventative measure to address employee health. Our aim is to continue to ensure that people are effective, healthy and enjoy playing a role to continually improve service delivery and directly support the zoo's strategic and operational goals.

Top left: Chef preparing a meal for visitors.

Top right: Animal keepers in the zoo grounds.

Bottom right: Chester Zoo staff receiving the 2010 Visit Chester and Cheshire Sustainable Tourism Award.

Supporting strategic objectives:

5

Safety, health and environment



Health and safety

Training

Significant training was undertaken this year, with Manual Handling sessions for all staff, Risk Assessment training for our site risk assessors, and the commencement of a general health and safety training programme comprising of a three day health and safety qualification (CIEH level 3) for more than 60 of our staff, with additional half day awareness training for all other staff to follow in 2011.

Accident statistics

This has been an excellent year for raising safety awareness and reducing accidents. There has been a 39% drop in zoo-related accidents to visitors with a monthly accident rate of around two accidents per 100,000 visitors. The 12 month rolling average has shown a distinct downward trend over the last year. This has been brought about by active management of any site issues that had resulted in an injury accident.

There has also been a drive to increase reporting of accidents that have occurred to our staff. By raising safety awareness,

staff have become much more proficient in reporting minor injuries. The site has also begun to monitor lost time accidents, to note the impact upon the business, and introduced a positive safety metric of measuring the number of hours worked without a lost time accident. We achieved our first significant target of reaching 100,000 hours without a lost time accident in November.

Project work

Two key projects were completed this year; a site wide barrier survey, and a safety signage audit. The barrier survey was undertaken to identify improvements to site barriers to either deep water, or Category 1 (dangerous) animals; upgrading the quality of existing fencing. This has also helped standardise the look of the barriers at the zoo. The safety signage audit identified signage that needed updating to match the requirements of the safety signs regulations, as signs are now required as colour-coded pictograms, rather than relying on text. A programme of installing the new signage has commenced, continuing into 2011.

Environmental management

ISO 14001

Significant work took place this year to update the procedures within our 14001 Environmental Management System. We also introduced Key Performance Indicators for Energy Use, Mains Water Use, Municipal Waste to Landfill, and Green Travel. We were successful in attaining re-certification to ISO14001 in October, which is conducted every three years.

Green Travel Plan

A feature of the Natural Vision expansion project is to improve the use of green travel options when coming to the zoo. A Green Travel Plan committee was formed in January and has made significant progress. This year there has been a focus on employee travel, with the introduction of a green travel reward card scheme that gives an entry into a monthly prize draw for every journey made (other than single car occupancy). A range of initiatives have taken place throughout the year, seeking to enhance car share, cycling, use of public transport and walking. For visitors, there has been the introduction of a discounted ticket price if arriving by bicycle, provision of cycle racks, and a new cycle route to the entrance via the bridle path, now part of the 'Pink' Chester Cycle Route (see page 11 for more information).

Environmental awards

The zoo has won environmental awards this year; the Visit Chester and Cheshire Sustainable Tourism Award, which looked at all aspects of our environmental work, our Maintenance Manager won the Northwest Business Environment Award, Leadership Category ('Green Hero') for his work on Energy Management, and the BIAZA Best Sustainability Project Award, also recognising the work done on Energy Management.



Trustees' Report for the Year Ended 31st December 2010

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Trustees and Governance

Honorary Positions

President

His Grace, The Duke of Westminster, KG, CB, OBE, TD, CD, DL

Vice Presidents

The Right Honourable Lord Wade of Chorlton

The Honourable Mrs A Margaret Jane Heber-Percy

Trustees on the date of this report and serving during the year:

Elected by the members

Prof Peter Wheeler Chairman

Neville Chamberlain CBE Vice Chairman

Malcolm Ardron

Prof Malcolm Bennett
(Elected 8th June 2010)

Catherine Buckley

Prof Stefan Buczacki
(Elected 8th June 2010)

Rebecca Burke-Sharples CBE

Steve Docking

Dr Simon Dowell

Iain Hall

David Pickering
(Elected 8th June 2010)

Dr Judith Skerritt

Bruce Ursell
(Elected 8th June 2010)

Tony Williams

Co-opted by the Trustees

Brian Child
(Co-opted 8th June 2010)

Robert Mee
(Co-opted 8th June 2010)

Chief Executive Officer – Director General

Dr Mark Pilgrim

Company Secretary

Alan Sykes

Structure

The North of England Zoological Society ("the Society") is a registered charity (Number 306077) and a company limited by guarantee (Number 287902), regulated by its Memorandum and Articles of Association. Its principal and registered office is Cedar House, Zoological Gardens, Caughall Road, Upton by Chester, Chester, CH2 1LH.

The Society, also known as Chester Zoo, owns a trading subsidiary company, Chester Zoo Enterprises Limited, whose taxable profits are transferred to the Society via Gift Aid.

Trustees

The Trustees, as a body of charity trustees, and as directors for the purposes of company law, have general control and management of the administration of the Society. They determine the strategic direction and policies of the Society, with consultation and discussion with the Director General of the Society as Chief Executive and his staff who implement policy. Up to 15 Trustees, who must be members of the Society, are elected by the members at the annual general meeting to serve for a maximum of 6 years. Up to 5 more may also be co-opted by the Trustees, to serve for up to 15 months from being appointed. The Trustees hold at least four formal meetings each year, together with an annual general meeting. The Chairman and Vice Chairman are elected by the Trustees from their current membership, for a period not exceeding three years before re-election for a maximum of one further term not exceeding three years, during which times they are not required to retire in accordance with the 6 year maximum.

Key responsibilities of the Trustees

With other Trustees to hold the Society "in trust" for current and future beneficiaries by:

- ensuring that the Society has a clear vision, mission and strategic direction and is focused on achieving these;
- being responsible for the performance of the Society and for its "corporate" behaviour;
- ensuring that the Society complies with all legal and regulatory requirements;
- acting as guardians of the Society's assets, both tangible and intangible, taking all due care over their security, deployment and proper application;
- ensuring that the Society's governance is of the highest possible standard.



Trustee Committees

The Trustees have delegated aspects of their powers to committees consisting of some of their members, relevant staff and other advisors. These committees report to the Trustees on matters that require their knowledge or approval. The Trustees also receive copies of the full minutes of all committee meetings.

Conservation and Education Committee – prime responsibility for advising the Trustees on all conservation and education matters, in accordance with the mission. An Animal Health, Welfare and Husbandry Sub-committee reports to this Committee.

Ethical Review Committee – prime responsibility for advising the executive of the Society, on behalf of the Trustees, in respect of all research and ethics with animals, and to oversee the ethical activities of the Society in so far as they relate to the advancement of the Society's stated mission.

Business Operations Committee – prime responsibility for advising the Trustees on all financial, human resource and business matters, in accordance with the Society's strategic objectives.

Remuneration Committee – determines remuneration and conditions of service for directors, heads of division and other key executives.

Trustee Nominations Committee – takes responsibility for identifying and proposing new Trustees, and (if elected) for their subsequent induction, support and development. Reviews the governance structure of the Society and recommends changes to maintain a high standard of Trustees' governance.

Trustees and Governance

The Standing Committee structure at 31st December 2010 is indicated in the table below:

Committees	Conservation and Education	Ethical Review	Business Operations	Remuneration	Trustee Nominations	Pension scheme ⁽¹⁾
Prof Peter Wheeler, Chairman	x		x	Chair	x	
Neville Chamberlain, Vice Chairman			Deputy Chair	x	Chair	
Malcolm Ardron			x			
Prof Malcolm Bennett	x					
Catherine Buckley	x					
Prof Stefan Buczacki	x					
Rebecca Burke-Sharples	x	Chair				
Brian Child			x			
Steve Docking	x					
Dr Simon Dowell	Chair					
Iain Hall			x			
Robert Mee			Chair	x		
David Pickering			x			
Dr Judith Skerritt	x	x			x	
Bruce Ursell			x			x
Tony Williams		x	x		x	

⁽¹⁾ Not a committee of the Trustees. The Trustees nominate 4 persons (2 others being nominated by members of the pension scheme) to act as trustees of The North of England Zoological Society Superannuation Fund Scheme, established to provide pension benefits to employees of the Society.

Trustees – recruitment

Each year, the Trustees prepare a list of names of members of the Society that they recommend for election to the Trustee board at the annual general meeting. The Trustee Nominations Committee interview nominees wishing to be elected, considering them against the following characteristics:

- 1) Do they support the aims of the Society?
- 2) What can they contribute to the Society?
- 3) Do their skills enhance or fill any current gaps in the overall skills of the Trustees as a whole?
- 4) Is there a balance in terms of the mix of ethnic, gender and age that reflects the membership?
- 5) Are they eligible by law to fulfil the role of a trustee of a charity?

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

Trustees – training

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

The relationship between the executive and the Trustees is further enhanced by the formation of ad hoc joint working parties to consider strategic issues. This is seen to not only develop the Trustees' awareness of the activities of the operational arm of the Society, but is also designed to develop the relationship between the Trustees and the executive management and staff. The combined meeting of Trustees and the executive team at the quarterly meetings of Trustees further enhances this relationship and awareness of operational issues.

Each Trustee is issued with an induction pack on becoming a Trustee that covers their roles and responsibilities and the mission, vision, values, strategy and current plans for the Society. Every Trustee is encouraged to attend an appropriate external training course, covering all aspects of the role and responsibilities of being a charity trustee.

Trustees' third party indemnity

The Society purchases liability insurance cover for the Society, its Trustees and other officers which gives them appropriate cover against the consequences of any neglect or default on their part.

Risk management

The Trustees actively review the major risks that the Society faces on a regular basis both generally and specifically, and believe that maintaining free reserves within defined levels (see 'Financial Review', page 39) will provide sufficient resources in the event of most adverse conditions. They also monitor the key financial and internal control systems and examine other operational and business risks to which the Society is exposed and have established systems to mitigate the significant risks identified.

The key risks identified by the Trustees are macro-economic recessionary influences causing running costs to exceed income; failure to change and grow market share; and animal disease causing significant loss of animal stock, restrictions on animal movement, or restrictions on visitor attendance.

The Society's Health and Safety Policy is reviewed annually by the Conservation and Education Committee and by the Trustees to ensure that the Health and Safety Management System remains both current and effective.

Advisors

External Advisors to the Conservation and Education Committee

Prof Filippo Aureli

Brian Coles

Dr Caroline Evans

Derek Lyon

John Makinson

Tim Sibthorp

Dr Phill Watts

Animal Health, Welfare and Husbandry Sub-committee

Prof Malcolm Bennett (Chairman)

Julian Chantrey

Brian Coles

Ethical Review Sub-committee

Dr Jeremy Playfer

Prof Gordon McPhate

Prof Sarah Andrew

Auditors

KPMG LLP, 8 Princes Parade, Liverpool, L3 1QH

Solicitors

Aaron & Partners, Grosvenor Court, Foregate Street, Chester, CH1 1HG

DTM Legal LLP, Archway House, Station Road, Chester, CH1 3DW

Hill Dickinson, 34 Cuppin Street, Chester, CH1 2BN

Walker Smith Way, 26 Nicholas Street, Chester, CH1 2PQ

Bankers

Barclays Bank PLC, 1st Floor, 3 Hardman Street, Spinningfields, Manchester, M3 3HF

Blackrock Institutional Cash Series PLC, J P Morgan House, International Financial Services Centre, Dublin 1, Ireland

Actuaries

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

Objectives and Activities

Strategic objectives

The Society's vision and mission are set out on the inside front cover of Zoo Review. Its objects, as set out in its Memorandum and Articles of Association, are (a) to promote the conservation of the physical and natural environment by promoting biodiversity; and (b) to advance the education of the public on the conservation of the physical and natural world and the promotion of biodiversity; in particular by, but not limited to, the provision of public education, scientific study and the maintenance of endangered animals, plants and habitats in both protective and natural environments. Its strategy is explained on pages 8 and 9.

Review of activities, achievements and performance

Please refer to pages 6 to 35.

Plans for future periods

Please refer to page 58.

Public benefit

The Trustees have complied with the duty in section 4 of the Charities Act 2006 to have due regard to public guidance published by the Charity Commission, including its supplementary guidance on fee charging.

In 2010 over 1,270,000 members of the public enjoyed an educational experience at Chester Zoo. The Society relies on income from admission fees, catering and retail sales and other charges to cover its operating costs but in setting the pricing structure, the Trustees give careful consideration to the accessibility of the zoo to those on low incomes. The majority of all visitors enjoyed concessionary prices set to encourage visits by children,

students, families, senior citizens and those with disabilities, and over 45,000 received free admission. Fuller details of our prices and discount terms and conditions are available from our website www.chesterzoo.org. Over 100,000 of the concessionary priced student visits had a direct instructive content, of which over 15,000 received free admission. More than 27,000 were taught by our staff.

Financial Review

The financial statements have been produced in the format prescribed by the Charity Commission's Statement of Recommended Practice ('SORP 2005').

The decline in visitor numbers, seen in the second half of 2009 continued throughout the first half of 2010 before stabilising. Overall visitor numbers declined 6% in the year (2009: 1% decrease). Generally the cost reduction exercise, introduced late in 2008 to defend the Society from the impact of the recession, was maintained throughout 2010.

Incoming resources from visitor-related charitable activities were £13,203,000 (2009: £13,705,000). Resources expended from visitor-related charitable activities were £3,140,000 (2009: £2,615,000) resulting in a surplus from visitor-related charitable activities of £10,063,000 (2009: £11,090,000). These principally comprise visitor admissions to the zoo, memberships and Gift Aid thereon, monorail and waterbus rides.

Voluntary income, including donations and Gift Aid on visitor admissions to the zoo, other donations and legacies and Gift Aid thereon, animal adoptions and associated Gift Aid, and grants were £3,609,000 (2009: £3,280,000).

The trading surplus of Chester Zoo Enterprises Limited was £376,000 (2009: £722,000) arising from its catering and retail activities.

Resources expended on charitable activities, excluding the visitor-related activities, principally on animal and botanical conservation, including grants payable (principally for outreach activities), were £9,887,000 (2009: £10,613,000). This represents a decrease of 6.8%. The costs of generating voluntary income were £280,000 (2009: £296,000).

Net incoming resources were £661,000 (2009: £3,625,000) after impairment of the Natural Vision asset of £2,788,000 (2009: nil) as discussed on page 10. An actuarial loss on the pension fund of £168,000 (2009: £1,167,000 gain) resulted in a net increase in funds of £493,000 (2009: increase of £4,792,000) which increased the accumulated funds carried forward to £28,830,000 (2009: £28,337,000).

The net cash inflow from incoming resources was £4,597,000 (2009: £5,950,000) and the net interest received from cash on deposit was £82,000 (2009: £61,000). This was utilised to fund net capital expenditure of £1,405,000 (2009: £3,819,000) resulting in a net increase in liquid resources of £3,322,000 (2009: £2,192,000). An increased proportion of these liquid resources are now held in sterling liquidity funds (classified as liquid resources) rather than interest bearing bank deposits (classified as cash).

A cash injection of £1,860,000 (2009: £105,000) was made to the pension fund during the year to address the deficit disclosed in the triennial actuarial valuation as at 31st December 2008.

Restricted and designated funds

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

The Society's reserves may be defined as that part of its unrestricted income funds that are freely available for its general purposes. This therefore excludes those funds that could only be realised by disposing of fixed assets held for charitable use. Accordingly the Trustees consider it appropriate to set aside reserves equivalent to the net book value of the tangible assets as a designated fund of £13,653,000. In previous years these have not been formally designated.

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

Reserves

It is the general policy of the Society to apply towards its objectives as much cash as it reasonably can, without accumulating excessive reserves. The Trustees do not consider it necessary to retain income in respect of the Society's designated fund activities. Whilst these funds have been earmarked by the Trustees for particular purposes or uses, they are not committed or restricted legally.

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

The Trustees consider that other charitable reserves at the end of any financial year not exceeding 100% of the total resources expended during the year could properly be regarded as both reasonable and justified. Equally it considers that it would not be prudent to allow such reserves to fall below zero. The Society's other charitable reserves at 31st December 2010, were £10,239,000 (2009: £7,980,000 excluding tangible assets) which represents 48.2% of total unrestricted resources expended in the year (2009: 39.7%)

Investment policy

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

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

Statement of Trustees' Responsibilities

The trustees are responsible for preparing the Trustees' Annual Report and the financial statements in accordance with applicable law and regulations.

Company law requires the trustees to prepare financial statements for each financial year. Under that law they are required to prepare the group and parent company financial statements in accordance with UK Accounting Standards and applicable law (UK Generally Accepted Accounting Practice).

Under company law the trustees must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the group and charitable company and of the group's excess of income over expenditure for that period. In preparing each of the group and charitable company financial statements, the trustees are required to:

- select suitable accounting policies and then apply them consistently;
- make judgements and estimates that are reasonable and prudent;
- state whether applicable UK Accounting Standards have been followed, subject to any material departures disclosed and explained in the financial statements; and
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the group and the charitable company will continue its activities.

The Trustees are responsible for keeping adequate accounting records that are sufficient to show and explain the charitable company's transactions and disclose with reasonable accuracy at any time the financial position of the charitable company and enable them to ensure that its financial statements comply with the Companies Act 2006. They have general responsibility for taking such steps as are reasonably open to them to safeguard the assets of the group and to prevent and detect fraud and other irregularities.

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

Disclosure of information to auditors

Each of the persons who are Trustees at the date of approval of this report confirms that:

- so far as the Trustee is aware, there is no relevant audit information of which the Society's auditors are unaware;
- The Trustee has taken all the steps that he/she ought to have taken as a Trustee in order to make himself/herself aware of any relevant audit information and to establish that the Society's auditors are aware of that information.

The confirmation is given and should be interpreted with the provisions of section 418 of the Companies Act 2006.

Auditors

The auditors, KPMG LLP have indicated their willingness to continue in office and a resolution to reappoint them will be proposed at the Annual General Meeting.

The Trustees' Report on pages 36 to 40 was approved by the Trustees on 19th April 2011 and signed on their behalf by:

Alan Sykes
Company Secretary

Independent Auditors' Report to the Members of The North of England Zoological Society

We have audited the financial statements of The North of England Zoological Society for the year ended 31st December 2010 set out on pages 42 to 57. The financial reporting framework that has been applied in their preparation is applicable law and UK Accounting Standards (UK Generally Accepted Accounting Practice).

This report is made solely to the company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the charitable company's members those matters we are required to state to them in an auditors' report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the charitable company and its members as a body, for our audit work, for this report, or for the opinions we have formed.

Respective responsibilities of trustees and auditor

As explained more fully in the Statement of Trustees' Responsibilities set out on page 40, the trustees (who are also the directors of the charitable company for the purposes of company law) are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view.

Our responsibility is to audit, and express an opinion on, the financial statements in accordance with applicable law and International Standards on Auditing (UK and Ireland). Those standards require us to comply with the Auditing Practices Board's (APB's) Ethical Standards for Auditors.

Scope of the audit of the financial statements

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

Opinion on financial statements

In our opinion the financial statements:

- give a true and fair view of the state of the group's and the charitable company's affairs as at 31st December 2010 and of the group's incoming resources and application of resources, including its income and expenditure, for the year then ended;
- have been properly prepared in accordance with UK Generally Accepted Accounting Practice; and
- have been prepared in accordance with the Companies Act 2006.

Opinion on other matter prescribed by the Companies Act 2006

In our opinion the information in the Trustees' Annual Report for the financial year for which the financial statements are prepared is consistent with the financial statements.

Matters on which we are required to report by exception

We have nothing to report in respect of the following matters where the Companies Act 2006 requires us to report to you if, in our opinion:

- the charitable company has not kept adequate accounting records or returns adequate for our audit have not been received from branches not visited by us; or
- the charitable company financial statements are not in agreement with the accounting records and returns; or
- certain disclosures of trustees' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit; or
- the trustees were not entitled to prepare the financial statements in accordance with the small companies' regime.

E W Baker (Senior Statutory Auditor) for and on behalf of KPMG LLP, Statutory Auditor

Chartered Accountants
8 Princes Parade
Liverpool
L3 1QH

19th April 2011

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Consolidated Statement of Financial Activities

(incorporating an income and expenditure account) for the year ended 31st December 2010

	Notes	Unrestricted funds £'000	Restricted funds £'000	Total 2010 £'000	Total 2009 £'000
Incoming Resources					
Incoming resources from charitable activities					
Animals and botanical collection	2	13,459	–	13,459	13,728
Education and research		14	–	14	121
Incoming resources from general funds					
Voluntary income	3	2,885	724	3,609	3,280
Activities for generating funds					
Subsidiary's trading turnover	4	6,409	–	6,409	6,904
Other		–	–	–	5
Investment Income	5	82	–	82	61
Total incoming resources		22,849	724	23,573	24,099
Resources Expended					
Resources expended on charitable activities					
Animals and botanical collection	6a	11,477	164	11,641	11,694
Education and research	6a	575	40	615	708
Outreach	6a	765	6	771	826
Costs of generating funds					
Costs of generating voluntary income		280	–	280	296
Fundraising trading					
Subsidiary's cost of goods sold and other costs	4	6,033	–	6,033	6,182
Governance costs		179	–	179	324
Other resources expended					
Pension finance net (credit)/expense	22	(151)	–	(151)	80
Impairment of Natural Vision assets	11	1,338	1,450	2,788	–
Irrecoverable VAT (including exceptional item of £300,000 (2009: nil))	6a	756	–	756	364
Total resources expended	6a	21,252	1,660	22,912	20,474
Net incoming resources before other recognised gains and losses	8	1,597	(936)	661	3,625
Other recognised gains and losses					
Actuarial (loss)/gain on defined benefit pension scheme	22	(168)	–	(168)	1,167
Net movement in funds		1,429	(936)	493	4,792
Reconciliation of funds					
Total funds brought forward	17	27,218	1,119	28,337	23,545
Total funds carried forward		28,647	183	28,830	28,337

The above results are all in respect of continuing operations.
No statement of total recognised gains and losses has been prepared as all such gains and losses have been included above.

Balance Sheets as at 31st December 2010

	Notes	Consolidated		Society	
		2010 £'000	2009 Restated £'000	2010 £'000	2009 £'000
Fixed assets					
Tangible assets	11	13,653	18,010	13,628	17,946
Investment in subsidiary company	12	–	–	–	–
		13,653	18,010	13,628	17,946
Current assets					
Stocks	13	351	424	126	142
Debtors	14	1,482	1,707	1,623	1,945
Short term investments	15	12,114	5,572	12,114	5,572
Cash at bank and in hand		1,793	5,013	1,793	5,013
		15,740	12,716	15,656	12,672
Creditors: amounts falling due within one year	16	(1,862)	(1,825)	(1,599)	(1,723)
Net current assets		13,878	10,891	14,057	10,949
Total assets less current liabilities		27,531	28,901	27,685	28,895
Net assets before net pension surplus/(liability)		27,531	28,901	27,685	28,895
Net pension surplus/(liability)	22	1,299	(564)	–	–
Net assets		28,830	28,337	27,685	28,895
Funds employed					
Income funds – restricted	17	183	1,119	183	1,119
Income funds – unrestricted					
Designated funds	17	17,109	1,792	17,109	1,792
Pension reserve	17	1,299	(564)	–	–
Other charitable funds	17	10,239	25,990	10,393	25,984
		28,647	27,218	27,502	27,776
Total funds employed	17	28,830	28,337	27,685	28,895

The financial statements on pages 42 to 57 were approved by the Trustees on 19th April 2011 and signed on their behalf by:

Peter Wheeler
Chairman of Trustees

Robert Mee
Chairman of Business Operations Committee

The North of England Zoological Society is a company limited by guarantee (Number 287902).

Consolidated Cash Flow Statement for the Year Ended 31st December 2010

	2010 £'000	2009 £'000
Reconciliation of net cash inflow from net incoming resources		
Net incoming/(outgoing) resources	661	3,625
Net interest receivable	(82)	(61)
Depreciation charge	2,926	3,109
Impairment of Natural Vision asset	2,788	–
Decrease/(increase) in stocks	73	54
Decrease/(increase) in debtors	225	(473)
Increase/(decrease) in creditors due within one year	37	(177)
Difference between pension charge and cash contributions	(2,031)	(127)
Net cash inflow from incoming resources	4,597	5,950
Returns on investment and servicing of finance		
Interest received	82	61
Capital expenditure and financial investment		
Payments to acquire tangible fixed assets	(1,405)	(3,819)
Receipts from disposal of tangible fixed assets	48	–
	(1,357)	(3,819)
Operating cashflow in year	3,322	2,192
Management of liquid resources		
(Increase)/decrease in short term investments	(6,542)	1,947
(Decrease)/increase in net cash at bank and in hand in the year	(3,220)	4,139

Analysis of changes in net funds during the year

	Balance at 1st Jan 2010 £'000	Cash flow £'000	Balance at 31st Dec 2010 £'000
Cash			
Cash at Bank and in hand	5,013	(3,220)	1,793
Movement in liquid resources	5,572	6,542	12,114
Net cash	10,585	3,322	13,907

Principal Accounting Policies

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

Basis of preparation

The financial statements have been prepared on a going concern basis under the historical cost convention and in accordance with applicable accounting standards in the United Kingdom, the Charity Commission's Statement of Recommended Practice 'SORP 2005', the Charities Act 1993 and the Companies Act 2006.

The pension reserve within the consolidated funds employed as at 31st December 2009 was recognised as £564,000 instead of £(564,000). The comparative amount has been adjusted during the current period with the other charitable funds increasing by £1,128,000 to £25,990,000. This is a reallocation within reserves and does not affect the net assets or surplus for the year.

Consolidation

The consolidated statement of financial activities (SOFA), consolidated balance sheet and consolidated cash flow statement include the financial statements of the Society and its subsidiary undertaking, Chester Zoo Enterprises Limited, made up to 31st December 2010 and comply with recommended practice for accounting by charities. The results of the subsidiary are consolidated on a line by line basis. The charity has adapted the Companies Act formats to reflect the special nature of the charity's activities. No separate SOFA has been presented for the charity alone as permitted by Section 408 of the Companies Act 2006 and paragraph 397 of the SORP.

Funds employed

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

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

Incoming resources

In accordance with the SORP, all incoming resources, including Gift Aid, becoming receivable by the Society during the year are recognised in the SOFA, regardless of their source or of the purpose to which they are to be put or have been put. All income, both Unrestricted and Restricted, is recognised at the time of receipt. The one exception to this is membership income and the associated Gift Aid which is treated as deferred income to the extent that it relates to a service to be provided in the following financial year and is potentially refundable. Membership income is recognised over the 12 month membership period in equal monthly instalments.

Where income is restricted to a specific purpose, as specified by a donor, the income is included in restricted funds. Legacies are recognised when payment is received or assets transferred. Grants are recognised when there is entitlement, conditions have been met, and there is certainty of receipt.

Going concern

The Trustees believe that the Society has adequate resources to continue in operational existence for the foreseeable future. Accordingly, they continue to adopt the going concern basis in preparing the financial statements.

Resources expended

The Society's systems analyse expenses departmentally. Expenditure is recognised when a liability is incurred, and is allocated in accordance with the main activity of the staff concerned or the substance of the costs incurred, including expenditure on charitable activities and on generating funds, and departments providing support services.

