



2011 ZOO REVIEW

Annual Report of the North of England Zoological Society
for the year ended 31st December 2011



Our Vision

A DIVERSE, THRIVING AND SUSTAINABLE NATURAL WORLD.

Our Mission

TO BE A MAJOR FORCE IN CONSERVING BIODIVERSITY WORLDWIDE.

Chairman's Statement
MOVING FORWARD

If 2010 was a year of change, then 2011 has been a year for moving forward. With the new senior executive team now in place, planning for the Natural Vision *Islands* project announced last year has gathered pace. This culminated with the decision by the Trustees in January of this year to proceed with the final development and construction of what will be the most ambitious project undertaken in the history of the Zoo. It is currently planned that this spectacular immersive zone, featuring the fauna of the Indo-Pacific Islands, will open in early 2015.

In the meantime, members can experience something of the style of exciting enclosure designs that *Islands* will feature with the new Painted Dog exhibit which opened in April, attracting media interest from around the world. Many Zoo supporters attended the official opening which was performed by Tony Fitzjohn OBE. The occasion provided the opportunity for the Society to present Tony with its Gold Medal in recognition of his many years of commitment to conservation in East Africa.

One of our existing predator exhibits was significantly enhanced with the addition of a viewing platform to the Sumatran Tiger enclosure. This development was made possible by a generous award of £40k from Asda, linked to their 'tiger bread'.

Behind the scenes, a new laboratory and research facility was established for the Veterinary Department. This will enable

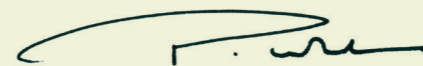
the Zoo to further develop its globally recognised veterinary and scientific work which is so important in supporting our conservation programmes, both within the Zoo and in the field.

Visiting members cannot have failed to notice the results of the considerable investment that has taken place during 2011 to improve the range and quality of catering available in the Zoo. These developments, which have taken place in association with Heathcotes, have seen major changes in the offerings in Café Bembe, the Oaks Coffee Cabin and, in particular, June's Pavilion. June and Fred Williams were the guests of honour at the official opening of June's Pavilion, which was also a celebration of the 85th birthday of our founder's daughter attended by a small group of family, friends and Zoo colleagues.

Congratulations are again due to the Society's staff for the high level of external recognition they continue to bring to the Zoo and its activities. Notable award successes in 2011 included Quality Assured Visitor Attraction 2010/11 accreditation by Visit England; Green Tourism Gold Award; North West in Bloom Trophy and Gold Medal Award in the Best Large Tourist Attraction Category; Mersey Forest Green Award in the Trinity Mirror Cheshire Business Awards; Cycle Chester Workplace Challenge Trophy; Loo of the Year Awards and 'Changing Places' Award for our disabled toilets and baby changing facilities. At the Marketing Cheshire Annual Awards in November

Chester Zoo won Large Visitor Attraction of the Year and Best Tourism Event of the Year for *Dinosaurs at Large!*

At the well attended Annual General Meeting in June, Brian Child and Robert Mee were re-elected as Trustees and Tony Williams as a co-opted Trustee. The establishment of the Audit & Risk Management Committee in 2011 marked the completion of the planned Trustees Committee Structure. Finally, members will be pleased that in recognition of many years of her valuable support to the Society, the Rt. Hon. Baroness Rendell of Babergh, CBE became a Vice President of the NEZS in July.



Professor Peter Wheeler, Chairman,
North of England Zoological Society



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Director General's Review

MOVING FORWARD, DR MARK PILGRIM

2011 began in the middle of a second successive, bitterly cold winter and we were all very glad of the huge improvements made to our winter animal facilities over the past few years which meant that we were able to cope well with the worst of the winter weather. The birth of female Asian Elephant calf *Jamilah* in January was a great lift and an especially good start to the year as female Asian Elephants remain for their whole life within the herd that they are born in. For us this means the growth and development of the herd. This wonderful news was somewhat dampened by the death of our elderly matriarch *Sheba* who had been having some age related health issues for some time. *Sheba* had been at the Zoo for 46 years and had played a major role in the development of our herd into one of the most successful Asian Elephant breeding herds in Europe.

As the winter retreated and we enjoyed a sunny and dry spring we launched our new

Animal Experience packages. The background to this is that we are seeing a change in the way our guests want to visit the Zoo. Perhaps as in other areas of life, such as television, people more and more want to be involved and not just spectate. Following on the back of our very successful 'Keeper for a Day' events the Experience packages allow people to have an up close and personal experience with a giraffe, a penguin or a meerkat and are proving very popular.

You may have noticed the new Zoo logo on front of this report and the introduction of a custom-designed 'Zoo font' in the page headers. This is another example of how our new branding is being gradually rolled out across all areas of our operations. The Zoo is going through a period of exciting and rapid change and the need has arisen for us to reflect on how best to project our identity to our various audiences in an effective,

contemporary manner. During 2012 you will see the new branding increasingly applied to our website, paper-based publications, signage in the Zoo and even on the Safari Ranger's car!

This principle of allowing our guests to engage with the Zoo and to feel involved in the experience rather than merely walking and looking, is key to the development of our hugely exciting £30 million *Islands* project which is featured later in this annual report. The development of *Islands* from concept to detailed design within one year is to the great credit of the many people involved.

In April we officially opened our Painted Dog exhibit. I was delighted with how it turned out with a new style of immersive exhibition and a fabulous group of these amazing animals. It is a great credit to all who worked incredibly hard to make it happen. I was also delighted to invite my good friend and long term

conservationist Tony Fitzjohn OBE to open it as well as to receive the Society's Gold Medal for more than 40 years of services to wildlife in East Africa - an incredible man.

The summer saw the arrival of *Dinosaurs at Large!* We had been looking for a few years for a dinosaur exhibition of sufficient quality and when the animatronic dinosaurs from the American company Billings arrived, we all knew immediately that they would be a big hit. Having the dinosaur exhibit attracted new visitors to the Zoo who hadn't visited for many years and we received a number of letters explaining how much they thought the Zoo had developed over the past few years and how they had become more regular visitors.

2011 was in many ways the year of the big cat, with our first ever births of cheetahs and Sumatran Tigers and the arrival two new female Asiatic Lions. The cheetahs were a fantastic added bonus for our visitors during the summer

and autumn especially as their mother *Kinkytail* was perfectly comfortable with them playing right outside the yurt viewing area. So popular were these cubs that on occasion we had to ask visitors to move on in order for others to get a good view. It was great to see our Sumatran Tiger female *Kirana* out and about with her cubs in the autumn and fantastic that she has proven to be a great mother following the loss of her first litter.

The third big cat story of 2011 is that following the recommendations of the European breeding programme coordinator, our elderly Asiatic Lioness *Asha* was transferred to a zoo in northern Spain for her retirement and we brought in two young females from Rotterdam. We are hopeful that once they have settled in we will again be seeing cubs of this highly threatened cat.

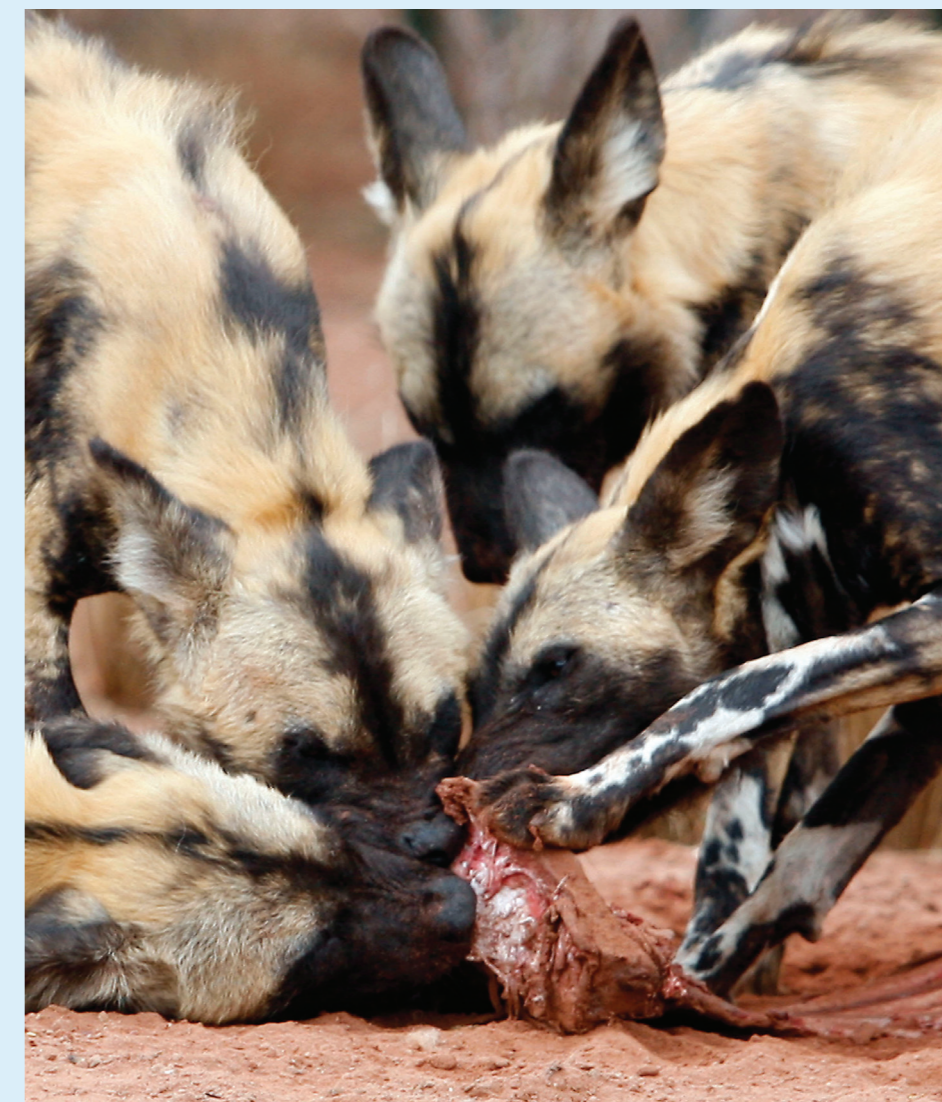
I was pleased to see that the number of people helping our work by becoming members of the

Zoo rose in 2011 with us ending the year on 38,829. To make paying for membership more convenient we introduced a quarterly direct debit scheme during the year and in 2012 will be offering members the opportunity to pay their fee by monthly direct debit. We are very grateful for the continuing support of members and adopters.

After my first full year as the Director General and Barbara's first full year as Managing Director we were absolutely delighted that we ended 2011 with an all time record number of visitors - over 1.4 million people, including under-3s, passed through our gates.

Left: Tony Fitzjohn OBE (l) opening the new Painted Dog exhibit with the Director General.

Right: Painted Dogs enjoying a meal.



Highlights of the Year 2011 AT A GLANCE



JANUARY

Asian Elephant *Thi* gave birth to a female calf.

FEBRUARY

Crime novelist Ruth Rendell named *Thi's* baby *Jamilah*, meaning 'beautiful'.

MARCH

Experience Presenter Keepers were appointed to deliver our new Animal Experience packages including giraffe, penguin and meerkat encounters.

APRIL

Conservationist Tony Fitzjohn OBE opened the Painted Dog exhibit and was presented with the NEZS Gold Medal.

Thirteen animatronic dinosaurs arrived to take up residence for the season.

MAY

A two day symposium 'From Royal Gifts to Biodiversity Conservation: The History and Development of Menageries, Zoos and Aquariums' was organised and hosted by the Zoo.

The 'Saving Apes: Frontline Conservation' symposium was also organised and hosted by the Zoo as part of the EAZA Ape Campaign.

JUNE

175 members of Zoo staff hosted our 8th annual 'Dreamnight' event for chronically ill and disabled children and their families.

The June's Pavilion restaurant was opened by June Williams, younger daughter of the Zoo's founder, George Mottershead.

Café Bembe ('feast' in Swahili) was opened by the Lord Mayor of Chester.

Chester Zoo's wildlife conservation campaign, Act for Wildlife, was launched.

JULY

Baroness Rendell became Vice President of the NEZS.

AUGUST

Giant Anteater *Bliss* gave birth to a baby male – the first Giant Anteater to be born in the Zoo.

SEPTEMBER

Two female Asiatic Lions arrived as part of the cooperative breeding programme for the species.

Our Green Tourism Gold Award was ratified.

We received a Gold Award for raising €14,000 during the EAZA Ape Campaign.

OCTOBER

Three female Sumatran Tiger cubs were born to *Kirana*.

A cross-divisional Zoo team travelled to Borneo to build bridges for orangutans across river tributaries.

The Zoo's gardens were awarded the North West in Bloom trophy.

A pair of Babirusa piglets were born in late October, adding significantly to the population of one of the rarest pig species in the world.

NOVEMBER

Senior officials from the Chinese Association of Zoological Gardens and three Chinese zoo directors visited on a fact-finding mission with Animals Asia staff.

The Zoo was awarded Large Visitor Attraction of the Year and Best Tourism Event for *Dinosaurs at Large!* at the Marketing Cheshire Awards.

DECEMBER

The last Zoo birth of the year was Brazilian Tapir, *Talia* who arrived just after Christmas.

We ended the year with an all time record number of visitors – over 1.4 million people passed through our gates in 2011.

Top left: Christmas baby *Talia* with mother.
Top right: *T. rex* towers over young visitor.

Reflections on the Year FROM THE EXECUTIVE TEAM

1. Mark Pilgrim Director General

"Opening the Painted Dog exhibit in my first year as DG was great. It really raises the bar in standards of exhibit both for the animals and visitors. I was delighted that Tony Fitzjohn opened it and was the very deserving recipient of the Society's Gold Medal.

The cheetah cubs were fabulous throughout the summer as were the Sumatran Tiger cubs later in the year."

2. Barbara Smith Managing Director

"My first full year as Managing Director was extremely challenging, exciting and fulfilling, with so many exciting events and developments coming to fruition in 2011.

My particular highlights have been rolling out the new brand identity, the catering developments including the refurbishment of June's Pavilion and the opening of Bembe Coffee Shop, the opening of the Painted Dog Exhibit and the overwhelming impact created by the dinosaurs exhibition.

The icing on the cake was finishing the year with record breaking visitor numbers and being rewarded at the Marketing Cheshire Awards for the Best Visitor Attraction and the Best Event for *Dinosaurs at Large!*"

3. Simon Mann Development Director

"2011 was a very exciting year of construction work as well as planning for the future. Major projects included the new Painted Dog exhibit and refurbishments of the Ark and Tsavo restaurants – with the dual aims of building the best facilities for animal welfare and a high quality visitor experience. Our stunning £30m *Islands* project, showcasing South-East Asian biodiversity, has moved on apace and we expect to commence enabling works in late 2012."

4. John Iles Finance Director

"This was my first year as FD, and having been appointed in October,

I cannot take much credit for what has been a terrific year with record visitor numbers and income underpinned with some innovative experiences with dinosaurs and new animal attractions. A feature of the success is the investment in new attractions and the proposed Natural Vision *Islands* project will further enhance the Zoo's appeal. One of the enabling factors for this capital investment has been as a result of the careful stewardship of the Zoo's funding over a number of years and the reserves that have been built up will help to facilitate this strategic investment. The Zoo is set for an exciting and challenging period in its development."

5. Stephanie Sanderson Head of Conservation Medicine and Research

"I am particularly proud of the really great interdepartmental team work displayed during 2011. This includes development of the new exhibits, management of some particularly challenging clinical cases, the launch of the new Animal Experience packages, the formation of an in-zoo science group and many staff going that extra mile to ensure cover for their departments during a period of significant change."

6. Roger Wilkinson Head of Field Programmes

"Links between our field conservation and conservation education work have been strengthened this year further increasing the conservation impact of Chester's conservation programmes. The long term nature of these programmes ensures the continuity of support required for on the ground conservation action. Chester Zoo and Chester Zoo staff continue to make a real difference in saving species and habitats worldwide."

7. Stephen McKeown Head of Discovery and Learning

"In a year when many people will have had to make difficult financial

decisions, the Zoo continued to be valued as an education provider as well as a great day out. I'd like to think that people's growing awareness of the conservation work we do outside the Zoo, both in the UK and further afield, gives added value to their day out with us, knowing that they are contributing towards it."

8. David Littler Head of Human Resources and Organisation Change

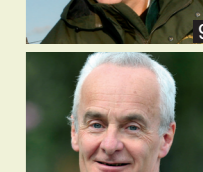
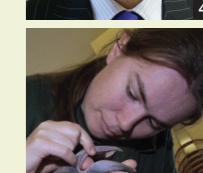
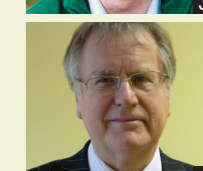
"2011 has been a successful year in providing new approaches to people management. First line supervisory development and health and safety training has been popular and effective. Staff appraisal processes have been improved and we conducted a staff attitude survey to better understand key staff engagement issues. Most satisfying of all for me was the introduction of a new staff grading structure following the completion of a comprehensive job evaluation exercise."

9. Steve O'Brien Head of Estates

"It was pleasing to see the capital development programme gain momentum in 2011 with significant projects including Painted Dogs completed, giving added value and uplift to the west side of the Zoo. In times of rising energy prices and pressure to reduce our carbon footprint it was rewarding to see initiatives introduced by the Green Team having a positive impact. In particular, modifications and improvements to several heating systems have significantly reduced both our running costs and CO2 emissions."

10. Alan Sykes Company Secretary

"After a difficult 2010, the Zoo's visitor numbers recovered steadily throughout 2011 to close at an all-time record. Despite the generally depressed UK economy, or perhaps because of the subdued public mood, our visitors seem to have really appreciated the solid quality and value for money of a family day out at Chester Zoo."



North of England Zoological Society Strategy 2007-2012

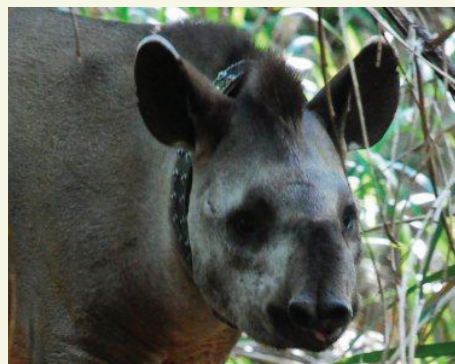
A SHARED VISION FOR A WINNING TEAM

Throughout 2011, the Trustee-approved strategy 'A Shared Vision' informed and guided the management team in planning, achieving and developing our mission and supporting business activities.

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 organising/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 in (or, where appropriate, lead) in external strategic exercises and conservation campaigns (e.g. networking via IUCN, WAZA, EAZA and BIAZA).

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

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.

1. Radio-collared tapir in the Brazilian Pantanal. © Patricia Medici
2. Mountain Chicken – individuals bred in the Zoo are destined to be returned to the wild.
3. Horticulture team tree-planting at a local school.
4. Painted Dogs exploring their new enclosure.
5. Rhino Keeper Mark Cleave, winner of the Zoo's Green Traveller of the Year Award, has cycled to work every day for 17 years!
6. Visitors enjoying the new range of food in June's Pavilion.

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 minimizing 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 2011

2011 has once again been a very busy year for Zoo development with a number of new exhibits and major refurbishments. It was also a year in which we re-examined and celebrated our heritage as a conservation charity of over 75 years' standing, and rediscovered our old post-war slogan: 'Chester Zoo - Always Building'.

Completed Projects

Painted Dogs

We took a new approach in developing this exhibit - integrating our field work into an immersive environment and delivering the first piece in the Natural Vision 'jigsaw'. The project brought together the expertise of our own teams of technicians and architectural specialists, conservation officers with experience of the natural environment we wanted to recreate, animal keeping staff and educators - with a brief to deliver an exhibit that was both a facility for breeding this threatened species and an exciting and informative experience for visitors. Our contractors fully engaged with this vision and the result has been a popular addition to a previously under-exploited area of the Zoo.

Jaguar Picnic Lodge

This new facility, comfortably seating 100 people, was developed and constructed within three months of being commissioned to address the lack of undercover picnic areas for school groups and general visitors.

Giant Otters – Underwater Viewing

Following their successful introduction into the collection in 2010, a £1/4 million extension to the existing Giant Otter exhibit was proposed. Visitors can see otters diving for food through large underwater viewing windows. The new exhibit also features an undercover seating area, a crawl-in viewing dome and state-of-the-art off show cubbing dens.

Spirit of the Jaguar

The central drum of this dramatic building was redeveloped in 2011 to create space for a Two-toed Sloth and Agouti exhibit and a stunning six metre wide glass-fronted aquarium featuring shoals of freshwater fishes along with Amazonian turtles. The building still houses its colony of leaf-cutter ants and four South American Jaguars.

Great attention was given to theming of this exhibit with realistic rock work, artificial trees and even the front porch of a South American ranch reproduced inside.

A number of trees and plants native to South America have been introduced and a cinema, inside the cattle ranch, highlights the Zoo's field conservation work in Brazil.

Bembe Café and Coffee Shop

A welcoming space was created by enclosing the undercroft area of the existing Tsavo Restaurant (now remodelled as Bembe café – the name meaning 'feast' in Swahili) to offer a coffee shop themed around tribal East Africa.

June's Pavilion

A complete refurbishment of the existing Ark Restaurant took place in early 2011 to develop a variety of dining options for visitors. This was also an opportunity to celebrate the Zoo's unique and fascinating history by rebranding the building as 'June's Pavilion' in honour of June Williams, daughter of George Mottershead, the Zoo's founder, who was, along with her husband Fred Williams, a major contributor to the Zoo's past development in her own right. The restaurant has many photographs telling the story of the Mottersheads' pioneering approach to zoo keeping.

Current Developments

Islands

Following the abolition of the North West Development Agency, and in view of the lack of major external funding, we developed a range of options for an alternative Phase One of the Natural Vision masterplan, previously centred on the *Heart of Africa* biodome.

The £30 million *Islands* scheme was selected as the preferred option by the Board of Trustees. dan pearlman, a German design company specialising in major international zoo developments, was appointed in January 2011 to develop the brief and design for this unique project.

Islands will be the largest zoo development of its kind in Britain.

Connected by a boat ride, this zone will group together some of the Zoo's key animal species according to their geographical habitat. Species will include Sumatran Orangutans, Sumatran Tigers, Sulawesi

Macaques, Anoa, hornbills, Visayan Warty Pigs, Babirusa, Bali Starling, cassowary and other birds, reptiles and invertebrates. New to the collection will be Saltwater Crocodiles, Banteng and Mitchell's Lorikeet.

Located on the south west side of the Zoo this will be an unparalleled visitor experience and all-year round adventure. The scheme will include educational exhibits, play areas, restaurants and village-style food stands, and is expected to increase visitors from 1.4 million per annum to over 1.6 million, including under-3s. It will also give Chester Zoo a great opportunity to showcase its conservation programmes and activities in Sumatra, Bali, Papua New Guinea, Sulawesi, Indonesia and elsewhere in the Indo-Pacific region where they have a real impact.

The landscaping and vegetation of the Islands project will feature mangroves, swamps and bamboo and tropical forests. The completed zone will be approximately five hectares in size and will expand the existing Zoo footprint by about 13%. The planning application is being submitted in May 2012, with public consultation in March 2012. Enabling works are expected to start on site by the end of 2012 and the zone is proposed to open for Easter 2015.

Oakfield House

A feasibility study is being undertaken to sympathetically renovate our Grade II Listed Oakfield House to make the most of its period architectural features and improve guest facilities subject to funding. At the same time the surrounding area will be landscaped to give this late Victorian manor house a more fitting and attractive setting.

Main Entrance

One of the ambitions of the Natural Vision masterplan is to allow greater public access to parts of the Zoo. Our £1.75 million entrance redevelopment, which started on site in November 2011 and is due to open for Easter 2012, is the first project to achieve this vision. For the first time in the Zoo's history the general public will have free access to shop and restaurant facilities, as well as the Elephants of the Asian Forest exhibit.

Nature Reserve

Funding secured from MBNA in 2011 has enabled the development of another public space, to be opened later in 2012. The

proposed nature reserve is to be located to the north of the car park running down towards the Shropshire Union Canal and will provide nature lovers with opportunities for bird watching, walking and enjoying local biodiversity. Access will be free to all.

Environmental Management

Management responsibilities for Environment, previously integrated with Health and Safety, have moved to the Development Directorate and are now incorporated into the Facilities Department where synergy with energy, water, and waste initiatives is proving beneficial. Subsequent to this change, the staff environment team, previously named ENPOC (Environmental Policy Committee) has reformed as the 'Green Team' and has recruited valuable new members, so widening influence across the site.

Reaccreditation to ISO14001 was achieved in October 2011, following a two-day system audit by Moody International. Groundwork UK, a not for profit environmental consultancy, has been engaged to assist with the continuous update and management of our environmental system, including the provision of an on-line legal update service and compliance register.

Green Travel

Numerous activities took place in 2011, with the aim of increasing take-up of sustainable travel options by Zoo staff and visitors. Green Team members attended meetings and workshops with partner organisations to share best practice, including presenting on the Zoo's Green Travel initiatives at a travel planning event at Cheshire West & Chester HQ in June 2011. Other events have included 'Walk to Borneo' during national walking month in May, and a workplace challenge facilitated by Cycle Chester and the national initiative 'Get Cycling' in which staff won a trophy and bicycles worth £2,000. We have recently agreed with Cheshire West and Chester Council to extend the Upton Park & Ride bus service so that it serves both Chester train station and the Zoo's main entrance. This service will commence on 1 May 2012, running from c. 9am to 6pm all year round with five buses per hour in operation. It will now be possible for visitors to buy tickets direct to Chester Zoo from all the main train operating companies.

Environmental Awards

We were delighted to be recipients of the Mersey Forest Green Award and a Green Tourism Gold Award in recognition of our environmental credentials.

Objectives for 2012

The big task for 2012 will be the implementation of an AMT (automatic monitoring and targeting) project for energy performance across the site, the first such initiative for a UK zoo. Energy is a significant contributor to the Zoo's carbon footprint and a large part of our running costs. We expect that, once fully developed, the AMT project will result in reduced energy usage across site. Further initiatives are planned to improve environmental performance in the areas of waste management and water consumption.

Top: Indonesian Showhouse in the *Islands* exhibit
Middle: Sumatra zone
Bottom: Site plan



CONSERVATION, SCIENCE, EDUCATION AND ANIMAL WELFARE

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Progressing our Mission CONSERVATION AROUND THE WORLD, DR MARK PILGRIM



Everything that we do as an organisation is in support of our mission and throughout this annual report you will be able to read about many of the fabulous activities that took place in 2011.

Progressing our mission of conserving biodiversity happens in a number of ways. Perhaps most obviously through our direct field conservation support of projects and programmes to protect endangered species and through the breeding of species within the Zoo for which there is a real need. Less obvious perhaps is the importance of inspiring our visitors about the wonderful natural world around us and empowering them to get involved and make a real difference.

I believe that this variety of approaches is essential in the ongoing battle to conserve wildlife, and the task increases in size each year.

During 2011 the International Union for Conservation of Nature (IUCN) updated their Red List of Threatened Species. In that report it states that 61,900 species had been reviewed and from these the numbers of threatened species of vertebrates has more than doubled since the year 2000 from 3507 threatened species to 7108 in 2011.

However, Jane Smart the Director of the IUCN Global Species Programme, said that the news is not all bad. "We have the knowledge that conservation works if executed in a timely manner; yet, without strong political will in combination with targeted efforts and resources, the wonders of nature and the services it provides can be lost forever."

So we are now seeing hard evidence that targeted conservation measures are having a positive impact. However, on a larger scale, it is only by influencing the political decision makers that we will bring about the step change required to secure long term conservation of biodiversity.

For Chester Zoo this reinforces the need not only to have targeted field projects but also for engaging with our visitors to bring about a social change to demand that biodiversity protection is high on the Government's agenda.

One very important initiative that we launched in 2011 is our Act for Wildlife campaign. This came about from our strategic discussions on how we reach and influence more people, including those who may not necessarily

visit the Zoo. A poll we conducted for Act for Wildlife showed that 67% of UK adults believe the average 10 year-old has more interest in technology than wildlife. Additionally, although the overwhelming majority of UK adults (94%) feel conservation is important, only 15% actively help the cause. I believe that what this poll shows is that there are many 'armchair conservationists' out there and what is imperative for us is to demonstrate that biodiversity conservation is relevant to people in their increasingly tough day to day lives.

Act for Wildlife is unique in that we have married the best technological advances with positive action for conservation to create a groundbreaking online community that is making a real difference. Conservationists can now actually contribute to positive outcomes from the comfort of their armchairs using the technology that so fascinates them, and without having to sacrifice their interests. Act for Wildlife provides supporters who donate to the projects with updates from the projects and the people working directly at the frontline of conservation. Blogs from the field and videos will provide a behind-the-scenes look at what is being achieved.

Our fantastically dedicated staff are at the heart of all that we do and there are numerous examples throughout this report. One that deserves special mention is the dedication of our Lead Keeper, Karen Entwistle. A self-confessed arachnophobe earlier in life, she hand-reared 400 hatchling Fen Raft Spiders.

These are one of the UK's most endangered species and were bred for release in the late summer. She spent four hours a day, four days a week, alone with the spiders in the special breeding facility to individually hand feed them with fruit flies!

While I have selected this story as an example I could have chosen many others. It is this dedication and passion of the staff that makes me feel hugely privileged to be the Director General of Chester Zoo.



Opposite page: Blue-crowned Laughingthrush © Lin Jian-sheng
Above: One of two Babirusa piglets born in October. The number of threatened vertebrates has more than doubled over the past ten years. © Phil Noble/Reuters
Below: The Conservation team celebrates the launch of Act for Wildlife.



Supporting strategic objectives:

1 2 3

Realm of the Red Ape

CONSERVING ORANGUTANS IN BORNEO AND SUMATRA

The floodplain of the Kinabatangan River in Sabah, Malaysian Borneo, is home to the largest population of Bornean Orangutans. Here our partners HUTAN run the Kinabatangan Orangutan Conservation Programme (KOCP), which very successfully combines scientific research with protection and management of wildlife habitat. Parts of this region such as the Kinabatangan Wildlife Sanctuary are protected. However patches of forest habitat are isolated from one another by large scale palm oil plantations, river tributaries and drainage channels.

Rope bridges were first constructed in 2003 by HUTAN-KOCP to re-connect isolated orangutan populations. More recently the lightweight, UV-resistant and durable webbing material used in our *Realm of the Red Ape* exhibit was identified as being ideal for the environmental conditions in Sabah. In October seven Zoo staff travelled out to Sabah, with 1300 metres of webbing, and constructed seven new orangutan bridges. Support for this travel, and also the majority of the Zoo's core support for HUTAN, came through funds raised by our Keeper for a Day scheme.



Research activities focused upon the use of palm oil plantations by orangutans, further improving our understanding of how orangutans use plantations to move from one forest patch to another. Such knowledge is essential to the long-term management of populations in these highly fragmented habitats. Work to reconnect isolated forest fragments saw 15 hectares of previously degraded land planted with 2000 trees.

The Hutan Environmental Awareness Programme (HEAP) is made up of five permanent staff who are dedicated to spreading conservation messages to local communities and further engaging them in conservation activities. A workshop led by our Education Programmes Manager last year identified key messages for the different audiences HEAP work with. The results of this workshop helped provide a more focused approach to environmental awareness, and this year a long-term environmental awareness strategy was developed encompassing various schools in Kinabatangan and in Sabah. An evaluation and monitoring plan was also developed and is currently used to assess the impact of awareness activities undertaken by the HEAP staff.

2011 also saw continued support for the Hutan Hornbill Conservation Project, a community and education project focusing on the eight species of hornbill found along the Lower Kinabatangan River. This project collaborates with the Thailand Hornbill Project which we have been supporting for many years. Next year we will be co-funding staff from the Thailand project to advise and assist with hornbill survey and assessment in Sabah.

HUTAN-KOCP also received additional funds in 2011 through the 2011 EAZA Ape Campaign. The Society was a major participant in this European campaign and coordinated a whole host of activities to raise funds and awareness. Activities ranged from Ape Week in the Zoo with games, talks and interactive fun, to the 'Saving Apes: Frontline Conservation' symposium, raising a total of €14,000.

Our veterinary staff continued their strong involvement in international orangutan conservation, with the organisation of and participation in the annual Orangutan Conservancy Veterinary Workshop in Indonesia. Through this workshop we provided technical assistance to orangutan rehabilitation centres on Borneo. We also provided additional support for orangutans through a grant for research into the dispersal and ranging behaviour of male orangutans in Sumatra.

In the Zoo, two Black and White Laughingthrushes were successfully hand-reared this year. The ESB European studbook for this species is held at Chester Zoo and our breeding of these charming, and very rare, Sumatran song birds is a welcome boost to the zoo population. This is a species for which we are now also offering *in situ* conservation support.

Top: Black and White Laughingthrushes being hand-reared at Chester Zoo.

Left: Wild Bornean Orangutan female with youngster. © HUTAN-KOCP

Supporting strategic objectives:

1 2 3 4

Reducing Human-Elephant Conflict

WORKING WITH COMMUNITIES IN SOUTH ASIA



Human-elephant conflict continues to be a growing threat to the future survival of the Asian Elephant. Deforestation and agricultural expansion has led to elephants increasingly coming into conflict with people. We are working alongside rural communities to alleviate this conflict and engage them in the conservation of this enigmatic animal.

The Assam Haathi Project

Assam, North East India, witnesses some of the most extreme human-elephant conflict in the world. The Assam Haathi Project, initiated in 2004 and managed by Chester Zoo, is at the forefront of Asian Elephant conservation in the region. Working in partnership with Ecosystems-India, our Assamese partner, and with continued Darwin Initiative support, 2011 saw the project expand to cover more key areas where elephants are under threat. The Assam Haathi Project is jointly funded by Chester Zoo and a Darwin Initiative grant with technical inputs such as capacity-building being provided by Chester Zoo staff.

