Annual Report 2017
Zoological Society of Ireland

DUBLIN ZOO

FOTA WILDLIFE PARK

PAST PRESIDENTS OF THE ZOOLOGICAL SOCIETY OF IRELAND

Presidents of the Zoological Society of Ireland*, 1833 to 1837, and 1994 to date; and the Royal Zoological Society of Ireland, 1838-1993.

Sir Philip Crampton*	1833	Sir Robert H. Woods	1922-26
The Duke of Leinster*	1834	Prof. A. Francis Dixon	1927-31
Captain Portlock*	1835-36	Sir William Taylor	1932-33
Sir Philip Crampton	1837-38	Lord Holmpatrick	1934-42
The Archbishop of Dublin	1839-40	Dr. R. Lloyd Praeger	1942-43
Sir Philip Crampton	1841-42	Capt. Alan Gordon	1944-50
The Archbishop of Dublin	1843-44	Prof. John McGrath	1951-53
Sir Philip Crampton	1845-46	Dinnen B. Gilmore	1954-58
The Duke of Leinster	1847-48	G.F. Mitchell	1959-61
Sir Philip Crampton	1849-50	N.H. Lambert	1962-64
The Marquis of Kildare	1851-52	G. Shackleton	1965-67
Sir Philip Crampton	1853-54	Prof. P.N. Meenan	1968-70
Lord Talbot of Malahide	1855-56	Prof. J. Carroll	1971-73
Sir Philip Crampton	1857-58	A.E.J. Went	1974-76
Doctor D.J. Corrigan	1859-63	Victor Craigie	1977-80
Viscount Powerscourt	1864-69	Alex G. Mason	1981-83
The Earl of Mayo	1870-71	Aidan Brady	1984-86
Earl Spencer	1872-74	John D. Cooke	1987-89
J.W. Murland	1875-78	Padraig O Nuallain	1990-91
Sir John Lentaigne C.P.	1879-84	Prof. David J. McConnell	1992-93
Rev. Dr. Haughton F.R.S.	1885-89	Prof. David J. McConnell	1994-95*
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	2014-17*
Sir Frederick Moore	1917-21	Michael Daly	2017*

LETTER FROM THE PRESIDENT

Dear Member,

Firstly, I am honoured to be elected as president of the Zoological Society of Ireland (ZSI), which was first established in 1830. I look forward to working with the directors, council and governors of both Dublin Zoo and Fota Wildlife Park.

The council of the Zoological Society of Ireland presents the twenty-fourth annual report, together with the consolidated audited financial results of Dublin Zoo and Fota Wildlife Park, for the year ended 31 December 2017.

I am delighted to report that both Dublin and Fota have once again achieved outstanding visitor attendances of 1,719,859, resulting in record income of €21,439,000 and a surplus of €2,609,000.

These strong financial results have once again allowed us to re-invest in our animals, our habitats, our visitor and staff facilities, and our conservation programmes.

In Dublin Zoo the Roberts House, an old Victorian building which was originally opened in 1902, was beautifully restored and re-opened as Zoorassic World, a brand new home for reptiles of the past and present. Working with partners from China, a magical night-time spectacular event called Wild Lights featuring giant colourful lanterns and illuminated animal sculptures inspired by wildlife was held, a first for both Dublin Zoo and Ireland. 2017 was the thirtieth anniversary of the Dublin Zoo volunteer programme. Today Dublin Zoo has over 100 volunteers who give freely of their time to support the various activities of the Zoo and to mark the occasion a new purpose-built centre was opened for our volunteers.

In Fota, construction of the South American Habitat was completed. This new, modern animal house can now accommodate the growing number of tapirs and capybara along with new species such as the endangered Darwin's rheas. During the course of the year all three species of felids gave birth: a Sumatran tiger cub, four Northern cheetah cubs and three Indian lion cubs were born.

Our involvement and support of conservation programmes was taken to a new level with our keepers visiting countries around the globe accompanied by the TV company Moondance. This not only allowed the audience of the TV series, The Zoo, to experience and see first-hand the conservation programmes supported by the Zoo, but also to share the interest, the enthusiasm and discoveries made by the keepers when supporting these wonderful projects.

As president of the Society I would like to express my thanks to the teams in both Dublin and Fota for their outstanding contribution throughout 2017, to the members of the council and the governors who give freely of their time and expertise, and to our members and visitors for your continued support.

I also acknowledge with thanks the enormous contribution made by Leo Oosterweghel, director of Dublin Zoo, and Sean McKeown, director of Fota Wildlife Park.

I look forward to the continued success of both Dublin Zoo and Fota Wildlife Park.

Michael Daly
President
The Zoological Society of Ireland

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, 13th September 2018 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 14th September 2017

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 of Election

Pursuant of Article 37 of the constitution of the Society, notice is given that the following persons have been duly nominated to fill vacancies on the Council:

John McMahon
Carmel O'Connor
Paul Burke Kennedy

Under the constitution of the society, the following members are retiring from the Council at the forthcoming AGM:

Paul Burke Kennedy

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

(Far right) Eastern bongo calf

DUBLIN ZOO: DIRECTOR'S REPORT

With 1,264,546 visitors to Dublin Zoo in 2017, another record was set. Of these, 1,108,728 were our regular zoo visitors, while 155,572 came during the winter evenings to experience Wild Lights. Of the total visitors, 68,656 – many of them school students – participated in a Discovery and Learning programme.

On 6 July, broadcaster Pat Kenny officially opened Zoorassic World, the Zoo's new home for living and extinct reptiles. It is situated in the Roberts House, built in 1902 and extended in 1909. Restoration of the red-brick building was precise and time consuming with particular attention paid to the conservation of this beautiful terracotta building. With the aid of Jones & Jones, Architects and Landscape Architects from Seattle, USA, the Zoo Team undertook detailed design and interpretation to create a bright and cheerful space with significant educational aspects to it. The work was completed on schedule. Hayes Higgins Partnership were the project managers. Easy Tiger Creative, a London-based museum and interpretation design company, worked with the Discovery and Learning Team, the Animal Care Team, the Marketing Team and contractors on story lines, models, light, sound and colour with striking results.

(Above) Honey and Zoo Director Leo Oosterweghel
(Far right) Panther chameleon

The centrepiece is 'Stan', a life-size replica fossil skeleton of an adult male Tyrannosaurus rex that lived 65 million years ago and was found in the Black Hills of South Dakota, USA. Stan is 3.7 metres high and 12.2 metres in length and was created at the Black Hills Institute of Geological Research, Hill City, South Dakota. Other replica dinosaur skeletons include a Velociraptor, an Oviraptor, an Anhanguera and an Archaeopteryx. There are also life-size replicas of a Galapagos tortoise and a Komodo dragon for children to interact with.

A significant development for Dublin Zoo was the involvement of the Discovery and Learning Team in the design process and the interpretation plan. Zoorassic World is a ready-made, state-of-the-art education space for students and teachers, with features specifically designed to support the new Junior Cycle curriculum. Significant effort was put into the development of a new Evolution module for Junior Cycle and transition-year students to be delivered between the classroom and Zoorassic World. All of the interpretation to meet the needs of the national curricula for this module was integrated into Zoorassic World at the design phase. It includes a replica of Charles Darwin's study at Down House, Kent, created by cabinet maker Paul Tunnycliff.

Another feature, 'Dinosaur Discovery', is a dig zone designed to engage children in the work of a palaeontologist with specialist equipment and models of fossils manufactured by the Black Hills Institute. Bone Clones, an

American company, produced numerous reptilian biofacts for the interactive touch tables and walls. Additional fossils and reptilian models for the education wall inside Zoorassic World were supplied by museum designer Cees van Dashorst of the Netherlands. Outside, Donald Knox and a small team of artists painted a mural of a life-size Diplodocus. This large herbivore is visible to visitors when exiting Zoorassic World and is often used for an unusual photo opportunity. The collaboration with the Discovery and Learning Team ensures that Zoorassic World will be an integral part of Dublin Zoo's formal and informal educational work for some time to come.

The living reptiles were moved from the former Reptile House (built 1994) to the new state-of-the-art habitats in Zoorassic World. There are 12 species, including West African crocodile, king rat snake, forest dragon, green tree python, the Annam leaf turtle and turquoise dwarf gecko. The 11 habitats have prefabricated glass fronts, waterproof tanks and a unique microclimate. They were created by American habitat designer Gregory George and his team. Each habitat is a precise replica of a wild place. The installation of a filtration system for the river habitat of the West African crocodile required specialist input from Ted Maranda of Seattle, who had previously worked on the Sea Lion Cove. Many of the living reptiles are part of international breeding programmes for endangered species.

In June, the Marketing Team filmed the arrival of Stan, the Tyrannosaurus rex fossil replica, in a branded delivery van and broadcast it on digital platforms. The film clip reached an incredible 612,042 people with 143,931 people watching it on Facebook. The piecing together of Stan by the Easy Tiger Creative team was recorded on a time-lapse camera and put on Facebook and the Dublin Zoo website. This reached 464,846 people and was watched by 117,000 people on Facebook.

Approximately 400 invited guests attended the opening on 6 July. During the preview earlier that day, the press were

(Above) Replica of Darwin's study at Zoorassic World
(Right) Children at Dino Dig

given high-quality photographs taken by photographer Patrick Bolger. Zoorassic World media coverage on television, radio, newspapers and digital media was extensive. Several media outlets hosted videos on their online platforms. There was a massive reaction online and the feedback was highly positive.