Support costs such as management and administration, information technology and property maintenance are incurred in support of activities undertaken to meet the objects of the Society. In accordance with the SORP, support costs have been allocated to charitable activities and fundraising, apportioned by usage according to relative cost driving activities.

Governance costs disclosed consist of an allocation of the Director General's costs plus the cost of fulfilling obligations to the members and the Society's statutory obligations. These costs typically include the costs of staging the members' annual meeting, legal costs, annual audit, taxation advice, trustees' indemnity insurance and the cost of the preparation and publication of the Annual Report.

Education costs include the cost of direct teaching, and costs of producing interpretive and interactive models and signage relating the animal and botanic collection, as well as supporting the publication of International Zoo News magazine.

Outreach costs include the making of grants and donations to research and conservation projects, the administration of such grant making and also the ongoing monitoring of the outcomes of projects.

Costs of generating voluntary income comprise costs of the fundraising department, including administrative salaries and wages, costs of appeal mailshots, inserts and e-mails, and collection of authority to collect Gift Aid on zoo admission fees and donations, and administration costs related to the animal adoption scheme.

Principal Accounting Policies (continued)

VAT

Visitor admission income is treated as VAT exempt and accordingly, as a partially exempt body, the Society may not recover all VAT incurred on costs, with the exception of VAT incurred in connection with the catering, retail, and seasonal event operations, which operate through the trading subsidiary. The cost of irrecoverable VAT is disclosed separately on the SOFA under other resources expended.

Taxation

As a registered charity, the Society is entitled to claim tax exemption from the charge to tax on income and chargeable gains in Section 505 Income and Corporation Tax Act 1988 and Section 256 Taxation of Chargeable Gains Act 1992. Any commercial activity which falls outside the statutory exemption for the purposes of corporation tax is conducted through Chester Zoo Enterprises Limited, which transfers all of its taxable profits annually to the Society via Gift Aid. In the opinion of the Trustees, no corporation tax liabilities arise from the Society's ongoing activities.

Volunteers

The Society does not make significant use of volunteers and the value of their contribution is not included in these financial statements.

Investments in subsidiary undertakings

These are included at cost, less any provision for impairment.

Fixed assets

These are included in the balance sheet at historic purchase cost, less accumulated depreciation. All assets are depreciated on a straight line basis.

Freehold properties

Depreciation is provided on freehold properties excluding land at 2% or 10% per annum. Freehold land is not depreciated.

Buildings and enclosures

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.

Machinery and equipment

Depreciation is provided at rates varying between 10% and 25% per annum, depending on the assumed useful life of the asset.

Impairment

The carrying amounts of assets are reassessed when impairment indicators are present. An impairment loss is recognised to the extent the carrying amount of an asset exceeds its estimated recoverable amount.

Animals

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

Leases

Where the Society enters into a lease which entails taking substantially all the risks and rewards of ownership of an asset, the lease is treated as a finance lease. The asset is recorded in the balance sheet as a fixed asset and is depreciated over its estimated useful life. Future instalments under such leases, net of finance charges, are included within creditors. Rentals payable are apportioned between the finance element, which is charged to the SOFA 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 SOFA as incurred.

Stocks

Stocks are valued at the lower of cost and estimated net realisable value. Where necessary, provision is made for obsolete, slow moving and defective stocks.

Pensions

The Society operates two voluntary pension schemes.

1. The Society makes contributions to a defined contribution pension scheme for certain staff members. The cost of these contributions is charged to the SOFA when incurred.
2. The Society also operates a defined benefit pension scheme to provide benefits to certain staff members based on final pensionable pay. This pension scheme is closed to new members. The assets of the scheme are held in trustee-administered funds completely independent of the Society's finances.

The cost of benefits accruing during the year in respect of current and past service is included within staff costs. The net aggregate value of the investment return on the scheme's assets and the increase in the present value of the scheme's liabilities, arising from the passage of time, are included in the SOFA in either other incoming resources or in other resources expended. Actuarial gains and losses are recognised in the net movement in funds in the SOFA.

The balance sheet includes the surplus/deficit in the defined benefit scheme taking assets at their year end market values and liabilities at their actuarially calculated values discounted at the current rate of return on a high quality corporate bond of equivalent term and currency to the liability.

In respect of the unconsolidated Society accounts, contributions made to the defined benefit scheme during the year cannot be identified on a consistent and reasonable basis, as two employers participate in the scheme, and as such contributions made to the scheme during the year have been accounted for as if they were to a defined contribution scheme and charged to the SOFA as incurred.

Grant-making

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

Related Party Transactions

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

Notes to the Financial Statements for the year ended 31st December 2010

1. Status

The Society is a company limited by guarantee and has no share capital. Members have guaranteed the liabilities of the Society to the extent of £1 each in the event of the charity being wound up.

2. Incoming resources from charitable activities

	Visitor related £'000	Other unrestricted £'000	Other designated £'000	Total 2010 £'000	Total 2009 £'000
Animals and botanical collection					
Visitor admission to zoo and gardens	10,962	–	–	10,962	11,478
Monorail and boats	497	–	–	497	412
Membership of zoo and Gift Aid theron	1,661	–	–	1,661	1,546
Other	80	247	12	339	292
Animals and botanical collection total	13,200	247	12	13,459	13,728
Education and Research	3	11	–	14	121
Total incoming resources from charitable activities	13,203	258	12	13,473	13,849

3. Voluntary income

	Unrestricted 2010 £'000	Restricted 2010 £'000	Total 2010 £'000	Total 2009 £'000
Donations and Gift Aid on admission to zoo	2,563	–	2,563	1,680
Other donations and legacies, and Gift Aid theron	–	–	–	100
Animal adoptions and Gift Aid theron	206	–	206	226
Grants	116	724	840	1,274
Total voluntary income	2,885	724	3,609	3,280

Grant income includes £4,350 (2009: £77,371) received from the Big Lottery Fund for the Learning Together project, and £454,000 (2009: £996,000) from NWDA for the Natural Vision project as matched funding.

Notes to the Financial Statements for the year ended 31st December 2010 (continued)

4. Activities for generating funds – Trading by subsidiary company

The Society has a wholly owned trading subsidiary, Chester Zoo Enterprises Limited, incorporated in the UK (representing an investment of £100 in ordinary £1 shares) which operates the catering and retail activities of the zoo from outlets rented from the Society, and certain seasonal events. It transfers its taxable profit via Gift Aid to the Society. A summary of its trading results is shown below.

Audited financial statements for the year ended 31st December 2010 will be filed with the Registrar of Companies. Its assets, liabilities and funds at the year end were £258,339, £257,991 and £348 respectively.

Chester Zoo Enterprises Limited trading results	Catering £'000	Shops £'000	Total 2010 £'000	Total 2009 £'000
Incoming resources				
Turnover	3,968	2,441	6,409	6,904
Resources expended				
Labour and cost of goods sold	–	–	(4,420)	(4,790)
Gross trading surplus for year	–	–	1,989	2,114
Indirect costs				
Operating and support costs paid to Society	–	–	(1,051)	(830)
Property rents paid to Society	–	–	(562)	(562)
Net trading surplus for year	–	–	376	722
Other (costs)/income				
Amount transferred to Society via Gift Aid	–	–	(392)	(731)
Deferred taxation	–	–	4	6
(Deficit) retained in subsidiary	–	–	(12)	(3)

Turnover of £6,409,000 is included in the consolidated statement of financial activities within Activities for generating funds – Subsidiary's trading turnover. Direct and indirect costs of £6,033,000 are included within Fundraising trading – Subsidiary's cost of goods sold and other costs.

5. Investment Income

	Total 2010 £'000	Total 2009 £'000
Income from short term investments	81	60
Bank interest receivable	1	1
Total investment income	82	61

6a. Analysis of total resources expended

	Staff Costs £'000	Other Direct Costs £'000	Support Costs £'000	Total 2010 £'000	Total 2009 £'000
Resources expended on charitable activities					
Animals and botanical collection	4,088	5,507	2,046	11,641	11,694
Education and research	379	129	107	615	708
Outreach	200	534	37	771	826
Total for Society	4,667	6,170	2,190	13,027	13,228
Costs of generating funds					
Costs of generating voluntary income	131	31	118	280	296
Total for Society	131	31	118	280	296
Subsidiary's cost of goods sold and other costs	1,774	3,434	825	6,033	6,182
Total for group	1,905	3,465	943	6,313	6,478
Governance costs	70	109	–	179	324
Other resources expended					
Pension finance net(gain)/cost	(151)	–	–	(151)	80
Impairment of Natural Vision assets	105	2,683	–	2,788	–
Irrecoverable VAT	–	756	–	756	364
Total resources expended for Society	4,822	9,749	2,308	16,879	14,292
Total resources expended for group	6,596	13,183	3,133	22,912	20,474

Resources expended on the charitable activity of animals and botanical collection include costs associated with marketing, administration of Society membership, and provision of guest services and amenities of £3,140,369 (2009 £2,615,209).

Irrecoverable VAT includes a charge of £300,000 (2009: £nil) in respect of a reassessment by the Trustees of amounts recoverable from HMRC.

The impairment charge in relation to the Natural Vision assets arises following the loss of NWDA funding in the current year. The costs principally relate to the Heart of Africa element of the project.

Notes to the Financial Statements for the year ended 31st December 2010 (continued)

6b. Analysis of support costs

	Total 2010 £'000	Total 2009 £'000
Staff Costs	1,959	2,139
Other Costs	1,174	915
Total of support costs	3,133	3,054

Support costs have been allocated to the activities set out in note 6a on the basis of their usage of cost driving activities attributable to each support service, as follows:

Support cost breakdown by activity

	Animals and botanical collection £'000	Education and Research £'000	Outreach £'000	Generating voluntary income £'000	Subsidiary £'000	Total £'000
Personnel, Payroll Office and Reception	204	19	4	5	92	324
Information Technology	256	15	5	15	110	401
Directorate and Central Services	675	38	14	40	289	1,056
Finance Department	136	7	3	8	58	212
Cash Office	62	4	1	4	27	98
Security and Facilities	161	–	1	20	66	248
Maintenance Department	426	24	9	26	183	668
Estates and Project Planning	126	–	–	–	–	126
Total	2,046	107	37	118	825	3,133

7. Grants payable in furtherance of the charity's objects

Resources expended on charitable activities include institutional grants made by the Society payable in furtherance of the charity's objects, for conservation outreach, research and animal welfare projects. More detail is given on page 24.

	Grants to institutions £'000	Grants to individuals £'000	Total 2010 £'000	Total 2009 £'000
Analysis				
Animal and botanical collection – Studentships	–	17	17	17
Education and research – Education grants	19	–	19	19
Outreach – Conservation programmes	457	36	493	533
Outreach – Other grants	75	2	77	77
Total grants payable	551	55	606	646

8. Net incoming resources before other recognised gains and losses

	Total 2010 £'000	Total 2009 £'000
This is after charging:		
Services provided by the Society's auditors		
Fees payable for the audit of the charity and consolidated accounts	12	12
Fees payable for the audit of the subsidiary	6	6
Depreciation of tangible fixed assets	2,926	3,109
Impairment of Natural Vision Assets	2,788	–
Operating lease charges - plant and equipment	–	4

9. Trustees' remuneration

The Trustees, being charity Trustees, received no remuneration (2009: £nil). No Trustees (2009: none) were reimbursed during the year for travelling expenses necessarily incurred.

Insurance costing £1,706 (2009: £1,773) has been taken out by the Society to protect the Society, its Trustees and other Officers against the consequences of any neglect or default on their part.

10. Employee Costs

	Total 2010 £'000	Total 2009 £'000
Wages and salaries cost	7,487	7,840
Social security cost	632	659
Pension cost:		
Defined Benefit pension scheme, including Life Assurance	365	407
Defined Contribution pension scheme	45	30
Total employee costs	8,529	8,936

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 £60,000 upwards is shown below. Two of these employees also had benefits accruing to them under the Society's defined benefit pension scheme, these costs are included within the trading subsidiary's accounts.

	2010 Number	2009 Number
From £90,001 to £100,000	1	–
From £80,001 to £90,000	3	2
From £60,001 to £70,000	1	2

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

	2010 Number	2009 Number
Animals and botanical collection	180	187
Education and Research	19	18
Outreach	4	4
Fundraising		
Society	6	6
Subsidiary trading	114	114
Support and Governance	65	64
Total FTE employees	388	393

Notes to the Financial Statements for the year ended 31st December 2010 (continued)

11. Tangible Fixed Assets

	Assets in course of construction £'000	Freehold Property £'000	Buildings and enclosures £'000	Machinery and equipment £'000	Animals £'000	Total £'000
Cost						
At 1st January 2010	2,404	3,339	24,790	1,301	1	31,835
Additions	432	–	844	129	–	1,405
Disposals and retirements	(48)	–	–	–	–	(48)
At 31st December 2010	2,788	3,339	25,634	1,430	1	33,192
Depreciation						
At 1st January 2010	–	1,794	11,272	759	–	13,825
Charge for the year	–	256	2,469	201	–	2,926
Provision for impairment	2,788	–	–	–	–	2,788
At 31st December 2010	2,788	2,050	13,741	960	–	19,539
Net book value						
At 31st December 2010	–	1,289	11,893	470	1	13,653
At 31st December 2009	2,404	1,545	13,518	542	1	18,010

The Trustees consider that the Society holds no fixed assets for investment purposes. Whilst some of the fixed assets do yield a rental income, they were not acquired for that purpose but to facilitate the operation of the zoo, which is the primary charitable purpose of the Society.

Assets in course of construction related to capitalised costs in relation to the "Natural Vision" project. The Society received matched funding from the Northwest Development Agency in relation to these assets. The impairment charge in relation to the Natural Vision assets arises following the loss of NWDA funding in the current year. The costs principally relate to the Heart of Africa element of the project.

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

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

Animal purchases of £12,423 (2009: £18,083) and sales of £nil (2009: £nil) have been treated as revenue transactions.

All the tangible fixed assets included in the consolidated statement above relate entirely to the Society with the exception of the machinery and equipment. The subsidiary company holds two specific assets with a combined net book value of £25,354, therefore the Society's specific machinery and equipment assets are as below:

	Cost £'000	Depreciation £'000	Net Book Value £'000
Society – machinery and equipment			
At 1st January 2010	1,177	(699)	478
Additions	129	–	129
Charge for the year	–	(162)	(162)
At 31st December 2010	1,306	(861)	445

12. Investments

	2010 £	2009 £
Investment in Chester Zoo Enterprises Limited	100	100

13. Stocks

	Group		Society	
	2010 £'000	2009 £'000	2010 £'000	2009 £'000
Goods for resale	237	320	34	57
Consumables	114	104	92	85
Total	351	424	126	142

14. Debtors: amounts falling due within one year

	Group		Society	
	2010 £'000	2009 £'000	2010 £'000	2009 £'000
Trade debtors	100	113	95	99
Amount owed by subsidiary undertaking	–	–	157	252
Other debtors	162	146	151	146
VAT recoverable	1,004	1,268	1,004	1,268
Prepayments and accrued income	216	180	216	180
Total	1,482	1,707	1,623	1,945

Amounts owed by the subsidiary are unsecured, interest free and repayable on demand.

15. Short term investments

	Group		Society	
	2010 £'000	2009 £'000	2010 £'000	2009 £'000
Black Rock Institutional Cash Fund	12,114	5,572	12,114	5,572
Total	12,114	5,572	12,114	5,572

16. Creditors: amounts falling due within one year

	Group		Society	
	2010 £'000	2009 £'000	2010 £'000	2009 £'000
Trade creditors	673	751	569	674
Other taxes and social security costs	249	200	249	200
Accruals	156	233	12	208
Other creditors	84	–	84	–
Deferred income	700	641	685	641
Total	1,862	1,825	1,599	1,723

Notes to the Financial Statements for the year ended 31st December 2010 (continued)

17. Movement in consolidated funds

	As originally stated 2009 £'000	Prior year restatement 2009 £'000	Balance at 1st Jan 2010 £'000	New funds 2010 £'000	Reclassification of funds 2010 £'000	Funds utilised 2010 £'000	Designated fund established at 31st Dec 2010 £'000	Balance at 31st Dec 2010 £'000
Restricted income funds								
Animal collection	79	–	79	247	–	(164)	–	162
Education	41	–	41	17	–	(40)	–	18
Outreach	3	–	3	6	–	(6)	–	3
Natural Vision grant funding	996	–	996	454	(1,450)	–	–	–
	1,119	–	1,119	724	(1,450)	(210)	–	183
Designated funds								
Reserves tied to tangible fixed assets	–	–	–	–	–	–	13,653	13,653
Animal collection	715	–	715	1,220	–	(715)	–	1,220
Education	18	–	18	–	–	–	–	18
Outreach	430	–	430	498	–	(430)	–	498
Other capital projects	629	–	629	1,720	–	(629)	–	1,720
	1,792	–	1,792	3,438	–	(1,774)	13,653	17,109
Pension reserve	564	(1,128)	(564)	1,863	–	–	–	1,299
Other charitable funds	24,862	1,128	25,990	17,548	1,450	(21,096)	(13,653)	10,239
Total group funds employed	28,337	–	28,337	23,573	–	(23,080)	–	28,830

Natural Vision funding was reclassified to unrestricted income following impairment of the asset. The Trustees have designated an amount equal to the fixed assets of the Zoo.

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

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

Movement in Society funds

All the restricted funds and designated funds included in the consolidated statement above relate entirely to the Society. The equivalent figures for other charitable funds and total funds employed for the Society alone are:

	Balance at 31st Dec 2009 £'000	New funds 2010 £'000	Funds utilised 2010 £'000	Transfer to designated fund 2010 £'000	Balance at 31st Dec 2010 £'000
Other charitable funds	25,984	14,988	(16,926)	(13,653)	10,393
Total Society funds employed	28,895	19,150	(20,360)	–	27,685

18. Analysis of group net assets between funds

	Tangible fixed assets £'000	Net current assets £'000	Total 2010 £'000
Restricted funds	–	183	183
Unrestricted funds	13,653	14,994	28,647
Total group funds employed	13,653	15,177	28,830

19. Financial commitments

	Group		Society	
	2010 £'000	2009 £'000	2010 £'000	2009 £'000
Capital expenditure, contracted for but not provided in the financial statements:	685	45	685	45
Annual commitment in respect of operating leases for assets other than land and buildings, which expire in one year or less	–	3	–	1

20. Contingent liabilities

The Society is currently challenging HMRC regarding the VAT treatment of animal input costs which may result in a VAT liability. While this process is ongoing and the Trustees consider the matter will be resolved favourably to the Society, they do not consider an estimate can be reliably given of any potential liability.

21. Related Party Transactions

The Society had no related party transactions during the year (2009: one).

22. Pensions

The Society operates two pension schemes; a defined benefit scheme and a defined contribution scheme. The defined benefit scheme holds assets in a separately administered fund which is closed to new members, and provides retirement benefits on the basis of the members' final salaries.

A full actuarial valuation was carried out at 31st December 2008 and updated to 31st December 2010 for the purpose of these disclosures by Mercer, a qualified independent actuary. The major assumptions made by the actuary for the defined benefit scheme were as follows:

Weighted average assumptions used to determine benefit obligations at:	2010	2009
Discount rate	5.33%	5.70%
Rate of compensation increase	4.98%	5.10%
Rate of increase of pensions in payment (5% LPI)	3.48%	3.60%
Rate of increase of pensions in payment (2.5% LPI)	2.10%	2.50%
Rate of increase of pensions in deferment	3.48%	3.60%
Inflation	3.48%	3.60%
Weighted average assumptions used to determine net pension cost:	2010	2009
Discount rate	5.70%	5.60%
Expected long term return of plan assets	6.32%	5.85%
Rate of compensation increase	5.10%	4.50%
Rate of increase of pensions in payment (5% LPI)	3.60%	3.00%
Rate of increase of pensions in payment (2.5% LPI)	2.50%	2.25%
Inflation	3.48%	3.00%

Notes to the Financial Statements for the year ended 31st December 2010 (continued)

22. Pensions (continued)

Expected return on plan assets

To develop the expected long term rate of return on assets assumption, the Society considered the current level of expected returns on risk free investments (primarily government bonds), the historical level of the risk premium associated with the other asset classes in which the portfolio is invested and the expectation for future returns of each asset class. The expected return for each class was then weighted based on the target asset allocation to develop the expected long-term rate of return on assets assumption for the portfolio. This resulted in the selection of the 6.32% assumption for the year ending 31st December 2010. The corresponding expected return on assets for the year ending 31st December 2011 is 6.20%.

Weighted average life expectancy for mortality tables used to determine benefit obligations at:	2010	2010	2009	2009
	Male	Female	Male	Female
Member age 65 (current life expectancy)	22.5	25.7	22.4	25.6
Member age 45 (life expectancy at age 65)	24.4	27.7	24.3	27.6

The mortality assumptions have been amended to recognise that the pensioners have longer life expectancy.

	Long term expected rate of return at 31st Dec 2010	Value at 31st Dec 2010	Long term expected rate of return at 31st Dec 2009	Value at 31st Dec 2009
	%	£'000	%	£'000
Equities	6.70	8,251	6.95	8,748
Bonds/gilts	5.40	5,898	5.55/4.45	3,534
Property	6.70	1,506	–	–
Cash	0.50	31	0.5	32
Total market value of assets	–	15,686	–	12,314
Present value of scheme liabilities	–	(14,387)	–	(12,878)
Net pension surplus/(deficit)		1,299		(564)

	2010 £'000	2009 £'000
Change in benefit obligation		
Benefit obligation at beginning of year	12,878	11,681
Current service cost	365	407
Interest cost	739	660
Members' contributions	156	164
Actuarial losses/(gains)	599	238
Benefit paid	(350)	(272)
Benefit obligation at end of year	14,387	12,878

	2010 £'000	2009 £'000
Change in plan assets		
Fair value of plan assets at beginning of year	12,314	9,823
Expected return of plan assets	890	580
Actuarial gains / (losses)	431	1,405
Employer contributions	2,245	614
Members contributions	156	164
Benefits paid	(350)	(272)
Fair value of plan assets at end of year	15,686	12,314

	2010 £'000	2009 £'000
Analysis of pension costs		
Current service cost	365	407
Interest cost	739	660
Expected return on plan assets	(890)	(580)
Total net expenses	214	487
Actuarial losses/(gains) immediately recognised in the SOFA	168	(1,167)
Total pension charge/(credit) recognised in the SOFA	382	(680)
Cumulative amount of actuarial losses immediately recognised	2,544	2,376

	2010 £'000	2009 £'000
Actual return on plan assets	1,320	1,985

Five year history

	Financial year ending in:				
	2010 £'000	2009 £'000	2008 £'000	2007 £'000	2006 £'000
Benefit obligation at end of year	(14,387)	(12,878)	(11,681)	(12,246)	(10,864)
Fair value of plan assets at end of year	15,686	12,314	9,823	11,564	10,452
Surplus/(Deficit)	1,299	(564)	(1,858)	(682)	(412)

	2010 £'000	2009 £'000	2008 £'000	2007 £'000	2006 £'000
Experience adjustments on scheme assets					
Amount (£000s)	430	1,405	(2,860)	363	300
Percentage of scheme assets	2.7%	11.4%	29.1%	3.1%	2.9%
Experience adjustments on scheme liabilities					
Amount (£000s)	–	770	–	(310)	682
Percentage of scheme liabilities	0.0%	6.0%	0.0%	2.5%	6.3%
Total amount recognised in statement of total recognised gain and losses					
Amount (£000s)	(168)	1,167	(1,305)	(321)	458
Percentage of scheme liabilities	1.2%	9.1%	11.2%	2.6%	4.2%

Contributions

The actuary recommended that the Society should make additional payments of £60,000 per annum for a four year period starting 1st January 2010. In addition the Society agreed to make a one-off payment of £1,800,000 in January 2010 to address the deficit disclosed in the formal actuarial valuation as at 31st December 2008. The Society accepted this recommendation and the contribution figures shown for 2010 include these additional payments alongside the regular contributions to meet the cost of benefit accrual.

Defined contribution scheme

Contributions to the defined contribution scheme totalled £45,130 (2009: £30,000), an amount of £4,693 (2009: £6,242) was owed at 31st December 2010.

Looking Ahead to 2011

An exciting year to come



Painted dogs

Our new pack of painted dogs, which are Endangered in the wild, will be arriving this year. Their new immersive exhibit, located near the Tsavo Black Rhino Reserve, will be opened by conservationist Tony Fitzjohn, OBE at Easter.

Dinosaurs at Large

There will be very special species making an appearance in summer 2011, with 13 life-size animatronic dinosaurs on display, including the mighty tyrannosaurus rex. Families visiting over the summer will be able to immerse themselves in a prehistorically themed area and follow a dedicated route to ensure all dinosaurs plus educational messages on conservation and extinction are seen.

ZOOm Adventure

From July onwards, the zoo will be home to an exciting zip wire course. Working with Treetop Adventures who have a successful high ropes course in Betws y Coed, we will be looking to offer zoo member discounts and combination tickets for joint activity.

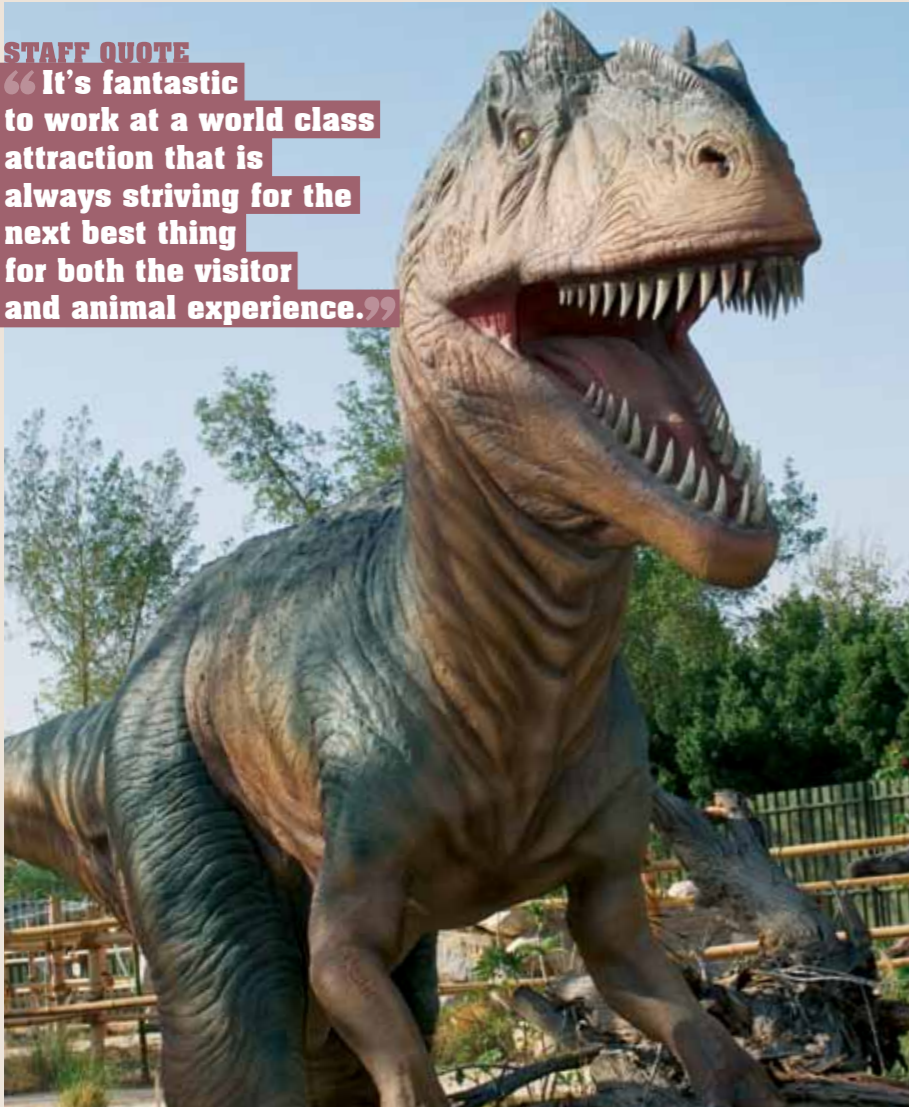
New catering developments

Change is on the menu for our catering outlets with the Ark Restaurant and Café Tsavo being given an overhaul and fresh and exciting food offers in the pipeline. Working with Heathcotes Outside, we will bring a vibrant new offering and create a strong, ethical brand using the freshest local ingredients. Scheduled re-opening is for Easter 2011.