An integral part of the Assam Haathi Project is the engagement of communities in elephant conservation; helping them to protect their crops, properties and lives. The project invests heavily to build the capacity of communities to use a wide range of methods that help mitigate against losses caused by elephants. Maintenance of the existing mitigation methods we developed continued in 2011, additionally new mitigation projects

included two new chilli fences protecting around 120 hectares of crop, a 6.1km solar electric fence protecting over 220 hectares of crops and 162 households and the distribution of 33 spotlights in 22 different villages. Conflict levels in our two original core project areas continue to decline, following initial dramatic decreases when the project first started. Next year we hope to report similar success in the new focal areas.

Staff training and capacity building remained a focus with 45 project staff, all recruited from local communities, attending formal training courses. Members of the team also had very productive visits to share experiences with projects in Kenya and Sumatra. Over 200 villagers attended workshops on topics such as pig, poultry, fish and cash crop farming. This training has led to the establishment of several successful self-help groups which are generating incomes and helping to alleviate losses caused by elephants. Such schemes help promote community involvement in conservation and this year two tree nurseries were established to cater for new community reforestation initiatives.

Increased awareness of elephant conservation was achieved through a very popular cricket match and a football tournament. These events provided a great opportunity for project staff to develop stronger links with communities and to distribute educational material. A new logo for the project provided strong branding for these educational resources.

Research achievements included papers published in two peer reviewed journals and completion of an MSc thesis. Several more papers are currently in preparation and two masters students, including one of our elephant keepers, conducted their field research with the project this year.

Sumatra: Living with Elephants

This project partners with the Wildlife Conservation Society and also receives Darwin Initiative funding. A large part of the project has been a Sumatra-wide elephant status assessment, and this will lead to a Sumatran Elephant Management Plan being published in 2012.

Capacity building for communities living with elephants continued in seven key sites, and included training workshops and the distribution of posters, leaflets and a comprehensive handbook.

Training for local conservation and government organisations has also produced an increased capacity in the control of wildlife crime and the implementation of law enforcement patrols. This work benefits not only elephants but also other threatened species including the Sumatran Tiger and Rhino. 2011 saw 21 arrests leading to 13 successful prosecutions.

Top: Chester Zoo helps communities in Assam learn to live with elephants.

Supporting strategic objectives:

1 2 3

Protecting China's Forests FOCUS ON SICHUAN BIODIVERSITY

The broadleaf forests of the Sichuan Province in southwest China are home to an abundance of endemic and severely threatened species. These forests are under threat from increasing human pressures including industrial development, forest degradation and agricultural expansion.

Chester Zoo's largest project in China is the Sichuan Forest Biodiversity Project. This project uses a holistic, sustainable approach to conservation. In partnership with Liverpool John Moores University and the Sichuan Forest Department, the project has established and maintains a network of protected forest areas. In 2011 support extended to cover four nature reserves, protecting approximately 90,000 hectares of biodiversity rich forest. Training and infrastructure improvements have helped increase the capacity of forest rangers working in these areas. Working closely with local communities, a number of education and sustainable development initiatives have also been implemented.

Research is a key component of our work in Sichuan and is used to inform conservation action. In 2011 monitoring of focal bird species such as the Sichuan Partridge and Lady Amherst's Pheasant has shown that numbers are still on the increase. Other investigations continue including a study of the vulnerable Grey-cheeked Liocichla and the monitoring of panda populations.

Two of our Chinese colleagues, Dr Dai Bo of the Sichuan Forestry Department and Dr Fu Yi – Qiang of Leshan University (on left and right in picture below) were awarded their PhDs, having received support from the project funds for some of their work.

Research also looks into the impact of community initiatives. Results from surveys of households using fuel efficient and biogas stoves indicated a reduction in the amount of fuel wood being consumed, up to 95% in some cases. This wood is often illegally taken from forest reserves and villages are targeted to achieve the optimal conservation impact. In other areas, local bee keeping projects offer a good alternative income yielding up to 400kg of honey per year. The provision of beehives has allowed local communities to reduce collection of wild resources, thus decreasing the impact on the forest. Development and evaluation of sustainable initiatives will continue in 2012.



In early 2011 Chester Zoo hosted two education staff members from the Chengdu Research Base of Giant Panda Breeding. This visit enabled the educators to experience all aspects of our education programmes, including school lessons and presenter talks. This skills exchange continued with a member of our Discovery & Learning team travelling to Chengdu to help run a Chester Zoo funded capacity building workshop for teachers and reserve guides. This workshop provided training on planning and developing education programmes. We also fully funded a volunteer training programme and production of a training manual for volunteer graduate students from Sichuan University working with villagers near to Heizhougou and Mabian Nature Reserves.



Working with Animals Asia we were pleased to host a delegation of directors from Chinese zoos and the Chinese Association of Zoological Gardens at Chester Zoo. The directors met with a number of Zoo staff for discussions on several topics including conservation, education and animal husbandry and how best practice could be applied in Chinese zoos.

Our partnership to conserve the critically endangered Blue-crowned Laughingthrush continued this year. This project protects and monitors the remaining population of this critically endangered bird species and continues searching for further undiscovered sites. In the Zoo four Blue-crowned Laughingthrushes were bred during 2011 from three breeding pairs. These important birds are a very valuable addition to the EAZA zoo breeding programme. Work continued to support the development of an international breeding programme for the Blue-crowned Laughingthrush.

Also at the Zoo, four male Grey-cheeked Liocichlas, an endemic Sichuan species, were reared this year from two breeding pairs; these birds will bolster the European zoo population which has decreased in recent years.

Top: Visitors from the Chinese Association of Zoological Gardens and three Chinese Zoos.
Left: Chinese and Chester Zoo colleagues visit the newly supported Ma'anshan Reserve in Sichuan, China.

Supporting strategic objectives:

1 2 3 4

Philippines Conservation HELPING ISLANDS IN DANGER

The Philippines are a globally recognised biodiversity hotspot. Comprised of over 7,000 islands, and with a diverse biogeography, they are home to thousands of species that are found nowhere else. However, the threats facing wildlife here are intense. Chester Zoo has been supporting conservation in this critical region for almost two decades, providing support for many threatened species and habitats on a number of islands.

A large focus for our support is the West Visayas Faunal Region – a major conservation priority area containing a significant proportion of the Philippines' threatened endemic species. Here we partner the Philippines Biodiversity Conservation Foundation on a variety of projects. Community-based conservation initiatives are at the core of much of the conservation work in this region and elsewhere in the Philippines. By working closely with communities, and providing essential training and technical support, a growing number of Local Community Areas (LCAs) have been officially designated in key biodiversity areas. These areas are managed and protected by local communities and the focus for a variety of conservation activities. The Polillo Islands in particular have very successfully employed this community-based approach, with around 13% of the Polillo land area now designated as LCAs. This year saw the Calamian and Camiguin Islands initiated into this programme, which will hopefully result in similar local community engagement in conservation activities and follow the success seen on Polillo.

Conservation breeding centres are another important component of the conservation programme in the Philippines and particularly in the Visayas. These centres are dedicated facilities for recovery programmes for species such as the Philippine Spotted Deer, Visayan Warty Pig and several threatened hornbills. The centres have been very successful, working alongside other zoos worldwide, in maintaining populations of threatened endemic Philippines species. These centres also serve as education hubs. Work continues to survey remaining wild populations and potential forests for reintroductions.

Major progress was made in 2011 with official government approval for a structured



reintroduction project to be taken forward, and in 2012 we hope to see both Philippines Spotted Deer and Visayan Tarictic Hornbills released to the wild. These reintroductions will provide added emphasis to the continued protection and restoration of the selected forest reintroduction sites.

Another key area for support is Palawan where we support a number of projects in collaboration with the Katala Foundation including significant financial support for



the Philippine Cockatoo Conservation Programme and research on the critically endangered endemic Philippine Forest Turtle. There are only around 1,250 Philippine Cockatoos remaining in the wild and this project is protecting some two thirds of this population. The project works alongside communities and government agencies to protect and restore important wildlife areas. Its dedicated community education programme and a highly successful field conservation and research programme are just two components that led to the project being awarded the Governor's Award this year in recognition of 'loyal dedication and unwavering commitment to wildlife conservation in the Province of Palawan'.

Closer to home the Zoo successfully hand-reared two Philippine Cockatoos. This is the first time this critically endangered and very challenging species has been bred at Chester. We were successful too in breeding from both pairs of our Visayan Tarictic Hornbills, and our Visayan Warty Pigs.

Top: Philippine researchers attach a hornbill nest box 22m above the ground on Panay Island. © Anke Siegert/PanayCon
Bottom: Male Philippine Spotted Deer on Negros Island.

Supporting strategic objectives:

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Saving Species in the Mascarenes WORKING IN THE 'LAND OF THE DODO'



Chester Zoo's support in the Mascarenes continues to go from strength to strength, with our focus on protecting threatened endemic species. The Mascarene Islands have been at the forefront of species conservation for the last 20 years. We provide both financial and technical support for many successful projects which are led by our partners the Mauritian Wildlife Foundation (MWF). This work has saved several species, the most recent being the Mauritius Fody, downlisted from Critically Endangered to Endangered in 2009.

Around 160 Mauritius Fody pairs survive, split into two isolated populations - a remnant wild population on mainland Mauritius and a translocated one on the island of Ile aux Aigrettes. An attempt at creating a third population on Round Island took place in the winter of 2010-11. Unfortunately, after a promising start, predation by the Keel-scaled Boa left only one bird remaining. A further release of a small number of fodies was made in late 2011 and it will be interesting to see if this proves more successful. Although an unexpected set back, this finding further increases our understanding of these island ecosystems and will help guide future conservation activities.

Breeding activity for the Mauritius Olive White-eye was delayed by two months on Ile aux Aigrettes due to the worst drought in 40 years. Despite the unusual weather,



six chicks successfully fledged. On the mainland, a record number of nests resulted in ten chicks fledging, providing a much needed population boost. Research into pest control activities this year concluded that rat control has a significant positive impact on Olive White-eye breeding success and will be further implemented in 2012.

Keeper exchange continues to be a large part of the Mascarenes Programme. This year two Chester Zoo Bird Department staff joined the passerine field survey team, assisting with the monitoring of Mauritius Fody and Mauritius Olive White-eye populations in the Black River Gorges National Park. The results of the field work will eventually map the distribution and territories of these endemic birds. Regular news from our keepers meant we were able to provide our supporters with news straight from the field via the new Act For Wildlife website.

We also continue to fund habitat restoration and plant conservation work. In 2011, an additional hectare of the Grande Montagne Nature Reserve on Rodrigues Island was restored, utilising over 10,000 seedlings of 29 different endemic species. In the Zoo we complement this work, growing a number of threatened plants from the Mascarenes from wild collected seed.

One species, *Zanthoxylum heterophyllum*, was germinated successfully and this is one of very few occasions that the seed has been germinated outside of Mauritius.

(see also P28) A number of plants from the Mascarenes are now on display in *Islands in Danger* and the *Grow Zone*.

The 'Learning with Nature' education programme for local Mauritian schools and communities continued to be successful. Around 13,000 people participated in educational tours from rangers trained by Chester Zoo. Visitor research evaluating the schools' programme on Ile aux Aigrettes was carried out in 2011. Findings proved that students attending a tour showed significant increases in knowledge and understanding of the core educational concepts. In 2011 we continued to fund training for education staff in Mauritius and provided funds to upgrade important locations on the education trail.

Additional financial support was also continued for the monitoring and conservation of the Rodrigues Fruit Bat. In the Zoo, the bats are breeding well and a number were sent out to other collections this year. We also provided support for Shoals Rodrigues to help improve the monitoring and management of octopus fisheries surrounding Rodrigues Island. Finally we provided support for Pink Pigeon research, in collaboration with both the Durrell Institute for Conservation Ecology and Reading University.

Top left: Rodrigues Fruit Bat.

Top right: One of our bird keepers carrying out a health check on an Echo Parakeet chick on Mauritius.

Supporting strategic objectives:

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Black Rhinos Back from the Brink RISING TO THE CHALLENGE IN AFRICA



Wildlife trade is a major, and growing, conservation challenge worldwide. Larger market demand in Asia has resulted in wildlife, particularly those species used for traditional medicine, being impacted considerably. Unfortunately rhino horn is one of the items in high demand.

In South Africa alone around 450 rhino were killed for their horn in 2011, however rhino have been targeted in much of their range. This year the Western Black Rhino subspecies was officially declared extinct in the wild, and outside of Africa poaching led to the extinction of the Vietnamese population of the Javan Rhino (only a few dozen now remain on Java itself).

Chester Zoo's rhino conservation activities are focused mainly in East Africa on the Eastern Black Rhino subspecies; this is the same subspecies we have in the Zoo collection. This year, in response to the poaching crisis, additional support was provided to several important new projects.

The Maasailand Preservation Trust, collaborating closely with the Kenya Wildlife Service, continues to effectively protect the Black Rhino population in the Chyulu Hills National Park and surrounding Maasai ranches in Kenya. In 2011, 243 arrests were made and a number of poaching-related items confiscated (see table). Support for rangers and game scouts includes critical items such as salaries, fuel and equipment. Additional financial support was also provided this year for camp infrastructure

support for Painted Dog conservation in Mkomazi, in Zimbabwe and in Namibia.

The Laikipia District is another focal area for our support in Kenya. This region is home to almost half of Kenya's Black Rhino, as well as Southern and Northern White Rhino. Most of these rhino exist in private rhino sanctuaries, many of which have been targeted by poachers. We contributed to a fund which will be used to pay informers for information that leads to arrests of those involved in the rhino horn trade. Such informer networks are an important part of battling the growing poaching threat. Also in Laikipia, Chester Zoo Education staff continued to work with the Laikipia Wildlife Forum to develop the existing education programme, and helped enhance this through developing a strategic plan for the development of a new field centre which will cater for school groups.

improvements and camera traps. The camera traps will allow increased monitoring of trails used by rhinos (and poachers). Fortunately 2011 has seen no rhino poaching incidents reported from Chyulu, although gun shots have been heard on a few occasions. The good news is that footprints of a baby rhino were found by rangers. Zoo staff also travelled out to Chyulu to continue training in data management and spatial mapping.

Over the border in Tanzania, working in partnership with the George Adamson Preservation Trust, security for the Mkomazi National Park was also increased following poaching incidents in the country. New security outposts were funded providing around the clock protection to key rhino areas. We also funded a replacement water bowser and aeroplane fuel costs, both essential project components. The community programme, Rafiki wa Faru (Friends of the Rhino), continues to develop. This project brings school groups into Mkomazi on the education bus for a day of adventure and learning, together with a unique wildlife viewing experience. Evaluation and research conducted by Chester Zoo staff has shown the programme to be effective in promoting a better understanding in the function of the park and its conservation activities. 20 teachers also received training as part of this programme in 2011.

Linking with the Zoo's new exciting exhibit for Painted Dogs, we also provided field

Finally, outside of Africa, we continued our sponsorship of the critically endangered Sumatran Rhino by contributing towards the funding of the Rhino Protection Unit in Bukit Barisan Selatan, supporting the rangers whose patrols and activities are essential to protecting not only the rhino but species such as the Sumatran Tiger and Sumatran Elephant. This project, as with several of the projects above, is supported in collaboration with Save the Rhino International.

Items confiscated from poachers in Chyulu Hills and surrounding ranches during 2011.

Snares	207
Panga knives	188
Hand saws	93
Motorbikes	6
Poisoned arrows	33
Non-poisoned arrows	26
Elephant tusks	14
Bicycles	59



Top left: Black Rhino female with calf in Mkomazi National Park.

Above: Confiscated poaching equipment. © Save the Rhino International

Supporting strategic objectives:

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Saving Chimpanzees in Nigeria CONSERVATION DRIVEN BY RESEARCH



Good science should be at the heart of conservation, and our work in Nigeria is a great showcase of how conservation success can be driven by research activities. Gashaka-Gumti and Ngel Nyaki National Parks are both found in the biodiversity rich northern edge of the Cameroonian Highlands. Over 25% of the remaining population of the Nigerian Chimpanzee subspecies, and probably the last remaining viable population, is found in this region.

the actions and objectives that need to be achieved if chimpanzees are to be saved in this region. Chester Zoo and the Gashaka Primate Project will continue to play a key part in helping to achieve these objectives.

The Gashaka Primate Project collaborates closely with the government's National Park Service. Previous Chester Zoo support has enabled demarcation of the park boundary and improved communications systems, leading to improved protection of the park. This year we paid for solar power upgrades

The largest component of Chester Zoo's Nigeria Programme is our support in Gashaka-Gumti National Park, primarily for the Gashaka Primate Project. This project has developed Gashaka-Gumti as an internationally renowned study site for primates and one of the largest conservation projects in West Africa. 2011 again saw several peer-reviewed papers published, as a result of research in the park, including completion of a major habitat mapping project. Several of these research projects were conducted by Nigerian students, made possible through bursaries funded by Chester Zoo. The project also continues to invest heavily in staff training and provides local employment as guides and research assistants. In conjunction with leading conservation organisations, the project's director also helped develop the recently published Regional Action Plan for the Conservation of the Nigerian-Cameroon Chimpanzee. This document clearly outlines



for radio communication systems and also a new visitor centre project which will help generate awareness of conservation issues and foster local support, understanding and involvement for conservation.

The Nigerian Montane Forest Project, based at Ngel Nyaki National Park, has a botanical research focus. The conservation activities here, as in Gashaka, benefit and protect the whole ecosystem and all of the species within it. Ngel Nyaki is an internationally recognised important bird area and is exceptionally rich in endemic taxa. Research outputs from the project have been instrumental in bolstering national and international commitments to conservation in the region. There is also a large focus on providing training for Nigerian students and staff in order to build capacity for conservation. Research outputs for 2011 included twelve peer-reviewed scientific publications and 17 conference presentations. The knowledge gained from this research is used to promote restoration, reforestation and protection activities that are essential for the continued survival of this habitat and its many species.

Other Chester Zoo support in 2011 benefitting chimpanzees included continued funding for the Kibale Fuel Wood Project in Uganda. Around Kibale over 95% of people rely exclusively on wood for cooking and heating. The wood often came from the national park, home to chimpanzees and many other threatened species. The project has seen the number of families collecting wood from the park drop dramatically, and half of all families surveyed now use fuel efficient stoves. With these stoves a family will use, on average, 3 kg less wood each day than with traditional stoves.

Chester Zoo staff also continue to play important roles in international primate conservation organisations such as PASA (Pan-African Sanctuaries Alliance), GRASP (Great Ape Survival Partnership) and the Jane Goodall Institute. 2011 activities included staff, acting as PASA representatives, conducting inspections of sanctuary facilities for chimpanzees and other great apes in Kenya and Uganda.

Top left: Tree planting in Uganda with the Kibale Fuel Wood Project. © New Nature Foundation.

Right: Researchers negotiate a riverbed in the Gashaka-Gumti National Park in Nigeria. © Volker Sommer

Supporting strategic objectives:

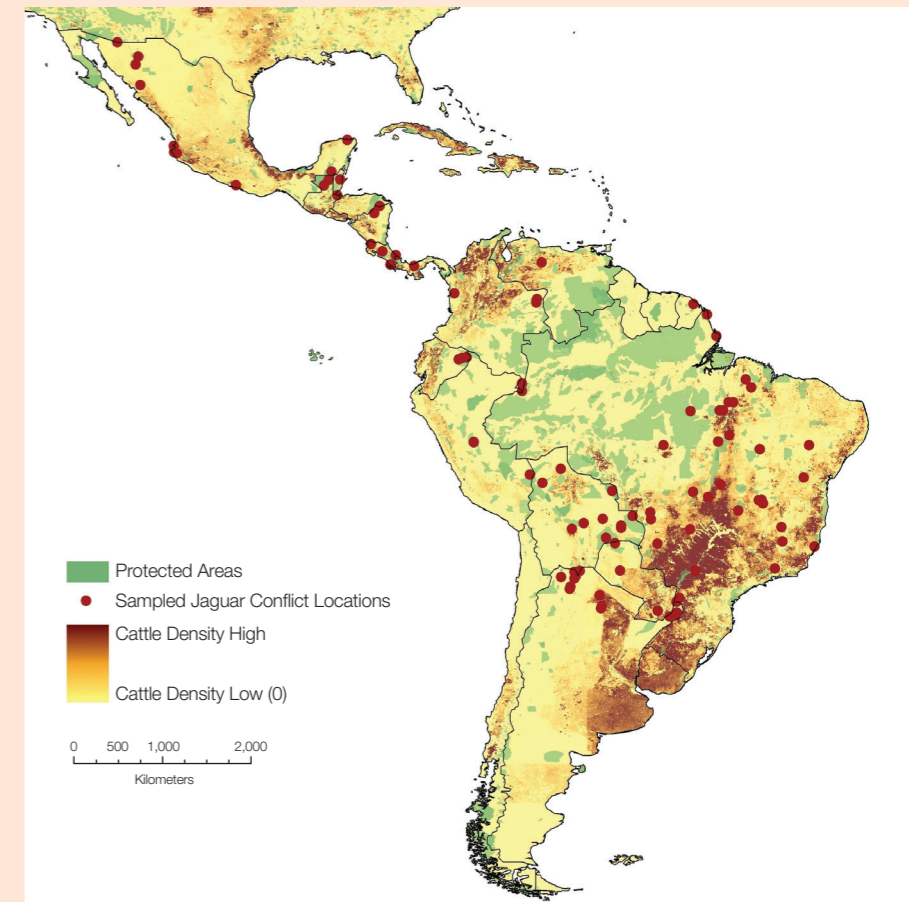
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Spirit of the Jaguar RESOLVING JAGUAR-RANCHER CONFLICT

Human-Jaguar conflict is the most serious and widespread threat for the survival of Jaguars across its 18 Latin American range states. Few pristine areas remain in which Jaguars can survive, protected from human disruptions. The Jaguar's historical range has declined by 40%, and today 65% of their current range is in unprotected areas, ie. areas existing outside of wildlife reserves and parks.

It is here that Jaguars come into contact with livestock, on which they occasionally prey, and which leads to killing of Jaguars by farmers. The persecution of Jaguars and hunting of their prey has become the most serious threat to the survival of Jaguars. Conflicts like these vary in their social and ecological contexts, so ideally each scenario requires a tailor-made solution. However, with Jaguar numbers falling and funds and time limited, more efficient methods are urgently needed for transferring conflict resolution and conservation experience across political borders.

Chester Zoo, in partnership with the Wildlife Conservation Research Unit at Oxford University, is leading a multinational research project to investigate the factors that shape different conflicts. The aim is to gain a clearer understanding of the patterns of predation by Jaguars and the varying reactions by farmers, and what determines the nature of



those reactions. This way, experiences from conservation approaches in one place can be transferred to another, to make the process of conflict resolution more efficient on an international scale.

Scientists at Chester Zoo have analysed 150 cases of human-Jaguar conflict for land use and depredation patterns, conflict severity and tolerance of conflict, proximity to protected areas, as well as habitat and prey base qualities. Conflicts occur quite evenly across all cultural groups, but the majority of conflicts happen around the borders of protected areas (such as reserves and national parks). We are now conducting 20 detailed field case studies in seven countries to examine the patterns in greater depth and to begin to translate patterns and best practice to the international context, to aid the conservation of the species across its range.

Chester Zoo also provides grants to other organisations working for the conservation of Jaguars. This year we funded a community

project working within the Osa Region, Costa Rica, which is has one of Central America's largest areas of tropical forest. Livestock farming is common in this area and levels of conflict with Jaguars are high for many communities. This project is working closely with communities and schools to increase awareness and understanding of Jaguars, aiming to reduce the negative attitudes towards neighbouring wildlife. The project also carries out field research to help identify Jaguar distributions, and thus better focus education activities.

In the Zoo the *Spirit of the Jaguar* exhibit was redeveloped in 2011. The new exhibit will include Two-toed Sloth, Agouti and a large aquarium of Brazilian freshwater fishes, not to mention a new conservation cinema and a realistic South American rancher's front porch.

Above: Jaguar conflict locations in relation to protected areas and cattle density.
Left: Rancher with livestock killed by a Jaguar

Supporting strategic objectives:

1 2 3

Frogs to the Fore

TACKLING THE GLOBAL
AMPHIBIAN EXTINCTION CRISIS

Addressing the current amphibian extinction crisis is one of the greatest conservation challenges we face. Threatened mainly by habitat loss and chytrid fungus, around a third of the world's amphibians currently face extinction. Chytrid is a fungus (*Batrachochytrium dendrobatidis*). Discovered in 1999 this fungus can be devastating to infected amphibian populations. It has caused the extinction of several species in recent years.

Zoos have a very important role to play in amphibian conservation, safeguarding species by conserving viable populations in specially designed bio-secure facilities and working in the field. Chester Zoo has three bio-secure Amphibian Pods (A-Pods), each dedicated to saving a critically endangered frog species.

Green-eyed Frog

The Costa Rican Green-eyed Frog was believed to be extinct until 2005 when a single breeding population, focused around a small seasonal pool in Monteverde, was identified. Since then a second and possibly third site, close to the original pool, have been identified. A Chester Zoo team visited the region in 2007 to assess the breeding pool and to search for further possible populations. Since then, we have supported *in situ* studies and hold the world's only *ex situ* population for the species.

With only a single male frog seen in the wild over the past 12 months, regular monitoring



is needed and will be set up over the next few years. The possibility of transfer of spawn from the viable wild populations to pools which have historically supported the species will also be assessed. At the same time, we hope to successfully breed from the *ex situ* population and develop guidelines for use in Costa Rica to supplement the wild transfers with zoo-bred frogs.

Black-eyed Tree Frog

This species has declined drastically across its former range in southern Mexico, Honduras, El Salvador, Guatemala and Belize. Studies carried out on Chester Zoo's *ex situ* population have contributed to improving the success of breeding programmes. Collaborative research between Manchester University and Chester Zoo has been looking into the dietary requirements of the Black-eyed Tree Frog (see page 30).

Over the next few months we are investigating the potential for two further *ex situ* research projects, both of which will help us towards developing a conservation action plan for this frog within Belize. Further field research is required to determine the species' distribution, identify the presence of chytrid fungus and survey for a viable translocation or reintroduction site.

Mountain Chicken

Restricted to Montserrat and Dominica, two islands in the eastern Caribbean, the Mountain Chicken population has been in

decline due to chytrid fungus. The Zoo's latest A-Pod is dedicated to the Mountain Chicken, and offspring from successful breeding of these frogs will be used for future reintroductions into the wild. In early 2012, one of our herpetological team will be in Montserrat assisting with the release and tracking of over 30 Mountain Chickens, all of which have been bred in zoos. This pilot study will be repeated over the next few years alongside close monitoring of the released frogs.

Our work this year with other amphibians included continuation of work with Darwin's Frogs, providing support for ongoing genetic studies for this species. Recent news from the Nigerian Montane Forest Project, part of our Nigeria Programme, reported the presence of chytrid fungus in Nigeria and further evaluation of the extent of the distribution in the region is to be evaluated. In Madagascar, we supported the conservation of breeding ponds of the critically endangered Golden Mantella Frog in a new protected area. We also provided support for the Amphibian Survival Alliance which brings together international institutions to implement the Amphibian Conservation Action Plan.

Top left: Darwin's Frog, subject of genetic studies supported by Chester Zoo.

Top right: Black-eyed Tree Frog, one of our A-Pod inhabitants. © Douglas Sherriff

Supporting strategic objectives:

1 2 3 4

Conserving British Wildlife

ACTING LOCALLY IN THE UK



Native Species Programme highlights in 2011 include a new UK conservation project with rare spiders, exciting results from dormouse research, and successful outcomes from several recently supported projects.

For three months in summer keepers reared young Fen Raft Spiders as part of an initiative led by Natural England. This species only occurs at three UK sites and is classified as vulnerable by the IUCN. We successfully reared 379 spiders which were released on protected sites in Suffolk.

Great progress was made with analysis of dormouse data collected over the last seven years. Important findings include breeding behaviour that was unexpected in the region, and evidence of the fragility of the reintroduced Cheshire population.

High quality video of a Lesser Horseshoe Bat maternity roost was obtained through the bat camera project previously supported with Zoo funds and installed by the Zoo's technology experts. New sites for further bat monitoring have been identified in North Wales.

Zoo funding and field work enabled more than 100 Cheshire Black Poplar trees to be genetically 'fingerprinted'. Only six different clones have been found, greatly simplifying propagation work. All the clones identified so far are in cultivation in Cheshire, with five held at the Zoo.

2011 saw our most successful contribution to the UK Sand Lizard project - 29 juvenile lizards raised here were released at Yrnyslas



Nature Reserve in West Wales. Other projects concerned with UK endangered plants included reintroductions back to the wild of Common Juniper and the continued propagation at Chester of insurance populations of Pilwort, MacKay's Horsetail, Limestone Woundwort, Isle of Man Cabbage and Floating Water Plantain.

The first two Biodiversity Trainees, funded by the HLF Skills for the Future scheme, started their year-long placements. This scheme provides paid, work-based training placements and will improve the quantity and quality of skills available to the UK heritage sector. Cheshire Wildlife Trust and RECORD are project partners, and the trainees spent time with all three organisations in 2011.

Grant support for native species projects included population monitoring and habitat connectivity activities to enhance Water Vole populations in Cheshire; a habitat restoration project at Brockholes Nature Reserve in Lancashire and support for the Big Balsalm Bash, a project to control invasive plants species.

Partnerships

Our partnership with the Countryside Council for Wales took a significant step forward through a 'Concordat' to facilitate improved cooperative working towards mutual conservation aims. Chester Zoo continues to host various important regional biodiversity meetings and has representatives on several regional groups including the Wales Mammal



Biodiversity Forum and the BIAZA Native Species Working Group.

Nature Reserve

Plans for a Zoo nature reserve, to be located on fields adjacent to the Shropshire Union canal, were developed in 2011. The 2010 Wildlife Audit highlighted the value of this area, which already is designated a local 'Site of Biological Importance'. The nature reserve will ensure protection and enhancement for local wildlife whilst allowing public access. Funding for the first phase of implementation has been obtained.

Other successes from previously funded projects:

Research by the National Botanic Garden of Wales and Aberystwyth University confirmed the native endemic status of Welsh Cotoneaster.

Sand Martins have moved into the Chester Zoo funded artificial nesting bank at Marbury.

And finally.... we held a Harvest Mouse training event in November and found several intricately woven Harvest Mouse nests in fields where we reintroduced this species in 2002-2003, proving the species is doing well there still.

Clockwise from top: Young Fen Raft Spiders raised at Chester Zoo. © Phil Noble/Reuters; Zoo-propagated juniper planted on the Great Orme under a goat-proof basket. © Sally Davies; Biodiversity trainee doing dormouse work. © Tom Marshall.

Supporting strategic objectives:

1 2 3

Chester Zoo Conservation Grants PROVIDING SUPPORT FOR CONSERVATION PROJECTS ACROSS THE GLOBE



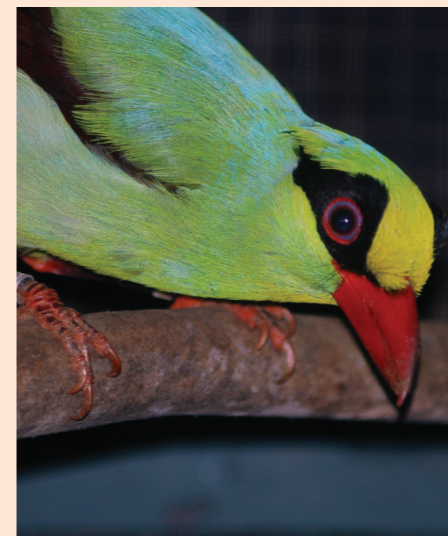
In addition to our ten flagship conservation programmes, Chester Zoo supports an extensive range of conservation projects worldwide through conservation grants. 69 projects in 35 countries received grant support in 2011, allowing the Zoo to create field links for more species in the collection and helping us broaden our network of conservation partners. There is strong competition for conservation grants and our review process ensures that awards are provided to those projects that potentially have the greatest conservation impact.

A process to evaluate the conservation impact of field conservation activities was developed and refined last year. This process was applied to all of our conservation support in 2011. The results of this will be analysed in 2012, helping guide Chester Zoo's strategy for conservation support and optimise our conservation impact.

Some of the grants awarded in 2011 include:

Mammals

Support for Lowland Tapirs continued in 2011 with the Brazilian Pantanal Tapir Initiative. The project experienced its most productive field season to date. Also in the Pantanal, camera traps funded by Chester Zoo for a new research project provided rare footage of the elusive Giant Armadillo. These images subsequently received wide spread international attention. We also sponsored the 5th International Tapir Symposium held in Malaysia.



Other mammal support in 2011 included research into Bushdog habitat use, continued monitoring and research of Black Lion Tamarin populations in the Atlantic Forest, Brazil and protection of Okapi in the Okapi Forest Reserve, Democratic Republic of Congo.

Birds

New support was given for a conservation breeding programme we initiated for the Javan Green Magpie; this once common bird has been exploited by the Indonesian bird trade and is now thought to be almost extinct in the wild. Our continued support for the Grey-breasted Parakeet, found in the Baturité Mountains of Brazil, has again resulted in population growth for this threatened species. Hornbill conservation continues to be a focus for Chester Zoo with projects supported in the Philippines, Thailand, Borneo and India. In South Africa we supported research investigating the impact of avian flu on vulture populations.

Reptiles, Amphibians and Invertebrates

Support was continued for the *in situ* conservation of Komodo Dragons, Philippine Crocodiles and for the Pacific (Partula) Tree Snail. Major project support for amphibian conservation continues through the Amphibian Programme (see page 22).

Fish

Funding was provided for a new project assessing the conservation status of the highly threatened Pinstripe Damba in Madagascar. Our long-term partnership with the Mexico Fish Ark is helping maintain important *ex situ* populations of many critically endangered Mexican fish species and this year enabled expansion of fieldwork activities. We also continued our involvement and support of the IUCN Freshwater Fish Specialist Group.

Botanical

Following a successful start to the REGUA Reserve Wetland Forest Restoration Project in Brazil, further funds were provided for the employment of local field assistants to continue the reintroduction of native and endemic orchid species.

Studentships

This year, following a record number of applications, we awarded ten Conservation



Studentships. These included projects examining genetics and inbreeding in the Mauritius Pink Pigeon; the cost effectiveness of human- elephant conflict mitigation methods in Assam; investigating habitat use of the Philippine Hawk Owl and assessing the impact of logging on the biodiversity of bat assemblages in Borneo.

