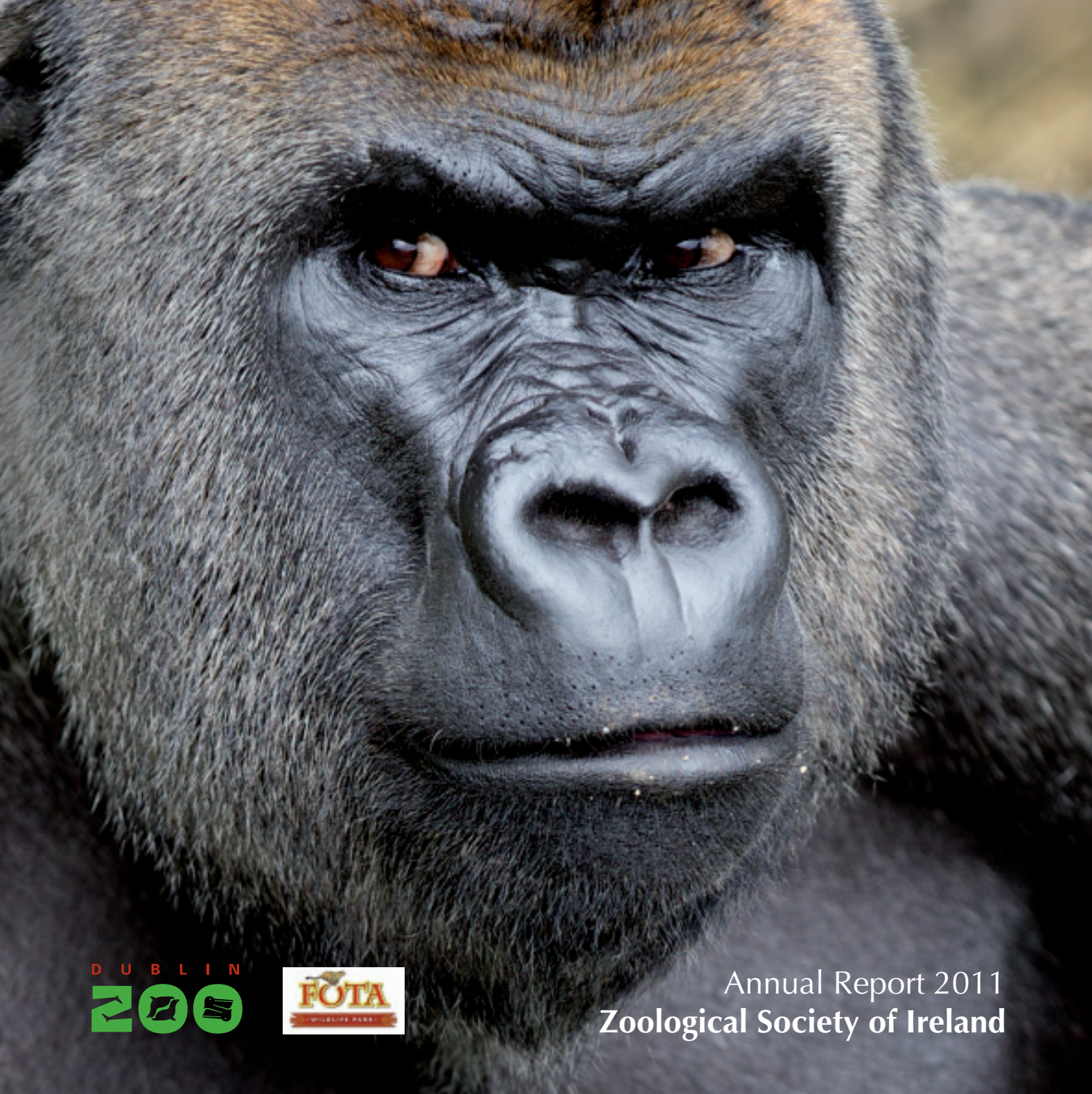


DUBLIN ZOO

FOTA WILDLIFE PARK

Annual Report 2011
Zoological Society of Ireland

LETTER FROM THE PRESIDENT

Dear Member,

The Council of the Zoological Society of Ireland presents the 17th annual report, together with the consolidated audited statements for the year ended 31st December 2011.

The consolidated accounts include the activities and results of both Dublin Zoo and Fota Wildlife Park for the year ended 31 December 2011.

In April, The President of Ireland, Mary McAleese, opened the new entrance complex at Fota Wildlife Park. In September, The President also opened the new Gorilla rainforest at Dublin Zoo. Both projects were funded from surpluses made in previous years.

The Council was thrilled that Dublin Zoo received over one million visitors in 2011. The dedication of the team at Dublin Zoo was obvious in the television series "The Zoo" which was produced, filmed and directed by Moondance Productions, and shown on Irish television during the year. Fota Wildlife Park also experienced a record year in terms of visitor numbers with 390,146 visitors during the year. It is a fitting tribute to the work put in by the entire teams at Dublin Zoo and Fota Wildlife Park.

Conservation of animals, both in their native habitat and in Dublin Zoo and Fota Wildlife Park, is what we are all about, as can be demonstrated by the animal collection and our continued funding of conservation projects around the world.

The members of the Council wish to acknowledge the contribution made by the Dublin Zoo and Fota Wildlife Park teams, the volunteers, Director of Dublin Zoo, Leo Oosterweghel, and Director of Fota Wildlife Park, Sean McKeown, to the success of 2011.

Finally, I would like to pay tribute to Derek McCleane, who retired in September 2011 after three years as President of the Society. I would also like to thanks all the members of the Council for their commitment and for the support they have given me as President.

Margaret Sinanan
President

Opposite: Western lowland gorilla Lena and 6 month young male Kituba

NOTICE OF ANNUAL GENERAL MEETING

Notice is hereby given that an Annual General Meeting of the Zoological Society of Ireland will be held at 6pm on Thursday, 20th September 2012 in Haughton House at Dublin Zoo, Phoenix Park, Dublin 8, for the following purposes:-

Agenda

1. Adoption of minutes of the Annual General Meeting of the Zoological Society of Ireland held on Thursday 15th September 2011

2. Declaration of Council President

3. Receiving the Annual Report of Council

4. Receiving the Annual Report of the Honorary Treasurer and the Consolidated Audited Financial Statements of the Zoological Society of Ireland

5. Appointment of auditors

6. Declarations of elections to Council

Notice of Election

Pursuant of Article 41 of the Articles of Association of the Society, notice is given that the following persons have been duly nominated to fill vacancies on the Council:

Dorothy Kilroy

Under the Articles of Association of the Society, the following member is retiring from the Council at the forthcoming AGM:

Dorothy Kilroy

Tony Kearney
Company Secretary
Zoological Society of Ireland
Registered Office: Phoenix Park, Dublin 8

Opposite: The vegetation of the African Savanna opened in 2009 is nicely maturing

DUBLIN ZOO: DIRECTOR'S REPORT

The year 2011 was the most successful year in the history of Dublin Zoo, with over a million visitors paying Dublin Zoo a visit. It was an extraordinary result, especially taking into account the population of Dublin, approximately 1 million and the population of Ireland, just over 4 million.

Dublin Zoo also continued to be Ireland's favourite family attraction.

Development

The highlight of the year was the opening of the Gorilla Rainforest by the President of Ireland Mary McAleese. The breeding troop of western lowland gorillas had been housed for a number of years in a facility that had become too small. The new 12,000m² gorilla habitat and house designed by the Seattle-based landscape and architecture firm Jones & Jones, together with Dublin Zoo, together with the Dublin Zoo team. It provides the gorilla troop with sufficient space and stimuli and, of course, room to expand the troop even further.

Another major achievement was the completion of a high quality veterinary and quarantine facility, a spacious store, a horticultural facility including a greenhouse, and a purpose-designed waste management area allowing Dublin Zoo to separate and recycle waste more efficiently.

The project was managed by the Office of Public Works and completed to a very high standard.

Above left: Dublin Zoo celebrated the new record of reaching the one million visitors milestone
Above right: The new store facilities
Opposite: Western lowland male gorilla in the new Gorilla Rainforest

Hatches, Matches and Despatches

In March 2011, western lowland gorilla Lena gave birth to a very healthy male. Lena, being a very experienced mother, became an important role model for another pregnant female in the troop, the hand-raised Myani. Myani gave birth in September. The vibrant female young was, after some initial concerns, cared for in an exemplary manner by her first-time mother.

In June, a female white crowned mangabey was born, which unfortunately needed to be hand-raised. Due to exceptional keeper dedication, the youngster thrived and was successfully integrated into the troop towards the end of the year.

A successfully hand-raised female Rothschild giraffe (Sandsteen) was transferred to Belfast Zoo where she was integrated into the Belfast herd. Later in the year, an unrelated female Rothschild giraffe was imported from Aalborg Zoo, Denmark.

Above left: Experienced mother Lena taking good care of Kituba
Above right: Keeper John O'Connor bottle feeding Sandsteen

Other significant births were a pair of red panda, a male Victoria crowned pigeon, two waldrapp ibis, a male Rothschild giraffe and one male and two female red river hogs.

Two female ostrich were imported from Hanover Zoo to increase the numbers of the African Savanna. A male scimitar oryx was imported from Longleat Safari Park in the UK to hopefully breed with the four Dublin Zoo females.

Three young female meerkats were received from Belfast Zoo and paired with a young male from the Welsh Mountain Zoo.

Towards the end of the year, the hippopotamus gave birth to a healthy female calf, ending the year on a high note.

Above: Young female hippopotamus

Horticulture

One project totally dominated the year for the horticulture team, the Gorilla Rainforest. Plans laid over many months the previous year paid off very well, with most planting lists drawn up, and nurseries visited and orders placed. Plants chosen were a mix of edible plants for enrichment (including weeds of turf), prickly or smelly plants that hopefully will be left alone, and some plants that by experimentation are believed not to be eaten by gorillas.

Spring 2011 had a heavier than usual workload of clearing damaged plants after a second very cold winter, with several nights again below minus 15°C, soil temperatures below 5°C until almost May, and much general replanting of gaps from both winters.

Excellent co-operation with the Gorilla Rainforest contractor enabled an early start in late May 2011, essential to get as much seed of grass and agriforbes sown and established as possible. A wildflower mix including many annuals gave an incredible floral display for the opening in September. Grass chosen was a deep-rooting rhizomatous tall fescue variety that should resist any damage from the gorillas, and will also be more drought-tolerant too.

Above left: Gorilla Rainforest
Above right: Silverback gorilla exploring the Gorilla Rainforest

Gorilla habitat plant numbers totalled about 15,000, plus grass and wildflower seed. Of this, 1000 were young trees, 1000 shrubs, 3000 moat edge water plants, 3000 marshy plants between the mounds, 7000 liners of herbaceous plants that will re-grow each year. Plant range was around 200 different species.

Initial reaction from the gorillas has been remarkably restrained, very little damage done, and some plants expected to be gorilla-proof have proved to be, so far – for instance, a willow, *Salix purpurea*, selected as left alone by rabbits due to its high acid content, has been rejected by the gorillas too;, it was observed that gorilla's ate the leaves and spat them out again.

In October, the Horticulture Team gratefully moved into their new base, a custom-built nursery area with machinery shed, greenhouse, potting shed, and staff facilities, the first time the team has had a proper nursery.

Above left: The great variety of plants stimulates natural gorilla behaviour
Above right: The new greenhouse was completed in October 2011

EDUCATION

Dublin Zoo has a year-round education calendar for students at pre-school, primary and secondary levels which encourages independent thinking and raises awareness of the world around us.

The **overall** number of visitors booked through the Zoo Education Department during the year 2011 was 64, 072 compared to 66,121 in 2010. The fall in numbers can be contributed to the cold weather snap in the first school term and the visits during the month of May of Queen Elizabeth and President Obama. However, there was a **marked increase in taught programmes** throughout 2011, with 28, 291 students participating in a taught programme compared to 26,198 students in (2010).

Above: The lush garden in front of the Education Centre

New Initiatives

Food and Nutrition

A new module on Food and Nutrition was introduced in 2011. It will provide students with a closer look at the digestion of animals. Students will gain practical experience identifying dentition types in our Learning & Discovery Centre and looking at a balanced diet in our new Zoo Garden.

Civic, Social and Political Education

Another new programme that has been developed at Junior Certificate level, in conjunction with the co-ordinator of the Civic, Social and Political Education Support Service (CSPE), and recently introduced at the Zoo is a module on 'ZooArdship'. This module is based on practical learning, a style of teaching which will become much more focused in the schools with the revised Junior Certificate syllabus under way and ready to roll out in September 2012.

Early Childhood Education…Exploring and Thinking

Working with Early Childhood Ireland, a new programme, designed to follow the Aistear early childhood curriculum framework, has been developed for pre-school and nursery education. This is a highly interactive 1-hour session where children are encouraged to explore the differences between major animal groups of mammals, birds and reptiles.

Parent & Toddler sessions at the zoo… one of the most popular events in 2011

Monthly event for parents and grandparents who wish to bring their toddlers to the zoo for a morning of fun! Volunteer guides are on hand to bring families on a tour of the Family Farm to enjoy the sights and sounds of a real life farm. As a special treat, children get to prepare lunch for the rabbits!

Bird Watching

Bird Watching is more than just observing birds; not only does it encourage a child to learn about birds, but it gets them outside and builds an appreciation of nature. The group meets monthly and new members are always welcome!

Book Club at the Zoo… now a firm favourite on the Zoo's calendar!

You don't need to keep your enjoyment of a book to yourself; you can share your thoughts with other book club members, who share a common interest. The Zoo Book Club group meets monthly and new members are always welcome!

Above left: Children enjoying the playground at the Family Farm
Above right: The Zoo bookclub in action

Teen Camp

Besides winter and spring workshops, the Education Team has started the Teen Camp where budding zoologists can get a privileged look at the Zoo's animals and their habitats by meeting Zoo experts who'll offer them a glimpse of what it takes to become a zookeeper.

Seasonal Workshops:

"Summer Camps" provide a chance for children to learn about animals and make new friends. Dublin Zoo was awarded the Top Award in the Primary Times Readers' Choice Awards 2011 for the second time in a row, having also won the award in 2010!

Above: Studying invertebrate life

MARKETING

The birth of gorilla Kituba in March provided a platform for four weeks of intensive media coverage, creatively extended to include the announcement of the birth, sex and naming of the gorilla, Kituba.

In August, a five-year sponsorship deal was agreed with Freddy Fyffes for the Gorilla Rainforest and Chimpanzee Island, a fantastic source of revenue and a yet another positive partner for Dublin Zoo.