New brand for Chester Zoo

Work has begun on a new identity that will encompass the beliefs and visions of Chester Zoo. Our involvement in the local and global communities are diverse; including families, schools and education facilities, conservationists, scientists and other zoological collections. The new brand will communicate and engage with all these groups; helping us to achieve our mission of being a major force in conserving biodiversity worldwide.

STAFF QUOTE
 “It’s fantastic to work at a world class attraction that is always striving for the next best thing for both the visitor and animal experience.”



Top left: Painted dog (*Lycaon pictus*) – arrival Easter 2011.

Bottom left: An animatronic Allosaurus.

Appendices on CD

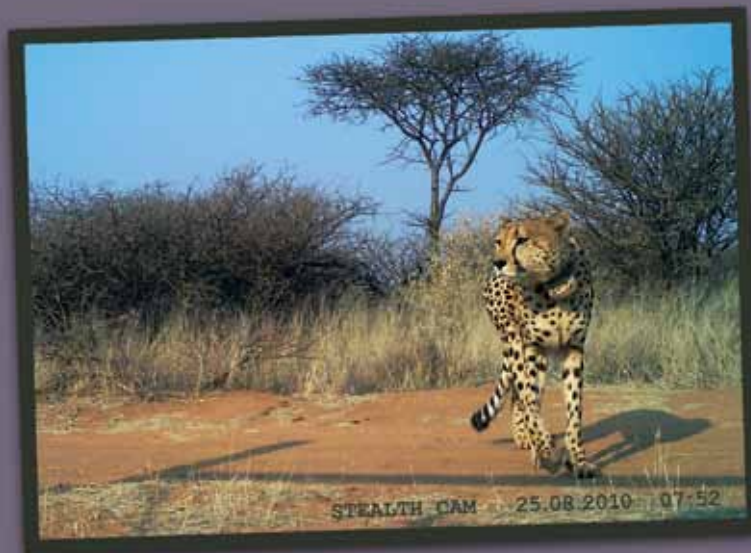
- 1 Chester Zoo Annual Report
- 2 Chester Zoo Organisational Structure
- 3 Chester Zoo Staff on External Boards
- 4 Brief Biographies of the NEZS Executive Team
- 5 Discovery and Learning: Members' Talks
- 6 Zoo Research and Scientific Publications
- 7 Worldwide Conservation Activities

Species holdings, roles and IUCN Red List Status:

- 8 Mammals
- 9 Birds
- 10 Reptiles
- 11 Amphibians
- 12 Fishes
- 13 Invertebrates
- 14 Plants
- 15 Summary of Conservation Status of Collection
- 16 Summary of PRIMARY Roles by Percentage
- 17 Summary of ALL Roles by Percentage



We would like to thank all the kind (and talented) people who gave use of their photography for this report.



Understanding cheetahs

Chester Zoo continues to support the N/a'an ku sê Carnivore Research Project, which focuses on reducing human-carnivore conflict in Namibia. This photo was taken using Stealth Cam camera trap technology, which has enabled the project to capture rare footage of cheetahs and provide further insight into their daily activity.

© N/a'an ku sê Carnivore Research Project.

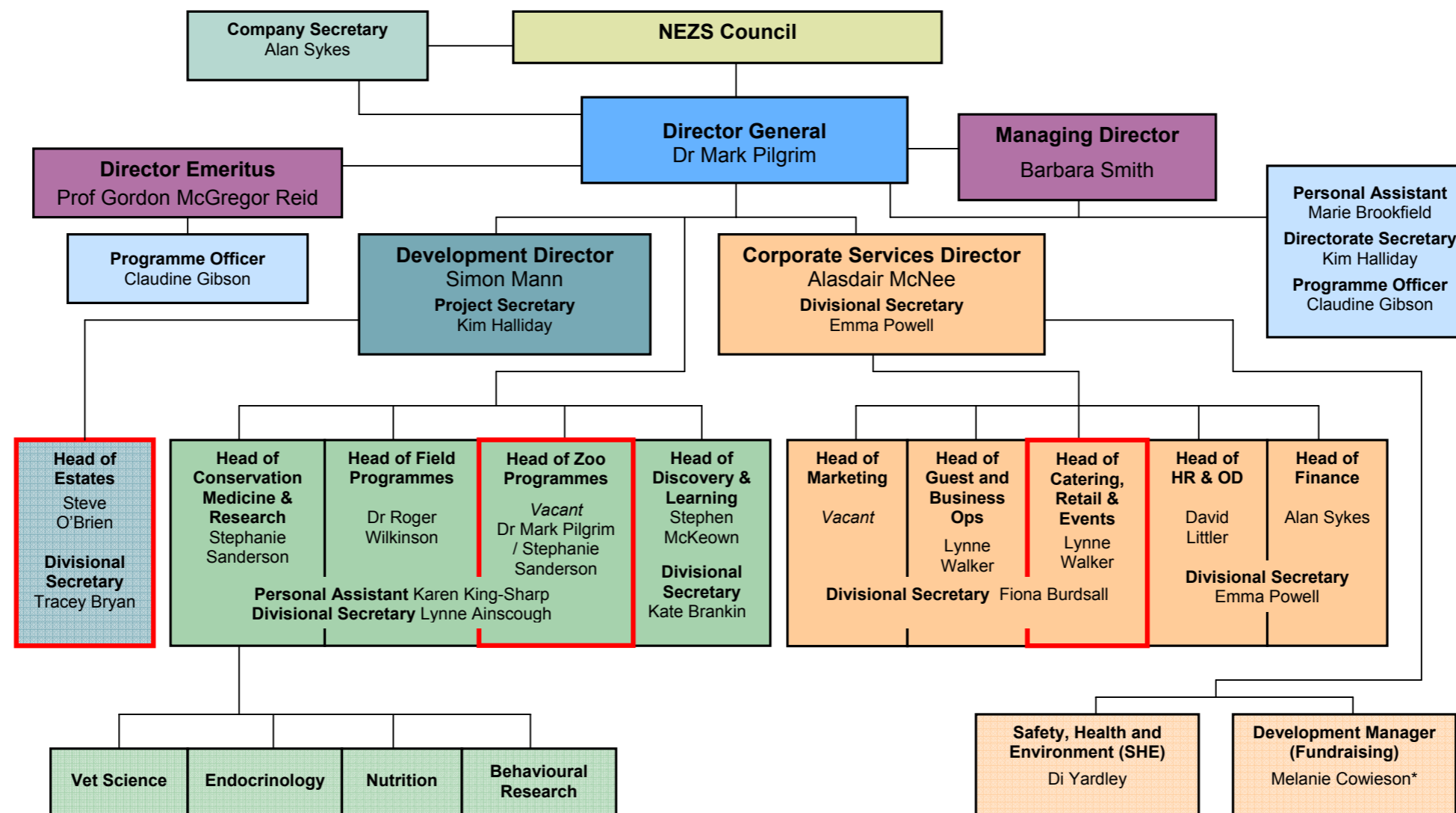
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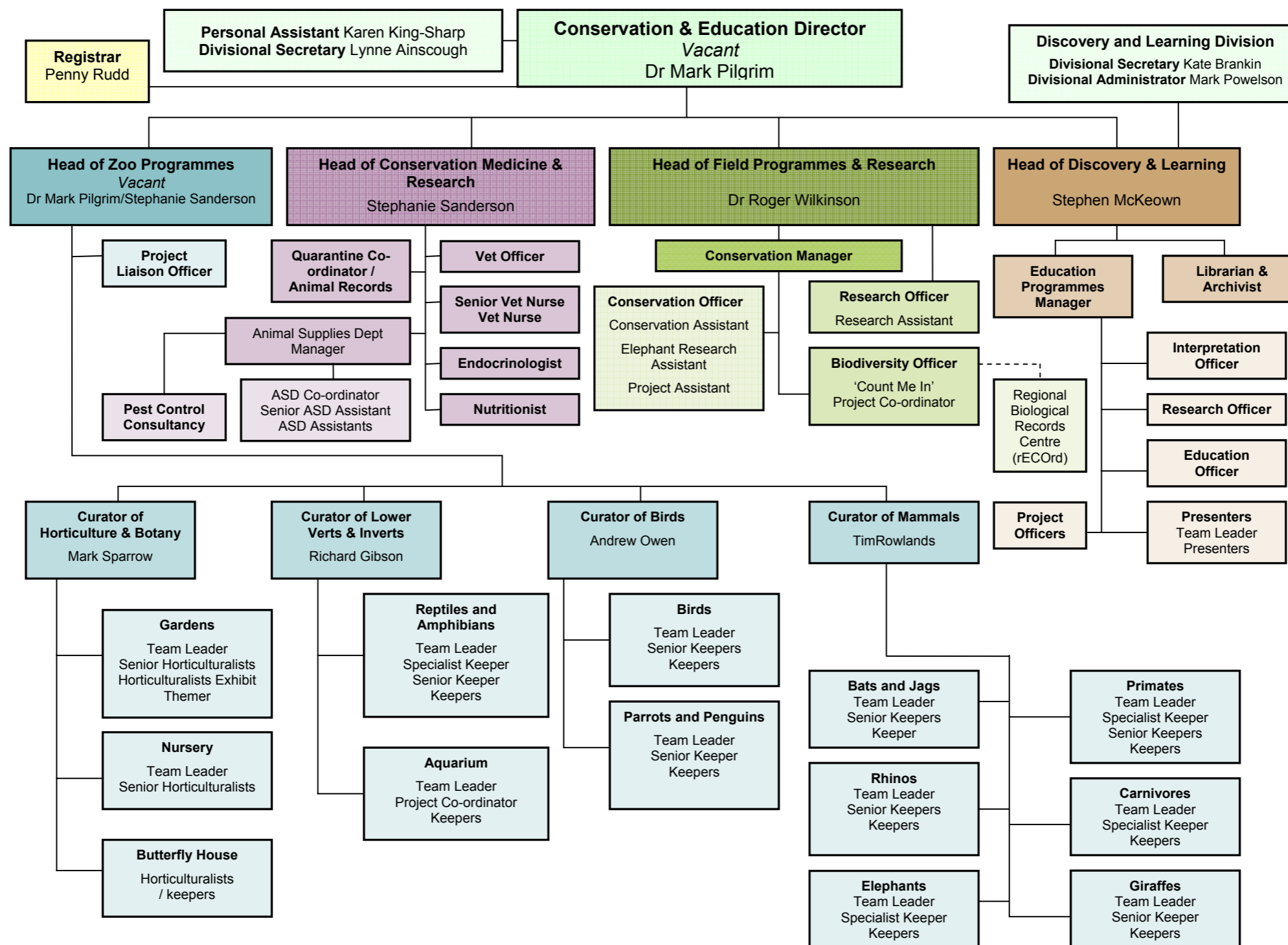
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Published April 2011 by the North of England Zoological Society.

NEZS/Chester Zoo Organisational and Management Structure 2010

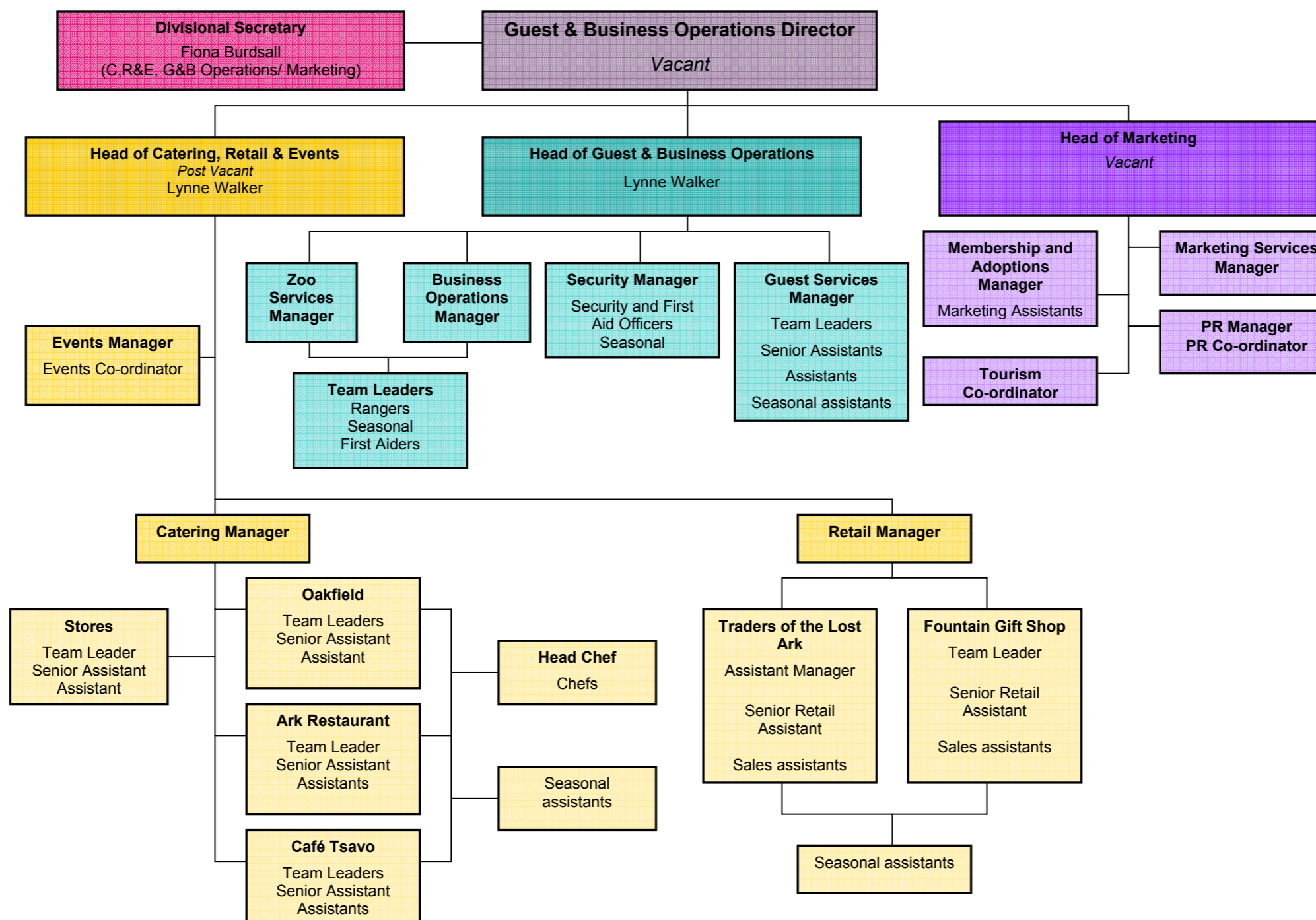


Key
 Interim arrangements
 * Lynsey Jones maternity cover

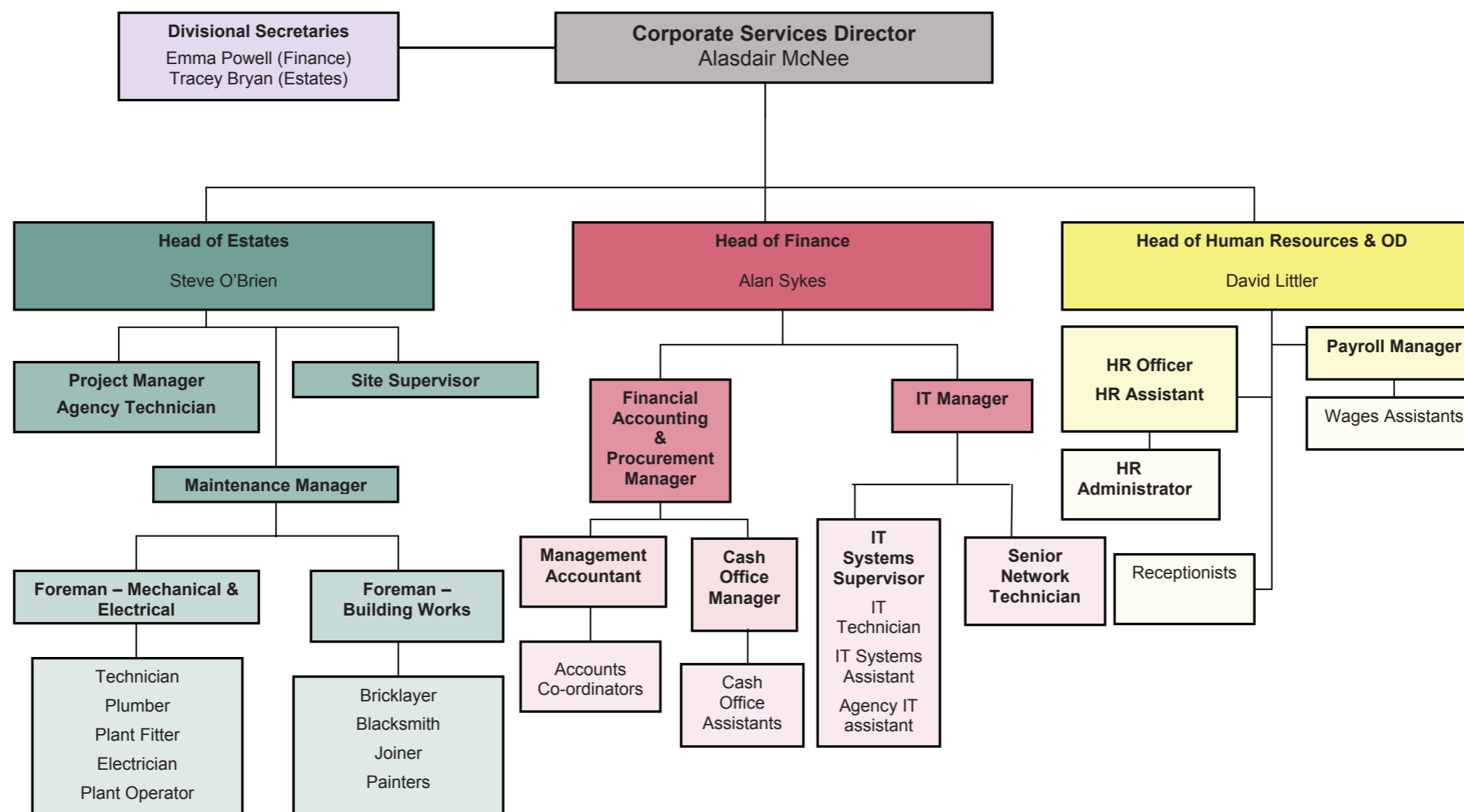
Conservation and Education Directorate 2010



Guest & Business Operations Directorate 2010



Corporate Services Directorate 2010



Staff on External Boards

Richard Barnett Management Accountant Treasurer

Association of British and Irish Wild Animal Keepers (ABWAK)

Steering Group Member, International Congress of Zookeepers (ICZ)

Sarah Bird Biodiversity Officer

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

Chair, Cheshire Mammal Group

Vice-Chair, BIAZA Native Species Working Group

Conservation Committee Member, Cheshire Wildlife Trust

Steering Group Member, Cheshire regional Biodiversity Partnership (CrBP)

Member, Wales Biodiversity Partnership Invasive Non Native Species sub Group

Member, Wales Mammal Biodiversity Action Forum

Member, North East Wales Joint Biodiversity Partnership

Member, Cheshire Invasive Non-Native Species Initiative

Member, North Wales and River Dee Invasive Non-Native Species Forum

Member, Cheshire Recorder's Forum

Member, Cheshire Black Poplar Biodiversity Action Plan Group

Member, North East Wales Plant and Mammal Biodiversity Groups

Kate Brankin Learning and Discovery Divisional Secretary

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

David Brunger, Quarantine and Veterinary Records Officer

Co-Chair, BIAZA Records Group

Maggie Esson, Discovery and Learning Programme Manager

Member, Visitor Studies Group Committee

Dr Andrea Fidgett Nutritionist

Chair, EAZA Nutrition Group

Member, EAZA Research Committee

Member, AZA Nutrition Advisory Group

Reporting Member, BIAZA Research Group

Visiting Lecturer and Member Board of Studies, BSc Conservation Medicine, Liverpool University

Treasurer, Flora and Fauna International (North West Group)

Member, IUCN Conservation Breeding Specialist Group

Honorary Lecturer, Dept Vet Pathology, University of Liverpool

Richard Gibson Curator Lower Vertebrates and Invertebrates

Taxon Officer, IUCN SSC CBSG and WAZA Amphibian Ark

Chair, EAZA Amphibian TAG

Member, IUCN Reintroduction Specialist Group

Member, IUCN Conservation Breeding Specialist Group

Member, IUCN SSC Iguana Specialist Group

Member, EAZA Reptile TAG

Member, BIAZA Reptile and Amphibian Working Group

Member, Editorial Committee - ZSL, International Zoo Year Book

Member, Society for the Study of Amphibians and Reptiles

Member, American Society of Ichthyologists and Herpetologists

Member, British Herpetological Society

Dr Sonya Hill Research Officer

Committee Member, BIAZA Research Group

Member, Research Sub-group of the EAZA Great Ape TAG

Assistant Member of Council, Primate Society of Great Britain

Convenor, Captive Care Working Party, Primate Society of Great Britain

Adviser, Jane Goodall Institute (UK)

Editorial Advisory Board, Anthrozoös: A Multidisciplinary Journal of the Interactions of People and Animals

Animal Research Ethics Committee, University of Chester

Guest Lecturer, courses in animal behaviour, conservation and welfare, e.g. University of Cambridge, University of Liverpool, Liverpool John Moores University, Manchester Metropolitan University

Paul Howse Team Leader

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

Steering Group Member, International Congress of Zookeepers (ICZ)

Lynsey Jones Assistant Development Manager

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

Stephen McKeown Head of Discovery and Learning

President, International Zoo Educators' Association

Co-Chair, WAZA Education Committee

Member, IUCN Commission on Education and Communication

Alasdair McNee Director of Corporate Services

Board Advisor, Chester Renaissance

Governor, West Cheshire College

Andy Moss Education Research Officer

Member, EAZA Working Group for Visitor Studies

Andrew Owen Curator of Birds

Council Member, Avicultural Society

Member, EAZA Bird TAG

Steering Committee Member, BIAZA Bird Working Group

Dr Mark Pilgrim Director General (formerly Director of Conservation and Education)

Member, World Conservation Union (IUCN)

Member, UK Committee; and Conservation Council, IUCN Conservation Breeding Specialist Group, Species Survival Commission

Member, IUCN Asian Elephant Specialist Group

Member, British Association for the Advancement of Science

Member, BIAZA Conservation and Animal Management Committee (CAMC)

Member of Council, European Association of Zoos and Aquariums (EAZA)

Member, EAZA Elephant Taxon Advisory Group

EAZA Accreditation Inspector

Professor Gordon McGregor Reid Director Emeritus (formerly Director General)

Immediate Past President, World Association of Zoos and Aquariums (WAZA)

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

Visiting Professor, Department of Veterinary Clinical Science and Animal Husbandry, University of Liverpool; and Member of Faculty Board for Veterinary Science

Visiting Professor, LIRANS, University of Bedfordshire

Research Associate, British Museum of Natural History

Global Chair of IUCN Species Survival Commission / Wetlands International Freshwater Fish Specialist Group

Member Representative, Council of Wetlands International

Champion, WAZA/IUCN-CBSG Climate Change Task Force

Member, Strategy Advisory Committee of the IUCN-SSC Conservation Breeding Specialist Group

Trustee, 'Frozen Ark' Project (cryobiological consortium operating between Chester Zoo, British Museum of Natural History, Institute of Zoology, University of Nottingham and international partners)

Scientific Advisor, PAZAAB Scientific Committee

Scientific Advisor, AARK Advisory Committee for Biobanking Amphibians

Member, Editorial Advisory Board, International Zoo Yearbook

Member, Editorial Advisory Board, Canadian Journal of Pure and Applied Sciences

Penny Rudd Registrar

Coordinator, Flora and Fauna International (North West Group)

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

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

Member of Cheshire Mammal Group

Stephanie Sanderson Head of Conservation Medicine and Research

Chair, Veterinary Advisory Group, BIAZA

Member, BIAZA Conservation and Animal Management Committee (CAMC)

Member, DEFRA Zoo Liaison Group

Member, DEFRA GB Avian Disease Core Group

Council Member and Honorary Secretary, British Veterinary Zoological Society

Secretary and Trustee, Zebra Foundation for Veterinary Zoological Education

UK Rep, International Committee of American Association of Zoo Veterinarians

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

Honorary Lecturer, Dept Vet Pathology, University of Liverpool

Staff on External Boards

Barbara Smith Managing Director

Member, Council, Association of Leading Visitor Attractions, UK

Member, Business Advisory Council, Faculty of Business, Enterprise and Lifelong Learning, University of Chester

Mark Sparrow Curator Botany and Horticulture

Member, BIAZA Plant Working Group

Member, Liaison Committee, Association of Zoological Horticulture

Member, EAZA Zoo Horticulture Group Committee

Member, EAZA Zoo Horticulture Group – Plant Conservation Committee

Member, ZooLex Editorial Board

Ambassador, World Land Trust

Steve Unwin Veterinary Officer

Member, Pan African Sanctuary Alliance Advisory Board

Honorary Lecturer, Dept Vet Pathology, University of Liverpool

Member, International Committee of American Association of Zoo Veterinarians

Member – Captive Care Working Party of the Primate Society of Great Britain

Dr Susan L Walker Endocrinologist

Co-Chair, European Group on Zoo Animal Contraception (EGZAC)

Steering Committee Member, AZA Endocrinology Scientific Advisory Group

Honorary Lecturer, University of Liverpool

Natural Environment Research Council Co-operative Award in Sciences of the Environment (NERC CASE) PhD Supervisor

Dr Roger Wilkinson Head of Field Programmes

Vice-President, West African Ornithological Society

Vice-President, Avicultural Society

Council Member, Mauritius Wildlife Foundation

Trustee, Polillo Island Biodiversity Conservation Foundation

Member, EAZA Conservation Committee

Member, BIAZA Conservation and Sustainability Committee

Chair, EAZA Parrot TAG

Co-Chair, EAZA Hornbill TAG

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

Member, IUCN-UK Committee

Consultant to British Ornithologist's Union Records Committee

Chair, Chester and District Ornithological Society

Scientific Adviser, World Parrot Trust

EAZA Accreditation Inspector

Alexandra Zimmermann Conservation Manager

Member, IUCN Cat Specialist Group

Scientific Advisor, Awely des Animaux et des Hommes

DPhil Candidate, Wildlife Conservation Research Unit, Oxford University

Brief Biographies of the Senior Management Team

MARK PILGRIM BSc (Hons), PhD Director General

Mark left school in 1980 and found engineering work in Portsmouth Dockyard. He decided to go back to further his education at the North East London Polytechnic, graduated with a degree in Science in 1986 and joined the Zoo as a bird keeper two years later. Mark went on to become Deputy Curator of Birds and, in 2001, became Chief Curator responsible for the whole animal and plant collection at the Zoo. In 2007 Mark became Director of Conservation and Education with a determination to bring these two key areas of the zoo closer. Mark is a Council member of the European Association of Zoos and Aquariums (EAZA) and manages the European zoo populations of Black rhino, Jaguar and the Ecuadorian Amazon parrot. In September 2010, Mark was appointed as the new Director General of the Society, only the fourth in its history.