In 2017, Dublin Zoo welcomed two more elephant calves, bringing the herd to 11 animals. In March, Bernhardine gave birth to a female calf, Avani. It was her third calf and the fifth elephant to be born in Dublin Zoo. Unusually, for an experienced mother, Bernhardine rejected the calf. However, Asha, who was still nursing her six-month-old calf, also nursed the newborn. The Animal Care Team invested significant time in providing the calf with supplementary milk through a bottle while maintaining protected contact and, by mid-year, she was gaining weight at a decent rate. In May, Yasmin gave birth to a healthy male calf, later named by competition as Kabir.

(Above) Pat Kenny, broadcaster, officially opening Zoorassic World

Due to the continued breeding of Asian elephants at Dublin Zoo, plans to split the herd were postponed to enable the calves to become part of the harmonious social group. Meanwhile, the bull elephant, Upali, has been recommended for transfer to a continental zoo where his ease within a social group and strong breeding record make him a sought-after bull. Dublin Zoo's innovative elephant management continues to attract attention as zoos around the world seek out successful protected-contact elephant management programmes for advice and inspiration. Dublin Zoo supports Asian elephant conservation at the Kaziranga National Park in Assam, India.

Good progress was made on integrating the western lowland gorilla troop following two arrivals and the death of Harry, the silverback, in 2016. However, the 15-year-old female, Mayani, who moved from Stuttgart in 2005, continued to display uncomfortable levels of confrontational behaviour despite many months of experimentation by the Animal Care Team. With the advice of the Taxon Advisory Group, the difficult decision was made to transfer her to Antwerp Zoo. She was box trained over several months and the general curator of Antwerp Zoo, Sander Hofman, visited Dublin Zoo to observe her. In September, she was successfully transferred to Belgium. Road transport was judged to be less stressful for her and she departed very early one morning with a Garda escort to the ferry, road transport to Harwich, a ferry to the Port of Rotterdam and road transport from Rotterdam to Antwerp. It was executed flawlessly. Keeper James Creighton accompanied Mayani during the transport.

A very significant loss was that of Kitoko, a female western lowland gorilla just over one year old. Kitoko lost condition rapidly and was separated from her mother, Lena, and

placed in intensive care in the Dublin Zoo veterinary facility. Despite the very best care, she died on 19 November; the cause of her decline was salmonella. Meanwhile, a search has commenced to find a suitable black-back gorilla to replace silverback Harry and suggestions offered by the EEP are being researched.

The EEP has made a recommendation that Dublin Zoo should receive a breeding female orangutan from Barcelona Zoo and a young male from Monkey World in Britain to succeed the Dublin Zoo male, Sibu, who is 38 years old, a respectable age for an orangutan male. The recommendation for the transfer of the orangutans to Dublin came after a number of international colleagues visited Dublin Zoo to see our new Orangutan Forest in 2016. Early in 2017, the critically endangered citron-crested cockatoos moved to a recently completed habitat at the Orangutan Forest.

In 2017, Dublin Zoo jumped at the opportunity to accept a two-year-old female okapi from Stuttgart Zoo with the view to breeding from her in the future. Such recommendations for breeding this endangered animal are rare. Dublin Zoo sent two of our Animal Care Team, keepers Jenny Darley and Eric McClure, to Stuttgart to gain experience working with the female. On 31 May, Lumara arrived with her German keeper. Very relaxed on arrival, Lumara settled in well and had contact through mesh with nine-year-old male Kitabu. All observations, including those from a night camera, suggest that the okapis are getting on very well. It is the intention to have successful breeding in 2019. When Sander Hofman, the okapi studbook keeper, visited Dublin Zoo during the year, the opportunity was taken to discuss the care of the okapi, a challenging species, with the Dublin Zoo Animal Care Team.

Births in Dublin Zoo in 2017 included two female scimitar-horned oryx, an eastern bongo, fifteen Tamworth pigs in two litters and a Goeldi's monkey. In November, a male southern white rhinoceros calf was born to mother Nyala, her first calf. Sixteen-year-old female Zanta successfully underwent an ultrasound procedure on her reproductive organs. A German expert on rhinoceros reproduction and a University College Dublin team attended. Zanta was found to be in good condition and hormone treatment will be considered.

(Right) Okapi

2017 was the most successful year ever in Dublin Zoo for breeding Chilean flamingos. Despite the fact that the entire flock had been relocated for a few months early in the year due to the outbreak of avian influenza, seven Chilean flamingo were successfully raised by their parents and are now sub-adults. The investment into Flamingo Lagoon has started to pay off. With well-established vegetation in the large aviary, the flamingos can nest protected from marauding seagulls that feed on eggs and newly hatched chicks. Predation from foxes, cats or even Eurasian otter is now impossible. The aviary was undamaged by the high winds of Storm Ophelia in October. At the end of the year, the holding building at Flamingo Lagoon was extended to allow the flamingos to be kept indoors in case of an outbreak of bird flu.

A male and two female Sulawesi crested macaques in Dublin Zoo were transferred to Drayton Manor in Britain following a recommendation from the studbook keepers. In July, a female Amur tiger, Tundra, was transferred to Dublin Zoo from Kristiansand Zoo in Norway. This animal came with a breeding recommendation and was successfully introduced to the Dublin Zoo male. A film crew from Kristiansand Dyrepark in Norway filmed Tundra settling in. In August, Asian lion Kumar was transferred to Frankfurt Zoo where he settled in well. Dublin Zoo is quiet without his magnificent roar in the evening. With Kumar gone, the remaining lions will not be separated from each other and will be able to roam the entire habitat. During his time in Dublin, Kumar produced four offspring. Many visitors wished Kumar a safe journey and posted their images of him on social media.

A major loss was that of Henry, a common hippopotamus nearly 40 years old and a favourite animal with many of our visitors. He suffered from laboured respiration and, during the post mortem, the nasal canal was found blocked and infected. The difficult decision was made to euthanise him. Other deaths included the 29-year-old male siamang gibbon, which died of complications associated with chronic colitis, and the aging female snow leopard that was suffering from a very large infection of the jaw.

Dublin Zoo received an update about a female red ruffed lemur born at Dublin Zoo that was sent to a zoo in Madagascar where she was paired with a male from a zoo in France. This female continues to do well and the plan is to breed from her. Dublin Zoo is also providing financial support for a study into the feasibility of a reintroduction of this species.

In January, in response to a threat of bird flu, Dublin Zoo placed all of the birds in its collection indoors in order to prevent contact with wild birds that might carry the highly pathogenic N5 H8 strain of bird flu. The Humboldt penguins, Chilean flamingos, ducks and chickens at the Family Farm, Waldrapp ibis, ostriches and macaws were all kept indoors, a preventative measure that was widely reported by the media. They were returned to their habitats in April.

In September, publication Awesome Ocean listed the top 10 impressive, educational and enriching sea lion habitats in the world. Dublin Zoo's Sea Lion Cove was named at number nine on a list that included six habitats in the United States, three in Europe and one in Hong Kong.

ANIMAL WELLNESS AND ETHICS

The routine 'culling' of healthy animals as a way of managing animal populations in zoos continues to be a concern in the global zoo community. This is occasionally reflected in enquiries received from concerned visitors who wish to know whether this is something that is practiced in Dublin Zoo. To each enquirer, Dublin Zoo reiterates its stated policy that the euthanasia of an animal is only considered where, in the opinion of a veterinarian, an animal is suffering from a disease, detrimental psychological state or severe pain and stress that cannot be adequately alleviated. When all options have been thoroughly investigated and the decision is made to euthanise an animal, best practice is always applied to ensure that it is carried out humanely. Dublin Zoo does not approve of routine culling of 'surplus' animals as a way of population management in zoos and has spoken out against such practices.

During the year, a book titled Zoo Ethics: The Challenges of Compassionate Conservation was written by Dr. Jenny Gray, chief executive of Zoos Victoria and newly appointed president of the World Association of Zoos and Aquariums (WAZA). Also in 2017, Sabrina Brando was appointed to a new position, Animal Welfare Coordinator for WAZA. Brando will oversee programmes that emphasise research, enrichment, advocacy and the well-being of animals throughout WAZA's global network.

At the European Association for Zoos and Aquariums (EAZA) conference in April, the Ethics and Membership Committee reported on the decision to terminate the EAZA membership of a French zoo that also ran a circus; it also reported on a warning given to a German zoo for being in breach of the EAZA guidelines on keeping elephants. The future of two other zoos was also discussed. One of these, a private British zoo, provoked a strong media reaction when its poor record on animal welfare emerged and there were calls for its license to be revoked by its local council. The media reaction included questions about the continued existence of zoos. At the same time, Irish media reported on animal deaths in Dublin Zoo and Fota Wildlife Park. In response, Dublin Zoo produced a strongly worded opinion piece that appeared in the Irish Independent on 16 March. The piece stated that "Ensuring every animal lives out its life to the full is paramount to Dublin Zoo. At Dublin Zoo we treat animals with the utmost respect; they are sentient beings that deserve the very best care." The article concluded with the statement, "We intend to continue to be our own toughest critics, constantly assessing and evaluating our standards and increasing our support for the protection of the world's wildlife."

(Left) Southern white rhinoceros and calf

RETAIL AND VISITORS' SERVICES

2017 was another very busy year for the Retail and Visitors' Services Team especially during Wild Lights, which occurred during the normally quiet time of year. It was a challenge that the team embraced and we are very much look forward to building on what we learnt.

In March, in a new and successful approach to the recruitment of casual team members for the summer season, the five retail managers did simultaneous speedy interviews with applicants. Through these open interviews, we met applicants whom we could invite back to help us with the Wild Lights event.