An extensive campaign for the launch of the Gorilla Rainforest kicked off in September and included vast media coverage, promotions and an opening event (officiated by the President of Ireland Mary McAleese) for 400 guests which once again ensured that Dublin Zoo was on the front of all newspapers!

Above left: Kituba was unaware of the huge media interest
Above right: Emma Crewe from Fyffes and Dublin Zoo Marketing Manager Emma Kiernan at the Gorilla Rainforest

The Zoo TV series had its most popular series ever, with an average of 350,000 viewers per episode (an increase of 100,000 per episode on 2010!)

A key objective for the Zoo's marketing team for 2011 was to drive off-peak (January to April and September to December) footfall, as a means of increasing overall footfall and reducing reliance on the peak season.

A calendar of events was created around off-season events such as Valentine's Day, Easter, Halloween, Africa Day and the 180th anniversary. A new pocket-sized calendar and map was distributed to all visitors to encourage them to return to Dublin Zoo.

Promotions were streamlined extensively, only running in off-peak periods. Some highlight promotions included a free DVD of Wanita's Story (the Sumatran tiger that needed extra care because of a heart condition) with the Irish Independent and a nationwide promotion An Post ran featuring Dublin Zoo on every postbox and in every post office in Ireland.

Above left: New Zoo map and calendar were designed
Above right: The hugely successful An Post promotion

December was also an exciting month for Dublin Zoo. The Farmhouse at the Family Farm was converted into a magical Santa's Grotto and over 1,300 children came to visit Santa. Dublin Zoo also published the inaugural Zoo Annual, a 130-page magazine sold in key retailers.

By the year-end, off-peak footfall increased by 25% year-on-year, social media advocates increased fourfold, from 11,000 to 39,325 and Dublin Zoo received an astounding €6,000,000 worth of positive media coverage in the year!

A Facebook campaign in December offering all Facebook fans discounted entry provided a great end to the year 2011. Over a three-week period, 17,500 visitors visited Dublin Zoo with the coupon, ensuring Dublin Zoo welcomed a million visitors for the first time. The pinnacle of the year!

CONSERVATION & RESEARCH

Throughout 2011, Dublin Zoo continued participation with international breeding programmes and provided funding for many in- situ (in the wild) conservation activities.

EAZA – breeding programmes and conservation campaigns

Dublin Zoo is a member of BIAZA (British and Irish Association of Zoos and Aquariums), EAZA (European Association of Zoos and Aquaria) and WAZA (World Association of Zoos and Aquariums).

EAZA – breeding programmes

As part of its membership of EAZA, Dublin Zoo has 27 species involved in EEPs (European Zoo Breeding Programmes) and a further 12 included in ESBs (European studbooks). By running these EEPs and ESBs, EAZA can monitor the demographics and genetics of animal populations in almost 300 zoos in 34 countries. The success of many of these programmes has meant that most animals in zoos were born in zoos and some of these zoo-bred animals have been part of reintroduction programmes into the wild e.g. golden lion tamarin, scimitar-horned oryx. These zoo populations have also yielded a lot of valuable information on diet, reproduction and behaviour through zoo-based research.

Above: The facebook promotion which contributed to Dublin Zoo reaching one million visitors for the first time

Dublin Zoo currently co-ordinates two EEPs – one for the Moluccan cockatoo (Cacatua moluccensis) and the other for the citron-crested cockatoo (Cacatua sulphurea citroncristata).

In addition to breeding programmes, EAZA promotes education and scientific study in zoos, represents zoos at an international level (e.g. European Union and the International Union for the Conservation of Nature and Natural Resources (IUCN)) and sets high standards for zoos to meet in relation to animal care.

EAZA - Conservation Campaigns

Since 2000, EAZA has developed various conservation campaigns for which EAZA zoos raise funding and public awareness. The table below demonstrates the role Dublin Zoo has played in these campaigns.

Year	Campaign	Dublin Zoo Result
2000/2001	Bushmeat Campaign (Signatures for petition also collected)	Raised and donated IR£5,000 and collected 5,700 signatures
2001/2002	Rainforest Campaign	Raised and donated €12,697
2002 - 2004	Tiger Campaign	Raised and donated €33,463.52
2005	Shellshock (Tortoises and Turtles)	Raised and donated €16,594.96
2006 - 2007	Rhino Campaign	Raised and donated over €33,000
2008	Amphibian Campaign	Raised and donated €16,125.04
2009 - 2010	European Carnivore Campaign	Raised and donated €14,536.50
2011	Ape Campaign	Raised and donated €22,537.12

EAZA Ape Campaign (2011)

All ape species except humans are threatened with extinction and if we don't act now, these magnificent animals could disappear from the wild forever. Dublin Zoo, therefore, participated in the European-wide EAZA Ape Campaign to raise funds for ape conservation.

Throughout the year, there were a number of fund-raising and awareness-raising activities such as an Ape Awareness weekend in July, a sponsored cycle from Belfast Zoo to Dublin Zoo, face-painting, table-quizzes, raffles, ape-themed camps for children along with various articles in the media such as a week-long poster campaign in the Daily Mail.

In addition to the Ape Campaign, EAZA - along with other conservation organisations - ran an online petition to assist with lobbying for clearer labels on food containing palm oil. The majority of palm oil plantations are in south-east Asia. The conversion of tropical forests to plantations has been recognised as a major threat to many animals in the region such as orangutans, elephants and tigers. However, the presence of this oil in food is often unknown to consumers as it is given the generic name "vegetable oil". In July 2011, the EU Parliament adopted a regulation to have mandatory labelling of palm oil on food products.

Right: Gorilla Mayani and her daughter Kambiri born in September 2011

GLOBAL CONSERVATION ACTIVITIES

Dublin Zoo helps fund a number of in situ (in the wild) conservation programmes. While breeding populations in zoos are important, it is paramount that wild populations and their habitats be understood and conserved.

Mbeli Bai Study, Republic of Congo

Tragically, western lowland gorilla *(Gorilla gorilla gorilla)* numbers are likely to fall by over 80% between 1980 and 2046 and are, therefore, listed as Critically Endangered. The two main threats are commercial hunting and a highly contagious disease called Ebola. The slow reproductive rate of gorillas not only makes population recovery slow but also makes the collection of life history data very time-consuming. This data is essential for establishing effective conservation plans for this sub-species.

Since 2010, Dublin Zoo has been supporting the Mbeli Bai Study in the Republic of Congo, which is a collaboration between the Wildlife Conservation Society WSC, based at the Bronx Zoo, New York, and the Government of Congo. This project has been collecting valuable long-term data on western lowland gorillas in Mbeli Bai in the Nouabalé-Ndoki National Park since 1995.

The national park is a rare example of an intact forest wilderness with low human disturbance. Not only is this area an important stronghold for western lowland gorillas, but it is also home to forest elephants, chimpanzees, approximately 300 bird species and thousands of plant and tree species.

The Mbeli Bai Study provides a deterrent to hunting and logging. In fact, this area of the National Park has been free from illegal human activities for over 20 years! The Study also engages in local community outreach programmes, local capacity building and international awareness-raising. Finally, the study notes any unusual health signs for indications of Ebola or other diseases. The work carried out by the Mbeli Bai Study is making a real contribution to the conservation of western lowland gorillas.

(Dublin Zoo began supporting in *situ* gorilla conservation in 2009 by providing funding for conservation in the Nouabalé-Ndoki National Park via the Wildlife Conservation society.)

Opposite: Western lowland gorilla troop in the Nauabalé-Ndoki National Park

© Thomas Breuer / WCS

Golden Lion Tamarin Association

Golden lion tamarins *(Leontopithecus rosalia)* are endangered in the wild. Since 2000, Dublin Zoo has contributed funds to the Golden Lion Tamarin Association via the Lion Tamarins of Brazil Fund. Over the years, the money has been used for various conservation initiatives such as tracking family groups using radio-collars, conducting studies on diet and habitat use and translocating isolated groups into larger reserves.

An important element of conserving this species was the reintroduction of zoo-bred animals into protected reserves. Zoos around the world which keep golden lion tamarins co-operate with an international breeding programme. Now, almost a half of all tamarins in the wild are descended from zoo-bred animals. Dublin Zoo has successfully bred nine golden lion tamarins. Overall, this project has been very successful so far and the wild population has risen from just 200 in the 1970s to approximately 1500.

West African Primate Conservation Action (WAPCA)

The white-naped mangabey *(Cercocebus atys lunulatus)* is listed as Endangered in the wild. Dublin Zoo has been supporting in situ conservation of this monkey since 2001 via WAPCA (West African Primate Conservation Action).

WAPCA was established in 2001 by 11 European Zoos (of which Dublin Zoo was one) and two nature conservation organisations. It was established with the aim of conserving the endangered primate species found in the upper Guinean rainforest of Western Africa and protecting their habitats. WAPCA works closely with the Ghanaian Government Wildlife Division which manages Ghana's wildlife and two national zoos.

WAPCA's field-based conservation work has taken place in five of Ghana's protected areas. They conduct research projects into the ecology of the monkeys living there and assist rangers with patrolling the rainforests. WAPCA has also built facilities for tourists and generates awareness in local areas of the issues affecting the rainforest. It is hoped that the provision of alternative sustainable livelihoods will reduce hunting and exploitation of forest resources. And, naturally, all this work also results in the protection of the rainforests themselves and their residents – many other mammals (including forest elephant and leopard), and hundreds of different types of birds, reptiles, amphibians and countless invertebrate species.

In addition to this, WAPCA has also established an Endangered Primate Centre in Ghana and the white-crowned mangabeys there are also part of the EEP (European Zoo Breeding Programme). WAPCA is also involved with a feasibility study into the establishment of a semi-wild group of white-crowned mangabeys in Ghana. This is the first step in considering the possibility of re-introducing this species back into the wild.

Opposite: White naped mangabey at Dublin Zoo

Snow Leopard Trust

The global population of snow leopards *(Uncia uncia)* has decreased by 20% in the past 16 years and it is estimated that there are only 4,000 – 6,500 snow leopards remaining due to habitat and prey base loss, and poaching and persecution. This species is classified as Endangered by the IUCN.

Above: Snow leopard at Dublin Zoo

In 2009, Dublin Zoo began working with the Snow Leopard Trust which was founded in 1981 and is now the leading authority on the study and protection of snow leopards. Its conservation philosophy is based on sound science and research coupled with building community partnerships. The funding from Dublin Zoo in 2011 went towards five on-going, sustainable and community-driven projects; a long-term ecological study in Mongolia along with implementing snow leopard enterprises, livestock vaccination and husbandry programme in Pakistan, and in India, conservation education programmes and livestock insurance programmes.

In 2011, the Snow Leopard Trust won the BBC World Challenge. The $20,000 prise money ensures that it can expand its flagship programme, Snow Leopard Enterprises, within Kyrgyzstan. This programme provides women across Central Asia with the training and equipment necessary to produce hand-made felt and other wool products, which are sold internationally through the Snow Leopard Trust and other venues. This provides the herding communities with an alternative income and helps to prevent the poaching of endangered snow leopards for survival. Dublin Zoo encouraged online voting for the Snow Leopard Trust through the Dublin Zoo Facebook page.

Elephant corridors in India

Asian elephants *(Elephas maximus)* are classified as Endangered because in the past 60-70 years, their numbers have decreased by over 50%. The major threats to the Asian elephant today are habitat loss, degradation and fragmentation which are caused by an expanding human population. This, in turn, leads to increasing human-elephant conflict, which results in the death and injury of hundreds of people and elephants each year. Thus, the most important conservation priorities for wild elephants are conservation of elephant habitat and creating corridors joining fragmented areas and mitigation of human-elephant conflict.

Dublin Zoo got involved with Asian elephant conservation in 2008 by supporting the Elephant Family, a charity dedicated solely to the protection of Asian elephants. In 2008, Dublin Zoo supported the establishment of wildlife corridors in Kerala, India. Since 2009, Dublin Zoo has been supporting the establishment of wildlife corridors in Assam, India, where one-third of India's wild elephants are found. This project entails securing four vital corridors in the area and is carried out in conjunction with the Wildlife Trust of India. Dublin Zoo continued this support in 2011.

In October 2011, Elephant Family came to Dublin Zoo to give a presentation on elephant conservation and the role that Dublin Zoo has played.

Right: Asian elephant at Dublin Zoo

Lowveld Rhino Trust

The southern white rhino *(Ceratotherium simum simum)* is listed as Near Threatened because of the rise in poaching of rhinos to supply the illegal trade in rhino horn. It is estimated that there are approximately 20,000 southern white rhino in the wild, while the northern white rhino population currently numbers four.

In 2009, Dublin Zoo began supporting the Lowveld Rhino Trust in Zimbabwe. The Lowveld conservancies are home to approximately 50% of Zimbabwe's white rhinos and 80% of the country's black rhinos. However, due to increasing political, social and economic problems in Zimbabwe, poaching has increased greatly. The Lowveld Rhino Trust is involved with translocating rhinos to safer areas, treating wounded rhinos and helping authorities apprehend poachers. In addition to this work, it also monitors rhino populations and develops community outreach programmes.

The Lowveld Rhino Trust was established by Zimbabwean-born Raoul du Toit and in 2011 he was awarded the Goldman Environmental Prize in recognition of his conservation work for African rhinos. The Goldman Environmental Prize is the world's largest prize for grassroots environmentalists.

In 2011, routine rhino monitoring confirmed the births of thirty-two rhino calves in Bubye and Save Valley

Conservancies (these conservancies lie within the Lowveld conservancies). The total number of confirmed calves born in 2011 will increase as more females are checked in 2012. Total detected rhino deaths for the year stands at twenty with seventeen of these being poaching deaths. Overall, 2011 was an encouraging year, with both these large populations maintaining growth and some significant anti-poaching successes being achieved. Though poaching remains a serious threat that could worsen, sustained and committed effort is currently bringing the situation under control. From the dire situation in 2008, when 16.3% of these populations were killed by poachers, the rate of loss has been reduced to 4.5% in 2011.

Above right: Southern white rhinoceros at Dublin Zoo

Bongo Surveillance Project

The eastern or mountain bongo *(Tragelaphus eurycerus isaaci)* is Critically Endangered, with less than 140 individuals left in the wild. The main threats are hunting, habitat loss and disease.

In 2010, Dublin Zoo began supporting the Bongo Surveillance Project (BSP). This project is involved with monitoring the remaining wild populations of bongos and gaining a greater understanding of their ecology. The BSP has set up partnerships with the local communities to protect the surrounding forest by carrying out activities such as tree planting, working on water catchment solutions, establishing fisheries and employing solar cooking and lighting techniques. The BSP has also set up Bongo School Clubs near bongo populations to inform local schoolchildren about bongos.