BARBARA SMITH BSc (Hons) Managing Director

Barbara studied Sport Science at Liverpool Polytechnic prior to commencing a career which has spanned across the areas of sport, leisure tourism and culture. After graduating in 1984, Barbara worked as a Recreation Officer in the management team of a Community High School in Midlothian, Scotland. She then took on the role of Assistant Manager at Meadowbank Stadium and was promoted to the post of Manager in 1992.

Barbara became Executive Manager of Edinburgh Castle, Scotland's premier visitor attraction in 2000, where she oversaw a 10 year development plan which included a series of high profile projects designed to enhance the visitor experience at the castle. She also chaired Edinburgh Tourism Action Group (ETAG) between 2007 and 2009. Barbara joined the Society in October 2010 to the newly created role of Managing Director.

SIMON MANN BSc Development Director

Simon initially studied as an architect before completing a degree in construction management. After qualifying he worked for a number of regional and national building contractors as a design and build manager on projects across the UK. In 1997 Simon moved to project management consultancy, initially working for a specialist London based practice on a series of high profile projects including the BBC Broadcasting House re-development in Central London. In 2003 he joined the largest UK PM consultancy and as a Director helped to develop the regional business within the North West. Simon first worked for the Society as Interim Development Director for Natural Vision in 2008 before taking up the permanent role in March 2009.

ALASDAIR McNEE BSc, MBA Corporate Services Director

Alasdair has wide ranging experience of the UK's leisure and tourism industry including visitor attractions, international tour operators, airlines as well as hotels and restaurants. He has also spent eight years as an investment analyst covering the leisure sector of the London stock-market. Recent positions held include corporate planning manager at Greenalls Group plc, Group Marketing Director at De Vere Group plc and Marketing Director at MacDonald Hotels plc. Alasdair joined the Society in July 2007.

Brief Biographies of the Heads of Divisions

MARTIN CLANCY BSc Head of Marketing

After graduating in Business Studies at the University of Bradford, Martin has progressed through direct marketing and marketing communications roles within the holiday and leisure sectors. After successfully re-launching an established holiday brand for a FTSE 100 company, he broadened his commercial experience whilst running his own business. He joined the Society in 2008 as Interim Marketing Services Manager and undertook his present position in 2009.

STEPHEN MCKEOWN BSc, PGCE Head of Discovery and Learning

Stephen graduated from University in 1984 and, a few months later, joined a zoo in Scotland as Assistant Education Officer. Subsequent to that he worked in a variety of jobs including on television and radio and as a reporter on a Sunday newspaper before completing a teacher training qualification and moving to Botswana to work as a science teacher. On his return he took up post as Senior Education Officer at another Scottish zoo before joining the Society in 1997 as Head of Education.

STEPHEN O'BRIEN BSc (Hons), Dip Surv Head of Estates

After studying Building and Civil Engineering, Steve gained considerable experience in large organisations as a senior engineer in the Docks and Harbour Industry and later design and project management in the Nuclear Industry. He joined the Society in 1988 as Estate Engineer, one of the original Head of Divisions responsible for all capital development and estate management. During this period he has reinforced his academic career with further qualifications in Building Surveying and Estate Management.

DAVID LITTLER BA (Hons), MCIPD Head of Human Resources and Organisation Development

David is an experienced HR professional who has operated in both the private and public sectors. After graduating in Social Sciences, David has gained experience in various human resources generalist and project management capacities. He gained a post graduate Diploma in Personnel Management and is a Chartered Member of the Institute of Personnel and Development. Before joining the Zoo David held positions at senior level in manufacturing and in the NHS. He also gained experience as an independent HR Consultant providing support to clients covering a wide range of issues on matters relating to people and organisational development.

STEPHANIE SANDERSON MA VetMB, MSc(WAH), MRCVS Head of Conservation Medicine and Research

Stephanie qualified with zoology and veterinary degrees in 1994 and after three years in general practice, took up a Residency at a large, wildlife rehabilitation centre. In 1998 she undertook an MSc in Wild Animal Health and was appointed Veterinary Resident at the Society on graduation. Over the next eight years she acquired responsibility for the development of the veterinary, nutrition and endocrinology services and for the animal supplies department. She was appointed Head of Division in 2007.

ALAN SYKES FCA, DipBA. Head of Finance and Company Secretary

After qualifying as a Chartered Accountant, Alan gained post qualification experience with one of the 'big 4' accounting firms before studying Business Administration at Manchester Business School. Subsequently he gained considerable financial managerial and secretarial experience in a wide variety of companies. He joined the Society in 1991, initially as Deputy Head of Finance, and was promoted to his present position in 2000.

LYNNE WALKER Head of Visitor Services

Lynne joined the Society as Head of Visitor Services in March 2009. With an early career in sales and marketing, she then gained a wealth of experience in visitor attraction operations and management working for the Blackpool Pleasure Beach Company for 14 years before moving to join the team who opened the iconic Arena and Convention Centre on Liverpool Waterfront as part of the City's celebration as the 2008 European Capital of Culture.

ROGER WILKINSON BSc (Hons), PhD) Head of Field Programmes

After a first degree in Zoology, Roger gained his PhD and completed a Research Fellowship in Animal Behaviour at Southampton University before enjoying six years in Nigeria as Senior Lecturer at Bayero University, Kano. Roger joined the Society in 1983 as Curator of Birds, becoming Curator of Higher Vertebrates in 1999 and taking on his current role of developing the Zoo's conservation and research work in 2002.

2010 Members' Talks (page 1 of 2)

14th January **Chester Zoo's Conservation Programme in the Philippines**
Dr Roger Wilkinson – Head of Field Programmes

Chester Zoo has been supporting conservation in the Philippines for over 15 years. Alcoy forest and wildlife protection in Cebu, Polillo Islands biodiversity protection and monitoring, west Visayan threatened endemic species - including Philippine spotted deer and Visayan warty pigs; Philippine hornbills, Philippine cockatoo; Los Banos Fish Ark; monitor lizards on Polillo and Philippine crocodile; are just some of the projects Chester Zoo has been involved in.

Roger brings us up to date with the current projects we are supporting and working with.

Roger Wilkinson is Head of Field Programmes at Chester Zoo. His main interests are in conservation biology, animal behaviour, ecology and ornithology. Roger joined Chester Zoo in 1983 as Curator of Birds and later became Curator of Higher Vertebrates and Research. Roger manages Chester Zoo's Philippines, Chinese, Mascarenes, and Nigerian biodiversity field conservation programmes and the black rhino and orangutan field programmes. He is a Trustee of the Polillo Biodiversity Conservation Foundation (Philippines) and a Council Member of the Mauritius Wildlife Foundation.

18th February **The Changing Role of Plants at Chester Zoo: the first ten years**
Mark Sparrow – Curator of Horticulture and Botany

Mark Sparrow has been in charge of the Horticulture and Botany Dept for just over ten years. This talk will illustrate how the use of plants in the zoo has developed during that period. This includes the creation of more naturalistic animal enclosures and the changing face of the gardens. It will also look at the increasing development of plant conservation projects both at home and abroad.

10th March **Natural Vision - Chester Zoo's Future Development**
Simon Mann – Development Director

In the last few years the society has worked with a variety of agencies to develop a new masterplan for the zoo, entitled 'Natural Vision'.

Chester Zoo is internationally recognised as a leading centre for animal conservation, education and science. It is already the UK's premier wildlife attraction, welcoming well over 1 million visitors a year.

Natural Vision aims to evolve the zoo from a national success story into a truly world class showcase for the abundant yet often threatened wildlife and fantastic, but fragile, habitats of earth.

It will be a beacon of excellence here in the North West of England – creating an internationally renowned centre of the highest quality, providing top class employment, education and economic benefits. At the same time, the Natural Vision development will inspire millions to appreciate and treasure the rich and remarkable biodiversity of our planet.

This talk will include an outline of the plans for new visitor and education facilities, plus give a detailed preview of the 'Heart of Africa' biodome – the centrepiece of Phase 1 of the project, scheduled for completion in 2014.

Simon Mann initially studied as an architect before completing a degree in construction management. After qualifying he worked for a number of regional and national building contractors as a design and build manager on projects across the UK.

In 1997 Simon moved to project management consultancy, initially working for a specialist London based practice on a series of high profile projects including the BBC Broadcasting House re-development in central London.

In 2003 he joined the largest UK PM consultancy and as a Director helped to develop the regional business within the North West. Simon first worked for the society as Interim Development Director for Natural Vision in 2008 before taking up the permanent role in March 2009.

14th April **Zoo Vets Exposed!**
Steve Unwin and members of the Chester Zoo vet team

The inside story on how our vet team looks after the health of our animals. This talk will complement the coming exhibition in the Joseph Banks Room focussing on the proactive health and preventative care treatments used in the zoo. Some aspects will be familiar to viewers of Channel 5's Zoo Days but there will be new, fascinating insights for you. It's also a great opportunity to speak directly to members of our vet team.

Steve Unwin has been one of our vets at Chester Zoo for six years. Before this he worked in Thailand, Africa and Australia.

19th May **Wildlife Recording at Chester Zoo and in Cheshire**
Sarah Bird and Karen Lawson

Count Me In!, run by Chester Zoo and rECOrd (from funding from the Heritage Lottery Fund and Esmée Fairburn Foundation), has now been running for a year and is a project aimed at creating Cheshire's 'Wildlife Recorders of the Future'. This talk will look at how wildlife recording is achieved on the zoo site, including the work done by Count Me In!, and will help you learn to discover plants and wildlife in your area. Sarah and Karen will relate what has been found in the surveys and the evening will hopefully include live creatures found in the previous night's moth trap.

Sarah Bird is Chester Zoo's Biodiversity Officer and Karen Lawson is the Project Coordinator for Count Me In!

23rd June **Environmental Management: the good, the bad and the ugly**
Ray Morrison

Environmental management is a hot topic and lots of NEZS members showed an interest into how the zoo was addressing the issue at the recent Climate Change Question Time. Ray will give an overview of the zoo's response to sustainable development and environmental management – reducing risk and improving performance: the good, the bad and the ugly!

Ray Morrison is the Chester Zoo Maintenance/Site Services Manager. Ray is a member of the British Institute of Facilities Management and is responsible for maintaining the built environment on the zoo site. Ray is from a Mechanical Services background and commenced work at Chester Zoo in 1989, initially as a plumber; in 1995 he became the Maintenance Foreman before being promoted to his current position in 1999.

In addition to his primary role of looking after the zoo's buildings and engineering systems, Ray has become a champion for sustainable development on site, in particular with regards to energy efficiency and conservation. He was short listed for the ESTA/ Energy Institute Energy 'Manager of the year' award in 2009.

2010 Members' Talks (page 2 of 2)

20th July Money, myths and man-eaters: Investigating human-carnivore conflict around Ruaha National Park in Tanzania
Dr Amy Dickman

Human-wildlife conflict is an issue of pressing conservation concern, particularly when it involves threatened species, and accurately identifying the causes of conflict is fundamental to developing effective resolution strategies. This study investigated pastoralists' attitudes towards wildlife, particularly large carnivores, in the area around Ruaha National Park in Tanzania, which is a globally important area for biodiversity. Pastoralists reported intense conflict with wildlife, especially carnivores, and were largely hostile towards the nearby Park, as wild animals cross the boundary and cause problems on village land. Although the level of retaliatory wildlife killing was low, this was mainly due to circumstantial constraints rather than innate tolerance, highlighting a likely conservation concern for the future. A range of factors affected the severity of respondents' conflict with carnivores, including ethnic group, personal interactions with large carnivores, and hostility towards other groups of people. Successful conflict mitigation will depend upon reducing depredation through better husbandry, improving the cost-benefit ratio of wildlife presence to ensure that local people receive direct, relevant benefits from conservation, and gaining a better understanding of local human-human conflict. Identifying the main factors influencing conflict, and therefore developing the most appropriate mitigation schemes, should have significant benefits both for people and predators in this globally important area.

Amy Dickman is Kaplan Senior Research Fellow in Felid Conservation, Pembroke College and WildCRU. She has been interested in wild cats for as long as she can remember, and has been lucky enough to work with them in Africa for over 12 years. She joined Oxford University's Wildlife Conservation Research Unit (WildCRU) in 1997 and worked for 5 years with Laurie Marker at the Cheetah Conservation Fund in Namibia, investigating cheetah and leopard ecology, as well as methods of mitigating human-cheetah conflict. She then completed an M.Sc. at the University of Oxford, investigating the determinants of human-carnivore conflict in Tanzania; work that she developed further for her Ph.D. She rejoined WildCRU as a Senior Research Fellow in 2009 and is now developing a joint carnivore-ecology/human-carnivore conflict study around Ruaha National Park in Tanzania. This project examines which social and ecological factors are most significant in driving human-wildlife conflict in the Ruaha landscape, and therefore how it can best be resolved, as well as examining felid ecology and the impact of anthropogenic pressure on cats across different land use types. She is also involved in using detection dogs for wildlife research, and hope to develop that work further during her current Fellowship.

22nd September Back to School!
Adam Fryda and Alison Lailey

A fundamental ingredient in the zoo's work is communicating the conservation message and raising awareness of the difficulties facing the natural world to the public, especially the conservationists of the future.

The zoo is the perfect place to learn and our Discovery and Learning Division has a team of Education Officers, which provides National Curriculum linked sessions to visiting schools. In 2009, we taught over 30,000 students from 5 years of age to university level in our interactive, hands-on sessions – and now it's your turn!

Adam and Alison will give a sample presentation of one of our school's Discovery Programmes, introducing you to one or two of our classroom animals – a snake, giant Madagascan hissing cockroach or giant African land snail. There will also be touch tables – your opportunity to handle some of our amazing biofacts: skulls, skins and confiscations on loan to us from HM Customs.

Adam Fryda and *Alison Lailey* are part of a team of 3 full time, permanent Education Officers and both joined the Discovery and Learning Division in 2008.

20th October RhinoFest!
Sarah Bazley, Becca Biddle, Maggie Esson and a Member of our Rhino Team

Chester has gone rhino crazy during 2010 but that's nothing new for Chester Zoo – we are always passionate about rhinos! We continue to play a key role in the conservation of the black rhino and this evening will introduce you to the various aspects of our work: supporting projects in Africa; raising awareness and fundraising.

Maggie will give an overview of our work in Kenya and Tanzania and Becca will tell you about her recent trip to the Laikipia Wildlife Forum, Kenya working with the community conservation team there and visiting Maasai villages, providing her with invaluable first hand information to impart to school pupils in the UK in her capacity as Safari Ranger.

In September, nine Chester Zoo staff – our very own Rhino Maniacs – climbed Mount Kilimanjaro to raise funds for and raise awareness of the black rhino. Sarah will look back at the climb, the highs and lows (blisters and all!), from the early days of fundraising for the trip to the projects that the proceeds will support.

Finally, a member of our own rhino team will provide an update on our own rhinos and answer any questions.

Sarah Bazley has worked as a Presenter at the zoo since 2001 and became Presenter Team Leader in 2004. *Becca Biddle* joined the zoo to work on the externally funded Learning Together project in August 2008. In January 2010 she became our first 'Safari Ranger' in a one year pilot initiative. *Maggie Esson* joined Chester Zoo from Durrell Wildlife Trust in 2004, taking up the position of Education Programmes Manager.

7th December Zoo Christmas Quiz Evening
Maggie Esson and Stephen McKeown

An interactive evening, incorporating the very first Zoo Members' Quiz! No need for pens and paper – our electronic voting handsets make answering fun and easy. The questions are intended to test how well you know your zoo and are multiple choice so everyone's in with a chance! Our computer will add up the points in real time and we'll be awarding prizes to top scoring members.

Maggie Esson is Education Programmes Manager and *Stephen McKeown* is Head of Division, both in Discovery and Learning.

Zoo Research and Scientific Publications (page 1 of 3)

The total number of publications and technical reports produced by staff, students and associates of the zoo, published in 2010, exceeds 120. A selection is listed here:

Ancrenaz, M., Ambu, L., Sunjoto, I., Ahmad, E., Manokaran, K., Meijaard, E. and Lackman, I., 2010. Recent surveys in the forests of Ulu Segama Malua, Sabah, Malaysia, show that orangutans (*P. p. morio*) can be maintained in slightly logged forests. *PLoS ONE* 5 (7): e11510. doi:10.1371/journal.pone.0011510.

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Aureli, F., 2010. Geographical variation in socio-ecology of spider monkeys in Meso-America: 2010 Project Report. Liverpool: Liverpool John Moores University.

Aureli, F. and Schaffner, C.M., 2010. Spider Monkeys. *Current Biology* 20 (15): 624-626.

Baker, L., 2010. Distribution, Reproduction and Conservation of *Myoporum mauritianum*, an Endangered Island Endemic. [Dissertation submitted to the University of East Anglia, for the Degree of Master of Sciences in Applied Ecology and Conservation].

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Banes, G.L., 2010. The effects of forest disturbance on the population density of the Bornean orangutan in Tanjung Putting National Park, Central Kalimantan, Republic of Indonesia: Final report to the North of England Zoological Society, in collaboration with Dr Suwido H. Limin, Universitas Palangkaraya. Aberdeen, UK: School of Biological Sciences, University of Aberdeen.

Benavides, M.O., 2010. Humboldt penguin: Conservation through responsible tourism in Pisco, Peru: Final Report submitted to Chester Zoo. Pisco Playa, Peru: ACOREMA (Areas Costeras y Recursos Marinos).

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Bold, R., 2010. The impact of environmental temperature and weather on the social behaviour exhibited by Asian elephants *Elephas maximus*. [B.Sc. dissertation in Animal Science]. Nottingham: University of Nottingham.

Bourke, J., Barrientos, C., Ortiz, J.C., Busse, K., Bakker, T. and Böhme, W., 2010. Colour change in Darwin's frog *Rhinoderma darwinii*, Dumèril & Bibrón, 1841. Bonn, Germany: Zoologisches Forschungsmuseum Alexander Koenig (ZFMK). [Report].

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Bowen, E., 2010. The effects of a feeding device on the nocturnal behaviour of a separated female Asian elephant *Elephas maximus* at Chester Zoo. In M. Fox (ed.), 3rd UK & Ireland Regional Environmental Enrichment Conference Abstract Book, 9-12 May 2010, Marwell Wildlife. Colden Common, Hants.: Marwell Wildlife. P. 22.

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Brown, J.L., Kersey, D.C. and Walker, S.L., 2010. Assessment of luteinizing hormone and prolactin immunoactivity in Asian and African elephant urine using assays validated for serum. *General and Comparative Endocrinology* 169: 138-143.

Campos, A.A., Mobley, J.A. and Nunes, F., 2010. Conservation of the grey-breasted parakeet in the Baturité Mountains, Ceará, Brazil: Nest Boxes and Awareness Campaign: Technical Progress Report 2010. Ceará, Brazil: AQUASIS.

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Worldwide Conservation Activities (page 1 of 3)

Title	Focus country
NEZS Project Support: Red panda population habitat viability analysis	Asia
NEZS Project Support: Nurturing taxon and thematic networks and associations for conservation and welfare of South Asian wildlife and biodiversity	Asia
NEZS Tiger Programme: Human-tiger conflict	Asia
NEZS Project Support: The socio-economics of human-tiger conflict: patterns, perceptions and impacts	Bangladesh
NEZS staff presentation at the Royal Zoological Society of Antwerp's annual research symposium	Belgium
NEZS staff participation at mid-year meeting of the EAZA Research Committee	Belgium
NEZS staff participation in 'EthoTrak' software for behavioural research workshop at Antwerp and Planckendael Zoo	Belgium
NEZS Studentship: A genetic assessment of the Critically Endangered Morelet's treefrog in the Chiquibul National Park of Belize	Belize
NEZS Project Support: Improving welfare standards in South American zoos and facilitating wider conservation partnerships	Belize
NEZS Project Support: Final construction and furnishing the new field station in the Barba Azul Nature Reserve	Bolivia
NEZS Studentship: Glasgow University exploration society Bolivia expedition 2010	Bolivia
NEZS Project Support: Integrating conservation education, research and population management of black lion tamarins	Brazil
NEZS Project Support: Restoration of wetland forest and reintroduction of its associated epiphytes at the REGUA reserve	Brazil
NEZS Project Support: Conservation of the grey-breasted parakeet in the Baturité Mountains	Brazil
NEZS Project Support: Lowland tapir conservation initiative: Pantanal tapir programme	Brazil
NEZS Project Support: Buffy-headed capuchin conservation programme	Brazil
NEZS staff travel to red-billed curassow project	Brazil
NEZS staff travel to REGUA reserve orchid conservation project	Brazil
NEZS staff attendance as veterinary director to PASA operations meeting	Cameroon
NEZS Amphibian Programme: Assessment of the current conservation status of the black-eyed tree frog, in both <i>in situ</i> and <i>ex situ</i> populations	Central America
NEZS Project Support: Geographical variation in socio-ecology of spider monkeys in Meso-America	Central America
NEZS Project Support: Status survey, reproductive biology, population ecology, and diseases in Darwin's frog	Chile
NEZS China Programme: Conservation education capacity building for the Chengdu Research Base of giant panda Breeding, Sichuan Province	China
NEZS China Programme: Training workshop for Liangshan Nature Reserve staff and teachers	China
NEZS China Programme: A Survey for a question laughingthrush bird	China
NEZS China Programme: Blue-crowned laughingthrush project	China
NEZS China Programme: Immune development and its association with stress and health in giant panda cubs	China
NEZS China Programme: Sichuan forest biodiversity project	China
NEZS China Programme: Directorate, staff and Trustee visit to visit the China Programme - conservation capacity building	China
NEZS China Programme: Staff visit to Chengdu Panda Breeding Base - education capacity building	China
NEZS Jaguar Programme: The jaguar my neighbour - Rainforest communities working for the conservation of the jaguar	Costa Rica
NEZS Project Support: Conservation of the Cuban long-nosed toad: captive breeding and <i>in situ</i> monitoring	Cuba

Title	Focus country
NEZS Project Support: A comparative parasitological study between the chimpanzees of the Centre de Rehabilitation des Primates de Lwiro, the great apes of Kahuzi-Biega National Park and their caregivers and rangers	Democratic Republic of Congo
NEZS Project Support: Gorilla rehabilitation and conservation education centre – veterinary support	Democratic Republic of Congo
NEZS Project Support: The okapi wildlife reserve	Democratic Republic of Congo
NEZS Conservation Campaign: EAZA European carnivore campaign	Europe
NEZS staff participation in the black rhino husbandry workshop, Doué la Fontaine Zoo	France
NEZS Directorate attendance at BIAZA Spring council meeting	France
NEZS Directorate attendance to BIAZA annual conference	France
NEZS staff travel to Dortmund Zoo for giant otter husbandry training	Germany
NEZS staff participation at IUCN Conservation Breeding Specialist Group annual meeting	Germany
NEZS Director General and Director Emeritus attendance at 65th WAZA annual conference	Germany
NEZS Amphibian Programme: Contribution to the Amphibian Ark project	Global
NEZS Project Support: Freshwater Conservation Sub-committee of the Species Survival Commission	Global
NEZS Project Support: Creation of the WAZA conservation and sustainability resource centre	Global
NEZS Jaguar Programme: Advancing human-jaguar co-existence in the forest communities and ranches of the Maya Biosphere Reserve	Guatemala
NEZS Elephant Programme: Staff travel to Assam Haathi project - project expansion and educational project development	India
NEZS Rhino Programme: Translocating greater one-horned rhinos to Manas National Park	India
NEZS Studentship: Identifying potential community and conservation reserves in Anamalai Hills, Western Ghats	India
NEZS staff travel to Assam Haathi project to supervise elephant nutrition research	India
NEZS Director Emeritus met with senior management of Tata Steel Zoological Park in order to discuss future collaboration with Tata on conservation and zoological issues	India
NEZS Elephant Programme: Assam Haathi project	India
NEZS Project Support: Evolutionary diversification in an endangered biodiversity hotspot: the Sumatran peat swamp forest fish fauna	Indonesia
NEZS Project Support: Reproductive success and mate choice in reintroduced orangutans: what can we learn from rehabilitant populations?	Indonesia
NEZS Project Support: The 1st Borneo Carnivore Symposium - Roads towards conservation action plans	Indonesia
NEZS Project Support: The ecology of the maroon langur in Sabangau peat swamp forest, central Kalimantan	Indonesia
NEZS Project Support: Rapid assessment of distribution and taxonomic status of caecilians in North Sumatra, Indonesia, and potential for establishing captive population	Indonesia
NEZS Project Support: Komodo dragon project - community awareness, habitat and wildlife protection plan for the Wae Wuul Nature Reserve, West Flores	Indonesia
NEZS Realm of the Red Ape Programme: Hutan environmental awareness programme - workshop on monitoring and evaluation of educational activities	Indonesia
NEZS Realm of the Red Ape Programme: Mobile education unit - orangutan reintroduction in CA Janthro Reserve	Indonesia
NEZS Rhino Programme: Protecting Sumatran rhinos, other threatened species and habitats in Bukit Barisan Selatan National Park and Way Kambas National Park	Indonesia
NEZS Directorate and staff attendance at the EAZA annual conference	Italy

Worldwide Conservation Activities (page 2 of 3)

