



Annual Report 2015
Zoological Society of Ireland



PAST PRESIDENTS OF THE ZOOLOGICAL SOCIETY OF IRELAND

Sir Philip Crampton	1833	Sir Frederick Moore	1917-21
The Duke of Leinster	1834	Sir Robert H. Woods	1922-26
Captain Portlock	1835-36	Prof. A. Francis Dixon	1927-31
Sir Philip Crampton	1837-38	Sir William Taylor	1932-33
The Archbishop of Dublin	1839-40	Lord Holmpatrick	1934-42
Sir Philip Crampton	1841-42	Dr. R. Lloyd Praeger	1942-43
The Archbishop of Dublin	1843-44	Capt. Alan Gordon	1944-50
Sir Philip Crampton	1845-46	Prof. John McGrath	1951-53
The Duke of Leinster	1847-48	Dinnen B. Gilmore	1954-58
Sir Philip Crampton	1849-50	G.F. Mitchell	1959-61
The Marquis of Kildare	1851-52	N.H. Lambert	1962-64
Sir Philip Crampton	1853-54	G. Shackleton	1965-67
Lord Talbot of Malahide	1855-56	Prof. P.N. Meenan	1968-70
Sir Philip Crampton	1857-58	Prof. J. Carroll	1971-73
Doctor D.J. Corrigan	1859-63	A.E.J. Went	1974-76
Viscount Powerscourt	1864-69	Victor Craigie	1977-80
The Earl of Mayo	1870-71	Alex G. Mason	1981-83
Earl Spencer	1872-74	Aidan Brady	1984-86
J.W. Murland	1875-78	John D. Cooke	1987-89
Sir John Lentaigne C.P.	1879-84	Padraig O Nuallain	1990-91
Rev. Dr. Haughton F.R.S.	1885-89	Prof. David J. McConnell	1992-95
Sir Robert Ball F.R.S.	1890-92	Joe McCullough	1996-98
Dr. Samuel Gordon	1893-97	Sean Cromien	1998-2001
Field Marshal Earl Roberts	1898-1902	Michael O'Grady	2001-04
Prof. D.J. Cunningham F.R.S.	1903	Barry Murphy	2004
Earl of Dudley	1904-05	Michael MacNulty	2005-08
Rt. Hon. Jonathon Hogg D.L.P.C.	1906-10	Derek McCleane	2008-11
Sir Charles Ball	1911-15	Margaret Sinanan	2011-14
W.E. Peebles	1916	Tom Dunphy	2014

LETTER FROM THE PRESIDENT

The Council of the Zoological Society of Ireland presents the 21st annual report, together with the consolidated audited financial results of Dublin Zoo and Fota Wildlife Park, for year ended 31 December 2015.

I am delighted to report that both Dublin and Fota have once again achieved outstanding visitor attendances of 1,103,378 and 436,386 respectively.

These visitor levels have enabled the Society to achieve record income of €18,511,000 and a surplus of €2,648,000. The successful results of 2015 and prior years have enabled us to continue a high level of investment creating habitats of world class standards for the animals in our care, and thereby creating an enjoyable, educational and enriching experience for our visitors to both sites.

The reports of the Directors of Dublin Zoo and Fota Wildlife Park, Leo Oosterweghel and Sean McKeown which follow, will detail the progress made in the continued enhancement of animal wellness and visitor experience at both locations.

A significant highlight of 2015 that I would particularly like to mention was the attendance of The President of Ireland Michael D Higgins and his wife Sabina at Dublin Zoo to open the Sea Lion Cove, and his generosity in acknowledging the emphasis placed by the society on conservation and education.

The sound business model underlying the Society's success is based on generating sufficient annual surplus to finance the planned investments at a manageable

and prudent rate. Progress made to date is increasingly recognised by zoo professionals around the world and Council is committed to continuing the enhancements of animal habitats and visitor and staff facilities. Council also continues to focus on achieving best practice in Health and Safety, Ethical Standards and Governance.

Investment plans are in place, driven by the vision of Leo and Sean, to utilise the Societies financial surplus to best effect, and continue the progress made at Dublin Zoo and Fota Wildlife Park to further advance the high reputation enjoyed by both.

The excellent results at both locations could not have been achieved without our outstanding employees and volunteers. Their dedication and commitment is truly appreciated by Council, and acknowledged by the visitors whose feedback on the hospitality and assistance they receive is invariably positive.

Finally, I would like to thank my colleagues on the Zoological Society of Ireland Council and the Board of Governors of Fota Wildlife Park for their dedication and commitment to the success and sustainability of both locations, and for their support so generously given to me.

Tom Dunphy
President



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, 15th September 2016 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 2016
2. Receiving the Annual Report of Council
3. Receiving the Annual Report of the Honorary Treasurer and the Consolidated Audited Financial Statements of the Zoological Society of Ireland
4. Appointment of auditors
5. Declaration of Council President

Notice:

Under the Articles of Association of the Society, the following members are retiring from the Council at the forthcoming AGM: Martin O'Grady

John Sweeney
Company Secretary
Zoological Society of Ireland
Registered Office: Phoenix Park, Dublin 8



(Above) Leo Oosterweghel, Sabina Higgins, President Michael D. Higgins and Tom Dunphy
(Right) Young visitor at viewing window of Sea Lion Cove.



DUBLIN ZOO: DIRECTOR'S REPORT

Once more, Dublin Zoo reached a record number of visitors with 1,103,378 passing through the gates in 2015. Several other visitor records were set in 2015 with 14,870 people visiting on Easter Monday, 6 April, and 227,842 people visiting in August. The one millionth visitor arrived at 2.00 on 10 October; never before in the history of the Zoo has this happened so early in the year.

The big event of the year was the opening of the Sea Lion Cove by the President of Ireland, Michael D. Higgins, in June. The new saltwater habitat is inspired by the natural environment of the California sea lions and includes a state-of-the-art water filtration plant. The most spectacular features of the new habitat are the deep saltwater pool and the underwater viewing area. Every detail was considered carefully with the needs of the sea lions in mind. The pool can accommodate up to seven sea lions,



including a dominant male, females and pups.

The planning, design and construction of the Sea Lion Cove, on the bottom of a former lake, was an enormous and complex undertaking with significant engineering challenges. Construction commenced in September 2014. The pool was filled with 640,000 litres of water and turned to saltwater by adding 25,000 kg of salt. T.J. Connolly were the contractors. Donal Higgins was the Zoo engineer/architect. Zootech installed the water filtration system and provided training on management of water quality to the Zoo team. Ted Marianda, a specialist connected to Jones & Jones, designed the filtration system. The Humboldt penguin pool is also connected to the filtration system.

At the south end of the habitat is the Sea Lion Cove village with a fast-food outlet, picnic tables and the skull of a sperm whale set in a coastal landscape. A carved totem,





in the Zoo's possession since 1970, was erected in the village. The totem, which depicts a raven, was presented to Dublin Zoo by the Canadian delegate at the World's Council of Craftsmen Conference, which took place in Dublin in 1970. It was carved from western red cedar by Robert Davidson, a master carver of totem poles who is of Haida descent and whose work is sought by collectors internationally. The Haida people are indigenous to a region just north of Seattle, Washington State, USA. Jones & Jones, based in Seattle, are familiar with Davidson's



work. Four additional totems of variable sizes, carved by Irish artist Richie Clarke, have been placed in the Sea Lion Cove village. Three paintings, also in the Haida tradition, were placed on the village buildings.

While the Sea Lion Cove was being constructed, Dublin Zoo's three female sea lions were transferred to British Zoos. They were successfully returned to Dublin and were released into their new saltwater pool on 2 June. Nico, a male born in Blackpool in 2012, joined them. An off-limits pool of fresh water was provided to ensure that the transfer from a fresh to a saltwater environment could take place without complications. The sea lions settled in very well. They have different levels, deep and shallow, in which to swim. There are two islands with caves, which give them places to play, rest and get away from each other if they wish.

By the opening day on 9 June, the sea lions were well acclimatised and integrated. The event generated huge publicity in print, broadcast and online media. President Higgins commended the director and all of the staff: 'The new sea lions' home... is a testament to the creativity and vision of Leo and his extraordinary team.'



The ever-popular daily keeper talks resumed at the Sea Lion Cove with a new script and a new sound system. The stepped walkways around the pool allow a greater number of people than before to observe the presentation by the keepers.

Flamingo Lagoon was opened to the public on 5 April in time for Easter. All 86 Chilean Flamingo settled in well and much night activity has been observed. The flight aviary is constructed of pre-fabricated steel with large



(Above) Chilean flamingos
(Right) Young Red ruffed lemur

concrete foundations. The roof is an irregular hexagonal shape and has a total area of 1,200 square metres. The roof is very strong because, to comply with building regulations, it has a snow loading of 72 tonnes.

With the large flight aviary, there is no longer a need to pinion the flamingos. It is expected that there will be changes to the law governing the keeping of birds in the near future and pinioning will possibly be outlawed.

Three male red-ruffed lemurs were born in May. This species is one of the most endangered of all lemurs. Following their birth, they attracted a lot of media attention. Our two female Asian lions gave birth; two cubs, 1 male and 1 female are being raised by the mothers. A Sulawesi crested macaque was born in December.

In the African Plains, new arrivals included the birth of a female bongo. A 2-year-old female scimitar oryx was



transferred from Fota Wildlife Park. Three male painted dogs were imported from Ebeltoft Zoo in Denmark. Both female painted dogs gave birth; unfortunately, no pups survived, but this is not uncommon for first-time mothers and an important learning process they must go through. In the chimpanzee troop, Marlon, the 18-year-old male introduced in 2014, has taken the leadership role. Austin, a hybrid male, was successfully reintroduced. During the summer, eggs laid by the ostriches at the back of the African Savanna were disappearing during the night and parts of the egg shells were found over a wide area. After a night-vision camera was installed, it was ascertained that badgers were 'harvesting' the eggs.

Two male tapirs were exported to Napoli Zoo in Italy. In the South America House, the Goeldi monkey gave birth to a female infant in May. Three aging spider monkeys were transferred to the Five Sisters Zoo in Scotland; this zoo is a small, caring operation and has a suitable retirement plan for these monkeys.

The elephant calves, born in 2014, made very good progress. After careful consideration, training of the calves was commenced in 2015. The EHV or elephant herpes virus is a real threat to elephant calves. Observation is used to check for signs of stress or ill health, but additional information including temperature and data from saliva and blood analysis increases the chance of catching the fast-acting virus in time. Using established protected contact techniques, Dublin Zoo designed a training crèche so that the calves could be separated from their mothers for training. The mothers could see their calves at all times, and the calves had free access to return to their mothers. Only positive stimulation and

reinforcement was used. The approach proved to be very successful: the elephants remained relaxed, the calves showed clear signs that they enjoyed the training and reliable data was gathered. This approach will continue.

Dublin Zoo instigated a study to find out how far our elephant herd travelled in a day. From research, we know that wild Asian elephants travel an average of between 9 and 11 kilometres daily. Using the existing habitat cameras, it was possible to accurately measure the activities of our herd. The findings were that, on average, they travelled 9.35 kilometres daily. These findings show that the habitat design and management of our herd are allowing the elephants to exhibit natural behaviours.

Dublin Zoo notes that protected contact for elephants will become a legal requirement for zoos in the United States of America in 2017. Major Australian zoos have recently moved to protected contact. The Dublin Zoo model of protected contact has earned much respect over the years and Dublin Zoo is now regarded as a leader in the field. Zoo professionals from around the world visit us to familiarise themselves with what is considered world's best practice.

In preparation for the creation of the Orangutan Forest, Paul O'Donoghue, assistant to the director of Animals and Grounds, visited the National Zoological Park in Washington, D.C., to learn about their orangutan facility, which has been in operation for 20 years. Of particular note was the system that allows the orangutans to climb towers and travel for 100 metres along cables at a height of over 11 metres above the main visitor walkway.



The quality of the animal habitats in Dublin Zoo was recognised at national and international levels in 2015. At the opening of the Sea Lion Cove, President Michael D. Higgins said: 'As we know from the hugely popular television programme, *The Zoo*, (produced by my son John with Moondance productions), Dublin Zoo is managed by caring, qualified and accredited zoo professionals who devote their lives to the welfare of animals... When designing for animals, the Dublin Zoo team always carefully studies the needs of animals and the inspiration for a new habitat always comes from nature. The director and all the staff deserve huge credit for what they have achieved here and for their continuing ambitious vision for the Zoo to continue and enhance its role in valuing, protecting and preserving the diversity of many of the earth's species for future generations.'

In 2015, the World Zoo and Aquaria Association (WAZA) produced its animal welfare strategy: 'Caring for Wildlife'. Written by the best minds in the international zoo community, it provides guidance to the world's zoos on how to establish and maintain acceptable animal welfare standards. Chapter Four covers habitat design and Dublin Zoo's Gorilla Rainforest is one of two case studies. Subtitled 'Gorilla habitat design innovation', it states that it is 'unique in the way it matches respect of existing landscape and the behavioural history of western lowland gorillas, and successfully re-creates the character of their home place.' The inclusion of one of our habitats in this important document is a significant acknowledgement of the work of the Dublin Zoo team.



ANIMAL WELLNESS AND ETHICS

In February, Dublin Zoo noted the ruling by an Argentine court that an orangutan is a 'non-human person'. The ruling attracted worldwide attention. In July, a lengthy Irish Times article by Anthony King, titled 'Animal magnetism, the importance of personality', featured references to our elephants and quotes from keeper Brendan Walsh. The sub-headline in the article was 'Personality in animals is no longer seen as wishy-washy pseudo-science but rather an important aspect of animal welfare and conservation'. Brendan is quoted as saying, 'Anyone who thinks animals don't have personalities hasn't been around animals.'

In October, the public dissection in front of children of a 9-month-old lion at Odense Zoo in Denmark received international attention. The healthy lion had been euthanised earlier in the year because the zoo could not accommodate the animal. A representative of Odense Zoo was interviewed on the Pat Kenny Show on Newstalk. A statement was issued by Dublin Zoo as follows:

Dublin Zoo does not agree with the euthanasia of healthy animals. It is important to distinguish between euthanasia

to end suffering due to old age, disease or injury and the euthanasia of healthy animals because they are surplus or genetically over represented. In reference to dissecting an animal, a lot can be learnt when the dissection is done with respect and decorum.

Dublin Zoo has a strong ethical position when it comes to the animals in our care. We feel that non-human animals have rights: the right to live out their lives in full; the right to live that life without pain, suffering, degradation or humiliation; the right to a suitable habitat and much more.

Dublin Zoo takes seriously its role in fostering respect or, and sensitivity towards, animals amongst its visiting public. It is critically aware of how a purely scientific approach to managing animal populations in our care has the potential to undermine the social licence under which Dublin Zoo operates. Ethical issues such as this require an assertive response.

Entrance and Retail

Record numbers of visitors came through the gates of Dublin Zoo in 2015. Online ticketing rose by 12.6 per cent. Meridian Opos was introduced to facilitate buying tickets and annual passes; this system is a lot faster than the previous system. New credit card machines that connect to broadband were also introduced; these have cut credit card transactions from 12 seconds to four seconds.

The retail shop continued to perform very well with sales in 2015 higher than 2014 sales. The availability of Dublin Zoo-branded merchandise continues to grow. With the opening of new habitats at the Zoo, the Dublin Zoo merchandise range was extended to include images of the flamingos and sea lions on mugs, T-shirts, pencils, notebooks, magnets and key rings.

Catering

On 25 November, the catering contract between Dublin Zoo and BaxterStorey was renewed for another five years. During the year, two new catering facilities were developed. In response to customer research results, Nakuru fast-food outlet in the African Plains was converted to a cafe. BaxterStorey went into partnership with Costa Coffee to bring their branded coffee to Nakuru cafe. The Cove, a fast-food outlet with outdoor seating, was opened at the Sea Lion Cove in June to great success. On busy days during the summer, it was the top performing catering outlet in the Zoo. At the official opening day of the Sea Lion Cove, the catering team were involved in the canapé reception and met President Michael D. Higgins; for all of the team present, this was an extremely proud moment.

Tony Kearney, Financial Controller and Secretary to the Council, 2002 – 2015

Tony Kearney, Dublin Zoo's Financial Controller, resigned to take up a new position elsewhere in November 2015. With the Zoo's new habitats and improved visitor facilities, gate receipts increased as annual visitor numbers rose from 700,000 in 2002 to over a million in 2011. Generous sponsorships from external companies and organisations contributed to the development and maintenance of the Zoo. As the trusted advisor to the director and to the Zoological Society of Ireland council, Tony kept a tight control on the Zoo's finances. He introduced cost efficiency programmes, established procurement procedures to maximise savings in purchasing, streamlined human resources policies and tidied up outstanding legal matters. In 2008, as secretary to the council, he guided a restructure of the council with the adoption of revised articles of association.

When the national economy went into decline, Tony's systems and efficiencies were so well established that the Zoo remained strong. Since then, several world-class habitats, including the Gorilla Rainforest and the Sea Lion Cove, have been financed by gate receipts and external, private sponsorship. Dublin Zoo thanks Tony for his 13 years of work with us and wishes him every success for the future.



(Above) Tony Kearney, Financial Controller and Secretary to the Council, 2002 – 2015

MAINTENANCE AND DEVELOPMENT

The construction of the Sea Lion Cove dominated maintenance and development activities in 2015. Other major undertakings included the complete refurbishment of a Phoenix Park residence, close to the African Plains, which was transferred to Dublin Zoo. The residence, formerly known as 'Lake Cottage' and renamed 'Lake Lodge', dates from about 1770. Much of the original floor plan was respected as walls and chimneys were rebuilt and the slate roof was replaced. An unsightly extension was demolished and the surrounding landscape adjusted. Work was supervised by a conservation architect and completed to a high standard. A senior member of the Zoo team moved into the house, which is now a bright and spacious home of about 120 square metres. This will improve night security in this remote part of the Zoo. There are now three homes for resident staff members in Dublin Zoo. Lake Lodge was transferred by a transfer deed to Dublin Zoo by the Office of Public Works. During this process, irregularities in the original transfer of the African Plains were rectified.

The former Gorilla House has been converted into an animal holding house with an outdoor space. This fulfils an outstanding need for a holding house to quarantine large, strong animals such as the great apes. The new house is also useful for facilitating phased introductions of animals to an existing group. In other works, the entrance cottage, dating from 1833, was re-thatched to a high standard at a competitive price. Full restoration work on the cottage scheduled for 2015 was postponed due to high estimates, and part of the restoration budget remains unspent. At the Ibis Cliff Terrace, the timber decking was replaced with bitumen and new picnic tables have been added, greatly increasing picnic capacity.