In 2011, nine expeditions were carried out by the BSP into various bongo hotspots and camera traps were set up to try and establish bongo movements and also to check for illegal activities within the protected areas. Bongo dung and tissue samples were sent to Sweden for genetic analysis to determine sexes, relationships and genetic variation within the different bongo populations. The Bongo School Club also had a good year and its outreach is now over 10,000 local people since its inception in 2005.

Citron-crested cockatoo research in Indonesia

The citron-crested cockatoo *(Cacatua sulphurea citrinocristata)* is Critically Endangered and found only on Sumba Island in Indonesia. The main threats are illegal trade and loss of habitat. However, in addition to this, the reproductive output of citron-crested cockatoos is abnormally low.

In 2011, Dublin Zoo teamed up with ZGAP (Zoologische Gesellschaft für Arten-und Populationsschutz; a German conservation organisation) and Burung Indonesia (Birdlife Indonesia) to investigate the factors influencing this low reproduction rate. It is hoped that if these factors are identified, provisions can be made to increase productivity and thus increase numbers in the wild. This research project will last three years.

Above: Eastern bongo thriving at Dublin Zoo

Conservation of the Humboldt Penguin and its habitats in Chile

Humboldt penguins *(Spheniscus humboldti)* have undergone dramatic population fluctuations in the past and overall, their numbers are declining; they have been classified as Vulnerable. There are many threats and these include fisheries by-catch, illegal capture for food and the pet-trade, dynamite fishing, depletion of fish prey by fisheries, damage to breeding islands by introduced species and El Niño events.

Since 2007, Dublin Zoo has been supporting Humboldt penguin conservation in Chile, firstly through Foundation Otway and then through Sphenisco, e.V. which works with Chilean and Peruvian scientists and activists and is committed to the protection of Humboldt penguins. This organisation is involved with research, monitoring and protection of breeding islands, campaigning for the creation of marine protection areas and environmental education.

One of Sphenisco's partners in Peru is Acorema and this organisation ran a very successful public education scheme in 2011. They contacted 1400 fishermen and their families to discuss how fishermen could help Humboldt penguin numbers by reducing by-catch and not employing dynamite fishing. Over 3000 children were reached via educational materials about Humboldt penguins developed for the school curriculum. In addition to this, over 4000 members of the public have attended the puppet theatre shows about Humboldt penguins which take place on the streets and beaches.

Thailand Hornbill Project

Great hornbills *(Buceros bicornis)* are listed as Near Threatened but numbers are decreasing across its range due to logging, forest clearance and hunting.

In 2007, Dublin Zoo commenced annual sponsorship of a family of great hornbills in Thailand as part of the Thailand Hornbill Project. This project is run by the Hornbill Research Foundation in Mahidol University in Bangkok. The money donated goes towards subsiding local villagers who protect the birds and collect scientific data in the Budo-Sungai Padi National Park where six species of hornbills can be found, four of which are Endangered. The most recent report received about the hornbill family supported by Dublin Zoo revealed that the female was inside the nesting hole for 105 days, the pair successfully raised a chick and figs formed three-quarters of the diet during the breeding season.

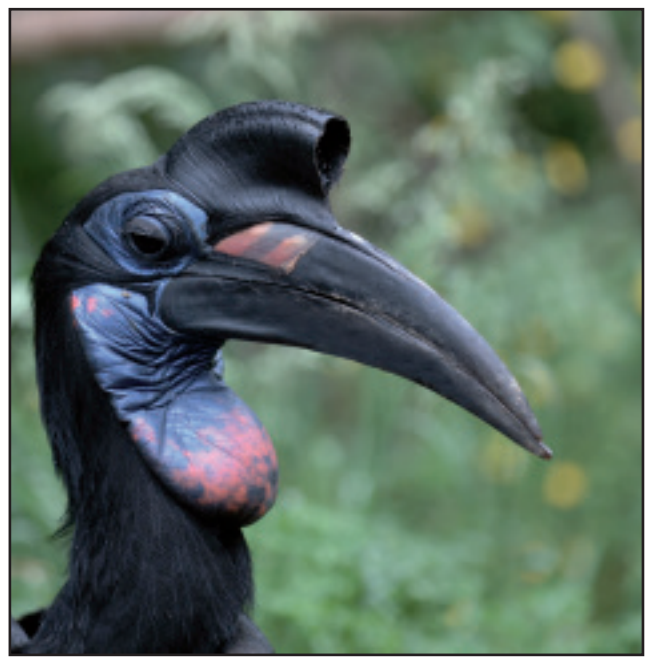
Waldrapp ibis

The waldrapp ibis *(Geronticus eremita)* is one of the most endangered birds in the world. The Souss-Massa National Park in Morocco and surrounding area is vitally important for this species' survival as the entire population breeds within this area. The main threat to this species is the increase in leisure tourism and the subsequent disturbance to Waldrapp ibis nesting sites and feeding areas.

A National Species Plan was drawn up and one of the priorities was the satellite tagging and colour ringing of some birds to discover more on this species' seasonal movements and area use outside of the National Park. In July 2011, two waldrapp ibis were fitted with satellite tags, one of which was funded by Dublin Zoo. The Dublin Zoo tag was placed on an adult bird. The satellite tags are providing essential data on the waldrapp ibis movements and also how parents and offspring move in relation to one another. To keep up to date with the movements of these tagged birds, a blog has been set up which can be accessed from the Dublin Zoo website.

Ground hornbill feathers to Africa

In 2010 and 2011, keepers working with the Abyssinian ground hornbill *(Bucorvus abyssinicus)* collected moulted feathers in order to send them to Burkina Faso in Africa. Some villages there make masks out of these feathers to honour their ancestors. However, this bird is becoming increasingly rare in Burkino Faso and the search for these feathers can lead to poaching. This threat is alleviated by zoos sending moulted feathers to these villages.



Above right: Abyssinian ground hornbill

Frozen Ark

In 2011, Dublin Zoo began collecting the first samples for the Frozen Ark Project. This is an international project aimed at the long-term storage of genetic material from endangered animals. Unfortunately, animal species are being lost at a catastrophic rate and some experts predict that a quarter of the world's mammal species and a tenth of the world's bird species will be lost within 30 years.

During routine veterinary procedures, blood containing genetic material is being collected and stored at -80oC at our Frozen Ark partner institution, University College Dublin. This genetic material contains valuable information on the species anatomy, development, behaviour, ecology and evolution and should remain viable for many hundreds of years. At some stage in the future, the genetic material may be used for adding genetic diversity to species approaching extinction. However, currently the overall uses of this material are not fully understood as our knowledge of genetics is advancing at an astonishing rate. In 2012, Dublin Zoo will purchase an ultra-low temperature freezer to provide a back-up for samples being collected and sent to University College Dublin.

In December 2011, Dr. Ann Clarke, founding member of the Frozen Ark Project, gave a presentation to Dublin Zoo staff and volunteers.

Conservation Breeding Specialist Group (CBSG)

In 2011, Dublin Zoo began sponsoring the Conservation Breeding Specialist Group. The CBSG falls under the IUCN (International Union for the Conservation of Nature) Species Survival Commission. The CBSG began as a link between zoos and the IUCN and its mission is to increase the effectiveness of conservation efforts worldwide by promoting global partnerships and developing inter-disciplinary methodologies. CBSG formed ISIS (International Species Information System) – the zoo animal database which created ARKS and ZIMS. It also developed the Population and Habitat Viability Assessment process which is used in workshops to create conservation action plans and initiated the Amphibian Ark, which co-ordinates ex situ breeding programmes for endangered amphibians.

Above left: Sandra Molloy checking recently acquired freezer
Opposite: Waterfront at Zoo entrance

IRISH CONSERVATION ACTIVITIES

Dublin Zoo also supports conservation initiatives in Ireland.

Red Grouse Conservation

The red grouse *(Lagopus lagopus hibernicus)* is a red-listed species in Ireland, meaning that it has a high conservation concern because its numbers have decreased drastically. Recent surveys have put numbers at 4,200 but these birds exist in geographically isolated sub-populations. Dublin Zoo and Fota Wildlife Park in Cork funded genetic research into the Irish population and unfortunately there has been an alarming decline in genetic variation among the national population. The results also reveal that the Irish population is genetically distinct from the U.K. population.

A National Red Grouse Action Committee has been established and this group will spearhead conservation activities for this once-widespread bird. In 2011, Dublin Zoo provided meeting facilities for this group to work on an All-Ireland Species Action Plan for red grouse.

Little Tern Conservation

Dublin Zoo provided funding for the Little Tern *(Sterna albifrons)* colony at Baltray, Co. Louth for a second year in 2011. This project is run by the Louth Nature Trust and began in 2007. The colony almost became extinct for little terns but work by the Louth Nature Trust has meant that this colony not only survives but thrives. In 2011, there were 49 breeding pairs and 84 chicks fledged. The number of chicks is down from 2010 with 96 fledging but up from 2008 when only 29 fledged.

Eurasian Curlew Conservation

In 2011, Dublin Zoo provided financial support for BirdWatch Ireland's Curlew Appeal which is aimed at conserving the breeding population of Eurasian curlew *(Numenius arquata)* in Ireland. The Irish breeding population has decreased by 80% in the past 25 years and numbers are believed to be less than 1,000 pairs.

The money Dublin Zoo donated went towards the erection of a predator-proof fence at Annagh Marsh in Co. Mayo. This fence will protect breeding curlews and should, therefore, increase breeding success.

Smooth Newt Survey

The smooth newt *(Lissotriton vulgaris)* is Ireland's only species of newt. It is suspected that significant wetland loss in Ireland in the last two decades may have decreased the Irish newt population and range, as newts are entirely dependent on wetlands for their survival. A nationwide survey is, therefore, necessary to establish the current distribution of newts and learn about this species' ecology.

Above right: Smooth newt

In 2010, Dublin Zoo funded a pilot survey in four counties and provided further funding, along with Fota Wildlife Trust, for a nationwide survey in 2011. The survey is being spearheaded by the Irish Wildlife Trust and involves members of the public participating as volunteer surveyors. Volunteers receive training from the Irish Wildlife Trust in newt surveying techniques after which they conduct important smooth newt survey work in their local area and thus contribute first-hand to this Irish amphibian conservation research.

The survey also raises awareness of this little-known species among the public. In 2011, 78 different sites were surveyed and newts were most frequently detected in garden ponds and quarries. This survey has also detected newts in areas where they were previously unrecorded such as in Co. Monaghan.

Rothamsted light-trap network – monitoring moths

In 2008, Dublin Zoo set up a Rothamsted light-trap. Dublin Zoo staff check this trap daily all year round. The trap monitors moths in the area and the information collected is inputted into a larger database of moths for Ireland and the U.K. The Rothamsted light-trap network has been running since 1968 and has produced one of the longest-running data-sets on insect population in the world.

Unfortunately, moth numbers seem to be declining and this can have a negative impact on other animals such as mammals and birds that feed on moths. It is hoped that information gained from monitoring them can help develop conservation plans to reverse these trends. To date, over 60 species of moths have been recorded in Dublin Zoo using this trap.

Mermaid's purses

In 2011, Dublin Zoo provided financial support for Marine Dimensions' conservation project, Purse Search Ireland. This project asks members of the public to report any mermaid purses (egg-cases of sharks, skates and rays) they find along the beach. The location of these egg-cases may provide information on important breeding areas for these animals.

Bog conservation

In 2011, Dublin Zoo supported the Irish Peatland Conservation Council (IPCC) Lodge Bog Management Plan Appeal. Lodge Bog is practically all that remains of the Bog of Allen in Co. Kildare. The IPCC is currently developing a Conservation Management Plan incorporating the latest techniques in peatland restoration to protect and enhance the bog and facilitate opportunities for people to enjoy and learn about the bog.

ACTIVITIES

Native Species Weekend at Dublin Zoo

Since 2007, Dublin Zoo, in partnership with a variety of wildlife experts and organisations, has hosted a Native Species Weekend. The aim of this weekend is to communicate the richness of Ireland's flora and fauna and highlight how everyone can play a role in conserving it. Over the weekend, wildlife experts set up in and around a marquee on the Great Lawn. In 2011, 13 organisations helped host the event, providing Dublin Zoo visitors a great opportunity to learn about Irish wildlife.

European Bat Night

To celebrate European Bat Night, a bat talk and walk was held in Dublin Zoo on the night of the 28th August 2011. The bat talk and walk was lead by Paul Scott of the Dublin branch of Bat Conservation Ireland. The event was very successful with spectacular sightings of bats, especially near the lake in the African Plains where dozens of pipistrelle bats were circling around just above people's heads.

Research

Dublin Zoo focuses on research which has a direct benefit to the animals at the Zoo. Research is conducted in various guises, from keeper-led studies, Dublin Zoo volunteer studies, third level student projects, to multi-zoo studies.

Research by the Zoo team

The animal care team is ideally placed to conduct research projects as the keepers understand the needs of animals in their care. In 2011, a wide variety of topics were researched by the Dublin Zoo team:

- Keeper Louise McDermott continued her observations on the breeding behaviour of the Dublin Zoo flock of Chilean flamingos. Louise has been studying the flock since 2003 and her findings have revealed interesting factors influencing the success of breeding in the colony.
- Keepers Louise McDermott and Peter Philips submitted a paper on using biometric data to sex Chilean flamingos to the International Zoo Yearbook and it was accepted. It is due to be published in 2012.
- Keeper Yvonne McCann examined the breeding behaviour of the waldrapp ibis colony. This study builds upon her work in 2009 and 2010. Yvonne has found that while breeding pairs remain monogamous throughout the breeding season, they may change partners from year to year. Similar to their wild counterparts, only a small percentage of eggs laid in Dublin Zoo result in fledged chicks.
- Keeper Adam Koziak conducted a study on the breeding of the Humboldt penguins in Dublin Zoo.
- Gorilla keepers and Dublin Zoo volunteers have been taking observational data on the behaviour of the western lowland gorilla group in their new habitat and will compare this to behavioural data taken when they were in their previous habitat.

Student research

Students from third level institutions also conduct research at Dublin Zoo, ranging from undergraduate level to PhD level. Below are some examples of the research carried out in Dublin Zoo in 2010.

"Changing Social Groups in Zoo Populations"

Jenny Wilde, PhD student, Trinity College Dublin

The aim of this PhD was to examine methods of changing social groups in zoos in order to come up with robust guidelines on how to manage these changes successfully. This PhD was completed in 2011. Jenny Wilde produced an in-depth report on a worldwide survey she conducted into changes in social groups along with two papers which were accepted for publication in Zoo Biology.