Title	Focus country
NEZS Project Support: Research and actions for the community-based management of the Tanoé forest, Côte d'Ivoire: primate conservation and poverty alleviation	Ivory Coast
NEZS Project Support: Conservation threats and restoration measures for the Critically Endangered <i>Garra ghorensis</i> in Southern Jordan	Jordan
NEZS Project Support: Undertaking awareness and policy measures to safeguard African vultures from impacts of chemicals	Kenya
NEZS Project Support: Is the Critically Endangered <i>Apalis fuscigularis</i> undergoing a population crash? Ongoing population monitoring	Kenya
NEZS Project Support: Ecological implications of vulture declines on rates of carcass decomposition and disease transmission	Kenya
NEZS Project Support: Ecology and conservation of the Endangered Rothschild's giraffe	Kenya
NEZS Project Support: Facilitating management of an African savannah landscape: aerial surveys of wildlife and livestock across the Greater Ewaso landscape	Kenya
NEZS staff travel to Rhino Programme - visiting schools in the Laikipia District	Kenya
NEZS Rhino Programme: Enhancing black rhino, habitat management and security through information gathering, analysis and dissemination in the Chyulu Hills	Kenya
NEZS Rhino Programme: Emergency fund for black rhino work in rhino conservancies in Laikipia District	Kenya
NEZS Studentship: Non-invasive assessment of cortisol levels in the evaluation of stress in wild black rhinos	Kenya
NEZS Project Support: Conservation of endemic Malagasy fish in the Sofia River catchment	Madagascar
NEZS Studentship: Gastrointestinal parasite shedding of three species of lemur in differently degraded forest fragments on the Sahamalaza Peninsula	Madagascar
NEZS Realm of the Red Ape: The Kinabatangan orangutan conservation project	Malaysia
NEZS Realm of the Red Ape: The Kinabatangan orangutan conservation project - honorary wildlife wardens scheme	Malaysia
NEZS staff attendance at ICZ steering committee	Malaysia
NEZS Mascarenes Programme: Ile aux Aigrettes education programme	Mauritius
NEZS Mascarenes Programme: Mauritius fody recovery programme	Mauritius
NEZS Mascarenes Programme: Conservation of the Mauritius echo parakeet	Mauritius
NEZS Mascarenes Programme: Conservation of the Mauritius olive white-eye and the establishment of a population on the managed offshore nature reserve, Ile aux Aigrettes	Mauritius
NEZS Mascarenes Programme: Staff travel to Mauritius to act as temporary bird keepers for Mauritian Wildlife Foundation	Mauritius
NEZS Mascarenes Programme: Staff travel to visit to Mauritian Wildlife Foundation passerine projects	Mauritius
NEZS Mascarenes Programme: Survey and monitoring of Rodrigues fruit bat populations	Mauritius
NEZS Mascarenes Programme: Restoration and reforestation of the Grande Montagne Nature Reserve, Rodrigues	Mauritius
NEZS Mascarenes Programme: Propagation and conservation of Critically Endangered plant species	Mauritius
NEZS Mascarenes Programme: CASE Studentship to examine the population dynamics and demography of the Endangered pink pigeon	Mauritius
NEZS Project Support: Mexican Fish Ark project	Mexico
NEZS Studentship: Expedition vaquita 2010 - photographic identification of the vaquita	Mexico
NEZS Amphibian Programme: Staff participation on the mountain chicken project fieldwork	Montserrat
NEZS Project Support: N/a' an ku sê carnivore research project: human-wildlife conflict	Namibia
NEZS Project Support: Otter research and conservation project	Nepal

Title	Focus country
NEZS Project Support: Studying the population status and distribution of sarus crane in Suklaphanta Wildlife Reserve	Nepal
NEZS Project Support: Habitat, status and conservation of red panda in Gaurishankar conservation area	Nepal
NEZS Richard Hughes Scholarship: Comparison of cortisol and thyroid hormones among tuberculosis reactive and non-reactive captive elephants	Nepal
NEZS staff travel to Burgers and Beeksebergen Zoos for giraffe enclosure training	Netherlands
NEZS Directorate attendance to ape taxon advisory group	Netherlands
NEZS Project Support: Energetics and life history of olive baboons at Gashaka-Gumti National Park	Nigeria
NEZS Project Support: Conservation genetics of Nigerian chimpanzees	Nigeria
NEZS Nigeria Programme: Gashaka Primate Project: Research, conservation and capacity building	Nigeria
NEZS Nigeria Programme: The Nigerian montane forest project	Nigeria
NEZS Project Support: Shielding from extinction the pygmy three-toed sloth of Escudo de Veraguas Island	Panama
NEZS Project Support: European zoos supporting <i>in situ</i> conservation of the Philippine crocodile	Philippines
NEZS Philippines Programme: Polillo Islands biodiversity protection and monitoring project	Philippines
NEZS Philippines Programme: West Visayan threatened endemic species conservation programme	Philippines
NEZS Philippines Programme: <i>In situ</i> protection scheme for the Visayan writhed-billed hornbill on Panay Island	Philippines
NEZS Philippines Programme: Philippine cockatoo conservation programme	Philippines
NEZS Philippines Programme: Philippine hornbills conservation programme	Philippines
NEZS Philippines Programme: Home range and seasonality of the Palawan-endemic Critically Endangered Philippine forest turtle	Philippines
NEZS Director General (Gordon Reid) visited NEZS supported programmes and field sites	Philippines
NEZS Project Support: Pacific tree snail conservation field programme	Polynesia
NEZS Studentship: Population status and habitat preference of the vulnerable endemic Rodrigues fody	Rodrigues
NEZS Studentship: Conservation of an Endangered endemic island plant: distribution, conditions for growth and threats to the population	Rodrigues
NEZS Project Support: Mabula ground hornbill research and conservation project	South Africa
NEZS staff participation in PASA veterinary workshop	South Africa
NEZS Director Emeritus participated in the Institutional Review of South African National Research Foundation – Biodiversity & Environmental Cluster	South Africa
NEZS Jaguar Programme: Human-jaguar conflict	South America
NEZS Project Support: Assessing the conservation status of cactus species of the Andean hotspot and the Galapagos Islands	South America
NEZS staff chaired at the 6th European Nutrition Conference	Spain
NEZS Director General (Gordon Reid) attended WAZA mid-year Council Meeting	Sri Lanka
NEZS staff participation in the orangutan vet advisory group	Sumatra
NEZS Project Support: Ketambe reforestation and ecotourism development initiative	Sumatra
NEZS Project Support: Human carnivore conflict - Village education around Ruaha National Park	Tanzania
NEZS staff visit to Mkomazi Game Reserve - Rhino Maniacs team	Tanzania

Worldwide Conservation Activities (page 3 of 3)

Title	Focus country
NEZS Rhino Programme: Replacement communication equipment and uniforms for the Mkomazi Rhino Sanctuary	Tanzania
NEZS Rhino Programme: Rafiki wa Faru education programme	Tanzania
NEZS Project Support: Hornbill nest adoptions	Thailand
NEZS Project Support: Budo hornbill conservation and education centre	Thailand
NEZS Director General (Gordon Reid) delivered a paper on Zoo, Wildlife and Exotic Animal Health and Management at the AITVM Conference	Thailand
NEZS Studentship: Establishing permanent monitoring plots for the Turks and Caicos Islands pine recovery project	Turks and Caicos Islands
NEZS Project Support: Kibale fuel wood project	Uganda
NEZS Rhino Programme: Black rhino CASE studentship	United Kingdom
NEZS Native Species Programme: Llangefni red squirrel reintroduction project	United Kingdom
NEZS Native Species Programme: Microchips for hazel dormice monitoring project	United Kingdom
NEZS Native Species Programme: Liverpool Bay recording partnership	United Kingdom
NEZS Native Species Programme: Count me in! goes wild	United Kingdom
NEZS Native Species Programme: DNA fingerprinting of Cheshire black poplars	United Kingdom
NEZS Project Support: Amphibian Workshop: towards a biobanking strategy for amphibian conservation	United Kingdom
NEZS staff organised the annual IUCN SSC/Wetlands International Freshwater Fish Specialist Group meeting	United Kingdom
NEZS Project Support: CASE Studentship – Amphibian nutrition research	United Kingdom
NEZS staff attendance at Birdlife International meeting	United Kingdom
NEZS staff presentation to the North West Wildlife Trust	United Kingdom
NEZS staff presentation at IUCN meeting in Edinburgh	United Kingdom
NEZS Richard Hughes Scholarship: Behavioural development of elephant calves in relation to captive welfare	United Kingdom
NEZS Studentship: Climate change impacts on UK butterflies	United Kingdom
NEZS Native Species Programme: Staff participation in marine invasive species training day	United Kingdom
NEZS Native Species Programme: Staff hosted Cheshire active naturalists wildlife photography course	United Kingdom
NEZS Native Species Programme: Staff participation in Lancashire bioblitz – wild mammals identifications course	United Kingdom
NEZS Native Species Programme: Staff participation in hazel dormouse nest monitoring in Wales and Cheshire	United Kingdom
NEZS staff attendance at ABWAK meetings	United Kingdom
NEZS staff chaired the European group on zoo animal contraception at the Zoological Society of London	United Kingdom
NEZS staff attendance and chaired Primate Society of Great Britain Winter meeting – Gombe 50 symposium	United Kingdom
NEZS staff participation in the Primate Society of Great Britain Spring meeting	United Kingdom
NEZS staff organised and hosted the 12th annual BIAZA Research Symposium	United Kingdom
NEZS staff participation in the regional enrichment conference	United Kingdom
NEZS staff organised and hosted 'Advanced animal learning - animal concepts' seminar	United Kingdom
NEZS staff participation in a training primates for cognitive research: principles and practice workshop	United Kingdom

Title	Focus country
NEZS staff supervision of amphibian nutrition studentships	United Kingdom
NEZS staff participation in 'Back to Basics' nutrition seminar	United Kingdom
NEZS staff attendance the Primate Society of Great Britain annual council meeting	United Kingdom
NEZS staff attendance at Visitor Studies Association annual meeting	United Kingdom
NEZS staff attendance at the BIAZA native species working group annual conference	United Kingdom
NEZS Director General and staff attendance at the BIAZA awards and ACE conference	United Kingdom
NEZS Directorate attendance at BIAZA Council meeting	United Kingdom
NEZS Directorate participation in BIAZA parliamentary reception	United Kingdom
NEZS staff organised and hosted climate change event: 'Climate change impacts on biodiversity and the natural world: a presentation and debate on the future of our planet',	United Kingdom
NEZS Director General (Gordon Reid) attended the inaugural ASA Board Meeting	United Kingdom
NEZS Director General (Gordon Reid) attended Frozen Ark Trustees' Meeting	United Kingdom
NEZS staff organised and hosted the 4th International Zoo and Aquarium Symposium on Global Freshwater Fish Conservation	United Kingdom
NEZS staff hosted the first meeting of the IUCN Freshwater Conservation Sub-Committee	United Kingdom
NEZS staff attendance at the International Gorilla Workshop	United States of America
NEZS staff participation in technical endocrinology laboratory techniques course at the University of California	United States of America
NEZS staff participated in the annual International Society of Wildlife Endocrinologists meeting in Cincinnati Zoo	United States of America
NEZS staff attendance at International Zoo Education conference	United States of America
NEZS Project Support: Andean bear defenders club	Venezuela
NEZS Project Support: Emergency funding for rhino operations in five National Parks	Zimbabwe

Mammal Stocklist (page 1 of 4)

Scientific name	Common Name	Primary Role	Species Roles												IUCN status	Stock 31/12/2009	Births	Imports	Deaths	DNS (30 days)	Exports	Stock 31/12/2010	Managed Programme					
			Conservation		Education				Research		Visitor Experience		No Current Role															
			Ex situ breeding	In situ support	Interdependence	Importance	Destruction	Partnerships	Chester Zoo	Youl	Cons research/training	General research		Exhibit enhancement										Theme enhancement				
Pilosa																												
Myrmecophagidae																												
<i>Myrmecophaga tridactyla</i>	Giant anteater	Education				x				x									VU	0	0	1.1.0	0	0	0	0	1.1.0	EEP
Diprotodontia																												
Macropodidae																												
<i>Macropus fuliginosus</i>	Western grey kangaroo	Education				x													LC	4.5.0	0.0.2	0	0.1.2	0	3.0.0	1.4.0	ESB	
Proboscidea																												
Elephantidae																												
<i>Elephas maximus</i>	Asiatic elephant	Cons in situ support	x	x	x	x	x	x	x	x	x	x	x						EN	2.6.0	1.0.0	0	0	0	1.0.0	2.6.0	EEP	
Hyracoidea																												
Procaviidae																												
<i>Procavia capensis</i>	Rock hyrax	Theme enhancement																	LC	0	0	1.1.0	0	0	0	1.1.0	ESB	
Scandentia																												
Tupaiaidae																												
<i>Tupaia belangeri</i>	Northern tree shrew																				1.0.0	0	0	0	0	1.0.0	0.0.0	
Primates																												
Atelidae																												
<i>Ateles fusciceps rufiventris</i>	Colombian spider monkey	Cons in situ support	x	x	x	x	x	x	x	x									CR	3.8.0	1.1.1	0	0	1.1.0	0	3.8.1	EEP	
Cebidae																												
<i>Callithrix geoffroyi</i>	Geoffroy's marmoset	Education				x													LC	5.5.0	0	1.0.0	1.0.0	0	4.1.0	1.4.0	EEP	
<i>Callithrix pygmaea niveiventris</i>	Eastern pygmy marmoset	Theme enhancement				x													LC	0	0	2.0.0	0	0	0	2.0.0		
<i>Callithrix melanura</i>	Black-tailed marmoset	Theme enhancement																	LC	0	0.0.1	1.1.0	0	0	0	1.1.1		
<i>Leontopithecus chrysomelas</i>	Golden-headed tamarin	Education																	EN	0	0	0.3.0	0	0	0	0.3.0	EEP	
<i>Leontopithecus chrysopygus</i>	Black lion tamarin	Cons ex situ breeding	x	x															EN	1.1	0	0	0	0	0	1.1.0	EEP	
<i>Saguinus bicolor</i>	Pied tamarin	General research																	EN	1.1	0	0	0	0	0	1.1.0	EEP	
<i>Cebus xanthostemos</i>	Buffy-headed capuchin	Cons in situ support	x	x	x	x	x	x	x	x									CR	7.1.1	1.0.0	0	0	0	0	8.1.1	EEP	
Ceriopithecidae																												
<i>Macaca silenus</i>	Lion-tailed macaque	Education			x	x	x	x	x										EN	7.14.0	1.2.3	0	0.1.0	0.2.0	0	8.13.3	EEP	
<i>Macaca nigra</i>	Sulawesi crested macaque	Cons ex situ breeding	x		x	x	x	x	x										CR	14.17.0	2.3.0	0	1.0.0	0	0.2.0	15.18.0	EEP	
<i>Mandrillus sphinx</i>	Mandrill	Education			x	x	x												VU	8.7.0	1.4.0	0	1.1.0	0	1.0.0	7.10.0	EEP	
Hominidae																												
<i>Pan troglodytes</i>	Chimpanzee	Cons in situ support		x	x	x	x	x	x			x	x						EN	7.20.0	0	0	0.1.0	0	7.19.0	7.19.0	ESB	
<i>Pongo pygmaeus</i>	Bornean orangutan	Cons ex situ breeding	x	x	x	x	x	x	x	x									EN	2.4.0	0	0	0	0	0	2.4.0	EEP	
<i>Pongo abelii</i>	Sumatran orangutan	Cons ex situ breeding	x	x	x	x	x	x	x				x						CR	3.5.0	0	0	0	0	1.0.0	2.5.0	EEP	
Hylobatidae																												
<i>Hylobates lar</i>	Lar gibbon	Exhibit enhancement																	EN	3.1.0	0	0	0	0	0	3.1.0	ESB	
Lemuridae																												
<i>Hapalemur alaotrensis</i>	Alaotran gentle lemur	Education				x	x												CR	1.1.0	0	0	0	0	0	1.1.0	EEP	
<i>Lemur catta</i>	Ring-tailed lemur	Education			x	x	x			x									NT	12.10.0	5.2.2	0	1.2.0	3.2.2	0.2.0	13.6.0	ESB	
<i>Varecia variegata variegata</i>	Black & white ruffed lemur	Education				x													CR	2.1.0	0	0	0	0	1.0.0	1.1.0	EEP	
<i>Varecia rubra</i>	Red Ruffed Lemur	Education				x	x	x											EN	4.1.0	1.1.0	0	1.0.0	0	3.0.0	1.2.0	EEP	

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Scientific name	Common Name	Primary Role	Species Roles												IUCN status	Stock 31/12/2009	Births	Imports	Deaths	DNS (30 days)	Exports	Stock 31/12/2010	Managed Programme				
			Conservation		Education				Research		Visitor Experience		No Current Role														
			<i>Ex situ</i> breeding	<i>In situ</i> support	Interdependence	Importance	Destruction	Partnerships	Chester Zoo	You!.	Cons research/training	General research		Exhibit enhancement										Theme enhancement			
Chiroptera																											
Phyllostomidae																											
<i>Carollia perspicillata</i>	Seba's short-tailed bat	Education			x	x	x	x											LC	0.0.397	0.0.368	0	0.0.90	0.0.26	0.0.100	0.0.549	
Pteropodidae																											
<i>Pteropus rodricensis</i>	Rodrigues fruit bat	Cons <i>in situ</i> support	x	x	x	x	x	x		x									CR	36.49.0	17.16.2	0	2.3.0	1.2.1	0	50.60.1	EEP
<i>Pteropus livingstonii</i>	Livingstone's fruit bat	Education			x	x	x												EN	3.0.0	0	0	0	0	0	3.0.0	ESB
Carnivora																											
Ailuridae																											
<i>Ailurus fulgens fulgens</i>	Red panda	Cons <i>in situ</i> support	x	x	x	x	x	x		x									VU	1.1.0	0.1.0	0	0	0	0	1.2.0	EEP
Canidae																											
<i>Speothos venaticus</i>	Bush dog	Education			x	x		x	x										NT	3.2.0	5.2.0	0	1.0.0	0	7.4.0	7.4.0	EEP
Felidae																											
<i>Panthera leo persica</i>	Asiatic lion	Education			x	x	x	x	x										EN	1.1.0	0	1.0.0	0	0	1.0.0	1.1.0	EEP
<i>Panthera tigris sumatrae</i>	Sumatran tiger	Cons <i>ex situ</i> breeding	x	x	x	x	x	x	x	x									CR	1.1.0	0	0	0	0	0	1.1.0	EEP
<i>Panthera onca</i>	Jaguar	Cons <i>in situ</i> support		x	x	x	x	x	x										NT	3.2.0	0	0	0	0	0	3.2.0	ESB
<i>Acinonyx jubatus soemmeringii</i>	Cheetah	Cons <i>in situ</i> support		x	x	x	x		x										VU	3.1.1	0	0.1.0	0	0	0	3.2.0	EEP
<i>Leptailurus serval</i>	Serval	Education				x													LC	2.0.0	0	0	0	0	0	2.0.0	
Herpestidae																											
<i>Suricata suricatta</i>	Slender-tailed meerkat	Education			x	x													LC	1.3.0	1.4.4	0	0	0.0.2	0.2.0	2.5.2	
<i>Mungos mungo</i>	Banded mongoose	Education				x													LC	3.8.0	0.0.10	0	2.1.6	0	0	1.7.4	
<i>Helogale parvula</i>	Dwarf mongoose	Education			x	x													LC	3.1.0	0.0.4	0	0.0.2	0	2.0.0	1.1.2	
<i>Cynictis penicillata</i>	Yellow mongoose	Education				x													LC	2.2.0	0	0	0	0	1.1.0	1.1.0	
Mustelidae																											
<i>Aonyx cinerea</i>	Oriental small-clawed otter	Cons <i>in situ</i> support	x			x													VU	1.7.0	0	0	0	0	0	1.7.0	
<i>Pteronura brasiliensis</i>	Giant otter	Education			x	x	x		x										EN	0	0	1.1.0	0	0	0	1.1.0	EEP
Otariidae																											
<i>Zalophus californianus</i>	Californian sealion																		LC	1.2.0	0	0	0	0	1.2.0	0	ESB
Procyonidae																											
<i>Nasua nasua</i>	Coati	Education				x													LC	0.7.0	0	0	0	0	0	0.7.0	
Ursidae																											
<i>Tremarctos ornatus</i>	Spectacled bear	Education			x	x	x	x	x										VU	1.1.0	0	0	0	0	0	1.1.0	EEP

Mammal Stocklist (page 3 of 4)

Scientific name	Common Name	Primary Role	Species Roles											IUCN status	Stock 31/12/2009	Births	Imports	Deaths	DNS (30 days)	Exports	Stock 31/12/2010	Managed Programme						
			Conservation		Education				Research		Visitor Experience		No Current Role															
			Ex situ breeding	In situ support	Interdependence	Importance	Destruction	Partnerships	Chester Zoo	Youl	Cons research/training	General research											Exhibit enhancement	Theme enhancement				
Perissodactyla																												
Equidae																												
<i>Equus przewalskii</i>	Przewalski's horse																			CR	1.3.0	0	0	0.1.0	0	1.2.0	0	EEP
<i>Equus grevyi</i>	Grevy's zebra	Education		x		x	x	x	x	x										EN	4.0.0	0	0	1.0.0	0	1.0.0	2.0.0	EEP
<i>Equus hemionus onager</i>	Persian onager	Education					x							x					EN	1.3.0	0	0.3.0	0	0	1.6.0	1.6.0	EEP	
Rhinocerotidae																												
<i>Diceros bicornis michaeli</i>	Eastern black rhinoceros	Cons ex situ breeding	x	x	x	x	x	x	x	x	x	x								CR	3.6.0	0	0	0	0	0	3.6.0	EEP
<i>Rhinoceros unicornis</i>	Indian rhinoceros	Education			x					x									VU	0.1.0	0	1.0.0	0	0	0.1.0	1.0.0	EEP	
Tapiridae																												
<i>Tapirus terrestris</i>	South american tapir	Cons in situ support		x	x	x					x			x					VU	1.1.0	0.0.1	0	0	0.0.1	0	1.1.0	EEP	
Artiodactyla																												
Bovidae																												
<i>Syncerus caffer nanus</i>	Congo buffalo	Education				x													LC	1.5.0	0	1.0.0	0	0	0	2.5.0	ESB	
<i>Tragelaphus eurycerus</i>	Eastern bongo	Education				x	x	x	x										CR	0.4.0	0	0.1.0	0.2.0	0	0	0.3.0	EEP	
<i>Tragelaphus spekii gratus</i>	West African sitatunga	Education				x								x					LC	8.8.0	1.3.1	0	1.2.0	1.1.0	1.0.0	6.8.1	ESB	
<i>Kobus leche kafuensis</i>	Kafue Flats red lechwe	Exhibit enhancement				x								x					VU	1.6.0	0.2.1	0	1.2.0	0.1.1	0	0.5.0	ESB	
<i>Oryx dammah</i>	Scimitar-horned oryx	Cons ex situ breeding	x		x	x	x	x	x	x		x							EW	2.6.0	4.1.1	0	2.1.0	1.0.1	0	3.6.0	EEP	
<i>Oryx gazella gazella</i>	Gemsbok	Education				x								x					LC	1.5.0	0.2.0	0	1.1.0	0	0	0.6.0		
<i>Antilope cervicapra</i>	Blackbuck	Education				x								x					NT	1.10.0	0	0	0.1.0	0	0	1.9.0		
<i>Madoqua kirkii</i>	Kirk's dik-dik	Education				x								x					LC	2.2.0	0.0.1	0	1.1.0	0.0.1	0	1.1.0	ESB	
<i>Hippotragus equinus</i>	Roan antelope	Education				x								x					LC	2.2.0	0	0	0	0	0	2.2.0	EEP	
<i>Bubalus depressicornis</i>	Lowland anoa	Education				x													EN	1.0.0	0	0	0	0	0	1.0.0	EEP	
<i>Cephalophus natalensis</i>	Red forest duiker					x													LC	0.1.0	0	0	0.1.0	0	0	0		
Camelidae																												
<i>Vicugna vicugna</i>	Vicuna	Education				x								x					LC	2.3.0	2.0.0	0	0	0	1.0.0	3.3.0	EEP	
<i>Camelus bactrianus ferus</i>	Bactrian camel	Education				x													CR	0.4.0	0	0	0	0	0	0.4.0		
Cervidae																												
<i>Pudu pudu</i>	Chilean pudu	Education				x								x					VU	1.1.0	1.0.0	0	0	0	0	2.1.0	EEP	
<i>Rusa alfredi</i>	Phillippine spotted deer	Cons in situ support		x			x	x	x	x									EN	1.3.0	0	0	1.0.0	0	0	0.3.0	EEP	
<i>Rucervus eldii thamin</i>	Burmese brow-antlered deer	Exhibit enhancement				x								x					EN	5.11.0	2.5.0	0	0.1.0	0.1.0	1.0.0	6.14.0		
Giraffidae																												
<i>Giraffa camelopardalis rothschildi</i>	Rothschild giraffe	Cons in situ support		x	x	x	x	x	x	x		x							EN	1.4.0	0.1.0	0.1.0	0	0	0.2.0	1.4.0	EEP	
<i>Okapia johnstoni</i>	Okapi	Cons in situ support		x		x	x	x	x	x		x							NT	1.1.0	0	0	0	0	0	1.1.0	EEP	
Suidae																												
<i>Babyrousa babyrussa</i>	Northern babirusa	Education				x	x	x	x					x					VU	1.1.0	0	0	0	0	0	1.1.0	EEP	
<i>Potamochoerus porcus</i>	Red river hog	Education			x	x													LC	1.3.0	0	0	0	0	0.1.0	1.2.0	EEP	
<i>Phacochoerus africanus</i>	Warthog	Education				x								x					LC	1.1.0	0	0	0	0	0	1.1.0	ESB	
<i>Sus cebifrons negrinus</i>	Visayan warty pig	Cons in situ support		x			x	x	x			x							CR	5.3.0	1.2.5	1.0.0	2.0.0	0.0.1	2.0.0	3.5.4	EEP	

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Scientific name	Common Name	Primary Role	Species Roles											IUCN status	Stock 31/12/2009	Births	Imports	Deaths	DNS (30 days)	Exports	Stock 31/12/2010	Managed Programme							
			Conservation		Education				Research		Visitor Experience		No Current Role																
			<i>Ex situ</i> breeding	<i>In situ</i> support	Interdependence	Importance	Destruction	Partnerships	Chester Zoo	Youl	Cons research/training	General research											Exhibit enhancement	Theme enhancement					
Rodentia																													
Caviidae																													
<i>Hydrochoerus hydrochaeris</i>	Capybara	Education			x	x	x													LC	1.2.0	0	0	0.2.0	0	0	1.0.0		
Dasyproctidae																													
<i>Dasyprocta azarae</i>	Azara's agouti	Exhibit enhancement																			DD	1.1.0	0	0	0	0	0	1.1.0	ESB
Gliridae																													
<i>Graphiurus murinus</i>	African woodland dormouse	Education				x															LC	0.0.18	0.0.12	0.0.1	0.0.1	0	0	0.0.30	
Hystricidae																													
<i>Hystrix africaeaustralis</i>	Crested porcupine	Education			x	x															LC	1.2.0	0.1.2	0	0	0	0	1.3.2	
Muridae																													
<i>Acomys cilicicus</i>	Turkish spiny mouse	Education				x															DD	0.0.198	0.0.617	0	0.0.500	0.0.185	0.0.12	0.0.118	
<i>Acomys sp</i>	Black spiny mouse	Theme enhancement																			DD	0.0.44	0.0.46	0	0.0.35	0.0.21	0.0.25	0.0.9	
<i>Lemniscomys striatus</i>	Spotted grass mouse	Theme enhancement																			LC	0.0.10	0.0.10	0	0.0.5	0.0.2	0.0.5	0.0.8	
<i>Micromys minutus</i>	Harvest mouse	Education			x	x	x	x	x												LC	16.22.4						20.10.7	
<i>Mus minutoides</i>	Pygmy mouse																				LC	0	0.0.19	0.0.22	0.0.2	0.0.16	0.0.23	0	
<i>Thallomys sp.</i>	Acacia rat	Theme enhancement																			LC	0.0.13	0.0.29	0	0.0.22	0.0.6	0.0.9	0.0.5	
Nesomyidae																													
<i>Cricetomys gambianus</i>	Forest giant pouched rat	Theme enhancement																			LC	1.1.0	5.2.1	0	0	0.0.1	4.1.0	2.2.0	
Sciuridae																													
<i>Cynomys ludovicianus</i>	Prairie marmot																				LC	1.1.0	0	0	0	0	1.1.0	0	