Preparation commenced on the creation of Orangutan Forest, scheduled for opening in spring 2016. Mario Campos, a representative of Jones & Jones, visited Dublin Zoo to finalise the designs for the orangutan house; two visitor viewing areas; the positioning of the huge, artificial climbing trees; and the reshaping of the islands in the lake.

Health and Safety

During 2015, Dublin Zoo carried out comprehensive induction and specialist training, all in line with the Zoo's new Risk Assessment and Safe Operating Procedures. Specific detailed assessments have been carried out on the new Sea Lion Cove and the future Orangutan Forest habitat.



(Above) Lake Lodge

Horticulture

Project work dominated the horticulture year as work at the Flamingo Lagoon and the Sea Lion Cove was finished, and creation of the Orangutan Forest commenced. In the Flamingo Lagoon, the lake was dammed. Large trees behind the flamingos' main standing area were planted in urban soil. This round stone mix with about 20 per cent organic matter will resist compaction and damage to the air supply to tree roots caused by the flamingos' feet. Willow *Salix alba* 'Chermesina', which has an orange-hued bark and does well in wet soil, was planted at the lake edges. Bundles of birch twigs were tied together to form faggots and were placed along the nesting island edges to protect against erosion and to allow the plants in

between them to establish well. A builder's laser level was used to estimate the water line. The real challenge was getting the plants in position before the water returned. The lake is rain fed and drains the northern half of the Phoenix Park. It is controlled via sluice gates and is predictable except in times of drought or flood.

The Sea Lion Cove planting was in two phases. First, the islands and the stream side of the cove required bundles of birch faggots to stop erosion and much of the area was planted with *Darmera*, a large-leaved, strong-rooted, water-loving plant. Second, the main areas around the cove were planted with large potted *Gunnera* saved from the area the previous year and kept



in the Zoo nursery. Large root-balled conifers, including Podocarpus from Chile and several other conifers from the Northwest Pacific Coast, were also planted. These included the well-known and over-used Lawsons Cypress *Chamaecyparis x lawsoniana*. Unfortunately, there were two very dry months just after the main conifer planting and, despite regular watering, a few plants were lost. It was also necessary to hard prune other plants to balance roots and shoots. More planting was carried out late in the year and these will help to fill the new habitats and increase the variety of conifers there.

The meadow at Family Farm responded very well to the new management style of treating it as a herbaceous border of native plants. This resulted in a long summer of flowering interest and good insect and bird life, too; the hedges were found to have eight nests within them once the leaves had dropped.

In 2015, a full review of the genus *Libertia* was written by



(Above) *The Libertia x butleri*

Royal Horticultural Society (RHS) Registrar Julian Shaw and published in *The Plantsman in Britain*. The review was partly based on Dublin Zoo's collection of *Libertia*, which was built up over many years by Curator of Horticulture Stephen Butler. Stephen's interest in cultivating the genus *Libertia* in Dublin Zoo began in the 1980s when he noticed that the many free-ranging geese roaming the gardens did not eat these plants. As he gathered a variety of species of *Libertia* for comparison, he realised that the naming was very confused. Sourcing plants from different nurseries and using seeds from New Zealand and Chile, he gave Dublin Zoo the largest collection of *Libertia* in Europe. He supplied the RHS with dried herbarium specimens, descriptions and pictures. Botanists spent much time researching the convoluted history of the names. In the review, Shaw recognised that it would be useful to have a name for any hybrids of the Chilean *Libertia chilensis* and the New Zealand *Libertia ixioides*, and has given the name *Libertia x butleri* in recognition of Stephen's contribution to the study of the taxonomy of the various *Libertia* species and cultivars. One form for sale in nurseries is *L. x butleri* 'Amazing Grace'.

DISCOVERY AND LEARNING

During 2015, a total of 66,018 learners of all ages took part in Discovery and Learning programmes at Dublin Zoo. Of these, 18,902 engaged with formal teaching programmes. At the primary level, the education team greeted more than 25,000 schoolchildren on their annual end-of-year visit. Those who booked early went on either the Explore Africa tour or the Rainforest Discovery tour with teacher Jim McMonagle. The remainder received the 10-minute Wonderful Wildlife talk on the lawn. Volunteers were nearby with the biofact touch table and the biofact cart to further enrich the learning experience.

2015 marked the 21st year of the Primary Teachers Summer In-Service Course, which has been approved by the Department of Education and Skills. The course booking was set up online this year and was booked out in less than one minute. Five external experts joined the Zoo's teaching team in delivering the course. Jim McMonagle's outreach visits to primary schools took him to Counties Wicklow, Meath, Carlow and Monaghan as well as primary schools in Dublin. Some of these visits arose out of connections made during the primary teacher in-service course.

Intouch magazine invited the Discovery and Learning team to contribute a series of double-page articles on the delivery of primary-level Social, Environmental and Scientific Education (SESE) in Dublin Zoo. Intouch, published by the Irish National Teachers Organisation magazine, is delivered to 44,000 teachers and organisations throughout Ireland each month during the school year. The Dublin Zoo articles appeared in October and December.

At secondary level, demand for curricula-linked programmes grew. The most popular were Junior Certificate Ecology,

Zooardship, Transition Year Conservation and Leaving Certificate Ecology. Demand for non-exam secondary classes, Animal Adaptations and Environmental Awareness, also grew. Genetics, a classroom-based course delivered by Éanna Ní Lamhna, continues to be very popular with Leaving Certificate biology students.

A new collaborative workshop for secondary school students was introduced for Science Week in November 2015. Called 'Design Your Habitat', the workshop encouraged students to explore the thought processes that go into good habitat design. Following a detailed tour of the Kaziranga Forest Trail or the Gorilla Rainforest, the students worked in groups to design a new habitat for the orangutans. The workshop promoted science, design, problem solving, team work, and thinking about animal behaviour and biology. Due to positive feedback, it is planned to include this programme in the Zoo's 2016 schedule.

The number of third-level diploma students attending FETAC-approved courses in animal behaviour and animal management increased by 86 per cent.



(Above) Aileen Tennant, Discovery and Learning Manager, appointed June 2015

The summer camps were extremely popular and, due to demand, were increased in number and capacity to five week-long camps with 75 children attending each of them. Using the animals as inspiration, the 6 to 12-year-olds, grouped by age, were encouraged to use their creativity and imagination. External groups assisted the contract teachers and the Dublin Zoo team; these included Concern Worldwide, National Parks and Wildlife Services, Gymboree and SAOR Drama School.

Discovery and Learning team's community-based after-school programmes at the Zoo have been receiving very good feedback. The transformative effect on the students' outlook on the environment was especially noted. Learners on these small, specialised courses come from a variety of backgrounds, including some from the local area who may not have an opportunity to visit Dublin Zoo otherwise and teenagers undergoing medical treatment.



(Above) The Discovery and Learning Team

In 2015, 28 volunteers graduated after completing the six-week course. The total number of volunteers on the books peaked at 98. In 2015, the number of hours of training, tours and support delivered by volunteers increased by 30 per cent to 9,686. Two new workshops for children delivered by volunteers were created in 2015: Wild Behaviours, which focuses on enrichment activities for the animals, and Nature in Your Garden, which teaches young people ways to attract wildlife and promote biodiversity at home. The 1.5 hour workshops were held on one Saturday per month from February to November. After being promoted on Facebook and Twitter, demand rose considerably.

A monthly bird-watching workshop for adults and children was led by volunteer Paul Reddington on Sunday mornings. The Zoo is a biodiversity hotspot with 56 species of native and migratory birds; a comprehensive list of wild birds at Dublin Zoo was compiled by Niall Hatch of Birdwatch Ireland.

At the opening of the Sea Lion Cove, President Michael D. Higgins praised the role of education in Dublin Zoo: 'We should acknowledge the director and the staff's clear vision that education in its best sense is about developing an appreciation of the wonders of the world, nature and wildlife, and the development and retention of a sense of wanting to contribute to the project of conservation. It's about informing people's beliefs and attitudes so that they want to live sustainably.'

Retirement of Úna Smyth, Education Officer

After 21 years with Dublin Zoo's education team, Úna Smyth retired from the position of Education Officer in July 2015. Úna was appointed as assistant to Education Officer Michelle Griffin in 1994. The Zoo's first education officer had been appointed in 1986, so formal education in Dublin Zoo was still at an early stage of development.

A major challenge was to provide an educational focus for the busloads of primary schoolchildren who visited between April and June each year. Michelle and Úna created educational packages with worksheets and guides, and sent them to schools prior to the visit. They also introduced the accredited in-service training day for primary school teachers. For secondary level, Úna promoted educational opportunities in the Zoo that linked into the curricula. When the Department of Education and Science endorsed these educational programmes in 2008, demand for secondary courses increased. The Minister of Education, Mary Hanafin, got in touch with Úna personally to congratulate her on the quality of the programmes being developed at Dublin Zoo.



Úna succeeded Michelle in 1999. At first, Úna was assisted by a core group of volunteers and, during busy periods, contract staff. From 2006, additional permanent staff members were employed and a coordinator for the volunteers was appointed. Steadily, during Úna's 16 years as Education Officer, the number of courses on offer at every level expanded. Elements of fun and exploration ran through many of the programmes, especially the school holiday courses. Yet underpinning every programme were authoritative messages concerning animal biology, behaviour, ecology and conservation. And at every stage, participants were encouraged to consider all animals with sensitivity and respect.

At a personal level, Úna brought to the Zoo her lifelong interest in Our Lady's Hospital, Crumlin, and her voluntary work with children from the local area. Quietly and with the support of the entire Zoo team, she facilitated family visits to the Zoo so that the special needs of very sick children were catered for and special moments were organised.

Dublin Zoo thanks Úna for her tremendous contribution to the work of the Zoo and wishes her every joy in her retirement.

Family Farm

2015 marked the fifth year of Dublin Zoo's successful partnership with the Agricultural Awareness Trust, 'Agri Aware', at Family Farm. Opened in May 2010, Family Farm is a purpose-built interpretative acre that represents modern Irish farm life and was designed by Agri Aware, the Dublin Zoo team and Jones & Jones. Here, visitors may get close to the cows, sheep, pigs, goats, ducks, rabbits and chickens. And in 2015, Agri Aware engaged thousands of visitors to Family Farm with demonstrations, talks and workshops about Irish agriculture, farming and food.

On 22 June, European Commissioner for Agriculture and Rural Development Phil Hogan launched Agri Aware's Common Agricultural Policy (CAP) communication campaign at Family Farm. This was the third consecutive year that Agri Aware was successful in their bid to deliver their campaign in Ireland. The bidding process was highly competitive with organisations throughout Europe competing for funds. The innovative campaign engaged urban and rural consumers on the delivery of a secure supply of quality, safe and traceable food at an affordable price while caring for the environment.

As part of Agri Aware's 'Meet the Farmer in the City' initiative, on weekdays during the summer months and on weekends in September, two young farmers gave guided tours of Family Farm and demonstrated the art of butter churning, pond dipping and other farming activities. On summer weekends, farmers from beef, sheep, tillage and other agri-sectors interacted with visitors. During Heritage Week, 22 – 30 August, craftsmen and women

gave demonstrations of blacksmithing, basket weaving, beekeeping, hurley making, sheep-shearing, and wool spinning and weaving. Experts delivered talks on antique farm machinery and old-fashioned threshing practices. For the Harvest Festival on 27 September, Agri Aware donated a huge array of vegetables, and at Halloween, there were festive activities. In line with each event, a farm trail was laid out and volunteers were on hand with a biofacts table. In addition, Agri Aware's Family Farm teacher, Dr. Elizabeth Finnegan, delivered educational programmes for pre-school and primary school students throughout the year.

Animals born on the Family Farm 2015 included a Friesian calf, Suffolk-Texel lambs and 27 Tamworth Pigs of which 23 survived. Tamworth pigs are one of the oldest breed of pig and are becoming increasingly rare.



(Above) Young farmers at Family Farm

MARKETING

The opening of Sea Lion Cove generated huge media publicity and was featured on RTÉ, TV3 and UTV and on national and local radio stations. There was also huge exposure in the national newspapers including the front page of *The Irish Times*. Other animals that featured prominently in publicity this year included the lemurs, the bongo calf and the Goeldi's monkey.

In 2015, Dublin Zoo's small marketing team won several national awards against formidable competitors. In May 2015, they were awarded the highly prestigious All Ireland Marketing Award 2015 by the Marketing Institute of Ireland for the best public relations campaign, Dublin: Where Elephants Roam. The shortlist included Diageo, Bewley's, Failte Ireland and Mars Ireland. Dublin Zoo also entered the Public Relations Consultants Association of Ireland awards and received a highly commended certification in the category, 'Best Consumer Public Relations Campaign'. In May, the marketing team achieved three awards at the Sockies, the biggest awards for social media in Ireland. The awards were: 'Use of Facebook by a Non-Profit Organisation'; 'Best Integrated Social Media Campaign'; and the top award, the Grand Prix.

In June 2015, Colette Kinsella, radio producer and resident of the Zoo, won a silver for 'Best Sound' at the 2015 New York Festivals World's Best Radio Programs for her four-part radio series 'Zoo Diaries'. The New York Philharmonic won gold.

A survey published in September by Customer Experience Insights (CEXi) rated Dublin Zoo as number three for best customer experience after the credit unions and the National Concert Hall, and ahead of such well-known brands as Aldi, An Post and Pennys.

Dublin Zoo's digital presence continues to expand. In April, Facebook statistics were published and identified Dublin Zoo as the third-biggest place page in Ireland, with Tourism Ireland and the official Ireland page placing ahead of it. In 2011, Dublin Zoo had around 11,000 followers on Facebook; at the end of 2015, it had 229,313. Periodic samples of comments on Dublin Zoo's Facebook page indicated an overwhelmingly positive experience by visitors.

In November, singer Cheryl Fernandez Versini tweeted a picture of a tiger at Dublin Zoo to her 5,770,000 followers.



It was accompanied with the caption 'Smile, it's Friday'. On 5 November, Dublin Zoo was trending on Twitter when it was announced that a Rothschild giraffe was born. The birth of the male calf also triggered a

huge amount of online coverage. It is interesting to note that a number of years ago, a press statement about a notable birth accompanied by excellent pictures would result in a communication of 80 per cent printed media and 20 per cent online media. In 2015, it was the reverse: 20 per cent was the printed media and 80 per cent was online.



The sixth series of *The Zoo* television programme by Moondance Productions commenced on April 9. It generated huge

(Above) Suzanne O'Donovan, Karen Nelson and Emma Kiernan at the All Ireland Marketing Awards

(Above) Angela Conroy at the Social Media Awards

publicity focusing on the animals and the keepers featured in the series. Operations Manager Gerry Creighton was on the Today Show on RTÉ to talk about births at Dublin Zoo as well as The Zoo programme. Dublin Zoo ran a competition with Today FM (Alison Curtis Show) and the Discovery Channel social media to tie in with their broadcasting of The Zoo. On average, the programme attracted 260,000 viewers a night, a share of 22 per cent. In September, The Zoo was nominated for an IFTA in category 'Factual'.

Other media highlights included a piece in March by Ryan Tubridy on RTÉ Radio One about the passing of 16-year-old Robin the giraffe, who had fathered 12 calves. In July, keeper Brendan Walsh was quoted in an Irish Times article by Anthony King titled 'Animal magnetism: the importance of personality'. In September, Lee Byrne from the animal care team and the California sea lions appeared on the new UTV indent segments between TV programmes. In November, Dublin Zoo featured prominently in the Egyptian newspaper Al-Ahram, the largest newspaper in the Arab world with a circulation of over 1,000,000 copies daily.

Promotions in 2015 included a half-price family ticket during February and March with An Post; it was very successful with 4,524 redemptions at this traditionally quiet time of the year. In May, Kellogg's Coco Pops, sponsors of South America House, had a very successful sampling day, and free cereal was given to all visitors upon leaving. Kellogg's also held a very successful 'Monkey Moments' weekend during the summer. Radio station 98FM broadcast from a unit in front of the Zoo on 25 July and promoted the new Sea Lion Cove. Two-for-one promotions in late autumn and early winter included those with the Star, the Sunday World, the Irish Independent and The Herald newspapers. The two-for-one promotion with The Herald during the weekend 3 – 4 October generated a footfall of 20,000. The weekend coincided with World Animal Day, celebrated annually on the feast day of St Francis of Assisi, patron saint of animals and the environment. Dublin Zoo also ran its first ever Black Friday promotion in November with a half-price ticket offer.



(Above) Irish Times front page coverage
(Right) Promotion with An Post



The Natural Confectionery Company, sponsors of The Kaziranga Forest Trail, launched a new range of sweets, 'Dublin Zoo Friends', on 20 May. The bags of jellies include animals found in Dublin Zoo and the Dublin Zoo logo is displayed. To promote the jellies, which were only available during summer, the Natural Confectionery Company produced a series of four television advertisements in cooperation with Moondance Productions. Dublin Zoo featured in the advertisements, and the elephant calves running, playing and swimming were the stars. Visitors were

encouraged to take 'elfies', photos of themselves with the elephants in the background. Submitted elfies were used for the final advertisement in the series, which was aired in August. The advertisements ran on all television channels during the summer and were worth around €200,000 to the Zoo.

The Zoo's marketing team continues to be supported by PSG Communications.



Events

The success of the Dublin Zoo events team continued in 2015, having organised more than 180 events for external groups and independent visitors as well as internal events, including the opening of the Sea Lion Cove. Many of the bookings arose from word-of-mouth referrals from people who attended parties and other events in the Zoo previously.

The events team was created in 2009 with the appointment of Aoife Keegan as Senior Events Executive. For many years prior to that, there had been no formal Dublin Zoo offering available for external functions. With the support of the Zoo team, Aoife offered packages for birthday parties, which included a tour, a keeper talk, catering and a party bag for each small guest. In 2013, Camp Kaziranga and Camp Congo were made available for birthday parties. In 2014, a part-time party host facilitator and events assistant was appointed. In 2015, 128 birthday parties with a total of 1,655 children in attendance were organised by the events team. Every available slot sold out an average of three weeks in advance.

Five weddings were held in Dublin Zoo in 2015. This brings to 68 the total number of weddings since 2009 when the license was first granted by the Health Service Executive. Dublin Zoo is listed on wedding-related websites but does not advertise for weddings otherwise. Weddings are hosted in Haughton House, which has a maximum capacity of 80 guests. Most couples who choose to marry here have a happy association with Dublin Zoo.

Four public, after-hours barbecues were held in 2015. The events catered for 200 people, all over 18 years old. They began with a keeper tour and finished at the Meerkat

Restaurant with barbecued food, music and a bar. The first of these events was held in 2013; in 2015, three were organised during the summer and an additional one put on in September due to demand.