Early in the year, a number of initiatives took place to launch exciting new merchandise. To coincide with the opening of Zoorassic World, there was an extensive range of dinosaur-related merchandise. This merchandise was on top of the back-to-school range and the complete zoo keepers' outfits for children, which proved very popular. In May, a Dublin Zoo-branded chocolate that is free of palm oil was made by Urney Chocolates in Co. Kildare. This was achieved after extensive research by Retail and Visitors' Services Manager Mark Bowes.

In May, new entry tickets were launched for the 2017 season featuring the skeleton of a Tyrannosaurus rex. In July, updated Z-cards arrived with the map and events listed to include Wild Lights and Santa's Grotto.

In August, in an initiative by the Retail and Visitors' Services Team, parents were encouraged at the entrance to use the paper wristbands provided for children on which a mobile phone number could be written. This approach has injected greater efficiency into finding lost children. There are few things more stressful to deal with than children being separated from their parents during a Zoo visit. The initiative was also used during Wild Lights and was a major success. This will be implemented year round for visitors, groups and events.

Later in the year, Dublin Zoo secured two Automatic Teller Machines. One is located at the entrance and another at the shop in the African Plains.

(Above) Kids' zoo keeper's outfit
(Right) Urney chocolate bar

Catering

BaxterStorey had another very successful year operating the catering outlets at Dublin Zoo: Meerkat Restaurant, the Picnic Bench, The Cove, Nakuru Cafe, kiosks and summer ice-cream carts. A highlight was to work with the Marketing and Events Team on the official opening of Zoorassic World.

Wild Lights was a huge success for Dublin Zoo catering. In addition to the existing units at the Sea Lion Cove, the Picnic Bench by the lawn and Meerkat Restaurant, two additional outlets were set up. These were a cabin by the Playforest that served coffee, hot chocolate and doughnuts, and an Asian stir-fry unit near the lawn. Working at night was a new experience for the team and they all look forward to being part of a similar experience in the future.

In October, Cater Care conducted an audit on the health and safety, food safety and quality standards of the catering in Dublin Zoo. This was part of an internal audit for all BaxterStorey catering units. Dublin Zoo catering achieved a 94% scoring overall. The general standard of food was judged to be very high and the services excellent. The audit found excellent management of documentation and staff records considering the large staff turnover and the management of multiple units. The excellent commitment of the team was commended.

DEVELOPMENT AND MAINTENANCE

Work on Zoorassic World very much dominated the first half of 2017. When that was completed, work on the next two big projects commenced: the new entrance for annual pass holders, groups and those with pre-paid tickets, and the new Discovery and Learning Centre. Jones & Jones Architects and Landscape Architects of Seattle, USA, were involved in the design of both. John J. Casey & Company, quantity surveyors, produced the tender documents. Hayes Higgins Partnership were the project managers. The 1960s entrance building and the 1994 Reptile House were demolished and, by the end of the year, foundations for the new buildings were in place. Both projects were within budget and on time.

Other jobs completed during a very busy year included the refurbishment of the small kitchen in Haughton House to bring it to a higher standard; the purchase of 55 new Zoo-green picnic tables made of recycled plastic, helping to alleviate the shortage at Nakuru Cafe, The Cove and Meerkat Restaurant during busy days; and completion of new bituminising of the path between the Amur tigers' and the grey wolves' habitats, removing potential trip hazards. In addition, a rough resin was applied to manhole covers that are potentially slippery when wet; hundreds of metres of new Zoo-standard fencing, replacing the old fence, were installed along the east-side lower road to prevent visitors from accessing the lake; and the holding building at Flamingo Lagoon was extended to keep flamingos indoors in case of another outbreak of bird flu.

Work on a 10-year master plan for Dublin Zoo by Jones & Jones commenced. It demanded the input of a large cross section of the Dublin Zoo Team. Consultation by Mario Campos of Jones & Jones with the Zoo Team took place over several days in April. Considerable work on refining the master plan took place throughout the summer. In October, Campos returned to continue his consultations and seek further input from members of the Zoo Team. The draft master plan is due for submission to the Zoological Society of Ireland Council in January 2018.

In June, Dublin Zoo recruited a very well qualified and experienced Sustainability Coordinator for a one-year fixed term to guide the Zoo into becoming more sustainable. The portfolio includes energy efficiency, water consumption, waste management, travel and transport, and ethical and sustainable procurement and use of products. Close cooperation with the Zoo's new sustainability partner, SSE Airtricity, is envisaged.

In November, Dublin Zoo adopted its first Sustainability Policy and committed to putting sustainability at the heart of Dublin Zoo's operations and decision making. Also in November, Dublin Zoo initiated a review of waste management practice and infrastructure, and launched a project to place recycling stations for visitors' use around the Zoo in early 2018. A programme of work to move towards more sustainable water management was also set out in December, to be initiated in 2018.

Health and Safety

All 39 recommendations in the Willis Report 2016 have been referenced in a three-year forward plan. The five principle headings are: Policy-Safety Statement, Organisational Issues, Planning and Implementation, Monitoring and Feedback, Audit and Review. Each has been assigned a specific file and reviews have commenced.

In October, Storm Ophelia created major challenges for Dublin Zoo. Most animals were placed inside on the night of 15 October and a standby Animal Care Team for the night was appointed. The Zoo was closed on 16 October with only a small number of the Animal Care Team on duty. This was done to minimise the risk of injury to Zoo employees travelling to work. It was decided that the Zoo should also be closed on 17 October so that a major cleanup and assessment could take place. Thankfully, there was only minor damage to roofs.

Arising from concern about the behaviour of grey heron at The Cove food outlet and their interaction with visitors, a study was undertaken by Ilaf Albeedh, Eric Clarke and Brendan Kavanagh from the Royal College of Surgeons in Ireland during the summer. Following their observations, a recommendation was made to move the birds. Advice and a permit to relocate some of these birds were received from the Department of Parks and Wildlife.

(Above) Mario Campos, Partner, Jones and Jones

HORTICULTURE

A dry winter meant that the Horticulture Team started the year watering recently planted material. There was concern about lake levels but by June regular rain had set back in; the plants thrived and the lake remained full enough. At one point, very heavy rain, an exceptional 50mm in 24 hours, almost caused the lake to overflow at the Sea Lion Cove.

Planting in Zoorassic World was the major project for 2017. The amount of planting was small but the logistics of getting five tonnes of suitable soil and working around the builders before the glass or the water went in was challenging. Rather than use normal topsoil, which would compact over time, 'tree sand' was used. Many of the plants have grown very well in the microclimates that are essential for the animals. Nearby at Family Farm, the over-abundant growth on the front hedge was reduced. The meadow was treated as a herbaceous border with pruning back, deadheading and weeding. This provided a much-enriched and more diverse plant area. There continues to be a good variety of birds feeding there with several nests in the hedges.

After the success of using plastic mesh and urban soil in the okapi habitat to reduce soil compaction and subsequent tree deaths, the same method was used in the eastern bongo habitat. Although it was successful with no more visible mud, it is proving hard to get good grass establishment, which may be because of the way the bongo feet disturb the urban soil and germinating seedlings. Time will tell and the team will persevere.

The Horticulture Team had several animal-enrichment success stories with plants. A willow, Salix purpurea, had been planted in the Gorilla Rainforest because it is the only willow that wild rabbits do not eat. As hoped, the gorillas and mangabeys would not eat it, either. In spring, the gorillas were seen apparently stripping the young shoots. On closer study, it emerged that they were eating the flowers – catkins – but ignoring the leaves and bark. After a week, the catkins were finished and the plants were left alone again. On the island in Orangutan Forest, Globe Artichoke Cynara cardunculus was planted because the gorillas had not eaten it in the Gorilla Rainforest. At first, neither the orangutans nor the siamang gibbons touched it. But as it grew, the orangutans started to pull the lower leaves off to make daytime nests on the ground; the leaves are large and downy and would give some insulation on damp or cold soil.

In the African Savanna, the number of Libertia chilensis was reduced and replaced with an equally floriferous Moraea huttonii, which do not require as much deadheading in summer. The Libertia that was removed was used for animal enrichment; the meerkats especially love digging into the tough root balls, as do the chimpanzees and other primates. Even the scimitar-horned oryx enjoyed clumps of Libertia as shelter for newborn young. In response to the request from the Animal Care Team, extra Libertia is being planted in woodland off-show areas to guarantee a future supply. The Zoo nursery was very useful again. About 750 Moraea were grown there, as were 2,000 Luzula sylavatica, a woodland-edge wood rush that is very useful in shady areas. Both of these plants are hard to buy in bulk.

Plant diseases are still causing some issues. A tree, Sorbus aucuparia, was lost to fireblight, which can affect all

members of the rose family and is a notifiable disease. More worrying is regular continual dieback of odd shrubs, mainly Aucuba and Photinia, to an as-yet unidentified pathogen but which may be Verticilium wilt. Some of our Libertia collection also suffered a spreading patch of dieback, again not reliably identified but possibly Fusarium wilt. Both of these are not easily treatable in the field, but we will be looking at beneficial fungi applied and hopefully deal with them in 2018.

(Above) A giant bugle, Echium wildprettii

In spring, a giant bugle, Echium wildprettii, flowered at the far end of the African Savanna. The magnificent plant with red flowers and silvery leaves on a two-metre-tall spire takes three years to flower, then dies. It had been nursed through two chilly winters and had been covered with evergreen branches during frost. The species is endemic to the island of Tenerife.