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Scientific name	Common Name	Primary Role	Species Roles											IUCN status	Stock 31/12/2009	Births	Imports	Deaths	DNS (30 days)	Exports	Stock 31/12/2010	Managed Programme								
			Conservation		Education				Research		Visitor Experience		No Current Role																	
			Ex situ breeding	In situ support	Interdependence	Importance	Destruction	Partnerships	Chester Zoo	Youl	Cons research/training	General research											Exhibit enhancement	Theme enhancement						
Anseriformes																														
Anatidae																														
<i>Aix galericulata</i>	Mandarin duck	None																		x	LC	0.0.7	0	0	0.0.1	0	0	0.0.6		
<i>Anas falcata</i>	Falcated teal	None																			x	NT	2.3.0	0	0	1.0.0	0	0	1.3.0	
<i>Anas formosa</i>	Baikal teal																					VU	2.1.0	0	0	2.1.0	0	0	0	
<i>Anas georgica spinicauda</i>	Chilean pintail																					LC	1.0.0	0	0	1.0.0	0	0	0	
<i>Anas hottentota</i>	Hottentot teal	Exhibit enhancement																				LC	1.1.3	0.0.4	0	0.0.1	0.0.1	0	1.1.5	
<i>Anas platyrhynchos laysanensis</i>	Laysan duck	None																				CR	1.2.0	0	0	0	0	0	1.2.0	
<i>Anas querquedula</i>	Garganey	Exhibit enhancement																				LC	0.0.4	0	0	0.0.1	0	0	0.0.3	
<i>Anser erythropus</i>	Lesser white-fronted goose	None																				VU	0.0.2	0	0	0	0	0	0.0.2	
<i>Anser rossii</i>	Ross' snow goose																					LC	2.1.2	0	0	0.1.0	0	2.0.2	0	
<i>Aythya baeri</i>	Baer's pochard	Exhibit enhancement																				EN	5.3.5	0	0	1.1.0	0	0	4.2.5	
<i>Aythya nyroca</i>	Ferruginous duck	Exhibit enhancement																				NT	1.1.9	0.0.2	0	0	0.0.2	0	1.1.9	
<i>Branta ruficollis</i>	Red-breasted goose	Exhibit enhancement																				EN	4.1.3	0	0	1.1.0	0	0	3.0.3	
<i>Branta sandvicensis</i>	Hawaiian goose																					VU	1.1.0	0.0.2	0	0	0.0.2	1.1.0	0	
<i>Cygnus melanocoryphus</i>	Black-necked swan																					IC	1.2.0	0	0	0	0	1.2.0	0	
<i>Dendrocygna arborea</i>	West Indian whistling duck	None																				VU	2.3.5	0.0.12	0	1.0.2	0	0.0.8	1.3.7	
<i>Dendrocygna viduata</i>	White-faced whistling duck	Exhibit enhancement																				LC	3.8.0	0.0.22	0	0.1.1	0.0.14	0	0.0.17	
<i>Marmaronetta angustirostris</i>	Marbled teal	Exhibit enhancement																				VU	3.2.6	0.0.16	0	1.0.1	0.0.2	0.0.14	0.0.9	
<i>Mergus albellus</i>	Smew	None																				LC	0.1.0	0	0	0	0	0	0.1.0	
<i>Mergus cucullatus</i>	Hooded merganser	None																				LC	0.2.6	0.0.8	0	0	0.0.7	0.0.1	4.4.0	
<i>Netta rufina</i>	Red-crested pochard	Exhibit enhancement																				LC	10.5.0	0	0	1.0.0	0	2.2.0	7.3.0	
<i>Oxyura leucocephala</i>	White-headed duck	Exhibit enhancement																				EN	3.3.2	0.0.2	0	0	0.0.2	0	3.3.2	
<i>Somateria mollissima</i>	Common eider	None																				LC	0.0.10	0	0	0	0	0.0.1	0.0.9	
Falconiformes																														
Accipitridae																														
<i>Aegypius monachus</i>	Eurasian black vulture	Exhibit enhancement		x		x	x	x	x													NT	1.1.0	0	0	0	0	0	1.1.0	
<i>Gyps fulvus</i>	Eurasian griffon vulture	Exhibit enhancement			x																	LC	1.1.0	0	0	0	0	0	1.1.0	ESB
Cathartidae																														
<i>Coragyps atratus</i>	American black vulture	Exhibit enhancement																				LC	0.1.0	0	0	0	0	0	0.1.0	
<i>Vultur gryphus</i>	Andean condor	Education			x	x	x	x	x													NT	1.1.0	0	0	0	0	0	1.1.0	EEP
Galliformes																														
Cracidae																														
<i>Crax blumenbachii</i>	Red-billed curassow	Cons in situ support		x																		EN	1.1.0	0	0	0	0	0	1.1.0	EEP
Phasianidae																														
<i>Chrysolophus amherstiae</i>	Lady amherst's pheasant	Cons in situ support		x																		LC	0.1.0	0	0	0	0	0	0.1.0	
<i>Gallus gallus</i>	Red junglefowl	Education																				LC	1.1.0	0	0	0	0	0	1.1.0	
<i>Lophophorus impejanus</i>	Himalayan monal	Research - cons and training																				LC	2.1.0	0.0.4	0	1.0.0	0.0.1	0	1.1.3	
<i>Lophura hatinhensis</i>	Vietnamese pheasant	None																				EN	2.2.0	0	0	0	0	0	2.2.0	
<i>Polyplectron emphanum</i>	Palawan peacock pheasant	Cons in situ support		x		x																VU	3.3.0	0.0.1	0	0	0.0.1	0.1.0	3.2.0	EEP
<i>Rollulus rouloul</i>	Roul roul partridge	Exhibit enhancement																				NT	20.9.1	0.0.14	0	1.3.4	0.0.8	0	21.7.0	
<i>Tragopan caboti</i>	Cabot's tragopan	Exhibit enhancement																				VU	0	0	1.0.0	0	0	0	1.0.0	
<i>Tragopan temminckii</i>	Temminck's tragopan	Cons in situ support		x																		LC	0	0	1.1.0	0	0	0	1.1.0	

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Scientific name	Common Name	Primary Role	Species Roles												IUCN status	Stock 31/12/2009	Births	Imports	Deaths	DNS (30 days)	Exports	Stock 31/12/2010	Managed Programme		
			Conservation		Education				Research		Visitor Experience		No Current Role												
			<i>Ex situ</i> breeding	<i>In situ</i> support	Interdependence	Importance	Destruction	Partnerships	Chester Zoo	Youl	Cons research/training	General research		Exhibit enhancement										Theme enhancement	
Gruiformes																									
Gruidae																									
<i>Anthropoides paradisea</i>	Blue crane	Cons <i>in situ</i> support	x			x										VU	0.1.0	0	1.0.0	0	0	0	0	1.1.0	ESB
<i>Balearica pavonina pavonina</i>	West African crowned crane	Cons <i>in situ</i> support	x	x		x										VU	2.1.1	0.0.6	0.1.0	0.0.1	0.0.4	0	0	2.2.2	ESB
<i>Balearica regulorum</i>	Grey-crowned crane	Cons <i>in situ</i> support	x												x	VU	0	0	1.1.0	1.0.0	0	0	0	0.1.0	
<i>Bugeranus carunculatus</i>	Wattled crane	Cons <i>in situ</i> support	x													VU	1.1.0	0	0	0	0	0	0	1.1.0	ESB
<i>Grus japonensis</i>	Red-crowned crane	Education				x										EN	1.1.0	0	0	0	0	0	0	1.1.0	EEP
Charadriiformes																									
Charadriidae																									
<i>Vanellus vanellus</i>	Northern lapwing															LC	0.0.4	0	0	0	0	0	0.4	0	
Columbiformes																									
Columbidae																									
<i>Caloenas nicobarica</i>	Nicobar pigeon	Exhibit enhancement														NT	3.1.0	0	0.2.0	1.0.0	0	0	0	2.3.0	
<i>Chalcophaps indica</i>	Emerald dove	Exhibit enhancement														LC	0	0	0.0.2	0.0.1	0	0	0	0.0.1	
<i>Columba guinea</i>	Speckled pigeon	None														LC	0.0.22	0	0	0.0.3	0	0	0	0.0.19	
<i>Columba livia</i>	Rock dove	Exhibit enhancement														LC	0.0.9	0	0	0.0.1	0	0	0	0.0.8	
<i>Ducula bicolor</i>	Pied imperial pigeon	Exhibit enhancement														LC	0.0.16	0.0.4	0	0.0.1	0.0.1	0	0	0.0.18	
<i>Gallicolumba criniger</i>	Mindanao bleeding-heart dove	Cons <i>in situ</i> support	x			x	x	x	x	x						VU	4.2.0	0.3.0	0.1.0	1.1.0	0	2.3.0	1.2.0	1.2.0	ESB
<i>Gallicolumba luzonica</i>	Luzon bleeding-heart dove	Cons <i>in situ</i> support	x			x	x	x	x							NT	1.0.0	0	0	0	0	0	0	1.0.0	ESB
<i>Gallicolumba rufigula</i>	Golden heart pigeon	Exhibit enhancement														LC	2.0.0	0	0	0	0	0	0	2.0.0	
<i>Goura victoria</i>	Victoria crowned pigeon	Exhibit enhancement														VU	1.1.0	0.0.1	0	0	0	0	0	1.1.1	ESB
<i>Leucosarcia melanoleuca</i>	Wonga pigeon															IC	0.1.0	0	0	0.1.0	0	0	0	0	
<i>Ocyphaps lophotes</i>	Crested bronzewing pigeon	None														LC	0.0.7	0	0	0.0.1	0	0	0	0.0.6	
<i>Otidiphaps nobilis aruensis</i>	White-naped pheasant pigeon	Exhibit enhancement														LC	1.1.0	0.0.1	0	0	0.0.1	0	0	1.1.0	ESB
<i>Otidiphaps nobilis nobilis</i>	Green-naped pheasant pigeon	Exhibit enhancement														LC	1.1.0	0.0.2	0	0	0.0.2	0	0	1.1.0	
<i>Ptilinopus melanospila</i>	Black-naped fruit dove	Theme enhancement														LC	0	0	1.1.1	0.0.1	0	0	0	1.1.0	
<i>Ptilinopus superbus</i>	Superb fruit dove	Exhibit enhancement														LC	0	3.0.1	1.2.0	0	0.0.1	0	0	4.2.0	
<i>Zenaida graysoni</i>	Socorro dove	Cons <i>ex situ</i> breeding	x													EW	3.4.0	1.2.0	0	1.1.0	0	0.2.0	3.3.0	3.3.0	EEP
Psittaciformes																									
Psittacidae																									
<i>Amazona autumnalis lilacina</i>	Ecuadorian Amazon	Education														CR	8.6.0	0.0.3	0	0	0	1.2.0	7.4.3	7.4.3	EEP
<i>Amazona brasiliensis</i>	Red-tailed Amazon	Cons <i>ex situ</i> breeding	x			x										VU	2.2.0	0	0	0	0	1.1.0	1.1.0	1.1.0	EEP
<i>Amazona versicolor</i>	St Lucia Amazon	None				x										VU	2.0.0	0	0	0	0	2.0.0	2.0.0	2.0.0	ESB
<i>Amazona viridigenalis</i>	Green-cheeked Amazon	Cons <i>ex situ</i> breeding	x													EN	1.1.0	0.0.3	0	0	0	0	0	1.1.3	EEP
<i>Anodorhynchus hyacinthinus</i>	Hyacinth macaw	Education				x	x	x	x							EN	3.2.0	0.0.1	0	0	0.0.1	1.0.0	2.2.0	2.2.0	EEP
<i>Ara couloni</i>	Blue-headed macaw	None														VU	1.1.0	0	0	0	0	0	0	1.1.0	
<i>Ara glaucogularis</i>	Blue-throated macaw	Cons <i>in situ</i> support		x		x	x	x	x							CR	3.3.0	0	0	0	0	0	0	3.3.0	EEP
<i>Aratinga guarouba</i>	Golden conure	Cons <i>ex situ</i> breeding	x													EN	2.2.0	0	0	0	0	0	0	2.2.0	ESB
<i>Cacatua haematuropygia</i>	Philippine cockatoo	Cons <i>ex situ</i> breeding	x	x			x	x	x	x						CR	5.1.0	0	0	0	0	0	0	5.1.0	EEP
<i>Cacatua sulphurea sulphurea</i>	Sulphur-crested cockatoo	Cons <i>in situ</i> support		x												CR	2.2.0	0	0	0.1.0	0	0	0	2.1.0	
<i>Eos histrio</i>	Red and blue lory	Cons <i>ex situ</i> breeding	x			x										EN	1.1.0	0	0	0	0	0	0	1.1.0	ESB
<i>Lorius domicellus</i>	Purple-naped lory	Cons <i>ex situ</i> breeding	x													VU	1.1.0	0	0	0	0	0	0	1.1.0	ESB
<i>Lorius garrulus flavopalliatu</i>	Yellow-backed chattering lory	None														VU	4.2.0	0.0.4	0	0	0	2.0.0	2.2.4	2.2.4	
<i>Psittacula derbiana</i>	Derbyan parakeet	Education				x	x	x	x	x						LC	6.6.3	0.0.7	0	1.0.1	0.0.3	0	0	5.6.6	
<i>Pyrrhura cruentata</i>	Blue-throated conure	None														VU	2.1.0	0	0	0	0	0	0	2.1.0	
<i>Pyrrhura leucotis griseipectus</i>	Grey-breasted conure	None														CR	0.2.0	0	2.0.0	0	0	0	0	2.2.0	
<i>Trichoglossus johnstoniae</i>	Mount apo lorikeet	Cons <i>in situ</i> support		x												NT	3.1.0	0.0.5	0	1.0.1	0.0.4	0	0	2.1.0	ESB

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Scientific name	Common Name	Primary Role	Species Roles											IUCN status	Stock 31/12/2009	Births	Imports	Deaths	DNS (30 days)	Exports	Stock 31/12/2010	Managed Programme
			Conservation		Education				Research		Visitor Experience		No Current Role									
			Ex situ breeding	In situ support	Interdependence	Importance	Destruction	Partnerships	Chester Zoo	Youl	Cons research/training	General research										
Cucliformes																						
Musophagidae																						
<i>Tauraco corythaix fischeri</i>	Fischer's turaco	Education																				
<i>Tauraco corythaix schalowi</i>	Schalow's turaco	Exhibit enhancement											x									
<i>Tauraco leucolophus</i>	White-crested turaco	Exhibit enhancement											x									
<i>Tauraco leucotis</i>	White-cheeked turaco																					
<i>Musophaga violacea</i>	Violet plantain eater	Exhibit enhancement											x									
<i>Corythaixoides leucogaster</i>	White-bellied go away bird	None											x									
Strigiformes																						
Strigidae																						
<i>Bubo scandiaca</i>	Snowy owl																					
<i>Otus leucotis</i>	White-faced scops owl	Education																				
<i>Pulsatrix perspicillata</i>	Spectacled owl	Education				x																
<i>Strix leptogrammica</i>	Brown wood owl	Education																				
<i>Strix nebulosa lapponica</i>	Great grey owl	Education				x																
<i>Sumia ulula</i>	Northern hawk owl	Education																				
Caprimulgiformes																						
Podargidae																						
<i>Podargus strigoides</i>	Tawny frogmouth	Education				x																
Coraciiformes																						
Alcedinidae																						
<i>Todiramphus chloris</i>	White-collared kingfisher	Exhibit enhancement											x									
Bucerotidae																						
<i>Aceros corrugatus</i>	Wrinkled hornbill	Cons in situ support	x							x												
<i>Aceros leucocephalus</i>	Mindanao writhed-billed hornbill	Cons in situ support	x		x	x	x	x		x												
<i>Buceros bicornis</i>	Great hornbill	Cons in situ support	x		x	x	x	x	x													
<i>Buceros rhinoceros silvestris</i>	Javan rhinoceros hornbill	Cons in situ support	x	x	x	x	x	x	x													
<i>Penelopides panini panini</i>	Visayan tarictic hornbill	Cons in situ support	x		x	x	x	x														
<i>Tockus deckeni</i>	Von der decken's hornbill	Exhibit enhancement											x									
Coraciidae																						
<i>Coracias caudatus</i>	Lilac-breasted roller	Exhibit enhancement											x									
Phoeniculidae																						
<i>Phoeniculus purpureus</i>	Green wood hoopoe	Exhibit enhancement											x									
Piciformes																						
Ramphastidae																						
<i>Lybius melanopterus</i>	Brown-breasted barbet	Exhibit enhancement											x									
<i>Tachyphonus erythrocephalus</i>	Red and yellow barbet	Exhibit enhancement											x									
Passeriformes																						
Corvidae																						
<i>Cyanocorax yncas</i>	Green jay	Exhibit enhancement											x									
<i>Cyanopica cyanus</i>	Azure-winged magpie	Exhibit enhancement											x									
<i>Pyrrhocorax pyrrhocorax</i>	Red-billed chough	Exhibit enhancement	x	x						x			x									
<i>Urocissa erythrorhyncha</i>	Red-billed blue magpie	Exhibit enhancement											x									
Emberizidae																						
<i>Paroaria dominicana</i>	Red-cowled cardinal	Exhibit enhancement											x									

Bird Stocklist (page 5 of 5)

Scientific name	Common Name	Primary Role	Species Roles											IUCN status	Stock 31/12/2009	Births	Imports	Deaths	DNS (30 days)	Exports	Stock 31/12/2010	Managed Programme								
			Conservation		Education				Research		Visitor Experience		No Current Role																	
			Ex situ breeding	In situ support	Interdependence	Importance	Destruction	Partnerships	Chester Zoo	Youl	Cons research/ training	General research											Exhibit enhancement	Theme enhancement						
Estrildidae																														
<i>Padda fuscata</i>	Timor sparrow	Theme enhancement																			NT	0.019	0.09	3.52	0.04	0.01	0.010	3.515		
<i>Padda oryzivora</i>	Java sparrow	Exhibit enhancement																				VU	0.072	0.028	0	0	0.01	0.021	0.078	
<i>Taeniopygia guttata</i>	Timor zebra finch	Theme enhancement																				LC	0.02	0	0.20	0	0	0	2.20	
Fringillidae																														
<i>Mycerobas affinis</i>	Collared grosbeak	Exhibit enhancement																				LC	0.10	0	2.00	0	0	2.10	2.10	
Icteridae																														
<i>Icterus oberi</i>	Montserrat oriole	Education			x	x	x	x	x													CR	1.20	0.08	0.10	0	0.08	0	1.30	
Irididae																														
<i>Irena puella</i>	Fairy bluebird	Exhibit enhancement																				LC	3.30	0.01	0	0.10	0.01	0	3.20	
Muscicapidae																														
<i>Copsychus malabaricus</i>	White-rumped shama	Exhibit enhancement																				LC	2.20	3.67	0	0.04	0.01	1.22	4.60	
<i>Cossypha niveicapilla</i>	Snowy-crowned robin chat	Exhibit enhancement																				LC	0.20	0.01	3.00	1.01	0	0	2.20	
<i>Niltava sundara</i>	Rufous-bellied niltava	Research cons/training																				LC	2.20	0	0	1.00	0	0	1.20	
Paradisaeidae																														
<i>Paradisaea rubra</i>	Red bird of paradise	Education				x	x	x	x													NT	3.30	0	0	2.00	0	0	1.30	
Ploceidae																														
<i>Dinemellia dinimelli</i>	White-headed buffalo weaver	None																				LC	1.10	0	0	0	0	1.10	1.10	
<i>Foudia madagascariensis</i>	Madagascar fody	Exhibit enhancement		x																		LC	0.02	0	0.012	0.01	0	0	0.013	
<i>Ploceus castaneiceps</i>	Taveta golden weaver	Exhibit enhancement																				LC	1.00	0	0	0	0	0	1.00	
<i>Ploceus cucullatus cucullatus</i>	Village weaver	Exhibit enhancement		x																		LC	9.15	0.08	0	1.00	0	0	8.113	
<i>Ploceus nigricollis nigricollis</i>	Black-necked weaver	Exhibit enhancement																				LC	0	0	1.22	0.10	0	0	1.12	
Sturnidae																														
<i>Aplonis panayensis</i>	Asian glossy starling	Exhibit enhancement																				LC	0.019	0.016	0	0.02	0.02	0	0.031	
<i>Cinnyricinclus leucogaster</i>	Amethyst starling	Exhibit enhancement																				LC	0.13	0	0	0.10	0	0	3.00	
<i>Coccycolius iris</i>	Emerald starling	Exhibit enhancement																				DD	0.025	0.08	0	0	0	0	0.033	
<i>Cosmopsarus regius</i>	Royal starling	Exhibit enhancement																				LC	1.10	0.03	0	1.10	0.01	0	0.02	
<i>Lamprotornis superbus</i>	Superb starling	Exhibit enhancement																				LC	0.14	0	0	0.01	0	0	0.04	
<i>Leucopsar rothschildi</i>	Bali starling	Cons ex-situ breeding	x																			CR	2.10	0	0	0	0	1.00	1.10	EEP
<i>Scissirostrum dubium</i>	Grosbeak starling	Theme enhancement																				LC	1.42	2.12	0	0.10	0.02	0	3.42	
<i>Spreo bicolor</i>	African pied starling	None																				LC	0.01	0	0	0	0	0	0.01	
Thraupidae																														
<i>Ramphocelus bresilius</i>	Brazilian tanager	Exhibit enhancement																				LC	1.10	0	2.00	1.00	0	0	2.10	
Timaliidae																														
<i>Garrulax bicolor</i>	Sumatran laughingthrush	Exhibit enhancement																				VU	1.40	0	1.00	0	0	0	2.40	ESB
<i>Garrulax courtosi</i>	Blue-crowned laughingthrush	Cons in situ support		x	x																	CR	5.41	1.12	0	1.11	0.01	1.10	4.31	ESB
<i>Garrulax milnei</i>	Red-tailed laughingthrush	Exhibit enhancement																				LC	1.20	0.01	0	0.10	0.01	0	1.10	
<i>Leiothrix lutea</i>	Pekin robin	Exhibit enhancement																				LC	1.026	8.65	1.00	0.01	0.05	8.41	2.224	
<i>Liocichla omeiensis</i>	Grey-cheeked liocichla	Cons in situ support		x	x																	VU	3.30	0	2.00	2.00	1.00	0	2.30	ESB
<i>Yuhina diademata</i>	White-collared yuhina	Exhibit enhancement																				LC	1.00	0	0	0	0	0	1.00	
Turdidae																														
<i>Zosterops citrina</i>	Orange-headed thrush	Exhibit enhancement																				LC	4.60	0	0	0.10	0	2.40	2.10	
<i>Zosterops dohertyi</i>	Chestnut-backed thrush	Theme enhancement																				NT	3.30	0.13	0	0	0.03	2.00	1.40	ESB
Zosteropidae																														
<i>Zosterops euryzoticus</i>	African montane white-eye	Research – cons/training																				LC	1.20	0	0.20	0.10	0	0	1.30	

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Scientific name	Common Name	Primary Role	Species Roles												IUCN status	Stock 31/12/2009	Births	Imports	Deaths	DNS (30 days)	Exports	Stock 31/12/2010	Managed Programme						
			Conservation		Education				Research		Visitor Experience		No Current Role																
			<i>Ex situ</i> breeding	<i>In situ</i> support	Interdependence	Importance	Destruction	Partnerships	Chester Zoo	Youl	Cons research/training	General research		Exhibit enhancement										Theme enhancement					
Serpentes		Snakes																											
Boidae																													
<i>Morelia viridis</i>	Green tree python	Theme enhancement				x	x													LC	0.1.0	0	0	0	0	0	0	0.1.0	
<i>Corallus caninus</i>	Emerald tree boa	Education			x	x														NE	0.0.2	0	0	0.0.1	0	0	0	0.0.1	
<i>Epicrates subflavus</i>	Jamaican boa	General research																		VU	16.8.0	0	0	0	0	0	0	16.8.0	EEP
<i>Eunectes murinus</i>	Green anaconda																			NE	1.1.0	0	0	0	0	1.1.0	0		
<i>Morelia boeleni</i>	Boelen's python	General research																		NE	1.1.0	0	0	0	0	0	0	1.1.0	
<i>Python reticulatus</i>	Reticulated python	Education			x	x	x													NE	0.2.0	0	0	0	0	0	0	0.2.0	
Colubridae																													
<i>Boiga dendrophila</i>	Mangrove snake	Theme enhancement					x													NE	1.4.2	0	0	0	0	0.0.2	1.4.0		
<i>Gonyosoma oxycephala</i>	Red-tailed racer	Theme enhancement																		NE	3.5.2	0	0	0	0	1.1.2	2.4.0		
<i>Spilotes pullatus</i>	Tiger rat snake																			NE	1.0.0	0	0	1.0.0	0	0	0		
<i>Elaphe carinata</i>	King rat snake	None																		NE	1.2.0	2.0.3	0	1.0.0	0	0.1.3	2.1.0		
<i>Elaphe guttata</i>	Corn snake	Education			x	x														NE	2.3.0	0	0	0	0	0	2.3.0		
<i>Elaphe obsoleta obsoleta</i>	Black rat snake	None																		NE	1.0.0	0	0	0	0	0	1.0.0		
<i>Rhynchophis boulengeri</i>	Rhinoceros rat snake	None																		NE	1.1.0	0.0.5	1.1.2	0	0	0	3.3.5		
<i>Thamnophis sirtalis tetrataenia</i>	San Francisco garter snake	Cons <i>ex situ</i> breeding	x																	LC	0.2.0	0	0	0	0	0	0.2.0	ESB	
Viperidae																													
<i>Bothriechis schlegelii</i>	Eyelash viper	Theme enhancement																		NE	3.1.0	0.0.11	1.0.0	0	0.0.2	0	4.1.9		
<i>Bitis gabonica</i>	Gaboon viper	Education			x	x	x													NE	0.2.0	0	0	0	0	0	0.2.0		
<i>Bitis nasicornis</i>	Rhinoceros viper	None																		NE	0	0	1.1.0	0	0	0	1.1.0		
<i>Cryptelytrops albolabris</i>	White-lipped viper	Theme enhancement					x													LC	2.1.0	0	0	0	0	0	2.1.0		
Sauria		Lizards																											
Agamidae																													
<i>Acanthosaura capra</i>	Forest lizard	Theme enhancement																		NE	1.1.0	0	0	0	0	0	1.1.0		
<i>Gonocephalus bellii</i>	Bell's angle-headed lizard	Theme enhancement																		NE	0	0	2.2.0	1.0.0	0	0	2.2.0		
<i>Gonocephalus doriae</i>	Dragon lizard	Theme enhancement																		NE	0	0	1.1.0	0	0	0	1.1.0		
<i>Uromastyx dispar</i>	Sudanese dab lizard	None																		NE	2.3.0	0	0	0	0	2.3.0	0		
Chamaelionidae																													
<i>Chamaeleo calyptratus</i>	Yemen chameleon	None																		NE	1.1.2	0	0	0	0	0	3.1.0		
Helodermatidae																													
<i>Heloderma suspectum</i>	Gila monster	Education					x													NT	2.1.0	0	0	0	0	0	2.1.0	EEP	
<i>Heloderma horridum</i>	Beaded lizard	Education					x													LC	2.4.0	0	0.0.2	0.1.0	0	0	2.3.2	EEP	
Iguanidae																													
<i>Brachylophus fasciatus</i>	Fiji banded iguana	None																		EN	1.0.0	0	0	0	0	0	1.0.0	ESB	
<i>Ctenosaura bakeri</i>	Utilla Island iguana	Cons <i>ex situ</i> breeding	x				x	x												CR	1.1.0	0.0.5	0	0	0	0	1.1.5	ESB	
<i>Cyclura cornuta</i>	Rhinoceros iguana	Education					x	x												VU	0.1.0	0	0	0	0	0	0.1.0	ESB	
<i>Iguana delicatissima</i>	Lesser antillean iguana	Education					x	x												EN	1.1.0	0	0	0	0	0	1.1.0		