"Conservation Awareness in Visitors to Dublin Zoo"

Emer Collins, Masters student, Trinity College Dublin

Conservation and education are two very important roles of modern zoos. This research sought to examine the attitudes and knowledge of Dublin Zoo visitors in relation to conservation. The researcher conducted surveys with Dublin Zoo visitors as they arrived and departed. She found that visitor knowledge of conservation issues was overall quite low but their knowledge did increase as a result of their visit to the zoo.

"Zoo Animal Popularity and the Factors that Influence it"

Sarah Curran, Masters student, University of Plymouth

An important remit of Dublin Zoo is education and people learn more when they are interested in the subject matter. The aim of this project was to reveal which species visitors were most interested in at Dublin Zoo and what influences this preference. The researcher found that the giraffes and elephants had the longest viewing times while the tarantula and tortoises had the shortest viewing times. From this study, it appeared that visitors had a preference for mammals that were large and active in relatively big zoo habitats with substantial viewing areas.

"Energy Efficient Solutions for Dublin Zoo"

Rachael Roppe, Undergraduate student, Trinity College Dublin

This study examined where and how energy is used within the Zoo and then suggested a range of potential energy sources including renewable energy options.

"Hunting for Novel Species of Helicobacter and Campylobacter in Mammals"

Rachael Carr, Undergraduate student, University College Dublin

Faecal samples from various mammal species were provided. No Helicobacter spp. were detected but Campylobacter spp. were, with one new possible species uncovered.

A range of nutrition and parasite studies were conducted by veterinary undergraduate students under the supervision of the Zoo vet:

- Dani Haslett (UCD) examined parasites of felids and canids in Dublin Zoo.
- Iris Daunt (UCD) investigated parasites of non-human primates in Dublin Zoo.
- Nicolas Noel (Lyon Vet School, France) studied the nutrition of saki monkeys in Dublin Zoo.
- Marie Baudon (Lyon Vet School, France) examined the nutrition of gibbons in Dublin Zoo.
- Niamh McGill (Veterinary graduate) investigated Salmonellosis in rhea.

Multi-zoo research

Many research projects require data collection from more than one zoo and where possible, Dublin Zoo is happy to assist. In 2011, Dublin Zoo contributed to the following:

- "How animal social network structure of a group can be affected by behavioural traits of an individual and vice versa": Xareni Pacheco, University of Exeter (PhD). This PhD involves behavioural observation of the wolf pack at Dublin Zoo.
- "Gorilla Rearing Status and Behaviour": Penelope Coulter, Australian National University (PhD).
- This research is endorsed by the Gorilla EEP
- "Disease prevalence in zoo great apes in British and Irish zoological collections": Thalita Simones Calvi, Zoological Society of London and Royal Veterinary College (Masters).
- "Cardiac Disease in Chimpanzees (Pan troglodytes) within UK and Ireland Collections - Retrospective study": Céline Le Rochais, Zoological Society of London and Royal Veterinary College (Masters).
- "Behaviour and reproductive success in zoo carnivores": Jeanette Kroshko , Calgary Zoo and University of Guelph, Canada (Masters).
- "Squirrel monkey intragroup aggression": Abigail Carr, University of Plymouth and Paignton Zoo (MSc).
- An investigation into the incidents of gallstones in callitrichids in zoos: a study conducted by the Callitrichid TAG (Taxon Advisory Group).
- An overview of the incidents of Clostridium in zoo elephants in the past 20 years: a study conducted by the Elephant TAG.
- Gorilla infanticide questionnaire: Sanne Geutjes, Apenheul Zoo and Van hall Institute. EEP-approved study.
- Venomous reptile survey: Steve Slater, West Midlands Safari Park.
- Zoo Owl Enrichment: Chryseida Callanan, Tilgate Nature Centre. BIAZA-approved study.
- Hoof care management in giraffes: James Edwards, Chester Zoo and Sparsholt College (undergraduate).
- Red pandas - diet and teeth – Kat Theobald – Banham Zoo and Sparsholt College (undergraduate).

Opposite: California sea lion

Spreading the word…

It is important that zoo knowledge and research is shared among zoo professionals so that zoos worldwide can work together in advancing the care we provide for animals. Therefore, Dublin Zoo not only sends staff to attend conferences and workshops but we also host conferences and workshops here. Dublin Zoo staff are given the opportunity to present their knowledge and also learn from other professionals and where possible, research findings are also published in zoo publications and journals. In addition to this, Dublin Zoo shares its research and conservation activities with Belfast Zoo and Fota Wildlife Park at the tri-annual Research and Conservation Committee meetings.

Conferences and workshops hosted/attended and presentations (2010)

- A nutrition workshop was held in Dublin Zoo for the animal care team in January. This workshop was run by Andy Beer, a zoo nutritional specialist.
- Keeper Brendan Walsh attended the ABWAK (Association of British and Irish Wild Animal Keepers) conference in March, hosted by Port Lympne Wild Animal Park, U.K. He presented a talk entitled, "Free the Bear" about rescuing bears from the bile industry in Cambodia. This talk was also presented to Dublin Zoo staff.
- Keeper Lise Jorgensen gave a presentation in April 2011 on her volunteer work with the Tambopata Macaw Project in Peru.
- Operations Manager Gerry Creighton was a guest speaker at the Institute of Animal Technology Congress in Southport in April.
- Registrar/Research and Conservation Co-ordinator Sandra Molloy gave a presentation on the research and conservation activities carried out by Dublin Zoo to the Dublin branch of the Irish Wildlife Trust in April. This was followed by a guided tour of Dublin Zoo.
- Curator of Horticulture Stephen Butler attended the European Zoo Horticulture Group Conference, under the umbrella of EAZA, held in May at Burgers Zoo, Arnhem, The Netherlands.
- Veterinary nurse Aisleen Greene attended the Irish Veterinary Nurses Association Annual Conference in Tullamore in May.
- Keeper Susan O'Brien attended the Zoo Resource Management course development meeting at Sparsholt College in England in June.

- Operations Manager Gerry Creighton presented, "Giant Footsteps: The Future of the Asian Elephant" to Peata, a voluntary pet therapy association in August.
- The annual conference of the European Association of Zoos and Aquaria (EAZA) was hosted by Montpellier Zoo in September and was attended by the Registrar/ Research and Conservation Co-ordinator Sandra Molloy.
- Team-leader Ciaran McMahon attended a conference on protective contact with elephants in Phoenix, Arizona, in September. He presented a talk on the protective contact programme with elephants in Dublin Zoo.
- Operations Manager Gerry Creighton presented, "Giant Footsteps: The Future of the Asian Elephant" in Trinity College in September.
- Educator Claire Doyle attended the EAZA Education Concepts & Technologies Course in Antwerp Zoo, Belgium, in October.
- Team-leader Helen Clarke attended the BIAZA Mammal Working Group meeting in Bristol Zoo in October.
- Mary Powys and Dan Bucknell from Elephant Family gave a presentation entitled, "Saving the endangered Asian Elephant with Dublin Zoo" in October.
- Keeper Sofie Rogge attended an aquatic mammal training workshop in Ouwehand Zoo, Rhenen, The Netherlands, in November where she presented a talk entitled, "Monitoring and assessing eye health in Californian sealions in Dublin Zoo". This talk was also given to zoo staff.
- Keeper Louise McDermott attended the BIAZA Bird Working Group meeting in November, in Birdland, Gloucester.
- Operations Manager Gerry Creighton presented, "Giant Footsteps: The Future of the Asian Elephant" in the National University of Ireland, Maynooth in November.
- Dr. Ann Clarke, founding member of the Frozen Ark Project, gave a presentation on the project to zoo staff and volunteers in December.

Papers published

Wilde, J. and Marples, N. (2011), **The behavior of a zoo-housed infant orangutan after the death of its mother.** *Zoo Biology*, 30: 205–211.

Wilde, J. and Marples, N. (2011), **Effect of a birth on the behavior of a family group of Asian elephants (Elephas maximus) at Dublin Zoo.** *Zoo Biology* (online version)

CENSUS OF ANIMALS IN DUBLIN ZOO DURING 2011

Summary of Census of Animals in Dublin Zoo on 1st January 2012

Taxon	Total Species	Total Specimens
Mammals	43	207
Birds	26	178
Reptiles	26	85
Amphibians	2	7
Total vertebrates	**97**	**477**
Invertebrates	5	57*

**Approximate numbers*

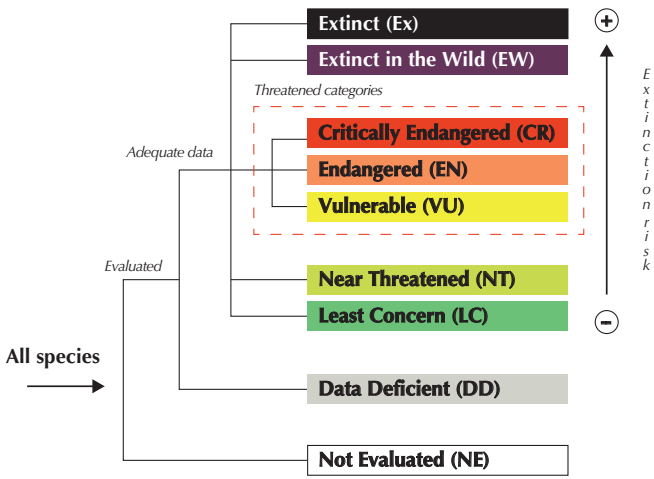
Summary of Births and Hatchings of Animals in Dublin Zoo during 2011

Taxon	Total Species	Total Specimens
Mammals	13	46
Birds	7	33
Reptiles	0	0
Amphibians	0	0
Total vertebrates	**20**	**79**
Invertebrates	3	X

X: Numbers not recorded

Summary of Animal Species on the IUCN Red List of Threatened Species in Dublin Zoo during 2011

IUCN status	Number of species/ subspecies
Extinct in the wild – EW	1
Critically endangered – CR	7
Endangered – EN	12
Vulnerable – VU	13
Near threatened – NT	13
Least Concern - LC	38
Not Evaluated - NE	16



Source: IUCN (2011) IUCN Red List of Threatened Species. Version 2011.2. Available at: http://www.iucnredlist.org. Downloaded on 01/03/2012.

Key to Census Tables Overleaf

EEP — Part of a European Endangered Species Breeding Programme (EEP)

ESB — Recorded in a European studbook

Column 1: The number of animals in the collection at 1st January 2011.

Column 2: The number of animals received in 2011 through presentation, exchange, deposit or purchase.

Column 3: The number of animals born or hatched during 2011.

Column 4: The number of animals dying within 30 days of birth or hatching, in 2011.

Column 5: The number of animals dying having survived more than 30 days, in 2011.

Column 6: The number of animals leaving the collection through presentation, exchange, deposit, sale, theft etc. during 2011.

Column 7: The number of animals in the collection at 1st January 2011.

The first figure indicates the male numbers; the second female numbers and the third unsexed numbers e.g. 1.2.4 reads 1 male, 2 females and 4 unsexed specimens.

Male	Female	Unknown
♂	♀	?

This census does not include animals which have been sent on deposit to other collections, nor does it include several species, which generally breed well in the gardens, i.e. Coot, Moorhen, Grey Heron etc.

	IUCN Status	SPECIES		Total at 01.01.11	Arrivals	Births	Dead within 30 Days	Dead	Departed	Total at 01.01.12
		VERTEBRATES	**VERTEBRATA**							
		CLASS: MAMMALS	**MAMMALIA**							
		BATS	**CHIROPTERA**							
	CR	Rodrigues flying fox	Pteropus rodricensis	5.16.0				2.2.0		3.14.0
		PRIMATES	PRIMATES							
ESB	NT	Ring-tailed lemur	Lemur catta	5.4.0						5.4.0
	EN	Red ruffed lemur	Varecia rubra	3.3.0						3.3.0
	VU	Goeldi's monkey	Callimico goeldii	3.2.0	0.1.0				2.2.0	1.1.0
	LC	Eastern pygmy marmosets	Callithrix pygmaea niveiventris	2.4.0		1.0.3	1.0.1			2.4.2
	EN	Golden lion tamarin	Leontopithecus rosalia	1.1.0						1.1.0
		Spider monkey	Ateles sp.	1.2.0						1.2.0
	LC	Bolivian squirrel monkey	Saimiri boliviensis boliviensis	8.0.0						8.0.0
	LC	White-faced saki	Pithecia pithecia	1.2.0	1.0.0				1.1.0	1.1.0
	EN	White-crowned mangabey	Cercocebus atys lunulatus	1.4.0		1.2.0				2.6.0
	CR	Sulawesi crested macaque	Macaca nigra	3.8.0		1.0.2	0.0.1			4.8.1
ESB	EN	Siamang	Symphalangus syndactylus	2.1.0					0.1.0	2.0.0
	CR	Western lowland gorilla	Gorilla gorilla gorilla	3.2.0		1.1.0				4.3.0
ESB	EN	Chimpanzee	Pan troglodytes	2.2.0						2.2.0
	EN	Western chimpanzee	Pan troglodytes verus	0.1.0						0.1.0
	EN	Bornean orangutan	Pongo pygmaeus pygmaeus	1.3.0						1.3.0
		XENARTHRANS	XENARTHRA							
ESB	LC	Linne's two-toed sloth	Choloepus didactylus	1.1.0						1.1.0
		RODENTS	RODENTIA							
	NT	Patagonian mara	Dolichotis patagonum	8.1.0				3.0.0		5.1.0
		INSECTIVORES	INSECTIVORA							
	LC	Pygmy hedgehog	Atelerix albiventris	0.0.0	1.0.0					1.0.0
		CARNIVORES	CARNIVORA							
	LC	Artic fox	Vulpes lagopus	0.1.0						0.1.0
	LC	Grey wolf	Canis lupus	5.4.0				1.0.0		4.4.0
	EN	African hunting dog	Lycaon pictus	6.3.0		0.0.1	0.0.1		0.2.0	6.1.0
	VU	Red panda	Ailurus fulgens fulgens	1.1.0		1.1.0				2.2.0
	VU	Oriental small-clawed otter	Aonyx cinerea	1.1.0						1.1.0
	LC	Slender-tailed meerkat	Suricata suricatta	2.2.0	1.3.0				2.2.0	1.3.0
	VU	Lion	Panthera leo	0.1.0						0.1.0
	EN	Amur tiger	Panthera tigris altaica	1.2.0					1.0.0	0.2.0
	CR	Sumatran tiger	Panthera tigris sumatrae	2.1.0					1.0.0	1.1.0
	EN	Snow leopard	Uncia uncia	1.1.0	1.0.0					2.1.0
ESB	LC	California sealion	Zalophus californianus	1.3.0				1.0.0		0.3.0
		ELEPHANTS	PROBOSCIDAE							
	EN	Asiatic elephant	Elephas maximus	1.4.0						1.4.0
		ODD-TOED UNGULATES	PERISSODACTYLA							
	LC	Common/Grant's zebra	Equus burchelli boehmi	1.2.0						1.2.0
	VU	South American tapir	Tapirus terrestris	1.1.0						1.1.0
	NT	Southern white rhinoceros	Ceratotherium simum simum	3.4.0						3.4.0