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 a human- elephant conflict project aiming to assess impact and efficacy of conflict mitigation techniques within the Laikipia District of Kenya.

Please see Appendix 7, Worldwide Conservation Activities, for a comprehensive list of projects supported in 2011.

Opposite page: The Grey-breasted Parakeet is restricted to a very small area of Brazil.

© Fabio Nunes/AQUASIS

Top: A rarely-seen Giant Armadillo captured by a Chester Zoo funded camera trap in the Brazilian Pantanal. © Arnaud Desbiez

Bottom: The Javan Green Magpie – overexploited by the Indonesian bird trade.

Supporting strategic objectives:

1 2 3 4 5

Global Partnerships for Progress

WORKING WITH ZOO ASSOCIATIONS, WILDLIFE ORGANISATIONS & CONSERVATION AGENCIES WORLDWIDE

World and Regional Zoo Associations

During the year a number of staff attended and participated in annual and mid-year meetings of the World Association of Zoos and Aquariums, the European Association of Zoos and Aquariums and the British and Irish Association of Zoos and Aquariums. In October Director Emeritus Professor Gordon McGregor Reid was presented with WAZA's highest honour, the Heini Hediger Award, in recognition of his contributions to the zoo world.

EAZA Ape Campaign

As part of our contribution to the 2011 EAZA Ape Campaign, Chester Zoo organised and hosted a one day symposium 'Saving Apes: Frontline Conservation' attended by over 80 delegates. Speakers included a number of ape experts both external and from our own staff.

Royal Gifts to Biodiversity Conservation: The History and Development of Menageries, Zoos and Aquariums

Representatives of some of the most prestigious and long-established zoos of the world and partner agencies gathered at Chester Zoo to share the history of their institutes on the 19th and the 20th of May 2011.

The symposium focused on the development of the missions of zoos from simply exhibiting animals to becoming a global force in biodiversity conservation. The proceedings of the contributions will be published by Chester Zoo in the first half of 2012.

IUCN-SSC/Wetlands International Freshwater Fish Specialist Group

Chester Zoo's Director Emeritus, Professor Gordon McGregor Reid continued as chair of the IUCN/WI Freshwater Fish Specialist Group during 2011. The previous Programme Officer, hosted and supported by Chester Zoo, left during the year and a new Programme Officer was recruited to take up post in January 2012.

One of the highlights of the year was the planning and organisation of a meeting 'Global Challenges in Caring for and Conserving Freshwater Fishes' held in liaison with the World Fishes Conference in Edinburgh. The FFSG Chair and Programme Officer also contributed to the IUCN-SSC publication 'The Diversity of Life in African Freshwaters: Under Water, Under Threat'.

FFSG provided facilitation of the 2011 Red Listing Workshop for New Zealand Fishes

and other freshwater biodiversity via a grant from Biofresh. Financial and other support was provided for the formation of the IUCN-SSC Freshwater Biodiversity Subcommittee via a workshop in Mexico.

Strategic Plan for Biodiversity

2010 was known as the year of biodiversity. One of the important things that came out of this was a new Strategic Plan for Biodiversity of the Convention on Biological Diversity (CBD). This plan was launched at the 10th Conference of the Parties (COP10) of the CBD in Nagoya, Japan in October 2010. This plan of major biodiversity importance included 20 Aichi Biodiversity Targets for the 2011-2020 period. What is most important about these targets is that governments around the world have signed up to achieving them. For zoos, the most notable of the targets is Aichi Target 12:

'By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained'

Zoos are very much part of the toolbox of conservation measures to assist governments in achieving this target which they have signed up for.

Amphibian Survival Alliance

The Amphibian Survival Alliance (ASA), launched in June 2011, is a global partnership for amphibian conservation. The ASA is a motivated and effective network of organisations working together to stem the rapid losses of amphibian populations and species worldwide by implementing the global Amphibian Conservation Action Plan (ACAP). The Alliance is the major force for the conservation of all amphibians and will bring focus, coordination and leadership to address the world's most serious extinction crisis. Its goal is the restoration of all threatened native amphibian species to their natural roles and population levels in ecosystems worldwide. Chester Zoo is pleased to have provided financial support to the ASA since 2010 and the Director General is a Board Member.

Left: Professor Gordon McGregor Reid receives the Heini Hediger Award from WAZA.



Supporting strategic objectives:

1 2 3 4 5 6

Keeper for a Day Scheme

STAFF INVOLVEMENT IN WORLDWIDE CONSERVATION



Chester Zoo operates 'Keeper for a Day' and 'Gardener for a Day' schemes, where members of the public have the opportunity to work alongside our highly skilled staff to experience first hand what it's like to work in a zoo. Money raised from this scheme is used to support conservation activities. Through an application process this fund provides staff with the opportunity to gain valuable experience and get involved with conservation projects, conferences and meetings outside of the Zoo. In 2011 this fund enabled 21 members of staff to undertake activities around the world.

Dave Brunger, from our Conservation Medicine & Research Division, travelled to Uganda to provide training on quarantine and records management at an event hosted by the Pan African Sanctuary Alliance. Dave also, alongside Zoo vet Steve Unwin, assisted with inspections of the Ngamba Chimpanzee Sanctuary in Uganda and the Sweetwaters Chimpanzee Sanctuary in Kenya and again provided training at both sanctuaries on quarantine and records procedures.

Butterfly keeper Heather Prince attended the Butterfly Exhibitors' Conference held at



Niagara Parks Botanical Gardens in Canada. The conference included presentations and discussions on butterfly husbandry and exhibition, including methods for increasing flower production and butterfly activity levels. These meetings also provided an opportunity to network and exchange experiences with other butterfly keepers.

Adam Richardson, also part of the Butterfly Team, travelled to Shipstern Nature Reserve in Belize to work with some of the species we keep in our butterfly exhibit. Whilst in Belize Adam received training in field surveying skills and rearing techniques which he has been able to put into practice back in the Zoo.

Primate keepers Deborah Williams and Claire Parry attended a callitrichid (marmosets and tamarins) and lemur husbandry and conservation training course held at Jersey Zoo. The course involved a number of workshops and lectures on subjects including collection planning, enclosure design and health monitoring. These workshops provide a great networking and training opportunity.

Elephant keeper Alan Littlehales travelled to Germany to take part in Hagenbeck's Elephant School. This school provides intensive training in all aspects of elephant husbandry and welfare.

Our senior veterinary nurse Alison Kelsall, vet Steve Unwin and nutritionist Andrea Fidgett visited Java to participate in an Orangutan Conservancy workshop on orangutan veterinary care. Whilst in Indonesia they were also able to visit the HUTAN-Kinabatangan Orangutan Conservation Project which is part of our Realm of the Red Ape Programme (see page 14), and receives core funding via the Keeper for a Day scheme, to see first hand the work which is supported by Chester Zoo. They also had the opportunity to help with the forest restoration work by planting tree saplings.

Other staff projects that were supported, many of which linked in with our conservation programmes, include an orangutan bridge building expedition to Borneo; bear care workshops in Canada and Ecuador; human-elephant conflict fieldwork in India; an elephant welfare workshop at Phoenix Zoo; conservation education in China and a rhino husbandry conference in Texas.

Top: Working with butterflies at Shipstern Nature Reserve in Belize.
Left: Tree planting in Borneo.

IN-ZOO DEVELOPMENTS IN 2011

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Key developments in the animal and plant collection

2011 saw the launch of our new collection plan database: a one stop shop for all information on the collection and a tool that will enable us to audit how well the collection is performing against the targets set for each species.

Mammals

One of the high points for 2011 was the opening of our Mkomazi exhibit, home to a pack of African Painted Dogs, Rock Hyrax, African Crested Porcupine and Sable Antelope. This themed area provides a great opportunity for visitors to see these animals in a naturalistic setting and learn more about the important field conservation work we do.

We are delighted to have bred two important carnivore species: Northern Cheetah and Sumatran Tiger. The four Cheetah cubs enthralled visitors over the summer months and we were devastated when we lost two of them to cowpox in the autumn. Fortunately swift diagnosis and the dedication of veterinary and carnivore teams meant that we were able to nurse the rest of the family back to full health. Our three Sumatran Tiger cubs were born in October and the new Asda viewing platform has allowed much improved viewing.

Another significant birth was that of a female Asian Elephant calf. A month later however we had to say goodbye to *Sheba*, our eldest elephant, who was no longer able to maintain herself due to having worn out her last set of teeth. *Sheba* was a much loved member of our herd and is sadly missed by staff, visitor and elephants alike.

Two other projects that we have been working on this year are indoor accommodation and underwater viewing for the Giant Otters and a new mixed exhibit in *Spirit of the Jaguar* which will house sloths, turtles and fish. Both are due to be opened early in 2012.



Birds

We were very excited to have bred three Philippine Cockatoos (a first for the Zoo) but this was overshadowed by the sad loss of one of the young at weaning and three of the adult birds, including the breeding male, to an as yet undiagnosed illness.

Two Black and White Laughingthrushes were successfully hand-reared. The studbook for this species is held at Chester Zoo and our breeding of these very rare Sumatran birds is a welcome boost to the captive population. This is a species for which we are now also offering *in situ* conservation support.

We are proud to be recipients of a pair of White-winged Ducks, one of the most endangered duck species in the world. They are housed in the recently refurbished former crocodile enclosure in the Tropical Realm. It is hoped that we can develop a field support component for this species in Assam or Sumatra.

2011 saw the departure of our four Red Birds of Paradise – a species that is a real struggle to keep in captivity. These birds have been moved to the main collection that is working with birds of paradise in Europe as part of the global studbook recommendations for this species.

Reptiles and Amphibians

Important acquisitions in 2011 included the world's largest chameleon species, Parson's Chameleon, which can be seen in the Tropical Realm and eight critically endangered Mountain Chickens which are part of an international recovery initiative. Our founder Mountain Chickens produced 14 tadpoles which, when grown, will hopefully be released in their native Montserrat. We also acquired two species new to the Zoo, Martinique's Anole Lizard held in the butterfly exhibit and the Yellow-spotted Amazonian River Turtle to be housed in *Spirit of the Jaguar*.

Breeding successes included four critically endangered Annam Leaf Turtles and the successful hatching of three Rio Fuerte Beaded Lizards.

Aquarium

One of the major achievements for 2011, and one for which we were awarded a BIAZA commendation, was the breeding of a shoal of 500 Red-Lined Torpedo Barbs. These fish can be seen in the elephant house.

New species for the Zoo are Dwarf Lionfish, Flag-tailed Grouper, Cleaner Shrimps, Red Rainbowfish and Ajamaru Lakes or Boeseman's Rainbowfish. A lot of work has also gone into the design of a new aquarium in *Spirit of the Jaguar* that will house a variety of fishes including tetras, cichlids, angelfish, pencilfish and discus.

Plants

The Zoo grows a number of threatened plants from the Mascarene Islands from seed collected in the wild. One species, the critically endangered *Zanthoxylum heterophyllum*, was germinated in our greenhouses. This is a particular achievement as it is one of the first times that the species has been germinated outside of Mauritius. A number of plants from the Mascarenes are now on display in *Islands in Danger* and the *Grow Zone*.

Major progress has been made on inputting the conservationally important plant collections onto the Zoo's plant record system – 'Demeter'. The database currently holds 2,949 records and includes the Zoo's National Collections of orchids and cacti.

Left: Seedling of *Zanthoxylum heterophyllum*.
Top: Parson's Chameleon, the largest of its kind.

Supporting strategic objectives:



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 of the key support services are highlighted below:

Veterinary Service

Chester Zoo has an in-house team of vets and nurses to provide clinical care to the collection. As well as providing care for sick animals the vet team also manages a comprehensive preventative health care programme. 2011 was a busy year with a number of challenging cases and the settling in of new staff including our new resident in Conservation Medicine – the fourth one to undertake this important three year clinical training programme in conjunction with the University of Liverpool.

Animal Moves & Records

Accurate record keeping and inter-zoo animal transfers are critical to our contribution to international breeding programmes. In 2011 we moved 2,483 individuals in 230 separate transactions. As well as the logistics of arranging their safe transport, permits must be obtained, animal health regulations met and stringent quarantine of all incoming animals undertaken. 2011 has also seen continued refinement and consolidation of our records in preparation for our transfer to ZIMS in 2012.

Endocrine Service

Now in its fourth year, the endocrine service has run several thousand faecal and urine samples in variety of taxa and provided research training for over 20 staff and visiting undergraduate and graduate students. Monitoring of reproductive and adrenal hormones has enabled us to adapt our husbandry practices to support animals better through pregnancy, birthing and the post-partum period.

Animal Feeding Programme

The Zoo Nutritionist and Animal Supplies team work closely with the keeping staff to ensure optimal feeding of our animals. Browse (tree branches) are an important food stuff for rhinos, elephants, Okapi and giraffe and ensuring a consistent supply using both

external sources and our own plantations has been a major focus this year.

In addition we are pioneering development of a new international zoo diet software programme with Format International which should enable us to further refine zoo diets and ensure cost effectiveness.



Developing and operating the Zoo attraction

2011 saw the first complete year of Chester Zoo in successful partnership with Heathcotes Outside. The last twelve months focused on numerous changes to the Catering Department, all for the better.

A complete refurbishment of the Ark Restaurant and a name change in honour of George Mottershead's daughter, June's Pavilion offers an exciting range of food, from pasta to burgers and even a Deli Bar. The whole interior showcases the rich history of the Mottershead family's association with the Zoo.

Two new coffee houses opened, Oaks and Bembe, which also now boasts an outside BBQ area. Bembe is located in the area that will be on the outside perimeter of the Zoo when the main entrance works are completed, and will be available to those visitors who just want to pop in for coffee or lunch.

Exciting new menus have been created incorporating fresh, locally sourced produce. In addition to this we are very proud to have developed our own coffee brand Shuka which is Rainforest Alliance certified, ethically produced and now available throughout our catering outlets as well as being available to purchase in 2012 for you to brew at home!

In order to build on our Guest Service skills we continued the Mystery Guest Scheme during 2011, increasing the number of visits in order to maximise feedback. Reports allowed us

to monitor guest comments from all aspects of the Commercial, Education, Animal and Horticultural Divisions.

During May of 2011 we saw the re-structure of the Zoo Services Department to define 'Sales' and 'Service' which has made significant improvements in communication, team building and performance.

An objective set during 2010 to assist staff with the understanding of the Society's conservation projects was completed in the form of presentations made by Guest Services and Conservation Managers. Those employees who attended now have a clearer understanding and this knowledge will be passed to our guests.

Over the past year the Retail team has made a number of operational changes in preparation for planned future developments, the introduction of a new back office system, the recruitment of a buyer focusing on diversifying the product mix.

The Zoo hosted a number of events during 2011, the annual *Barnardo's Big Toddle* saw over 2,000 under-3s walk one mile around the Zoo, even further boosted by us holding the Barnardo's North West launch.

The Carnivorous Plant Society held their European Exhibition and Exchange on the lawns of Oakfield Manor. Guests were given the opportunity to learn more about the plants and conservation as well as viewing some national collections, hydroponics and taking part in cultivation workshops.

The main event of the year was *Dinosaurs at Large!* - an outdoor exhibition consisting of 13 animatronic dinosaurs. Over 400,000 visitors attended the exhibition between July and October. A team of special 'Dinosaur Keepers' brought the exhibition to life making this one of the most popular events seen at Chester Zoo for many years.

Our 5K fun run, '*Run for the Wild*', continued into its second year with over 150 participants, raising over £3,000 for our conservation work in Nigeria.

Animal Gifts and Experiences have also had a positive first year. Excellent feedback and strong sales have provided a solid foundation which should continue well in 2012 with Rhino and Lemur Island encounters added to the range.

Top: June Williams with Zoo Managing Director, Barbara Smith, at the opening of June's Pavilion.

Supporting strategic objectives:

1 2 3

In-zoo Science and Research

INVESTIGATIONS AND EVIDENCE IN SUPPORT OF CONSERVATION AND WELFARE



Science plays an important role in achieving Chester Zoo's vision and mission. Knowledge of species, habitats and the drivers for their loss underpins all conservation efforts, and scientific method provides the evidence base for decision-making, evaluation and refinement. These principles apply not only to research and conservation initiatives in the field, but also to our in-zoo activities, be they related directly to species conservation, or indirectly through the delivery and support of organisational needs and the building of our scientific credibility and capacity.

During 2011, Chester Zoo staff and academic associates contributed to over 140 scientific and technical publications (see Appendix 6 for key publications).

We have a multidisciplinary in-zoo research team with strengths in applied ethology, endocrinology, nutrition, visitor research and zoological medicine. Conversion of the former small mammal breeding unit to our new Research Centre was completed in June 2011, providing dedicated facilities including office space for up to 11 staff and visiting researchers, a new purpose-built endocrine laboratory, and a seminar room. We hold weekly 'research group' meetings, which are open to staff in Conservation Medicine, Field Programmes and Discovery & Learning. Other individual staff and external researchers attend on an ad hoc basis, depending on their research needs.

This group reflects all areas of our research expertise, facilitates greater opportunities to support and collaborate with each other, and has helped provide a firm foundation from which to contribute towards our strategic goal.

Our research success depends not only on the on-site work we do, but also on our profile and influence with peers, nationally and internationally. This includes participation in various animal management and conservation committees (e.g. our roles include: Elected Secretary, International Society of Wildlife Endocrinology (ISWE); Vice Chair, EAZA Research Committee; Vice Chair, BIAZA Research Committee; Chair, BIAZA Animal Welfare Focus Group; Research and Animal Welfare "Champion", BIAZA Living Collections Committee); writing and reviewing scientific papers, and participating in conferences and workshops. In July 2011, we had a strong presence at the BIAZA Research Symposium, held at Bristol Zoo. Our staff and interns were involved in eleven oral and poster presentations (one of which received a 'Highly Commended' student award). Some of the other 2011 research highlights involving our staff include the following:

Applied ethology

The Research Officer has been working with Curators to identify our current research priorities and ways in which research can support evidence-based management of the collection. One of the outcomes is an

ongoing year-long study, by the Research Department, to assess the behaviour and welfare of Jaguars in relation to targeted husbandry improvements.

Endocrinology

The endocrine lab has begun supporting research carried out by the University of Exeter on Banded Mongoose (*Mungos mungo*) in situ. This research contributes to the field of evolutionary ecology, by giving insight into the hormonal mechanisms controlling behaviour and by serving as a model for more vulnerable social species.

Nutrition

In collaboration with the University of Manchester, our Nutritionist has supervised to completion a PhD on the effects of dietary supplements on South American tree frogs, and further doctoral study on ultraviolet lighting regimens for these species is ongoing (co-funded by NEZS and grants from UK Research Councils (NERC and BBSRC)).

Zoological Medicine

Staff have contributed to the development of disease risk analysis protocols for great ape reintroductions (partnering with CBSG), to assist in release programmes; and a tuberculosis diagnostic test evaluation (in association with Chembio Diagnostics, PASA and the Orangutan Conservancy). In-house, progress has been made on an investigation into blood ionised calcium and vitamin D levels in indoor aviary-housed birds, part of wider investigations into causes and prevention of avian metabolic bone disease.

Visitor research

The Zoo's education researchers have further developed a longitudinal study into the factors that influence visitor attendance at talks. Another long-term study continues on the impact on visitor perceptions of animals, following different talks by Presenters on one species (Chimpanzees). Furthermore, evaluation of 'Zoo Vets: The Inside Story' indicated that this exhibition had a positive impact.

Top: Researcher collecting data at *Spirit of the Jaguar*.

Supporting strategic objectives:

1 2 3 4

Discovery and Learning

ENGAGING PEOPLE WITH NATURE

Although 2011 was officially the Chinese year of the rabbit, for the Discovery and Learning team, it became very much the year of the dog with an enormous amount of creativity, ingenuity and hard work going into the development of the interpretation for the new Painted Dog exhibit. In a departure from our traditional sign-based approach we tried to make the interpretation more part of the landscape to further deepen the immersive aspect for visitors while still getting our messages across to them. Similar principles were applied to the redevelopment of the central drum of *Spirit of the Jaguar* where visitors can experience a very realistic reconstruction of a rancher's front porch and watch a short film showcasing Chester Zoo's work with Jaguars in the wild.

Education Officers worked hard to improve the quality of learning experiences for visiting school groups in the Education Centre. Our upper limit of 20 per class meant that interactive activities became easier to manage and the session, we hope, more enjoyable and effective. We conducted research to see if the desired increase in interactive components of taught sessions had been achieved and found that it had not. Although disappointing this has made us more determined to make the necessary changes going forwards. Our research project won a commendation in the BIAZA Awards for Best Education Project.

2011 was the first full year of the new Experience Presenter Keepers in place. Four kinds of animal encounters were offered (Meerkat, penguin, Lemur Island and giraffe) plus zookeeper experiences and private tours. The three most popular activities were Penguin Encounter, Junior Zookeeper Experience and Giraffe Encounter in that order. New experiences are in preparation for 2012.

The Safari Ranger service continued to be successful, visiting 89 schools and delivering sessions to a total of 10,831 pupils. Once again, generous support from sponsors covered all the running costs of the Ranger enabling us to continue offering this as a free service to those schools within a 15 mile radius of the Zoo.

Even further afield we were involved in a number of overseas education initiatives detailed on pages 13-23.



The Presenter team was out, as always, in all weather giving live talks about our animals and conservation work. By the end of the year Presenters had spoken to just under 225,000 visitors, not including the 44,000 who visited the Zoo Vets exhibition in the Joseph Banks Room. We also received a BIAZA Commendation for this exhibition.

We continued to work on cataloguing, preserving and making accessible the Zoo's

archive material dating back to the 1930s. The big task of 2011 was scanning and then binding many thousands of items of correspondence between the Zoo's founder, George Mottershead, and other zoos around the world. These often give a fascinating insight into how Chester Zoo influenced the development of many others.

Discovery and Learning staff participated in and contributed to a number of conferences both at home and overseas including the Asian Zoo Educators' Conference at Taipei Zoo, Taiwan where the Head of Discovery and Learning was the invited keynote speaker. Discovery and Learning staff were involved in the design and delivery of two EAZA Academy training events in 2011, at the Oceanographic Aquarium, Valencia in March and at Antwerp Zoo in October. Both events catered for the growing demand from European zoos for higher quality visitor research. In 2012 Chester Zoo will be hosting the International Zoo Educators' Conference with an anticipated attendance of up to 150 educators from around the world.

Top: A Presenter talks to visitors about palm oil issues in *Realm of the Red Ape*.
Bottom: Experience Presenter Keeper and two young guests prepare for a Penguin Encounter.

Supporting strategic objectives:

3 4 5 6

Marketing and Public Relations

LAUNCHING THE NEW BRAND AND WORKING WITH DINOSAURS



The launch of the Zoo's new iconic brand together with some rather large 'intruders' were the focus for marketing and public relations.

The new brand identity began to be rolled out with the aim of reflecting the many functions of the Zoo and its role as both a conservation charity and one of the UK's top tourist attractions.

The new logo, typeface, tone of voice and colour palette created a consistent brand which connects all of our audiences.



The Zoo's PR, meanwhile, was dominated during the summer months by the arrival of *Dinosaurs at Large!*

The publicity for the event was based on a dedicated PR plan that was put in place before the event. This enabled the PR team to focus on the different elements of the event – from the arrival of the dinosaurs through to their departure.

The dinosaurs appeared on national TV morning programme *Daybreak*, regionally on *Granada Reports*, dominated radio stations and made headlines in print and via social media in the UK and around the world.

The creation of Dinosaur Keepers for the summer provided plenty of spin-off PR, with radio interviews with one of the candidates – a primary school pupil – and the Dinosaur Keepers themselves. As well as the PR, the event was marketed on TV, radio, print and through outdoor and partner activity throughout the North West, Yorkshire and the Midlands.

A mix of engaging TV, radio and print campaigns were used during key holiday periods to generally market the Zoo to visitors, including those people living in the extended drive time of 1.5 to 2 hours to visit.

PR also reached new markets this year. The PR team welcomed *Daybreak* and *Granada Reports* back to the Zoo for the arrival of

the four Cheetah cubs, broadcasting live throughout the morning.

There were a number of animal births throughout the year that made for some high-profile coverage, none more so than Asian Elephant *Jamilah* and the three Sumatran Tiger cubs. The advertising equivalent value for PR for 2011 was £3,801,640 excluding broadcast.

New and exciting marketing partnerships were built throughout the year too. Joint activity with Merseyrail proved most successful and we worked closely with Marketing Manchester on a new summer tourism marketing package.

Together with Marketing Cheshire, we developed our *Destination Support Package* which included joint marketing events and advertising in the *Chester and Cheshire Visitor Guide*.

We also advertised with *Cheshire's Gardens of Distinction* using the new Zoo brand to showcase our gardens. With *Favourite Days Out* we attended numerous shows and distributed over 200,000 leaflets.

2011 was another record year for ticket agents with 50,392 tickets sold, up 22% on 2010 and with revenue of £549,237. The total number of group visitors booked stood at 48,134 group visitors, worth £565,907.

In line with our business plan to increase the number of paying visitors through the door, we limited the number of promotions for 2011.

There were great advancements on the digital marketing front. We marked 2.1 million website visits (up 32% on 2010), generating £2.25 million in revenue (up 40% on 2010).

Changes were made to enhance search engine optimisation, online advertising, email marketing & social media. Facebook 'likes' increased to 32,500 (150% increase on 2010) and there was a 300% increase in Twitter followers – 4,500 at the year's end. Zoo animations and a promotional video were also launched to further market the Zoo. There was a successful end to the year when the Zoo picked up the Marketing Cheshire's Large Visitor Attraction of the Year Award and Best Tourism Event Award for *Dinosaurs at Large!*

Top: Inspecting one of the new arrivals.
Left: Inoculation time for the Cheetah cubs.

Supporting strategic objectives:

1 2 3 4

Trusts, Grants and Sponsorships Received

RENEWING OLD FRIENDSHIPS AND MAKING NEW ONES



As a conservation and education charity, Chester Zoo is dependent on the generosity of its partners to continue and expand its projects both at home and in the field. Our sincere thanks go to all those who help us fulfil our mission and have supported our work during 2011 including donors, sponsors, partners, lifetime supporters and volunteers.

During 2011 we have renewed our partnership with Asda to create a new visitor viewing platform at the Sumatran Tiger enclosure. A massive thanks go to all at Asda's Bakery team and the Ellesmere Port store who have been fantastic supporters of the Zoo and our tigers.

This year we also received support from Bank of America Merrill Lynch, helping to fund our new nature reserve which is due to open towards the end of 2012.

Ongoing financial support is incredibly helpful for us to plan and develop projects and so we are delighted that the Cheshire Building Society continues to support our work with the Big Cat Junior Saver, and our partnership

with Airbus goes from strength to strength with their support of aviaries at Chester Zoo.

Trusts and foundations have also continued to support a wide variety of projects including the Heritage Lottery Fund's support of our biodiversity trainees programme. This was the first full year of a four year project and exceeded all expectations. The Philip Barker Charity has also continued to fund our education work through the Safari Ranger Programme delivering conservation education in schools. Thanks also go to Halliwell Jones for supporting this project with a car throughout 2011. We are extremely grateful to both for their help with this project for schools. Grateful thanks also go to the trustees of The Ronald and Kathleen Pryor Charity who have been supporting the work of the Zoo for many years through a variety of different projects.

During this year the Society has been supported by the estates of Dorothy Davies and Florence Pettitt who left legacies to help the Zoo to continue its work for which we are extremely grateful.

Sincere thanks go to the following major donors and supporters:

- Aaron & Partners LLP Solicitors
- Airbus
- Ambrose Appelbe Solicitors
- Ambrose and Ann Appelbe Trust
- ASDA
- Bank of America Merrill Lynch
- Brian Wilson Charitable Trust
- Darwin Initiative
- Dickson Haslam Solicitors
- Dorothy Davies (Legacy)
- Florence Pettitt (Legacy)
- Gregorys Solicitors
- Halliwell Jones Chester
- Heritage Lottery Fund
- Hill Dickinson LLP
- Keoghs and Nicholls, Lindsell & Harris Solicitors
- Lees Solicitors LLP
- Philip Barker Charity
- Ruth Smart Foundation
- The Rt Hon Baroness Rendell of Babergh, CBE
- The Cheshire Building Society
- The Eric and Dorothy Leach Charitable Trust
- The Law Office of Paul D'Ambrogio
- The Marjory Boddy Charitable Trust
- The Peter Foden Family Charitable Trust
- The Ronald and Kathleen Pryor Charity
- The Steel Charitable Trust
- The Zochonis Charitable Trust
- T.J.Morris Ltd
- Walker Smith Way Solicitors
- Yorkshire and Clydesdale Bank Foundation

Top left: Staff from Airbus and Chester Zoo celebrate their partnership. ©Airbus Operations Ltd.



Supporting strategic objectives:

1 2 3

Human Resources and Organisation Development

STAFFING, ORGANISATION, STRUCTURE AND TRAINING

During 2011 the Human Resources Department has responded to organisational challenges by delivering customer focused line management support on all people matters. In particular our aim has been to recruit and maintain a workforce where flexibility is of high importance, effective manpower controls are in place and fair pay practices are applied to support the success of the organisation.

Resourcing

This year we have been very busy recruiting permanent, temporary, seasonal and agency staff to meet our manpower requirements. Keeping a close eye on manpower controls and budgets ensured we hired staff at the right time and at the right salary to support operational requirements. Effort was made this year to review every aspect of the recruitment process to ensure the right people are recruited for vacancies advertised internally and externally. The HR team continues to provide advice and support to managers and supervisors on all resourcing matters by attending interviews and influencing decision making on selection. This year we once again coordinated the under 16 work experience programme in conjunction with Education Business Plus (Connexions) giving local high school students an insight into the working world of Chester Zoo. For all new employees we have developed and improved induction programmes. For those staff who have not been through an induction process for a number of years a mini induction programme has been introduced which has had helped to ensure probationary reviews for new starters are undertaken effectively.

Reward and Benefits

Pay negotiations were more complicated in 2011 with the completion of job evaluation being required before the negotiated pay settlement could be agreed. The opportunity to agree the 2012 pay award swiftly on the back of the 2011 settlement was important, and a 2 year pay deal was in principle achieved for the first time at the Zoo. Under the 2011 pay settlement it was agreed that we would improve staff benefits and all staff will be eligible for the first time to have a healthcare cash plan providing a range of positive healthcare benefits. The scheme provides cash back to cover costs such as



dental and optical bills, physiotherapy and even consultancy charges which has been extremely well received by staff.

The Job Evaluation project covering all staff was implemented in October with retrospective pay increases awarded in November. The project took 18 months to complete with reward analysis, pay practice planning and full consultation being concluded during 2011.

Overall 83% of staff (excluding seasonal staff) received pay rises as a result of this project. A new job evaluation maintenance procedure has been prepared to avoid the pressures of "grade drift" over time and ensure the new staff salary graded structure does not fall into disrepute ceasing to be an effective method to retain relativities between jobs.

This project delivered a fair and more manageable pay structure than had previously existed. Visible pay structures were put in place for the first time supported by an annual pay policy. Effort was also made to have more attractive employment terms adopted by the end of 2011, helping us to be more competitively placed in the labour market, and to strengthen our retention capability for those who have recently joined us.

Training and Development

Under our strategic improvement planning process, supervisory training and development has been our primary focus,

in addition to supporting on-going general training requirements which have been prioritised in terms of need for all operational areas.

There were a number of key programmes completed throughout the year which included the Institute of Leadership Management Level 2 Team Leader Training NVQ and Level 3 First Line Management NVQ. In retail we ran the NVQ Level 2 and also provided upselling training to enable our retail and catering teams to better engage with the customer to deliver extra sales. A course to improve crowd control delivered through the Spectator Safety NVQ Level 2 is continuing into 2012.

During 2011 we provided supervisory training in Health and Safety through the Chartered Institute of Environment and Health NVQ Level 3 course with training being delivered to all our supervisors. During 2011 we continued to provide child protection training for all roles where it is considered essential to have this in place.

Performance Management

This year we replaced the existing appraisal process with a new format aimed at delivering a more effective and less time consuming

requirement on supervisors and staff. The new process is called the Performance and Development Review Process (PDR). We aim to have all PDRs completed by March 2012 having introduced the new process in November 2011. The line manager and staff member are required to fully prepare for the PDR meeting ensuring past objectives can be reviewed and measured against targets. Objectives will be set as well as all training needs identified for 2012 within a single meeting. All PDRs will be captured electronically and this will be the first phase of a new project to develop a better PDR process by the end of 2012.

In 2011 a number of senior management coaching sessions were arranged to assist staff to be fully effective when promoted, and also to help staff develop their potential to be competent at the level at which they were currently operating.

Engagement

This year we focused on the results of our first site wide Staff Attitude Survey, which was conducted late in 2010. The results, which have been fully reviewed, provided an insight on how to better engage our workforce, and enable us to prepare action plans aimed at improving scores when the next survey is undertaken. The Executive presented back to staff the ten most positive factors and the ten least positive factors, and staff have responded well by engaging with management to improve communication processes which was highlighted as one key area for improvement. In fact staff having the opportunity to feed views upwards and feel well-informed about what is happening in the organisation has been the cornerstone of our quarterly All Staff Briefings promoting regular and open communication throughout 2011. Focus has also been given to increasing our effort to improve leadership capability and we continue to deliver new and effective ways to improve staff development following sharing the survey results with staff.

In 2011 we committed to engage more with our workforce building on good people management and development policies providing active support to line managers and staff. We recognise there is no short-cut to building and maintaining employee engagement and believe the time, effort and resource required will be amply repaid by improved staff morale and performance.

Top: Staff celebrate the successful completion of a variety of training courses.

Supporting strategic objectives:

1 2 3

HEALTH AND SAFETY

Training

More than 60 of our staff successfully completed a three day general health & safety training programme (CIEH level 3) with a 100% pass rate, with many staff gaining merits. Ongoing staff training, covering topics including general health & safety awareness, risk assessments, safe systems of work and manual handling, was also completed during the year.

Accident Statistics

2011 saw a slight increase of 4.5% in the total number of accident/incidents that required first aid compared to 2010. The drive to continually raise staff awareness through the reporting of all accidents and incidents has been a high priority with the number of minor injuries increasing. The rolling average for visitor related accidents has increased from 2 to 3.5 per 100,000 visitors, and for staff a slight increase from 2.18 to 2.61 per 100 employees has been noted.