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Scientific name	Common Name	Primary Role	Species Roles												IUCN status	Stock 31/12/2009	Births	Imports	Deaths	DNS (30 days)	Exports	Stock 31/12/2010	Managed Programme				
			Conservation		Education				Research		Visitor Experience		No Current Role														
			<i>Ex situ</i> breeding	<i>In situ</i> support	Interdependence	Importance	Destruction	Partnerships	Chester Zoo	Youl	Cons research/training	General research		Exhibit enhancement										Theme enhancement			
Lacertidae																											
<i>Lacerta agilis</i>	Sand lizard	Cons <i>ex situ</i> breeding	x	x		x	x	x	x										LC	0.022	0.029	0	0.01	0.01	0.024	c.25	SRP
Phrynosomatidae																											
<i>Sceloporus cyanogenys</i>	Blue spiny lizard	Education				x													LC	3.3.0	0	0	1.2.0	0	0	2.1.0	
Teiidae																											
<i>Dracaena guianensis</i>	Caiman lizard	Education				x							x						NE	1.1.3	0	0	0	0	0	1.1.3	
Varanidae																											
<i>Varanus indicus</i>	Mangrove monitor	Theme enhancement				x													LC	1.1.0	0	0	1.0.0	0	0	0.1.0	
<i>Varanus komodoensis</i>	Komodo dragon	Cons <i>in situ</i> support	x	x		x	x	x	x										VU	2.1.0	0	1.0.0	1.0.0	0	0	2.1.0	EEP
<i>Varanus prasinus</i>	Emerald tree monitor	Theme enhancement																	NE	1.0.0	0	0.1.0	0	0	0	1.1.0	ESB
<i>Varanus salvadorii</i>	Crocodile monitor	Theme enhancement				x													NE	1.1.0	0	0	0	0	0	1.1.0	
Testudines																											
Turtles																											
Bataguridae																											
<i>Cuora galbinifrons</i>	Flower-back box turtle	Cons <i>ex situ</i> breeding	x																CR	1.2.5	0	0	0	0	0	1.2.5	TSA
<i>Cuora trifasciata</i>	Three-striped box turtle	Cons <i>ex situ</i> breeding	x																CR	1.1.8	0	0.0.1	0	0	0.0.6	1.1.3	TSA
<i>Cuora zhoui</i>	Zhou's box turtle	Cons <i>ex situ</i> breeding	x																CR	1.1.0	0	0	0	0	0	1.1.0	TSA
<i>Geoemyda spengleri</i>	Black-breasted leaf turtle	Cons <i>ex situ</i> breeding	x																EN	2.3.0	0	0	0	0	0	2.3.0	TSA
<i>Heosemys spinosa</i>	Spiny hill turtle	Cons <i>ex situ</i> breeding	x																EN	2.4.0	0	0	0	0	0	2.4.0	ESB
<i>Mauremys annamensis</i>	Annam leaf turtle	Cons <i>ex situ</i> breeding	x																CR	2.3.7	0	0	0	0	0.0.3	2.3.4	ESB
<i>Sacalia bealei</i>	Beal's four-eyed turtle																		EN	1.1.1	0	0	0	0	0.0.3	0	
<i>Sacalia quadriocellata</i>	Four-eyed turtle																		EN	2.2.0	0	0	0	0	2.2.0	0	
Carretochelidae																											
<i>Carettochelys insculpta</i>	Fly river turtle	None																	VU	0.0.2	0	0	0	0	0	0.0.2	
Chelidae																											
<i>Chelodina mccordi</i>	Roti island turtle	Cons <i>ex situ</i> breeding	x																CR	1.3.0	0.0.1	0	0	0	0	1.3.1	TSA
Testudinidae																											
<i>Geochelone nigra</i>	Galapagos giant tortoise	Education				x													VU	1.3.0	0	0	0	0	0	1.3.0	ESB
<i>Astrochelys radiata</i>	Radiated tortoise	Cons <i>ex situ</i> breeding	x			x	x												CR	2.1.7	0.0.1	0	0	0	0	2.1.8	ESB
<i>Testudo kleinmanni</i>	Egyptian tortoise	Cons <i>ex situ</i> breeding	x																CR	5.5.0	0	0	3.1.0	0	0	2.4.0	EEP
Crocodylia																											
Crocodyliidae																											
<i>Crocodylus mindorensis</i>	Philippine crocodile	Cons <i>ex situ</i> breeding	x	x	x	x	x	x	x										CR	1.1.0	0	0	0	0	0	1.1.0	Phase in EEP
Rhyncocephalia																											
Tuatara																											
Sphenodontidae																											
<i>Sphenodon punctatus</i>	Tuatara	Education				x	x	x	x										LC	1.5.0	0	0	0	0	0	1.5.0	

Amphibian Stocklist

Scientific name	Common Name	Primary Role	Species Roles												IUCN status	Stock 31/12/2009	Births	Imports	Deaths	DNS (30 days)	Exports	Stock 31/12/2010	Managed Programme				
			Conservation		Education				Research		Visitor Experience		No Current Role														
			<i>Ex situ</i> breeding	<i>In situ</i> support	Interdependence	Importance	Destruction	Partnerships	Chester Zoo	Youl	Cons research/training	General research		Exhibit enhancement										Theme enhancement			
Anura																											
Alytidae																											
<i>Alytes muletensis</i>	Mallorcan midwife toad	Education			x	x	x	x	x										VU	0.0.310	0	0	0.0.4	0.0.1	0.0.40	0.0.267	
Bufoidea																											
Bufoidea																											
<i>Pedostibes hosii</i>	Asian climbing toad	General research																	LC	7.2.0	0	0	2.0.0	0	0	5.2.0	
Ceratophryidae																											
<i>Ceratophrys cranwelli</i>	Chaco horned frog	Theme enhancement																	LC	0.1.0	0	0	0	0	0	0.1.0	
Dendrobatidae																											
<i>Adelphobates (Dendrobates) galactonotus</i>	Splashback poison dart frog																		LC	0.2.0	0	0	0	0	0.2.0	0	
<i>Dendrobates auratus</i>	Green and black poison dart frog	Education				x	x	x	x	x									LC	2.2.15	0.0.42	0.0.4	1.1.15	0.0.4	0.0.31	1.2.10	
<i>Dendrobates tinctorius 'azureus'</i>	Blue poison dart frog	Education				x													LC	6.7.12	0.0.36	0	1.0.3	0.0.2	0.0.31	5.7.12	
<i>Dendrobates leucomelas</i>	Yellow-banded poison arrow frog	Education				x	x	x	x	x									LC	5.2.3	0.0.23	0.0.4	1.0.3	0.0.5	0	4.2.22	
<i>Dendrobates tinctorius</i>	Dyeing poison dart frog	Exhibit enhancement																	LC	4.3.0	0	0	3.0.0	0	0	1.3.0	
<i>Ranitomeya (Dendrobates) lamasi</i>	Pasco poison dart frog	General research																	LC	3.1.1	0	0	0	0	0	3.1.1	
<i>Ranitomeya (Dendrobates) reticulatus</i>	Reticulated poison dart frog	General research																	LC	5.5.6	0.0.24	0	3.3.2	0.0.4	0.0.15	2.2.9	
<i>Phyllobates vittatus</i>	Golfodulcean poison dart frog	General research																	EN	5.4.0	0	0	1.0.0	0	3.4.0	1.0.0	
<i>Phyllobates terribilis</i>	Golden poison dart frog	Education				x	x	x	x	x									EN	1.1.11	0	0	1.1.2	0	0	0.0.9	
Hylidae																											
<i>Agalychnis moreletii</i>	Morelet's tree frog	Research cons/training		x															CR	27.23.0	0.0.1382	0	0.0.57	0.0.1197	0	27.23.143	
<i>Cruziohyla (Agalychnis) calcarifer</i>	Splendid leaf frog	Education				x	x	x	x	x									LC	4.4.0	0.0.61	0	0.1.16	0.0.15	0	4.3.30	
<i>Phrynohyas resinifictrix</i>	Mission golden-eyed frog	Exhibit enhancement																	LC	1.1.9	0	0	0	0	0	1.1.9	
Leptodactylidae																											
<i>Leptodactylus fallax</i>	Mountain chicken	Education		x		x	x	x	x										CR	4.2.0	0.0.58	0	0.0.16	0.0.5	0	4.2.37	ESB
Microhylidae																											
<i>Scaphiophryne marmorata</i>	Marbled frog																		VU	5.5.0	0	0	0	0	5.5.0	0	
Pipidae																											
<i>Pipa pipa</i>	Surinam toad	Education				x	x	x	x	x									LC	0.0.1	0	0	0	0	0	0.0.1	
Ranidae																											
<i>Lithobates vibicaria</i>	Green-eyed frog	Cons <i>ex situ</i> breeding	x	x															CR	7.13.20	0.0.5	0	1.15.1	0.0.2	0	18.6.2	
Rhacophoridae																											
<i>Theleiderma corticale</i>	Tonkin bug-eyed frog	General research																	DD	1.0.23	0	0.4.0	1.3.3	0	0.0.6	14.1.0	
Caudata																											
Ambystomatidae																											
<i>Ambystoma andersoni</i>	Lake Zacapu salamander	Cons <i>in situ</i> support	x	x		x	x	x	x										CR	3.2.23	0	0	0.0.7	0	0.0.4	3.2.12	
<i>Ambystoma mexicanum</i>	Axolotl	Education				x	x	x	x										CR	0.0.10	0	0	0.0.2	0	0	0.0.8	
Gymnophiona																											
Caeciliidae																											
<i>Typhlonectes natans</i>	Aquatic caecilian	Education				x	x	x	x	x									LC	0.0.4	0.0.10	0	0.0.1	0.0.2	0	0.0.11	

Fish Stocklist (page 1 of 4)

Scientific name	Common Name	Primary Role	Species Roles												IUCN status	Stock 31/12/2009	Births	Imports	Deaths	DNS (30 days)	Exports	Stock 31/12/2010	Managed Programme													
			Conservation		Education				Research		Visitor Experience		No Current Role																							
			Ex situ breeding	In situ support	Interdependence	Importance	Destruction	Partnerships	Chester Zoo	Youl	Cons research/training	General research		Exhibit enhancement										Theme enhancement												
Fresh Water																																				
Adrianchidae																																				
<i>Xenopoeilius sarasinorum</i>	Duck-billed fish	General research																	EN	18	36	0	7	13	0	34										
Anabantidae																																				
<i>Trichogaster leeri</i>	Pearl gourami	None																											10	0	0	4	0	0	6	
Atherinidae																																				
<i>Glossolepis incisus</i>	Red rainbow fish	Exhibit enhancement											X							VU	10	0	0	0	0	0	10									
<i>Melanotaenia lacustris</i>	Lake Kutubu rainbow fish	Exhibit enhancement												X						VU	29	0	0	2	0	0	27									
<i>Melanotaenia praecox</i>	Dwarf rainbow fish	None																		DD	4	0	0	1	0	0	3									
Callichthyidae																																				
<i>Corydoras panda</i>	Panda corydoras	Exhibit enhancement											X								20	0	0	1	0	0	19									
<i>Corydoras reticulatus</i>	Reticulated corydoras	None																			9	0	0	0	0	0	9									
<i>Corydoras sterbai</i>	Sterba's corydoras	Exhibit enhancement												X							76	28	0	0	26	0	78									
<i>Corydoras arcuatus</i>	Skunk corydoras	None																			1	0	0	0	0	0	1									
Characidae																																				
<i>Astyanax mexicanus jordani</i>	Mexican blind cave fish	Education			X	X															19	0	38	39	0	0	18									
<i>Brycinus longipinnis</i>	Long-finned characin	Exhibit enhancement											X	X						LC	200	114	0	8	0	50	256									
<i>Hemigrammus rhodostomus</i>	Rummy-nose tetra	Exhibit enhancement											X								33	0	0	2	0	0	31									
<i>Paracheirodon axelrodi</i>	Cardinal tetra	Exhibit enhancement											X								25	0	0	8	0	0	17									
Cichlidae																																				
<i>Konia eisentrautei</i>	Lake Barombi Mbo cichlid	None																			x	CR	30	0	0	1	0	0	29							
<i>Labeotropheus fuelleborni</i>	Lake Malawi cichlid	Education				X	X		X	X			X								LC	45	49	0	57	0	0	37								
<i>Labidochromis caeruleus</i>	Lake Malawi cichlid	Education				X	X		X	X			X								LC	15	0	0	1	0	0	14								
<i>Melanochromis parallelus</i>	Striped Mbuna cichlid	Education				X	X	X	X	X			X								LC	0	0	2	0	0	0	2								
<i>Paretroplus menarambo</i>	Pin-striped damba	None																			CR	65	0	0	19	0	10	36								
<i>Pseudotropheus socolofi</i>	Lake Malawi cichlid	Education				X	X		X				X								LC	100	0	0	0	0	0	100								
<i>Pseudotropheus zebra</i>	Lake Malawi cichlid	Education				X	X		X				X								LC	4	0	0	0	0	0	4								
<i>Pseudotropheus sp. 'Tropheus gold'</i>	Zebra cichlid	Education				X	X		X				X								LC	0	0	12	0	0	0	12								
<i>Pseudotropheus sp</i>	Zebra cichlid	Education				X	X		X				X								LC	0	0	14	0	0	0	14								
<i>Pungu maclareni</i>	Lake Barombi Mbo cichlid	None																			x	CR	26	0	0	3	0	0	23							
<i>Sarotherodon linnellii</i>	Lake Barombi Mbo cichlid	None																			x	CR	15	25	0	0	0	0	40							
<i>Sarotherodon lohbergeri</i>	Lake Barombi Mbo cichlid	None																			x	CR	20	0	0	1	0	0	19							
<i>Stomatepia mariae</i>	Lake Barombi Mbo cichlid	None																			x	CR	25	0	0	1	0	0	24							
<i>Stomatepia pindu</i>	Lake Barombi Mbo cichlid	None																			x	CR	42	0	0	2	0	0	40							
<i>Symphysodon aequifasciata axelrodi</i>	Brown discus	None																				10	34	0	4	0	0	40								
<i>Yssichromis (Haplochromis) argens</i>	Lake Victoria cichlid	None																				39	0	0	8	0	0	31								
<i>Yssichromis (Haplochromis) pyrrhocephalus</i>	Lake Victoria cichlid	None																				VU	13	0	0	13	0	0	0							
Cobitidae																																				
<i>Botia macracantha</i>	Clown loach	Exhibit enhancement											X	X								18	0	1	0	0	0	19								
<i>Yasuhikotakia (Botia) sidthimunki</i>	Dwarf loach	General research											X	X								CR	33	0	0	0	0	0	33							

Fish Stocklist (page 2 of 4)

Scientific name	Common Name	Primary Role	Species Roles												IUCN status	Stock 31/12/2009	Births	Imports	Deaths	DNS (30 days)	Exports	Stock 31/12/2010	Managed Programme
			Conservation		Education				Research		Visitor Experience		No Current Role										
			<i>Ex situ</i> breeding	<i>In situ</i> support	Interdependence	Importance	Destruction	Partnerships	Chester Zoo	Youl	Cons research/training	General research		Exhibit enhancement									
Cyprinidae																							
<i>Danio malabaricus</i>	Giant danio	None													x	LC	234	0	0	6	0	101	127
<i>Danio margaritatus</i>	Celestial pearl danio	None													x		71	46	0	17	0	0	100
<i>Garra barreimiae</i>	Omani blind cave fish	Cons <i>in situ</i> support		x												VU	93	0	0	6	0	0	87
<i>Puntius cumingii</i>	Cumming's barb	None													x	LR/CD	6	13	0	4	0	0	15
<i>Puntius denisonii</i>	Denison's barb	Cons <i>in situ</i> support		x							x	x	x			VU	85	51	0	12	5	0	119
<i>Puntius nigrofasciatus</i>	Black ruby barb	None													x	LR/CD	40	12	0	2	0	0	50
<i>Puntius titteya</i>	Cherry barb	None													x	LR/CD	45	32	0	17	0	0	60
<i>Probarbus jullieni</i>	Seven-striped barb	Theme enhancement														EN	6	0	0	0	0	0	6
<i>Trigonostigma heteromorpha</i>	Harlequin rasbora	None													x		18	0	0	9	0	0	9
Cyprinodontidae																							
<i>Ameioba splendens</i>	Butterfly goodeid	Cons <i>ex situ</i> breeding	x	x												EW	200	288	0	388	0	0	100
<i>Allotoca goslinei</i>	Banded allotoca	Cons <i>in situ</i> support		x													44	0	0	31	0	0	13
<i>Characodon audax</i>	Bold characodon	Cons <i>in situ</i> support		x												VU	40	25	0	25	0	0	40
<i>Characodon sp 'Abraham Gonzales'</i>	Characodon	Cons <i>in situ</i> support		x													56	20	0	41	0	0	35
<i>Pachypanchax omalonotus</i>	Nosy be killiefish	None														LC	14	0	0	4	0	10	0
<i>Pachypanchax sakaramyi</i>	Killiefish	Cons <i>ex situ</i> breeding	x													CR	9	92	0	32	3	20	46
<i>Skiffia francesae</i>	Golden saw-finned goodeid	Research cons/training	x	x							x					EW	300	440	0	127	18	50	545
<i>Xiphophorus helleri</i>	Green wagtail swordfish	None															77	211	0	233	0	0	55
<i>Zoogoneticus tequila</i>	Crescent zoe	Cons <i>ex situ</i> breeding	x	x												CR	104	0	0	12	0	0	92
Holocentridae																							
<i>Myripristis murdjan</i>	Pinecone soldierfish	None															1	0	0	1	0	0	0
Loricariidae																							
<i>Ancistrus dolichopterus</i>	Bristlenose plecostomus	None														LC	174	56	0	9	16	6	199
<i>Hypostomus plecostomus</i>	Plecostomus catfish	None															2	0	0	0	0	0	2
<i>Hypancistrus zebra</i>	Emperor peckoltia	General research	x								x						9	0	0	0	0	0	9
<i>Panaqolus maccus</i>	Ringlet pleco	None															4	0	0	0	0	0	4
<i>Rineloricaria lanceolata</i>	Chocolate-coloured catfish	Exhibit enhancement															8	0	0	2	0	0	6
Mormyridae																							
<i>Gnathonemus elephas</i>	Blunt jaw elephant trunkfish	Exhibit enhancement														LC	3	0	0	0	0	0	3
<i>Gnathonemus petersi</i>	Long-nosed elephant trunkfish	Exhibit enhancement														LC	11	0	0	0	0	0	11
<i>Marcusenrus angolensis</i>	Short-nosed elephant trunkfish	Exhibit enhancement															3	0	0	0	0	0	3
Mochokidae																							
<i>Synodontis angelicus</i>	Polka-dot upside-down catfish	None														LC	2	0	0	0	0	0	2
<i>Synodontis njassae</i>	Lake Malawi upside-down catfish	None														LC	4	0	0	0	0	0	4
<i>Synodontis polli</i>	Poll's upside-down catfish	None														LC	0	0	2	0	0	0	2
Osteoglossidae																							
<i>Scleropages formosus</i>	Asiatic arowana	Education				x	x									EN	1.1.0	0	0	1.0.0	0	0	0.1.0
Protopteridae																							
<i>Protopterus annectens</i>	African lungfish	Theme enhancement														LC	1	0	0	0	0	0	1

Invertebrate Stocklist (page 1 of 2)

Scientific name	Common Name	Primary Role	Species Roles										IUCN status	Stock 31/12/2009	Imports	Exports	Stock 31/12/2010	Managed Programme		
			Conservation		Education				Research		Visitor Experience									
			Ex situ breeding	In situ support	Interdependence	Importance	Destruction	Partnerships	Chester Zoo	Youl	Cons research/training	General research							Exhibit enhancement	Theme enhancement
Terrestrial																				
Arthropoda																				
Crustacea																				
Decapoda																				
<i>Coenobita clypeatus</i>	Land hermit crab	None													x	4	6	0	8	
Myriapoda																				
Diplopoda																				
<i>Archispirostreptus gigas</i>	African train millipede	Education														0	5	0	5	
Amblypygi																				
Phrynichidae																				
<i>Damon variegatus</i>	Tanzanian whipscorpion	Exhibit enhancement														0	1.1	0	1.1	
Arachnida																				
Araneae																				
<i>Brachypelma smithii</i>	Mexican red-knee tarantula	None													x	NT	1	0	0	1
<i>Brachypelma albopilosum</i>	Honduran curly-haired tarantula	Education														2	2	0	2	
<i>Lasiadora parahybana</i>	Brazilian salmon-pink bird-eating spider	None													x	1	0.1	0	0.1	
Scorpionidea																				
<i>Pandinus imperator</i>	Emperor scorpion	None														2	0	0	0	Y
Insecta																				
Coleoptera																				
<i>Chalcosoma atlas</i>	Atlas beetle	None														1	0	0	0	Y
<i>Pachnoda spp.</i>	Fruit beetle	None														150	0	20	150	
<i>Smaragdesthes africana oertzeni</i>	African flower beetle	None														100	0	80	100	
Dictyoptera																				
<i>Blaberus spp.</i>	South American giant cockroach	None														100+	0	0	100+	
<i>Gromphadorhina portentosa</i>	Madagascan hissing cockroach	Education			x	x	x									38	0	0	38	
Hymenoptera																				
<i>Atta cephalotes</i>	Leafcutter ant	Education			x											colony	0	0	colony	
Lepidoptera																				
<i>Various</i>		Education			x	x			x							143	0	0	250	
Mantodea																				
<i>Hymenopus comatus</i>	Orchid mantis	Theme enhancement														0.2	0.2	0	0.1	
<i>Pseudempusa pinnapavonis</i>	Peacock mantis	Theme enhancement														50	0	0	5	
Phasmida																				
<i>Aretaon asperrimus</i>	Sabah thorny stick insect	Education			x	x	x									50	0	0	50	
<i>Extatostoma tiaratum</i>	Macleay's spectre	Education														0	12	0	12	
<i>Heteropteryx dilatata</i>	Malaysian jungle nymph	Theme enhancement														21	0	0	36	
<i>Peruphasma schultzei</i>	Peruvian stick insect	Exhibit enhancement														53	0	4.4	200+	
<i>Phyllium spp.</i>	Leaf insect	Education														2	100+	0	100+	
<i>Pharnacea jianfengligensis</i>	Giant walking stick	None				x										2	0	8	100+	
<i>Trachyretacon brueckneri</i>	Giant thorny stick insect	Education														0	50	0	50	

Plant Stocklist (page 3 of 11)

Scientific name	Common Name	Primary Role	Species Roles											IUCN status	Stock 31/12/2009	Stock 31/12/2010	Managed Programme		
			Conservation		Education				Research		Visitor Experience		No Current Role						
			Ex situ breeding	In situ support	Interdependence	Importance	Destruction	Partnerships	Chester Zoo	Youl	Cons research/training	General research						Exhibit enhancement	Theme enhancement
Cactaceae																			
<i>Coryphantha longicornis</i>		Theme enhancement													x		NT		
<i>Echinocactus grusonii</i>	Golden barrel	Theme enhancement														x		CR	
<i>Escobaria chaffeyi</i>		Theme enhancement														x		VU	
<i>Ferocactus santamaria</i>		Theme enhancement														x		EN	
<i>Mammillaria angelensis</i>		Theme enhancement														x		VU	
<i>Mammillaria backbergiana</i> var. <i>erestii</i>		Theme enhancement														x		VU	
<i>Mammillaria bocasana</i>		Theme enhancement														x		VU	
<i>Mammillaria bocensis</i>		Theme enhancement														x		VU	
<i>Mammillaria bombycina</i>		Theme enhancement														x		VU	
<i>Mammillaria bullardiana</i>		Theme enhancement														x		VU	
<i>Mammillaria cerralboa</i>		Theme enhancement														x		VU	
<i>Mammillaria duoformis</i>		Theme enhancement														x		VU	
<i>Mammillaria hahniana</i>		Theme enhancement														x		VU	
<i>Mammillaria herrerae</i>		Theme enhancement														x		VU	
<i>Mammillaria kraehenbuehlii</i>		Theme enhancement														x		VU	
<i>Mammillaria magnifica</i>		Theme enhancement														x		VU	
<i>Mammillaria marksiana</i>		Theme enhancement														x		VU	
<i>Mammillaria matudae</i>		Theme enhancement														x		VU	
<i>Mammillaria mercadensis</i> ssp. <i>patonii</i>		Theme enhancement														x		VU	
<i>Mammillaria meyranii</i>		Theme enhancement														x		VU	
<i>Mammillaria microhelia</i>		Theme enhancement														x		VU	
<i>Mammillaria moelleriana</i>		Theme enhancement														x		VU	
<i>Mammillaria napina</i>		Theme enhancement														x		VU	
<i>Mammillaria oteroi</i>		Theme enhancement														x		VU	
<i>Mammillaria painteri</i>		Theme enhancement														x		VU	
<i>Mammillaria parkinsonii</i>		Theme enhancement														x		VU	
<i>Mammillaria peninsularis</i>		Theme enhancement														x		VU	
<i>Mammillaria pilcayensis</i>		Theme enhancement														x		VU	
<i>Mammillaria pillispina</i>		Theme enhancement														x		VU	
<i>Mammillaria pondii</i>		Theme enhancement														x		VU	
<i>Mammillaria pringlei</i>		Theme enhancement														x		VU	
<i>Matucana aurantiaca</i> ssp. <i>polzii</i>		Theme enhancement														x		DD	
<i>Matucana aureiflora</i>		Theme enhancement														x		EN	
<i>Matucana huagalensis</i>		Theme enhancement														x		EN	
<i>Matucana madisoniorum</i>		Theme enhancement														x		CR	
<i>Matucana oreodoxa</i>		Theme enhancement														x		EN	
<i>Matucana pujupatii</i>		Theme enhancement														x		VU	
<i>Matucana ritteri</i>		Theme enhancement														x		VU	
<i>Matucana tuberculata</i>		Theme enhancement														x		DD	
<i>Matucana weberbaueri</i>		Theme enhancement														x		EN	
<i>Pelecypora asseliformis</i>		Theme enhancement														x		VU	
<i>Stenocactus coptonogonus</i>		Theme enhancement														x		VU	
<i>Thelocactus bicolor</i>		Theme enhancement														x		VU	
<i>Turbincarpus alonsoi</i>		Theme enhancement														x		CR	
<i>Turbincarpus beguinii</i> ssp. <i>zaragozae</i>		Theme enhancement														x		VU	
<i>Turbincarpus gielsdorfianus</i>		Theme enhancement														x		CR	
<i>Turbincarpus hoferi</i>		Theme enhancement														x		CR	
<i>Turbincarpus horripilus</i>		Theme enhancement														x		VU	
<i>Turbincarpus laui</i>		Theme enhancement														x		VU	
<i>Turbincarpus lophophoroides</i>		Theme enhancement														x		VU	