	IUCN Status	SPECIES		Total at 01.01.11	Arrivals	Births	Dead within 30 Days	Dead	Departed	Total at 01.01.12
		EVEN-TOED UNGULATES	ARTIODACTYLA							
	LC	Red river hog	Potamochoerus porcus pictus	3.5.0		1.2.1	0.0.1	1.1.0		3.6.0
ESB	VU	Hippopotamus	Hippopotamus amphibius	1.1.0		0.1.0				1.2.0
	LC	Giraffe	Giraffa camelopardalis	1.3.0		1.0.0				2.3.0
	EN	Baringo/Rothschild giraffe	Giraffa camelopardalis rothschildi	1.3.0	0.1.0				0.1.0	1.3.0
	NT	Blackbuck	Antilope cervicapra	1.1.0		0.1.0		0.1.0		1.1.0
	CR	Eastern bongo	Tragelaphus eurycerus isaaci	1.2.0						1.2.0
	EW	Scimitar-horned oryx	Oryx dammah	0.4.0	1.0.0			0.1.0		1.3.0
		DOMESTIC								
		Rabbit	Oryctolagus cuniculus domestic	1.0.0						1.0.0
		New Zealand rabbit	Oryctolagus cuniculus new_zealand	1.1.0					1.1.0	0.0.0
		Tamworth pig	Sus scrofa scrofa tamworth	0.2.0	1.0.0	5.4.1	0.0.1		5.5.0	1.1.0
		Landrance pig	Sus scrofa scrofa landrance	0.2.0					0.2.0	0.0.0
		Friesian cow	Bos taurus taurus british_friesian	1.1.0					1.0 .0	0.1.0
		Simmental cow	Bos taurus taurus simmental	0.2.0	0.1.0				0.2.0	0.1.0
		Small East African goat	Capra hircus hircus small_east_african	2.4.0	1.0.0	8.2.1	2.0.1		7.2.0	2.4.0
		Cheviot sheep	Ovis aries aries cheviot	0.1.2					0.1.2	0.0.0
		Greyface sheep	Ovis aries aries greyface	2.0.0					2.0.0	0.0.0
		Suffolk sheep	Ovis aries aries suffolk	0.0.0	0.2.0					0.2.0
		Texel-Suffolk sheep	Ovis aries aries texel_suffolk	0.0.0	0.2.0	2.1.0	1.0.0			1.3.0
		Dog Labrador	Canis lupus familiaris labrador_retriever	0.3.0				0.2.0		0.1.0
		CLASS: BIRDS	**AVES**							
		OSTRICHES	STRUTHIONIFROMES							
	LC	Ostrich	Struthio camelus	1.2.0	0.2.0			0.1.0		1.3.0
		RHEAS	RHEIFORMES							
	NT	Greater rhea	Rhea americana	1.2.0				1.2.0		0.0.0
		PENGUINS	SPHENISCIFORMES							
	VU	Humboldt penguin	Spheniscus humboldti	7.7.0		0.0.2	0.0.2	1.1.0		6.6.0
		HERONS/STORKS	CICONIIFORMES							
	LC	Little egret	Egretta garzetta	2.0.0						2.0.0
	CR	Waldrapp ibis	Geronticus eremita	8.9.0		0.0.4	0.0.2			8.9.2
		FLAMINGOS	PHOENICOPTERIDAE							
	NT	Chilean flamingo	Phoenicopterus chilensis	44.36.0		3.1.5	0.0.2	6.4.0	0.0.3	41.33.0
		DUCKS/GEESE/SWANS	ANSERIFORMES							
	LC	Mute swan	Cygnus olor	0.1.0				0.1.0		0.0.0
		GALLINACEOUS BIRDS	GALLIFORMES							
	LC	Common peafowl	Pavo cristatus	4.2.0		0.2.2	0.0.2	1.1.0	1.0.0	2.3.0
	NT	Crested wood partridge	Rollulus rouloul	2.4.0		5.0.7	0.0.7	1.0.0		6.4.0
	LC	Red junglefowl	Gallus gallus	2.0.0				1.0.0		1.0.0
		PIGEONS/DOVES	COLUMBIFORMES							
	NT	Nicobar pigeon	Caloenas nicobarica nicobarica	1.1.0						1.1.0
	EN	Mauritius Pink pigeon	Columba mayeri	0.1.0	1.0.0					1.1.0
	LC	Green imperial pigeon	Ducula aenea aenea	0.1.0						0.1.0
	LC	Pied imperial pigeon	Ducula bicolor	1.1.4		0.0.1	0.0.1			1.1.4
ESB	VU	Victoria crowned pigeon	Goura victoria	3.1.0		1.0.0				4.1.0

	IUCN Status	SPECIES		Total at 01.01.11	Arrivals	Births	Dead within 30 Days	Dead	Departed	Total at 01.01.12
		PARROTS	PSITTACIFORMES							
ESB	VU	Yellow-backed chattering lory	Lorius garrulus flavopalliatus	1.2.2				0.1.2		1.1.0
	LC	Scarlet macaw	Ara macao	1.0.0						1.0.0
	VU	Military macaw	Ara militaris	1.1.0						1.1.0
ESB	VU	Mexican military macaw	Ara militaris mexicana	5.1.0	0.1.0					5.2.0
		TURACOS/CUCKOOS	CUCULIFORMES							
ESB	LC	Red-crested turaco	Tauraco erythrolophus	1.1.0						1.1.0
		OWLS	STRIGIFORMES							
	LC	Snowy owl	Bubo scandiacus	1.1.0				1.0.0		0.1.0
		HORNBILLS ETC.	CORACIIFORMES							
	NT	Great hornbill	Buceros bicornis	1.1.0						1.1.0
ESB	LC	Abyssinian ground hornbill	Bucorvus abyssinicus	1.1.0						1.1.0
		PERCHING BIRDS	PASSERIFORMES							
	LC	Black-throated laughing thrush	Dryonastes chinensis	0.1.0						0.1.0
	LC	Superb starling	Spreo superbus	0.1.0						0.1.0
		DUCKS	ANSERIFORMES							
	LC	Mandarin duck	Aix galericulata	0.1.0	1.0.0					1.1.0
	LC	Wood duck	Aix sponsa	2.1.0				0.1.0		2.0.0
		DOMESTIC FOWL								
		Australorp chicken	Gallus gallus domestic australorp	0.2.0	1.0.0					1.2.0
		Brahma bantem	Gallus gallus domestic brahma	0.0.0	2.1.0					2.1.0
		Call duck	Anas platyrhynchos domestic call	2.0.0						2.0.0
		Indian runner duck	Anas platyrhynchos domestic indian_runner	1.0.0	0.1.0					1.1.0
		CLASS: REPTILES	**REPTILIA**							
		CHELONES	TESTUDINES							
	NT	Asian leaf turtle	Cyclemys dentata	0.1.0				0.1.0		0.0.0
	CR	Annam leaf turtle	Mauremys annamensis	0.0.3						0.0.3
	NE	Central America wood turtle	Rhinoclemmys pulcherrima manni	0.2.0						0.2.0
	LC	Yellow-bellied slider	Trachemys scripta scripta	0.0.2						0.0.2
	LC	Red-eared slider	Trachemys scripta elegans	0.0.18						0.0.18
	NE	Red-footed tortoise	Chelonoidis carbonaria	1.4.0						1.4.0
	NE	Leopard tortoise	Stigmochelys pardalis	1.2.2						1.2.2
	LC	Star tortoise	Geochelone elegans	0.0.0	3.3.0					3.3.0
	VU	African spurred tortoise	Geochelone sulcata	3.1.0						3.1.0
	NE	Western hingeback tortoise	Kinixys belliana nogueyi	2.1.0						2.1.0
ESB	VU	African pancake tortoise	Malacochersus tornieri	1.2.0						1.2.0
		CROCODILES	CROCODILIA							
	LC	Nile crocodile	Crocodylus niloticus	0.2.0						0.2.0
		LIZARDS	SAURIA							
	LC	Veiled chameleon	Chamaeleo calyptratus	2.2.0				1.0.0		1.2.0
	LC	Green anole	Anolis carolinensis	0.1.0						0.1.0
	NE	Plated lizard	Gerrhosaurus major major	0.1.0					0.1.0	0.0.0
		Gecko (unk sp.)	Gekkonidae	0.1.0						0.1.0
	NE	Turnip-tailed gecko	Thecadactylus rapicaudus	0.0.1						0.0.1

	IUCN Status	SPECIES		Total at 01.01.11	Arrivals	Births	Dead within 30 Days	Dead	Departed	Total at 01.01.12
	NE	Leopard gecko	Eublepharis macularius	0.0.2						0.0.2
	NE	Tokay gecko	Gekko gecko	0.0.0	1.2.0					1.2.0
	NT	Gila Monsters	Heloderma suspectum	2.2.0						2.2.0
	NT	Green iguana	Iguana iguana	1.0.0						1.0.0
	LC	Water monitor	Varanus salvator salvator	1.0.0						1.0.0
		SNAKES	SERPENTES							
	NT	Burmese rock python	Python molurus bivittatus	2.0.0						2.0.0
	LC	Royal python	Python regius	0.0.4						0.0.4
	NE	King ratsnake	Elaphe carinata	0.1.3						0.1.3
	NE	Cornsnake	Elaphe guttata guttata	0.0.1	0.0.2					0.0.3
	LC	Rough green snake	Opheodrys aestivus	0.0.1						0.0.1
	LC	Common gartersnake	Thamnophis sirtalis	1.0.0						1.0.0
		CLASS: AMPHIBIANS	**AMPHIBIA**							
		FROGS/TOADS	ANURA							
		Fire-bellied toad	Bombina sp.	0.0.6						0.0.6
	LC	Asiatic black-spined toad	Bufo melanostictus	0.0.1						0.0.1
		CLASS: GASTROPODS	**GASTROPODA**							
		SNAILS	STYLOMMATOPHORA							
	NE	Giant African snail	Achatina fulica	0.0.2				0.0.1		0.0.1
		CLASS: ARACHNIDS	**ARACHNIDA**							
		SPIDERS	ARANEAE							
	NE	Chilean rose tarantula	Grammostola rosea	0.2.0						0.2.0
		CLASS: INSECTS	**INSECTA**							
		COCKROACHES	BLATTARIA							
	NE	Madegascar hissing cockroaches	Gromphadorhina portentosa	1.0.0				1.0.0		0.0.0
		STICK INSECTS	PHASMATOPTERA							
	NE	Indian green stick insects	Cacausius morosus	0.33*.0		137*		159*		15*
	NE	Macleays spectre	Extatosoma tiaratum	0.43*.0		x		x		0.0.22
	NE	Black beauty stick insect	Peruphasma schultei	3.2.0		x		x		0.0.20

** approximate numbers*

x numbers not recorded

FOTA WILDLIFE PARK: DIRECTOR'S REPORT

Fota Wildlife Park had another successful year with continued increase in visitor numbers and revenue. The new entrance development completed at the end of 2010 was put through its first rigorous test during the last 2 weeks of April when 47,500 people visited the Park over the Easter school holidays.

The main changes in visitor numbers and revenue enhancement were as follows:

- Visitor numbers increased 4% in 2011 to 390,154.
- Sales of Park Memberships were up 18% on 2010 and 16% for Conservation Memberships.
- Gift Shop sales up 4% on 2010.

On the 11th April 2011 the President of Ireland, Mary Mc Aleese, officially opened the new entrance complex. The President unveiled a plaque in honour of her visit to Fota Wildlife Park and in her speech she 'congratulated the Board of Governors of Fota Wildlife Park, the Park Director and the dedicated Park staff, who must feel pride because something they did is showcased here and will be every day for decades to come. It will all be measured in time in the joy brought to visitors and the safe haven created for animals. It is a great credit to you all and I wish you all every success in the future. Go raibh míle maith agaibh'.

Fota Wildlife Park hosted the annual British and Irish Association of Zoos and Aquaria conference from the 9th to 12th June 2011. The Clarion Hotel, Cork City was the conference venue and this was the first BIAZA annual conference held outside of the United Kingdom. For most of the 90 visiting delegates this was their first visit to Fota Wildlife Park and Cork and they were impressed by the new entrance development and also appreciated the natural and relaxing ambiance of the Wildlife Park.

The conference theme was 'Evidence, Evidence! Basing decisions and actions on sound foundations'. It concluded that it is essential for modern zoological facilities to have effective information gathering and evaluation techniques to enhance their extensive and current contributions to conservation, education, research, animal husbandry and also to the economic and social values of modern society.

Park Developments:

The most impressive development to take place during the year was the construction of an aviary over the seal pond and the refurbishment of this pond. This new aviary was then linked to the White-tailed Eagle pen over the existing road thus allowing the eagles fly back and forth over the public to the seal aviary. There has been very positive feedback to this development which affords the Eagles greater room to fly and also allows them to catch fish etc. from the open water. The Harbour seals now have a larger and deeper pond and also a great flow through of sea water from the harbour which contains eels, mullet and many other food items.

The main canal running from the Seal enclosure through to the Lion-tailed Macaque Island and main lake was also refurbished. The banks of the canal and edges of the island were stabilised using rocks and liner to prevent erosion.. A public exclusion area was also made nearby so that the kangaroos can hide or get away from the visiting public during periods of high visitor numbers. The Agile gibbon and Howler monkey islands were refurbished with a more three dimensional outdoor structures and plants with trees in line with modern husbandry recommendations for arboreal primates. A new waterfall was added to the Humboldt penguin enclosure and secure nesting areas were provided to prevent herons and gulls eating the penguin eggs.

Animals:

Our pair of resident White-tailed Eagles hatched a chick in April, however the adult female became aggressive to the male after 2 weeks and the male had to be separated to another enclosure. The female was later observed carrying a goose carcass and an eels from the seal enclosure over the road to the nest. This eaglet progressed very well and was sent in December 2011 to the Nature & Parks Authority in Israel for release into the wild near the Golan Heights. She was eventually released to the wild in late January 2012 and has adjusted well to life in the wild.