A detailed review of the accident reporting procedures has been undertaken looking closely at trend analysis with a clear view of improving safety around the Zoo, and aiming to reduce the number of accidents during the forthcoming year.

Project Work

The year saw updates to the Asbestos Management Plan following a full survey

by external contractors. Work was also undertaken to comply with the Legionella risk assessment. Significant work has been completed in updating the emergency procedures in the event of an animal escape as part of our commitment to continually review emergency procedures. Regular contact has been maintained with local Environmental Health Officers from Cheshire West and Chester Council, and Cheshire Fire & Rescue Services have worked in close collaboration with us in all areas of health, safety, fire and emergency to raise levels of protection throughout the Zoo. A review of the site traffic management policy and procedures was undertaken and will continue into 2012 forming part of the overall Safety Management System review that will commence in 2012, with the aim of ensuring that a robust health & safety management system is in place.

The Committee for the Representation of Employee Safety (CRES) has continued to meet throughout the year and has been very proactive in raising both standards and awareness of a variety of health & safety related issues. A drive will take place in 2012 to recruit new members to the committee to ensure all departments and sections are represented.

Below: Health and safety issues across the Zoo are discussed at CRES meetings.



TRUSTEES' REPORT FOR THE YEAR ENDED 31ST DECEMBER 2011

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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

The Rt. Hon. Baroness Rendell of Babergh, CBE

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	
Catherine Buckley	
Prof Stefan Buczacki	
Rebecca Burke-Sharples CBE	
Brian Child	(Elected 7 June 2011)
Steve Docking	
Dr Simon Dowell	
Iain Hall	
Robert Mee	(Elected 7 June 2011)
David Pickering	
Dr Judith Skerritt	
Bruce Ursell	
Tony Williams	(Until 7 June 2011)

Co-opted by the Trustees

Brian Child	(Until 7 June 2011)
Robert Mee	(Until 7 June 2011)
Tony Williams	(From 7 June 2011)

Principal Executives

Dr Mark Pilgrim	Director General
Barbara Smith	Managing Director

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 and Managing Director of the Society as Principal Executives and their 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 six years. Up to five 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 six 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.

Audit and Risk Management Committee - responsibility to review the effectiveness and integrity of systems for internal financial control, risk assessment procedures, information technology security, procedures for detecting fraud, appointment of senior finance staff; appointment of external auditors and review of audit findings, and to investigate on behalf of the Board any financial or administrative matter which may put the charity at risk of loss.

Remuneration Committee - determines remuneration and conditions of service for directors 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.

The Standing Committee structure at 31st December 2011 is indicated in the table below:

Committees	Conservation and Education	Ethical Review	Business Operations	Audit & Risk Management	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			x		
Brian Child			x				
Steve Docking	x						
Dr Simon Dowell	Chair				x		
Iain Hall			x				
Robert Mee			Chair		x		
David Pickering			x	Chair			
Dr Judith Skerritt	x	x				x	
Bruce Ursell			x	x			x
Tony Williams		x	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. Bruce Ursell is the only Trustee who sits on this committee.

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:

- Do they support the aims of the Society?
- What can they contribute to the Society?
- Do their skills enhance or fill any current gaps in the overall skills of the Trustees as a whole?
- Is there a balance in terms of the mix of ethnic, gender and age that reflects the membership?
- 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; lack of a robust procurement strategy; internal communications, relationships and team working; and Health & Safety risk assessments and systems.

The effectiveness of the Society's risk assessment procedures are reviewed annually by the Audit and Risk Management Committee. The Society's Health and Safety Policy is reviewed annually by the Trustees to ensure they remain both current and effective.

Employee involvement

The group continues to provide employees with information on matters of concern to them and regularly consults them and their representatives about affairs of the company. Every effort is made to maintain and develop existing arrangements to achieve a common awareness amongst employees of the financial and economic factors affecting the performance of the group. Employees are also encouraged to contribute ideas that will improve quality and performance in all aspects and areas of the group.

Disabled persons

It is the group's policy to give full consideration to suitable applications for employment from disabled persons. Opportunities also exist for the employees of the group who become disabled to continue in their employment or to be trained for other positions within the group.

ADVISORS

External Advisors to the Conservation and Education Committee

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

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

The Co-operative Bank, 3rd Floor, Station House, Stamford New Road, Altrincham, Cheshire, WA14 1EP

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 2011 to have due regard to public guidance published by the Charity Commission, including its supplementary guidance on fee charging.

In 2011 over 1,420,000 visits were made by members of the public to enjoy 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 60,000 received free admission. Fuller details of our prices and discount terms and conditions are available from our website www.chesterzoo.org. Over 93,000 of the concessionary priced student visits had a direct instructive content, of which over 10,000 received free admission. More than 24,000 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').

2011 was a record year for visitors to the Zoo with 1,283,052 paying visitors compared to 1,155,895 last year. The increase in visitors reflected the success of the Dinosaurs exhibition and the opening of a number of animal exhibits including the Painted Dogs and the Giant Otters.

As a result total Incoming resources rose to £25.7m (2010:£23.6m), resulting in net incoming resources before other recognized gains and losses rising to £1.1m (2010:£0.7m) and producing an overall net cash inflow from incoming resources of £4.8m(2010: £4.6m).

Total incoming resources included:-

- Income from charitable activities rose to £15.4m (2010:£13.5m) – this covers visitor admissions to the Zoo, memberships, Gift Aid, monorail and waterbus rides.
- Voluntary income, fell in the year to £3.3m (2010:£3.6m), mainly due to the absence of any NWDA grant (2010:£0.5m).
- Trading turnover of Chester Zoo Enterprises Limited rose to £7.0m (2010:£6.4m) from its catering and retail activities, mainly as a result of higher visitor numbers.

Total resources expended rose to £24.6m (2010:£22.9m) due to:-

- Spend on charitable activities, principally on animal and botanical collection rose to £15.4m (2010: £11.6m) mainly as a result of consulting fees for the Natural Vision *Islands* project (£1.3m) which are currently being expensed. The Natural Vision Islands project is a prospective investment which is currently being designed and evaluated. The project will be funded out of Society reserves and bank borrowing.
- Increased labour costs following job evaluation and annual pay awards and hire of dinosaurs. Spend on Education and Research £0.7m (2010:£0.6m) and Outreach £0.6m (2010:£0.8m) did not vary significantly from the prior year.
- Cost of Goods sold from the Catering and Retail activities rose to £7.0m (2010:£6.0m) reflecting the higher turnover.
- These increases were offset by the fall in impairment charges due to the one-off impairment charge on assets relating to the Natural Vision Biodome project in the prior year (£2.8m).

An actuarial loss on the pension fund of £2.1m (2010:£0.2m) was due to lower than anticipated returns on investments and the fall in discount rates. This actuarial loss, combined with the net incoming resources of £1.1m resulted in a net decrease in funds of £1.0m (2010:increase £0.5m) which decreased the accumulated funds carried forwards to £27.8m (2010:£28.8m).

The net cash inflow from incoming resources was £4.8m (2010:£4.6m) was utilised to fund net capital expenditure of £3.7m (2010:£1.4m) on new catering facilities at the June's Pavilion restaurant and new animal exhibits. The increased capital spend reduced the operating cash flow to £1.2m (2010:£3.3m). As £2.1m (2010:£6.5m) of this cash was moved into short term investments there was a net decrease in liquid resources of £0.9m (2010:£3.2m). 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).

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 free 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 £14.4m (2010:£13.6m).

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 31 December 2011, were £10.9m (2010:£10.2m) excluding tangible assets.

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 seven day and three 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 expenditure over income 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 1st May 2012 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 31 December 2011 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 auditor's 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 31 December 2011 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;

E W Baker (Senior Statutory Auditor)

for and on behalf of

KPMG LLP, Statutory Auditor

Chartered Accountants
8 Princes Parade
Liverpool
L3 1QH

1 May 2012

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CONSOLIDATED STATEMENT OF FINANCIAL ACTIVITIES

(incorporating an income and expenditure account) for the year ended 31st December 2011

	Notes	Unrestricted funds £'000	Restricted funds £'000	Total 2011 £'000	Total 2010 £'000
Incoming Resources					
Incoming resources from charitable activities					
Animals and botanical collection	2	15,372	0	15,372	13,459
Education and research		0	0	0	14
Incoming resources from general funds					
Voluntary income	3	2,922	349	3,271	3,609
Activities for generating funds					
Subsidiary's trading turnover	4	6,953	0	6,953	6,409
Investment Income	5	119	0	119	82
Total incoming resources		25,366	349	25,715	23,573
Resources Expended					
Resources expended on charitable activities					
Animals and botanical collection		15,226	222	15,448	11,641
Education and research		554	98	652	615
Outreach		604	21	625	771
Costs of generating funds					
Costs of generating voluntary income		156	0	156	280
Fundraising trading					
Subsidiary's cost of goods sold and other costs	4	6,950	0	6,950	6,033
Governance costs		210	0	210	179
Other resources expended					
Pension finance net (credit)/expense	22	(205)	0	(205)	(151)
Impairment of Natural Vision- Biodome assets	11	0	0	0	2,788
Irrecoverable VAT	6a	763	0	763	756
Total resources expended		24,258	341	24,599	22,912
Net incoming resources before other recognised gains and losses	8	1,108	8	1,116	661
Other recognised gains and losses					
Actuarial (loss)/gain on defined benefit pension scheme	22	(2,148)	0	(2,148)	(168)
Net movement in funds		(1,040)	8	(1,032)	493
Reconciliation of funds					
Total funds brought forward	17	28,647	183	28,830	28,337
Total funds carried forward		27,607	191	27,799	28,830

The notes on pages 45 to 57 form part of these financial statements.

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 2011

	Notes	Consolidated		Society	
		2011 £'000	2010 £'000	2011 £'000	2010 £'000
Fixed assets					
Tangible assets	11	14,373	13,653	14,360	13,628
Investment in subsidiary company	12	0	0	0	0
		14,373	13,653	14,360	13,628
Current assets					
Stocks	13	270	351	66	126
Debtors	14	1,281	1,482	1,434	1,623
Short term investments	15	14,192	12,114	14,192	12,114
Cash at bank and in hand		897	1,793	897	1,793
		16,640	15,740	16,589	15,656
Creditors: amounts falling due within one year	16	(2,566)	(1,862)	(2,499)	(1,599)
Net current assets		14,074	13,878	14,090	14,057
Total assets less current liabilities		28,447	27,531	28,450	27,685
Net assets before net pension surplus/(liability)		28,447	27,531	28,450	27,685
Net pension surplus/(liability)	22	(648)	1,299	0	0
Net assets		27,799	28,830	28,450	27,685
Funds employed					
Income funds – restricted	17	191	183	191	183
Income funds – unrestricted					
Designated funds	17	17,309	17,109	17,309	17,109
Pension reserve	17	(648)	1,299	0	0
Other charitable funds	17	10,947	10,239	10,950	10,393
		27,608	28,647	28,259	27,502
Total funds employed	17	27,799	28,830	28,450	27,685

The notes on pages 45 to 57 form part of these financial statements

The financial statements were approved by the Trustees on 1st May 2012 and signed on their behalf by:

Peter Wheeler
Chairman of Trustees

Robert Mee
Chairman of Business Operations Committee

CONSOLIDATED CASH FLOW STATEMENT FOR THE YEAR ENDED 31ST DECEMBER 2011

	2011 £'000	2010 £'000
Reconciliation of net cash inflow from net incoming resources		
Net incoming/(outgoing) resources	1,116	661
Net interest receivable	(119)	(82)
Depreciation charge	2,987	2,926
Impairment of Natural Vision asset	0	2,788
Decrease/(increase) in stocks	82	73
Decrease/(increase) in debtors	201	225
Increase/(decrease) in creditors due within one year	704	37
Difference between pension charge and cash contributions	(201)	(2,031)
Net cash inflow from incoming resources	4,770	4,597
Returns on investment and servicing of finance		
Interest received	119	82
Capital expenditure and financial investment		
Payments to acquire tangible fixed assets	(3,707)	(1,405)
Receipts from disposal of tangible fixed assets	0	48
	(3,707)	(1,357)
Operating cashflow in year	1,182	3,322
Management of liquid resources		
(Increase)/decrease in short term investments	(2,078)	(6,542)
(Decrease)/increase in net cash at bank and in hand in the year	(896)	(3,220)

Analysis of changes in net funds during the year

	Balance at 1st Jan 2011 £'000	Cash flow £'000	Balance at 31st Dec 2011 £'000
Cash			
Cash at Bank and in hand	1,793	(896)	897
Movement in liquid resources	12,114	2,078	14,192
Net cash	13,907	1,182	15,089

The notes on pages 45 to 57 form part of these financial statements.

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 2011 and the Companies Act 2006.

The group's activities, together with the factors likely to affect its future development, performance and position are set out in the Trustees' report. The financial position of the group, its cash flows and liquidity position are shown in these financial statements. The Trustees report also notes the principal risks and uncertainties that impact on the group.

The group has considerable financial resources. As a consequence the trustees believe that the group is well placed to manage its risks successfully despite the current uncertain economic outlook.

After making enquiries, the Trustees have a reasonable expectation that the Society and the group have adequate resources to continue in operational existence for the foreseeable future. Accordingly, they continue to adopt the going concern basis in preparing the annual report and accounts.

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 31 December 2011 and comply with recommended practice for accounting by charities. The results of the subsidiary are consolidated on a line by line basis. The charity has availed itself of paragraph 3(3) of Schedule 4 of the Companies Act 2006 and adapted the Companies Act formats to reflect the special nature of the charity's activities. No separate SOFA has been presented for the charity alone as permitted by Section 408 of the Companies Act 2006 and paragraph 397 of the SORP.

Funds employed

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

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 exception to this is where income (and the associated Gift Aid) relates to a service to be provided in the following financial year. Such income is deferred and released over the period the service is provided.

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.

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 Principal Executives' 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 to 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.

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

The Society is considered to pass the tests set out in Paragraph 1 Schedule 6 Finance Act 2010 and therefore it meets the definition of a charitable company for UK corporation tax purposes. Accordingly, the charity is potentially exempt from taxation in respect of income or capital gains received within categories covered by Chapter 3 Part 11 Corporation Tax Act 2010 or Section 256 of the Taxation of Chargeable Gains Act 1992, to the extent that such income or gains are applied exclusively to charitable purposes.

Investments in subsidiary undertakings

These are included at cost less any provision for impairment.

PRINCIPAL ACCOUNTING POLICIES (continued)

Fixed assets

These are included in the balance sheet at historic purchase cost less accumulated depreciation, and 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 & 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 & Equipment

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

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.

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.

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.

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.

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 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 profit and loss account as incurred.

Grant-making

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

Grant-making policy

The Society supports a wide range of conservation and research activities both in the Zoo and externally, often in partnership with other organisations. This support may be ongoing as with our major conservation programmes such as those in partnership with Ecosystems-India in Assam or the Mauritian Wildlife Foundation in the Mascarenes. One-off annual grants including scholarships are also awarded.

Criteria for our funding support for projects include feasibility; qualification of project personnel; capacity building; benefits to local communities; relevance to other conservation initiatives of the Zoo and regions or countries where the Zoo already has a field conservation focus; links to species within the collection plan; opportunities for technical support from Zoo staff.

Primarily support is provided to those projects which are judged to have potential to make a significant positive conservation impact. Applications are requested to be made on our standard grant application forms and these are formally reviewed by at least two qualified people, usually Society employees before a funding decision is made.

Related Party Transactions

The Society has taken advantage of the exemptions available under 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 2011

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

	Unrestricted Funds			Total 2011 £'000	Total 2010 £'000
	Visitor related £'000	Other unrestricted £'000	Other designated £'000		
Animals and botanical collection					
Visitor admission to zoo and gardens	12,568	0	0	12,568	10,962
Monorail and boats	524	0	0	524	497
Membership of zoo and Gift Aid theron	1,640	0	0	1,640	1,661
Other	640	0	0	640	339
Animals and botanical collection total	15,372	0	0	15,372	13,459
Education and Research	0	0	0	0	14
Total incoming resources from charitable activities	15,372	0	0	15,372	13,473

3. Voluntary income

	Unrestricted	Restricted	Total 2011 £'000	Total 2010 £'000
	2011 £'000	2011 £'000		
Donations and Gift Aid on admission to zoo	2,667	0	2,667	2,5630
Other donations and legacies, and Gift Aid theron	0	0	0	0
Animal adoptions and Gift Aid theron	210	0	210	206
Grants and Other Donations	45	349	394	840
Total voluntary income	2,922	349	3,271	3,609

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.

NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31ST DECEMBER 2011 (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 31 December 2011 will be filed with the Registrar of Companies.

	Total 2011 £'000	Total 2010 £'000
Chester Zoo Enterprises Limited trading results		
Incoming resources		
Turnover	6,953	6,409
Resources expended		
Labour and cost of goods sold	(5,244)	(4,420)
Gross trading surplus for year	1,709	1,989
Indirect costs		
Operating and support costs paid to Society	(1,140)	(1,051)
Property rents paid to Society	(562)	(562)
Net trading surplus for year	7	376
Amount transferred to Society via Gift Aid	(4)	(392)
Deferred taxation	0	4
Surplus/(Deficit) retained in subsidiary	3	(12)

Turnover of £6,953,000 is included in the consolidated statement of financial activities within Activities for generating funds - Subsidiary's trading turnover.

Direct and indirect costs of £6,950,000 are included within Fundraising trading - Subsidiary's cost of goods sold and other costs.

5. Investment Income

	Total 2011 £'000	Total 2010 £'000
Income from short term investments	119	81
Bank interest receivable	0	1
Investment income	119	82

6a. Analysis of resources expended

	Staff Costs £'000	Other Direct Costs £'000	Support Costs £'000	Total 2011 £'000	Total 2010 £'000
Resources expended on charitable activities					
Animals and botanical collection	4,296	8,525	2,627	15,448	11,641
Education and research	388	112	152	652	615
Outreach	418	157	50	625	771
Total for Society	5,102	8,794	2,829	16,725	13,027
Costs of generating funds					
Costs of generating voluntary income	0	0	156	156	280
Total for Society	0	0	156	156	280
Subsidiary's cost of goods sold and other costs	2,311	3,511	1,128	6,950	6,033
Total for group	2,311	3,511	1,128	6,950	6,313
Governance costs	107	103	0	210	179
Other resources expended					
Pension finance net(gain)/cost	(205)	0	0	(205)	(151)
Impairment of Natural Vision assets	0	0	0	0	2,788
Irrecoverable VAT	0	763	0	763	756
Total resources expended for Society	5,004	9,660	2,985	17,649	16,879
Total resources expended for group	7,315	13,171	4,113	24,599	22,912

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 £2,985,744 (2010 £3,140,369).

Irrecoverable VAT includes an exceptional item of £Nil (2010:£300,000) in respect of anticipated expenses relating to the Society's ongoing challenge of HMRC over the VAT treatment of animal input costs.

NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31ST DECEMBER 2011 (CONTINUED)

6b. Analysis of support costs

	Total 2011 £'000	Total 2010 £'000
Direct Staff Costs	2,039	1,959
Other Costs	2,074	1,174
Total of support costs	4,113	3,133

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	369	34	7	9	168	587
Information Technology	250	14	5	15	107	391
Directorate and Central Services	973	55	20	58	417	1,523
Finance Department	161	9	3	10	69	252
Cash Office	66	4	1	4	29	104
Security and Facilities	187	1	2	23	76	289
Maintenance Department	611	35	12	37	262	957
Estates and Project Planning	10	0	0	0	0	10
Total	2,627	152	50	156	1,128	4,113

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

The Society makes institutional grants payable in furtherance of the charity's objects, for conservation outreach, research and animal welfare projects. The grants have been included in the other direct costs analysis of total resources expended.

	Grants to institutions £'000	Grants to individuals £'000	Total 2011 £'000	Total 2010 £'000
Analysis				
Studentships	0	10	10	17
Conservation programmes	450	0	450	19
Education grants	38	0	38	493
Other grants	103	0	103	77
Total grants payable	591	10	601	606

8. Net incoming resources before other recognised gains and losses

	Total 2011 £'000	Total 2010 £'000
This is after charging:		
Services provided by the Society's auditors		
Fees payable for the audit of the charity and consolidated accounts	25	12
Fees payable for the audit of the subsidiary	6	6
Depreciation of tangible fixed assets	2,987	2,926
Impairment of Natural Vision - Biodome assets	0	2,788

9. Trustees' remuneration

The Trustees, being charity Trustees, received no remuneration (2010: £nil). A Trustee was reimbursed during the year for travelling expenses necessarily incurred. Insurance costing £1,722 (2010: £1,706) 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 2011 £'000	Total 2010 £'000
Wages and salaries cost	8,345	7,487
Social security cost	707	632
Pension cost:		
Defined Benefit pension scheme, including Life Assurance	457	365
Defined Contribution pension scheme	50	45
Total employee costs	9,559	8,529

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.

	2011 Number	2010 Number
From £90,001 to £100,000	1	1
From £80,001 to £90,000	3	3
From £70,001 to £80,000	1	0
From £60,001 to £70,000	1	1

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

	2011 Number	2010 Number
Animals and botanical collection	173	180
Education and Research	18	19
Outreach	4	4
Fundraising		
Society	6	6
Subsidiary trading	132	114
Support and Governance	63	65
Total FTE employees	396	388

NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31ST DECEMBER 2011 (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 2011	2,788	3,339	25,634	1,430	1	33,192
Additions	0	0	3,536	171	0	3,707
Disposals and retirements	0	0	0	0	0	0
At 31st December 2011	2,788	3,339	29,170	1,601	1	36,899
Depreciation						
At 1st January 2011	2,788	2,050	13,741	960	0	19,539
Charge for the year	0	246	2,517	224	0	2,987
At 31st December 2011	2,788	2,296	16,258	1,184	0	22,526
Net book value						
At 31st December 2011	0	1,043	12,912	417	0	14,373
At 31st December 2010	0	1,289	11,893	470	1	13,653

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 - Biodome" project. The Society received matched funding from the Northwest Development Agency in relation to these assets. Due to funding constraints, this asset is now deemed to be impaired. This is separate to the Natural Vision - *Islands* project mentioned elsewhere in this report.

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 £15,969(2010: £12,423) and sales of £nil (2010: £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 4 specific assets with a combined NBV of £12,678 therefore the Society's specific machinery and equipment assets are as below.

The Society considers that none of its assets meet the definition of heritage assets under FR530. Although certain assets may have a heritage quality, these are all used for operational purposes in the running of the Zoo and are therefore classified as operating assets.

	Cost £'000	Depreciation £'000	Net Book Value £'000
Society – machinery and equipment			
At 1st January 2011	1,306	(861)	445
Additions	171	0	171
Charge for the year	0	(211)	(211)
At 31st December 2011	1,477	(1,072)	405

12. Investments

	2011 £	2010 £
Investment in Chester Zoo Enterprises Limited	100	100

13. Stocks

	Group		Society	
	2011 £'000	2010 £'000	2011 £'000	2010 £'000
Goods for resale	204	237	0	34
Consumables	66	114	66	92
Total	270	351	66	126

14. Debtors: amounts falling due within one year

	Group		Society	
	2011 £'000	2010 £'000	2011 £'000	2010 £'000
Trade debtors	161	100	153	95
Amount owed by subsidiary undertaking	0	0	172	157
Other debtors	267	162	257	151
VAT recoverable	610	1,004	610	1,004
Prepayments and accrued income	243	216	242	216
Total	1,281	1,482	1,434	1,623

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

15. Short term investments

	Group		Society	
	2011 £'000	2010 £'000	2011 £'000	2010 £'000
Black Rock Sterling Liquidity First Fund	7,168	12,114	7,168	12,114
Barclays Treasury Deposit Account	5,000	0	5,000	0
The Co-operative Bank Guaranteed Investment Account	2,024	0	2,024	0
Total	14,192	12,114	14,192	12,114

16. Creditors: amounts falling due within one year

	Group		Society	
	2011 £'000	2010 £'000	2011 £'000	2010 £'000
Trade creditors	899	673	832	569
Other taxes and social security costs	222	249	222	249
Accruals	457	156	457	12
Other creditors	183	84	183	84
Deferred income	805	700	805	685
Total	2,566	1,862	2,499	1,599

NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31ST DECEMBER 2011 (CONTINUED)

17. Movement in consolidated funds

	Balance at 31st Dec 2010 £'000	Designated fund established at 31st Dec 2011	Reclassifications in year 2011 £'000	New funds 2011 £'000	Funds utilised 2011 £'000	Balance at 31st Dec 2011 £'000
Restricted income funds						
Animal collection	162	0	0	244	(222)	184
Education	18	0	0	86	(98)	6
Outreach	3	0	0	19	(21)	1
Natural Vision grant funding	0	0	0	0	0	0
	183	0	0	349	(341)	191
Designated funds						
Reserves tied to tangible fixed assets	13,653	0	0	720	0	14,373
Animal collection	1,220	0	0	976	(1,220)	976
Education	18	0	0	0	0	18
Outreach	498	0	0	595	(498)	595
Other capital projects	1,720	0	0	1,347	(1,720)	1,347
	17,109	0	0	3,638	(3,438)	17,309
Pension reserve	1,299	0	0	0	(1,947)	(648)
Other charitable funds	10,239	0	0	21,728	(21,020)	10,947
Total group funds employed	28,830	0	0	25,715	(26,746)	27,799

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. See page 39 for further details on the designated funds.

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 2010 £'000	New funds 2011 £'000	Funds utilised 2011 £'000	Transfer to designated fund £'000	Balance at 31st Dec 2011 £'000
Other charitable funds	10,393	14,775	(14,218)	0	10,950
Total Society funds employed	27,685	18,762	(17,997)	0	28,450

18. Analysis of group net assets between funds

	Group			Society		
	Tangible fixed assets £'000	Net current assets £'000	Total 2011 £'000	Tangible fixed assets £'000	Net current assets £'000	Total 2011 £'000
Restricted funds	0	191	191	0	191	191
Unrestricted funds	14,373	13,235	27,608	14,373	13,886	28,259
Total group funds employed	14,373	13,426	27,799	14,373	14,077	28,450

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

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

19. Financial commitments

	Group		Society	
	2011 £'000	2010 £'000	2011 £'000	2010 £'000
Capital expenditure, contracted for but not provided in the financial statements:	1,485	685	1,485	685
Annual commitment in respect of operating leases for assets other than land and buildings, which expire in one year or less	0	0	0	0

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

The Society has entered into one related party transactions (2010: nil):

Tony Williams, a Trustee of the Society, is a director of T and DJ Williams Limited which provided the Society with advice relating to Data Protection Act compliance with respect to a Subject Access Request, for a fee of £112 (2010: nil).

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.

Since the year end there has been a consultation period with stakeholders on the future of the pension scheme which concluded in March 2012. This resulted in the DB section of the scheme being closed to future accrual from 31 March 2012. From this date there are no active members in this section of the scheme and active membership will move to the DC section of the scheme. The Society will continue to make an annual contribution to the scheme which is intended to remove the scheme deficit over a period not exceeding 11 years.

A full actuarial valuation was carried out at 31st December 2008 and updated to 31st December 2011 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:	2011	2010
Discount rate	4.70%	5.33%
Rate of compensation increase	4.60%	4.98%
Rate of increase of pensions in payment (5% LPI)	3.10%	3.48%
Rate of increase of pensions in payment (2.5% LPI)	2.10%	2.10%
Rate of increase of pensions in deferment	3.10%	3.48%
Inflation	3.10%	3.48%
Weighted average assumptions used to determine net pension cost:	2011	2010
Discount rate	5.33%	5.70%
Expected long term return of plan assets	6.20%	6.32%
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%
Inflation	3.10%	3.48%

NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31ST DECEMBER 2011 (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 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:	2011		2010	
	Male	Female	Male	Female
Member age 65 (current life expectancy)	22.5	25.8	22.5	25.7
Member age 45 (life expectancy at age 65)	24.4	27.8	24.4	27.7

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

The assets in the scheme and the expected rates of return were:

	Long term expected		Long term expected	
	rate of return at 31st Dec 2011	Bid value at 31st Dec 2011	rate of return at 31st Dec 2010	Bid value at 31st Dec 2010
	%	£'000	%	£'000
Equities	5.80	7,851	6.70	8,251
Bonds/gilts	4.70	6,277	5.40	5,898
Property	5.80	1,601	6.70	1,506
Cash	0.50	58	0.50	31
Total market value of assets		15,787		15,686
Present value of scheme liabilities		(16,435)		(14,387)
Net pension surplus/(deficit)		(648)		1,299

	2011 £'000	2010 £'000
Change in benefit obligation		
Benefit obligation at beginning of year	14,387	12,878
Current service cost	457	365
Interest cost	775	739
Members' contributions	161	156
Actuarial losses/(gains)	1,031	599
Benefit paid	(376)	(350)
Benefit obligation at end of year	16,435	14,387

	2011 £'000	2010 £'000
Change in plan assets		
Fair value of plan assets at beginning of year	15,686	12,314
Expected return on plan assets	980	890
Actuarial gains / (losses)	(1,117)	431
Employer contributions	453	2,245
Members contributions	161	156
Benefits paid	(376)	(350)
Fair value of plan assets at end of year	15,787	15,686

	2011 £'000	2010 £'000
Analysis of pension costs		
Current service cost	457	365
Interest cost	775	739
Expected return on plan assets	(980)	(890)
Total net expenses	252	214
Actuarial losses/(gains) immediately recognised in the SOFA	2,148	168
Total pension charge/(credit) recognised in the SOFA	2,400	382
Cumulative amount of actuarial losses immediately recognised	4,692	2,544

	2011 £'000	2010 £'000
Actual return on plan assets	(137)	1,321

Five year history

	Financial year ending in:				
	2011 £'000	2010 £'000	2009 £'000	2008 £'000	2007 £'000
Benefit obligation at end of year	(16,435)	(14,387)	(12,878)	(11,681)	(12,246)
Fair value of plan assets at end of year	15,787	15,686	12,314	9,823	11,564
Surplus/(Deficit)	(648)	1,299	(564)	(1,858)	(682)

	2011 £'000	2010 £'000	2009 £'000	2008 £'000	2007 £'000
Experience adjustments on scheme assets					
Amount (£000s)	52	430	1,405	(2,860)	363
Percentage of scheme assets	0.0%	2.7%	11.4%	29.1%	3.1%
Experience adjustments on scheme liabilities					
Amount (£000s)	(2,148)	0	770	0	(310)
Percentage of scheme liabilities	13.1%	0.0%	6.0%	0.0%	2.5%
Total amount recognised in statement of total recognised gain and losses					
Amount (£000s)	(2,148)	(168)	1,167	(1,305)	(321)
Percentage of scheme liabilities	13.1%	1.2%	9.1%	11.2%	2.6%

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.

Defined contribution scheme

Contributions to the defined contribution scheme totalled £50,377 (2009: £45,130)

Looking Ahead to 2012

ANOTHER EXCITING YEAR TO COME

With lots of new developments and activities planned for the Zoo in 2012, we're looking forward to all the challenges and excitement that the year will bring!

Spirit of the Jaguar

Spirit of the Jaguar will reopen during February half-term, following a £14m makeover. The refreshed enclosure will feature an aquarium, a pair of Two-toed Sloths, a colony of leaf-cutter ants and four Jaguars.

Giant Otters

The Giant Otter centre will be one of the only places in Europe where people can see the otters diving for food through underwater viewing windows. It will feature an undercover seating area, a crawl-in viewing dome and cubbing dens.

Diamond Jubilee Quarter

The Diamond Jubilee Quarter at our main entrance will undoubtedly be the jewel in our crown for 2012. The quarter includes a revamped retail outlet and coffee shop. New pay booths and scanners will speed up queues and the scanners will enable fast track entrance. Visitors will be drawn in by iconic animal sculptures by Cumbrian sculptor Chris Brammall. The entrance will

be a public space where people can meet without going into the Zoo. This gives us a great event space, particularly for Christmas.

Brand

Our new brand continues to be rolled out, particularly through the website. A Zoo app will be available and our map is being redeveloped. Staff uniforms will be given a new look, as will our signage.

Below: Artist's impression of the Giant Otter centre.

Bottom left: An animatronic *Deinonychus* tears into its kill.



Guest Services

All of our visitors should go away with great memories of their day, wanting to return. We will be continuing to develop our customer service training and practices to ensure we engage thoroughly with our all of our visitors.

Islands

Our conservation expedition will be going for detailed planning this year. Public consultations will also be held and we will start work later in the year. The development will showcase the Zoo's conservation fieldwork, a range of animals and 25 new buildings.

Dinosaurs Bite Back!

Scheduled to run from 1st April to 4th November 2012, *Dinosaurs Bite Back!* is the biggest exhibition in our history and features 19 animatronic dinosaurs including the giant Brachiosaurus, the iconic Stegosaurus and the terrifying Tyrannosaurus rex. Visitors will be guided through the exhibit with its strong education content by the Presentersaurus!

APPENDICES ON CD

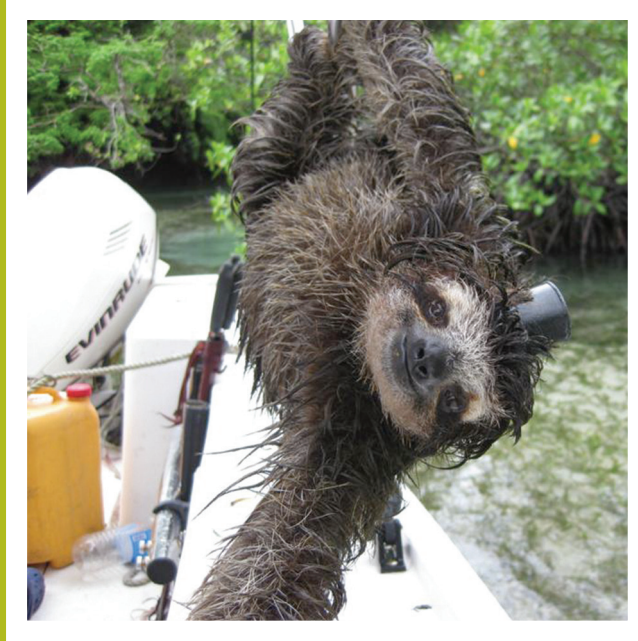
1. Chester Zoo Annual Report
2. Chester Zoo Organisational Structure
3. Chester Zoo Staff on External Boards
4. Brief Biographies of the NEZS Executive Team
5. Discovery and Learning Members' Talks
6. Zoo Research and Scientific Publications
7. Worldwide Conservation Activities

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. About the Chester Zoo Collection Plan
17. Summary of All Roles



We would like to thank all the kind people who gave us permission to use their photographs for this report.