The events team organised 43 other external events in 2015, including 10 conferences, two private barbecues held after hours, four Christmas lunches, five large groups with entry only and four family lunches. The team organised 22 corporate family days; these increasingly popular days give the group the use of Haughton House, catering, activities for the children and a keeper tour.

Events for independent visitors included Valentine's Day weekend, which sold out for the first time. One hundred couples per day for two days attended a romantic early morning tour and breakfast; excellent feedback was received. In March, activities for families on St Patrick's Day included maypole ribbon dancing, face painting, arts and crafts and magical storytelling with the leprechaun king. The annual Santa's Grotto opened in November with a weekend for staff, media and special invited guests from the children's hospitals. Other events during the year included the Easter Egg-Stravaganza, Native Species weekend, the elephant calves' first birthday and the Halloween Spooktacular.

CONSERVATION AND RESEARCH

In 2015, Dublin Zoo continued to support in-situ wildlife conservation and research projects in a practical way. This year, Dublin Zoo donated €5,000 to the Lion Tamarins of Brazil Fund. In acknowledging Dublin Zoo's continued donations to this fund, Bengt Holst, co-custodian of the fund, said that the programme was ahead of schedule: 'The population has now passed 3,000 individuals, which is far more than the goal for 2025. Although the future of this species is by far not secure yet, it's a good step forward, thanks to all the conservation activities carried out so far and not least thanks to all the donors that have paid the costs.'

The Bongo Surveillance Project monitors the remaining bongo groups in the forests of the Aberdares, Mount Kenya, Eburu and southwest Mau. It is estimated that there are fewer than 100 bongos remaining in the wild. Dublin Zoo is one of several zoos supporting this work and, in 2015, donated €5,000. The Bongo Surveillance Project records bongo data with GPS, camera traps and handheld cameras. It also monitors threats including poachers' camps and illegal logging. It continues its outreach education programme through the 'Bongo Wildlife Clubs' located at schools near the last groups of bongo. There are now 20 schools in the programme and the total outreach through the schools and communities is over 20,000. Activities with local communities involved tree planting and tree nurseries along with the introduction of solar lights and more fuel-efficient cookers as well as income-generating projects such as the development of bee hives and the addition of dairy alpine goats.

After chairing the national Conservation and Research Committee with vision, kindness, drive and diplomacy, Paul Burke Kennedy has stepped down. Professor Martin O'Grady

is now chairing the committee, which draws representatives from Belfast Zoo, Dublin Zoo and Fota Wildlife Park.

Dublin Zoo donated €5,000 to Save the Rhino International, Lowveld Rhino Trust's work in Zimbabwe. Additional funds were raised during the rhino weekend in September at the Zoo team's end-of-season barbecue, and by Mark Bowes, Retail Services and Visitors' manager, who ran the Dublin Marathon in aid of the rhino. The amount raised was matched by Dublin Zoo to a total of €6,248.

In 2015, Dublin Zoo teamed up with Amur Leopard and Tiger Alliance to support a project on mitigating human-tiger conflict in the Russian Far East. Human-tiger conflict is a major threat to the Amur tiger, which is listed as endangered. This project is coordinated by the Wildlife Conservation Society – Russian Programme and has two main parts. The first is to resolve human-tiger conflict when it arises; the majority of tiger deaths in the Russian Far East are caused by people, so it is important to reduce the number of tigers hurt by people in order for their populations to recover. The second is to monitor the progress of orphaned cubs and rehabilitated tigers released back into the wild; these tigers are fitted with GPS collars so their movements can be checked. Camera traps in the area also help monitor them.

International conservation projects supported by Dublin Zoo in 2015

- Mbeli Bai Study (Western lowland gorillas) – Wildlife Conservation Society.
- Tacugama Chimpanzee Sanctuary.
- Camp JL (Borneo) - Orangutan Foundation, UK.
- WAPCA – West African Primate Conservation Action (includes conservation of white-naped mangabeys).

- EARS – Education and Awareness Raising Strategy to save the Sulawesi crested macaques through Selamatkan Yaki.
- Golden Lion Tamarin Association.
- GERP (Groupe d’Etude et de Recherche sur les Primates de Madagascar) Red Ruffed Lemur Project – ‘Assessing the feasibility of a reintroduction programme of red ruffed lemur in Farankaraina, Northeastern Madagascar’.
- Conservation planning for Asian elephants in Assam, India – Asian Nature Conservation Foundation.
- Lowveld Rhino Trust – Save the Rhino.
- Mountain Bongo Surveillance Project.
- Rothschild’s Giraffe Project - Giraffe Conservation Foundation.
- Okapi Conservation Project.
- Scimitar-horned oryx – reintroduction programme.
- Snow Leopard Trust.
- Mitigating human-tiger conflict in the Russian Far East – Amur Leopard and Tiger Alliance.
- Painted Dog Conservation.
- Red Panda Forest Guardian Programme – Red Panda Network.
- Sphenisco (Humboldt penguins).
- Hornbill Research Foundation (includes conservation of great hornbills).
- Frozen Ark Project.
- Conservation Breeding Specialist Group.

Irish conservation projects supported by Dublin Zoo in 2015

- Irish Peatlands Conservation Council .
- Owl monitoring and research project – BirdWatch Ireland.

- Northern lapwing research - Irish Grey Partridge Conservation Trust.
- Little Tern conservation at Baltray – Louth Nature Trust.
- National Reptile Survey – Irish Wildlife Trust .
- Nest record scheme - Monitoring nest boxes for wild birds within Dublin Zoo.
- Monitoring moths within Dublin Zoo using a light trap - Rothamsted Research.
- Native Species Weekend.

Research

Dublin Zoo focuses on research which has a direct benefit to the animals in the Zoo, to the species and its conservation in general, or to the operations of Dublin Zoo. Research is conducted in various ways, from Dublin Zoo team studies as well as Zoo volunteer studies to third-level student projects and multi-zoo studies. Dublin Zoo is also engaged in horticultural research through its own horticulture team.

Animal research by the Zoo team

The animal care team is ideally placed to conduct research projects as it understands the needs of animals in its care. In 2015, the following was researched by the Dublin Zoo team:

- Brendan Walsh, keeper, continued collecting data on the elephants’ sleep patterns using infrared recordings taken at night.
- Louise McDermott, keeper, and Melissa Cameroon, volunteer, are analysing photographs of flamingo feet taken in Dublin Zoo since 2008 to determine the factors that influence their condition.
- Sandra Molloy, Registrar/Research and Conservation Coordinator, continued to collect data on the causes of mortality in the Moluccan cockatoo European

Endangered species Programme (EEP).

Horticulture research by the Zoo team

- Dublin Zoo is the collection holder for the genus *Libertia* for Ireland and Britain. Curator of Horticulture Stephen Butler is working with the Royal Horticultural Society in England to investigate naming and identification issues with this genus.
- The horticulture team continued their investigations into maintaining mud-free grass areas in some of the animal habitats. Regular use of certain areas causes the ground to become poached, meaning water cannot drain through, and this results in very wet, muddy areas.
- The horticulture team continue to enter information on to zooplants.net, the EAZA web database on plants used in zoo habitats, with special reference to edible, non-edible, unpalatable, and poisonous plant species.

Native species research

- Dublin Zoo continued operating the Rothamsted Light trap, which collects data on moths present in the vicinity of the trap.
- Sandra Molloy, Registrar/Research and Conservation Coordinator, collected data on nesting birds from the bird boxes around the Zoo and submitted this information to the British Trust for Ornithology.

Student research

- Elephant locomotion study in Dublin Zoo (MSc) – University College Dublin.
- Environmental DNA: a comparison of extraction methods using novel sources of genetic information (MSc) – University College Dublin.

- Gorilla and red-capped mangabey interactions during outside feeds (MSc) – Queens University, Belfast.

Multi-zoo research

Many research projects require data collection from more than one zoo. Where possible, Dublin Zoo is happy to assist especially if the research projects are endorsed by an EEP (European Endangered species Programmes) or ESB (European studbooks) coordinator. In 2015, Dublin Zoo contributed to the following:

- Flamingo social network analysis (PhD) – University of Exeter, U.K. This research is assisted by a Dublin Zoo volunteer who photographs the flamingos. The photos are then sent on to the PhD candidate.
- Epidemiology and molecular biology of Elephant Endotheliotropic Herpesvirus 1 (EEHV1) in the Asian elephant (PhD) – University of Nottingham, UK and endorsed by the British and Irish Association of Zoos and Aquariums (BIAZA).
- An investigation into social relationships and social structures in European zoo elephant herds (PhD) – Nottingham Trent University.
- Measuring genetic diversity within captive breeding populations of Turaco spp (Musophagidae) as a tool for informing their future conservation management (PhD) – Oxford Brookes University, UK.
- Getting to the heart of the matter: an investigation into zoo great ape mortality and cardiovascular disease (PhD) – University of Nottingham.
- Genetic screening within the LIFE+ Biodiversity Project 'Reason for hope – reintroduction of the northern bald ibis in Europe' – University Trier, Germany.
- Common causes of mortality in the Asian lion EEP

(MSc)– Royal Veterinary College, UK.

- Elephant behavioural differences with related and non-related groups (Vet undergraduate) – University of Nottingham.
- Callitrichid TAG (Taxon Advisory Group) Wasting marmoset syndrome study – this research was organised by the Callitrichid TAG.
- Primate Diabetes Mellitus in European Collections – this research was supported by the Old World Monkey and Callitrichid TAGs.

In addition to the above, Dublin Zoo regularly contributes data to the European Group on Zoo Animal Contraception to help create best practices when using contraception.

Conferences, publications and presentations

February

Operations Manager Gerry Creighton took part in the Elephant Care Workshop at the Phoenix Zoo, Arizona. Such workshops drive the change in how American zoos care for elephants. Alan Roocroft and Dr David Fagan of Coyler Institute are involved in this workshop.

Thomas Breuer of the Mbeli Bai Study in the Congo gave a presentation to the Dublin Zoo team regarding the study's long-term research on western lowland gorillas and on their conservation and outreach work.

Keepers Rose Capitano and Daniel Dunne gave a presentation on chimpanzee enrichment to the Dublin Zoo team.

March

Pamela O'Brien, keeper, attended the Association of British and Irish Wild Animal Keepers (ABWAK) conference and presented a poster on the behaviour and diet of great hornbills during the breeding season in Dublin Zoo.

Brendan Walsh, keeper, gave a presentation in Trinity College Dublin titled '*Elephant sleep patterns in Dublin Zoo*'.

May

Curator of Horticulture Stephen Butler attended the European Association of Zoos and Aquaria (EAZA) Zoo Horticulture Conference in Nuremberg.

July

Dublin Zoo hosted the 17th Annual BIAZA Research Conference in Haughton House. Eighty delegates from British and Irish zoos attended as well as some from universities. Delegates presented 49 papers over the two days. Among the presenters were three Dublin Zoo team members: Brendan Walsh, keeper, who presented on his research on elephant sleep patterns in Dublin Zoo; Louise McDermott, keeper, who gave a presentation on her research on flamingo breeding ecology in Dublin Zoo; and Operations Manager Gerry Creighton, who gave an overview of Dublin Zoo's Asian elephant programme.

At the Conservation and Research Committee meeting in Dublin Zoo in July, four presentations were delivered:

Rosa Capitano, keeper, spoke about the enrichment in chimpanzee habitat that allowed a chimpanzee leadership

change to take place without conflict; Brendan Walsh, keeper, presented the findings of his sleep study of Asian elephants; Curator of Horticulture Stephen Butler presented his work on the genus *Libertia*; and Operations Manager Gerry Creighton spoke about the birth of three elephant calves in 2014 and the progress of the protected contact programme.

August

Andrea Dempsey of West African Primate Conservation Action (WAPCA) delivered a talk to the Dublin Zoo team about a project in Ghana that Dublin Zoo has been supporting for 15 years. The conservation of mangabeys is one of WAPCA's spearpoints.

September

Paul O'Donoghue, *assistant* to the Director of Animals and Grounds; Sandra Molloy, Registrar/Conservation and Research coordinator; and Susan O'Brien, keeper, attended the annual EAZA conference in Wroclaw in Poland. Sandra, who is also vice-chair of the Parrot Taxon Advisory Group (TAG), gave two presentations at the Parrot TAG meeting - one on Amazon parrots and the other on the functioning of parrot breeding programmes in EAZA.

Keeper Pamela O'Brien attended a two-day workshop on Callitrichid husbandry in London Zoo. A report was produced by Pamela on this workshop.

Keeper Brendan Walsh attended the International Congress of Zookeepers (ICZ) conference in Leipzig and gave a presentation titled '*Elephant sleep study at Dublin Zoo*'.

October

In October, Alison Brady of University College Dublin presented the findings of her Master's research on elephant locomotion in Dublin Zoo to the Dublin Zoo team.

November

Aileen Tennant, manager of Learning and Discovery, attended the BIAZA Education and Presenters Conference in Plymouth with the theme 'It's good to talk!'

Presentations

Collins, C. K., and Marples, N. (2015) 'Zoo playgrounds: a source of enrichment or stress for a group of nearby cockatoos? A case study'. *Journal of Applied Animal Welfare Science*, 1-13.

Molloy, S (2015) **Citron-crested cockatoo (*Cacatua sulphurea citrinocristata*) - EEP Annual Report 2014.** Available on www.eaza.net

Molloy, S (2015) **Moluccan cockatoo (*Cacatua moluccensis*) - EEP Annual Report 2014.** Available on www.eaza.net

O'Brien, S. (2015) **Goeldi's monkey (*Callimico goeldii*) - EEP Annual Report 2014.** Available on www.eaza.net

The *Plantsman*, New Series Volume 14, Part 2, June 2015, published by The Royal Horticultural Society, included a review of the genus *Libertia* mentioning Dublin Zoo as the source of much of the material for the review.

Visits and Visitors

Aart Walen, an expert on exhibiting dinosaurs, visited Dublin Zoo.

Dick de Vos, alderman for the 'Party for the Animals', in the city of Leiden, the Netherlands, visited Dublin Zoo. This political party stands for respectful treatment of animals and animal welfare; they declare that animal interest should no longer be subordinated to economic interest.

In September, the entire management team of Twycross Zoo in Leicestershire, Britain, visited Dublin Zoo for two days to learn about Dublin Zoo's design philosophy, its business model and day-to-day management. The Twycross team were given use of Haughton House and met many of the Dublin Zoo team.

As preparations for the Orangutan Forest commenced, Paul O'Donoghue visited the National Zoo in Washington, D.C., to study the artificial trees and connecting cables to allow orangutans to cross over visitor paths. This arrangement has been operational for 20 years and there have not been any issues of concern. The director visited Ouwehands Dierenpark in Rhenen to view the artificial trees for orangutans and the built-in lift that deposits food on small platforms six to seven metres above the ground. He also visited Pairi Daiza Zoo in Belgium. This private zoo is also working on a new orangutan habitat and the plans were compared.

At Ouwehands Dierenpark in Rhenen, the director met 'Bamboo Bill' and his band of zoologists, palaeontologists and entomologists. This zoo uses a team of actors to

connect and communicate with children. The results are exceptional and Mr Bill has a high public profile.

Dennis Kelly, director of the National Zoo in Washington, D.C., visited Dublin Zoo to learn about protected contact of Asian elephants at the Kaziranga Forest Trail. In June, the director of Cincinnati Zoo, Thane Maynard, paid a visit for the same reason. He wrote to James Creighton, keeper, saying, 'Best elephant program I've seen.'

In November, two members of the elephant care team of Emmen Zoo in the Netherlands spent two days working with the Dublin Zoo team learning about protected contact.

In November, Aileen Tennant, manager of Discovery and Learning, visited the Eden Project and met with the programme manager to learn about Eden's education programme. Storytelling and play-based learning feature in many of their programmes and a purpose-built education centre helps Eden to deliver innovative learning experiences.



CENSUS OF ANIMALS IN DUBLIN ZOO DURING 2015

Summary of Census of Animals in Dublin Zoo on 1st January 2016

Taxon	Total Species	Total Specimens
Mammals	41	224
Birds	21	196
Reptiles	21	74
Total vertebrates	83	494
Invertebrates	7	69*

*Approximate numbers

Summary of Births and Hatchings of Animals in Dublin Zoo during 2015

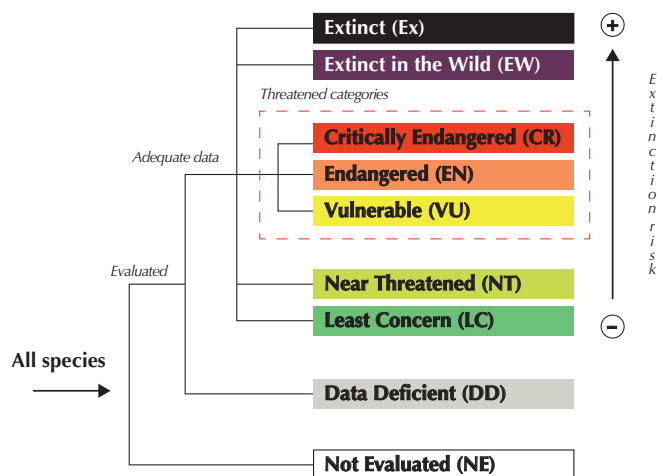
Taxon	Total Species	Total Specimens
Mammals	11	55
Birds	6	13
Reptiles	1	10
Total vertebrates	18	78
Invertebrates	6	9728

Summary of European Endangered species Programmes & European Studbooks which Dublin Zoo participated in throughout 2015

Number of European Endangered species Programmes (EEP)	31
Number of European studbooks (ESB)	10

Summary of Animal Species on the IUCN Red List of Threatened Species in Dublin Zoo during 2015

IUCN status	Number of species/ subspecies
Extinct in the wild – EW	1
Critically endangered – CR	8
Endangered – EN	17
Vulnerable – VU	8
Near threatened – NT	7
Least Concern - LC	30
Data deficient - DD	1
Not Evaluated - NE	13



Source: IUCN 2015. IUCN Red List of Threatened Species. Version 2015.4

Available at: <http://www.iucnredlist.org>

Downloaded on 14/06/2016.

Key to Census Tables Opposite



Part of a European Endangered Species Programme (EEP)

ESB



Recorded in a European studbook













- Column 1:** The number of animals in the collection at 1st January 2015.
- Column 2:** The number of animals received in 2015 through donation, loan or exchange.
- Column 3:** The number of animals born or hatched during 2015.
- Column 4:** The number of animals dying within 30 days of birth or hatching, in 2015.
- Column 5:** The number of animals dying having survived more than 30 days, in 2015.
- Column 6:** The number of animals leaving the collection through presentation, exchange, deposit, theft etc. during 2015.
- Column 7:** The number of animals in the collection at 1st January 2016.