The Horticulture Team gave numerous tours and talks to students and professional horticulturalists during 2017. In April, Stephen Butler, the Curator of Horticulture was invited to speak at the International Zoo Design Conference in Wroclaw, Poland. Two presentations, one on the Gorilla Rainforest and one on the use of heavy plastic mesh and urban soil to prevent soil compaction in the bongo and okapi habitats, were very well received. The curator was pleasantly surprised by the queue of zoo directors and curators who wished to congratulate him on the well-planted Dublin Zoo that they had seen in 2016 while on a side trip from the EAZA conference in Belfast. Several of them requested further information and contact was made. The curator also attended the annual EAZA horticulture conference, held in Bioparco in Rome. There he saw the effects of alien pests. Many of the Bioparco's palms were dying from Asian Palm Weevil infestation. Rome's iconic pine trees are also under threat from a suddenly more aggressive beetle, possibly triggered by a change in climate.

DISCOVERY AND LEARNING

Zoorassic World, opened in July, was the major project for the Discovery and Learning Team in 2017. The team planned features and interpretation in Zoorassic World to create exciting new possibilities for the delivery of formal and informal educational programmes in Dublin Zoo. Features include museum-quality replicas of dinosaurs and other reptiles, fossils, and Dinosaur Discovery, a state-of-the-art dig zone designed to support the pre-school and primary school curriculum. Informal programmes were soon underway, the first of which was in Dinosaur Discovery for children ages 6 to 12 years old. Delivered at the end of August before children returned to school, it was a big success. Subsequent sessions took place over two Saturdays in September and October, and three days over Halloween. A total of 266 enthusiastic young 'palaeontologists' attended Dinosaur Discovery in 2017. Formal programmes for pre-school and Junior Cycle in Zoorassic World commenced with the new term, all linked to the curricula.

Meanwhile, existing and new programmes continue to appeal to schools with all morning slots booking out early in the year, and the afternoon slots booking out soon afterwards. In 2017, there was a 5% growth in numbers passing through the Discovery and Learning Department with 68,656 in 2017 compared to 65,162 in 2016.

At the primary school level, we engaged with 7,478 students and primary school teachers in a taught programme with Dublin Zoo educators. All interactive programmes, including Rainforest Ranger, African Adventure, Earth Alive and Food from the Farm, were revised and updated. Each programme was available for up to 32 students and was 60 to 90 minutes long. The programmes were linked to the SESE curriculum and were DPSM accredited. The uptake was excellent with an overall growth of 11% due to an extra staff member on the programmes.

The traditional May-June primary school tours were booked to capacity. For those who did not get a taught programme with a Zoo educator, resource material was sent with the booking form to help the teacher prepare for the visit. The resource material included pre-visit terminology, a timetable for talks on the lawn, and optional trails around the Zoo. All school tours were met by two volunteers, given maps and invited to ask questions. Talks on the lawn were delivered by an educator with volunteers on hand at the biofacts table and on the biofact cart. Volunteers were also on duty in the Discovery Centre where 11,847 primary students who were booked in for self-guided tours engaged with this process. Other school groups and the general public also took the opportunity to interact with the volunteers and the educator on the lawn.

The new outreach programme for primary schools was launched in January with bookings opening at the end of the month. The outreach programme was promoted at the BT Young Scientist and Technology Exhibition and advertised in the February and March editions of Intouch Magazine, providing great reach. In 2017, the outreach programme engaged with 1,880 students in Dublin, Westmeath and Donegal.

In July, 60 primary school teachers attended the ever-popular Teachers Continuous Professional Development Course at the Zoo from 3-7 July. As in previous years, it

was fully booked within a week of bookings opening. Feedback has again been very positive.

At the secondary school level, Discovery and Learning engaged with 13,114 students in taught classes in 2017. The ecology fieldwork classes for Leaving Certificate and Junior Cycle students and Zooardship, which is linked to the CSPE Junior Cycle, continue to be the most-booked programmes. The new Evolution module for Junior Cycle and transition-year students, which was developed for delivery between the classroom and Zoorassic World, will be launched in January 2018 and is unique to Dublin Zoo. Planning on the new Sustainability Workshop for Junior Cycle and transition-year students took place; the workshop will also be launched in January 2018.

The after-schools programme ran during the school year with 329 students from various groups such as Willow Grove Adolescent Unit, Stoneybatter Youth Services and Aosóg After Schools Group attending. These programmes run for four weeks each and the team designed a programme suitable for the age group coming in for

(Above) Kids club at the Kaziranga Forest Trail

each programme. The programme provided valuable environmental learning opportunities and fostered positive social interactions for these students.

The morning Parent and Toddler programme continues to be hugely popular. These are designed for toddlers with an accompanying adult and include a tour of Family Farm and a discovery and learning session. Two sessions each morning were held on two Wednesdays per month from February to June and September to October. All sessions were booked out with 633 parents and toddlers taking part, a 46% growth on 2016. The fee for both annual pass holders and non-annual pass holders was increased in line with the quality of the programme delivered.

In October, a new pre-school programme, Dinosaur Explorer in Zoorassic World, was launched with Early Childhood Ireland. Promotion included an article featured in their quarterly publication Early Times, which goes out to 14,000 pre-school settings. In total, 197 pre-schoolers and their teachers attended 50-minute sessions over two days. The hands-on programme included the children, who were up to five years old, working as palaeontologists to uncover fossils of dinosaurs. Like the existing early years programmes, Farmtastic Food and Winter Woollies, Dinosaur Explorer link to the Aistear curriculum.

The Dublin Zoo Kids Club continued in 2017 with lovely feedback coming in from families. The Kids Club is a six-module programme held on Saturdays that focuses on different animals or groups of animals in each session. The aim of the club is to develop animal knowledge and raise awareness of conservation issues for children who have a particular interest in wildlife. Three Kids Clubs were held, starting in February, April and September. The number of children in each varied from six to 15. Feedback from zookeepers highlighted the incredible knowledge and passion of participants. Evaluation of the ecological and conservation knowledge developed by participants showed a significant increase from pre- to post-club surveys.

The reputation of our spring, Easter and autumn workshops and summer camps continues to grow with bookings more than doubling. Spring workshops were in high demand with 72 children attending junior workshops and 11 teens taking part in the teen workshop. (The latter number highlights the growing interest of the teenage group as the teen workshop did not book at all in 2016.) Easter was another busy session with 74 children attending junior workshops and nine teens attending. During the summer, five very successful summer camps took place in August with children ages 6 to 12 years old attending. The five-day programme continues to grow from strength to strength with increased experience in both planning and teaching from our team. Support provided by the new summer camp volunteers enhanced the programme greatly with 378 children participating in summer camps in 2017. On 1 and 2 November, two fun-filled autumn camps were run for children ages 6 to 12 years old with 55 children participating. This was a 50% increase on last year's number. In addition, Teen Camp on 3 November, which focused on careers with animals, filled to capacity with 15 participants.

The Meridien EPOS booking system, introduced in 2016, is working very efficiently. It captures numbers coming through each programme accurately. All permanent

education staff are trained to use the system.

In January, Kelly Mara commenced as full-time permanent teacher in the Discovery and Learning Team. The Discovery and Learning Team were very involved in the development of interpretation for two significant public engagement projects in 2017 – the SSE Airtricity Sustainability Trail and Sustainability Weekends as well as Zoorassic World. During the year, detailed planning commenced for the new Discovery and Learning building, which is scheduled to open in 2018. As part of the planning process, we examined our needs for growth in programmes, suitable classroom spaces, appropriate programme animal facilities and a lecture theatre space for educational conferences, meetings and training.

In January, Dublin Zoo Discovery and Learning Team was present at the Young Scientist and Technology Exhibition, 11-14 January 2017. It was opened by President Michael D. Higgins, who stressed the importance of science for the protection of biodiversity. In November, two Dublin Zoo outreach activities took place during Science Week, but the Zoo did not host activities this year due to lack of a suitable venue.

A fund-raising coffee morning took place on 19 December in aid of the Dublin Simon Community. The event was initiated by Discovery and Learning as a way to draw the entire Zoo Team together in a social environment and to raise money for homeless people. Participation from the Zoo Team was very high: €690 was raised in about 30 minutes and Dublin Zoo matched the amount euro for euro. Leftover home-made cakes were given to organisations doing food runs.

Volunteers

In 2017, the volunteer programme peaked at 117 volunteers and delivered 3,227 shifts (8.2% growth on 2016 figures). Recruitment of new volunteers began in January with great interest expressed. Following a rigorous selection process conducted by Coordinator of Volunteers Noreen Fitzsimons, training for successful candidates commenced in February. Thirty highly motivated volunteers graduated in May at a ceremony which was followed by lunch. The growth in the number of volunteer shifts can be attributed to the new initiative of engaging volunteers specifically to support the summer camps. Teacher training colleges and university students were targeted with the aim of finding 10 volunteers for the five weeks of summer camp; each volunteer was asked to commit to a minimum of two full weeks. After another rigorous selection process, 15 volunteers were taken on with most committing to more than the two-week minimum commitment.

(Right) Volunteer Meadhbh O'Leary welcoming a family to the Discovery & Learning Centre

In July, the opening of the new Volunteer Centre was combined with the 30th anniversary of the volunteer programme. More than 100 volunteers and staff attended. The Volunteer Centre has provided great resources for volunteers to create new materials and information for our visitors. The three volunteers who have been part of the team since the programme's inception – Maeve McDonald, Mary Neville and Mary Marsh – were presented with flowers.