A FUTURE FOR SLOTHS

This picture was taken on Escudo de Veraguas Island, Panama, by a research project sponsored by Chester Zoo which is working to conserve the Pygmy Three-toed Sloth. We provided radio-tracking devices to enable monitoring of this Critically Endangered species. This project is protecting sloths through research, anti-poaching patrols and community education initiatives.

Photo © Fundación Conservación Naturaleza y Vida

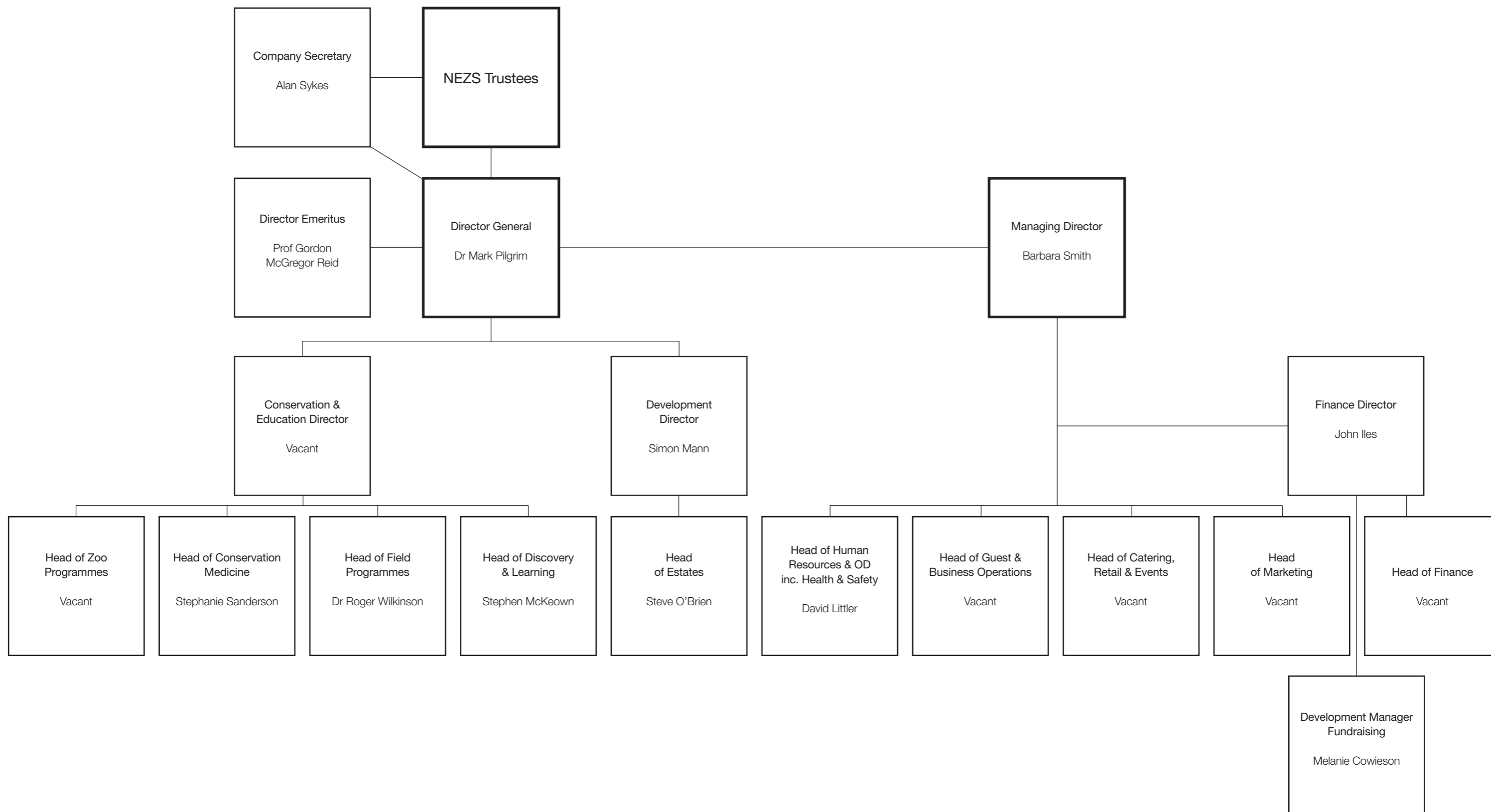
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NEZS/Chester Zoo ORGANISATION MANAGEMENT STRUCTURE 2011



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

Member, 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 Recorders' Forum

Member, Cheshire Black Poplar Biodiversity Action Plan Group

Member, North East Wales Plant and Mammal Biodiversity Groups

Kate Brankin Discovery and Learning Divisional Secretary

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

David Brunger, Records and Quarantine Coordinator

Co-Chair, BIAZA Records Group

Dr Maggie Esson Discovery and Learning Programmes Manager

Member, BIAZA Education and Training Committee

Dr Andrea Fidgett Nutritionist

Chair, EAZA Nutrition Group

Vice-Chair, EAZA Research Committee

Member, AZA Nutrition Advisory Group

Member, IUCN Conservation Breeding Specialist Group

Reporting Member, BIAZA Research Group

Honorary Lecturer, Dept Vet Pathology, University of Liverpool

Treasurer, Flora and Fauna International (North West Group)

Dr Sonya Hill Research Officer

Chair, BIAZA Animal Welfare Focus Group

Vice-Chair, BIAZA Research Committee

Research 'Champion', BIAZA Living Collections Committee

Animal Welfare 'Champion', BIAZA Living Collections Committee

Research Liaison Officer, BIAZA Mammal Working Group

Member, research sub-group of the EAZA Great Ape TAG

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

Assistant Member of Council, Primate Society of Great Britain

Trustee, 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

Honorary Lecturer, Dept of Veterinary Science, University of Liverpool

Paul Howse Team Manager

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

Immediate Past President, International Zoo Educators' Association

Member, IUCN Commission on Education and Communication

Andrew Moss Education Research Officer

Member, EAZA Working Group for Visitor Studies

Member, BIAZA Research Committee

Associate Fellow, University of Warwick

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

Chair, UK Elephant Welfare Group

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

Member of Council, British and Irish Association of Zoos and Aquariums (BIAZA)

Member, EAZA Elephant Taxon Advisory Group

Member, EAZA Rhino Taxon Advisory Group

EAZA Accreditation Inspector

Professor Gordon McGregor Reid Director Emeritus

Immediate Past President, World Association of Zoos and Aquariums (WAZA) and Member of Council (until October 2011)

Chair, WAZA Nominations Committee; Champion, WAZA/IUCN-CBSG Climate Change Task Force

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

Professor, National Centre for Zoonosis Research, Department of Veterinary Clinical Science and Animal Husbandry, University of Liverpool

Visiting Professor, Institute for Research in Applied Natural Sciences (LIRANS), University of Bedfordshire

Scientific Research Associate, British Museum of Natural History

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

Member, IUCN-SSC Trustee Board (registered in the UK)

Member Representative, Council of Wetlands International (registered in The Netherlands)

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, Pan African Zoo and Aquarium Association (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

Trustee, IUCN SSC Board Freshwater Sub Committee (registered in Switzerland)

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

BIAZA Living Collections Committee

DEFRA Zoo Liaison Group

DEFRA GB Avian Disease Core Group

DEFRA EU Animal Health Law Core Group

DEFRA /BIAZA UK Elephant Welfare Group

Council Member and Honorary Secretary, British Veterinary Zoological Society

Secretary and Trustee, Zebra Foundation for Veterinary Zoological Education

UK Representative, International Committee of American Association of Zoo Veterinarians

Honorary Lecturer, Dept Vet Pathology, University of Liverpool

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

Governor, West Cheshire College

Member, Board of Chester Renaissance

STAFF ON EXTERNAL BOARDS

Mark Sparrow **Curator of 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

Lecturer in Masters Wild Animal Health – Royal Veterinary College/ ZSL

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, Mauritian 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, IUCN-UK Committee

Consultant to British Ornithologist's Union Records Committee

Chair, Chester and District Ornithological Society

Alexandra Zimmermann **Senior Conservation Scientist**

Member, IUCN Cat Specialist Group

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 the British and Irish Association of Zoos and Aquariums (BIAZA). Mark is the Chair of the UK Elephant Welfare Group 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 ten 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 2010 to the newly created role of Managing Director. Since then Barbara has become a Governor of West Cheshire College and joined the newly reconstituted Board of Chester Renaissance.

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.

JOHN ILES MSc FCCA **Finance Director**

John has recently been appointed Finance Director, this followed an assignment he undertook as an interim manager before taking up the permanent position of FD. He is a Chartered Certified Accountant and went to the University of Bath and obtained a Masters Degree. He has wide experience of operating as an FD, both in the UK and in Europe, having been seconded from Ernst & Young's Corporate Recovery Team as interim FD. Whilst with E&Y he spent 5 years working in Central Europe managing Reconstruction companies for EBRD and the EU, following the transformation and privatisation of the many state owned companies in the former COMECON countries. Latterly he has run his own business working on a range of financial assignments for large multi nationals such as Astra Zeneca, Cable & Wireless and BNFL.

BRIEF BIOGRAPHIES OF THE HEADS OF DIVISIONS

STEPHEN MCKEOWN BSc, PGCE **Head of Discovery and Learning**

Stephen graduated from the University of Stirling 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 1996 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 graduated from Cambridge University in 1994 with zoology and veterinary degrees. She spent 3yrs in general veterinary practice before moving full time into a career working with wildlife. Stephanie was awarded an MSc in Wild Animal Health from London Zoo & the Royal Veterinary College in 1999 and joined Chester Zoo as its first staff vet on graduation. During her twelve years at the Zoo, she has held four positions of increasing scope and responsibility. She was appointed as Head of Conservation Medicine in 2007 and her remit includes animal health, animal support services and in-zoo science. Stephanie also plays a significant role in advising on animal health on both at national and international level. She chairs the British and Irish Association of Zoos and Aquarium (BIAZA)'s veterinary advisory group and acts as an advisor to Department of Environment, Food & Rural Affairs (DEFRA).

ALAN SYKES FCA, DipBA **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 Head of Finance and Company Secretary in 2000. He relinquished the Head of Finance role on the appointment of John Iles as Finance Director in November 2011 but will continue as Company Secretary on a part time basis.

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 spending 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 the role of leading and developing the Zoo's field conservation and research work in 2002.

2011 MEMBERS' TALKS (page 1 of 2)

Wednesday 30th March The Chinese Connection – Saving Species and Habitat
Simon Dowell, Marisa Edwards, Roger Wilkinson

Several people have asked about the possibility of viewing the whole James Fisher 1950s 'News from the Zoos' documentary filmed at Chester, excerpts of which we have previously shown at Members' evenings. Now is your chance! We'll be screening the whole 25 minute documentary in advance of tonight's main presentation, starting at 7pm sharp so be sure to get here early if you're interested in seeing this rare archive footage.

And the evening's main event ...

China contains some of the world's most exciting animals but they are also under some of the most severe threats as the country rapidly develops. A recent search for the Yangtze River Dolphin failed to find a single individual and this enigmatic species, once widespread in the Yangtze river and its tributaries, is now believed to be extinct. This has provided a stark warning that time is running out for China's charismatic wildlife, including that most iconic of endangered species, the Giant Panda.

In the face of this it would be easy to despair, but Chester Zoo has been at the forefront of efforts to save a number of exciting Chinese birds from the brink of extinction, such as the beautiful Sichuan Hill-partridge and the spectacular Blue-crowned Laughingthrush. In doing so, we have also been instrumental in protecting broadleaf forests for important populations of many other species including China's Red Pandas. The talk will explain how this has been achieved by helping nature reserve managers and staff and actively working with people who live alongside the wildlife.

From local agreements to protect laughingthrushes in Eastern China to harnessing the inherent wonder in their environment shown by schoolchildren in the Giant Panda's mountain home in Sichuan, we will show how work with local conservation reserves and their communities can help to secure a brighter future for the great diversity of Chinese wildlife.

Dr. Simon Dowell is a Conservation Fellow and Trustee of the Zoo and has been involved in conservation work in China since 1995. His early research on the Sichuan Hill-partridge and other endemic birds in collaboration with the Sichuan Forest Department, led to the establishment of Chester Zoo's Sichuan Forest Biodiversity Project which now supports the protection of over 900 km² of forest habitat. He has been a lecturer in Conservation Ecology at Liverpool John Moores University since 1992 where he also promotes their Science Faculty to encourage closer collaboration on higher education projects in Asia.

Marisa Edwards has been a Presenter at Chester Zoo since 2005. Before this she completed a Zoology degree, gained a PGCE and taught primary school children for seven years. Marisa visited China for the first time in September 2010. This visit provided an amazing opportunity to visit schools around the reserve and see the work completed by the education team at the Research Base for Giant Panda Breeding.

Dr Roger Wilkinson is Head of Field Conservation and Research at Chester Zoo. His 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. He has visited China on many occasions and as well as working with Simon in Sichuan he actively manages and promotes the Blue-crowned Laughingthrush conservation project in partnership with Chinese scientists and international conservation organisations.

Tuesday 5th April Whose Game Is It Anyway?
Tony Fitzjohn

Tony Fitzjohn has worked in the field over the past forty years in Kenya and Tanzania and his talk will focus on this work, covering rehabilitation of ecosystems, endangered species programmes including the African Painted Dog and Black Rhino, lion and leopard rehabilitation programmes. Tony will also talk about his community outreach work and environmental education programmes.

Tony Fitzjohn is Field Director for the George Adamson Wildlife Preservation Trust and spent 18 years rehabilitating lions and leopards with George Adamson in Kora National Reserve, Kenya. In 1989, he was invited by the Government of Tanzania to rehabilitate the Mkomazi Game Reserve and in 2008 this was upgraded to National Park status. As well as being heavily involved with community outreach and education programmes, he established the Mkomazi Rhino Sanctuary, Tanzania's first, and has established and managed the African Painted Dog programme. In 2006, he was awarded the OBE for Services to Wildlife in East Africa.

Saturday 21st May Sandbags, salad, shrapnel and sustainability: lessons for the future from how Chester Zoo and other World War Zoo gardens survived wartime challenges in the past.
Mark Norris

World War Zoo gardens project

Chester Zoo's early years were overshadowed by the food rationing, resource shortages and challenges of the Second World War and postwar austerity. Its founder George Mottershead was part of a generation that experienced the First and Second World War; sadly not all zoo staff were to be so lucky. Chester Zoo emerged relatively unscathed from wartime bombing; some zoos in Europe were almost destroyed. Drawing on a range of resources from garden history, family history, Newquay Zoo's wartime life collection and Dig for Victory allotment together with Chester Zoo's superb archives, Mark Norris from the World War Zoo gardens project at Newquay Zoo shares some of the varied, innovative, amusing and sometimes tragic experiences of British and European zoos and botanic gardens in wartime. What can we learn from the stories of the wartime generation to help us prepare for the future? Gasmasks, ration books and identity cards optional for those attending!

Mark Norris has been the Education Manager at Newquay Zoo since 1996 and is currently editing wartime blitz diaries, a book and schools' resources for the World War Zoo gardens research project based at Newquay Zoo. Newquay Zoo opened postwar in the late 1960s and is now part of the Whitley Wildlife Conservation Trust which also runs Paignton Zoo, opened in the 1920s and operational in wartime.

Wednesday 15th June Africa – highlights, birds and more
Dr Roger Wilkinson

Roger is an avid bird-watcher and naturalist. His journeys have taken him across Africa to some special places. He will talk about his travels, the amazing animals he has seen and his adventures along the way.

Dr Roger Wilkinson is Head of Field Conservation and Research at Chester Zoo. His 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.

Tuesday 19th July Kool Komodos
Richard Gibson

Keeping, breeding and conserving the world's largest lizard; plus news from the Lower Vertebrate and Invertebrate Department. Richard has been working with Komodo Dragons for several years and has designed and built the dedicated facility at ZSL, London Zoo; has undertaken field work in Indonesia; co-developed and implemented the EAZA-supported field conservation project in Flores, and is co-discoverer of parthenogenesis in this iconic species. He currently manages the EAZA zoo population.

Richard Gibson is Curator of Lower Vertebrates and Invertebrates at Chester Zoo.

2011 MEMBERS' TALKS (page 2 of 2)

Tuesday
13th September

Chester Zoo – Man and Boy
Tim Rowlands

Tim is an Upton boy, born and bred, and his earliest relationship with the Zoo was climbing over the fence at night after the Zoo was closed. He was an enthusiastic Junior Member and first came to the Zoo on YTS (the government sponsored Youth Training Scheme). Tim has seen many changes over the years and as Curator of Mammals is now responsible for the mammal collection at the Zoo and is heavily involved in the design of new enclosures. Tim will talk fondly about the 'old days' and bring us right up to date with what's happening now and in the near future with the mammal collection in the Zoo.

Tim Rowlands is Curator of Mammals at Chester Zoo

Wednesday
12th October

Supporting an orchid conservation project in the Brazilian Atlantic Rainforest
Mark Sparrow

One of the principal strategic objectives of Chester Zoo is to link its animal and plant collections to in-situ conservation projects.

In 2009 an article appeared in the BIAZA Lifelines Magazine about the work of REGUA (Reserva Ecologica de Guapi Assu) in the Atlantic Rainforest of Brazil. REGUA receives the majority of its funding from The World Land Trust with the aim of establishing reserves in this region. This valuable ecosystem has suffered severe loss of forest habitat with less than 7% of the original area remaining. This has led to the Atlantic Forest, containing many endemic plants and animals, being considered one of the most endangered eco-regions in the world.

In 2008, BIAZA co-ordinated a campaign for zoos in the UK to raise money to purchase an area of the forest, through REGUA, which would be known as the BIAZA reserve. The REGUA reserve currently comprises of 8,000 hectares of forest while the BIAZA reserve conserves a further 1,800 hectares.

This area of the Mata Atlantica rainforest is renowned for its wealth of orchids which include a large number of Pleurothallidinae species. Since 2001 the Zoo has acquired a collection of these orchids and now holds over 90% of the UK National Collection, comprising over 2,500 plants. All of the species in this group originate from South America and many are found in the Atlantic Rainforests of Brazil. A large number of these orchid species are threatened in the wild and a number are Critically Endangered.

After reading about the work of REGUA and the WLT, Mark Sparrow was inspired to contact them to see if Chester Zoo could become involved in this work and in March 2010 he spent 10 days in Brazil, 7 of those in the rainforest. Mark was astounded by the wealth of plant and animal species in the area. Over 650 species of orchids from 110 genera have been recorded in the Atlantic Rainforest, a quarter of all species occurring in Brazil, in less than 1% of the area of the country's surface.

Chester Zoo has now committed money to a three year project to re-establish the wetland habitat in this area, which has been virtually eliminated due to cattle ranching. It is hoped that further staff can visit the project to assist with practical conservation activities.

A consequence of the contacts made with the WLT was that the Zoo supplied a number of rare orchids for their Show Garden exhibit at the 2010 Chelsea Flower Show. The garden won a Gold Medal and was the Best in Show in the Continuous Learning category. After the show the exhibit was dismantled and reconstructed in the Tropical Realm at Chester Zoo.

Mark Sparrow is Curator of Horticulture and Botany at Chester Zoo

Wednesday
9th November

ACT FOR WILDLIFE
Cat Barton, Sarah Bird, Michelle Duma, Maggie Esson,
Scott Wilson, Alex Zimmerman

Act for Wildlife was launched in June this year to help showcase and raise funds for conservation projects in the wild. Led by Chester Zoo, Act for Wildlife features five flagship projects that all need our support but which one has your vote? This unique Members' Talk will give you the chance to find out more about all five of the Act for Wildlife projects and at the end vote for which one you think should receive the proceeds from money raised on the evening.

- UK Wildlife – Sarah Bird. Sarah manages our Native Species Programme and works on a range of projects in the North West of England and North Wales.
- Mauritius – Maggie Esson. Our involvement with conservation in Mauritius has involved Zoo staff from a number of departments including hand-rearing staff, horticulture and education. Maggie has led the development of education initiatives on Mauritius.
- Bornean orangutans – Cat Barton. Cat is involved in developing sustainable palm oil links between the Zoo and our partners in Borneo, palm oil being the major current threat to orangutans.
- Black rhinos – Scott Wilson. Scott works with rangers from the Maasailand Preservation Trust on the Chyulu Hills rhino project in Kenya, helping with data management and spatial mapping.
- Asian elephants – Alex Zimmermann. Alex is project leader on our Asian elephant programme and has developed the Assam Haathi Project, working to reduce human-elephant conflict in Assam, India.

But which one will convince you that their project is best? And which project will benefit from the proceeds of the evening? There's really only one way to find out... Act Now! and join us for this one-off event.

100% of donations made through Act for Wildlife fund conservation projects in the wild, and this Members' Talk will be no different. So make sure your favourite project is victorious and join us.

Cat Barton is Chester Zoo's Assistant Conservation Officer

Sarah Bird is Chester Zoo's Biodiversity Officer

Michelle Duma is Chester Zoo's Corporate and Events Fundraiser

Maggie Esson is Chester Zoo's Education Programmes Manager

Scott Wilson is Chester Zoo's Conservation Officer

Alex Zimmerman is Chester Zoo's Senior Conservation Scientist

Tuesday
13th December

Zoo Christmas Quiz Evening
Maggie Esson and Stephen McKeown

Last year's Members' Christmas Quiz night proved so popular that we're doing it again. The format will be similar with electronic voting handsets to register your answers to questions designed to test your knowledge of your zoo – past and present. This time, as a bonus, we're planning on having some 'mystery objects' to add to the excitement! We have lots of prizes for the lucky winners and there will be a Christmas buffet to get you into practice for the festive season.

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 2)

The total number of publications and technical reports produced by staff, students and associates of the zoo, published in 2011, exceeds 140. A selection is listed here:

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WORLDWIDE CONSERVATION ACTIVITIES (page 1 of 2)

Focus Country:	Project Title:
Asia	Human-Tiger conflict
Indonesia	Expenses for visit to Indonesia - Dr Martin Tyson
Indonesia	Building Capacity for Studbook Keeping and Ex situ Population Management for Key Indonesian Species
Malaysia	Hutan Hornbill Conservation Project
United Kingdom	Brockholes – feathered friends welcome
China	Confronting the Wildlife Trade through Public Education in China's Zoos
Nigeria	Construction of Visitors Information Centre - Gashaka Gumti National Park
Kenya	Facilitating management of an African savanna landscape: aerial surveys of wildlife and livestock across the greater Ewaso landscape
China	Donation to bird conservation - Blue crowned Laughingthrush project
Kenya	Increasing capacity for anti-poaching activities and deterrents in and around the Chyulu Hills
Tanzania	Environmental Education Programme, Rafiki wa Faru, Mkomazi National Park, Tanzania
Indonesia	Securing Human–Elephant Coexistence in Sumatra - Darwin
Indonesia	Staff travel - Visit to Java and Bali for new project development (including the short-tailed magpie project)
Malaysia	Orangutan Bridge Building Project Expedition 2011
United Kingdom	IUCN UK Committee subscription
Thailand	Hornbill Nest Adoption x 2
Mexico	Fish Ark Project Mexico
Tanzania	George Adamson Wildlife Preservation Trust African Wild Dog Breeding, Veterinary and Reintroduction Programme
Tanzania	Staff Travel - Mkomazi Game reserve
Nepal	Otter research and conservation project in Nepal
Peru	A travelling photographic exhibit documenting the extent and inhumane treatment of Peruvian wildlife in the illegal pet trade
Philippines	Home range and seasonality of the Palawan-endemic critically endangered Philippine Forest Turtle <i>Siebenrockiella leytensis</i> (Taylor, 1920) - Project extension
Nigeria	Gashaka Primate Project (Nigeria): Core Funding for Research, Conservation and Capacity Building (2012 Support)
Central America	2011 Amphibian Programme
United Kingdom	Black Rhino CASE studentship with Chester Zoo
Indonesia	Komodo Dragon Project - Community awareness, habitat and wildlife protection plan for the Wae Wuul nature reserve, West Flores
	Staff Travel - Education workshops Chengdu Giant Panda Breeding Base
Uganda	Staff travel - assisting with PASA Workshop
Belize	Staff travel - Visit to Shipstern Nature Reserve
Malaysia	Orangutan Bridge Building Project Expedition 2011
China	Volunteer program and volunteer training manual production for Liangshan Nature Reserves
Tanzania	Airbus support for Mkomazi plane
Indonesia	Protecting Sumatran rhinos, other threatened species and habitats in Bukit Barisan Selatan National Park, Indonesia
India	Foraging ecology of green turtles (<i>Chelonia mydas</i>) in the Lakshadweep Islands, India.
Tanzania	Continuing support for The Mkomazi Project: Environmental Education Programme, Rafiki wa Faru, Mkomazi National Park, Tanzania
Indonesia	Conservation Breeding Program for the Javan Short-tailed Magpie <i>Cissa (t.) thalassina</i> ; one of Java's most endangered bird species Stage 2 - captive breeding at Cikananga Conservation Breeding Center
Chile	<i>Rhinoderma darwini</i> genetic analysis
South Africa	The Ground Hornbill Research and Conservation Project
Philippines	Katala Environmental Education Center (KEEC)
Mauritius	An improved and continuous data collection system for the Octopus fishery in Rodrigues for improved management.
Indonesia	Staff travel - Orangutan Conservancy Workshop in Java
Kenya	Intelligence and informer network, run by the APLRS in Laikipia District, Kenya
Asia	Keeping up Momentum and preparing to carry a heavier load

Focus Country:	Project Title:
Indonesia	Assessing Frugivore Guilds in a Disturbed Peat-Swamp Forest, Central Kalimantan, Indonesian Borneo
Indonesia	Core funding for the "Kinabatangan Orang-utan Conservation Program" (KOCP)
Indonesia	Support for the KOCP "Honorary Wildlife Wardens" (HWWs)
Indonesia	Staff travel - Vet and nutritionist visit to KOCP (linked to orangutan conservancy workshop trip)
United Kingdom	Wilder Wych Research Project - Dormice
Mauritius	Another way to die: Using novel genetic markers to examine inbreeding in the Mauritius Pink Pigeon (<i>Nesoenas mayeri</i>)
India	Assam Haathi Project - Nandita's Salary 2011
Indonesia	Understanding dispersal and ranging behaviour of male orang-utans in a large, unfragmented habitat, and implications for mating-system mechanics
Cote d'Ivoire	Research and Actions for the Community-based Management of the Tanoe forest, Côte d'Ivoire: primate conservation and poverty alleviation (phase 3)
Philippines	Cebu Biodiversity Conservation Program
Philippines	Polillo Islands Biodiversity Protection and Monitoring Project (PIBPMP) – Year 1 Consolidation Stage
China	Sichuan Forest Biodiversity Project
India	Cost effectiveness of mitigation strategies in Assam
Philippines	Breeding Season Habitat Use of Philippine Hawk Owl <i>Ninox philippensis spilonota</i> in Cebu Island, Philippines
Sri Lanka	Survey on Community perspectives on Tourism in Rekawa Sanctuary in Southern Sri Lanka.
United Kingdom	Investigating the role of columbiforms in the molecular epidemiology of trichomonosis in UK birds
Cambodia	The Effects of Ecotourism on the Behavior of a Group of Habituated Gibbons (<i>Nomascus annamensis</i>) in Ratanakiri Province, Cambodia: Implications for Management of Ecotourism Schemes
Indonesia	Impact of logging on Palearctic bat assemblages: What value do twice logged forests hold for biodiversity conservation?
Central African Republic	Gorilla tracking rules and data collection on a habituated group of <i>Gorilla gorilla gorilla</i> by local guides at Bai Hokou, Central African Republic: Pre- and post-analysis of a refresher training.
Philippines	Smaller Islands Biodiversity Conservation Programme, Philippines
Japan	Japanese zoos and aquariums affected - Earthquake and Tsunami Appeal -Urgent call for help!
Uganda	Kibale Fuel Wood Project
Kenya	Barriers for conservation? People, elephants and fenced landscapes in Kenya
United Kingdom	Count Me In! goes wild
Mauritius	A CASE partnership in a Biotechnology and Biological Sciences Research Council (BBSRC) CASE Studentship to examine the population dynamics and demography of the endangered Pink Pigeon
United Kingdom	Cheshire Water Vole Project
Global	IUCN membership fees
Philippines	Philippine Cockatoo Conservation Project - 2012 Support
Global	Contribution of support for SSC Chairperson - Year 3
Tanzania	Increasing security at Mkomazi Rhino Sanctuary
Solomon islands	Biodiversity and Poverty in the Solomon Islands
Global	CBSG subscription fees
Tanzania	Providing a new water bowser for Mkomazi Rhino Sanctuary
Brazil	Lowland Tapir Conservation Initiative (LTICI): Pantanal Tapir Program
China	Blue-crowned Laughingthrush project
Global	Amphibian Ark Contribution - 2011
Global	CBSG subscription fees
Kenya	Staff travel - Trip to Ol Pejeta Conservancy
United Kingdom	Project coordinator - Andean Bears - MMU course teaching and CZ visit
Malaysia	Support for the Fifth Tapir Symposium
India	Conserving a hornbill haven: long-term monitoring and protection of hornbills with the Nyishi community in Pakke Wildlife Sanctuary, Arunachal Pradesh, north-east India
India	Assam Haathi Project (non-Darwin funds)

WORLDWIDE CONSERVATION ACTIVITIES (page 2 of 2)

Focus Country:	Project Title:
United Kingdom	Hosting education staff from Chengdu panda breeding base, China
Philippines	Philippine Hornbills Conservation Programme
Philippines	West Visayan Threatened Endemic Species Conservation Programme
United Kingdom	Staff Travel - Student Conference on Conservation Science - Conference attendance and Who's who in Conservation stand
Netherlands	Staff travel - EAZA conference- Rotterdam
United Kingdom	Staff Travel - Palm oil Conference at ZSL
Philippines	Staff travel to Philippine programme
United States of America	Staff Travel - Staff participation in ZACC Conference, Seattle
Kenya	Staff travel to Chyulu Hills for database development
Fiji	Synopsis of global evidence for freshwater fish conservation: project development phase
Argentina	Identifying habitat corridors for landscape species in interior Atlantic forest
South America	NEZS Jaguar Programme 2011
Global	EAZA Ape Campaign
Bolivia	Protecting the Barba Azul Nature Reserve population of the Blue-throated Macaw through its annual movements
Kenya	Cancelled - Improving Rhino Crime Investigation and Prosecution in State, Community and Private Land Areas of Kenya
Democratic Republic of Congo	Okapi Conservation Project in Epulu - 2011 support
India	Staff travel to Assam Haathi Project to complete masters project research
New Zealand	Survey of Galaxiid fish species diversity within the Cascades Kauri Park
Brazil	Ecology and Conservation of the Giant Armadillo (<i>Prionomys maximus</i>) in the Brazilian Pantanal
United Kingdom	Bollin Non-native invasive species project - Big Balsam Bash!
United Kingdom	Accommodation in UK for Chengdu education staff visit
United Kingdom	North Wales Breeding Bird Atlas Species Sponsorship: Black Guillemot
India	Assam Haathi Project 2011- Darwin Initiative funds
Global	Conserving the largest salmon in the world: Challenges and opportunities to protect Taimen as threats escalate throughout northern Eurasia
United Kingdom	Effects of UV-B and dietary supplementation on fitness and behaviour of frogs in <i>ex-situ</i> conservation - Year 1
United Kingdom	Effects of UV-B and dietary supplementation on fitness and behaviour of frogs in <i>ex-situ</i> conservation - Year 1
Madagascar	Conservation survey of the Pinstripe Damba in Boriziny District, Madagascar
Madagascar	Conservation of Breeding Ponds of the Critically Endangered Golden Mantella Frog in a new protected area in Madagascar
Mauritius	Propagation and conservation of critically endangered plant species of Mauritius
Mauritius	Long-term conservation management of the Echo Parakeet <i>Psittacula eques</i> . Restoring the species and developing management techniques.
Mauritius	Conservation of the Mauritius Olive White-eye <i>Zosterops chloronothos</i> , The establishment of a population on the managed offshore nature reserve, Ile aux Aigrettes.
Mauritius	A survey of the wild population of the Mauritius Fody <i>Foudia rubra</i> , the management of the population on Ile aux Aigrettes and the evaluation of Flat Island as a future site for translocation
Mauritius	Restoration and Reforestation of the Grande Montagne Nature Reserve (Rodrigues)
Mauritius	Survey & monitoring of Rodrigues Fruit Bat (<i>Pteropus rodricensis</i>) population
Global	Amphibian Survival Alliance 2011 Contribution
Indonesia	Securing Human-Elephant Coexistence in Sumatra - Darwin
United Kingdom	Staff Travel - Staff presentation at Gashaka Field Day - Roehampton University
	Conservation Breeding Program for the Javan Short-tailed Magpie <i>Cissa (t.) thalassina</i> ; one of Java's most endangered bird species - Stage 1 surveys
Kenya	Staff Travel - Education support for the Laikipia Wildlife Forum
Bolivia	Critically Endangered Blue-throated Macaw education program for the Barba Azul Nature Reserve area
Malaysia	Hutan Environmental Awareness Programme (HEAP) in Kinabatangan, Sabah, Malaysia