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.

	CITES	IUCN Status	SPECIES		Total at 01.01.15	Arrivals	Births	Dead within 30 Days	Dead	Departed	Total at 01.01.16
			VERTEBRATES	VERTEBRATA							
			CLASS:MAMMALS	MAMMALIA							
			BATS	CHIROPTERA							
	II/A	CR	Rodrigues flying fox	<i>Pteropus rodricensis</i>	1.12.0				0.1.0		1.11.0
			PRIMATES	PRIMATES							
ESB	I/A	EN	Ring-tailed lemur	<i>Lemur catta</i>	5.3.0						5.3.0
	I/A	CR	Red ruffed lemur	<i>Varecia rubra</i>	2.2.0		2.1.0				4.3.0
	I/A	VU	Goeldi's monkey	<i>Callimico goeldii</i>	1.2.0		1.1.0				2.3.0
	II/B	LC	Eastern pygmy marmosets	<i>Callithrix pygmaea niveiventris</i>	3.2.1				1.1.1		2.1.0
	I/A	EN	Golden lion tamarin	<i>Leontopithecus rosalia</i>	1.1.0						1.1.0
	II/B		Spider monkey	<i>Ateles sp.</i>	1.2.0					1.2.0	0.0.0
	II/B	LC	Bolivian squirrel monkey	<i>Saimiri boliviensis boliviensis</i>	7.0.0						7.0.0
	II/B	LC	White-faced saki	<i>Pithecia pithecia</i>	3.1.0						3.1.0
	II/B	EN	White-naped mangabey	<i>Cercocebus atys lunulatus</i>	4.4.0		3.0.1	2.0.1			5.4.0
ESB	II/B	VU	Red-capped mangabey	<i>Cercocebus torquatus</i>	4.0.0						4.0.0
	II/B	CR	Sulawesi crested macaque	<i>Macaca nigra</i>	9.8.0		1.0.3				10.8.3
	I/A	EN	Siamang	<i>Symphalangus syndactylus</i>	1.1.0						1.1.0
	I/A	CR	Western lowland gorilla	<i>Gorilla gorilla gorilla</i>	2.4.0						2.4.0
ESB	I/A	EN	Chimpanzee	<i>Pan troglodytes</i>	2.1.0						2.1.0
	I/A	EN	Western chimpanzee	<i>Pan troglodytes verus</i>	1.3.0						1.3.0
	I/A	EN	Bornean orangutan	<i>Pongo pygmaeus pygmaeus</i>	1.3.0						1.3.0
			XENARTHANS	XENARTHRA							
ESB	NL	LC	Linne's two-toed sloth	<i>Choloepus didactylus</i>	1.1.0						1.1.0
			INSECTIVORES	INSECTIVORA							
			CARNIVORES	CARNIVORA							
	II/A	LC	Grey wolf	<i>Canis lupus</i>	3.2.0				0.1.0		3.1.0
	NL	EN	Painted dogs	<i>Lycaon pictus</i>	0.2.0	3.0.0	5.0.0	5.0.0			3.2.0
	I/A	EN	Red panda	<i>Ailurus fulgens fulgens</i>	2.1.0	0.1.0				1.0.0	1.2.0
	NL	LC	Slender-tailed meerkat	<i>Suricata suricatta</i>	11.6.0						11.6.0
	I/A	EN	Asiatic lion	<i>Panthera leo persica</i>	2.3.0		2.4.0	1.2.0	1.0.0		2.5.0

	CITES	IUCN Status	SPECIES		Total at 01.01.15	Arrivals	Births	Dead within 30 Days	Dead	Departed	Total at 01.01.16
	I/A	EN	Amur tiger	<i>Panthera tigris altaica</i>	1.2.0						1.2.0
	I/A	CR	Sumatran tiger	<i>Panthera tigris sumatrae</i>	1.1.0						1.1.0
	I/A	EN	Snow leopard	<i>Uncia uncia</i>	1.2.0						1.2.0
ESB	NL	LC	California sealion	<i>Zalophus californianus</i>	0.0.0	1.3.0					1.3.0
			ELEPHANTS	PROBOSCIDAEE							
	I/A	EN	Asiatic elephant	<i>Elephas maximus</i>	3.5.0						3.5.0
			ODD-TOED UNGULATES	PERISSODACTYLA							
	NL	LC	Common/Grant's zebra	<i>Equus quagga boehmi</i>	2.5.0						2.5.0
	II/B	VU	South American tapir	<i>Tapirus terrestris</i>	3.2.0					0.0.2	1.2.0
	I/A	NT	Southern white rhinoceros	<i>Ceratotherium simum simum</i>	3.4.0		1.0.0	1.0.0		1.0.0	2.4.0
			EVEN-TOED UNGULATES	ARTIODACTYLA							
	NL	LC	Red river hog	<i>Potamochoerus porcus pictus</i>	3.6.0				1.0.0		2.6.0
ESB	II/B	VU	Hippopotamus	<i>Hippopotamus amphibius</i>	1.1.0						1.1.0
	NL	LC	Giraffe	<i>Giraffa camelopardalis</i>	2.2.0						2.2.0
	NL	EN	Baringo/Rothschild's giraffe	<i>Giraffa camelopardalis rothschildi</i>	3.3.0		1.0.0		1.1.0		3.2.0
	NL	EN	Okapi	<i>Okapia johnstoni</i>	2.0.0						2.0.0
	III/C	NT	Blackbuck	<i>Antilope cervicapra</i>	1.4.0				0.1.0		1.3.0
	NL	CR	Eastern bongo	<i>Tragelaphus eurycerus isaaci</i>	1.3.0		0.1.0		0.1.0		1.3.0
	I/A	EW	Scimitar-horned oryx	<i>Oryx dammah</i>	1.3.0	0.1.0			0.2.0		1.2.0
			DOMESTIC								
			Flemmish giant rabbit	<i>Oryctolagus cuniculus domestic flemish giant</i>	1.0.0						1.0.0
			Tamworth pig	<i>Sus scrofa scrofa tamworth</i>	1.1.0	0.3.0	11.12.4	0.0.4		11.15.0	1.1.0
			Friesian cow	<i>Bos taurus taurus friesland</i>	0.1.0	0.1.0	1.0.0			1.1.0	0.1.0
			Simmental cow	<i>Bos taurus taurus simmental</i>	0.1.0					0.1.0	0.0.0
			Charolais cow	<i>Bos taurus taurus charolais</i>	0.0.0	0.2.0				0.1.0	0.1.0
			Small East African goat	<i>Capra hircus domestic small east african</i>	0.6.0						0.6.0
			Suffolk sheep	<i>Ovis aries aries suffolk</i>	0.0.0	0.10.0				0.6.0	0.4.0
			Texel sheep	<i>Ovis aries aries texel</i>	0.0.0	2.5.0			1.0.0	1.5.0	0.0.0
			Texel x Suffolk sheep	<i>Ovis aries aries texel x suffolk</i>	2.2.0					2.2.0	0.0.0
			Shropshire sheep	<i>Ovis aries aries shropshire</i>	0.0.0	1.3.0				1.3.0	0.0.0
			Labrador dog	<i>Canis lupus familiaris labrador</i>	0.1.0						0.1.0

	CITES	IUCN Status	SPECIES		Total at 01.01.15	Arrivals	Births	Dead within 30 Days	Dead	Departed	Total at 01.01.16
			CLASS: BIRDS	AVES							
			OSTRICHES	STRUTHIONIFORMES							
	NL	LC	Ostrich	<i>Struthio camelus</i>	1.7.0						1.7.0
			PENGUINS	SPHENISCIFORMES							
	I/A	VU	Humboldt penguin	<i>Spheniscus humboldti</i>	7.6.3		0.0.3	0.0.3			7.6.3
			HERONS/STORKS	CICONIIFORMES							
	/A	LC	Little egret	<i>Egretta garzetta</i>	2.0.0						2.0.0
	I/A	CR	Waldrapp ibis	<i>Geronticus eremita</i>	11.12.1		0.0.5	0.0.3	0.1.0		11.11.3
			FLAMINGOS	PHOENICOPTERIDAE							
	II/B	NT	Chilean flamingo	<i>Phoenicopterus chilensis</i>	41.33.9				0.1.0		41.32.9
			GALLINACEOUS BIRDS	GALLIFORMES							
	NL	LC	Helmeted guinea fowl	<i>Numida meleagris</i>	2.4.2				0.0.2		2.4.0
	III/C	LC	Common peafowl	<i>Pavo cristatus</i>	2.3.0		0.1.0		1.0.0		1.4.0
	NL	NT	Crested wood partridge	<i>Rollulus rouloul</i>	4.3.0		0.0.1	0.0.1	2.1.0		2.2.0
	NL	LC	Red junglefowl	<i>Gallus gallus</i>	1.0.0						1.0.0
			PIGEONS/DOVES	COLUMBIFORMES							
	I/A	NT	Nicobar pigeon	<i>Caloenas nicobarica nicobarica</i>	1.1.0						1.1.0
	III/C	EN	Mauritius pink pigeon	<i>Columba mayeri</i>	1.0.0						1.0.0
			PARROTS	PSITTACIFORMES							
	NL	LC	Green imperial pigeon	<i>Ducula aenea aenea</i>	0.1.0						0.1.0
	NL	LC	Pied imperial pigeon	<i>Ducula bicolor</i>	2.1.5		0.0.1		0.0.1		2.1.5
ESB	II/B	NT	Victoria crowned pigeon	<i>Goura victoria</i>	3.1.0		0.0.2	0.0.1	0.0.1	2.0.0	1.1.0
			TURACOS/CUCKOOS	CUCULIFORMES							
	I/A	LC	Scarlet macaw	<i>Ara macao</i>	1.0.0						1.0.0
	I/A	VU	Military macaw	<i>Ara militaris</i>	1.1.0						1.1.0
ESB	I/A	VU	Mexican military macaw	<i>Ara militaris mexicana</i>	5.2.0						5.2.0
			HORNBILL ETC.	CORACIIFORMES							
ESB	II/B	LC	Red-crested turaco	<i>Tauraco erythrolophus</i>	1.0.0	0.1.0					1.1.0
			PERCHING BIRDS	PASSERIFORMES							
	I/A	NT	Great hornbill	<i>Buceros bicornis</i>	1.1.0						1.1.0
ESB	NL	LC	Abyssinian ground hornbill	<i>Bucorvus abyssinicus</i>	1.1.0						1.1.0
			PERCHING BIRDS	PASSERIFORMES							
	NL	LC	Black-throated laughing thrush	<i>Dryonastes chinensis</i>	0.1.0						0.1.0

	CITES	IUCN Status	SPECIES		Total at 01.01.15	Arrivals	Births	Dead within 30 Days	Dead	Departed	Total at 01.01.16
			DOMESTIC FOWL								
			Australorp chicken	<i>Gallus gallus domestic australorp</i>	1.4.0						1.4.0
			Sussex chicken(light)	<i>Gallus gallus domestic sussexlight</i>	8.4.0				1.2.0	6.0.0	1.2.0
			Brahma bantem	<i>Gallus gallus domestic brahma</i>	0.4.0						0.4.0
			Rhode Islandred chicken	<i>Gallus gallus domestic rhode island red</i>	0.2.0						0.2.0
			Indian runner duck	<i>Anas platyrhynchos domestic indian runner</i>	1.0.0	0.1.0					1.1.0
			CLASS:REPTILES	REPTILIA							
			CHELONES	TESTUDINES							
	II/B	CR	Annam leaf turtle	<i>Mauremys annamensis</i>	2.1.0	0.2.0					2.3.0
	III/C	EN	Chinese three-keeled pond turtle	<i>Mauremys reevesii</i>	0.0.0	0.0.1					0.0.1
	III/C	EN	Chinese stripe-necked turtle	<i>Mauremys sinensis</i>	0.0.0	1.0.0					1.0.0
	NL	NE	Central America wood turtle	<i>Rhinoclemmys pulcherrima manni</i>	0.2.0						0.2.0
	/B	LC	Yellow-bellied slider	<i>Trachemys scripta scripta</i>	0.1.3				0.0.1		0.1.2
	/B	LC	Red-eared slider	<i>Trachemys scripta elegans</i>	0.0.14	0.0.2			0.0.10		0.06
	II/B	NE	Red-footed tortoise	<i>Chelonoidis carbonaria</i>	1.4.0						1.4.0
	II/B	LC	Star tortoise	<i>Geochelone elegans</i>	2.3.0						2.3.0
	II/B	VU	African spurred tortoise	<i>Geochelone sulcata</i>	2.1.0				1.0.0		1.1.0
			CROCODILES	CROCODILIA							
	I/A	LC	West African Crocodile	<i>Crocodylus niloticus suchus</i>	0.2.0						0.2.0
			LIZARDS	SAURIA							
	NL	NE	Bornean blood suckers	<i>Bronchocela cristatella</i>	12.4.0		0.0.10	0.0.1	1.0.2		11.4.7
	NL	DD	Forest dragon	<i>Hypsilurus nigrigularis</i>	2.0.0						2.0.0
	/D	NE	Asian water dragon	<i>Physignathus cocincinus</i>	1.1.0	1.0.0			0.1.0		2.0.0
	II/B	LC	Veiled chameleon	<i>Chamaeleo calyptratus</i>	1.0.0					1.0.0	0.0.0
	NL	LC	Leopard gecko	<i>Eublepharis macularius</i>	0.2.0						0.2.0
	NL	NE	Tokay gecko	<i>Gekko gekko</i>	1.0.0						1.0.0
	II/B	LC	Mangrove monitor	<i>Varanus indicus</i>	0.1.0						0.1.0

CITES	IUCN Status	SPECIES		Total at 01.01.15	Arrivals	Births	Dead within 30 Days	Dead	Departed	Total at 01.01.16
		SNAKES	SERPENTES							
II/B	LC	Green tree python	<i>Morelia viridis</i>	1.0.0						1.0.0
II/B	VU	Burmese rock python	<i>Python bivittatus</i>	2.0.0						2.0.0
II/B	LC	Royal python	<i>Python regius</i>	0.0.3						0.0.3
/D	NE	King ratsnake	<i>Elaphe carinata</i>	1.2.0				0.1.0		1.1.0
NL	LC	Cornsnake	<i>Elaphe guttata guttata</i>	2.1.0						2.1.0
NL	LC	Common gartersnake	<i>Thamnophis sirtalis</i>	1.0.0						1.0.0
		INVERTEBRATES	INVERTEBRATA							
		CLASS:ARACHNIDS	ARACHNIDA							
		SPIDERS	ARANEAE							
NL	NE	Chilean rose tarantula	<i>Grammostola rosea</i>	0.2.0						0.2.0
		CLASS:INSECTS	INSECTA							
		STICKINSECTS	PHASMATOPTERA							
NL	NE	Spiny/Thorny stick insect	<i>Trachyaretaon brueckneri</i>	1.4.0		10.7.30*	0.0.25	2.4.5		9.7.0
NL	NE	Indian green stick insects	<i>Carausius morosus</i>	0.30*.0		0.9464*.0	0.9380*.0	0.100*.0		0.14.0
	NE	Magnus stick insect	<i>Phoebaticus magnus</i>	0.1.0		0.9.0		0.9.0		0.1.0
NL	NE	Macleays spectre	<i>Extatosoma tiaratum</i>	0.0.7		0.4.10		0.2.17		0.2.0
	NE	Black beauty stick insect	<i>Peruphasma schultei</i>	3.8.0		01.32	0.0.20	3.9.0		0.0.12
NL	NE	Zompro's/Thai stick insect	<i>Parapachymorpha zomproi</i>	0.7.0		0.161*.0	0.120*.0	0.26*.0		0.22.0

* approximate numbers

FOTA WILDLIFE PARK: DIRECTOR'S REPORT

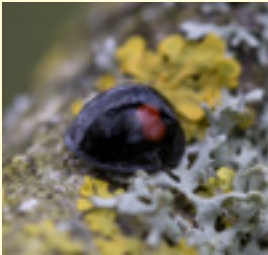
Asian Sanctuary Phase 2

Phase 2 of the Asian Sanctuary opened to the public during 2015 and included the following animal exhibits:

- Indian Rhino Habitat
- Lar Gibbon Habitat
- Agile Gibbon Habitat
- François' Langur Habitat



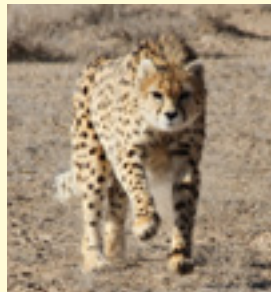
During 2015, Gill Weyman commenced her PhD research



project titled 'Status, threats and conservation of ladybirds in Ireland'. As part of her initial survey work on ladybirds, she found a number of kidney-spot ladybirds in the main car park at Fota Wildlife Park. These are among the first records for this

species in Ireland.

Fota Wildlife Park provided training to staff at the Asiatic Cheetah Breeding Centre in Tehran, Iran, in all aspects of cheetah husbandry and captive breeding. With fewer than 50 Asiatic cheetahs remaining in



the wild, captive breeding will play an important role in the survival of this critically endangered felid.

Introduction

In 2015, Fota Wildlife Park had another successful year with the second-highest attendance since opening in 1983 despite the difficult weather conditions for the months of July, November and December. Significantly, in the month of August, the Wildlife Park had a record monthly attendance with over 99,000 visitors enjoying the largest visitor attraction in the South West of Ireland.



Summary of the main annual attendance indicators for 2015

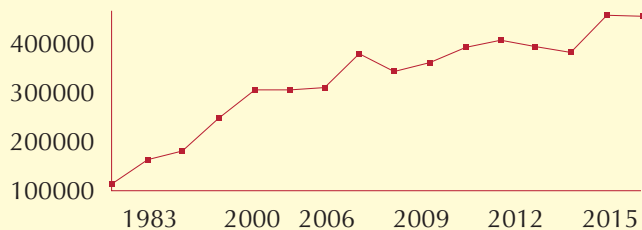
- The total number of visitors as of 31st December 2015 was 436,386 compared to 438,114 at the end of 2014. The 2015 numbers are down 1,728 visitors, or 0.4%, from 2014.
- The number of full-rate paying visitors increased 2% in 2015 compared to 2014. However, the number of 'under 3' years of age visitors who enter the park for free was down by 7,070, or 16%, when compared to 2014 numbers.
- Membership sales in 2015 were up 3% for Park memberships and down 2% for Conservation memberships when compared to 2014 levels.
- Member visits in 2015 were down 0.5% for Park memberships and up 0.5% for Conservation memberships in comparison to 2014 figures.