It was another successful year for primate breeding with following notable births including a Lion-tailed Macaques, a female White-faces Saki and the Park's first Black Howler monkey born in mid-October. There was considerable change with our Red pandas with the young male 'Rua' born at Fota in 2010 moving to Belfast on breeding loan and the old male 'Bamboo' sent to Trigby Hall in Yarmouth, England. Sadly our remaining female 'Binthi' died in mid-September from pancreatic cancer.

The recently established group of Meerkats gave birth to five surviving young in April and another litter of 3 in pups in October leaving a total of 11 Meerkats in the group at the end of 2011.

There were considerable changes to our Rothschild giraffes herd during 2011 with the birth of 2 calves and the death a one of our breeding females during labour. A new breeding male 'Walda' arrived from South Lakes in England and our young male Finn was sent to Belfast Zoo to become their breeding male Rothschild giraffe. Other hoof stock born includes 5 European Bison, 5 Red Lechwe and 2 male Grant's Zebra. A total of 6 European Bison sent on loan to other UK collections including three males to New Forest Conservation Park, one male to Highland Wildlife Park and two females to Pitcastle Estate, Scotland. Two Eastern Grey Kangaroo and numerous Bennett's Wallabies were also among the animal births as were the following birds hatched in 2011, 3 Barnacle geese, 3 black Swans, 1 snow goose, 4 Cereopsis geese, 4 Humboldt penguins and 3 Kenyan–crested Guinea fowl.

Field conservation:

Fota Wildlife Park committed €55,000 to various conservation projects for the year 2011 and in addition raised a further €28,732 through collection boxes and fundraising activities. Our commitment to the Madagascar Porchard conservation and breeding project continues with the provision of €20,000 to the running costs of the Madagascar Pochard Captive Breeding Centre. More than 20 Madagascar pochard ducklings have been reared during the last year which brings the total global population to 60 individuals for this critically endangered species. This project is run in conjunction with the Durrell Wildlife Conservation Trust and the Wildfowl and Wetlands Trust.

Other projects funded in 2011 included the Cork Bat Group with €2,000 for educational activities The Irish Wildlife Trust was allocated €2,000 euros for the Cork Otter Survey and €5,000 for the Irish Newt Survey. Fota Wildlife Park contributed €6,666 towards the EAZA

Ape conservation campaign most of which was funded from visitor collection boxes. Other species conservation programs to also receive support are as follows; €5,000 to Cheetah conservation, €1,000 to Parrot conservation and €1,000 to Penguin conservation.

A further €18,000 was set aside to sponsor a PhD project for the following study, 'Population dynamics, habitat use, philopatry and feeding behaviour of the Red Squirrel, Sciurus vulgaris at Fota'. This Study will be two thirds funded by the Irish Research Council under the IRCSET programme.

Education:

The education department at Fota Wildlife Park had another fantastic year with in excess of 13,000 students participating in a variety of educational modules. This increase can be attributed to the following reasons;

- A greater number of primary school students attending science based modules in Fota as part of their SESE (Social, environmental and scientific education) curriculum.
- The development of a Primary school outreach programme with the aim of "bringing nature" directly to the schoolyard. The programme was designed to encourage schools to participate in nature based activities directly within their school grounds. An increase in the cost of transporting children to education centres such as Fota Wildlife Park was proving to be prohibitive for many of the smaller schools in Munster and hence the outreach programme facilitated a means of attracting additional business during the winter months.

Research:

There were four final year student projects completed during 2011 at Fota Wildlife Park and supervised by Dr. Ruth Ramsay of University College Cork (UCC) as follows:

- Caroline Bowen on 'Overwintering behaviour of Chilean flamingo Phoenicopterus chilensis at Fota Wildlife Park'.
- Claire Looney on 'The behaviour of ring-tailed lemurs Lemur catta at Fota Wildlife Park'.
- Alice Power on' Interspecific and intraspecific interactions in a mixed exhibit of Grey-cheeked Mangabey Lophocebus albigena and Meerkat Suricata suricatta'.
- Owen Twomey on 'Primate enrichment at Fota Wildlife Park'.
- In 2011 Thomas Quirke completed his PhD thesis entitled 'Cheetahs in Captivity: A study on behaviour and the effects of environmental enrichment. His thesis reported on a series of integrated studies on cheetahs in captivity designed to evaluate the overall behavioural patterns of cheetahs in captivity in a multi-institutional study.

Fota 2011 Animal Inventory

SPECIES		Total at 01.01.11	Arrivals	Births	Deaths	Departed	Total at 01.01.12
TAXONOMIC	COMMON NAME						
Struthio camelus	Common ostrich	0.1.0	2.4.1	0.0.0	0.0.1	0.0.0	2.5.0
Dromaius novaehollandiae	Emu	1.1.0	0.0.0	0.0.0	0.0.0	0.0.0	1.1.0
Numida meleagris	Helmeted guineafowl	4.4.11	0.0.0	0.0.15	0.0.0	0.0.0	4.4.26
Guttera pucherani	Kenya crested guineafowl	0.0.6	0.0.0	0.0.3	0.0.5	0.0.0	0.0.4
Pavo cristatus	Common peafowl	4.9.0	0.0.0	0.0.0	0.0.0	0.0.0	4.9.0
Anser anser	Greylag goose	9.7.15	0.0.0	0.0.1	0.0.1	0.0.0	9.7.15
Anser caerulescens	Snow goose	1.7.2	0.0.0	0.0.1	0.0.0	0.0.0	1.7.3
Anser canagica	Emperor goose	0.1.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
Anser cygnoides	Swan goose	2.5.0	0.0.0	0.0.0	0.0.0	0.0.0	2.5.0
Anser indicus	Bar-headed goose	9.7.8	0.0.0	0.0.0	1.0.0	0.0.0	8.7.8
Branta leucopsis	Barnacle goose	16.9.6	0.0.0	0.0.3	1.1.0	0.0.0	15.8.9
Branta sandvicensis	Ne-ne	2.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.0.0
Cereopsis novaehollandiae	Cereopsis goose	2.3.0	0.0.0	0.0.4	0.0.3	0.0.0	2.3.1
Coscoroba coscoroba	Coscoroba swan	1.5.0	0.0.0	0.0.0	0.0.0	0.0.0	1.5.0
Cygnus atratus	Black swan	2.1.1	0.0.0	0.1.2	0.0.2	0.0.0	2.2.1
Dendrocygna viduata	White-faced whistling duck	0.1.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
Aix galericulata	Mandarin duck	9.5.0	0.0.0	0.0.0	5.3.0	0.0.0	4.2.0
Aix sponsa	North American wood duck	6.4.0	0.0.0	0.0.0	0.1.0	0.0.0	6.3.0
Anas acuta	Pintail	0.1.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
Anas platalea	Red shoveler	1.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0
Anas strepera	Gadwall	0.1.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
Aythya baeri	Baer's pochard	0.1.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
Aythya fuligula	Tufted duck	5.2.12	0.0.0	0.0.0	1.0.1	0.0.0	4.2.11
Aythya nyroca	Common white-eye	2.1.2	0.0.0	0.0.0	0.0.0	0.0.0	2.1.2
Netta peposaca	Rosybill	0.1.0	0.0.0	0.0.0	0.1.0	0.0.0	0.0.0
Netta rufina	Red-crested pochard	7.9.2	0.0.0	0.0.0	0.1.0	0.0.0	7.8.2
Somateria mollissima	Eider	3.1.0	0.0.0	0.0.0	0.1.0	0.0.0	3.0.0
Tadorna ferruginea	Ruddy shelduck	1.1.9	0.0.0	0.0.0	0.1.1	0.0.0	1.0.8
Spheniscus humboldti	Humboldt penguin	9.7.0	2.2.0	0.0.4	0.0.0	0.0.0	11.9.4
Phoenicopterus chilensis	Chilean flamingo	4.3.0	0.0.3	1.0.2	4.0.3	0.0.0	1.3.2
Pelecanus onocrotalus	Eastern white pelican	1.1.0	0.0.0	0.0.0	0.1.0	0.0.0	1.0.0
Haliaeetus albicilla	White-tailed sea eagle	1.1.0	0.0.0	0.1.0	0.0.0	0.1.0	1.1.0
Ara ararauna	Blue-and-yellow macaw	1.1.0	0.0.0	0.0.0	0.0.0	0.0.0	1.1.0
Ara chloroptera	Green-winged macaw	1.1.0	0.0.0	0.0.0	0.1.0	0.0.0	1.0.0
Ara macao	Scarlet macaw	1.1.0	0.0.0	0.0.0	0.0.0	0.0.0	1.1.0
Macropus giganteus	Eastern grey kangaroo	1.8.0	0.0.0	4.1.0	2.0.0	0.0.0	3.9.0
Macropus rufogriseus	Red-necked wallaby	0.1.54	0.0.0	0.0.1	0.1.9	0.0.3	0.0.43
Lemur catta	Ring-tailed lemur	5.8.0	0.0.0	0.0.0	1.0.0	0.0.0	4.8.0

SPECIES		Total at 01.01.11	Arrivals	Births	Deaths	Departed	Total at 01.01.12
TAXONOMIC	COMMON NAME						
Pithecia pithecia	White-faced saki	3.3.0	0.0.0	0.1.0	0.0.0	0.0.0	3.4.0
Alouatta caraya	Black howler	1.1.0	0.0.0	0.0.1	0.0.0	0.0.0	1.1.1
Ateles fusciceps	Black-headed spider monkey	1.4.0	0.0.0	0.0.0	0.0.0	0.0.0	1.4.0
Lophocebus albigena	Grey-cheeked mangabey	2.5.0	0.0.0	1.1.0	1.1.0	0.0.0	2.5.0
Macaca silenus	Lion-tailed macaque	6.12.0	0.0.0	0.1.0	0.0.0	0.0.0	6.13.0
Colobus guereza	Eastern black-and-white colobus	2.1.0	3.0.0	0.0.0	0.1.0	0.0.0	5.0.0
Hylobates agilis	Agile gibbon	1.2.0	0.0.0	0.0.0	0.0.0	0.0.0	1.2.0
Hylobates lar	Lar gibbon	1.3.0	0.0.0	0.0.0	0.0.0	0.0.0	1.3.0
Symphalangus syndactylus	Siamang	3.2.0	0.0.0	0.0.0	0.0.0	0.0.0	3.2.0
Cynomys ludovicianus	Black-tailed prairie dog	0.0.0	2.5.0	0.0.0	0.1.0	0.0.0	2.4.0
Dolichotis patagonum	Patagonian mara	0.2.35	0.0.0	0.0.9	0.0.8	0.2.0	0.0.37
Hydrochaeris hydrochaeris	Capybara	1.2.0	0.0.0	0.0.0	1.0.0	0.0.0	0.2.0
Acinonyx jubatus	Cheetah	3.4.0	3.3.0	0.0.0	2.1.0	0.2.0	4.4.0
Suricata suricatta	Slender-tailed meerkat	3.4.0	0.0.0	3.2.7	2.0.7	0.1.0	4.5.0
Phoca vitulina	Harbor seal	1.1.0	0.0.0	0.0.0	0.0.0	0.0.0	1.1.0
Ailurus fulgens	Red panda	3.1.0	0.0.0	0.0.0	0.1.0	2.0.0	1.0.0
Equus burchellii	Common zebra	2.2.2	0.0.0	1.1.0	0.0.0	0.0.0	3.3.2
Tapirus terrestris	South American tapir	0.1.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
Lama guanicoe	Guanaco	1.2.0	0.0.0	0.0.0	0.0.0	1.2.0	0.0.0
Giraffa camelopardalis	Giraffe	2.6.0	1.0.0	2.1.0	1.2.0	1.0.0	3.5.0
Bison bonasus	European wisent	9.7.0	0.0.0	2.3.0	0.0.0	5.2.0	6.8.0
Oryx dammah	Scimitar-horned oryx	2.14.0	0.0.0	0.0.0	0.0.0	1.3.0	1.11.0
Kobus leche	Southern lechwe	2.8.2	0.0.0	1.1.3	0.1.0	0.0.0	3.8.5
TOTAL		**165.209.167**	**13.14.4**	**15.14.56**	**23.20.41**	**12.13.3**	**158.204.184**

THE ZOOLOGICAL SOCIETY OF IRELAND

(A company limited by guarantee and not having a share capital)

Reports and Consolidated Financial Statements for the year ended 31 December 2011

Registered number: 207824

CONTENTS

MEMBERS OF COUNCIL AND OTHER INFORMATION

Members of Council:

President	Margaret Sinanan
Immediate past president	Derek McCleane
Ordinary Council members	Dorothy Kilroy Dr. Dermot MacDonald MB, FRCPI, FRCOG Thomas Dunphy FCA Christopher Kane, FCIS Paul Burke Kennedy Richard Collins Martin O'Grady

Other information:

Past presidents	Michael O'Grady FCIPD Seán Cromien BA, MRIA, FNCI, F (Mgt), IMI, FZSI Joseph McCullough BE, C Eng, FZSI Michael MacNulty MBA (Harvard)
Vice president	Thomas Dunphy FCA
Honorary secretary	Dorothy Kilroy
Honorary treasurer	Thomas Dunphy FCA
Secretary and registered office	Tony Kearney FCCA, ACIS The Zoological Gardens, Phoenix Park, Dublin 8

MEMBERS OF COUNCIL AND OTHER INFORMATION *(Continued)*

Auditors	Deloitte & Touche Chartered Accountants and Registered Auditors Deloitte & Touche House Earlsfort Terrace Dublin 2
Bankers	Ulster Bank Limited, 33 College Green, Dublin 2 Bank of Ireland, 2 College Green, Dublin 2 AIB, 37 Upper O'Connell Street, Dublin 1 Rabo Bank, Charlemont Place, Dubin 2 AIB, 66 South Mall, Cork
Solicitors	Mason Hayes & Curran, 7 Fitzwilliam Square, Dublin 2 Ronan Daly Jermyn & Company, 12 South Mall, Cork Kilroy Solicitors, 66 Leeson Street Lower, Dublin 2
Charity Number	CHY2964
Company Number	207824

COUNCIL'S REPORT

The Council presents its annual report together with the audited consolidated financial statements for the year ended 31 December 2011.

Consolidation

These accounts form the first Consolidated Accounts of the Zoological Society of Ireland which includes the results of both Dublin Zoo and Fota Wildlife Park for the year ended 31 December 2011.

Principal Activities, Business Review And Future Developments

The principal activities of The Zoological Society of Ireland ("the Society") are:

a. The operation of a Zoo in the Phoenix Park, Dublin.
b. To maintain the Fota Wildlife Park.
c. To promote the conservation of wildlife generally worldwide by advancing the study of environmental sciences and knowledge of zoology through science and scientific education.