Focus Country:	Project Title:
Mauritius	Improving the Ecotourism & Educational Value of Ile aux Aigrettes, Mauritius
China	Staff travel - Visit to China programme
South Africa	A study to determine the susceptibility of the Cape and African White-backed vultures to Avian Influenza
Mauritius	Staff Travel - Keeper assistance for Passerine field work and replacement keeper costs (4 months)
Namibia	Namibian Captive African Wild Dog Management Workshop
United Kingdom	KOCP project coordinator visit to give FFI talk
Nigeria	The Nigerian Montane Forest Project
Global	EAZA Ape Campaign - Gorilla Money box and symposium costs
United Kingdom	BIAZA Field Programmes Committee - Ilke Tinders Miradi workshop expenses
Thailand	Budo Hornbill Conservation and Education Center (BHCEC)
Costa Rica	The Jaguar (<i>Panthera onca</i>), My Neighbor Rainforest Communities Working for the Conservation of the Jaguar
Indonesia	Black-winged Starling release programme for Cikananga
Central America	Geographical variation in socio-ecology of spider monkeys in Meso-America
Zimbabwe	African Painted Dog: reducing risk of population decimation from disease
Brazil	Continued Restoration of Wetland forest and reintroduction of its associated epiphytes at the REGUA reserve
Brazil	The IPÊ Black Lion Tamarin Conservation Programm - Integrating Conservation Education, Research, Habitat and Population Management of Black Lion Tamarins
	Partula Field Programme Consortium
Solomon islands	Conserving one of the last coastal rainforests: establishing baseline data and building capacity for community conservation on Makira
Indonesia	Recovery Program for the Black-winged Starling (<i>Sturnus melanopterus melanopterus</i>) in West Java.
Uganda	Staff travel - Vet assisting with PASA Workshop
Kenya	Upgrade of senior staff and visitor accommodation at the Chyulu Hills game scout and rhino programme
	Marine Conservation Society Campaign Donation
Global	Staff travel - costs of airport transfers
United Kingdom	Staff Travel - Presentation of Mphil proposal at BIAZA Bird Working Group meeting
Brazil	Conservation of the Grey-breasted Parakeet in the Baturité Mountains, Ceará, Brazil
Philippines	European zoos supporting <i>in situ</i> conservation of the Philippine Crocodile
Kenya	Use of camera traps to improve monitoring of the Eastern black rhino population and assist anti-poaching efforts
Tanzania	Providing a new water bowser for Mkomazi Rhino Sanctuary

MAMMALS STOCKLIST

(page 1 of 3)

		STOCK 31/12/10			IMPORTS			BORN/HATCHED			DNS<30 DAYS			DEATHS/OTHER			EXPORTS			STOCK 31/12/11		
		M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?
Diprotodontia																						
Macropodidae																						
Western Grey Kangaroo	<i>Macropus fuliginosus</i>	1	4	0	0	0	0	0	0	4	0	0	0	0	0	1	1	4	3	0	0	0
Scandentia																						
Tubulidentata																						
Aardvark	<i>Orycteropus afer</i>	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
Hyracoidea																						
Procaviidae																						
Rock Hyrax	<i>Procavia capensis capensis</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Proboscidea																						
Elephantidae																						
Asiatic Elephant	<i>Elephas maximus</i>	2	6	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	2	6	0
Phyllosophora																						
Myrmecophagidae																						
Giant Anteater	<i>Myrmecophaga tridactyla</i>	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	1	0
Primates																						
Lemuridae																						
Alaotran Gentle Lemur	<i>Haplemur alaotrensis</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Ring-tailed Lemur	<i>Lemur catta</i>	13	6	0	0	0	0	1	2	2	0	0	1	0	0	0	2	8	1	12	0	0
Red Ruffed Lemur	<i>Varecia rubra</i>	1	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0
Black-and-white Ruffed Lemur	<i>Varecia variegata variegata</i>	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
Cebidae																						
Geoffroy's Marmoset	<i>Callithrix geoffroyi</i>	1	4	0	0	0	0	0	0	3	0	0	2	0	0	1	1	4	0	0	0	0
Black-tailed Marmoset	<i>Callithrix melanura</i>	1	2	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	2	3	2
Eastern Pygmy Marmoset	<i>Callithrix pygmaea niveiventris</i>	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0
Golden-headed Lion Tamarin	<i>Leontopithecus chrysomelas</i>	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
Black Lion Tamarin	<i>Leontopithecus chrysopygus</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Pied Tamarin	<i>Saguinus bicolor</i>	1	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0
Emperor Tamarin	<i>Saguinus imperator subgriseus</i>	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0
Buffy-headed Capuchin	<i>Cebus xanthosternos</i>	5	5	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	4	5	1
Atelidae																						
Colombian Black Spider Monkey	<i>Ateles fusciceps robustus</i>	4	8	0	0	0	0	1	0	2	1	0	1	0	0	0	0	0	0	4	8	1
Cercopithecoidea																						
Cercopithecidae																						
Sulawesi Crested Macaque	<i>Macaca nigra</i>	15	18	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	14	17	1
Lion-tailed Macaque	<i>Macaca silenus</i>	10	14	0	0	0	0	2	1	3	0	0	0	2	0	0	0	0	0	10	15	3
Mandrill	<i>Mandrillus sphinx</i>	7	10	0	0	0	0	0	1	4	0	1	0	0	0	0	1	0	0	6	10	4
Hylobatidae																						
Lar Gibbon	<i>Hylobates lar</i>	3	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	1	0
Hominidae																						
Chimpanzee	<i>Pan troglodytes</i>	7	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	19	0
Sumatran Orangutan	<i>Pongo pygmaeus abelii</i>	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5	0
Bornean Orangutan	<i>Pongo pygmaeus pygmaeus</i>	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	0

MAMMALS STOCKLIST (page 2 of 3)

		STOCK 31/12/10			IMPORTS			BORN/HATCHED			DNS<30 DAYS			DEATHS/OTHER			EXPORTS			STOCK 31/12/11		
		M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?
Rodentia																						
African Dormouse	<i>Graphiurus murinus</i>	0	0	30	0	0	0	0	0	5	0	0	0	0	0	6	0	0	26	0	0	3
Giant Pouched Rat	<i>Cricetomys gambianus</i>	2	2	0	0	0	0	5	1	0	0	0	0	1	0	0	5	2	0	1	1	0
Black Spiny Mouse*	<i>Acomys sp.</i>	0	0	9	0	0	5	0	0	28	0	0	0	0	0	32	0	0	0	0	0	10
Turkish Spiny Mouse*	<i>Acomys cilicicus</i>	0	0	118	0	0	0	0	0	198	0	0	0	0	0	279	0	0	10	0	0	27
Zebra Mouse	<i>Lemniscomys barbarus</i>	0	0	0	0	0	3	0	0	2	0	0	0	0	0	0	0	0	2	0	0	3
Spotted Grass Mouse*	<i>Lemniscomys striatus</i>	0	0	10	0	0	1	0	0	1	0	0	0	0	0	3	0	0	9	0	0	0
Harvest Mouse	<i>Micromys minutus</i>	20	10	7	1	1	0	0	4	3	0	0	3	6	8	1	12	4	0	3	3	6
Acacia Rat	<i>Thallomys sp.</i>	0	0	5	0	0	0	0	0	2	0	0	0	0	0	0	0	0	7	0	0	0
African Crested Porcupine	<i>Hystrix africaeaustralis</i>	1	5	0	0	0	0	0	0	3	0	0	1	0	0	0	0	2	0	1	3	2
Capybara	<i>Hydrochaeris hydrochaeris</i>	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	1	1	0
Azara's Agouti	<i>Dasyprocta azarae</i>	1	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0
Chiroptera																						
Pteropodidae																						
Livingstone's Fruit Bat	<i>Pteropus livingstonii</i>	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0
Rodrigues Fruit Bat	<i>Pteropus rodricensis</i>	54	68	0	0	0	0	20	20	1	0	0	1	1	4	0	21	15	0	52	69	0
Phyllostomidae																						
Seba's Short-tailed Bat*	<i>Carollia perspicillata</i>	0	0	426	0	0	0	0	0	80	0	0	0	0	0	212	0	0	40	0	0	254
Carnivora																						
Felidae																						
Cheetah	<i>Acinonyx jubatus soemmeringii</i>	3	2	0	0	0	0	2	2	0	0	0	0	2	0	0	0	0	0	5	2	0
Serval	<i>Leptailurus serval</i>	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0
Asiatic Lion	<i>Panthera leo persica</i>	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0
Jaguar	<i>Panthera onca</i>	3	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	2	0
Sumatran Tiger	<i>Panthera tigris sumatrae</i>	1	1	0	0	0	0	0	4	1	0	1	1	0	0	0	0	0	0	1	4	0
Herpestidae																						
Yellow Mongoose	<i>Cynictis penicillata</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Dwarf Mongoose	<i>Helogale parvula</i>	1	3	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	1	3	9
Banded Mongoose	<i>Mungos mungo</i>	1	7	4	0	0	0	2	4	9	1	0	4	1	0	7	0	0	0	1	11	2
Slender-tailed Meerkat	<i>Suricata suricatta</i>	4	5	0				5	2	5				3	3	1	2	0	0	4	4	4
Canidae																						
African Hunting Dog	<i>Lycaon pictus pictus</i>	0	0	0	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	5	2	0
Bush Dog	<i>Speothos venaticus</i>	7	4	0	0	0	0	3	2	1	0	0	0	0	0	1	0	3	0	10	3	0
Ursidae																						
Spectacled Bear	<i>Tremarctos ornatus</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Mustelidae																						
Oriental Small-clawed Otter	<i>Aonyx cinerea</i>	1	7	1	0	0	0	0	2	0	0	0	0	2	0	0	1	0	0	1	6	1
Giant Otter	<i>Pteronura brasiliensis</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Procyonidae																						
Brown-nosed Coati	<i>Nasua nasua</i>	0	7	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	6	0
Ailuridae																						
Red Panda	<i>Ailurus fulgens fulgens</i>	1	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	1	0	1	1	0
Perissodactyla																						
Equidae																						
Grevy's Zebra	<i>Equus grevyi</i>	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	0
Persian Onager	<i>Equus hemionus onager</i>	1	6	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	1	5	0

MAMMALS STOCKLIST (page 3 of 3)

		STOCK 31/12/10			IMPORTS			BORN/HATCHED			DNS<30 DAYS			DEATHS/OTHER			EXPORTS			STOCK 31/12/11		
		M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?
Tapiridae																						
South American Tapir	<i>Tapirus terrestris</i>	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0
Rhinocerotidae																						
Eastern Black Rhinoceros	<i>Diceros bicornis michaeli</i>	3	6	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	3	6	0
One-horned Rhinoceros	<i>Rhinoceros unicornis</i>	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0
Artiodactyla																						
Suidae																						
Babirusa	<i>Babirusa babirusa</i>	1	1	0	0	0	0	1	1	2	1	1	0	0	0	0	0	0	0	1	1	2
Warthog	<i>Phacochoerus africanus</i>	1	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0
Red River Hog	<i>Potamochoerus porcus pictus</i>	1	2	0	0	0	0	1	3	0	1	3	0	0	0	0	0	0	0	1	2	0
Visayan Warty Pig	<i>Sus cebifrons negrinus</i>	3	5	4	0	0	0	1	3	0	0	0	0	0	1	0	1	2	4	3	5	0
Camelidae																						
Bactrian Camel	<i>Camelus bactrianus</i>	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0
Vicugna	<i>Vicugna vicugna</i>	3	3	0	0	0	0	2	1	0	0	0	0	1	0	0	3	0	0	1	4	0
Cervidae																						
Southern Pudu	<i>Pudu puda</i>	2	1	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	1	1	0
Burmese Brow-antlered Deer	<i>Rucervus eldii thamin</i>	6	14	0	0	0	0	4	2	3	2	1	0	0	1	0	5	0	0	3	14	3
Philippine Spotted Deer	<i>Rusa alfredi</i>	0	3	0	1	1	0	0	0	0	0	0	0	0	3	0	0	0	0	1	1	0
Giraffidae																						
Baringo Giraffe	<i>Giraffa camelopardalis rothschildi</i>	1	4	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	1	5	0
Okapi	<i>Okapia johnstoni</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Bovidae																						
Blackbuck	<i>Antelope cervicapra</i>	1	9	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	7	0
Kirk's Dik-dik	<i>Madoqua kirkii</i>	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	1	0
Lowland Anoa	<i>Bubalus depressicornis</i>	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Congo Buffalo	<i>Syncerus caffer nanus</i>	2	5	0	0	0	0	3	0	0	1	0	0	1	0	0	0	0	0	3	5	0
Eastern Bongo	<i>Tragelaphus eurycerus isaaci</i>	0	3	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0
West African Sitatunga	<i>Tragelaphus speki gratius</i>	7	8	0	1	0	0	0	2	3	0	0	0	0	0	1	7	0	0	1	10	2
Roan Antelope	<i>Hippotragus equinus</i>	2	2	0	0	4	0	3	0	1	2	0	1	2	0	0	0	0	0	1	6	0
Scimitar-horned Oryx	<i>Oryx dammah</i>	3	6	0	0	0	0	1	2	0	0	0	0	1	1	0	1	1	0	2	6	0
Gemsbok	<i>Oryx gazella gazella</i>	0	6	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	6	0
Kafue Flats Red Lechwe	<i>Kobus leche kafuensis</i>	0	5	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	3	0

Totals	236	344	614	18	23	9	61	64	383	10	7	19	25	36	545	67	51	102	213	337	340
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* = multiple DNS or euthanased sp's

Number of specimens at year end - 890

Number of species at year end - 77

Number of species held during the year - 81

1194	50	508	36	606	220	890
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BIRD STOCKLIST

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		STOCK 31/12/10			IMPORTS			BORN/HATCHED			DNS<30 DAYS			DEATHS/OTHER			EXPORTS			STOCK 31/12/11		
		M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?
Struthioniformes																						
Struthionidae																						
Common Ostrich	<i>Struthio camelus</i>	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Rheiformes																						
Rheidae																						
Common Rhea	<i>Rhea americana</i>	3	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	1	0
Casuariiformes																						
Casuariidae																						
Double-wattled Cassowary	<i>Casuarus casuarius</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Galliformes																						
Cracidae																						
Red-billed Curassow	<i>Crax blumenbachii</i>	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0
Phasianidae																						
Congo Peacock	<i>Afropavo congensis</i>	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Crested Wood Partridge	<i>Rollulus rouloul</i>	22	7	2	0	0	0	5	7	26	0	0	18	2	2	6	0	0	0	25	12	4
Temminck's Tragopan	<i>Tragopan temminckii</i>	1	1	0	0	0	0	1	2	0	0	0	0	1	0	0	0	1	0	2	1	0
Cabot's Tragopan	<i>Tragopan caboti</i>	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Himalayan Impeyan Pheasant	<i>Lophophorus impejanus</i>	2	3	0	0	1	0	0	0	0	0	0	0	0	0	0	1	2	0	1	2	0
Red Junglefowl	<i>Gallus gallus</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
Salvadori's Pheasant	<i>Lophura inornata inornata</i>	3	2	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	2	2	0
Malayan Crestless Fireback	<i>Lophura erythrophthalma erythrophthalma</i>	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Vietnamese Pheasant	<i>Lophura hatinhensis</i>	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0
Lady Amherst's Pheasant	<i>Chrysolophus amherstiae</i>	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Palawan Peacock Pheasant	<i>Polyplectron emphanum</i>	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0
Anseriformes																						
Anatidae																						
Lesser White-fronted Goose	<i>Anser erythropus</i>	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Red-breasted Goose	<i>Branta ruficollis</i>	3	0	3	2	4	0	0	0	6	0	0	2	0	0	0	0	0	0	5	4	7
Black-billed Whistling Duck	<i>Dendrocygna arborea</i>	1	3	7	0	0	0	0	0	0	0	0	0	0	0	1	1	3	6	0	0	0
White-faced Whistling Duck	<i>Dendrocygna viduata</i>	4	7	8	6	17	0	0	0	48	0	0	25	0	0	0	0	0	0	10	24	31
Mandarin Duck	<i>Aix galericulata</i>	0	0	5	3	1	0	0	0	0	0	0	0	0	0	0	3	1	5	0	0	0
Cape Teal	<i>Anas capensis</i>	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	5
Red-billed Pintail	<i>Anas erythrorhynchos</i>	0	0	0	2	0	2	0	0	5	0	0	2	0	0	0	0	0	0	2	0	5
Falcated Duck	<i>Anas falcata</i>	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0
Laysan Teal	<i>Anas platyrhynchos laysanensis</i>	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0
Hottentot Teal	<i>Anas punctata</i>	1	3	3	0	0	0	0	0	5	0	0	2	0	0	0	0	0	0	1	3	6
Garganey	<i>Anas querquedula</i>	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Baer's Pochard	<i>Aythya baeri</i>	4	3	4	0	0	0	0	0	16	0	0	2	0	1	5	0	0	13	4	2	0
Tufted Duck	<i>Aythya fuligula</i>	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0
Ferruginous Duck	<i>Aythya nyroca</i>	1	1	9	0	0	0	0	0	9	0	0	2	1	0	3	0	0	3	0	1	10
White-winged Wood Duck	<i>Cairina scutulata</i>	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Marbled Teal	<i>Marmaronetta angustirostris</i>	2	2	6	0	0	0	0	0	10	0	0	10	1	0	1	0	0	0	1	2	5
Smew	<i>Mergus albellus</i>	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Hooded Merganser	<i>Mergus cucullatus</i>	3	1	4	0	0	0	0	0	0	0	0	0	0	0	3	1	1	1	2	0	0
Red-crested Pochard	<i>Netta rufina</i>	7	3	0	0	0	0	0	0	9	0	0	3	2	1	1	0	0	2	5	2	3
White-headed Duck	<i>Oxyura leucocephala</i>	3	3	2	0	0	0	0	0	7	0	0	5	0	0	0	0	0	0	3	3	4
Common Eider	<i>Somateria mollissima</i>	1	0	8	1	4	2	0	0	0	0	0	0	0	0	0	2	4	9	0	0	1
African White-backed Duck	<i>Thalassomis leuconotus leuconotus</i>	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0

BIRD STOCKLIST

(page 3 of 5)

		STOCK 31/12/10			IMPORTS			BORN/HATCHED			DNS<30 DAYS			DEATHS/OTHER			EXPORTS			STOCK 31/12/11		
		M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?
Columbiformes																						
Columbidae																						
Nicobar Pigeon	<i>Caloenas nicobarica nicobarica</i>	2	3	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	5	0
Emerald Dove	<i>Chalcophaps indica</i>	0	0	1	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	1
Speckled Pigeon	<i>Columba guinea</i>	0	0	19	0	0	5	0	0	1	0	0	0	0	0	7	0	0	8	0	0	10
Rock Dove	<i>Columba livia</i>	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Pied Imperial Pigeon	<i>Ducula bicolor</i>	0	0	18	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	18
Mindanao Bleeding-heart	<i>Gallacolumba criniger</i>	1	3	0	1	0	0	0	0	4	0	0	1	0	0	0	0	1	0	2	2	3
Luzon Bleeding-heart	<i>Gallacolumba luzonica</i>	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Golden Heart Pigeon	<i>Gallacolumba rufigula</i>	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
Victoria Crowned Pigeon	<i>Goura victoria</i>	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0
Crested Bronzewing Pigeon	<i>Ocyphaps lophotes</i>	0	0	6	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	5
White-naped Pheasant Pigeon	<i>Otidiphaps nobilis aruensis</i>	1	1	0	1	0	0	0	2	4	0	0	2	0	0	0	0	0	0	2	3	2
Green-naped Pheasant Pigeon	<i>Otidiphaps nobilis nobilis</i>	1	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	1	0
Black-naped Fruit Dove	<i>Ptilinopus melanospila</i>	1	1	0	1	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	1	0
Superb Fruit Dove	<i>Ptilinopus superbus</i>	4	2	0	1	0	0	2	3	3	0	0	2	0	0	0	3	1	0	4	4	1
Socorro Dove	<i>Zenaida macroura graysoni</i>	3	3	0	0	0	0	0	0	3	0	0	1	0	0	0	0	0	0	3	3	2
Psittaciformes																						
Psittacidae																						
Red-and-blue Lory	<i>Eos histrio</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Mount Apo Lorikeet	<i>Trichoglossus johnstoniae</i>	2	1	0	0	0	0	0	3	4	0	0	2	0	0	0	0	0	0	2	4	2
Yellow-backed Chattering Lory	<i>Lorius garrulus flavopalliatu</i>	5	3	0	0	0	0	2	3	0	0	0	0	0	0	0	1	0	0	7	5	0
Purple-naped Lory	<i>Lorius domicella</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Derbyan Parakeet	<i>Psittacula derbiana</i>	7	10	0	0	0	0	3	2	1	0	0	1	0	1	0	0	0	0	10	11	0
Hyacinth Macaw	<i>Anodorhynchus hyacinthinus</i>	2	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	2	0
Blue-headed Macaw	<i>Ara couloni</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Blue-throated Macaw	<i>Ara glaucogularis</i>	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0
Golden Conure	<i>Aratinga guarouba</i>	2	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	2	0
Blue-throated Conure	<i>Pyrrhura cruentata</i>	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0
Grey-breasted Conure	<i>Pyrrhura leucotis griseipectus</i>	2	2	0	0	0	0	0	0	4	0	0	0	1	0	0	0	0	0	1	2	4
Ecuadorian Amazon	<i>Amazona autumnalis lilacina</i>	7	4	3	0	0	0	0	0	4	0	0	0	0	0	0	2	0	0	5	4	7
Red-tailed Amazon	<i>Amazona brasiliensis</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Green-cheeked Amazon	<i>Amazona viridigenalis</i>	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0
Red-vented Cockatoo	<i>Cacatua haematuropygia</i>	5	1	0	0	0	0	2	1	0	0	0	0	4	0	0	0	0	0	3	2	0
Lesser Sulphur-crested Cockatoo	<i>Cacatua sulphurea</i>	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0
Cuculiformes																						
Musophagidae																						
Fischer's Turaco	<i>Tauraco corythaix fischeri</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Schalow's Turaco	<i>Tauraco schalowi</i>	3	3	0	0	0	0	1	0	3	0	0	2	1	0	1	0	1	0	3	2	0
White-crested Turaco	<i>Tauraco leucolophus</i>	1	1	0	0	0	0	0	0	3	0	0	1	1	0	1	0	0	0	0	1	1
Violet Turaco	<i>Musophaga violacea</i>	2	2	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	1	1	1
White-bellied Go-away Bird	<i>Corythaixoides leucogaster</i>	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0

BIRD STOCKLIST (page 4 of 5)

		STOCK 31/12/10			IMPORTS			BORN/HATCHED			DNS<30 DAYS			DEATHS/OTHER			EXPORTS			STOCK 31/12/11		
		M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?
Strigiformes																						
Strigidae																						
Northern White-faced Owl	<i>Ptilopsis leucotis</i>	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	2	0
Spectacled Owl	<i>Pulsatrix perspicillata</i>	2	2	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	1	1	0
Brown Wood Owl	<i>Strix leptogrammica</i>	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	
Great Grey Owl	<i>Strix nebulosa lapponica</i>	2	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	
Ural Owl	<i>Strix uralensis</i>	0	0	0	1	1	0	1	1	0	0	0	0	0	0	1	1	0	1	1	0	
Northern Hawk Owl	<i>Sumia ulula</i>	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	
Caprimulgiformes																						
Podargidae																						
Tawny Frogmouth	<i>Podargus strigoides</i>	2	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	1	0
Coraciiformes																						
Coraciidae																						
Lilac-breasted Roller	<i>Coracias caudatus</i>	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	
Alcedinidae																						
White-collared Kingfisher	<i>Todiramphus chloris</i>	3	2	0	0	0	0	2	2	0	0	0	0	1	0	0	2	2	0	2	2	0
Phoeniculidae																						
Green Woodhoopoe	<i>Phoeniculus purpureus</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	
Bucerotidae																						
Von der Decken's Hornbill	<i>Tockus deckeni</i>	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	
Rhinoceros Hornbill	<i>Buceros rhinoceros silvestris</i>	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	
Great Hornbill	<i>Buceros bicornis</i>	2	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2	0	
Philippine Tarctic Hornbill	<i>Penelopides panini panini</i>	6	3	0	0	0	0	2	2	3	0	0	2	1	1	0	2	0	0	5	4	1
Wrinkled Hornbill	<i>Aceros corrugatus</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	
Mindanao Writhe-billed Hornbill	<i>Aceros leucocephalus</i>	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	
Piciformes																						
Ramphastidae																						
Brown-breasted Barbet	<i>Lybius melanopterus</i>	2	1	0	0	0	0	3	4	4	0	0	0	1	0	1	2	3	0	2	2	3
Red-and-yellow Barbet	<i>Trachyphonus erythrocephalus</i>	2	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0
Passeriformes																						
Corvidae																						
Green Jay	<i>Cyanocorax yncas</i>	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0
Azure-winged Magpie	<i>Cyanopica cyana</i>	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	
Red-billed Chough	<i>Pyrrhocorax pyrrhocorax</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	
Red-billed Blue Pie	<i>Urocissa erythrorhyncha</i>	2	3	0	0	0	0	3	3	1	0	0	1	0	0	0	1	1	0	4	5	0
Paradisaeidae																						
Red Bird-of-paradise	<i>Paradisaea rubra</i>	1	3	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	
Pycnonotidae																						
Red-whiskered Bulbul	<i>Pycnonotus jocosus</i>	0	0	0	2	5	7	2	0	5	0	0	2	0	2	0	0	0	7	4	3	3
Zosteropidae																						
African Montane White-eye	<i>Zosterops eurycricotus</i>	1	3	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	2	0
Irididae																						
Fairy Bluebird	<i>Irena puella</i>	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	2	0

BIRD STOCKLIST

(page 5 of 5)

		STOCK 31/12/10			IMPORTS			BORN/HATCHED			DNS<30 DAYS			DEATHS/OTHER			EXPORTS			STOCK 31/12/11		
		M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?
Sturnidae																						
Asian Glossy Starling	<i>Aplonis panayensis</i>	4	5	22	0	0	0	0	0	14	0	0	0	0	0	2	4	5	5	0	0	29
Amethyst Starling	<i>Cinnyricinclus leucogaster</i>	3	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	0	0
Royal Starling	<i>Cosmopsarus regius</i>	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0
Emerald Starling	<i>Lamprotornis iris</i>	2	2	29	0	0	0	0	0	5	0	0	2	0	0	0	0	2	0	2	0	32
Bali Mynah	<i>Leucopsar rothschildi</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Red-winged Starling	<i>Onychognathus morio</i>	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Scissor-billed Starling	<i>Scissirostrum dubium</i>	3	7	0	2	0	0	0	0	0	0	0	1	1	0	0	2	0	4	4	0	
Pied Starling	<i>Spreo bicolor</i>	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Superb Starling	<i>Spreo superbus</i>	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3
Muscicapidae																						
White-rumped Shama	<i>Copsychus malabaricus</i>	4	6	0	0	0	0	9	11	8	0	0	7	0	0	0	9	11	1	4	6	0
Snowy-headed Robin Chat	<i>Cossypha niveicapilla</i>	2	2	0	0	0	0	3	0	2	0	0	2	0	0	0	0	0	0	5	2	0
Turdidae																						
Orange-headed Thrush	<i>Zoothera citrina</i>	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0
Chestnut-backed Thrush	<i>Zoothera dohertyi</i>	1	4	0	0	0	0	1	0	7	0	0	3	0	0	0	0	1	0	2	3	4
Timaliidae																						
Blue-crowned Laughingthrush	<i>Dryonastes courtosi</i>	4	4	0	1	0	0	1	2	7	0	0	3	0	0	3	2	1	0	4	5	1
Sumatran Laughingthrush	<i>Garrulax leucolophus bicolor</i>	2	4	0	1	1	0	1	1	4	0	0	2	0	1	2	0	2	0	4	3	0
Pekin Robin	<i>Leiothrix lutea</i>	5	3	23	0	0	0	4	0	15	0	0	7	2	0	6	0	0	0	7	3	25
Grey-cheeked Liocichla	<i>Liocichla omeiensis</i>	2	3	0	1	0	0	3	1	0	0	0	0	0	0	0	0	0	0	6	4	0
Red-tailed Laughingthrush	<i>Trochalopteron milnei</i>	1	1	0	1	2	0	0	0	0	0	0	1	0	0	0	0	0	0	1	3	0
White-collared Yuhina	<i>Yuhina diademata</i>	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
Rufous-bellied Niltava	<i>Niltava sundara</i>	1	2	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0
Ploceidae																						
Red Fody	<i>Foudia madagascariensis</i>	0	2	11	0	0	0	0	0	8	0	0	0	0	1	9	0	0	0	0	1	10
Taveta Golden Weaver	<i>Ploceus castaneiceps</i>	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Village Weaver	<i>Ploceus cucullatus cucullatus</i>	9	6	4	0	0	0	5	2	14	0	0	0	0	2	1	0	0	0	14	6	17
Black-necked Weaver	<i>Ploceus nigricollis nigricollis</i>	1	1	2	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	1	0	0
Estrildidae																						
Timor Sparrow	<i>Padda fuscata</i>	3	5	20	0	0	0	0	0	17	0	0	0	1	1	22	0	0	0	2	4	15
Javan Sparrow *	<i>Padda oryzivora</i>	0	0	78	0	0	0	0	0	62	0	0	0	0	0	1	0	0	84	0	0	55
Timor Zebra Finch	<i>Poephila guttata guttata</i>	2	2	0	4	4	0	0	0	0	0	0	0	1	0	0	1	0	0	5	5	0
Fringillidae																						
Collared Grosbeak	<i>Coccothraustes affinis</i>	2	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0
Icteridae																						
Montserrat Oriole	<i>Icterus oberi</i>	1	3	0	0	0	0	2	0	3	0	0	1	0	0	1	0	1	0	3	2	1
Emberizidae																						
Pope Cardinal	<i>Paroaria dominicana</i>	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Thraupidae																						
Brazilian Tanager	<i>Ramphocelus bresilius</i>	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0

Totals	326	293	479	45	52	16	69	62	395	0	0	126	39	26	89	58	73	146	343	308	529
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* = multiple DNS or euthanased sp's

Number of specimens at year end - 1180

Number of species at year end - 140

Number of species held during the year - 155

1098	113	526	126	154	277	1180
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REPTILES STOCKLIST (page 1 of 2)

		STOCK 31/12/10			IMPORTS			BORN/HATCHED			DNS<30 DAYS			DEATHS/OTHER			EXPORTS			STOCK 31/12/11		
		M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?
Testudines																						
Carettochelyidae																						
Fly River Turtle	<i>Carettochelys insculpta</i>	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
Geoemydidae																						
Flower-backed Box Turtle	<i>Cuora galbinifrons</i>	1	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	5
Chinese Three-striped Box Turtle	<i>Cuora trifasciata</i>	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2
Zhou's Box Turtle	<i>Cuora zhoui</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Black-breasted Leaf Turtle	<i>Geoemyda spengleri</i>	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0
Spiny Hill Turtle	<i>Heosemys spinosa</i>	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	0
Annam Leaf Turtle	<i>Mauremys annamensis</i>	2	3	4	0	0	0	0	0	19	0	0	1	0	0	0	0	0	0	2	3	22
Testudinidae																						
Radiated Tortoise	<i>Astrochelys radiata</i>	2	1	8	0	2	0	0	0	12	0	0	0	0	0	0	0	0	0	2	3	20
Galapagos Tortoise	<i>Chelonoidis nigra</i>	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0
Egyptian Tortoise	<i>Testudo kleinmanni</i>	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	0
Chelidae																						
McCord's Snake-necked Turtle	<i>Chelodina mccordi</i>	1	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	1
Podocnemidae																						
Yellow-spotted Amazon River Turtle	<i>Podocnemis unifilis</i>	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
Sphenodontidae																						
Tuatara	<i>Sphenodon punctatus</i>	1	5	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	5	0
Sauria																						
Agamidae																						
Mountain Horned Lizard	<i>Acanthosaura capra</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Bell's Angle-headed Dragon	<i>Gonocephalus bellii</i>	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0
Dragon Lizard	<i>Gonocephalus doriae</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Asian Water Dragon	<i>Physignathus cocincinus</i>	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Chamaeleonidae																						
Parson's Chameleon	<i>Calumma parsonii</i>	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	0	0	2	1	0
Veiled Chameleon	<i>Chamaeleo calypratus</i>	1	2	1	1	0	0	0	0	0	0	0	0	0	0	2	2	1	0	0	0	0
Iguanidae																						
Martinique Anole	<i>Anolis roquet summus</i>	0	0	0	0	0	23	0	0	0	0	0	0	0	1	0	0	0	0	0	0	22
Fiji Banded Iguana	<i>Brachylophus fasciatus</i>	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Utila Spiny-tailed Iguana	<i>Ctenosaura bakeri</i>	1	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	5
Rhinoceros Iguana	<i>Cyclura cornuta</i>	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Lesser Antilles Iguana	<i>Iguana delicatissima</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Blue Spiny Lizard	<i>Sceloporus serrifer cyanogenys</i>	3	3	0	0	0	2	0	0	4	0	0	0	2	2	0	0	0	2	1	1	4
Teiidae																						
Caiman Lizard	<i>Dracaena guianensis</i>	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	2
Lacertidae																						
Sand Lizard*	<i>Lacerta agilis</i>	0	0	25	0	0	1	0	0	53	0	0	0	0	0	14	0	0	31	0	0	34
Helodermatidae																						
Rio Fuerte Beaded Lizard	<i>Heloderma horridum exasperatum</i>	2	3	2	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	2	3	5
Reticulated Gila Monster	<i>Heloderma suspectum suspectum</i>	1	2	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0
		STOCK 31/12/10			IMPORTS			BORN/HATCHED			DNS<30 DAYS			DEATHS/OTHER			EXPORTS			STOCK 31/12/11		

REPTILES STOCKLIST (page 2 of 2)