(Above) Sean McKeown, Director, Fota Wildlife Park

- Gift shop sales were up 18% at the end of 2015 compared to 2014.
- Park revenue at the end of 2015 was up 6% over 2014's revenue.
- Fota Wildlife Park produced a surplus of €686,204 for the year 2015, which is a slight increase on the 2014 surplus figure of €684,104.

Fota Wildlife Park Annual Attendances

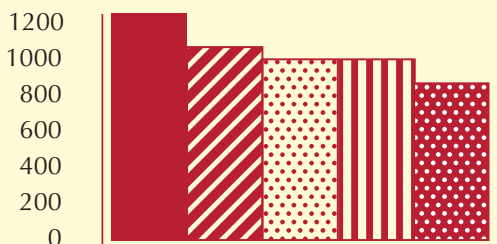
- 2015 attendances of 436,386 similar to 2014
- August 2015 was highest monthly record by 11%
- Summer of 2015 was wettest in 15 years
- 2015 was one of the wettest years on record



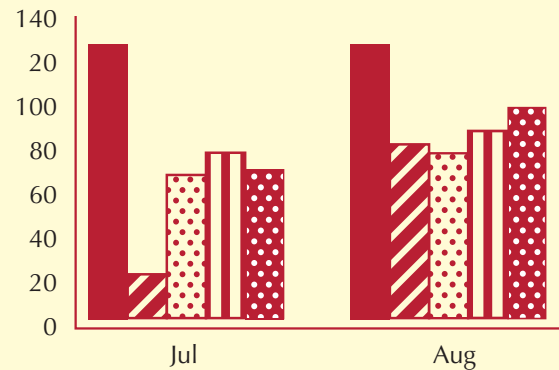
Key



Annual Rainfall Totals in mm



Summer Rainfall 2013 to 2015



Animal Highlights during 2015

The most notable birth during 2015 was a litter of two male Northern cheetah cubs born on the 11th July to female 'Gimpy' who also had a cub born earlier in the year that did not survive. These two cubs were the first Northern cheetah cubs born at Fota Wildlife Park that were successfully parent – reared by their dam.

Other births included a male Brazilian tapir born in April and a female Rothschild giraffe born to female 'Sapphire'.





The most significant arrivals to Fota Wildlife Park during 2015 were the two male Indian rhinos for the new Indian Rhino

Habitat. The male 'Jamil', who came from Whipsnade Park in England, arrived in July 2015 and settled in well to his new habitat. The male 'Shusto' arrived from Benidorm Zoo in Spain in December. This animal was hand-reared and bottle fed for the first four months of his life but, despite this, he has adjusted well to his new home. Both rhinos were almost 3 years old at the end of 2015 and it is anticipated that they will be mixed with females when they are around 5 years old. This is a necessary process to get this species to breed well in a captive environment and is similar to what happens in the wild.

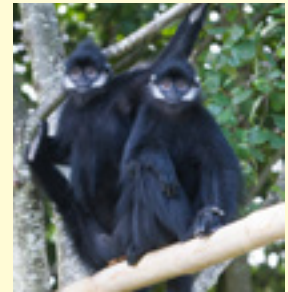
Other new arrivals to Fota include a 16-month-old male Sumatran tiger 'Pattak', who came from France's Beauval



Zoo in May. His arrival enables Fota to have one tiger visible to the public in each of the three large tiger enclosures during the busy summer period. Two Fota-born Colombian black spider monkeys were sent to The Netherlands, one each to Apenheul Zoo and Emmen Zoo. Fota also received two female Colombian black spider monkeys in return, one each from Chessington Zoo (UK) and Doué la Fontaine (FR).

Fota Wildlife Park also received two female Scimitar-

horned oryx from Planckendael Zoo in Belgium and a female Northern cheetah from Landau Zoo in Germany. Three male lion-tailed macaques were exchanged with Belfast Zoo as part of recommended transfers made by the lion-tailed



macaque EEP programme. Two male François' langurs arrived at Fota in June. François' langurs are critically endangered in the wild but, fortunately, there is a small but growing captive breeding programme which will play an important part in this species' future survival.

Capital Developments

The following elements of the Asian Sanctuary Phase 2 Completed during and 2015:

Lar Gibbon Habitat (EN) Aug 2015 and Agile Gibbon Habitat (EN) Sept 2015:

- Each gibbon habitat has a house that can accommodate a large family group but also includes separation areas that can be used for introductions or treatment if required.
- Each has a large island habitat with a shelter and many trees as well as poles to afford proper brachiation.



Indian Rhino Habitat (EN) July 2015:

- Large indoor housing complex suitable for holding six Indian rhino with heated indoor pools, air-conditioning system and hydrothermal heating in the walls and floors. This rhino house is also suitable for public viewing during the winter period.
- There are two holding yards which allow the animals to be indoors with access to an outside yard during inclement weather conditions during winter.
- The two large outdoor paddocks each have a wallow and a large pond so that the rhinos can enter the water to swim. There are also trees in each of the paddocks which provide screening and environmental enrichment for the rhinos.

The Rhino Raised Walkway not only affords good viewing of the rhinos but also the Lar Gibbon Habitat and the surrounding areas, which will hopefully in the future be home to takin as well as an Asian bear species.



François' Langur Habitat (CR) June 2015:

The François' Langurs Habitat was completed in June 2015 and consisted of the following:

- The habitat has a house that can accommodate a large family group and also includes separation areas.
- The habitat also has a large island with a shelter and many trees and poles for environmental enrichment.

Yard Staff Canteen:

Construction of the Yard Staff Canteen commenced in the last week of August 2015 with site clearance, etc. It includes a canteen area with kitchen, an office for Lead Wardens, and separate toilets, showers and changing areas for males and females. It also has a drying area for work wear. The project was completed in early 2016.



Asian Sanctuary and Indian Rhino Habitat Official Opening:

The Asian Sanctuary was officially opened by Mr. Simon Coveney, Minister for Agriculture, Food, The Marine and Defence, on 10th August 2015. This event received considerable media coverage, not least for the photo opposite.



RESEARCH AND CONTRIBUTION TO FIELD CONSERVATION PROJECTS

Conservation Research:

Throughout the year, Fota Wildlife Park continued its long-term collaboration with the School of Biological, Earth and Environmental Sciences (BEES), University College Cork, in the fields of animal behaviour, environmental enrichment, population biology and ecology.

The following is a list of students and their research projects carried out under the supervision of Dr. Ruth Ramsey:

Joseph Beeken: - The behaviour and activity budgets of Agile gibbons, *Hylobates agilis*, at Fota Wildlife Park and the effect of environmental enrichment on their behaviour.

Conor Dunne: - Environmental enrichment for captive Humboldt penguins, *Spheniscus humboldti*.

Shannon McCarthy: - Behavioural variations among two Sumatran tigers, *Panthera t. sumatrae*, at Fota Wildlife Park and the effects of different types of enrichment on their behaviour.

John O'Riordan: - The behaviour of captive white-handed gibbons, *Hylobates lar*, and environmental enrichment at Fota Wildlife Park.

Post Graduate Project:

PhD student Projects:

Courtney Keane: - The potential effect of zoo-based

education programmes on children's learning.

Rebecca Newman: - The influence of wild and captive environments on populations of lion-tailed macaques, *Macaca silenus*; behavioural responses to changes in population dynamics and different environments, and the influence of diet on health and behaviour. This PhD is co-funded by the Irish Research Council and Fota Wildlife Park and commenced in November 2014.

Gill Weyman: - Status, threats and conservation of ladybirds in Ireland (commenced October 2015). This PhD research project is co-funded by the Irish Research Council and Fota Wildlife Park under an Enterprise Partnership Scheme and has the following key objectives:

- To identify patterns of status and distribution of native ladybirds and the invasive Harlequin ladybird in Ireland.
- To identify the ecological and physical factors that influence the patterns of distribution of ladybird species in Ireland.
- To assess the pest control ecosystem service provided by ladybirds and the potential threat to this service by the Harlequin ladybird.
- To propose conservation strategies for endangered/vulnerable native ladybirds in Ireland, which may include a conservation breeding programme for Fota.
- To produce an education and awareness raising programme for Fota Wildlife Park on native ladybirds and to complement a module on their ecology and biodiversity that can be used by the Wildlife Park's education department.

Post Doctorate Projects:

Dr. Amy Haigh started (Oct. 1st 2012) her EMBARK partnership post-doctorate project with Fota Wildlife Park on 'Population dynamics, habitat use, philopatry and feeding behaviour of the red squirrel in Fota'. This research project was completed in 2014, supervised by Dr. Fidelma Butler of UCC and co-funded by the Irish Research Council with Fota Wildlife Park being the Enterprise Partner. The following paper was published on the ecology and behaviour of red squirrels on Fota Island: The preference for yew (*Taxus baccata*) by a red (*Sciurus vulgaris*) only squirrel population. Amy Haigh, Ruth O'Riordan and Fidelma Butler Wildlife Research, 2015, 42, 426–436.

Field Conservation Projects

Fota Wildlife Park continued to make direct funding available to conservation programmes that have a direct conservation benefit to both indigenous and exotic species. Conservation of the critically endangered Madagascar pochard is the most extensive conservation project which Fota has been involved with in recent years. Within the last five years, the project has witnessed significant progress in efforts to save this critically endangered species, whose wild population was reduced to 21 birds in May of 2012. The captive population continues to grow with a total of 78 captive Madagascar pochard (42 males and 36 females), an increase of 24 birds, or 44%, from the previous year. Our commitment to the Madagascar pochard conservation and breeding project continues with the provision of €0,000 towards the running costs of the Madagascar Pochard Captive Breeding Centre. This project is run in conjunction with the Durrell Wildlife Conservation Trust and the Wildfowl

and Wetlands Trust. Fota Wildlife Park signed a MOU with Flora & Fauna International to fund the training, equipment and salaries of two Community Patrol Teams to protect the critically endangered Western black crested gibbon and Tonkin snub-nosed monkey (CPT) in Mun Cang Chai and Quan Ba District, respectively, in Vietnam. Work on these two protected areas has already commenced whereby both habitat loss/degradation and poaching continue to threaten the survival of these primates. Fota Wildlife Park has actively supported in-situ conservation for the Sumatran Tiger since January 2014 through 21st Century Tiger's work in the Kerinci Seblat National Park. The Kerinci Seblat Tiger Protection Project was launched in May 2000 and is an ongoing collaborative project between Kerinci Seblat National Park (KSNP), Fauna & Flora International (FFI) and 21st Century Tiger. Kerinci Seblat National Park is the second-largest national park in Southeast Asia, covering approximately 1.35 million hectares, excluding buffer zone forests. The Park is critical habitat for the endangered Sumatran tiger.

Meetings

In 2015, the Director, Sean Mc Keown, with Tony O'Dwyer (Operations Manager) and John McLaughlin attended the EAZA annual conference in Wroclaw Zoo in Poland. Sean Mc Keown attended the Mid-year EAZA Council meeting at the end of April in Zurich Zoo, Switzerland, as the Irish Zoo's EAZA Council representative.

Sean Mc Keown attended the BIAZA Annual Conference in Woburn Safari Park, England, as Vice Chairman of BIAZA.

Fota 2015 Animal Inventory

	IUCN Status	SPECIES	Beginning	Births	Acquisitions	Dead	Dispositions	Ending
		INVERTEBRATA						
		CLASS: SCYPHOZA						
		<i>Mastigias papua</i> *	0.0.0	0.0.0	0.0.3	0.0.1	0.0.0	0.0.2
		CLASS: INSECTA						
		<i>Papilionoidea</i> *	0.0.25	0.0.0	0.0.0	0.0.0	0.0.0	0.0.250
		VERTEBRATA						
		CLASS: PISCES						
		<i>Sahyadria denisonii</i> *	0.0.10	0.0.0	0.0.0	0.0.0	0.0.0	0.0.10
		<i>Chromobotia macracanthus</i> *	0.0.6	0.0.0	0.0.0	0.0.3	0.0.0	0.0.3
		<i>Hypheosobrycon anisitsi</i> *	0.0.10	0.0.0	0.0.0	0.0.0	0.0.0	0.0.10
		<i>Panaque nigrolineatus</i> *	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
NT		<i>Bedotia madagascariensis</i> *	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
VT		<i>Glossolepis incisus</i> *	0.0.3	0.0.0	0.0.0	0.0.0	0.0.0	0.0.3
EN		<i>Melanotaenia boesemani</i> *	0.0.4	0.0.0	0.0.0	0.0.0	0.0.0	0.0.4
		<i>Melanotaenia trifasciata</i> *	0.0.5	0.0.0	0.0.0	0.0.0	0.0.0	0.0.5
EW		<i>Ameca splendens</i> *	0.0.110	0.0.0	0.0.0	0.0.0	0.0.0	0.0.110
EW		<i>Skiffia francesae</i> *	0.0.100	0.0.0	0.0.0	0.0.0	0.0.0	0.0.100
		<i>Sargocentron xantherythrum</i> *	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
		<i>Pterois volitans</i> *	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
		<i>Toxotes jaculatrix</i> *	0.0.10	0.0.0	0.0.0	0.0.3	0.0.0	0.0.7
		<i>Monodactylus sebae</i> *	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
		<i>Amphiprion ocellaris</i> *	0.0.5	0.0.0	0.0.0	0.0.0	0.0.0	0.0.5
		<i>Chromis viridis</i> *	0.0.4	0.0.0	0.0.0	0.0.0	0.0.0	0.0.4
		<i>Chrysiptera cyanea</i> *	0.0.4	0.0.0	0.0.0	0.0.0	0.0.0	0.0.4
		<i>Chrysiptera parasema</i> *	0.0.4	0.0.0	0.0.0	0.0.0	0.0.0	0.0.4
		<i>Stigmatogobius sadanundio</i> *	0.0.3	0.0.0	0.0.0	0.0.0	0.0.0	0.0.3
		<i>Siganus vulpinus</i> *	0.0.6	0.0.0	0.0.0	0.0.4	0.0.0	0.0.2
		<i>Zebrasoma desjardini</i> *	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
		<i>Zebrasoma flavescens</i> *	0.0.3	0.0.0	0.0.0	0.0.1	0.0.0	0.0.2

	IUCN Status	SPECIES		Beginning	Births	Acquisitions	Dead	Dispositions	Ending
		CLASS: AMPHIBIA	CLASS: AMPHIBIANS						
	CR	<i>Ambystoma mexicanum</i> *	Axolotl	4.3.0	0.0.3	0.0.0	2.1.1	0.0.0	2.2.2
	CR	<i>Neureergus kaiseri</i> *	Emperor spotted newt	0.0.9	0.0.0	0.0.0	0.0.1	0.0.0	0.0.8
	EN	<i>Epipedobates tricolor</i> *	Phantasmal poison dart frog	0.0.10	0.0.0	0.0.0	0.0.0	0.0.0	0.0.10
	LC	<i>Trachycephalus venulosus</i>	Veined tree frog	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
	LC	<i>Agalychnis callidryas</i> *	Red-eyed tree frog	0.0.10	0.0.0	0.0.0	0.0.7	0.0.0	0.0.3
	CR	<i>Agalychnis moreletii</i>	Morelet's tree frog	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
ESB	CR	<i>Leptodactylus fallax</i>	Mountain chicken frog	3.5.1	0.0.0	0.0.0	1.1.1	0.0.0	2.4.0
	CR	<i>Mantella aurantiaca</i> *	Golden mantella	0.0.10	0.0.0	0.0.0	0.0.2	0.0.0	0.0.8
	EN	<i>Mantella viridis</i> *	Green mantella	0.0.10	0.0.0	0.0.0	0.0.1	0.0.0	0.0.9
	LC	<i>Polypedates otlophus</i> *	Bornean eared frog	0.0.9	0.0.0	0.0.0	0.0.6	0.0.0	0.0.3
		<i>Theloderma corticale</i>	Tonkin bug-eyed frog	2.2.6	0.0.0	0.0.0	0.0.6	0.0.0	2.2.0
		CLASS: REPTILIA	CLASS: REPTILES						
		<i>Chelonoidis carbonaria</i>	Red-footed tortoise	1.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0
EN		<i>Indotestudo elongata</i>	Elongated tortoise	1.3.1	0.0.3	0.0.0	0.0.2	0.0.0	1.3.2
LC		<i>Chamaeleo calytratus</i>	Veiled chameleon	0.1.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
		<i>Iguana iguana</i>	Green iguana	2.1.0	0.0.0	0.0.0	0.0.0	0.0.0	2.1.0
LC		<i>Phelsuma madagascariensis</i>	Madagascar giant day gecko	0.1.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
LC		<i>Python regius</i> *	Royal/ball python	0.2.0	0.0.0	0.0.3	0.0.0	0.0.0	0.2.3
LC		<i>Acrantophis dumerili</i>	Dumeril's ground boa	3.0.0	0.0.0	0.0.0	0.0.0	0.0.0	3.0.0
		<i>Lamprophis fuliginosus</i>	Brown house snake	0.0.0	0.0.0	0.0.2	0.0.0	0.0.0	0.0.2
LC		<i>Pantherophis guttatus</i>	Corn snake	0.0.0	0.0.0	0.0.2	0.0.0	0.0.0	0.0.2
		CLASS: AVES	CLASS: BIRDS						
LC		<i>Struthio camelus</i>	Common ostrich	4.4.0	0.0.0	0.0.0	2.0.0	0.0.0	2.4.0
LC		<i>Dromaius novaehollandiae</i>	Emu	1.1.0	0.0.0	0.0.0	0.0.0	0.0.0	1.1.0
LC		<i>Numida meleagris</i>	Helmeted guineafowl	10.6.20	0.0.0	0.0.0	0.0.2	0.0.0	10.6.18
LC		<i>Pavo cristatus</i>	Common peafowl	4.9.0	0.0.0	0.0.0	0.1.0	0.0.0	4.8.0
LC		<i>Anser anser</i>	Greylag goose	11.8.14	0.0.0	0.0.0	0.0.0	0.0.0	11.8.14
LC		<i>Anser caerulescens</i>	Snow goose	1.6.7	0.0.0	0.0.0	0.0.0	0.0.0	1.6.7
NT		<i>Anser canagicus</i>	Emperor goose	2.2.0	0.0.0	0.0.0	0.0.0	0.0.0	2.2.0
VU		<i>Anser cygnoides</i>	Swan goose	1.2.0	0.0.0	0.0.0	1.0.0	0.0.0	0.2.0