Throughout the year, volunteers were busy assisting visitors with questions or queries; staffing the Discovery and Learning Centre, touch tables and the biofact cart; assisting the Animal Care Team with research and observational studies; delivering tours to groups of all ages; helping with birthday parties; and assisting with our fun and educational seasonal visitor events, kids' camps, activities and themed animal weekends, including Wild Behaviours, Shy Forest Animals, Senior Safari, Bird Watching, Nature Detectives and World Animal Weekend. In October, our volunteers designed a programme of educational activities about critically endangered animals in Dublin Zoo for World Animal Weekend.

The Volunteer Centre supported volunteers in delivering even more educational activities in Dublin Zoo and also inspired more activity. On 16 September, International Red Panda Day, volunteers led a new initiative to celebrate the popular animal. A steady stream of visitors came to the information stand and children learned about the species and took part in arts and crafts activities. On Rhino Day in September, a team of volunteers coordinated information boards, educational games and nail-art stations in the African Plains to inform visitors about the various species of rhinoceros and to raise awareness of the threats to them in the wild. A blackboard titled 'What I learned today' encouraged visitors to write up the take-home messages they were leaving the Zoo with. For Halloween, the volunteers carved pumpkins for animal enrichment and set up Halloween activities in Family Farm. The garden was set out with a creepy crawly trail and various information stations, which were a huge hit with families. The trail was so popular that it remained open for the entire midterm break.

(Above) Longstanding volunteers Maeve McDonald, Mary Neville and Mary Marsh receiving flowers at 30th anniversary of volunteers celebration

A coffee morning for volunteers took place in January to provide updates on Zoorassic World, the Volunteer Centre and biofact protocols. Operations Manager for Animals and Grounds Gerry Creighton delivered a tour of the Zoo and provided updates about the animals and developments. In December, a celebration took place for International Volunteers Day and included a team-building 'Sustainable Craft Making' morning. This was followed by coffee and mince pies in the Volunteer Centre.

Family Farm

Farm-based education programmes saw a steady increase, especially in the second half of the year. In July, Family Farm hosted Agri Aware workshops, farm tours and a Bumble Bee Identification Workshop for visitors. In August, the Farmhouse and Family Farm came alive for Heritage Week with a variety of Irish traditional work. Craftsmen and women from various backgrounds delivered talks and workshops. These included demonstrations of basket weaving, beekeeping, butter making, hurley making, hand sheep-shearing, and the spinning and weaving of wool. In September, there were more activities to suit all ages at the Farmhouse. Crafts persons delivered talks and workshops, which included demonstrations of rope-making and the spinning and weaving of wool as well as farm tours and a potato dig session for visitors. In October, National Potato Day was celebrated in the Farmhouse with schoolchildren from Co. Laois. The World Food Day Celebration on Family Farm on October 16 had to be cancelled due to Storm Ophelia.

(Right) Johnny Gleeson at Family Farm

In August, Johnny Gleeson commenced the Education and Development Officer role with Dublin Zoo and Agri Aware in a full-time contract with four days spent in Dublin Zoo and the fifth day in the Agri Aware Office. Johnny comes from a background in agricultural science education and farm management. He attended the National Ploughing Championships in September, representing the Family Farm. The National Ploughing Championships had a record 290,000 visitors in 2017. This was an important promotional outreach opportunity for primary and secondary school activities which will run from Family Farm during the academic calendar.

MARKETING

The Marketing Team at Dublin Zoo had another extremely busy year. The highlights were the opening of Zoorassic World, a brand-new series of 'The Zoo' television programme and the extraordinarily successful new event, Wild Lights.

Media coverage, yet again, was extensive throughout the year, providing visitors with plenty of new reasons to visit Dublin Zoo.

The launch of Zoorassic World was preceded by a social media campaign to build anticipation and awareness. A video of 'Stan', the life-size replica of a T. rex fossil skeleton, arriving at the Zoo excited schoolchildren while a time-lapse video of his installation went viral and had extensive media coverage. The summer edition of Zoo Matters focussed on Zoorassic World and this edition was also included in The Irish Mail on Sunday, which had a print run of 100,000. 98FM added to the exposure by running a weeklong promotion of Zoorassic World.

The seventh series of 'The Zoo' television programme, by production company Moondance, commenced in April on RTÉ One on Sunday evenings at 18.30. 'The Zoo' attracted more than 250,000 viewers per episode, a 24% market share. The series also generated a huge amount of publicity in print, radio and digital media, and members of the Zoo Team were in high demand for interviews. Members of the Animal Care Team had a 30-minute slot on The Late Late Show that highlighted how Dublin Zoo has evolved over the years and featured a direct camera link to the Elephant House and the remote feeding of the elephants as part of the Zoo's animal enrichment programme.

New births continued to attract media attention. Press releases were issued to celebrate births, including the female scimitar-horned oryx and an eastern bongo calf in January, an Asian elephant calf to Bernhardine in March and to Yasmin in May, and the birth of the male southern white rhinoceros calf in November. These resulted in extensive coverage across all platforms. Social media campaigns were run to name the scimitar-horned oryx calf and Yasmin's calf. The brilliant pictures by photographer Patrick Bolger which were issued with the press releases contributed significantly to the high-profile coverage.

Dublin Zoo's online presence continued to grow. At the end of the year, Dublin Zoo's Facebook page had 284,852 followers while its Twitter account had 29,800 and its Instagram account had 25,900. In addition, 2017 saw Dublin Zoo's first Facebook live event with Q&As with the Animal Care Team, live talks and live footage from The Irish Fairy Door Easter event.

(Right) Sandra Molloy and the team from Moondance visit a primary school in rural Sulawesi

Dublin Zoo were very pleased to announce SSE Airtricity as the official Sustainability Partner to Dublin Zoo in a five-year partnership. The aim of the partnership is to help families learn more about the importance of sustainability in a fun and interactive manner. SSE Airtricity created a bespoke Eco Explorer Sustainability Trail, which showcases 10 sustainability stations for parents and children alike to discover, enhancing enjoyment and learning all across Dublin Zoo.

Several new initiatives were also launched in 2017, including 'Where Cards', which promotes local attractions to tourists in hotel foyers, and 'Phoenix Park Passport', which is distributed through the tourist offices in Dublin City Centre.

In October, Dublin Zoo was awarded the 'Experience Destination' award for 2017 by CXi, Customer eXperience Insights.

(Above) Nina Kiernan admiring the lanterns at Wild Lights

Dublin Zoo is always keen to listen to visitor feedback. With the aid of volunteers, 'The Research Centre' interviewed approximately 550 visitors on entry and 500 on exit in order to gain a better insight into visitors' opinions of the Zoo. Very positive feedback was received and 99% of the respondents think that Dublin Zoo is a lovely place to spend time with family and friends!

Wild Lights

For the first time, Dublin Zoo hosted a spectacular event called Wild Lights, which was a marketing initiative to drive footfall to Dublin Zoo during the off-peak months. Wild Lights was a magical nighttime event featuring giant colourful lanterns inspired by wildlife. Containing 12,000 metres of silk, 19,000 bulbs, 5,000 metres of LED lights, 48,000 glass bottles and 215,000 pieces of porcelain, the exhibit took 30 Chinese artists months to create and install.

The concept was thoroughly researched by Marketing Manager Emma Kiernan, Financial Controller John Sweeney and Senior Events Executive Aoife Keegan. Wild Lights, which required a full year of detailed planning, was presented in partnership with DDM Entertainment and Events and the VYA Creative Lantern Co.

A strong marketing campaign, including a media preview evening and digital advertising as well as advertising for press radio and outdoor on buses was created. 98FM and Independent News and Media came on board as media partners, giving phenomenal coverage to the event.

The opening event on 1 November was featured on RTÉ's Six and Nine O'Clock News as well as on the front covers

of The Irish Times and the Irish Independent and on The Late Late Show.

The Dublin Zoo Facebook page reached 4,781,889 during Wild Lights with 870,000 viewing the video content. As word of mouth spread, the event was completely sold out by 14 December, with an astonishing 190,000 tickets sold!

Events

The Dublin Zoo Events team had another very busy and successful year. The Summer Nights BBQs were launched in March and booked out before the first BBQ was held in May. Five BBQs were held with a total of 1,000 people, all over 18 years old, attending. Each BBQ evening ran from 6.30 to 11.30 and included an after-hours tour with a keeper. This was followed by a BBQ at the Meerkat Restaurant with music and dancing. In February, Valentines Date Mornings, now in their fourth year, were a great success and also sold out. Dublin Zoo ran competitions for free tickets to the event through 98FM and Today FM. Held on the weekend of 11 and 12 February, more than 100 couples attended. The event received excellent press coverage. The BBQs and Valentines Date Mornings were advertised only on social media, the Zoo website and in Zoo Matters. Many attendees were repeat visitors or had heard about them by word of mouth.

(Above) Beth Healy among the lanterns at Wild Lights

Early in March, a Tree Weekend was held in the Zoo to promote native species and support National Tree Week. Curator of Horticulture Stephen Butler and Eanna Ní Lamhna delivered tree-based walks and talks on 4 March, while Paddy Madden and Seosamh ni Breathnach delivered tree-themed workshops on 5 March. St. Patrick's Day was a hive of activity with trails and arts and crafts around the Zoo. On 25 March, Scouting Ireland hosted National Beaver Day in the Zoo with 2,656 Beaver Scouts and their leaders attending; volunteers staffed biofact stations around the Zoo for the children. In May, a Family Fun weekend was organised with entertainers, face painting, festival activities music and keeper talks. Other themed weekends included 'Long Live Lemurs', which was held at the beginning of July, and Reptile Weekend in August in Zoorassic World.

Dublin Zoo's new partner, SSE Airtricity, hosted two Sustainability Weekends – the first in June and the second in August. In July, the energy company held two 'Wake up with the Asian elephants and Amur tiger' mornings for clients, and a private event for staff and clients. Very positive feedback was received.