		M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?
Varanidae																						
Komodo Dragon	<i>Varanus komodoensis</i>	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0
Mangrove Monitor	<i>Varanus indicus</i>	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Emerald Monitor	<i>Varanus prasinus</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Crocodile Monitor	<i>Varanus salvadorii</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Serpentes																						
Boinae																						
Emerald Tree Boa	<i>Corallus caninus</i>	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Jamaican Boa	<i>Epicrates subflavus</i>	16	8	0	0	0	0	0	0	0	0	0	0	0	0	0	8	4	0	8	4	0
Pythoninae																						
Reticulated Python	<i>Broghammerus reticulatus</i>	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
Boelen's Python	<i>Morelia boeleni</i>	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0
Green Tree Python	<i>Morelia viridis</i>	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Colubridae																						
Mangrove Snake	<i>Boiga dendrophila melanota</i>	1	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3	0	1	0	0
King Rat Snake	<i>Elaphe carinata</i>	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0
Cornsnake/Red Rat Snake	<i>Elaphe guttata</i>	2	3	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5	0
One Hundred Flower Rat Snake	<i>Elaphe moellendorfi</i>	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	5
Western Rat Snake	<i>Elaphe obsoleta obsoleta</i>	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Red-tailed Rat Snake	<i>Gonyosoma oxycephala</i>	2	4	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	0	1	3	0
Rhinoceros Snake	<i>Rhynchophis boulengeri</i>	5	6	0	0	0	0	0	0	0	0	0	0	1	1	0	1	2	0	3	3	0
San Francisco Garter Snake	<i>Thamnophis sirtalis tetrataenia</i>	0	2	0	1	1	0	0	0	0				0	0	0	0	0	0	1	3	0
Crotalinae																						
Eyelash Viper	<i>Bothriechis schlegelii</i>	4	1	9	1	1	0	0	0	0	0	0	0	0	1	1	0	0	7	5	1	1
White-lipped Viper	<i>Cryptelytrops albolabris</i>	2	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0
Viperinae																						
West African Gaboon Viper	<i>Bitis gabonica rhinoceros</i>	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
Rhinoceros Viper	<i>Bitis nasicornis</i>	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0
Crocodylia																						
Crocodylidae																						
Spectacled Caiman	<i>Caiman crocodilus</i>	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Philippine Crocodile	<i>Crocodylus mindorensis</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0

Totals	72	91	68	11	10	36	0	0	97	0	0	2	5	8	16	16	15	44	62	78	139
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* = multiple DNS or euthanased sp's

Number of specimens at year end - 279

Number of species at year end - 47

Number of species held during the year - 52

231	57	97	2	29	75	279
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AMPHIBIAN STOCKLIST

		STOCK 31/12/10			IMPORTS			BORN/HATCHED			DNS<30 DAYS			DEATHS/OTHER			EXPORTS			STOCK 31/12/11		
		M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?
Gymnophiona																						
Caeciliidae																						
Aquatic Caecilian	<i>Typhlonectes natans</i>	0	0	11	0	0	5	0	0	0	0	0	0	0	0	0	0	0	10	0	0	6
Caudata																						
Ambystomatidae																						
Zacapu Axolotl	<i>Ambystoma andersoni</i>	3	2	12	0	0	0	0	0	100	0	0	0	0	0	4	0	0	0	3	2	108
Axolotl	<i>Ambystoma mexicanum</i>	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Anura																						
Bufonidae																						
Climbing Toad	<i>Pedostibes hosii</i>	5	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	5	1	0
Dendrobatidae																						
Green & Black Poison Dart Frog	<i>Dendrobates auratus</i>	2	2	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	2	2	13
Blue Poison Dart Frog	<i>Dendrobates azureus</i>	6	7	11	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	5	6	11
Pasco Poison Dart Frog	<i>Dendrobates lamasi</i>	3	1	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2	0	1
Yellow-banded Poison Dart Frog	<i>Dendrobates leucomelas</i>	6	2	29	0	0	0	0	0	24	0	0	0	1	0	6	0	0	24	5	2	23
Red-backed Poison Dart Frog	<i>Dendrobates reticulatus</i>	4	5	6	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	3	4	4
Dyeing Poison Dart Frog	<i>Dendrobates tinctorius</i>	2	3	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	1	0	0
Golden Poison Dart Frog	<i>Phyllobates terribilis</i>	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
Golfodulcean Poison Dart Frog	<i>Phyllobates vittatus</i>	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Alytidae																						
Mallorcan Midwife Toad	<i>Alytes muletensis</i>	0	0	120	0	0	0	0	0	0	0	0	0	0	0	120	0	0	0	0	0	0
Hylidae																						
Mission Golden-eyed Tree Frog*	<i>Trachycephalus resinifictrix</i>	1	1	9	0	0	0	0	0	38	0	0	0	1	0	34				0	1	13
Phyllomedusinae																						
Morelet's Tree Frog	<i>Agalychnis moreletii</i>	27	23	166	0	0	49	0	0	0	0	0	0	1	0	54	0	0	49	26	23	112
Splendid Leaf Frog	<i>Cruziohyla calcarifer</i>	4	3	33	0	0	0	0	0	0	0	0	0	0	0	33	4	3	0	0	0	0
Leptodactylidae																						
Chacoan Horned Frog	<i>Ceratophrys cranwelli</i>	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Mountain Chicken Frog	<i>Leptodactylus fallax</i>	4	2	40	4	4	0	0	0	8	0	0	2	2	0	28	0	0	0	6	6	18
Mantellidae																						
Green Mantella	<i>Mantella viridis</i>	0	0	0	0	0	9	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0
Microhylidae																						
Sambava Tomato Frog	<i>Dyscophus guineti</i>	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0
Pipidae																						
Surinam Toad	<i>Pipa pipa</i>	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Ranidae																						
Rancho Redondo Frog	<i>Lithobates vibicarius</i>	17	13	2	0	0	0	0	0	0	0	0	4	1	1	0	0	0	0	13	12	1
Rhacophoridae																						
Mossy Frog	<i>Theleiderma corticale</i>	4	1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	10

Totals	89	68	487	5	6	63	0	0	170	0	0	2	13	8	291	5	3	90	76	63	337
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* = multiple DNS or euthanased sp's

Number of specimens at year end - 476

Number of species at year end - 18

Number of species held during the year - 23

644	74	170	2	312	98	476
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FISHES STOCKLIST (page 1 of 2)

		Bred 2011	Stock 31/12/11
Osteoglossiformes			
Osteoglossidae			
Asian Arowana	<i>Scleropages formosus</i>		1
Mormyridae			
Blunt Jaw Elephant Trunkfish	<i>Campylomormyrus elephas</i>		2
Long-nosed Elephant Trunk Fish	<i>Gnathonemus petersii</i>		10
Short-nosed Elephant Trunkfish	<i>Marcusenius sp.</i>		2
Anguilliformes			
Muraenidae			
Snowflake Moray	<i>Echidna nebulosa</i>		3
Cypriniformes			
Cyprinidae			
Celestial Pearl Danio	<i>Celestichthys margaritatus</i>		51
Giant Danio	<i>Danio malabaricus</i>	*	146
Omani Blind Cave Fish	<i>Garra barreimiae</i>		87
Pla Eesok	<i>Probarbus jullieni</i>		6
Two Spot Barb	<i>Puntius cumingii</i>		10
Denison's Barb	<i>Puntius denisonii</i>	*	680
Black Ruby Barb	<i>Puntius nigrofasciatus</i>		60
Cherry Barb	<i>Puntius titteya</i>	*	98
Harlequin Rasbora	<i>Trigonostigma heteromorpha</i>		21
Cobitidae			
Clown Loach	<i>Chromobotia macracanthus</i>		19
Dwarf Loach	<i>Yasuhikotakia sidhimunki</i>		31
Characiformes			
Alestiidae			
Long-finned Characin	<i>Brycinus longipinnis</i>	*	246
Anostomidae			
Giant Pencil Fish	<i>Anostomus anostomus</i>		31
Gasteropelecidae			
Spotfin Hatchetfish	<i>Thoracocharax stellatus</i>		24
Characidae			
Mexican Blind Cavefish	<i>Astyanax mexicanus jordani</i>		10
Glowlight Tetra	<i>Hemigrammus erythrozonus</i>		97
Rummynose Tetra	<i>Hemigrammus rhodostomus</i>		192
Bleeding Heart Tetra	<i>Hyphessobrycon erythrostigma</i>		49
Black Neon Tetra	<i>Hyphessobrycon herbertaxelrodi</i>		98
Lemon Tetra	<i>Hyphessobrycon pulchripinnis</i>		100
Red Eye Tetra	<i>Moenkhausia sanctaefilomenae</i>		100
Cardinal Tetra	<i>Paracheirodon axelrodi</i>		548
X-ray Tetra	<i>Pristella maxillaris</i>		98
Penguin Tetra	<i>Thayeria boehlkei</i>		91
Siluriformes			
Mochokidae			
Polka-dot Upside-down Catfish	<i>Synodontis angelicus</i>		2
Lake Malawi Upside-down Catfish	<i>Synodontis njassae</i>		3
Poll's Upside-down Catfish	<i>Synodontis polli</i>		2

		Bred 2011	Stock 31/12/11
Callichthyidae			
Skunk Catfish	<i>Corydoras arcuatus</i>		1
Panda Catfish	<i>Corydoras panda</i>		10
Reticulated Corydoras	<i>Corydoras reticulatus</i>		6
Sterba's Catfish	<i>Corydoras sterbai</i>		60
Loricariidae			
Bristlenose Plecostomus	<i>Hemiancistrus dolichopterus</i>	*	129
Emperor Pekoltia	<i>Hypancistrus zebra</i>		1
Plecostomus	<i>Hypostomus plecostomus</i>		2
Ringlet Pleco	<i>Panaqolus maccus</i>		4
Lanceolate Whiptail Catfish	<i>Rineloricaria lanceolata</i>		5
Atheriniformes			
Melanotaeniidae			
Red Rainbowfish	<i>Glossolepis incisus</i>		12
Boeseman's Rainbowfish	<i>Melanotaenia boesemani</i>		7
Lake Kutubu Rainbow Fish	<i>Melanotaenia lacustris</i>		20
Dwarf Rainbowfish	<i>Melanotaenia praecox</i>		1
Cyprinodontiformes			
Aplocheilidae			
Killifish	<i>Pachypanchax sakaramyi</i>	*	34
Goodeidae			
Banded Allotoca	<i>Allotoca goslinei</i>		
Butterfly Goodeid	<i>Ameca splendens</i>	*	299
Bold Characodon	<i>Characodon audax</i>		49
Golden Saw-finned Goodeid	<i>Skiffia francesae</i>	*	834
Crescent Zoe	<i>Zoogoneticus tequila</i>		86
Beloniformes			
Adrianichthyidae			
Duck-billed Fish	<i>Xenopoeilus sarasinorum</i>	*	56
Syngnathiformes			
Centriscidae			
Shrimpfish	<i>Aeoliscus strigatus</i>		7
Syngnathidae			
Pacific Giant Seahorse	<i>Hippocampus kuda</i>	*	109
Scorpaeniformes			
Scorpaenidae			
Fumanchu Lionfish	<i>Dendrochirus biocellatus</i>		1
Fuzzy Dwarf Lionfish	<i>Dendrochirus brachypterus</i>		6
White Fin Lionfish	<i>Pterois radiata</i>		2
Perciformes			
Serranidae			
Red-bar Anthias	<i>Pseudanthias cooperi</i>		8
Flagtail Grouper	<i>Cephalopholis urodeta</i>		1
Apogonidae			
Emperor/Banggai Cardinal Fish	<i>Pterapogon kauderni</i>	*	46
Chaetodontidae			
Copperband Butterflyfish	<i>Chelmon rostratus</i>		3

FISHES STOCKLIST (page 2 of 2)

		Bred 2011	Stock 31/12/11
Pomacanthidae			
Bicolor Angelfish	<i>Centropyge bicolor</i>		1
Coral Beauty	<i>Centropyge bispinosus</i>		2
Keyhole Angelfish	<i>Centropyge tibicen</i>		2
Cichlidae			
Lake Malawi Cichlids (hybrids)			298
Konye Barombi Mbo Cichlid	<i>Konia eisentrauti</i>		16
Pin-striped Damba	<i>Paretroplus menarambo</i>		35
Altum Angelfish	<i>Pterophyllum altum</i>		19
Pungu Barombi Mbo Cichlid	<i>Pungu maclareni</i>		20
Unga Barombi Mbo Cichlid	<i>Sarotherodon linnelli</i>		51
Leka Keppe Barombi Mbo Cichlid	<i>Sarotherodon lohbergeri</i>		18
Nsess Barombi Mbo Cichlid	<i>Stomatepia mariae</i>		35
Pindu Barombi Mbo Cichlid	<i>Stomatepia pindu</i>		38
Discus	<i>Symphysodon aequifasciatus</i>	*	90
Pomacentridae			
Tomato Clownfish	<i>Amphiprion frenatus</i>		1
Common Clownfish	<i>Amphiprion ocellaris</i>		19
Skunk Clownfish	<i>Amphiprion sandaracinos</i>		1
Goldtail Damselfish	<i>Chrysiptera parasema</i>		1
Labridae			
Vermiculate Wrasse	<i>Macropharyngodon bipartitus</i>		3
Callionymidae			
Mandarinfish	<i>Synchiropus splendidus</i>		1
Gobiidae			
Golden Goby	<i>Gobiodon okinawae</i>		1
Ptereleotrinae			
Fire Goby	<i>Nemateleotris magnifica</i>		2
Acanthuridae			
Bristle-tooth Tang	<i>Ctenochaetus tominiensis</i>		1
Regal Tang	<i>Paracanthurus hepatus</i>		1
Yellow Tang	<i>Zebrasoma flavescens</i>		1
Scopas Tang	<i>Zebrasoma scopas</i>		1
Belontiidae			
Pearl Gourami	<i>Trichogaster leerii</i>		1
Tetraodontiformes			
Monacanthidae			
Mimic Leatherjacket	<i>Paraluteres prionurus</i>		1
Tetraodontidae			
Saddled Puffer	<i>Canthigaster valentini</i>		2
Lepidosireniformes			
Protopteridae			
African Lungfish	<i>Protopterus annectens</i>		1

91 species

Total number of specimens

5380

INVERTEBRATES STOCKLIST

		STOCK 31/12/11	CITES	
Arachnids				
Mexican Red-kneed Tarantula	<i>Euathlus smithii</i>	1		
Salmon Pink Tarantula	<i>Lasiodora parahybana</i>	1		
Honduran Curly-haired Tarantula	<i>Brachypelma albopilosum</i>	2		
Tanzanian Whipscorpion	<i>Damon variegatus</i>	*	37	
Insects				
Fruit Beetle	<i>Pachnoda sp.</i>	*	200	+
Flower Beetle	<i>Smaragdesthes africana oertzeni</i>	*	100	+
Derbyana Flower Beetle	<i>Dichronorhina derbyana</i>	*	108	
Death's Head Cockroach	<i>Blaberus sp.</i>	*	500	+
Madagascan Hissing Cockroach	<i>Gromphadorhina portentosa</i>		50	+
Malaysian Jungle Nymph	<i>Heteropteryx dilatata</i>	*	12	
Leaf Cutter Ants	<i>Atta cephalotes</i>	*	Colony	
Leaf Insect	<i>Phyllium siccifolium</i>	*	1	
Giant Asian Mantis	<i>Hierodula membranacea</i>		2	
Malaysian Leaf Katydid	<i>Ancylecha fenestrata</i>		14	
Florida Leaf Katydid	<i>Stilpnochlora coulöniana</i>	*	27	
Giant Stick Insect	<i>Pharnacea jianfenglingensis</i>	*	247	
Giant Thorny Stick Insect	<i>Trachyaretaon brueckneri</i>	*ed	40	+
Macleay's Spectre Stick Insect	<i>Extatosoma tiaratum</i>	*ed	10	
Myriapoda				
Giant African Millipede	<i>Archispirostreptus gigas</i>	ed	2	
Lepidoptera				
Giant Owl	<i>Caligo memnon</i>	*	14	
Purple Mort Bleu	<i>Eryphanis polyxena</i>	*	10	
Tailed Jay	<i>Graphium agamemnon</i>	*	13	
Glasswing	<i>Greto oto</i>	*	14	
Giant Asian Orange Tip	<i>Hebomoia glaucippe</i>		14	
Tiger Longwing	<i>Heliconius ismenius</i>	*	10	
Postman	<i>Heliconius melpomene</i>	*	7	
Great Eggfly	<i>Hypolimnna bolina</i>	*	12	
Giant Wood Nymph	<i>Idea leuconoe</i>		21	
Indian Leaf	<i>Kallima paralekta</i>		13	
Blue Morpho	<i>Morpho peleides</i>	*	54	
White Morpho	<i>Morpho polyphemus</i>	*	3	
Mocker Swallowtail	<i>Papilio dardanus</i>		6	
Lime Swallowtail	<i>Papilio demoleus</i>	*	23	
Great Mormon	<i>Papilio memnon</i>	*	13	
Emperor Swallowtail	<i>Papilio ophidicephalus</i>		6	
Common Mormon	<i>Papilio polytes</i>	*	17	
Scarlet Swallowtail	<i>Papilio rumanzovia</i>	*	17	
Clipper	<i>Parthenos sylvia sylvia</i>		6	
Malachite	<i>Siproeta stelenes</i>		1	
Golden Birdwing	<i>Troides rhadamantus</i>		20	II

Molluscs				
African Land Snail	<i>Achatina fulica</i>	ed	13	
Partula Snail	<i>Partula varia</i>	*	117	
Partula Snail	<i>Partula mirabilis</i>	*	238	
Partula Snail	<i>Partula hyalina</i>	*	74	
Partula Snail	<i>Partula taeniata nucleola</i>	*	343	
Partula Snail	<i>Partula affinis</i>	*	152	
Conch	<i>Pleuroploca gigantea</i>	aq	1	
Coelenterates				
Bubble Coral	<i>Plerogyra sinuosa</i>	aq	3	II
Sea Anemone	<i>Heteractis sp</i>	aq*	60	
Sand anemone	<i>Phymanthus crucifer</i>	aq	1	
Leather Coral	<i>Sarcophyton trocheliophorum</i>	aq	1	
Soft Coral	<i>Sinularia sp</i>	aq*	100	
Mushroom Polyp	<i>Actinodiscus sp</i>	aq*	80	
Gorgonian	<i>Euplexaura sp</i>	aq	12	
Encrusting Anemone	<i>Palythoa sp</i>	aq*	150	
Yellow Encrusting Anemone	<i>Parazoanthus sp</i>	aq*	300	
Bowl Coral	<i>Turbinaria peltata</i>	aq	1	II
Bowl Coral	<i>Turbinaria mesenterina</i>	aq	1	II
Echinoderms				
Long Spined Urchin	<i>Diadema antillarum</i>	aq	8	
Green Brittle Starfish	<i>Ophiarachna incrassata</i>	aq	30	
Crustacea				
Land Hermit Crab	<i>Coenobita clypeatus</i>		8	
Cleaner Shrimp	<i>Lysmata amboinensis</i>	aq	10	
TOTAL			3351	+

Number of specimens at year end - 3351+

Number of species at year end - 62

* indicates species bred in the Society's collection in 2011

CITES 0

I

CITES 6

II

6

aq indicates species kept by the Aquarium

ed indicates species kept by the Discovery and Learning Division

PLANT STOCKLIST (page 1 of 4)

Scientific name	Common Name	Class	Order	Family
<i>Nymphaea alba</i>	White Water Lily	Angiospermae	Nymphaeales	Nymphaeaceae
<i>Cycas rumphii</i>		Cycadopsida	Cycadales	Cycadaceae
<i>Dioon spinulosum</i>		Cycadopsida	Cycadales	Zamiaceae
<i>Zamia fischeri</i>		Cycadopsida	Cycadales	Zamiaceae
<i>Zamia furfuracea</i>	Cardboard Palm	Cycadopsida	Cycadales	Zamiaceae
<i>Equisetum xtrachyodon</i>	Mackay's Horsetail	Equisetopsida	Equisetales	Equisetaceae
<i>Gastonia mauritiana</i>		Eudicots	Apiales	Araliaceae
<i>Pittosporum obcordatum</i>	Heart-leaved Kohuhu	Eudicots	Apiales	Pittosporaceae
<i>Ilex perado ssp. platyphylla</i>		Eudicots	Aquifoliales	Aquifoliaceae
<i>Corokia macrocarpa</i>		Eudicots	Asterales	Argophyllaceae
<i>Brachyglottis compacta</i>		Eudicots	Asterales	Asteraceae
<i>Chromolaena lucayana</i>		Eudicots	Asterales	Asteraceae
<i>Cosmos atrosanguineus</i>		Eudicots	Asterales	Asteraceae
<i>Olearia hectorii</i>	Daisy Bush	Eudicots	Asterales	Asteraceae
<i>Olearia traversii</i>	Daisy Bush	Eudicots	Asterales	Asteraceae
<i>Sarcanthemum coronopus</i>		Eudicots	Asterales	Asteraceae
<i>Vernonia bahamensis</i>		Eudicots	Asterales	Asteraceae
<i>Lobelia digitalifolia</i>		Eudicots	Asterales	Campanulaceae
<i>Coincya monensis ssp. monensis</i>	Isle of Man Cabbage	Eudicots	Brassicales	Brassicaceae
<i>Berberidopsis corallina</i>		Eudicots	Berberidopsidales	Berberidopsidaceae
<i>Conophytum ernestii ssp. ernestii</i>		Eudicots	Caryophyllales	Aizoaceae
<i>Lithops aucampiae</i>	Living Stone	Eudicots	Caryophyllales	Aizoaceae
<i>Lithops bromfieldii</i>	Living Stone	Eudicots	Caryophyllales	Aizoaceae
<i>Lithops comptonii</i>	Living Stone	Eudicots	Caryophyllales	Aizoaceae
<i>Lithops geyeri</i>	Living Stone	Eudicots	Caryophyllales	Aizoaceae
<i>Lithops gracilidelineata</i>	Living Stone	Eudicots	Caryophyllales	Aizoaceae
<i>Lithops lesliei ssp. burchellii</i>	Living Stone	Eudicots	Caryophyllales	Aizoaceae
<i>Lithops schwantesii</i>	Living Stone	Eudicots	Caryophyllales	Aizoaceae
<i>Schwantesia treibnerii</i>		Eudicots	Caryophyllales	Aizoaceae
<i>Achyranthes arborescens</i>		Eudicots	Caryophyllales	Amaranthaceae
<i>Aporocactus flagelliformis</i>		Eudicots	Caryophyllales	Cactaceae
<i>Ariocarpus agavoides</i>		Eudicots	Caryophyllales	Cactaceae
<i>Ariocarpus bravoanus</i>		Eudicots	Caryophyllales	Cactaceae
<i>Ariocarpus fissuratus</i>		Eudicots	Caryophyllales	Cactaceae
<i>Ariocarpus retusus ssp. trigonus</i>		Eudicots	Caryophyllales	Cactaceae
<i>Ariocarpus scaphirostris</i>		Eudicots	Caryophyllales	Cactaceae
<i>Astrophytum ornatum</i>		Eudicots	Caryophyllales	Cactaceae
<i>Aztekium ritteri</i>		Eudicots	Caryophyllales	Cactaceae
<i>Cephalocereus follicularis</i>		Eudicots	Caryophyllales	Cactaceae
<i>Cephalocereus senilis</i>		Eudicots	Caryophyllales	Cactaceae
<i>Copiapoa cinerea ssp. cinerea</i>		Eudicots	Caryophyllales	Cactaceae
<i>Copiapoa echinoides</i>		Eudicots	Caryophyllales	Cactaceae
<i>Copiapoa esmeraldana</i>		Eudicots	Caryophyllales	Cactaceae
<i>Copiapoa fielderiana</i>		Eudicots	Caryophyllales	Cactaceae
<i>Copiapoa grandiflora</i>		Eudicots	Caryophyllales	Cactaceae
<i>Copiapoa humilis ssp. tecopillana</i>		Eudicots	Caryophyllales	Cactaceae
<i>Copiapoa humilis ssp. tenuissima</i>		Eudicots	Caryophyllales	Cactaceae
<i>Copiapoa humilis ssp. varispinata</i>		Eudicots	Caryophyllales	Cactaceae
<i>Copiapoa hypogaea ssp. hypogaea</i>		Eudicots	Caryophyllales	Cactaceae

Scientific name	Common Name	Class	Order	Family
<i>Copiapoa hypogaea ssp. laui</i>		Eudicots	Caryophyllales	Cactaceae
<i>Copiapoa krainziana</i>		Eudicots	Caryophyllales	Cactaceae
<i>Copiapoa longistaminea</i>		Eudicots	Caryophyllales	Cactaceae
<i>Copiapoa marginata</i>		Eudicots	Caryophyllales	Cactaceae
<i>Copiapoa megarhiza ssp. echinata</i>		Eudicots	Caryophyllales	Cactaceae
<i>Copiapoa megarhiza ssp. megarhiza</i>		Eudicots	Caryophyllales	Cactaceae
<i>Copiapoa montana</i>		Eudicots	Caryophyllales	Cactaceae
<i>Copiapoa serpentisulcata</i>		Eudicots	Caryophyllales	Cactaceae
<i>Copiapoa solaris</i>		Eudicots	Caryophyllales	Cactaceae
<i>Copiapoa taltalensis ssp. desertorum</i>		Eudicots	Caryophyllales	Cactaceae
<i>Copiapoa taltalensis ssp. taltalensis</i>		Eudicots	Caryophyllales	Cactaceae
<i>Coryphantha elephantidens</i>		Eudicots	Caryophyllales	Cactaceae
<i>Coryphantha longicornis</i>		Eudicots	Caryophyllales	Cactaceae
<i>Echinocactus grusonii</i>	Golden Barrel	Eudicots	Caryophyllales	Cactaceae
<i>Escobaria chaffeyi</i>		Eudicots	Caryophyllales	Cactaceae
<i>Ferocactus santamaria</i>		Eudicots	Caryophyllales	Cactaceae
<i>Mammillaria angelensis</i>		Eudicots	Caryophyllales	Cactaceae
<i>Mammillaria backbergiana var. ernestii</i>		Eudicots	Caryophyllales	Cactaceae
<i>Mammillaria bocasana</i>		Eudicots	Caryophyllales	Cactaceae
<i>Mammillaria bocensis</i>		Eudicots	Caryophyllales	Cactaceae
<i>Mammillaria bombycina</i>		Eudicots	Caryophyllales	Cactaceae
<i>Mammillaria bullardiana</i>		Eudicots	Caryophyllales	Cactaceae
<i>Mammillaria cerralboa</i>		Eudicots	Caryophyllales	Cactaceae
<i>Mammillaria duiformis</i>		Eudicots	Caryophyllales	Cactaceae
<i>Mammillaria hahniana</i>		Eudicots	Caryophyllales	Cactaceae
<i>Mammillaria herrerae</i>		Eudicots	Caryophyllales	Cactaceae
<i>Mammillaria kraehenbuehlii</i>		Eudicots	Caryophyllales	Cactaceae
<i>Mammillaria magnifica</i>		Eudicots	Caryophyllales	Cactaceae
<i>Mammillaria marksiana</i>		Eudicots	Caryophyllales	Cactaceae
<i>Mammillaria matudae</i>		Eudicots	Caryophyllales	Cactaceae
<i>Mammillaria mercadensis ssp. patonii</i>		Eudicots	Caryophyllales	Cactaceae
<i>Mammillaria meyranii</i>		Eudicots	Caryophyllales	Cactaceae
<i>Mammillaria microhelia</i>		Eudicots	Caryophyllales	Cactaceae
<i>Mammillaria moelleriana</i>		Eudicots	Caryophyllales	Cactaceae
<i>Mammillaria napina</i>		Eudicots	Caryophyllales	Cactaceae
<i>Mammillaria oteroi</i>		Eudicots	Caryophyllales	Cactaceae
<i>Mammillaria painteri</i>		Eudicots	Caryophyllales	Cactaceae
<i>Mammillaria parkinsonii</i>		Eudicots	Caryophyllales	Cactaceae
<i>Mammillaria peninsularis</i>		Eudicots	Caryophyllales	Cactaceae
<i>Mammillaria pilcayensis</i>		Eudicots	Caryophyllales	Cactaceae
<i>Mammillaria pilispina</i>		Eudicots	Caryophyllales	Cactaceae
<i>Mammillaria pondii</i>		Eudicots	Caryophyllales	Cactaceae
<i>Mammillaria pringlei</i>		Eudicots	Caryophyllales	Cactaceae
<i>Matucana aurantiaca ssp. polzii</i>		Eudicots	Caryophyllales	Cactaceae
<i>Matucana aureiflora</i>		Eudicots	Caryophyllales	Cactaceae
<i>Matucana huagalensis</i>		Eudicots	Caryophyllales	Cactaceae
<i>Matucana madisoniorum</i>		Eudicots	Caryophyllales	Cactaceae
<i>Matucana oreodoxa</i>		Eudicots	Caryophyllales	Cactaceae
<i>Matucana pujupatii</i>		Eudicots	Caryophyllales	Cactaceae

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Scientific name	Common Name	Class	Order	Family
<i>Matucana ritteri</i>		Eudicots	Caryophyllales	Cactaceae
<i>Matucana tuberculata</i>		Eudicots	Caryophyllales	Cactaceae
<i>Matucana weberbaueri</i>		Eudicots	Caryophyllales	Cactaceae
<i>Pelecyphora asselliformis</i>		Eudicots	Caryophyllales	Cactaceae
<i>Stenocactus coptonogonus</i>		Eudicots	Caryophyllales	Cactaceae
<i>Thelocactus bicolor</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus alonsoi</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus beguinii</i> ssp. <i>zaragozae</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus gjelsdorfianus</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus hoferi</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus horripilus</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus laui</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus lophophoroides</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus mandragora</i> ssp. <i>mandragora</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus mandragora</i> ssp. <i>pailanus</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus pseudomacrochele</i> ssp. <i>krainzianus</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus pseudomacrochele</i> ssp. <i>lausseri</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus pseudomacrochele</i> ssp. <i>minimus</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus pseudomacrochele</i> ssp. <i>pseudomacrochele</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus pseudopectinatus</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus saueri</i> ssp. <i>knuthianus</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus saueri</i> ssp. <i>nelissae</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus saueri</i> ssp. <i>saueri</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus schmiedickeanus</i> ssp. <i>andersonii</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus schmiedickeanus</i> ssp. <i>bonatzii</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus schmiedickeanus</i> ssp. <i>dicksoniae</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus schmiedickeanus</i> ssp. <i>flaviflorus</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus schmiedickeanus</i> ssp. <i>gracilis</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus schmiedickeanus</i> ssp. <i>jauernigii</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus schmiedickeanus</i> ssp. <i>macrochele</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus schmiedickeanus</i> ssp. <i>rioverdensis</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus schmiedickeanus</i> ssp. <i>schmiedickeanus</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus schmiedickeanus</i> ssp. <i>schwarzii</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus subterraneus</i> ssp. <i>booleanus</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus subterraneus</i> ssp. <i>subterraneus</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus swoboda</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus valdezianus</i>		Eudicots	Caryophyllales	Cactaceae
<i>Turbincarpus viereckii</i>		Eudicots	Caryophyllales	Cactaceae
<i>Dionaea muscipula</i>	Venus Fly Trap	Eudicots	Caryophyllales	Droseraceae
<i>Drosera adela</i>	Sundew	Eudicots	Caryophyllales	Droseraceae
<i>Drosera regia</i>	Sundew	Eudicots	Caryophyllales	Droseraceae
<i>Drosera rotundifolia</i>	Sundew	Eudicots	Caryophyllales	Droseraceae
<i>Nepenthes albomarginata</i>		Eudicots	Caryophyllales	Nepenthaceae
<i>Nepenthes ampullaria</i>		Eudicots	Caryophyllales	Nepenthaceae
<i>Nepenthes clipeata</i>		Eudicots	Caryophyllales	Nepenthaceae
<i>Nepenthes hispida</i>		Eudicots	Caryophyllales	Nepenthaceae
<i>Nepenthes khasiana</i>		Eudicots	Caryophyllales	Nepenthaceae
<i>Nepenthes mirabilis</i>		Eudicots	Caryophyllales	Nepenthaceae

Scientific name	Common Name	Class	Order	Family
<i>Nepenthes rafflesiana</i>		Eudicots	Caryophyllales	Nepenthaceae
<i>Pisonia aculeata</i>		Eudicots	Caryophyllales	Nyctaginaceae
<i>Eriogonum cinereum</i>		Eudicots	Caryophyllales	Polygonaceae
<i>Davidia involucrata</i> var. <i>involuta</i>	Handkerchief Tree	Eudicots	Cornales	Cornaceae
<i>Diospyros egrettarum</i>		Eudicots	Ebenales	Ebenaceae
<i>Gustavia gracillima</i>		Eudicots	Ericales	Lecythidaceae
<i>Sarracenia alata</i>	Pitcher Plant	Eudicots	Ericales	Sarraceniaceae
<i>Sarracenia flava</i>	Pitcher Plant	Eudicots	Ericales	Sarraceniaceae
<i>Sarracenia leucophylla</i>	Pitcher Plant	Eudicots	Ericales	Sarraceniaceae
<i>Sarracenia minor</i>	Pitcher Plant	Eudicots	Ericales	Sarraceniaceae
<i>Sarracenia oreophylla</i>	Pitcher Plant	Eudicots	Ericales	Sarraceniaceae
<i>Sarracenia psittacina</i>	Pitcher Plant	Eudicots	Ericales	Sarraceniaceae
<i>Sarracenia rubra</i> ssp. <i>alabamensis</i>	Pitcher Plant	Eudicots	Ericales	Sarraceniaceae
<i>Acacia choriophylla</i>		Eudicots	Fabales	Fabaceae
<i>Carmichaelia curta</i>		Eudicots	Fabales	Fabaceae
<i>Carmichaelia kirkii</i>		Eudicots	Fabales	Fabaceae
<i>Chordospartium muritai</i>	Weeping Tree Broom	Eudicots	Fabales	Fabaceae
<i>Chordospartium stevensonii</i>	Weeping Tree Broom	Eudicots	Fabales	Fabaceae
<i>Clianthus puniceus</i>	Glory Pea	Eudicots	Fabales	Fabaceae
<i>Dalbergia latifolia</i>	Indian Rosewood	Eudicots	Fabales	Fabaceae
<i>Notospartium glabrescens</i>	Southern Broom	Eudicots	Fabales	Fabaceae
<i>Notospartium torulosum</i>	Southern Broom	Eudicots	Fabales	Fabaceae
<i>Pithecellobium oblongatum</i>		Eudicots	Fabales	Fabaceae
<i>Strongylodon macrobotrys</i>	Jade Vine	Eudicots	Fabales	Fabaceae
<i>Zapoteca formosa</i>		Eudicots	Fabales	Fabaceae
<i>Betula chichibuensis</i>		Eudicots	Fagales	Betulaceae
<i>Doricera trilocularis</i>		Eudicots	Gentianales	Rubiaceae
<i>Notopleura guadalupensis</i> ssp. <i>guadalupensis</i>		Eudicots	Gentianales	Rubiaceae
<i>Palicourea crocea</i>		Eudicots	Gentianales	Rubiaceae
<i>Tarenna borbonica</i>		Eudicots	Gentianales	Rubiaceae
<i>Tabebuia heterophylla</i>		Eudicots	Lamiales	Bignoniaceae
<i>Tecomanthe speciosa</i>		Eudicots	Lamiales	Bignoniaceae
<i>Gesneria ventricosa</i>		Eudicots	Lamiales	Gesneriaceae
<i>Clerodendrum laciniatum</i>		Eudicots	Lamiales	Lamiaceae
<i>Stachys alpina</i>	Limestone Woundwort	Eudicots	Lamiales	Lamiaceae
<i>Syringa josikaca</i>		Eudicots	Lamiales	Oleaceae
<i>Hebe armstrongii</i>		Eudicots	Lamiales	Plantaginaceae
<i>Hebe cupressoides</i>		Eudicots	Lamiales	Plantaginaceae
<i>Euphorbia mellifera</i>	Honey Spurge	Eudicots	Malpighiales	Euphorbiaceae
<i>Heteropterys purpurea</i>		Eudicots	Malpighiales	Malpighiaceae
<i>Passiflora kewensis</i> x <i>racemosa</i> 'Pura Vida'		Eudicots	Malpighiales	Passifloraceae
<i>Passiflora murucuja</i>		Eudicots	Malpighiales	Passifloraceae
<i>Passiflora organensis</i> var. <i>marmorata</i>		Eudicots	Malpighiales	Passifloraceae
<i>Passiflora tulae</i>		Eudicots	Malpighiales	Passifloraceae
<i>Populus nigra</i> ssp. <i>betulifolia</i>	Black Poplar	Eudicots	Malpighiales	Salicaceae
<i>Hibiscus fragilis</i>		Eudicots	Malvales	Malvaceae
<i>Hibiscus insularis</i>	Philip Island Hibiscus	Eudicots	Malvales	Malvaceae
<i>Hibiscus rosa-sinensis</i>	Chinese Hibiscus	Eudicots	Malvales	Malvaceae
<i>Tilia xeuropaea</i>	Lime Tree	Eudicots	Malvales	Malvaceae