	IUCN Status	SPECIES		Beginning	Births	Acquisitions	Dead	Dispositions	Ending
	LC	<i>Anser indicus</i>	Bar-headed goose	9.8.6	0.0.5	0.0.0	0.0.6	0.0.0	9.8.5
	LC	<i>Branta leucopsis</i>	Barnacle goose	14.7.12	0.0.0	0.0.0	1.1.2	0.0.0	13.6.10
	VU	<i>Branta sandvicensis</i>	Ne-ne	3.1.1	0.0.0	0.0.0	2.1.1	0.0.0	1.0.0
	LC	<i>Cereopsis novaehollandiae</i>	Cereopsis goose	2.5.1	0.0.0	0.0.0	1.2.0	0.0.0	1.3.1
	LC	<i>Coscoroba coscoroba</i>	Coscoroba swan	2.5.0	0.0.0	0.0.0	0.1.0	1.0.0	1.4.0
	LC	<i>Cygnus atratus</i>	Black swan	0.1.1	0.0.0	0.0.0	0.1.1	0.0.0	0.0.0
	LC	<i>Aix galericulata</i>	Mandarin duck	16.7.9	0.0.2	0.0.0	1.0.2	0.0.0	15.7.9
	LC	<i>Aix sponsa</i>	North American wood duck	6.2.4	0.0.0	0.0.0	0.0.0	0.0.0	6.2.4
	LC	<i>Aythya fuligula</i>	Tufted duck	4.3.11	0.0.0	0.0.0	0.0.0	0.0.0	4.3.11
	NT	<i>Aythya nyroca</i>	Common white-eye	2.1.2	0.0.0	0.0.0	0.0.0	0.0.0	2.1.2
	LC	<i>Netta rufina</i>	Red-crested pochard	9.7.0	2.2.6	0.0.0	2.1.6	0.0.0	9.8.0
	LC	<i>Somateria mollissima</i>	Eider	3.2.4	0.0.5	0.0.0	0.0.5	0.0.0	3.2.4
	LC	<i>Tadorna ferruginea</i>	Ruddy shelduck	1.0.5	0.0.0	0.0.0	1.0.5	0.0.0	0.0.0
EEP	VU	<i>Spheniscus humboldti</i>	Humboldt penguin	13.13.7	0.0.3	0.0.0	3.2.1	0.0.0	10.11.9
	NT	<i>Phoenicopterus chilensis</i>	Chilean flamingo	1.4.1	0.0.0	0.0.0	0.0.0	0.0.0	1.4.1
	LC	<i>Pelecanus onocrotalus</i>	Eastern white pelican	3.1.0	0.0.0	0.0.0	0.0.0	0.0.0	3.1.0
	LC	<i>Accipiter gentilis</i>	Northern goshawk	0.1.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
EEP	LC	<i>Haliaeetus albicilla</i>	White-tailed sea eagle	0.2.0	0.0.0	0.0.0	0.0.0	0.0.0	0.2.0
	LC	<i>Crex crex</i>	Corncrake	9.16.0	5.2.15	0.0.0	2.4.12	0.4.0	12.10.3
ESB	VU	<i>Goura scheepmakeri</i>	Scheepmaker's crowned pigeon	2.0.0	0.0.0	0.0.0	1.0.0	0.0.0	1.0.0
	LC	<i>Ara ararauna</i>	Blue-and-yellow macaw	5.3.0	1.1.0	0.0.0	2.0.0	0.0.0	4.4.0
	LC	<i>Ara chloroptera</i>	Green-winged macaw	2.0.0	0.0.0	0.0.0	1.0.0	0.0.0	1.0.0
	LC	<i>Ara macao</i>	Scarlet macaw	1.1.0	0.0.0	0.0.0	0.1.0	0.0.0	1.0.0
		CLASS: MAMMALIA	CLASS: MAMMALS						
		MARSUPIALIA	MARSUPIAL						
ESB	LC	<i>Macropus giganteus</i>	Eastern grey kangaroo	2.10.1	0.0.2	0.0.0	1.1.0	0.0.0	1.9.3
	LC	<i>Macropus rufogriseus</i> *	Red-necked wallaby	0.0.73	0.0.0	0.0.0	0.0.12	0.0.0	0.0.61
		PRIMATES	PRIMATES						
ESB	EN	<i>Lemur catta</i>	Ring-tailed lemur	4.8.0	0.0.0	0.0.0	1.1.0	0.0.0	3.7.0
EEP	CR	<i>Varecia rubra</i>	Red ruffed lemur	0.1.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
EEP	CR	<i>Varecia variegata</i>	Black-and-white ruffed lemur	2.0.0	0.0.0	0.0.0	1.0.0	0.0.0	1.0.0
EEP	LC	<i>Pithecia pithecia</i>	White-faced saki	3.5.0	0.0.0	0.0.0	0.0.0	0.0.0	3.5.0

	IUCN Status	SPECIES		Beginning	Births	Acquisitions	Dead	Dispositions	Ending
ESB	LC	<i>Alouatta caraya</i>	Black howler	2.3.0	0.0.0	0.0.0	0.1.0	0.0.0	2.2.0
EEP	CR	<i>Ateles fusciceps</i>	Black-headed spider monkey	2.4.0	0.0.0	0.2.0	0.0.0	0.2.0	2.4.0
	LC	<i>Lophocebus albigena</i>	Grey-cheeked mangabey	1.5.0	0.0.0	0.0.0	0.2.0	0.0.0	1.3.0
EEP	EN	<i>Macaca silenus</i>	Lion-tailed macaque	10.12.0	0.0.0	3.0.0	2.0.0	3.0.0	8.12.0
ESB	LC	<i>Colobus guereza</i>	Eastern black-and-white colobus	5.0.0	0.0.0	0.0.0	1.0.0	0.0.0	4.0.0
EEP	EN	<i>Hylobates agilis</i>	Agile gibbon	1.2.1	0.0.0	0.0.0	0.0.0	0.0.0	1.2.1
EEP	EN	<i>Hylobates lar</i>	Lar gibbon	2.3.0	0.0.0	0.0.0	1.0.0	0.0.0	1.3.0
EEP	EN	<i>Symphalangus syndactylus</i>	Siamang	4.2.0	0.0.0	0.0.0	0.0.0	0.0.0	4.2.0
		RODENTIA	RODENTS						
	LC	<i>Cynomys ludovicianus</i>	Black-tailed prairie dog	2.3.0	0.0.0	0.0.0	0.0.0	0.0.0	2.3.0
	NT	<i>Dolichotis patagonum</i> *	Patagonian mara	0.0.22	0.0.0	0.0.0	0.0.3	0.0.0	0.0.19
	LC	<i>Hydrochaeris hydrochaeris</i>	Capybara	1.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0
		CARNIVORA	CARNIVORES						
EEP	VU	<i>Acinonyx jubatus</i>	Cheetah	6.6.0	3.1.0	0.1.0	1.1.0	0.0.0	8.7.0
EEP	CR	<i>Panthera tigris</i>	Tiger	1.1.0	0.0.0	1.0.0	0.0.0	0.0.0	2.1.0
	LC	<i>Suricata suricatta</i>	Slender-tailed meerkat	3.5.9	0.0.0	0.0.0	0.0.0	0.0.0	3.5.9
	LC	<i>Phoca</i>	Harbor seal	0.1.0	0.0.0	0.0.0	0.0.0	0.1.0	0.1.0
EEP	VU	<i>Ailurus fulgens</i>	Red panda	1.2.0	1.0.0	0.0.0	0.0.0	0.1.0	2.1.0
		PERISSODACTYLA	ODD-TOED UNGULATES						
	LC	<i>Equus burchellii</i>	Common zebra	3.3.0	0.0.0	0.0.0	0.1.0	0.0.0	3.2.0
EEP	VU	<i>Tapirus terrestris</i>	South American tapir	1.1.0	1.0.0	0.0.0	0.1.0	0.0.0	2.1.0
EEP	VU	<i>Rhinoceros unicornis</i>	One-horned rhinoceros	0.0.0	0.0.0	2.0.0	0.0.0	0.0.0	2.0.0
		ARTIODACTYLA	EVEN-TOED UNGULATES						
EEP	CR	<i>Sus cebifrons</i>	Visayan warty pig	1.1.0	0.0.0	0.0.0	0.0.0	0.0.0	1.1.0
EEP	EN	<i>Rusa alfredi</i>	Alfred's spotted deer	0.0.0	0.0.0	0.3.0	0.0.0	0.0.0	0.3.0
EEP	LC	<i>Giraffa camelopardalis</i>	Giraffe	5.7.0	1.1.0	0.0.0	1.0.0	1.0.0	4.8.0
EEP	VU	<i>Bison bonasus</i>	European wisent	12.8.0	0.1.1	0.0.0	2.1.1	0.0.0	10.8.0
EEP	EW	<i>Oryx dammah</i>	Scimitar-horned oryx	2.3.0	0.1.0	0.2.0	1.0.0	0.1.0	1.5.0
ESB	LC	<i>Kobus leche</i>	Southern lechwe	3.9.0	1.3.0	0.0.0	0.1.0	0.0.0	4.11.0
		TOTAL		238.254.822	15.12.45	85.10	35.26.98	5.8.0	221.237.779

* = Group Inventory Counts Included In Row
** = Colony counts included in Row

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 2015**

Registered number: 207824

CONTENTS

	PAGE
MEMBERS OF COUNCIL AND OTHER INFORMATION	52
COUNCIL'S REPORT	54
STATEMENT OF COUNCIL'S RESPONSIBILITIES	57
INDEPENDENT AUDITOR'S REPORT	58
CONSOLIDATED INCOME AND EXPENDITURE ACCOUNT	60
CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME	61
CONSOLIDATED BALANCE SHEET	62
COMPANY BALANCE SHEET	64
CONSOLIDATED STATEMENT OF CHANGES IN EQUITY	66
COMPANY STATEMENT OF CHANGES IN EQUITY	67
CONSOLIDATED STATEMENT OF CASH FLOWS	68
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS	69
SUPPLEMENTARY INFORMATION	100

THE ZOOLOGICAL SOCIETY OF IRELAND

MEMBERS OF COUNCIL AND OTHER INFORMATION

Members of Council:

Council president	Tom Dunphy FCA
Immediate past president	Margaret Sinanan
Ordinary Council members	Dorothy Kilroy Paul Burke Kennedy Richard Collins Martin O'Grady Conor Quinn Michael Daly Nigel Bell

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) Derek McCleane
Vice president	Richard Collins
Honorary secretary	Dorothy Kilroy
Honorary treasurer	Nigel Bell
Secretary and registered office	Dorothy Kilroy The Zoological Gardens, Phoenix Park, Dublin 8

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

MEMBERS OF COUNCIL AND OTHER INFORMATION *(Continued)*

Auditors

Deloitte
Chartered Accountants and Statutory Audit Firm
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, Dublin 2

AIB, 66 South Mall, Cork

Solicitors

Mason Hayes & Curran,
South Bank House, Barrow Street, Dublin 4

Ronan Daly Jermyn & Company, 12 South Mall, Cork

Kilroy Solicitors, 66 Leeson Street Lower, Dublin 2

Charity Number

CHY2964

Company Number

207824

THE ZOOLOGICAL SOCIETY OF IRELAND

COUNCIL'S REPORT

The Council presents its annual report together with the audited consolidated financial statements for the financial year ended 31 December 2015.

Consolidation

These accounts form the Consolidated Accounts of the Zoological Society of Ireland which includes the results of both Dublin Zoo and Fota Wildlife Park for the financial year ended 31 December 2015.

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 financial year ended 31 December 2015 at Dublin Zoo was 1,103,378 (2014: 1,076,876). This was the fifth year in a row that Dublin Zoo has had visitation surpassing the one million mark and 2015 was an all-time record. The attendance at Fota Wildlife Park for the financial year ended 31 December 2015 was 436,386 (2014: 438,114). A slight decrease in attendance was experienced in 2015 mainly due to the adverse weather

conditions experienced in December 2015. However the Wildlife Park experienced record attendance in August 2015.

The Council do not foresee any significant change to the operations in the short term.

Principal Risks And Uncertainties

The Council considers that the principal risks 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 changes in the economic environment.

Results for the Financial Year

The results for the financial year and state of affairs of the Group are set out in the consolidated income and expenditure account, the statement of comprehensive income and balance sheet on pages 11, 12 and 13 respectively.

Council and Secretary

The members of Council, who served at any time during the financial year except as noted, were as follows:

Tom Dunphy
Margaret Sinanan
Dorothy Kilroy
Paul Burke Kennedy
Richard Collins
Martin O'Grady

Conor Quinn
Michael Daly
Nigel Bell

Secretary:

Dorothy Kilroy

On 26 October 2015, Tony Kearney resigned as company secretary and Dorothy Kilroy was appointed.

Legal status

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

Subsidiaries

The statutory information concerning subsidiary undertakings is provided in Note 9 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 members of Council bring their varied experience in their respective fields to bear on guiding the Society. The members of Council are legally responsible for the overall control and management of the Society.

The Council delegates the management of the day to day operation of the Society and Fota Wildlife Park, the

implementation of policy and strategy to the Directors (Chief Executives) of Dublin Zoo and Fota Wildlife Park. The executive management teams, chaired by the Directors and consisting of key senior executives, is the main day to day decision making forum of the Society and Fota Wildlife Park.

The Council believe that committing to a high level of corporate governance is essential to achieving the optimal standard of operation of the Society's activities. To accomplish this, the Society has a competent executive team. There is clear division of responsibility with the Council retaining control of major decisions, with the Director responsible for devising strategy and policy within authority delegated to him by the Council. The Council is responsible for providing leadership, setting strategy and ensuring control.

The Society has a clear and detailed process for reporting management information to the Council. The Council is provided with regular information, which includes key performance and risk indicators for all aspects of the organisation. The Council meets regularly as required and met 10 times during 2015.

The Council recognise their overall responsibility for the company's systems of internal control and for reviewing their effectiveness. They have delegated responsibility for the implementation of this system to the executive team. This system includes financial controls, which enable the Council to meet its responsibilities for the integrity and accuracy of the Society's accounting records.

The Council is supported by a number of sub-committees

THE ZOOLOGICAL SOCIETY OF IRELAND

(not confined to Council members) established for good governance, as follows:

Audit & Remuneration Committee

The function of the Audit and Remuneration Committee is to review internal financial controls, treasury, and risk management processes. The Committee liaises with the external auditors and reports directly to the Council. It also monitors and reviews the financial performance, including remuneration issues of the Society.

Nominations Committee

The function of the Nominations Committee is to ensure that the composition of the Council and its Committees have the appropriate skills, knowledge and experience. It also ensures that there is effective succession planning.

Conservation & Research Committee

The responsibility of this Committee is to oversee conservation and research projects undertaken and supported by the Society.

Ethics Committee

The Ethics Committee was established to provide guidance and advice on all ethical matters that may arise. The Committee comprises members of the Council, the Zoo Director and some external appointments.

Health & Safety Committee

The responsibility of this Committee is to oversee the health and safety function and ensure that any changes and improvements are implemented. The Committee comprises three members of Council and the Zoo Director.

Accounting records

The measures that the directors have taken to secure compliance with the requirements of sections 281 to 285 of the Companies Act 2014 with regard to the keeping of accounting records, are the employment of appropriately qualified accounting personnel and the maintenance of computerised accounting systems. The company's accounting records 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 financial 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 health and safety policy which is being complied with and satisfactorily operated.

Political donations

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

Auditors

The auditors, Deloitte, Chartered Accountants and Statutory Audit Firm, continue in office in accordance with Section 383(2) of the Companies Act 2014.

Approved by the Board and signed on its behalf by:

Tom Dunphy

Council President

Nigel Bell

Honorary Treasurer

Date: 23rd May 2016

STATEMENT OF COUNCIL'S RESPONSIBILITIES

The Council is responsible for preparing the Council's report and the financial statements in accordance with the Companies Act 2014 and the applicable regulations.

Irish company law requires the members of the Council to prepare financial statements for each financial year. Under the law, the Council has elected to prepare the financial statements in accordance with FRS 102 The Financial Reporting Standard applicable in the UK and Republic of Ireland ("relevant financial reporting framework"). Under company law, the Council must not approve the financial statements unless they are satisfied that they give a true and fair view of the assets, liabilities and financial position of the Group and Society as at the financial year end date and of the surplus or deficit of the Group for the financial year and otherwise comply with the Companies Act 2014.

In preparing those financial statements, the Council members are required to:

- select suitable accounting policies for the Group and Society's financial statements and then apply them consistently;
- make judgements and estimates that are reasonable and prudent;
- state whether the financial statements have been prepared in accordance with the applicable accounting standards, identify those standards, and note the effect and the reasons for any material departure from those standards; and
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the Society will continue in business.

The Council members are responsible for ensuring that the Society keeps or causes to be kept adequate accounting records which correctly explain and record the transactions of the Society, enable at any time the assets, liabilities, financial position and surplus or deficit of the Society to be determined with reasonable accuracy, enable them to ensure that the financial statements and Council's report comply with the Companies Act 2014 and enable the financial statements to be audited. They are also responsible for safeguarding the assets of the Society and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

THE ZOOLOGICAL SOCIETY OF IRELAND

INDEPENDENT AUDITOR'S 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 financial year ended 31 December 2015, which comprise the Consolidated Income and Expenditure Account, the Consolidated Statement of Comprehensive Income, the Consolidated Balance Sheet, the Company Balance Sheet, the Consolidated Statement of Changes in Equity, the Company Statement of Changes in Equity, the Consolidated Statement of Cash Flows and the related notes 1 to 21. The relevant financial reporting framework that has been applied in their preparation is the Companies Act 2014 and FRS 102 The Financial Reporting Standard applicable in the UK and Republic of Ireland ("relevant financial reporting framework").

This report is made solely to the company's members, as a body, in accordance with Section 391 of the Companies Act 2014. 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 Council members and auditors

As explained more fully in the Council's Responsibilities Statement, the Council members are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view and otherwise comply with the Companies Act 2014. Our responsibility is to audit and express an opinion on the financial statements in accordance with the Companies Act 2014 and International Standards on Auditing (UK and Ireland). Those standards require us to comply with the Auditing Practices Board's Ethical Standards for Auditors.

Scope of the audit of the financial statements

An audit involves obtaining evidence about the amounts and disclosures in the financial statements sufficient to give reasonable assurance that the financial statements are free from material misstatement, whether caused by fraud or error. This includes an assessment of: whether the accounting policies are appropriate to the Group and company's circumstances and have been consistently applied and adequately disclosed; the reasonableness of significant accounting estimates made by the Council; and the overall presentation of the financial statements. In addition, we read all the financial and non-financial information in the Reports and Consolidated Financial Statements for the financial year ended 31 December 2015 to identify material inconsistencies with the audited financial statements and to identify any information that is apparently materially incorrect based on, or materially inconsistent with, the knowledge acquired by us in the course of performing the audit. If we become aware of

any apparent material misstatements or inconsistencies we consider the implications for our report.