Plant Stocklist (page 6 of 11)

Scientific name	Common Name	Primary Role	Species Roles											IUCN status	Stock 31/12/2009	Stock 31/12/2010	Managed Programme
			Conservation		Education				Research		Visitor Experience		No Current Role				
			Ex situ breeding	In situ support	Interdependence	Importance	Destruction	Partnerships	Chester Zoo	Youl	Cons research/training	General research					
Lamiaceae																	
<i>Clerodendrum laciniatum</i>		Cons <i>in situ</i> support		x													
<i>Stachys alpina</i>	Limestone woundwort	Cons <i>ex situ</i> breeding	x	x													
Oleaceae																	
<i>Syringa josikaca</i>														x		VU	
Plantaginaceae																	
<i>Hebe armstrongii</i>		Theme enhancement													x		VU
<i>Hebe cupressoides</i>		Theme enhancement													x		VU
Malpighiales																	
Euphorbiaceae																	
<i>Euphorbia mellifera</i>	Honey spurge	Theme enhancement													x		VU
Malpighiaceae																	
<i>Heteropterys purpurea</i>		Cons <i>ex situ</i> breeding	x														
Passifloraceae																	
<i>Passiflora kewensis x racemosa 'Pura Vida'</i>		Exhibit enhancement													x		
<i>Passiflora murucuja</i>		Exhibit enhancement													x		
<i>Passiflora organensis var. marmorata</i>		Exhibit enhancement													x		
<i>Passiflora tulae</i>		Exhibit enhancement													x		
Salicaceae																	
<i>Populus nigra ssp. betulifolia</i>	Black poplar	Cons <i>ex situ</i> breeding	x	x	x		x		x								
Malvales																	
Malvaceae																	
<i>Hibiscus fragilis</i>		Cons <i>ex situ</i> breeding	x														EN
<i>Hibiscus insularis</i>	Philip island hibiscus	Cons <i>ex situ</i> breeding	x														EN
<i>Hibiscus rosa-sinensis</i>	Chinese hibiscus	Education			x	x											
<i>Tilia xeuropaea</i>	Lime tree	Education			x	x											
<i>Trochetiopsis ebenus</i>	St. Helena ebony	Theme enhancement												x		EN	
Sterculiaceae																	
<i>Helicteres jamaicensis</i>		Cons <i>ex situ</i> breeding	x														
Myrtales																	
Combretaceae																	
<i>Terminalia bentzoe sp. rodriguesensis</i>		Cons <i>in situ</i> support		x													
Melastomataceae																	
<i>Charianthus purpureus</i>		Cons <i>ex situ</i> breeding	x														
<i>Clidemia umbrosa</i>																	
Oxalidales																	
Elaeocarpaceae																	
<i>Crinodendron hookerianum</i>	Chile lantern tree	Theme enhancement													x		VU

Plant Stocklist (page 7 of 11)

Scientific name	Common Name	Primary Role	Species Roles											IUCN status	Stock 31/12/2009	Stock 31/12/2010	Managed Programme
			Conservation		Education				Research		Visitor Experience		No Current Role				
			<i>Ex situ</i> breeding	<i>In situ</i> support	Interdependence	Importance	Destruction	Partnerships	Chester Zoo	Youl	Cons research/training	General research					
Proteales																	
Proteaceae																	
<i>Banksia integrifolia</i>	Australian honeysuckle	Education				x											
Ranunculales																	
Fumariaceae																	
<i>Dicentra spectabilis</i>	Bleeding hearts	None												x		DD	
Rosales																	
Rosaceae																	
<i>Cotoneaster cambricus</i>	Wild cotoneaster	Cons <i>ex situ</i> breeding	x													CR	
<i>Lyonothamnus floribundus ssp. asplenifolius</i>	Santa Cruz island ironwood	Theme enhancement												x		VU	
Moraceae																	
<i>Ficus religiosa</i>		Education				x											
<i>Ficus citrifolia</i>		Cons <i>ex situ</i> breeding	x														
Sapindales																	
Meliaceae																	
<i>Turraea lacinata</i>		Cons <i>in situ</i> support		x													
Rutaceae																	
<i>Phellodendron armurense</i>		Theme enhancement												x		EN	
Saxifragales																	
Crassulaceae																	
<i>Aeonium balsamiferum</i>		Theme enhancement												x		VU	
<i>Aeonium castellopaivae</i>		Theme enhancement												x		EN	
<i>Aeonium cuneatum</i>		Theme enhancement												x		VU	
<i>Aeonium goochiae</i>		Theme enhancement												x		EN	
<i>Aeonium haworthii</i>		Theme enhancement												x		EN	
<i>Aeonium rubrolineatum</i>		Theme enhancement												x		VU	
<i>Crassula rupestris ssp. marnierana</i>		Theme enhancement												x		EN	
<i>Crassula socialis</i>		Theme enhancement												x		VU	
<i>Echeveria laui</i>		Theme enhancement												x		DD	
<i>Kalanchoe faustii</i>		Theme enhancement												x		VU	
Ginkgoopsida																	
Ginkgoales																	
Ginkgoaceae																	
<i>Ginkgo biloba</i>	Maidenhair tree	Education				x										EN	
Magnoliids																	
Magnoliales																	
Magnoliaceae																	
<i>Magnolia soulangeana</i>	Chinese magnolia	Education			x	x											
<i>Michelia chapaensis</i>		Theme enhancement												x		VU	

Plant Stocklist (page 9 of 11)

Scientific name	Common Name	Primary Role	Species Roles											IUCN status	Stock 31/12/2009	Stock 31/12/2010	Managed Programme
			Conservation		Education				Research		Visitor Experience		No Current Role				
			Ex situ breeding	In situ support	Interdependence	Importance	Destruction	Partnerships	Chester Zoo	Youl	Cons research/training	General research					
Orchidaceae																	
<i>Bulbophyllum rothschildianum</i>		Theme enhancement											x				EN
<i>Calanthe rubens</i>		Theme enhancement												x			VU
<i>Cattleya trianae</i>		Theme enhancement												x			DD
<i>Coelogyne barbata</i>		Theme enhancement												x			DD
<i>Coelogyne cristata</i>		Theme enhancement												x			VU
<i>Coelogyne flaccida</i>		Theme enhancement												x			DD
<i>Dracula vampira</i>		Theme enhancement												x			VU
<i>Dracula wallisii</i>		Theme enhancement												x			VU
<i>Dryadella hirtzii</i>		Theme enhancement												x			VU
<i>Encyclia cochleata</i>		Theme enhancement												x			VU
<i>Encyclia mariae</i>		Theme enhancement												x			VU
<i>Epidendrum fimbriatum</i>		Theme enhancement												x			VU
<i>Laelia gouldiana</i>		Theme enhancement												x			EN
<i>Lepanthes cascajelensis</i>		Theme enhancement												x			VU
<i>Masdevallia agaster</i>		Theme enhancement												x			EN
<i>Masdevallia amaluzae</i>		Theme enhancement												x			EN
<i>Masdevallia andreetana</i>		Theme enhancement												x			VU
<i>Masdevallia carmenensis</i>		Theme enhancement												x			EN
<i>Masdevallia chaetostoma</i>		Theme enhancement												x			VU
<i>Masdevallia collina</i>		Theme enhancement												x			VU
<i>Masdevallia dynastes</i>		Theme enhancement												x			VU
<i>Masdevallia gilbertoi</i>		Theme enhancement												x			VU
<i>Masdevallia instar</i>		Theme enhancement												x			VU
<i>Masdevallia lynchiphora</i>		Theme enhancement												x			EW
<i>Masdevallia menatoi</i>		Theme enhancement												x			EW
<i>Masdevallia ova-avis</i>		Theme enhancement												x			VU
<i>Masdevallia panguiensis</i>		Theme enhancement												x			EN
<i>Masdevallia purpurella</i>		Theme enhancement												x			VU
<i>Masdevallia reichenbachiana</i>		Theme enhancement												x			VU
<i>Masdevallia rolfeana</i>		Theme enhancement												x			VU
<i>Masdevallia sanctae-inesae</i>		Theme enhancement												x			VU
<i>Masdevallia stenorhynchus</i>		Theme enhancement												x			VU
<i>Masdevallia towarensis</i>		Theme enhancement												x			DD
<i>Masdevallia veitchiana</i>		Theme enhancement												x			EN
<i>Paphiopedilum exul</i>		Theme enhancement												x			EN
<i>Paphiopedilum niveum</i>		Theme enhancement												x			DD
<i>Paphiopedilum philippinense</i>		Theme enhancement												x			DD
<i>Paphiopedilum rothschildianum</i>		Theme enhancement												x			EN
<i>Paphiopedilum wardii</i>		Theme enhancement												x			VU
<i>Pleurothallis aspergillum</i>		Theme enhancement												x			VU
<i>Pleurothallis cardiophylla</i>		Theme enhancement												x			DD
<i>Pleurothallis dodsonii</i>		Theme enhancement												x			VU
<i>Pleurothallis macrantha</i>		Theme enhancement												x			EN
<i>Pleurothallis pallida</i>		Theme enhancement												x			VU
<i>Pleurothallis phyllocardia</i>		Theme enhancement												x			EN
<i>Pleurothallis scoparum</i>		Theme enhancement												x			VU
<i>Pleurothallis volcanica</i>		Theme enhancement												x			VU
<i>Porroglossum amethystinum</i>		Theme enhancement												x			VU
<i>Porroglossum andrettae</i>		Theme enhancement												x			VU
<i>Porroglossum dalstroemii</i>		Theme enhancement												x			VU
<i>Restrepiopsis pandurata</i>		Theme enhancement												x			VU

Plant Stocklist (page 11 of 11)

Scientific name	Common Name	Primary Role	Species Roles											IUCN status	Stock 31/12/2009	Stock 31/12/2010	Managed Programme
			Conservation		Education				Research		Visitor Experience		No Current Role				
			<i>Ex situ</i> breeding	<i>In situ</i> support	Interdependence	Importance	Destruction	Partnerships	Chester Zoo	Youl	Cons research/training	General research					
Pteridopsida																	
Cyatheales																	
Dicksoniaceae																	
<i>Dicksonia antarctica</i>	Soft tree fern	Education				x											
Salviniales																	
Marsileaceae																	
<i>Pilularia globulifera</i>	Pillwort	Cons <i>ex situ</i> breeding	x														VU
Boraginaceae																	
<i>Echium pininana</i>		Theme enhancement											x				VU
<i>Echium wilpretii</i>		Theme enhancement											x				VU

Summary of Conservation Status of Collection

Animal Stock

As of 31st December 2010

	Number of Species End '09	Number of Species End '10	Number of Specimens End '09	Number of Specimens End '10
Mammals	76	77	1243	1303
Birds	145	143	1053	1085
Reptiles	48	46	228	229
Amphibians	23	21	618	733
Fishes	78	87	2809	3040
Invertebrates	40	45	1824	2391
Total	410	419	7775+	8781+

ISIS Animal Data Quality Management Figures

Data Quality 01/03/2011

	Number of Species End '09	Number of Species End '10
Transaction Link Rate	Linked 99%	ISIS Avg. 87%
Validated Parent Rate	Validated 99%	ISIS Avg. 96%
Data Reconciled with Worldwide Studbooks	Reconciled 95%	ISIS Avg. 81%
Studbooks Reconciled with ISIS Global Database	Reconciled 85%	ISIS Avg. 81%

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

Animal Summary

As of 31st December, 2010

	Threatened on the IUCN Red List	Managed Programmes	TOTAL IUCN &/or MANAGED PROGRAMMES
Mammals	42	54	96
Birds	48	46	94
Reptiles	18	21	39
Amphibians	8	1	10
Fishes	23	0	23
Invertebrates	5	7	12
Total in zoo	144	129	274

Summary of the conservation status of Chester Zoo's animal collection – IUCN Red List of Threatened Species

As of 31st December 2010

	Extinct in the Wild	Critically Endangered	Endangered	Vulnerable	Near Threatened	Least Concern	Data Deficient	Not Evaluated
Mammals	1	12	18	11	5	27	3	0
Birds	1	10	11	26	18	76	1	0
Reptiles	0	9	4	5	1	8	0	19
Amphibians	0	5	2	1	0	12	1	0
Fishes	3	10	4	6	0	25	2	37
Invertebrates	2	2	0	1	1	0	0	39
Total in zoo	7	48	39	50	25	148	7	95

Numbers of Plant Species on the IUCN Red List of Threatened Species

As of 31st December 2010

	Number of animals
Extinct in the Wild - EW	4
Critically Endangered - CR	26
Endangered - EN	58
Vulnerable - VU	155
Near Threatened - NT	12
Least Concern - LC	11
Data Deficient - DD	20
Not Evaluated - NE	44
Total in zoo	330

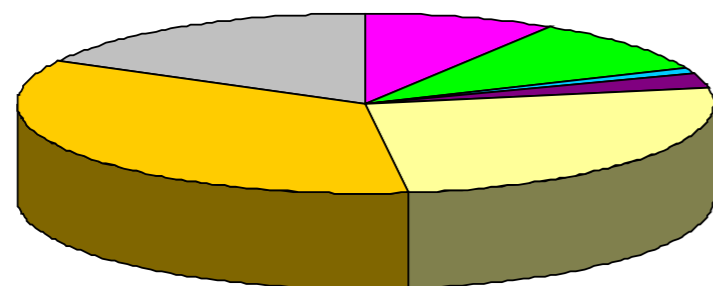
Total numbers of species and threatened species

As of 31st December, 2010

	Number of species in the zoo	Number of threatened species in the zoo
Animals	419	144
Plants	330	243
Total in zoo	749	387

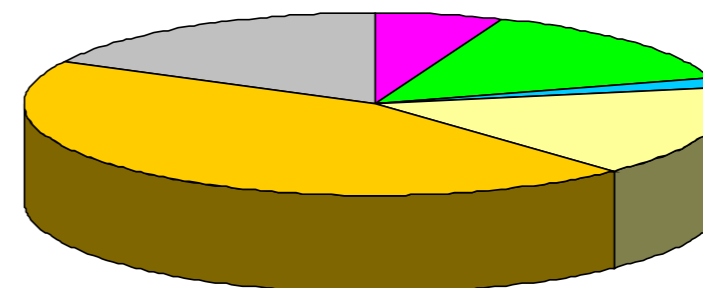
Summary of PRIMARY role by percentage

Summary of PRIMARY role fulfilled by **all animal species** at Chester Zoo in 2010



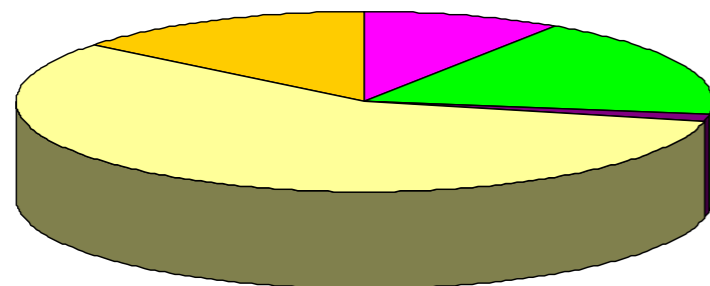
- Conservation *ex situ* breeding
- Conservation *in situ* support
- Research – conservation/training
- General research
- Education
- Visitor experience
- No current role

Summary of PRIMARY role fulfilled by **bird species** at Chester Zoo in 2010



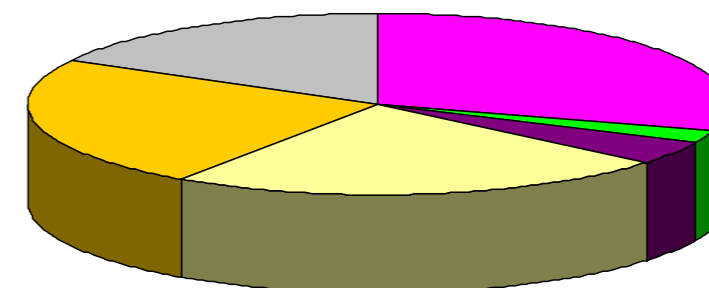
- Conservation *ex situ* breeding
- Conservation *in situ* support
- Research – conservation/training
- General research
- Education
- Visitor experience
- No current role

Summary of PRIMARY role fulfilled by **mammal species** at Chester Zoo in 2010



- Conservation *ex situ* breeding
- Conservation *in situ* support
- General research
- Education
- Visitor experience

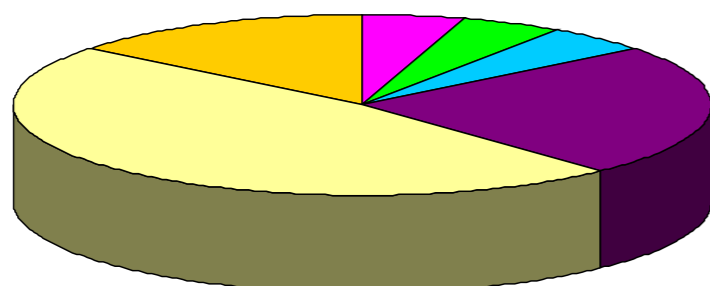
Summary of PRIMARY role fulfilled by **reptile species** at Chester Zoo in 2010



- Conservation *ex situ* breeding
- Conservation *in situ* support
- General research
- Education
- Visitor experience
- No current role

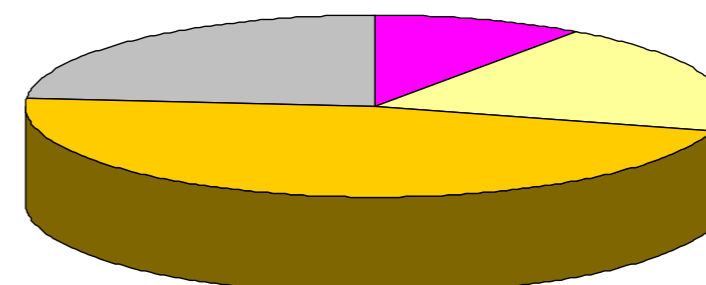
Summary of PRIMARY role by percentage

Summary of PRIMARY role fulfilled by **amphibian species** at Chester Zoo in 2010



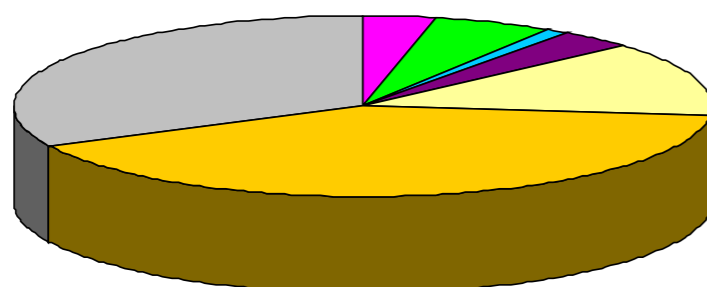
- Conservation *ex situ* breeding
- Conservation *in situ* support
- Research - conservation/training
- General research
- Education
- Visitor experience

Summary of PRIMARY role fulfilled by **invertebrate species** at Chester Zoo in 2010



- Conservation *ex situ* breeding
- Visitor experience
- Education
- No current role

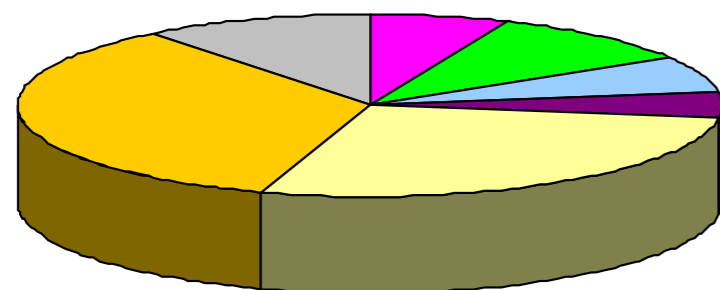
Summary of PRIMARY role fulfilled by **fish species** at Chester Zoo in 2010



- Conservation *ex situ* breeding
- Conservation *in situ* support
- Research - conservation/training
- General research
- Education
- Visitor experience
- No current role

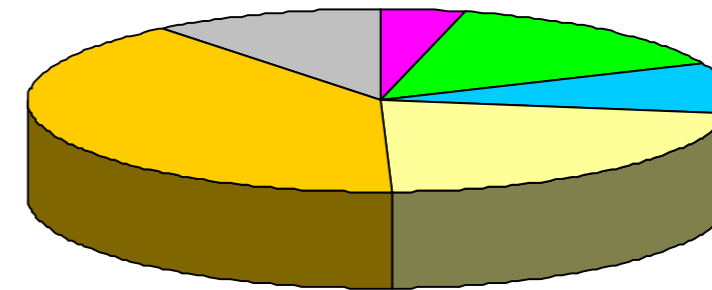
Summary of ALL roles by percentage

Summary of ALL roles fulfilled by **all animal species** at Chester Zoo in 2010



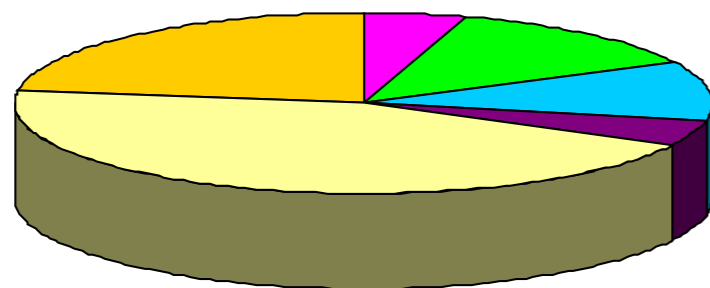
- Conservation *ex situ* breeding
- Conservation *in situ* support
- Research – conservation/training
- General research
- Education
- Visitor experience
- No current role

Summary of ALL roles fulfilled by **bird species** at Chester Zoo in 2010



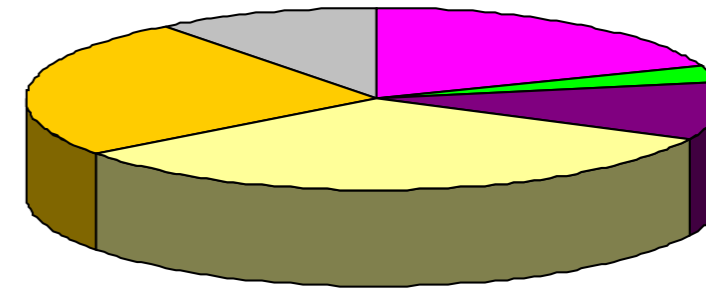
- Conservation *ex situ* breeding
- Conservation *in situ* support
- Research – conservation/training
- Education
- Visitor experience
- No current role

Summary of ALL roles fulfilled by **mammal species** at Chester Zoo in 2010



- Conservation *ex situ* breeding
- Conservation *in situ* support
- Research – conservation/training
- General research
- Education
- Visitor experience

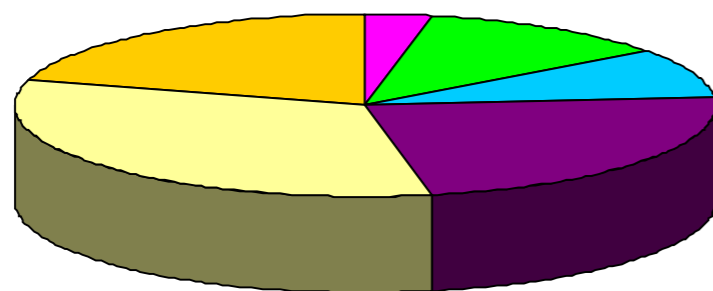
Summary of ALL roles fulfilled by **reptile species** at Chester Zoo in 2010



- Conservation *ex situ* breeding
- Conservation *in situ* support
- General research
- Education
- Visitor experience
- No current role

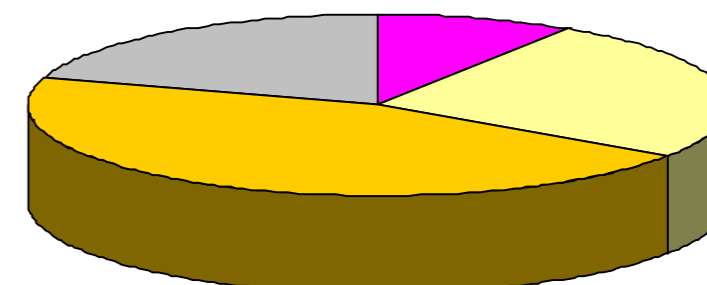
Summary of ALL roles by percentage

Summary of All roles fulfilled by **amphibian species** at Chester Zoo in 2010



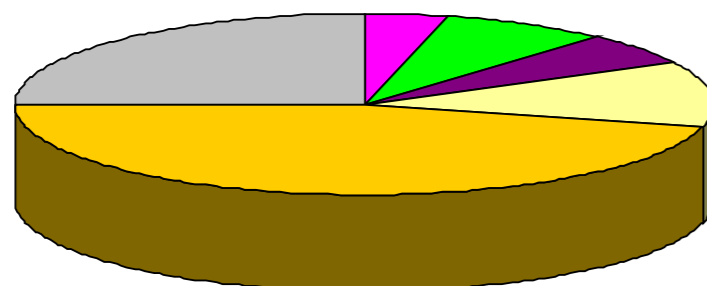
- Conservation *ex situ* breeding
- Conservation *in situ* support
- Research - conservation/training
- General research
- Education
- Visitor experience

Summary of All roles fulfilled by **invertebrate species** at Chester Zoo in 2010



- Conservation *ex situ* breeding
- Education
- Visitor experience
- No current role

Summary of All roles fulfilled by **fish species** at Chester Zoo in 2010



- Conservation *ex situ* breeding
- Conservation *in situ* support
- General research
- Education
- Visitor experience
- No current role