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Scientific name	Common Name	Class	Order	Family
<i>Trochetiopsis ebenus</i>	St. Helena Ebony	Eudicots	Malvales	Malvaceae
<i>Helicteres jamaicensis</i>		Eudicots	Malvales	Sterculiaceae
<i>Terminalia bentzoe</i> sp. <i>rodriguesensis</i>		Eudicots	Myrtales	Combretaceae
<i>Charianthus purpureus</i>		Eudicots	Myrtales	Melastomataceae
<i>Clidemia umbrosa</i>		Eudicots	Myrtales	Melastomataceae
<i>Crinodendron hookerianum</i>	Chile Lantern Tree	Eudicots	Oxalidales	Elaeocarpaceae
<i>Banksia integrifolia</i>	Australian Honeysuckle	Eudicots	Proteales	Proteaceae
<i>Dicentra spectabilis</i>	Bleeding Hearts	Eudicots	Ranunculales	Fumariaceae
<i>Cotoneaster cambicus</i>	Wild Cotoneaster	Eudicots	Rosales	Rosaceae
<i>Lyonothamnus floribundus</i> ssp. <i>asplenifolius</i>	Santa Cruz Island Ironwood	Eudicots	Rosales	Rosaceae
<i>Ficus religiosa</i>		Eudicots	Rosales	Moraceae
<i>Ficus citrifolia</i>		Eudicots	Rosales	Moraceae
<i>Turraea lacinata</i>		Eudicots	Sapindales	Meliaceae
<i>Phellodendron armurense</i>		Eudicots	Sapindales	Rutaceae
<i>Aeonium balsamiferum</i>		Eudicots	Saxifragales	Crassulaceae
<i>Aeonium castellopaivae</i>		Eudicots	Saxifragales	Crassulaceae
<i>Aeonium cuneatum</i>		Eudicots	Saxifragales	Crassulaceae
<i>Aeonium goochiae</i>		Eudicots	Saxifragales	Crassulaceae
<i>Aeonium haworthii</i>		Eudicots	Saxifragales	Crassulaceae
<i>Aeonium rubrolineatum</i>		Eudicots	Saxifragales	Crassulaceae
<i>Crassula rupestris</i> ssp. <i>marnierana</i>		Eudicots	Saxifragales	Crassulaceae
<i>Crassula socialis</i>		Eudicots	Saxifragales	Crassulaceae
<i>Echeveria laui</i>		Eudicots	Saxifragales	Crassulaceae
<i>Kalanchoe faustii</i>		Eudicots	Saxifragales	Crassulaceae
<i>Echium pininana</i>		Eudicots	Lamiales	Boraginaceae
<i>Echium wilpretti</i>		Eudicots	Lamiales	Boraginaceae
<i>Ginkgo biloba</i>	Maidenhair tree	Ginkgoopsida	Ginkgoales	Ginkgoaceae
<i>Magnolia soulangeana</i>	Chinese Magnolia	Magnoliids	Magnoliales	Magnoliaceae
<i>Michelia chapaensis</i>		Magnoliids	Magnoliales	Magnoliaceae
<i>Chamaedorea radicalis</i>		Monocots	Arecales	Arecaceae
<i>Chamaerops humilis</i>		Monocots	Arecales	Arecaceae
<i>Dypsis decaryi</i>	Triangle Palm	Monocots	Arecales	Arecaceae
<i>Howea balmoreana</i>	Sentry Palm	Monocots	Arecales	Arecaceae
<i>Howea forsteriana</i>	Kentia Palm	Monocots	Arecales	Arecaceae
<i>Hyophorbe verschaffeltii</i>		Monocots	Arecales	Arecaceae
<i>Johannesteijsmannia magnifica</i>		Monocots	Arecales	Arecaceae
<i>Jubaea chilensis</i>	Chilean Wine Palm	Monocots	Arecales	Arecaceae
<i>Latania lodigessii</i>		Monocots	Arecales	Arecaceae
<i>Latania lontaroides</i>	Red Latan Palm	Monocots	Arecales	Arecaceae
<i>Latania verschaffeltii</i>		Monocots	Arecales	Arecaceae
<i>Ptychosperma gracile</i>		Monocots	Arecales	Arecaceae
<i>Ravenea rivularis</i>		Monocots	Arecales	Arecaceae
<i>Syagrus flexuosa</i>	Cotton Palm	Monocots	Arecales	Arecaceae
<i>Trachycarpus fortunei</i>	Windmill Palm	Monocots	Arecales	Arecaceae
<i>Washingtonia filifera</i>	Californian Cotton Palm	Monocots	Arecales	Arecaceae
<i>Wodyetia bifurcata</i>	Foxtail Palm	Monocots	Arecales	Arecaceae
<i>Amorphophallus titanum</i>	Titan Arum	Monocots	Alismatales	Araceae
<i>Baldellia ranunculoides</i>	Lesser Water Plantain	Monocots	Alismatales	Alismataceae
<i>Luronium natans</i>	Floating Water Plantain	Monocots	Alismatales	Alismataceae

Scientific name	Common Name	Class	Order	Family
<i>Potamogeton compressus</i>	Grass-wrack Pondweed	Monocots	Alismatales	Potamogetonaceae
<i>Agave chrysantha</i>		Monocots	Asparagales	Agavaceae
<i>Agave victoriae reginae</i>		Monocots	Asparagales	Agavaceae
<i>Haworthia truncata</i>		Monocots	Asparagales	Asphodelaceae
<i>Lomatophyllum tormentorii</i>		Monocots	Asparagales	Asphodelaceae
<i>Astelia chathamica</i>		Monocots	Asparagales	Asteliaceae
<i>Phormium tenax</i>	New Zealand Flax	Monocots	Asparagales	Hemerocallidaceae
<i>Aristea platycaulis</i>		Monocots	Asparagales	Iridaceae
<i>Bulbophyllum rothschildeanum</i>		Monocots	Asparagales	Orchidaceae
<i>Calanthe rubens</i>		Monocots	Asparagales	Orchidaceae
<i>Cattleya trianae</i>		Monocots	Asparagales	Orchidaceae
<i>Coelogyne barbata</i>		Monocots	Asparagales	Orchidaceae
<i>Coelogyne cristata</i>		Monocots	Asparagales	Orchidaceae
<i>Coelogyne flaccida</i>		Monocots	Asparagales	Orchidaceae
<i>Dracula vampira</i>		Monocots	Asparagales	Orchidaceae
<i>Dracula wallisii</i>		Monocots	Asparagales	Orchidaceae
<i>Dryadella hirtzii</i>		Monocots	Asparagales	Orchidaceae
<i>Encyclia cochleata</i>		Monocots	Asparagales	Orchidaceae
<i>Encyclia mariae</i>		Monocots	Asparagales	Orchidaceae
<i>Epidendrum fimbriatum</i>		Monocots	Asparagales	Orchidaceae
<i>Laelia gouldiana</i>		Monocots	Asparagales	Orchidaceae
<i>Lepanthes cascajelensis</i>		Monocots	Asparagales	Orchidaceae
<i>Masdevallia agaster</i>		Monocots	Asparagales	Orchidaceae
<i>Masdevallia amaluzae</i>		Monocots	Asparagales	Orchidaceae
<i>Masdevallia andreetana</i>		Monocots	Asparagales	Orchidaceae
<i>Masdevallia carmenensis</i>		Monocots	Asparagales	Orchidaceae
<i>Masdevallia chaetostoma</i>		Monocots	Asparagales	Orchidaceae
<i>Masdevallia collina</i>		Monocots	Asparagales	Orchidaceae
<i>Masdevallia dynastes</i>		Monocots	Asparagales	Orchidaceae
<i>Masdevallia gilbertoi</i>		Monocots	Asparagales	Orchidaceae
<i>Masdevallia instar</i>		Monocots	Asparagales	Orchidaceae
<i>Masdevallia lynchiphora</i>		Monocots	Asparagales	Orchidaceae
<i>Masdevallia menatoi</i>		Monocots	Asparagales	Orchidaceae
<i>Masdevallia ova-avis</i>		Monocots	Asparagales	Orchidaceae
<i>Masdevallia panguiensis</i>		Monocots	Asparagales	Orchidaceae
<i>Masdevallia purpurella</i>		Monocots	Asparagales	Orchidaceae
<i>Masdevallia reichenbachiana</i>		Monocots	Asparagales	Orchidaceae
<i>Masdevallia rolfeana</i>		Monocots	Asparagales	Orchidaceae
<i>Masdevallia sanctae-inesae</i>		Monocots	Asparagales	Orchidaceae
<i>Masdevallia stenorrhynchus</i>		Monocots	Asparagales	Orchidaceae
<i>Masdevallia tovarensis</i>		Monocots	Asparagales	Orchidaceae
<i>Masdevallia veitchiana</i>		Monocots	Asparagales	Orchidaceae
<i>Paphiopedilum exul</i>		Monocots	Asparagales	Orchidaceae
<i>Paphiopedilum niveum</i>		Monocots	Asparagales	Orchidaceae
<i>Paphiopedilum philippinense</i>		Monocots	Asparagales	Orchidaceae
<i>Paphiopedilum rothschildianum</i>		Monocots	Asparagales	Orchidaceae
<i>Paphiopedilum wardii</i>		Monocots	Asparagales	Orchidaceae
<i>Pleurothallis aspergillum</i>		Monocots	Asparagales	Orchidaceae
<i>Pleurothallis cardiophylla</i>		Monocots	Asparagales	Orchidaceae

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Scientific name	Common Name	Class	Order	Family
<i>Pleurothallis dodsonii</i>		Monocots	Asparagales	Orchidaceae
<i>Pleurothallis macrantha</i>		Monocots	Asparagales	Orchidaceae
<i>Pleurothallis pallida</i>		Monocots	Asparagales	Orchidaceae
<i>Pleurothallis phyllocardia</i>		Monocots	Asparagales	Orchidaceae
<i>Pleurothallis scoparium</i>		Monocots	Asparagales	Orchidaceae
<i>Pleurothallis volcanica</i>		Monocots	Asparagales	Orchidaceae
<i>Porroglossum amethystinum</i>		Monocots	Asparagales	Orchidaceae
<i>Porroglossum andrettae</i>		Monocots	Asparagales	Orchidaceae
<i>Porroglossum dalstroemii</i>		Monocots	Asparagales	Orchidaceae
<i>Restrepiopsis pandurata</i>		Monocots	Asparagales	Orchidaceae
<i>Rossioglossum insleayi</i>		Monocots	Asparagales	Orchidaceae
<i>Scaphosepalum beluosum</i>		Monocots	Asparagales	Orchidaceae
<i>Scaphosepalum fimbriatum</i>		Monocots	Asparagales	Orchidaceae
<i>Scaphosepalum microdactylum</i>		Monocots	Asparagales	Orchidaceae
<i>Scaphosepalum ovulare</i>		Monocots	Asparagales	Orchidaceae
<i>Sobralia macrantha</i>		Monocots	Asparagales	Orchidaceae
<i>Stanhopea tigrina</i>		Monocots	Asparagales	Orchidaceae
<i>Stelis hirtzii</i>		Monocots	Asparagales	Orchidaceae
<i>Trisetella gemmata</i>		Monocots	Asparagales	Orchidaceae
<i>Vanda coerulea</i>		Monocots	Asparagales	Orchidaceae
<i>Dracaena draco</i>	Canary Island Dragon Tree	Monocots	Asparagales	Ruscaceae
<i>Puya coquimbensis</i>		Monocots	Poales	Bromeliaceae
<i>Bromus interruptus</i>	Interrupted Brome	Monocots	Poales	Poaceae
<i>Phragmites australis</i>	Common Reed	Monocots	Poales	Poaceae
<i>Zingiber officinale</i>	Ginger	Monocots	Zingiberales	Zingiberaceae
<i>Araucaria araucana</i>	Monkey puzzle	Pinopsida	Pinales	Araucariaceae
<i>Araucaria heterophylla</i>	Norfolk Island Pine	Pinopsida	Pinales	Araucariaceae
<i>Chamaecyparis lawsoniana</i>	Lawson's cypress	Pinopsida	Pinales	Cupressaceae
<i>Juniperus communis</i>	Common Juniper	Pinopsida	Pinales	Cupressaceae
<i>Metasequoia glyptostroboides</i>	Dawn Redwood	Pinopsida	Pinales	Cupressaceae
<i>Sequoiadendron giganteum</i>	Giant Redwood	Pinopsida	Pinales	Cupressaceae
<i>Picea omorika</i>		Pinopsida	Pinales	Pinaceae
<i>Pseudolarix amabilis</i>	Golden Larch	Pinopsida	Pinales	Pinaceae
<i>Cedrus deodara</i>	Himalayan Cedar	Pinopsida	Pinales	Pinaceae
<i>Podocarpus nubigenus</i>		Pinopsida	Pinales	Podocarpaceae
<i>Podocarpus salignus</i>	Willowleaf Podocarp	Pinopsida	Pinales	Podocarpaceae
<i>Dicksonia antarctica</i>	Soft tree fern	Pteridopsida	Cyatheaales	Dicksoniaceae
<i>Pilularia globulifera</i>	Pillwort	Pteridopsida	Salviniales	Marsileaceae

SUMMARY OF CONSERVATION STATUS OF COLLECTION

Table 1. Animal Stock

As of 31st December 2011

	Number of Species End 2010	Number of Species End 2011	Number of Specimens End 2010	Number of Specimens End 2011
Mammals	77	76	1303	890
Birds	143	140	1085	1180
Reptiles	46	47	229	279
Amphibians	21	18	733	476
Fishes	87	91	3040	5380
Invertebrates	45	62	2391	3351
Total	419	434	8781	11556

Table 2. Summary of the conservation status of Chester Zoo's animal collection by IUCN category

as of 31st December 2011

*IUCN Red List Category	Mammals	Birds	Reptiles	Amphibians	Fishes	Invertebrates	Total by category
Threatened species Extinct in the Wild (EW), (Critically Endangered (CR), Endangered (EN), and Vulnerable (VU))	42	44	15	7	22	5	31% 135
Near Threatened (NT)	5	17	0	0	0	1	5% 23
Least Concern (LC)	26	1	8	10	21	0	15% 66
Data Deficient (DD)	3	1	0	1	2	0	2% 7
Not evaluated (NE)	0	0	18	0	0	0	4% 18
Total species	100% 76	45% 63	87% 41	100% 18	49% 45	10% 6	57% 249

(Percentage figures are IUCN category compared against total species held in the collection).

* IUCN 2011. IUCN Red List of Threatened Species. Version 2011.2. <www.iucnredlist.org>

Table 3. Summary of the conservation status of Chester Zoo's plant collection by IUCN category

as of 31st December 2011

IUCN Categories	Number of plant species
Threatened species (Extinct in the Wild (EW), Critically Endangered (CR), Endangered (EN), and Vulnerable (VU))	74% 242
Near Threatened (NT)	3% 10
Least Concern (LC)	3% 10
Data Deficient (DD)	6% 20
Not Evaluated (NE)	0% 0
Total in Zoo	86% 282
Total number of plant species held	329

Table 4. Numbers of animal and plant species in managed programmes

as of 31st December 2011

Taxon Group	Species in Managed Programmes
Mammals	54
Birds	55
Reptiles	17
Amphibians	0
Fishes	0
Invertebrates	0
Plants	9
Total	135

Table 5. Species' roles in the collection plan

as of 31st December 2011

Roles	Mammals	Birds	Reptiles	Amphibians	Fishes	Invertebrates	Plants	Totals
Ex situ management	9	17	12	1	7	3	30	79
In situ conservation ambassador	23	22	1	3	1	5	14	69
Education	43	20	15	8	11	10	34	141
Research and Husbandry techniques	1	3	7	8	7	0	0	26
Visitor Experience	37	84	21	7	49	48	245	491
No Current Role	3	26	4	1	33	6	14	87

ABOUT THE CHESTER ZOO COLLECTION PLAN

Chester Zoo's Institutional Collection Plan (ICP) gives an overview of the current state of our animal and plant collection and the role of each species within it. It is an important source of information to all staff and a key tool that is used by curators to plan the future and progress towards it.

Fundamental to the concept of a collection plan is the notion of species 'role'. The table below summarises the various different roles that we use at Chester Zoo. The roles mirror our mission and cover the core areas of conservation breeding, conservation ambassador, education, research and visitor experience. A species must have at least one at least one in order to justify its place in the collection – many however will have multiple roles. It is also worth noting that in some instances one or more of the assigned roles may apply only to certain individuals of a species. The roles fulfilled by each of the species we hold are reviewed annually and may change over time as activities and priorities for each species are evaluated.

As well as the species role(s), the collection plan also contains some basic information about each species including common and scientific names, geographic range and IUCN Red List threat category and, in order to manage each species and the collection as a whole, a variety of other operational data is included. Data relevant to managing the species and collection includes the number of each species currently held (males.females.unsexed), the target number for each species, the current and future location in the zoo, and breeding recommendations. Links to husbandry guidelines, diet sheets and relevant *in situ* field programmes are also provided.

Chester Zoo ICP Species* Roles

All species* held at Chester Zoo must fulfil at least one of the following roles in order to justify its place in the collection. These roles can be grouped into 5 key categories all of which reflect our mission.

* "Species" in the context of this document may sometimes refer to subspecies or localised populations

1. Ex situ Management

1a. <i>Ex situ</i> Management – Release programme	A species* that is Extinct in the Wild or is in imminent danger of extinction which is being managed in an <i>ex situ</i> at Chester Zoo where one or more of the individuals are released back into the wild as part of the recommended** conservation action.
1b. <i>Ex situ</i> Breeding – Insurance population	A species* that is Extinct in the Wild or is in imminent danger of extinction which is being managed in an <i>ex situ</i> breeding programme at Chester Zoo as part of the recommended** conservation action.

** Recommended action could come, for example, an IUCN SSC Specialist group, from the results of a recognised IUCN/CBSG CAMP/PHVA process, a published Species Action Plan, a national or regional BAP, a government request from a range State etc.

2. In situ Conservation Ambassador

2a. Flagship Species	A species* acting as a flagship for a Chester Zoo <i>in situ</i> programme.
2b. Species Conservation	A species* for which there is a significant species-specific <i>in situ</i> focus, as part of long-term support for Chester Zoo's projects or multi-species programmes.
2c. Habitat Conservation	A species* receiving <i>in situ</i> support indirectly through region or habitat focused Chester Zoo programmes and/or projects.
2d. Zoo Community Projects	A species* supported <i>in situ</i> by the zoo community and where Chester Zoo is a contributor to the project.

3. Education

A species used to convey the Key Conservation Message(s) that:	
3a. Interdependence	"All living things including humans live in ecosystems and depend on other living things for their survival."
3b. Human Impact	"Human activities are causing serious environmental damage."
3c. Partnerships	"Chester Zoo works in partnerships with other organisations to conserve nature and natural resources."
3d. Chester Zoo	"Chester Zoo is a charity whose mission is to be a major force in conserving biodiversity worldwide."
3e. You!	"We can all make changes to help the environment and zoos can help inspire people to do this."

4. Research & Husbandry Techniques

4a. Husbandry Development and/or Skills Training	A species for which we are developing particular husbandry methods to address an identified issue and /or that we are using to build staff capacity in specific husbandry or field conservation skills.
4b. Research with <i>in situ</i> application	A species undergoing clearly defined applied research that contributes to the conservation of that species or a related species in the wild
4c. Research with <i>ex situ</i> application	A species undergoing clearly defined applied research that leads to evidence-based decisions regarding captive management.
4d. Pure Research	A species undergoing clearly defined pure research that increases knowledge of natural history, behaviour, ecology, population biology, taxonomy, disease.

5. Visitor Experience

Note these species are less likely to be chosen if they require large amounts of investment to maintain in the collection and they have no other role.

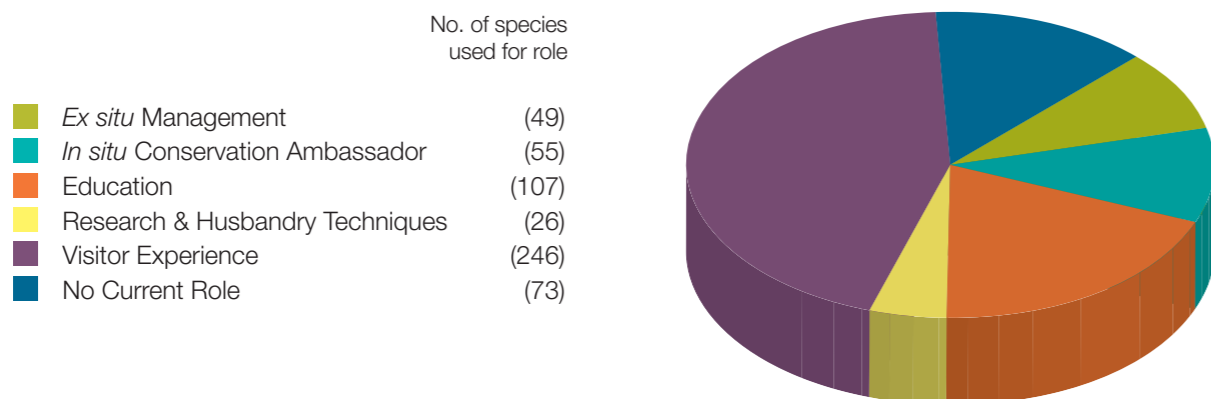
5a. Exhibit Enhancement	A species exhibited in, or apparently in, another species' enclosure in order to enhance the visitor experience. Such a species must originate from the same geographic area and habitat and should demonstrate behaviours, enclosure use, and activity periods that differ from the focal species in order to expand animal visibility.
5b. Theme Enhancement	A species exhibited separately from the focal species within a themed exhibit or region of the Zoo in order to enhance visitor experience. Such a species must clearly reinforce the respective theme.

No Current Role

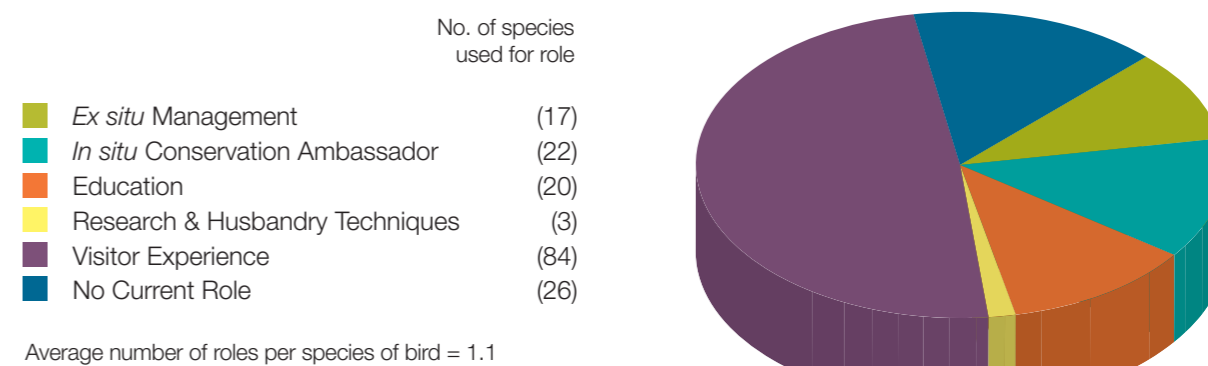
A species that currently makes no clearly defined contribution to Conservation, Education or Research and does not enhance Visitor Experience. We may continue to work with these species if we anticipate that they will shortly be able to fulfil one of the above roles. If not, the species will be phased out of the collection.

SUMMARY OF ALL ROLES

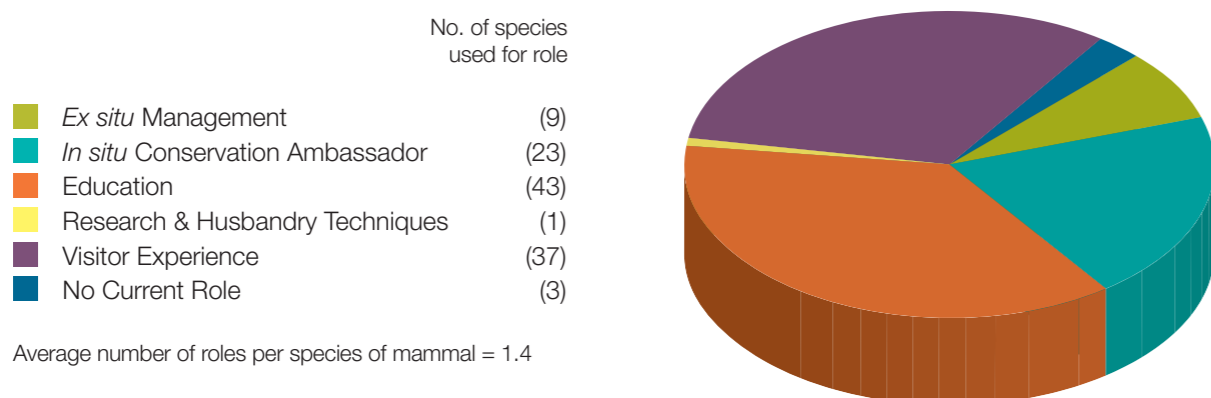
Distribution of roles fulfilled by **all animal species** at Chester Zoo in 2011



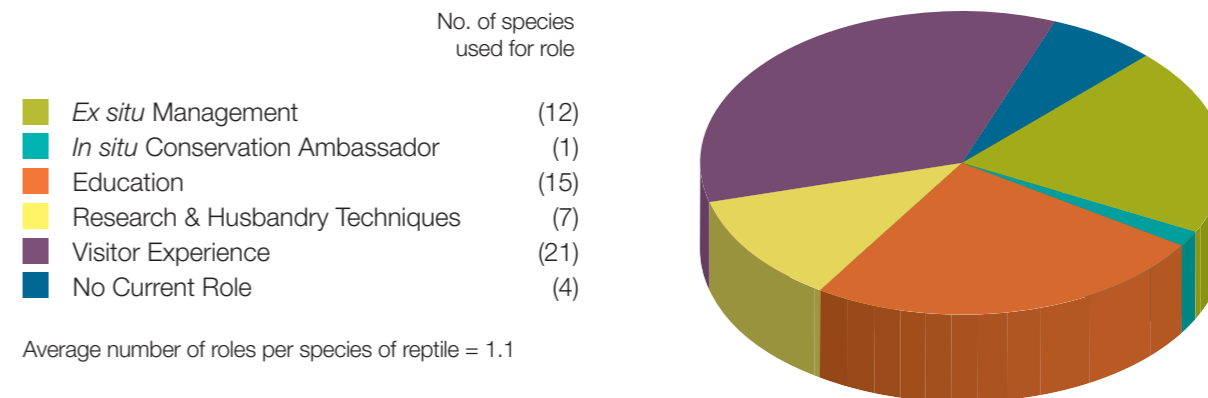
Distribution of roles fulfilled by **bird species** at Chester Zoo in 2011



Distribution of roles fulfilled by **mammal species** at Chester Zoo in 2011

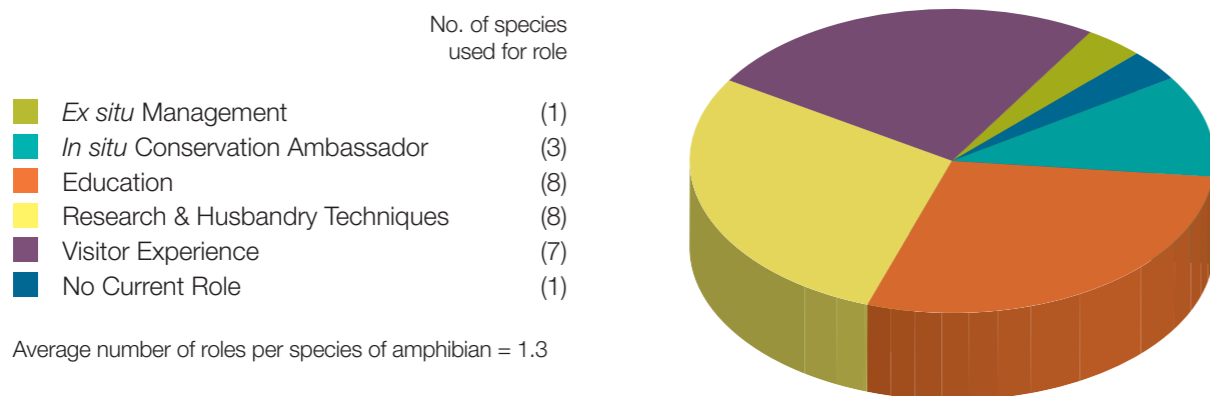


Distribution of roles fulfilled by **reptile species** at Chester Zoo in 2011

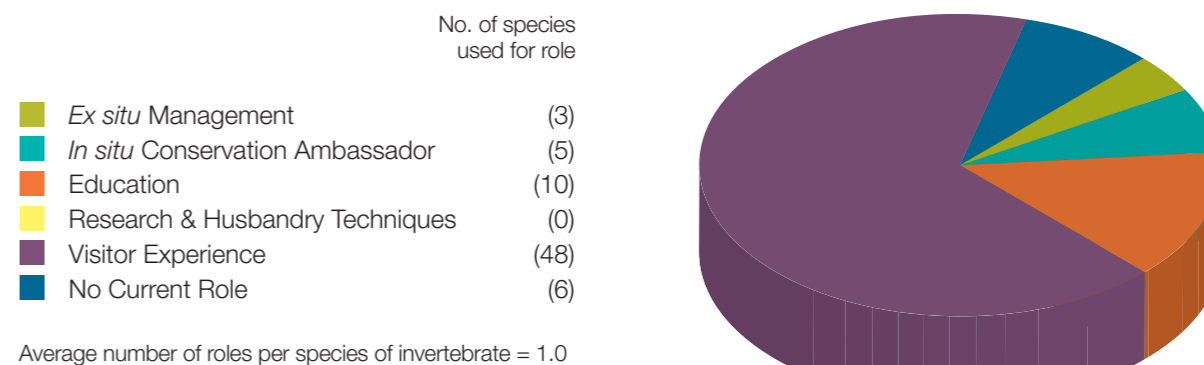


SUMMARY OF ALL ROLES

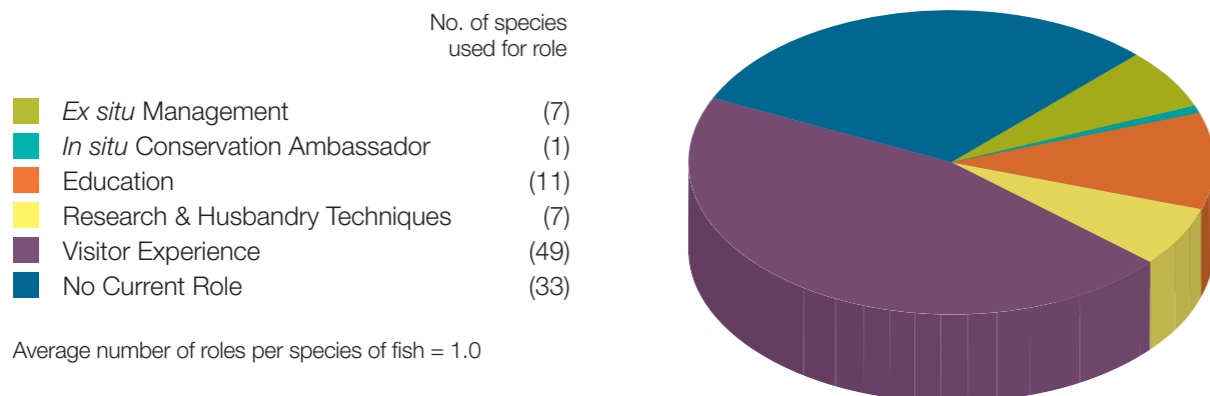
Distribution of roles fulfilled by **amphibian species** at Chester Zoo in 2011



Distribution of roles fulfilled by **invertebrate species** at Chester Zoo in 2011



Distribution of roles fulfilled by **fish species** at Chester Zoo in 2011



Distribution of roles fulfilled by **plant species** at Chester Zoo in 2011