Opinion on financial statements

In our opinion the financial statements:

- give a true and fair view of the assets, liabilities and financial position of the Group and company as at 31 December 2015 and of the Group's surplus for the financial year then ended; and
- have been properly prepared in accordance with the relevant financial reporting framework and, in particular, with the requirements of the Companies Act 2014.

Matters on which we are required to report by the Companies Act 2014

- We have obtained all the information and explanations which we consider necessary for the purposes of our audit.
- In our opinion the accounting records of the company were sufficient to permit the financial statements to be readily and properly audited.
- The financial statements are in agreement with the accounting records.
- In our opinion the information given in the Council's report is consistent with the financial statements.

Matters on which we are required to report by exception

We have nothing to report in respect of the provisions in the Companies Act 2014 which require us to report to you if, in our opinion, the disclosures of directors' remuneration and transactions specified by law are not made.

Thomas Cassin

**For and on behalf of Deloitte & Touche
Chartered Accountants and Statutory
Audit Firm Dublin**

23 May 2016

THE ZOOLOGICAL SOCIETY OF IRELAND

CONSOLIDATED INCOME AND EXPENDITURE ACCOUNT FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015

	Notes	2015 €'000	2014 €'000
INCOME	3	18,511	17,339
EXPENDITURE			
Operating costs		(15,142)	(13,898)
Administration expenses		<u>(740)</u>	<u>(720)</u>
TOTAL EXPENDITURE		<u>(15,882)</u>	<u>(14,618)</u>
OPERATING SURPLUS	5	2,629	2,721
Interest payable	6	(58)	(72)
Interest income	6	44	132
Amortisation of government grants	14	<u>33</u>	<u>32</u>
SURPLUS FOR THE FINANCIAL YEAR		<u><u>2,648</u></u>	<u><u>2,813</u></u>

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

**CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015**

	Notes	2015 €'000	2014 €'000
SURPLUS FOR THE YEAR		2,648	2,813
Remeasurement of net defined benefit asset	15	<u>114</u>	<u>(261)</u>
TOTAL COMPREHENSIVE INCOME		<u>2,762</u>	<u>2,552</u>

THE ZOOLOGICAL SOCIETY OF IRELAND

CONSOLIDATED BALANCE SHEET AS AT 31 DECEMBER 2015		2015	2014
		€'000	€'000
FIXED ASSETS	Notes		
Tangible assets	8	<u>20,517</u>	<u>15,744</u>
CURRENT ASSETS			
Stocks	10	216	183
Debtors	11	529	462
Cash at bank and in hand			
– OPW grant	12	30	30
– Other		<u>6,946</u>	<u>9,096</u>
		<u>7,721</u>	<u>9,771</u>
CREDITORS: (Amounts falling due within one year)	12	<u>(4,098)</u>	<u>(3,899)</u>
NET CURRENT ASSETS		<u>3,623</u>	<u>5,872</u>
TOTAL ASSETS LESS CURRENT LIABILITIES		24,140	21,616
CREDITORS: (Amounts falling due after more than one year)	13	(290)	(250)
OTHER DEFERRED GRANTS	14	(411)	(444)
NET ASSETS EXCLUDING PENSION		<u>23,439</u>	<u>20,922</u>
Pension asset	15	<u>275</u>	<u>30</u>
NET ASSETS INCLUDING PENSION ASSET		<u><u>23,714</u></u>	<u><u>20,952</u></u>

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

Represented by:

Accumulated surplus	9,450	6,951
Development reserve	12,000	12,000
Emergency reserve	2,264	2,001
	<u>23,714</u>	<u>20,952</u>

The financial statements were approved and authorised for issue by the Board of Directors on 23 May 2016 and signed on its behalf by:

Tom Dunphy
Council President

Nigel Bell
Honorary Treasurer

THE ZOOLOGICAL SOCIETY OF IRELAND

COMPANY BALANCE SHEET AS AT 31 DECEMBER 2015

	Notes	2015 €'000	2014 €'000
FIXED ASSETS			
Tangible assets	8	10,476	7,220
Financial assets	9	500	500
		10,976	7,720
CURRENT ASSETS			
Stocks	10	142	114
Debtors			
– Due within one year	11	575	476
– Due after one year	11	400	-
Cash at bank and in hand:			
– OPW grant	12	30	30
– other		6,764	8,549
		7,911	9,169
CREDITORS: (Amounts falling due within one year)	12	(2,770)	(2,704)
Net current assets excluding pension asset isla fisher		5,141	6,465
Pension asset	15	165	18
Net current assets including pension asset		5,306	6,483
NET ASSETS		16,282	14,203

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

Represented by:

Accumulated surplus	7,018	5,202
Development reserve	7,000	7,000
Emergency reserve	2,264	2,001
	<u>16,282</u>	<u>14,203</u>

The financial statements were approved and authorised for issue by the Board of Directors on 23 May 2016 and signed on its behalf by:

Tom Dunphy

Council President

Nigel Bell

Honorary Treasurer

THE ZOOLOGICAL SOCIETY OF IRELAND

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015

		Development	Emergency	Accumulated	
	Notes	Reserve	Reserve	Surplus	Total
		€'000	€'000	€'000	€'000
At 31 December 2013					
as previously stated		5,000	1,755	11,645	18,400
Changes on transition to FRS 102	19	-	-	-	-
As restated		<u>5,000</u>	<u>1,755</u>	<u>11,645</u>	<u>18,400</u>
Surplus for the financial year		-	-	2,813	2,813
Remeasurement of net defined benefit asset		-	-	(261)	(261)
Transfers between reserves		<u>7,000</u>	<u>246</u>	<u>(7,246)</u>	<u>-</u>
At 31 December 2014		<u>12,000</u>	<u>2,001</u>	<u>6,951</u>	<u>20,952</u>
Balance at 1 January 2015		12,000	2,001	6,951	20,952
Surplus for the financial year		-	-	2,648	2,648
Remeasurement of net defined benefit asset		-	-	114	114
Transfers between reserves		<u>-</u>	<u>263</u>	<u>(263)</u>	<u>-</u>
At 31 December 2015		<u>12,000</u>	<u>2,264</u>	<u>9,450</u>	<u>23,714</u>

The Council members have decided to transfer €263,000 (2014: €246,000) from the accumulated surplus to the emergency reserve and €Nil (2014: €7,000,000) from the accumulated surplus to the development reserve. The Council members continue to monitor the strategic development of the Zoo & park facilities and have set aside funds to finance future capital investment projects.

COMPANY STATEMENT OF CHANGES IN EQUITY FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015

		Development Reserve	Emergency Reserve	Accumulated Surplus	Total
	Notes	€'000	€'000	€'000	€'000
At 31 December 2013					
as previously stated		5,000	1,755	5,408	12,163
Changes on transition to FRS 102	19	-	-	60	60
As restated		<u>5,000</u>	<u>1,755</u>	<u>5,468</u>	<u>12,223</u>
Surplus for the financial year		-	-	2,137	2,137
Remeasurement of net defined benefit asset		-	-	(157)	(157)
Transfers between reserves		<u>2,000</u>	<u>246</u>	<u>(2,246)</u>	<u>-</u>
At 31 December 2014		<u>7,000</u>	<u>2,001</u>	<u>5,202</u>	<u>14,203</u>
Balance at 1 January 2015		7,000	2,001	5,202	14,203
Surplus for the financial year		-	-	2,011	2,011
Remeasurement of net defined benefit asset		-	-	68	68
Transfers between reserves		<u>-</u>	<u>263</u>	<u>(263)</u>	<u>-</u>
At 31 December 2015		<u>7,000</u>	<u>2,264</u>	<u>7,018</u>	<u>16,282</u>

The Council members have decided to transfer €263,000 (2014: €246,000) from the accumulated surplus to the emergency reserve and €Nil (2014: €2,000,000) from the accumulated surplus to the development reserve. The Council members continue to monitor the strategic development of Dublin Zoo and have set aside funds to finance future capital investment projects.

THE ZOOLOGICAL SOCIETY OF IRELAND

CONSOLIDATED STATEMENT OF CASH FLOWS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015

	Notes	2015 €'000	2014 €'000
NET CASH INFLOW FROM OPERATING ACTIVITIES	17	<u>4,376</u>	<u>4,911</u>
Cash flows from investing activities			
Payment to acquire tangible fixed assets		(6,509)	(4,564)
Payment to acquire tangible fixed assets		41	85
Other income		(58)	(72)
Payment to acquire tangible fixed assets		<u>(6,526)</u>	<u>(4,551)</u>
Cash flows from investing activities			
Development funds received from SECAD		-	5
Net cash inflow from financing activities		<u>-</u>	<u>5</u>
(DECREASE)/ INCREASE IN CASH IN THE FINANCIAL YEAR	17	<u>(2,150)</u>	<u>365</u>
Cash and cash equivalents at beginning of financial year		<u>9,126</u>	<u>8,761</u>
Cash and cash equivalents at end of financial year		<u>6,976</u>	<u>9,126</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015

1. ACCOUNTING POLICIES

The principal accounting policies are summarised below. They have all been applied consistently throughout the financial year and to the preceding financial year.

General Information and Basis of Accounting

The Zoological Society of Ireland is a company incorporated in Ireland under the Companies Act 2014. The address of the registered office is given on page 2. The nature of the company's operations and its principal activities are set out in the Council's report on pages 54 to 57.

The financial statements have been prepared under the historical cost convention and in accordance with the Companies Act 2014 and Financial Reporting Standard 102 (FRS 102) issued by the Financial Reporting Council. The consolidated financial statements incorporate the financial statements of the company and its subsidiary undertaking for the financial year ended 31 December 2015.

The prior year financial statements were restated for material adjustments on adoption of FRS 102 in the current financial year. For more information see note 19.

The functional currency of the Zoological Society of Ireland is considered to be Euro because that is the currency of

the primary economic environment in which the company operates.

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.

Foreign Currencies

Transactions in foreign currencies are recorded at the rate at the date of the transaction. Monetary assets and liabilities denominated in foreign currencies at the balance sheet date are reported at the rates of exchange prevailing at that date. Exchange differences are recognised in the income and expenditure account in the period in which they arise.

Taxation

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

THE ZOOLOGICAL SOCIETY OF IRELAND

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	33%
Motor vehicles	20%
Habitats	10%

Land and assets under construction are not depreciated.

Residual value represents the estimated amount which would currently be obtained from disposal of an asset, after deducting estimated costs of disposal, if the asset were already of the age and in the condition expected at the end of its useful life.

An asset is impaired where there is objective evidence that, as a result of one or more events that occurred after initial recognition, the estimated recoverable value of the asset has been reduced to below its carrying amount. The recoverable amount of an asset is the higher of its fair value less costs to sell and its value in use.

Where indicators exist for a decrease in impairment loss, the prior impairment loss is tested to determine reversal. An impairment loss is reversed on an individual impaired asset to the extent that the revised recoverable value does not lead to a revised carrying amount higher than the

carrying value had no impairment been recognised.

Financial Fixed Assets

Investment in subsidiary is stated at cost less provision for impairment. An asset is impaired where there is objective evidence that, as a result of one or more events that occurred after initial recognition, the estimated recoverable value of the asset has been reduced to below its carrying amount.

Where indicators exist for a decrease in impairment loss, the prior impairment loss is tested to determine reversal. An impairment loss is reversed on an individual impaired asset to the extent that the revised recoverable value does not lead to a revised carrying amount higher than the carrying value had no impairment been recognised.

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. 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

Rentals under operating leases are charged on a straight-line basis over the lease term, even if the payments are not made on such a basis. Benefits received and receivable as an incentive to sign an operating lease are similarly spread on a straight-line basis over the lease term.

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.

Grants

Capital grants are accounted for in the financial year in which they are received and credited to the Income and Expenditure Account on the same basis as the related fixed assets are depreciated.

Retirement Benefits

For defined benefit schemes the amounts charged to the operating surplus are the costs arising from employee services rendered during the period and the cost of plan introductions, benefit changes, settlements and curtailments. They are included as part of staff costs. The

net interest cost on the net defined asset/liability is charged to the income and expenditure account. Remeasurement comprising actuarial gains and losses and the return on scheme (excluding amounts included in net interest on the net defined benefit asset/liability) are recognised immediately in other comprehensive income.

A defined benefit scheme is funded, with the assets of the scheme held separately from those of the Society, in separate trustee administered funds. Pension scheme assets are measured at fair value and liabilities are measured on an actuarial basis using the projected unit method. The actuarial valuations are obtained at least triennially and are updated at each balance sheet date.

For the defined contribution scheme the amount charged to the income and expenditure account in respect of pension costs and other post-retirement benefits is the contributions payable in the year. Differences between contributions payable in the year and contributions actually paid are shown as either accruals or prepayments in the balance sheet.

Financial Instruments

Financial assets and financial liabilities are recognised when the company becomes a party to the contractual provisions of the instrument.

Financial liabilities are classified according to the substance of the contractual arrangements entered into.

All financial assets and liabilities are initially measured at transaction price (including transaction costs), except

THE ZOOLOGICAL SOCIETY OF IRELAND

for those financial assets classified as at fair value through the income and expenditure account, which are initially measured at fair value (which is normally the transaction price excluding transaction costs), unless the arrangement constitutes a financing transaction. If an arrangement constitutes a financing transaction, the financial asset or financial liability is measured at the present value of the future payments discounted at a market rate of interest for a similar debt instrument.

Financial assets and liabilities are only offset in the statement of financial position when, and only when there exists a legally enforceable right to set off the recognised amounts and the company intends either to settle on a net basis, or to realise the asset and settle the liability simultaneously.

Financial assets are derecognised when and only when a) the contractual rights to the cash flows from the financial asset expire or are settled, b) the company transfers to another party substantially all of the risks and rewards of ownership of the financial asset, or c) the company, despite having retained some, but not all, significant risks and rewards of ownership, has transferred control of the asset to another party.

Financial liabilities are derecognised only when the obligation specified in the contract is discharged, cancelled or expires.

Financial assets and liabilities that are classified as receivable or payable within one year on initial recognition are measured at the undiscounted amount of the consideration expected to be received or paid, net of

impairment.

Non current bank debt is measured at amortised cost using the effective interest method.

Going Concern

Based on budgets and cashflow projections, the Council has a reasonable expectation that the company can meet all liabilities for a period of not less than twelve months from the date of approval of the financial statements. Accordingly, the Council have prepared the financial statements of the company on a going concern basis.

2. CRITICAL ACCOUNTING JUDGEMENTS AND KEY SOURCES OF ESTIMATION UNCERTAINTY

In the application of accounting policies, which are described in note 1, the Council members are required to make judgements, estimates and assumptions about the carrying amounts of assets and liabilities that are not readily apparent from other sources. The estimates and associated assumptions are based on historical experience and other factors that are considered to be relevant. Actual results may differ from these estimates. The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimate is revised if the revision affects only that period or in the period of the revision and future periods if the revision affects both current and future periods.

The following are the critical judgements and estimates that the Council members have made in the process of

applying the accounting policies and that have the most significant effect on the amounts recognised in the financial statements:

Retirement Benefit Obligations

The estimation of and accounting for retirement benefit obligations involves judgements made in conjunction with independent actuaries. There are estimates in respect of life expectancy of scheme members, increase in salaries, inflation as well as discount rates. The assumptions used are disclosed in note 15.

Provisions

The company provides for defective stock and stock losses. The amount recognised as a provision is the best estimate of the stock write off required based on historical evidence.

Useful Economic Lives

The annual depreciation charge for tangible fixed assets is sensitive to changes in the estimated useful economic lives and residual values of the assets. Determination of appropriate useful economic lives is a key judgement and the useful economic lives and residual values are re-assessed annually. They are amended when necessary to reflect current estimates, based on technological advancement, future investments, economic utilisation and the physical condition of the assets.

THE ZOOLOGICAL SOCIETY OF IRELAND

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015 (Continued)

3. INCOME	2015	2014
Income arises from the following activities undertaken wholly within Ireland.	€'000	€'000
Gate receipt income	11,994	11,390
Annual pass and membership income	2,562	2,357
Shop income	2,559	2,273
Other income	1,396	1,319
	<u>18,511</u>	<u>17,339</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015 (Continued)

4. EMPLOYEE INFORMATION

	2015	2014
Staff numbers and costs		
Average number of employees:		
Management	10	10
Administration	19	18
General staff		
- full time	103	96
- part time	15	16
Shop	10	10
	<u>157</u>	<u>150</u>

	2015	2014
The aggregate payroll costs of these persons were as follows	€'000	€'000
Wages and salaries	5,541	5,292
Social welfare costs	582	550
Retirement benefit costs (Note 15)	362	342
	<u>6,485</u>	<u>6,184</u>

The total remuneration for fourteen key management personnel for the financial year totalled €933,281 (2014: €881,761 for thirteen key management personnel)

All payroll costs were expensed during the current and prior financial year.

THE ZOOLOGICAL SOCIETY OF IRELAND

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015 (Continued)

5. OPERATING SURPLUS	2015	2014
The operating surplus is stated after charging:	€'000	€'000
Remuneration of Council members	-	-
Auditor's remuneration in respect of the entity	19	18
Auditor's remuneration in respect of the group accounts (including the entity)	26	25
Depreciation	1,736	1,439
Operating lease charges	5	13
Loss on disposal of fixed asset	-	20
	<u><u> </u></u>	<u><u> </u></u>

Under the Society's Articles of Association, Council members are not entitled to remuneration. Auditor's remuneration is disclosed net of VAT.