For Halloween, the volunteers carved pumpkins for enrichment activities for the animals. Beautiful scenes were created in Family Farm with Halloween activities and crafts taking place in the Farmhouse on 31 October.

Tickets for Santa's Grotto went on sale in September and were sold out within a month.

The Events Team organised three major launches for Dublin Zoo. In July, 400 invited guests were welcomed to the official opening of Zoorassic World. Also in July, the 30th anniversary of the volunteer programme at Dublin Zoo was celebrated with the opening of the new Volunteer Centre. Refreshments were served and all volunteers and education staff, past and present, were invited, which led to a wonderful reunion. In November, the team organised the opening night of Wild Lights at which approximately 1,500 guests attended.

(Above) SSE Airtricity eco explorer trail

The 13th annual Dream Night for sick children and their families was held on a beautiful evening in June. It was organised by keeper Brendan Walsh, and members of the Events team and the Discovery and Learning team, who worked with the directors of nursing in Our Lady's Hospital Crumlin and in Temple Street Hospital. With such good weather, 268 children and parents attended. Nearly 60 Zoo staff and volunteers were on hand to make this a special evening. The families were greeted with music and entertainment donated by DJ Derek Monaghan and Silly Billy's Magician Entertainment. This was followed with tours and talks by the Animal Care Team and a party in the Meerkat Restaurant with a feast donated by BaxterStorey and games, props and character costumes donated by Prop Me Up. Magic Memories photographed each family and gave them a complimentary photo souvenir pack. Synergy donated security hours and St John Ambulance were on hand. Everyone gave their time and services in a voluntary capacity to make this a magical evening for all of the families.

Haughton House was host to 66 corporate days, five family events and six weddings. The birthday party calendar, which runs from March to September, was fully booked by the end of June. In all, 115 birthday parties were held for a total of 2,035 children. The parties were coordinated by Lorraine Finucane and the invaluable support of volunteers.

CONSERVATION

Dublin Zoo continues its support for international in situ conservation. All of the recipients of Dublin Zoo funds are working with species that are in the Zoo. The Zoo's support generates much good will and, during the summer, members of the Zoo Team were welcomed by two Indonesian conservation organisations. Team leader Ciaran McMahon and keeper Aisleen Greene travelled with Moondance, creators of 'The Zoo' television programme, to Kalimantan (Indonesian Borneo) to film orangutans in the wild and to experience what the Orangutan Foundation in Pangkalan Bun is achieving. Shortly afterwards, Conservation and Research Coordinator Sandra Molloy travelled with the Moondance team to northern Sulawesi where they visited Selamatkan Yaki, a conservation programme for Sulawesi crested macaques. The Orangutan Foundation and Selamatkan Yaki are supported by Dublin Zoo. Conservation in Indonesia will be a focus in the 2018 series of 'The Zoo' and excellent footage was gathered. Sandra wrote about her trip in the Autumn edition of the quarterly Dublin Zoo publication Zoo Matters while the diaries of Ciaran and Aisleen detailing their trip to Kalimantan were a major feature of Zoo Matters in the winter edition.

A Conservation and Research Committee meeting took place on 28 June at Dublin Zoo. Sandra Molloy gave a presentation about Dublin Zoo's global conservation involvement. The meeting was attended by representatives of Belfast Zoo and Fota Wildlife Park who gave updates about their achievements and initiatives.

In January, The Lowveld Trust - Save the Rhino International acknowledged continued Dublin Zoo support, especially the fund-raising efforts by Ken Mackey and Eric McClure, who work with the southern white rhinoceros in Dublin Zoo. Retail Manager Mark Bowes also raised €1,697 for Save the Rhino through sponsorship for the London Marathon. Additionally, 444 black rhino calves were born in the southeast lowveld of Zimbabwe and The Lowveld Trust is helping to protect them from extinction. The Trust is also helping people who live near rhinos to feel the benefits of rhinoceros conservation.

In December, Dublin Zoo received an update about a female red ruffed lemur born at Dublin Zoo that was sent to a zoo in Madagascar where she was paired with a male from a zoo in France. This female continues to do well and the plan is to breed from her. Dublin Zoo is also providing financial support for a study into the feasibility of a reintroduction of this species.

Support of Irish conservation work is also an important aspect of Dublin Zoo's work. Dublin Zoo has been providing support to the Irish Peatland Conservation Council (IPCC) since 2011, and this year became a symbolic shareholder in 3.33 acres of Irish bog. To become a shareholder, Dublin Zoo contributed to a special fund

(Right) Red ruffed lemur

to purchase peatland of conservation concern by the IPCC. The Irish Wildlife Trust National Reptile Survey, also supported by Dublin Zoo, produced a survey progress report about the distribution of terrestrial reptiles in Ireland.

In July 2017, Dublin Zoo hosted a Bumblebee workshop run by the National Biodiversity Data Centre. The aim of the workshop was to raise awareness about Irish bumblebees and to encourage people to submit records of sightings.

In a letter received in December from Bengt Holst, custodian of the golden lion tamarins of Brazil Fund, he stressed the importance of the continued help coming from Dublin Zoo and other supporters of in situ conservators. At present, the conservators are struggling with local plans to build an extended highway that would endanger the golden lion tamarins.

In August, Dublin Zoo provided an additional donation to Tacugama Chimpanzee Sanctuary to assist them with their relief work after the disastrous mudslides in Freetown, Sierra Leone. Many of the families with which the Tacugama Chimpanzee Sanctuary work in their outreach projects were affected by these mudslides.

International conservation projects supported by Dublin Zoo

- Mbeli Bai Study (Western lowland Gorillas), Congo – Wildlife Conservation Society.
- Tacugama Chimpanzee Sanctuary – Community Outreach Programme, Sierra Leone.
- Camp JL (Lamandau Wildlife Reserve, Borneo) - Orangutan Foundation.
- WAPCA – West African Primate Conservation Action (includes conservation of white-naped mangabeys) – Ghana.
- Selamatkan Yaki - EARS (Education and Awareness Raising Strategy) to save the Sulawesi crested macaques, Sulawesi, Indonesia.
- Golden Lion Tamarin Association, Brazil.
- Red ruffed lemur reintroduction feasibility project on Madagascar - GERP (Groupe d'Etude et de Recherche sur les Primates de Madagascar).
- Conservation planning for Asian elephants in Assam, India – Asian Nature Conservation Foundation.
- Lowveld Rhino Trust – Save the Rhino.
- Lowland Tapir Conservation Initiative, Brazil.
- Mountain Bongo Surveillance Project, Kenya.
- Rothschild's Giraffe Project, Kenya - Giraffe Research and Conservation Trust.
- Okapi Conservation Project, Democratic Republic of Congo.
- Scimitar-horned oryx – reintroduction programme in Tunisia.
- Snow Leopard Trust (various Asian range countries).
- Securing a future for Amur leopards and tigers in Russia V (Phoenix Fund) – WildCats Conservation Alliance.
- Painted Dog Conservation, Zimbabwe.
- Red Panda Forest Guardian Programme, Nepal – Red Panda Network.
- Sphenisco, Peru and Chile (Humboldt penguins).
- Thailand Hornbill Project - Hornbill Research Foundation (includes conservation of great hornbills).
- Frozen Ark Project.
- Conservation Planning Specialist Group.

Irish conservation projects supported by Dublin Zoo

- Irish Peatlands Conservation Council.
- Research and Conservation of Owls and Kestrel in Ireland – BirdWatch Ireland.
- The conservation of the critically endangered Irish Breeding Curlew – a first step - Irish Grey Partridge Conservation 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.

Research and Publications

Zooquaria, the quarterly publication of the European Association of Zoos and Aquaria, published a two-page article by Curator of Horticulture Stephen Butler about the design philosophy and the creation of habitats at Dublin Zoo.

Zooquaria also published an article written by Sandra Molloy, Registrar/Research and Conservation Coordinator, and Simon Bruslund (Heidelberg Zoo) on the activities of the Parrot Taxon Advisory Group of which Sandra is vice-chair.

After several years of collecting video data at Dublin Zoo, a paper was published in the Journal of Zoo and Aquarium Research (JZAR) titled Asian Elephant (Elephas maximus) sleep study – long term quantitative research at Dublin Zoo. The author is Brendan Walsh, Senior Keeper of primates and elephants.

A paper appeared in the Open Veterinary Journal, (2017), Vol. 7 (4): 300 – 305, October 2017 titled Multiple myeloma in an Amur tiger (Panthera tigris altaica) at Dublin Zoo, by Alison M. Lee (Pathobiology Section, UCD School of Veterinary Medicine), Naomi Guppy (UCL Advanced Diagnostics, London), John Bainbridge (Dublin Zoo), and Hanne Jahns (Pathobiology Section, UCD School of Veterinary Medicine).

A paper appeared in Bird Study titled Breeding ecology and habitat selection of Merlin (Falco columbarius) in forested landscapes, which was co-authored by Shane McGuinness of the Education Department.

The Giraffe EEP distributed a report into a study relating to issues regarding giraffes falling or going down and the substrates involved, which was conducted by Helen Clarke and Alan Duffy, Dublin Zoo.

Sandra Molloy, Registrar/Research and Conservation Coordinator and EEP coordinator for citron-crested cockatoos and Moluccan cockatoos, produced annual reports for both species, plus the studbook for the citron-crested cockatoo.

Susan O'Brien, keeper and EEP coordinator for Goeldi's monkey, produced an annual report for this species.