The attendance for the year ended 31 December 2011 at Dublin Zoo was 1,005,776. This is the highest number of visitors in the history of Dublin Zoo despite the severe economic downturn. Fota Wildlife Park also experienced a record year in terms of visitor numbers with 390,146 visitors during the year ended 31 December 2011.

During the year, the President of Ireland, Mary McAleese, opened the Gorilla Rainforest at Dublin Zoo and two western lowland gorillas were born generating huge media and visitor interest. The President of Ireland also opened the new entrance complex at Fota Wildlife Park in April 2011.

Principal Risks and Uncertainties

The Council considers that the principal risk and uncertainties to the Society relate to weather conditions affecting visitor numbers, uncertainty impacting on the Society relating to an outbreak of animal disease and the economic environment.

Results for the year

The results for the year are set out on page 64 of the financial statements.

Council

The present members of Council are listed on page 54.

On 15 September 2011, at the Society's AGM, Ms. Margaret Sinanan was appointed as President. Martin O'Grady was appointed to the Council and Michael MacNulty retired from the Council.

Legal Status
The Society is limited by guarantee and has no share capital.

COUNCIL'S REPORT *(Continued)*

Subsidiaries

The information required by Section 158(4) of the Companies Act, 1963 is provided in Note 8 to the financial statements.

Governance

The Society is governed by a Council of directors, who under the Society's Articles of Association, are not entitled to remuneration for their services. The directors bring their varied experience in their respective fields to bear on guiding the Society. The Council meets eleven times per annum which was the case during 2011.

In addition to the Council, the Society operates through a number of committees.

Books of Account

The Council members believe that they have complied with the requirements of Section 202 of the Companies Act, 1990 with regard to books of account by employing personnel with appropriate expertise and by providing adequate resources to the financial function. The books of account are maintained at the Society's registered office in The Zoological Gardens, Phoenix Park, Dublin 8.

Post Balance Sheet Events

No significant events have taken place since the year end that would result in adjustment to the financial statements or inclusion of a note thereto.

Health and Safety Policy

The Society has prepared a safety policy which is being complied with and satisfactorily operated.

Political Donations

The Society did not make any political donations during the year, which require disclosure in accordance with the Electoral Act, 1997.

Auditors

The auditors, Deloitte & Touche, Chartered Accountants, who were appointed during the year, continue in office in accordance with Section 160(2) of the Companies Act, 1963.

On behalf of the Council

Margaret Sinanan	Thomas Dunphy
President	**Honorary Treasurer**

21 June 2012

STATEMENT OF COUNCIL'S RESPONSIBILITIES

Irish company law requires the members of council to prepare financial statements for each financial year which give a true and fair view of the state of affairs of the group and Society and of the surplus or deficit of the group. In preparing these financial statements, the members of Council are required to:

- select suitable accounting policies for the group and Society's financial statements and apply them consistently;
- make judgements and estimates that are reasonable and prudent; and
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the Society will continue in business.

The Members of Council are responsible for keeping proper books of account that disclose with reasonable accuracy at any time the financial position of the Society and enable them to ensure that the financial statements are prepared in accordance with accounting standards generally accepted in Ireland and comply with Irish statute comprising the Companies Acts, 1963 to 2009. They are also responsible for taking such steps for safeguarding the assets of the Society and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

The Members of Council are also responsible for preparing a Council's report that complies with the requirements of the Companies Acts, 1963 to 2009.

On behalf of the Council

Margaret Sinanan
President

Thomas Dunphy
Honorary Treasurer

21 June 2012

INDEPENDENT AUDITORS' REPORT TO THE MEMBERS OF THE ZOOLOGICAL SOCIETY OF IRELAND

(A company limited by guarantee and not having a share capital)

We have audited the financial statements of The Zoological Society of Ireland for the year ended 31 December 2011 which comprise the Statement of Accounting Policies, the Consolidated Income and Expenditure Account, the Consolidated Statement of Total Recognised Gains and Losses, the Consolidated Balance Sheet, the Company Balance Sheet, the Consolidated Cash Flow Statement and the related notes 1 to 20. These financial statements have been prepared under the accounting policies set out in the Statement of Accounting Policies.

This report is made solely to the company's members, as a body, in accordance with Section 193 of the Companies Act, 1990. Our audit work has been undertaken so that we might state to the company's members those matters we are required to state to them in an auditors' report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the company and the company's members as a body, for our audit work, for this report, or for the opinions we have formed.

Respective responsibilities of Members of Council and auditors

The Members of Council are responsible for preparing the financial statements as set out in the Statement of Council's Responsibilities in accordance with applicable law and the accounting standards issued by the Accounting Standards Board and published by the Institute of Chartered Accountants in Ireland (Generally Accepted Accounting Practice in Ireland).

Our responsibility as independent auditor is to audit the financial statements in accordance with relevant legal and regulatory requirements and International Standards on Auditing (UK and Ireland).

We report to you our opinion as to whether the financial statements give a true and fair view and have been properly prepared in accordance with Irish statute comprising the Companies Acts, 1963 to 2009. We also report to you whether, in our opinion: proper books of account have been kept by the company; and whether the information given in the Council's Report is consistent with the financial statements. In addition, we state whether we have obtained all the information and explanations necessary for the purposes of our audit and whether the company's balance sheet are in agreement with the books of account.

We also report to you if, in our opinion, any information specified by law regarding Council members' remuneration and transactions is not disclosed and, where practicable, include such information in our report.

We read the Council's Report and consider the implications for our report if we become aware of any apparent misstatements within it. Our responsibilities do not extend to other information.

Basis of audit opinion

We conducted our audit in accordance with International Standards on Auditing (UK and Ireland) issued by the Auditing Practices Board. An audit includes examination, on a test basis, of evidence relevant to the amounts and

disclosures in the financial statements. It also includes an assessment of the significant estimates and judgements made by the Members of Council in the preparation of the financial statements, and of whether the accounting policies are appropriate to the group's circumstances, consistently applied and adequately disclosed.

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

Opinion

In our opinion the financial statements:

- give a true and fair view, in accordance with Generally Accepted Accounting Practice in Ireland, of the state of the company's and group's affairs at 31 December 2011 and of the surplus of the group for the year then ended; and
- have been properly prepared in accordance with the Companies Acts, 1963 to 2009.

We have obtained all the information and explanations which we considered necessary for the purposes of our audit. In our opinion, proper books of account have been kept by the company. The company's balance sheet are in agreement with the books of account.

In our opinion the information given in the Council's Report is consistent with the financial statements.

Thomas Cassin
For and on behalf of Deloitte & Touche
Chartered Accountants and Registered Auditors
Dublin

22 June 2012

STATEMENT OF ACCOUNTING POLICIES

The significant accounting policies adopted by the Society are:

Basis of Accounting

The financial statements are prepared under the historical cost convention in accordance with accounting standards generally accepted in Ireland and Irish statute comprising the Companies Acts 1963 to 2009. Accounting standards generally accepted in Ireland in preparing financial statements giving a true and fair view are those issued by the Accounting Standards Board and published by the Institute of Chartered Accountants in Ireland.

Basis of Consolidation

The consolidated financial statements incorporate the financial statements of the company and its subsidiary undertakings for the year ended 31 December 2011.

Income

Income comprises annual pass and membership subscriptions relating to the current period. Where subscriptions are received in advance, they are included in deferred income in creditors and released to the income and expenditure account in the relevant period.

Life membership subscriptions are amortised to the income and expenditure account based on the estimated useful life of membership which is considered ten years.

Other income comprises the value of sales, excluding VAT, to third parties and is recognised once the related goods or services are provided to customers.

Tangible Fixed Assets And Depreciation

Tangible fixed assets are stated at cost less accumulated depreciation and any provision for impairment.

The charge for depreciation is calculated to write down the cost of tangible fixed assets to their estimated residual values by equal annual instalments over their expected useful lives as follows:

Plant, machinery and equipment	20%
Computer equipment and software	33⅓%
Motor vehicles	20%
Building and habitats	10%

Land and assets under construction are not depreciated.

Financial Assets

Financial assets are stated at cost less provision for impairment.

Government Support

The land in the Phoenix Park occupied by the Zoo ("the Society") is used under a licence from the State, the Society being a tenant at will. No value is reflected in these financial statements in respect of this licence or this land.

STATEMENT OF ACCOUNTING POLICIES

(Continued)

Government Support *(Continued)*

The Government Capital Investment Programme in the Society is provided and accounted for by the Office of Public Works (OPW) and any related assets are therefore excluded in these financial statements. The accounts of the Society reflect only its disbursements for the OPW under this programme. The facilities provided under this Programme are used by the Society under licence from the State.

Other Government grants in respect of capital expenditure are credited to a deferred grant account and are amortised to the income and expenditure account by equal annual instalments over the expected useful lives of the related assets.

Leases

Expenditure on operating leases is charged to the income and expenditure account on a basis representative of the benefit derived from the asset, normally on a straight line basis over the lease period.

Animals

No value is placed on the animals belonging to the Society.

Stocks

Stocks, other than animals, are stated at the lower of cost and net realisable value.

Foreign Currencies

Transactions in foreign currencies are recorded at the rate ruling at the date of the transactions or at a contracted rate. The resulting monetary assets and liabilities are translated at the balance sheet rate or the contracted rate and the exchange differences are dealt with in the income and expenditure account.

Pensions

The group operates both defined benefit and defined contribution schemes.

Defined contribution scheme

Pension contributions in respect of defined contribution schemes are charged to the income and expenditure as they become payable in accordance with the rules of the scheme. The assets are held separately from those of the group in an independently administered fund. Differences between the amounts charged in the profit and loss account and payments made to pension funds are treated as assets or liabilities.

Defined benefit scheme

The pension costs in respect of defined benefit schemes are charged to the income and expenditure account on a systematic basis, based on the actuary's calculations. Amounts charged are calculated using the following rates:

Current service cost – discount rate at the start of the year
Interest cost – discount rate at the start of the year
Expected return on assets – Expected rate of return at the start of the year.

Past service costs are recognised in the income and expenditure account on a straight line basis over the period in which increases in benefit vest.

Differences between the amounts charged in the income and expenditure account and payments made to pension funds are treated as assets or liabilities.

Assets in the scheme are measured at their fair value at the balance sheet date. Defined benefit liabilities are measured on an actuarial basis using the projected unit method. The assets and liabilities of the scheme are subject to a full actuarial valuation by an external professionally qualified actuary triennially and are reviewed annually by the actuary and updated to reflect current conditions.

The excess or shortfall in the value of the assets in the scheme over or below the present value of the scheme liabilities is recognised as an asset or liability when the amounts can be recovered through reduced contributions or refunds from the scheme.

Actuarial gains and losses arise on the valuation of the scheme's assets and liabilities and are released to the statement of total recognised gains and losses.

Taxation

The group is regarded by the Revenue Commissioners as established for charitable purposes and, accordingly, is exempt from corporation tax.

CONSOLIDATED INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31 DECEMBER 2011

	Notes	**2011** **€'000**	2010 €'000
Income	1	**15,266**	14,862
Expenditure			
Operating costs		**(12,678)**	(12,430)
Administration expenses		**(658)**	(650)
Total Expenditure		**(13,336)**	(13,080)
Operating Surplus	3	**1,930**	1,782
Interest income	4	**144**	102
Interest payable and similar charges	5	**-**	(2)
Amortisation of government grants	13	**25**	25
Surplus for the Year	15	**2,099**	1,907

Results in the current and previous year arose solely from continuing operations.

The financial statements were approved by the Council on 21 June 2012 and signed on its behalf by:

Margaret Sinanan
President

Thomas Dunphy
Honorary Treasurer

CONSOLIDATED STATEMENT OF TOTAL RECOGNISED GAINS AND LOSSES FOR THE YEAR ENDED 31 DECEMBER 2011

	Notes	**2011 €'000**	2010 €'000
Surplus for the Year		**2,099**	1,907
Actuarial loss recognised on defined benefit scheme	14	**(292)**	(107)
Total recognised gains and losses relating to the year		**1,807**	1,800

CONSOLIDATED BALANCE SHEET AS AT 31 DECEMBER 2011

	Notes	2011 €'000	2010 €'000
Fixed Assets			
Tangible assets	7	**11,858**	9,675
Current Assets			
Stocks	9	**360**	276
Debtors	10	**814**	568
Cash at bank and in hand - OPW grant	11	**932**	2,827
Cash at bank and in hand - Other		**5,132**	6,146
		7,238	9,817
Creditors: (Amounts falling due within one year)	11	**(3,903)**	(5,742)
Net Current Assets		**3,335**	4,075
Total Assets Less Current Liabilities		**15,193**	13,750
Creditors: (Amounts falling due after more than one year)	12	**(579)**	(829)
Other Deferred Grants	13	**(326)**	(351)
Net Assets Excluding Pension Liability		**14,288**	12,570
Pension liability	14	**(83)**	(172)
Net Assets Including Pension Liability		**14,205**	12,398
Accumulated surplus	15	**9,504**	7,898
Development reserve	15	**3,000**	3,000
Emergency reserve	15	**1,701**	1,500
The financial statements were approved by the Council on 21 June 2012 and signed on its behalf by:		**14,205**	12,398

Margaret Sinanan — **President**

Thomas Dunphy — **Honorary Treasurer**

COMPANY BALANCE SHEET AS AT 31 DECEMBER 2011

	Notes	**2011** **€'000**	2010 €'000
Fixed Assets			
Tangible assets	7	**6,135**	3,651
Financial assets	8	**500**	500
		6,635	4,151
Current Assets			
Stocks	9	**154**	152
Debtors	10	**326**	352
Cash at bank and in hand			
– OPW grant	11	**932**	2,827
– Other		**3,676**	4,587
		5,088	7,918
Creditors: (Amounts falling due within one year)	11	**(2,808)**	(4,416)
Net Current Assets		**2,280**	3,502
Net Assets		**8,915**	7,653
Represented by:			
Accumulated surplus	15	**4,214**	3,153
Development reserve	15	**3,000**	3,000
Emergency reserve	15	**1,701**	1,500
		8,915	7,653

The financial statements were approved by the Council on 21 June 2012 and signed on its behalf by:

Margaret Sinanan — **President**

Thomas Dunphy — **Honorary Treasurer**

CONSOLIDATED CASH FLOW STATEMENT FOR THE YEAR ENDED 31 DECEMBER 2011

	Notes	**2011** **€'000**	2010 €'000
Net Cash Inflow From Operating Activities	17	**2,428**	2,656
Returns on Investments and Servicing of Finance			
Interest received		**133**	102
Capital Expenditure and Financial Investment			
Payments to acquire tangible fixed assets		**(3,333)**	(5,171)
Development funds received from OPW		**100**	2,500
OPW development expenditure		**(1,995)**	(798)
Proceeds on disposal of fixed asset		**8**	-
Net Cash Outflow from Capital Expenditure and Financial Investment		**(5,220)**	(3,469)
Decrease in Cash and Cash Equivalents	18	**(2,659)**	(711)

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

1. Income	**2011**	2010
Income arises from the following activities undertaken wholly within Ireland.	**€'000**	€'000
Gate receipt income	**9,525**	9,456
Annual pass and membership income	**2,240**	2,266
Shop income	**2,274**	1,972
Other income	**1,227**	1,168
	15,266	14,862

2. Employee Information		
Staff numbers and costs	**2011**	2010
Average number of employees:		
Management	**10**	10
Administration	**15**	15
General staff		
- full time	**96**	90
- part time	**14**	13
Shop	**10**	10
	145	138
The aggregate payroll costs of these persons were as follows		
Wages and salaries	**4,889**	4,783
Social welfare costs	**518**	503
Pension costs (Note 14)	**132**	31
	5,539	5,317

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2011 *(Continued)*

3. Operating Surplus	**2011**	2010
The operating surplus is stated after charging/(crediting):	**€'000**	€'000
Remuneration of Members of Council		
- Fees	**-**	-
- Other emoluments	**-**	-
Auditor's remuneration in respect of the entity	**23**	22
Auditor's remuneration in respect of the group accounts (including the entity)	**35**	38
Depreciation	**1,145**	958
Operating lease charges	**14**	17
Gain on disposal of fixed asset	**(3)**	-

Under the Society's Articles of Association, Members of Council are not entitled to remuneration.