6. INTEREST	2015	2014
Interest payable	€'000	€'000
On bank loans due within five years	58	72
	<u><u> </u></u>	<u><u> </u></u>

	2015	2014
Interest income	€'000	€'000
Deposit interest	41	85
Other finance income (Note 15)	3	47
	<u><u> </u></u>	<u><u> </u></u>
	44	132
	<u><u> </u></u>	<u><u> </u></u>

7. TAXATION

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

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015 (Continued)

8 . 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 2015	191	4,177	1,531	487	19,841	26,227
Additions	-	101	144	25	6,239	6,509
At 31 December 2015	191	4,278	1,675	512	26,080	32,736
Depreciation:						
At 1 January 2015	-	3,465	1,343	323	5,352	10,483
Charge for financial year	-	249	109	38	1,340	1,736
At 31 December 2015	-	3,714	1,452	361	6,692	12,219
Net Book Value:						
At 31 December 2015	191	564	223	151	19,388	20,517
At 31 December 2014	191	712	188	164	14,489	15,744

THE ZOOLOGICAL SOCIETY OF IRELAND

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015 (Continued)

8. 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 2015	191	2,272	1,531	240	9,438	13,672
Additions	-	51	144	6	4,241	4,442
At 31 December 2015	191	2,323	1,675	246	13,679	18,114
Depreciation:						
At 1 January 2015	-	1,993	1,343	221	2,895	6,452
Charge for financial year	-	102	109	7	968	1,186
At 31 December 2015	-	2,095	1,452	228	3,863	7,638
Net Book Value:						
At 31 December 2015	191	228	223	18	9,816	10,476
At 31 December 2014	191	279	188	19	6,543	7,220

Included in habitats at 31 December 2015 are assets under construction which amounted to €1.5m.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015 (Continued)

8. TANGIBLE FIXED ASSETS (Continued)

Group

	Land €'000	Plant Machinery & Equipment €'000	Computer Equipment & Software €'000	Motor Vehicles €'000	Buildings & Habitats €'000	Total €'000
Cost:						
At 1 January 2014	191	4,030	1,388	423	15,726	21,758
Additions	-	147	154	118	4,145	4,564
Disposals	-	-	(11)	(54)	(30)	(95)
	<u>191</u>	<u>4,177</u>	<u>1,531</u>	<u>487</u>	<u>19,841</u>	<u>26,227</u>
At 31 December 2014	<u>191</u>	<u>4,177</u>	<u>1,531</u>	<u>487</u>	<u>19,841</u>	<u>26,227</u>
Depreciation:						
At 1 January 2014	-	3,224	1,259	333	4,303	9,119
Charge for year	-	241	95	30	1,073	1,439
On disposals	-	-	(11)	(40)	(24)	(75)
	<u>-</u>	<u>3,465</u>	<u>1,343</u>	<u>323</u>	<u>5,352</u>	<u>10,483</u>
At 31 December 2014	<u>-</u>	<u>3,465</u>	<u>1,343</u>	<u>323</u>	<u>5,352</u>	<u>10,483</u>
Net Book Value:						
At 31 December 2014	<u>191</u>	<u>712</u>	<u>188</u>	<u>164</u>	<u>14,489</u>	<u>15,744</u>
At 31 December 2013	<u>191</u>	<u>806</u>	<u>129</u>	<u>90</u>	<u>11,423</u>	<u>12,639</u>

THE ZOOLOGICAL SOCIETY OF IRELAND

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015 (Continued)

8. 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 2014	191	2,221	1,388	245	7,910	11,955
Additions	-	51	154	3	1,558	1,766
Disposals	-	-	(11)	(8)	(30)	(49)
At 31 December 2014	191	2,272	1,531	240	9,438	13,672
Depreciation:						
At 1 January 2014	-	1,892	1,259	223	2,134	5,508
Charge for year	-	101	95	6	785	987
On disposals	-	-	(11)	(8)	(24)	(43)
At 31 December 2014	-	1,993	1,343	221	2,895	6,452
Net Book Value:						
At 31 December 2014	191	279	188	19	6,543	7,220
At 31 December 2013	191	329	129	22	5,776	6,447

Included in habitats at 31 December 2014 are assets under construction which amounted to €1.5m.

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

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015 (Continued)

9 . FINANCIAL ASSETS

Company	2015	2014
	€'000	€'000
At beginning and end of financial year	<u>500</u>	<u>500</u>

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

In respect of prior financial year	2014	2013
	€'000	€'000
At beginning and end of financial year	<u>500</u>	<u>500</u>

THE ZOOLOGICAL SOCIETY OF IRELAND

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015 (Continued)

10. STOCKS	Group		Company	
	2015 €'000	2014 €'000	2015 €'000	2014 €'000
Shops	192	154	117	85
Consumables	<u>24</u>	<u>29</u>	<u>25</u>	<u>29</u>
	<u>216</u>	<u>183</u>	<u>142</u>	<u>114</u>

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

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015 (Continued)

11. DEBTORS

	Group		Company	
	2015 €'000	2014 €'000	2015 €'000	2014 €'000
Amounts falling due within one year:				
Trade debtors	210	179	178	173
Prepayments and other debtors	316	283	274	238
VAT	3	-	-	-
Amounts due from subsidiary	-	-	23	65
Loan to subsidiary	-	-	100	-
	<u>529</u>	<u>462</u>	<u>575</u>	<u>476</u>
Amounts falling due after more than one year:				
Loan to subsidiary	-	-	400	-
	<u>-</u>	<u>-</u>	<u>400</u>	<u>-</u>

During the financial year, the company advanced a loan of €500,000 to Fota which is repayable over five years. The interest rate applied to the loan is 2%.

THE ZOOLOGICAL SOCIETY OF IRELAND

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015 (Continued)

12. CREDITORS

(Amounts falling due within one year)

	Group		Company	
	2015	2014	2015	2014
	€'000	€'000	€'000	€'000
Bank loan (Note 13)	210	250	-	-
Trade creditors	1,216	1,185	661	641
Accruals	987	1,027	823	827
Deferred income	1,412	1,175	1,064	1,016
PAYE/PRSI	197	188	146	154
VAT	46	44	46	36
	<u>4,068</u>	<u>3,869</u>	<u>2,740</u>	<u>2,674</u>
OPW grant	30	30	30	30
	<u>4,098</u>	<u>3,899</u>	<u>2,770</u>	<u>2,704</u>

In prior periods, the OPW issued grants 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 2015, €30,000 (2014: €30,000) remained unspent from the grant received and has been included in creditors and cash.

	2015	2014
	€'000	€'000
At beginning and end of financial year	<u>30</u>	<u>30</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015 (Continued)

12. CREDITORS (Amounts falling due within one year) (Continued)

In respect of prior financial year	2014 €'000	2013 €'000
At beginning of financial year	30	54
Expended during the financial year	-	(24)
At end of financial year	<u>30</u>	<u>30</u>

13. CREDITORS (Amounts falling due within one year)

	Group	
	2015 €'000	2014 €'000
Government grants		
Bank loan	<u>290</u>	<u>250</u>
Loan maturity analysis:		
	2015 €'000	2014 €'000
In one year or less, or on demand	210	250
Between two and five years	290	250
After more than five years	-	-
	<u>500</u>	<u>500</u>

The bank loan is repayable in installments over the next five years. It is subject to an interest rate of 2.7%.

THE ZOOLOGICAL SOCIETY OF IRELAND

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015 (Continued)

14. OTHER DEFERRED GRANTS

	Group	
	2015	2014
	€'000	€'000
Government grants		
Received and receivable:		
At beginning of financial year	835	830
Received during the financial year	<u>-</u>	<u>5</u>
At end of financial year	<u>835</u>	<u>835</u>
Amortisation:		
At beginning of financial year	391	359
Amortised to income and expenditure	<u>33</u>	<u>32</u>
At end of financial year	<u>424</u>	<u>391</u>
At end of financial year	<u><u>411</u></u>	<u><u>444</u></u>

The total funding received to date of €200,000 from SECAD is subject to terms and conditions and if these are not adhered to, SECAD reserves the right to deem the contract to be invalid and all grant aid shall be immediately repayable.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015 (Continued)

15. RETIREMENT BENEFIT SCHEMES

Group

Defined contribution scheme

The Group operates a defined contribution retirement benefit scheme for all qualifying employees. The total expense charged to income and expenditure in the financial year ended 31 December 2015 was €307,000 (2014: €303,000). Included in creditors at year end are pension accruals amounting to €10,926 / 2014: €18,266).

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 2013.

The financial assumptions used to calculate the value of the defined benefit pension scheme's liabilities under FRS 102 are:

	2015	2014
	%	%
Rate of general increase in salaries	3.00	3.00
Rate of increase in pensions in payment	0.00	0.00
Discount rate of scheme liabilities	2.20	2.10
Inflation	1.50	1.50

THE ZOOLOGICAL SOCIETY OF IRELAND

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015 (Continued)

15. RETIREMENT BENEFIT SCHEMES (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 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	<u>24.5</u>	<u>25.4</u>

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

	2015 €'000	2014 €'000
Current service cost	(53)	(39)
Net interest income	<u>3</u>	<u>47</u>
	<u>(50)</u>	<u>(8)</u>
Recognised in other comprehensive income	<u>114</u>	<u>(261)</u>
Total cost relating to defined benefit scheme	<u>64</u>	<u>(269)</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015 (Continued)

15. PENSION ASSET (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:

	2015 €'000	2014 €'000
Fair value of assets	3,499	3,299
Present value of defined benefit obligations	<u>(3,224)</u>	<u>(3,269)</u>
Net asset recognised in the balance sheet	<u>275</u>	<u>30</u>

Movements in the fair value of scheme assets were as follows:

	2015 €'000	2014 €'000
At 1 January	3,299	2,709
Contributions	181	183
Benefits paid	(100)	(83)
Expected return on pension scheme assets	70	135
Actual return less expected return on pension scheme assets	<u>49</u>	<u>355</u>
At 31 December	<u>3,499</u>	<u>3,299</u>

THE ZOOLOGICAL SOCIETY OF IRELAND

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015 (Continued)

15. PENSION ASSET (Continued)

Movements in the present value of defined benefit obligations were as follows:

	2015	2014
	€'000	€'000
At 1 January	3,269	2,609
Service cost	53	39
Interest cost	67	88
Benefits paid	(100)	(83)
Actuarial (gain)/loss	(65)	616
	<u>3,224</u>	<u>3,269</u>
At 31 December	<u>3,224</u>	<u>3,269</u>

The analysis of the scheme's assets at the balance sheet date was as follows:

	Fair value	Fair value
	at	at
	31 December	31 December
	2015	2014
	€'000	€'000
Equities	1,646	1,634
Bonds	1,457	1,297
Property	69	52
Other	327	316
	<u>3,499</u>	<u>3,299</u>
Total market value of assets	<u>3,499</u>	<u>3,299</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015 (Continued)

15. PENSION ASSET (Continued)

Company

Defined contribution scheme

The company operates a defined contribution retirement benefit scheme for all qualifying employees. The total expense charged to income and expenditure in the financial year ended 31 December 2015 was €207,000 (2014: €208,000). Included in creditors at year end are pension accruals amounting to €10,926 (2014: €18,266).

Defined benefit scheme

Dublin Zoo participates in The Zoological Society of Ireland Employee Benefits Plan, a defined benefit scheme which includes employees of both Dublin Zoo and Fota Wildlife Park Limited (Fota). The net defined benefit asset/cost and contributions have been allocated based on an estimate of final pensionable salary of the employees of both Dublin Zoo and Fota.

THE ZOOLOGICAL SOCIETY OF IRELAND

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015 (Continued)

15. PENSION ASSET (Continued)

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

	2015 €'000	2014 €'000
Current service cost	(31)	(24)
Net interest income	<u>2</u>	<u>28</u>
	<u>(29)</u>	<u>(4)</u>
Recognised in other comprehensive income	<u>69</u>	<u>(157)</u>
Total cost relating to defined benefit scheme	<u>40</u>	<u>(161)</u>

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

	2015 €'000	2014 €'000
Fair value of assets	2,099	1,980
Present value of defined benefit obligations	<u>(1,934)</u>	<u>(1,962)</u>
Net asset recognised in the balance sheet	<u>165</u>	<u>18</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015 (Continued)

15. PENSION ASSET (Continued)

Movements in the fair value of scheme assets were as follows:

	2015 €'000	2014 €'000
At 1 January	1,980	1,625
Contributions	109	110
Benefits paid	(60)	(50)
Expected return on pension scheme assets	42	81
Actual return less expected return on pension scheme assets	28	214
	<u>2,099</u>	<u>1,980</u>
At 31 December	<u>2,099</u>	<u>1,980</u>

Movements in the present value of defined benefit obligations were as follows:

	2015 €'000	2014 €'000
At 1 January	1,962	1,565
Service cost	31	24
Interest cost	40	53
Benefits paid	(60)	(50)
Actuarial (gain)/loss	(39)	370
	<u>1,934</u>	<u>1,962</u>
At 31 December	<u>1,934</u>	<u>1,962</u>

THE ZOOLOGICAL SOCIETY OF IRELAND

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015 (Continued)

16. FINANCIAL INSTRUMENTS

The carrying values of the Group's financial assets and liabilities are summarised by category below:

	2015 €'000	2014 €'000
Financial assets		
<i>Measured at undiscounted amount receivable</i>		
• Trade and other debtors	<u>529</u>	<u>462</u>
	2015 €'000	2014 €'000
Financial liabilities		
<i>Measured at amortised cost</i>		
• Bank loans (Note 12 & 13)	500	500
<i>Measured at undiscounted amount payable</i>		
• Trade and other payables (Note 12)	<u>3,888</u>	<u>3,649</u>
	<u>4,388</u>	<u>4,149</u>
	2015 €'000	2014 €'000
Interest expense		
• Interest expense on financial liabilities measured at amortised cost (Note 6)	<u>58</u>	<u>72</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015 (Continued)

16. FINANCIAL INSTRUMENTS (Continued)

The carrying values of the Company's financial assets and liabilities are summarised by category below:

	2015 €'000	2014 €'000
Financial assets		
<i>Measured at cost less impairment</i>		
• Investment in subsidiary (Note 9)	500	500
<i>Measured at cost less impairment</i>		
• Loan to subsidiary (Note 11)	500	-
<i>Measured at undiscounted amount receivable</i>		
• Trade and other debtors (Note 11)	452	411
• Amount due from subsidiary (Note 11)	23	65
	<u>1,475</u>	<u>976</u>

THE ZOOLOGICAL SOCIETY OF IRELAND

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015 (Continued)

16. FINANCIAL INSTRUMENTS (Continued)

	2015 €'000	2014 €'000
Financial liabilities		
<i>Measured at undiscounted amount payable</i>		
Trade and other payables (Note 12)	<u>2,770</u>	<u>2,704</u>
	2015 €'000	2014 €'000
Interest income		
• Interest income on financial assets measured at amortised cost	<u>8</u>	<u>-</u>

17. CASH FLOW STATEMENT

Reconciliation of operating surplus to cash generated by operations

	2015 €'000	2014 €'000
Operating surplus	2,629	2,721
Depreciation of tangible fixed assets	1,736	1,439
Loss on disposal of fixed asset	-	20
Adjustment for retirement benefit plan	(128)	(144)
(Increase)/decrease in stocks	(33)	59
Increase in debtors	(67)	(15)
Increase in non OPW creditors	<u>239</u>	<u>831</u>
Cash generated by operations	<u>4,376</u>	<u>4,911</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015 (Continued)

17. CASH FLOW STATEMENT (Continued)

Analysis of movement in net funds

	At beginning of year €'000	Cashflows €'000	At end of year €'000
Cash at bank and in hand	9,126	(2,150)	6,976
Bank loan	<u>(500)</u>	<u>-</u>	<u>(500)</u>
Net funds	<u>8,626</u>	<u>(2,150)</u>	<u>6,476</u>

18. COMMITMENTS AND CONTINGENCIES

	2015 €'000	2014 €'000
Authorised and contracted for commitments	3,900	2,069
Authorised but not contracted for commitments	<u>872</u>	<u>4,407</u>

THE ZOOLOGICAL SOCIETY OF IRELAND

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015 (Continued)

19. EXPLANATION OF TRANSITION TO FRS 102

Group

This is the first year the Group has presented its financial statements under Financial Reporting Standards 102 (FRS 102) issued by the Financial Reporting Council. The last financial statements under previous Irish GAAP were for the financial year ended 31 December 2014 and the date of transition to FRS 102 was therefore 1 January 2014. As a consequence of adopting FRS 102, accounting policies have been changed to comply with that standard. None of these changes have resulted in a material adjustment to equity reported under previous Irish GAAP at 31 December 2014 or 1 January 2014 and there was no effect on reserves previously reported for the financial year ended 31 December 2014.

Company

This is the first year the company has presented its financial statements under Financial Reporting Standards 102 (FRS 102) issued by the Financial Reporting Council. The last financial statements under previous Irish GAAP were for the year ended 31 December 2014 and the date of transition to FRS 102 was therefore 1 January 2014. As a consequence of adopting FRS 102, accounting policies have been changed to comply with that standard. These changes have resulted in the following adjustments to equity reported under previous Irish GAAP at 31 December 2014 and 1 January 2014 and the reserves previously reported for the financial year ended 31 December 2014.

	At 1 January 2014 €'000	At 31 December 2014 €'000
Reserves reported under previous Irish GAAP	12,163	14,185
Adjustment for defined benefit plan asset	<u>60</u>	<u>18</u>
Reserves reported under FRS 102	<u><u>12,223</u></u>	<u><u>14,203</u></u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2015 (Continued)

19. EXPLANATION OF TRANSITION TO FRS 102 (Continued)

Reconciliation of income and expenditure for 2014

	€'000
Surplus for the financial year under previous Irish GAAP	2,022
Adjustment for defined benefit plan asset	115
	<hr/>
Surplus for the financial year under FRS 102	2,137
Remeasurement of net defined benefit asset	(157)
	<hr/>
Total comprehensive income under FRS 102	1,980
	<hr/> <hr/>

Dublin Zoo contributes to a Group defined benefit plan. Under Old Irish GAAP, Dublin zoo accounted for the plan as a defined contribution plan. Under FRS 102 section 28.38, where a company participates in a defined benefit plan and there is a policy for charging the net defined benefit cost then it should be recognised in the individual financial statements.

20. POST BALANCE SHEET EVENTS

There have been no significant events affecting the Zoological Society of Ireland since the year end that would result in an adjustment to the financial statements or inclusion of a note thereto.

21. APPROVAL OF FINANCIAL STATEMENTS

The consolidated financial statements were approved by the Council on 23 May 2016.

THE ZOOLOGICAL SOCIETY OF IRELAND

SUPPLEMENTARY INFORMATION (NOT COVERED BY THE INDEPENDENT AUDITOR'S REPORT)

OPERATING COSTS	2015 €'000	2014 €'000
Staff costs	6,485	6,184
Shop expenses	1,193	1,061
Repairs and maintenance	901	679
Animal feed	889	845
Insurance	251	231
Light and heat	721	681
Advertising and public relations	654	715
Depreciation	1,736	1,439
Security	244	269
IT costs	276	215
Waste removal	169	149
Veterinary expenses	265	244
Other expenses	1,358	1,186
	<u>15,142</u>	<u>13,898</u>







Dublin Zoo, Phoenix Park, Dublin 8.
T: (01) 474 8900 F: (01) 677 1660 E: info@dublinozoo.ie W: www.dublinozoo.ie

Fota Wildlife Park, Carrigtwohill, Co. Cork, Ireland
T: (021) 481 2678 F: (021) 4812744 E: info@fotawildlife.ie W: www.fotawildlife.ie

Photography by Patrick Bolger, Bryan Meade, Ronan Temple Lang

Design by Wilson Creative

0 0 8 1 4



Annual Report 2015 and Socio-Economic Survey of Kerala