Conferences, training and presentations

February

Operations Manager for Animals and Grounds Gerry Creighton spent three days working with the elephant team in Albuquerque, New Mexico, at their invitation. Gerry was also a guest speaker at the Cleveland 360 elephant workshop and a guest presenter at an elephant

care workshop in Arizona.

March

A pathologist from University College Dublin Veterinary Hospital gave a presentation to the Zoo Team on a rare case of placenta previs in a white-naped mangabey. The mangabey had recently died in Dublin Zoo and was sent for post-mortem to UCD Veterinary Hospital.

Susan O'Brien, keeper, attended the mid-year Callitrichid meeting in Antwerp.

April

The Director attended the EAZA Directors' Day, EAZA Council Meeting and EAZA AGM on 26-28 April in Chester, United Kingdom. The chair of the IUCN, Jon Paul Rodrigues, attended meetings to strengthen the cooperation between the IUCN and EAZA. Other important topics were zoos supporting CITES in the fight against the illegal wildlife trade, new Invasive Alien Species Regulations, zoo leadership and collection planning for biodiversity conservation. The different EAZA committees – conservation, education, research, technical assistance, veterinary and communications – all reported on their achievements. On the final day, a visit to Chester Zoo was scheduled and 'Islands', the most recently completed development, was visited.

Team leader Helen Clarke attended the mid-year Great Ape Taxon Advisory Group (GATAG) meeting in Münster Zoo in Germany. She is on the species committee for chimpanzees.

Stephen Butler, Curator of Horticulture, spoke at the International Zoo Design Conference held in Wroclaw, Poland.

A lecture was given by the Horticulture Team for the Royal Horticultural Society of Ireland at Airfield Gardens Trust, Dundrum. There were 45 attendees.

May

Sandra Molloy, Registrar/Research and Conservation Coordinator, attended the mid-year Bird TAG meetings in Vienna.

Stephen Butler, Curator of Horticulture, attended the annual EAZA Zoo Horticulture Group conference in Bioparco, Rome.

June

Dublin Zoo hosted the Conservation and Research Committee meeting, which was attended by delegates from Belfast Zoo and Fota Wildlife Park. Sandra Molloy gave a presentation on the conservation activities of Dublin Zoo.

July

In July 2017, Dublin Zoo hosted a Bumblebee workshop run by the National Biodiversity Data Centre. The aim of the workshop was to raise awareness about Irish bumblebees and to encourage people to submit records of sightings.

August

Operations Manager for Animals and Grounds Gerry Creighton gave a presentation in Cleveland, Ohio, about elephant management. The talk was by invitation and the

trip was fully funded by the Americans.

In August, Gerry, Helen, Ciaran and John Meade (Stores) attended a course in Kildalton College on moving live animals. This course is endorsed by the Department of Agriculture on moving live animals as part of our zoo transporter licence.

September

Keepers Lee Byrne and Danny Dunne went to a sea lion training course in Britain.

The European Association of Zoos and Aquaria (EAZA) annual conference, hosted by the Wildlands Adventure Zoo, Emmen, the Netherlands, was held 19-23 September. More than 800 representatives of the European zoos came together to discuss a wide range of topics and to forward plan the zoo collection. Because there are many parallel meetings, a number of Dublin Zoo representatives attended for part of the conference, including Gerry Creighton, Operations Manager for Animals and Grounds; team leaders Helen Clarke Bennett and Ciaran McMahon; studbook keeper Susan O'Brien; and Sandra Molloy, Coordinator of Conservation and Research. The Director also attended.

Dublin Zoo hosted the Irish BIAZA regional educators and research meeting with Belfast Zoo, Secret Valley and Galway Atlantaquaria represented. Aileen Tennant, Discovery and Learning manager, gave a presentation on developments within Discovery and Learning in Dublin Zoo, and Noreen Fitzsimons, Volunteers Coordinator, delivered a talk on the Dublin Zoo Volunteering Programme.

October

The director attended the annual conference of the World Association of Zoos and Aquaria (WAZA) from 15-19 October in Berlin.

Keeper Mel Sheridan and Gerry Creighton attended a five-day workshop on Elephant Management in Chester Zoo. Mel gave an excellent presentation about the elephant management programme in Dublin Zoo. Gerry was a guest speaker on aspects of resource management of elephants and sustainability.

Alison Lee (UCD Veterinary Hospital) presented a poster at the British Veterinary Zoological Conference in London Zoo titled 'Multiple Myeloma in an Amur tiger (Panteria tigris altaica)'.

November

Aileen Tennant and teacher Kelly Mara attended the Botanical Educators Network Conference hosted by the Botanic Gardens in Glasnevin.

Visitors and Visiting

The holistic approach to design for and relating to animals in Dublin Zoo has drawn worldwide attention. Over the past year, scores of colleagues from other zoos have come here to familiarise themselves with the Dublin Zoo methods. In 2017, Dublin Zoo welcomed colleagues from numerous zoos, including Mike Dolan from the San Diego Wild Animal Park, USA; Pat Grieve and CEO Lisa New from Knoxville Zoo, USA; Amanda Schaffner and Erika Jaques, Ohio, USA; Adriana Diaz from Miami Zoo, USA; Benny van Dyck from Plankendael, Belgium; Adil Hakim Bin and K. Jabir Anil from Singapore Zoo,

Singapore; and Fern Fernandez, a member of the Board of the Smithsonian, National Zoo, Washington D.C.
In April, the Horticulture Team gave garden tours to the following: Chinese landscape students from University College Dublin; students from Dublin School of Horticulture; and 12 students from the Horticulture Society, University College Dublin.

In May, Jenny Darley and Eric McClure went to Stuttgart Zoo, Germany, to meet the team caring for the female okapi which came to Dublin Zoo.

In June, a master's biology student at the Federal University of São Carlos in partnership with São Paulo Zoo (Brazil) visited Dublin Zoo for a technical visit to learn more about our environmental education and high animal welfare standards.

In July, the Horticulture Team gave garden tours to the Royal Horticultural Society of Ireland; approximately 30 people attended. The team also delivered a garden tour to the Meath branch of An Taisce.

In August, the Horticulture Team gave two tours to staff from Blarney Castle, Cork. Also in August, Benny Van Dyck of Planckendeal Zoo and Adriana Diaz of Miami Zoo visited the Kaziranga Forest Trail to learn about Dublin Zoo's elephant management programme.

In September, keeper James Creighton travelled to Antwerp Zoo, Belgium, to help western lowland gorilla Mayani settle in. Also, the team from the Botanic Gardens visited Dublin Zoo over several days, resulting in more than 40 people receiving a guided tour from the Horticulture Team. In addition, the Horticulture Team gave a talk to Irish Garden Plant Society/Irish Society of Botanical Artists. Also in September, visitors to the Kaziranga Forest Trail included CEO Lisa New and Patty Grieve from Knoxville Zoo, and Amanda Schaffner and Erika Jaques from Ohio Zoo.

In October, Mike Dolan from the San Diego Wild Animal Park, and Adil Hakim Bin and Kjabir Anil from Singapore Zoo and Night Safari visited the Kaziranga Forest Trail to learn about Dublin Zoo's elephant management programme.

In November, the Elephant Care Team welcomed two colleagues from Zurich Zoo.

In December, Dijana Beneta and Ana Trogrlic visited Dublin Zoo from Zoo Zagreb with Zoo Zagreb with particular interest in our chimp, wolf, giraffe, sea lion and penguin habitats.

CENSUS OF ANIMALS IN DUBLIN ZOO DURING 2017

Summary of Census of Animals in Dublin Zoo on 1st January 2018

Taxon	Total Species	Total Specimens
Mammals	40	234
Birds	15	178
Reptiles	21	72
Total vertebrates	**76**	**484**
Invertebrates	7	64

**Approximate numbers*

Summary of Births and Hatchings of Animals in Dublin Zoo during 2017

Taxon	Total Species	Total Specimens
Mammals	12	61
Birds	3	22
Reptiles	2	13
Total vertebrates	**17**	**96**
Invertebrates	6	5090

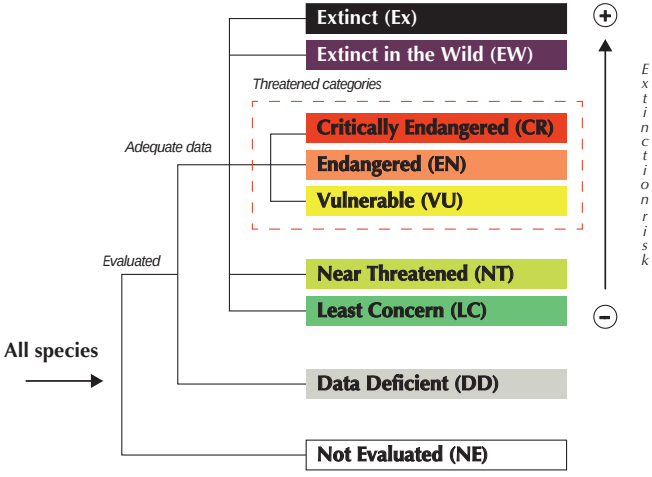
Summary of European Endangered species Programmes & European Studbooks which Dublin Zoo participated in throughout 2017

Number of European Endangered species Programmes (EEP)	30
Number of European studbooks (ESB)	7

Summary of Animal Species on the IUCN Red List of Threatened Species in Dublin Zoo during 2017

IUCN status	Number of species/ subspecies
Extinct in the wild – EW	1
Critically endangered – CR	10
Endangered – EN	16
Vulnerable – VU	11
Near threatened – NT	5
Least Concern – LC	26
Not Evaluated – NE	15

Source: Source: IUCN 2018. IUCN Red List of Threatened Species. Version 2017-3 Available at: http://www.iucnredlist.org.