4. Interest Income		
Deposit interest	**133**	102
Other finance income on defined benefit pension scheme (Note 14)	**11**	-
	144	102

5. Interest Payable and Similar Charges		
Other interest cost on defined benefit pension scheme (Note 14)	-	2

6. TAXATION

No liability to taxation arose during the year as the Society is exempt from corporation tax.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2011 *(Continued)*

7. Tangible Fixed Assets

Group	Land €'000	Plant Machinery & Equipment €'000	Computer Equipment & Software €'000	Motor Vehicles €'000	Buildings & Habitats €'000	Total €'000
Cost:						
At 1 January 2011	191	3,315	1,080	368	10,007	14,961
Additions	-	200	127	39	2,967	3,333
Disposals	-	-	-	(15)	-	(15)
Transfers	-	33	-	-	(33)	-
At 31 December 2011	**191**	**3,548**	**1,207**	**392**	**12,941**	**18,279**
Depreciation:						
At 1 January 2011	-	2,413	794	210	1,869	5,286
Charge for year	-	299	200	54	592	1,145
Disposals	-	-	-	(10)	-	(10)
At 31 December 2011	**-**	**2,712**	**994**	**254**	**2,461**	**6,421**
Net Book Value:						
At 31 December 2011	**191**	**836**	**213**	**138**	**10,480**	**11,858**
At 31 December 2010	**191**	**902**	**286**	**158**	**8,138**	**9,675**

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2011 *(Continued)*

7. Tangible Fixed Assets *(Continued)*

Company	**Land €'000**	**Plant Machinery & Equipment €'000**	**Computer Equipment & Software €'000**	**Motor Vehicles €'000**	**Habitats €'000**	**Total €'000**
Cost:						
At 1 January 2011	191	1,829	1,080	218	3,075	6,393
Additions	-	81	127	9	3,056	3,273
At 31 December 2011	**191**	**1,910**	**1,207**	**227**	**6,131**	**9,666**
Depreciation:						
At 1 January 2011	-	1,445	794	135	368	2,742
Charge for year	-	185	200	35	369	789
At 31 December 2011	**-**	**1,630**	**994**	**170**	**737**	**3,531**
Net Book Value:						
At 31 December 2011	191	280	213	57	5,394	6,135
At 31 December 2010	**191**	**384**	**286**	**83**	**2,707**	**3,651**

Included in habitats at 31 December 2011 are assets under construction which amounted to €35,188.
No depreciation was charged on these assets in the year.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2011 *(Continued)*

8. Financial Assets

Company

The Society's financial asset comprises its investment in Fota Wildlife Park Limited ("Fota"), a company limited by guarantee. Fota is accounted for as a subsidiary undertaking as the Society is a member of Fota Wildlife Park Limited and has the power to appoint a majority of the Governors of the Fota Board.

Details in respect of Fota are set out below:

Name and registered office	**Country of Incorporation**	**Principal activity**
Fota Wildlife Park Limited	Ireland	Operation of a wildlife park

9. Stocks

	Group		**Company**	
	2011	2010	**2011**	2010
	€'000	€'000	**€'000**	€'000
Shops	**330**	259	**124**	135
Consumables	**30**	17	**30**	17
	360	276	**154**	152

The replacement cost of stocks does not differ materially from the amounts shown above.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2011 *(Continued)*

10. Debtors: (Amounts falling due within one year)

	Group		Company	
	2011	2010	**2011**	2010
	€'000	€'000	**€'000**	€'000
Trade debtors	**287**	99	**133**	54
Prepayments and other debtors	**254**	341	**193**	298
VAT	**273**	128	**-**	-
	814	568	**326**	352

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2011 *(Continued)*

11. Creditors: (Amounts falling due within one year)

	Group		Company	
	2011	2010	**2011**	2010
	€'000	€'000	**€'000**	€'000
Bank loan (Note 12)	**250**	250	**-**	-
Trade creditors	**1,037**	1,411	**529**	633
Accruals and deferred income	**1,464**	1,062	**1,166**	807
PAYE/PRSI	**174**	153	**135**	110
VAT	**46**	39	**46**	39
	2,971	2,915	**1,876**	1,589
OPW grant (a)	**932**	2,827	**932**	2,827
	3,903	5,742	**2,808**	4,416

(a). During 2011, the OPW issued a grant of €100,000 (2010: €2,500,000) to the Society. These funds are to be used solely for purposes of development projects authorised by the OPW. All expenditure on such projects is approved by the OPW prior to payment. At 31 December 2011, €932,000 remained unspent from the grant received and has been included in creditors and cash.

	2011	2010
	€'000	€'000
At beginning of year	**2,827**	1,125
Received during the year	**100**	2,500
Expended during the year	**(1,995)**	(798)
At end of year	**932**	2,827

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2011 *(Continued)*

12. Creditors (Amounts falling due after more than one year)

	Group	
	2011	2010
Group	**€'000**	€'000
Bank loan	**579**	829

Loan maturity analysis:	**2011**	2010
	€'000	€'000
In one year or less, or on demand	250	250
Between one and two years	500	500
Between two and five years	79	329
After more than five years	**-**	-
	829	1,079

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2011 *(Continued)*

13. Other Deferred Grants

	Group	
	2011	2010
Group	**€'000**	€'000
Government grants		
Received and receivable:		
At beginning and end of year	**635**	635
Amortisation:		
At beginning of year	**284**	259
Amortised to income and expenditure	**25**	25
At end of year	**309**	284
Net book amount	**326**	351

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2011 *(Continued)*

14. Pension Liability

Defined benefit pension scheme

The group operates a defined benefit pension scheme. Pension costs for the defined benefit pension scheme members are assessed in accordance with the advice of independent qualified actuaries using the projected unit method.
The most recent actuarial valuation of the group's pension scheme was carried out as at 1 April 2010. The most recent actuarial valuation referred to above has been updated to 31 December 2011 by an independently qualified actuary.
The best estimate of pension contributions for the year ended 31 December 2012 is €180,000.
The financial assumptions used to calculate the value of the defined benefit pension scheme's liabilities under FRS 17 are:

	2011	2010	2009
	%	%	%
Rate of general increase in salaries	**3.00**	3.00	3.00
Rate of increase in pensions in payment	**0.00**	0.00	0.00
Discount rate of scheme liabilities	**4.90**	5.50	5.80
Inflation	**2.00**	2.00	2.00

Amounts recognised in the income and expenditure account in respect of the defined benefit pension scheme is as follows:

	2011	2010
	€'000	€'000
Current service cost	**25**	24
Expected return on pension scheme assets	**(111)**	(97)
Interest on pension scheme liabilities	**100**	99
	14	26

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2011 *(Continued)*

14. Pension Liability *(Continued)*

The amount included in the balance sheet arising from the group's obligations in respect of its defined benefit retirement scheme is as follows:

	2011	2010
	€'000	€'000
Total market value of assets	**1,983**	1,687
Present value of the scheme's liabilities	**(2,066)**	(1,859)
Net liability recognised in the balance sheet	**(83)**	(172)

Movements in the deficit in the scheme during the year arose as follows:

	2011	2010
	€'000	€'000
At 1 January	**(172)**	(358)
Current services cost	**(25)**	(24)
Contributions	**395**	319
Other financial income/(expenditure)	**11**	(2)
Actuarial loss	**(292)**	(107)
At 31 December	**(83)**	(172)

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2011 *(Continued)*

14. Pension Liability *(Continued)*

Movement in Scheme Assets and Liabilities

	Pension Assets €'000	Pension Liabilities €'000	Pension Deficit €'000
At 1 January 2011	1,687	(1,859)	(172)
Current service cost	-	(25)	(25)
Interest on scheme liabilities	-	(100)	(100)
Expected return on scheme assets	(19)	-	(19)
Contributions by plan participants	395	-	395
Benefits paid	(80)	80	-
Actuarial loss	-	(162)	(162)
At 31 December 2011	**1,983**	**(2,066)**	**(83)**

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2011 *(Continued)*

14. Pension Liability *(Continued)*

Defined benefit scheme *(Continued)*

Basis of expected rate of return on scheme assets

As at 31 December 2011 based on the yield on the Merrill Lynch Eurozone bond index we have assumed an expected long-term return on bonds equal to 3.7%. The expected long-term return on equities is equal to the bond return plus an assumed equity premium of 4.0% per annum. This gives an assumed equity return of 7.7% per annum. The assumed return on property is assumed to be 2% below the rate of return on equities. The return on cash ("other") is assumed to be 2% per annum. The analysis of the scheme's assets and the expected rate of return at the balance sheet date were as follows:

	Expected return 31 December 2011 %	**Fair value at 31 December 2011 €'000**	Expected return 31 December 2010 %	Fair value at 31 December 2010 €'000
Equities	**7.70**	**849**	8.00	835
Bonds	**3.70**	**746**	4.20	722
Property	**5.70**	**40**	6.00	44
Other	**2.00**	**348**	2.00	86
Total market value of assets		**1,983**		1,687

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2011 *(Continued)*

14. Pension Liability *(Continued)*

Analysis of amount recognised in the statement of total recognised gains and losses:	**2011 €'000**	2010 €'000
(Loss)/gain on assets	**(130)**	9
Experience gain/(loss) on liabilities	**16**	(34)
Loss on change in assumptions	**(178)**	(82)
Actuarial loss to be recognised in statement of total realised gains and losses	**(292)**	(107)

The experience gains and losses are as follows:	**2011**	2010
Difference between the expected and actual return on scheme assets		
- amount (€'000)	**(130)**	9
- percentage of scheme's assets	**(6.6%)**	0.5%
Experience gains and losses on scheme's liabilities		
- amount (€'000)	**16**	(34)
- percentage of the present value of the scheme's liabilities	**0.8%**	(1.8%)
Change in actuarial assumptions to value liabilities		
- amount (€'000)	**(178)**	(82)
- percentage of the present value of the scheme's liabilities	**(8.6%)**	(4.4%)
Total amount included in statement of total recognised gains and losses		
- amount (€'000)	**(292)**	(107)
- percentage of the present value of the scheme's liabilities	**(14.1%)**	(5.8%)

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2011 *(Continued)*

14. Pension Liability *(Continued)*

Mortality

No mortality table used pre-retirement (all members assumed to survive to NRA).
Post-retirement tables used are 62% PNML 00 (Males) and 70% PNFL 00 (females) plus allowance for future mortality improvements.

Expected Lifetime

The expected lifetime of a participant who is aged 65 and the expected lifetime (from the age 65) of a participant who will be aged 65 in the 25 years are shown in years below based on the above mortality tables.

Age	Males	Females
65	21.5	23.0
65 in 25 years	24.4	25.3

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2011 *(Continued)*

15. Reserves

	Accumulated surplus €'000	Development reserve €'000	Emergency reserve €'000	Total €'000
Group				
At beginning of year	7,898	3,000	1,500	12,398
Surplus for year	2,099	-	-	2,099
Actuarial loss recognised on defined benefit pension scheme	(292)	-	-	(292)
Transfer	(201)	-	201	-
At end of year	**9,504**	**3,000**	**1,701**	**14,205**

	Accumulated surplus €'000	Development reserve €'000	Emergency reserve €'000	Total €'000
Company				
At beginning of year	3,153	3,000	1,500	7,653
Surplus for year	1,262	-	-	1,262
Transfer	(201)	-	201	-
At end of year	**4,214**	**3,000**	**1,701**	**8,915**

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2011 *(Continued)*

16. Transfer to Development and Emergency Reserves

The members of the Council have decided to transfer €201,000 (2010: €Nil) from the accumulated surplus to the emergency reserves. The members of Council continue to monitor the strategic development of Dublin Zoo.

17. Reconciliation of Surplus Before Interest to Net Cash Inflow from Operating Activities

	2011	2010
	€'000	€'000
Operating surplus	**1,930**	1,782
Depreciation of tangible fixed assets	**1,145**	958
Gain on disposal of fixed asset	**(3)**	-
Effect of defined benefit pension scheme	**(370)**	(295)
(Increase)/decrease in stocks	**(84)**	37
Increase in debtors	**(246)**	(157)
Increase in non OPW creditors	**56**	331
Net Cash Inflow from Operating Activities	**2,428**	2,656

18. Analysis of Movement in Net Funds

	At beginning of year	**Cashflow**	**At end of year**
	€'000	**€'000**	**€'000**
Cash at bank and in hand	8,973	(2,909)	**6,064**
Bank loan	(1,079)	250	**(829)**
Net funds	7,894	(2,659)	**5,235**

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2011 *(Continued)*

19. Commitments and Contingencies

At 31 December 2011, the Society had authorised capital expenditure amounting to €750,000 or the year ended 31 December 2011 but this had not yet been contracted.

20. Approval of Financial Statements

The consolidated financial statements were approved by the Council on 21 June 2012.

Opposite: Southern white rhinoceros at the African Savanna

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