Downloaded on 01/02/2018.

(Left) Forest dragon

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 2017

Column 2: The number of animals received in 2017 through donation, loan or exchange.

Column 3: The number of animals born or hatched during 2017.

Column 4: The number of animals dying within 30 days of birth or hatching, in 2017.

Column 5: The number of animals dying having survived more than 30 days, in 2017.

Column 6: The number of animals leaving the collection through donation, loan, exchange theft etc. during 2017.

Column 7: The number of animals in the collection at 1st January 2018.

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 wild animals living within the zoo e.g. many native bird species.

	CITES	IUCN Status	SPECIES		Total at 01.01.17	Arrivals	Births	Dead within 30 Days	Dead	Departed	Total at 01.01.18
			VERTEBRATES	**VERTEBRATA**							
			CLASS:MAMMALS	**MAMMALIA**							
			BATS	**CHIROPTERA**							
	II/A	CR	Rodrigues flying fox	*Pteropus rodricensis*	1. 11. 0						1. 11. 0
			PRIMATES	**PRIMATES**							
ESB	I/A	EN	Ring-tailed lemur	*Lemur catta*	5. 3. 0						5. 3. 0
	I/A	CR	Red ruffed lemur	*Varecia rubra*	5. 2. 0		2. 1. 0		2. 0. 0	0. 1. 0	5. 2. 0
	I/A	VU	Goeldi's monkey	*Callimico goeldii*	2. 4. 0		1. 0. 0		1. 0. 0	0. 1. 0	2. 3. 0
	II/B	LC	Eastern pygmy marmosets	*Cebuella pygmaea niveiventris*	1. 1. 0						1. 1. 0
	I/A	EN	Golden lion tamarin	*Leontopithecus rosalia*	1. 1. 0						1. 1. 0
	II/B	LC	Bolivian squirrel monkey	*Saimiri boliviensis boliviensis*	7. 0. 0				3. 0. 0		4. 0. 0
	II/B	LC	White-faced saki	*Pithecia pithecia*	3. 1. 0						3. 1. 0
	II/B	EN	White-naped mangabey	*Cercocebus atys lunulatus*	3. 4. 0		0. 1. 1	0. 0. 1		0. 1. 0	3. 4. 0
ESB	II/B	VU	Red-capped mangabey	*Cercocebus torquatus*	4. 0. 0						4. 0. 0
	II/B	CR	Sulawesi crested macaque	*Macaca nigra*	14. 10. 0		0. 0. 1			1. 2. 0	13. 8. 1
	I/A	EN	Siamang	*Symphalangus syndactylus*	1. 1. 0				1. 0. 0		0. 1. 0
	I/A	CR	Western lowland gorilla	*Gorilla gorilla gorilla*	1. 6. 0				0. 1. 0	0. 1. 0	1. 4. 0
	I/A	EN	Chimpanzee	*Pan troglodytes*	2. 1. 0						2. 1. 0
	I/A	CR	Western chimpanzee	*Pan troglodytes verus*	1. 3. 0						1. 3. 0
	I/A	CR	Bornean orangutan	*Pongo pygmaeus pygmaeus*	1. 3. 0	0. 1. 0					1. 4. 0
			XENARTHRANS	**XENARTHRA**							
ESB	NL	LC	Linne's two-toed sloth	*Choloepus didactylus*	1. 1. 0						1. 1. 0
			CARNIVORES	**CARNIVORA**							
	II/A	LC	Grey wolf	*Canis lupus*	9. 2. 0						9. 2. 0
	NL	EN	Painted dogs	*Lycaon pictus*	5. 6. 0		0. 0. 1	0. 0. 1			5. 6. 0
	I/A	EN	Red panda	*Ailurus fulgens fulgens*	0. 2. 0				0. 1. 0		0. 1. 0
	NL	LC	Slender-tailed meerkat	*Suricata suricatta*	10. 6. 0				1. 0. 0		9. 6. 0
	I/A	EN	Asiatic lion	*Panthera leo persica*	2. 4. 0					1. 0. 0	1. 4. 0
	I/A	EN	Amur tiger	*Panthera tigris altaica*	1. 1. 0	0. 1. 0					1. 2. 0
	I/A	VU	Snow leopard	*Panthera uncia*	1. 2. 0				0. 1. 0		1. 1. 0
ESB	NL	LC	California sealion	*Zalophus californianus*	1. 3. 0						1. 3. 0

	CITES	IUCN Status	SPECIES		Total at 01.01.17	Arrivals	Births	Dead within 30 Days	Dead	Departed	Total at 01.01.18
			ELEPHANTS	**PROBOSCIDAE**							
	I/A	EN	Asiatic elephant	*Elephas maximus*	3. 6. 0		1. 1. 0				4. 7. 0
			ODD-TOED UNGULATES	**PERISSODACTYLA**							
	NL	NT	Common/Grant's zebra	*Equus quagga boehmi*	2. 5. 0						2. 5. 0
	II/B	VU	South American tapir	*Tapirus terrestris*	1. 2. 0						1. 2. 0
	I/A	NT	Southern white rhinoceros	*Ceratotherium simum simum*	3. 4. 0		1. 1. 0				4. 4. 0
			EVEN-TOED UNGULATES	**ARTIODACTYLA**							
	NL	LC	Red river hog	*Potamochoerus porcus*	4. 4. 0				0. 3. 0		4. 1. 0
ESB	II/B	VU	Hippopotamus	*Hippopotamus amphibius*	1. 1. 0				1. 0. 0		0. 1. 0
	NL	VU	Giraffe	*Giraffa camelopardalis*	2. 1. 0						2. 1. 0
	NL	EN	Baringo/Rothschild giraffe	*Giraffa camelopardalis rothschildi*	3. 2. 0					1. 0. 0	2. 2. 0
	NL	EN	Okapi	*Okapia johnstoni*	2. 0. 0	0. 1. 0					2. 1. 0
	III/C	LC	Blackbuck	*Antilope cervicapra*	1. 3. 0						1. 3. 0
	NL	CR	Eastern bongo	*Tragelaphus eurycerus isaaci*	1. 3. 0		1. 0. 0				2. 3. 0
	I/A	EW	Scimitar-horned oryx	*Oryx dammah*	1. 3. 0		1. 1. 1				2. 4. 1
			DOMESTIC								
			Domestic Rabbit	*Oryctolagus cuniculus domestic*	0. 0. 0	1. 1. 1	2. 3. 7	0. 0. 2		1. 1. 6	2. 3. 0
			Tamworth pig	*Sus scrofa scrofa tamworth*	5. 4. 0	0. 4. 0	8. 14.10	0. 2. 2		8. 16. 8	5. 4. 0
			Friesian cow	*Bos taurus taurus friesian*	0. 1. 0	0. 1. 0	0. 1. 0			0. 1. 0	0. 2. 0
			Charolais cow	*Bos taurus taurus charolais*	0. 1. 0		0. 1. 0			0. 2. 0	0. 0. 0
			Small East African goat	*Capra hircus domestic small_east_african*	0. 6. 0					0. 1. 0	0. 5. 0
			Cheviot sheep	*Ovis aries aries cheviot*	0. 1. 0					0. 1. 0	0. 0. 0
			Lleyn sheep	*Ovis aries aries lleyn*	0. 0. 0	1. 1. 0				1. 0. 0	0. 1. 0
			Shropshire sheep	*Ovis aries aries shropshire*	0. 1. 0	2. 1. 0				2. 1. 0	0. 1. 0
			Suffolk sheep	*Ovis aries aries suffolk*	0. 1. 0					0. 1. 0	0. 0. 0
			Texel sheep	*Ovis aries aries texel*	0. 2. 0					0. 2. 0	0. 0. 0
			Labrador dog	*Canis lupus familiaris labrador*	0. 1. 0						0. 1. 0
			CLASS: BIRDS	**AVES**							
			OSTRICHES	**STRUTHIONIFROMES**							
	NL	LC	Ostrich	*Struthio camelus*	1. 6. 0				0. 1. 0		1. 5. 0

	CITES	IUCN Status	SPECIES		Total at 01.01.17	Arrivals	Births	Dead within 30 Days	Dead	Departed	Total at 01.01.18
			PENGUINS	**SPHENISCIFORMES**							
	I/A	VU	Humboldt penguin	*Spheniscus humboldti*	8. 7. 0						8. 7. 0
			HERONS/STORKS	**CICONIIFORMES**							
	/A	LC	Little egret	*Egretta garzetta*	2. 0. 0						2. 0. 0
	I/A	CR	Waldrapp ibis	*Geronticus eremita*	12. 11. 5				0. 1. 0		12. 10. 5
			FLAMINGOS	**PHOENICOPTERIDAE**							
	II/B	NT	Chilean flamingo	*Phoenicopterus chilensis*	41. 30. 9		1. 0. 13	1. 0. 6	1. 0. 0		40.30.16
			GALLINACEOUS BIRDS	**GALLIFORMES**							
	NL	LC	Helmeted guinea fowl	*Numida meleagris*	2. 4. 0				1. 1. 0	0. 2. 0	1. 1. 0
	III/C	LC	Common peafowl	*Pavo cristatus*	2. 5. 0		0. 1. 6		0. 0. 1	1. 1. 5	1. 5. 0
	NL	NT	Crested wood partridge	*Rollulus rouloul*	2. 1. 0						2. 1. 0
			DUCKS/GEESE/SWANS	**ANSERIFORMES**							
	NL	LC	White-cheeked pintails	*Anas bahamensis*	3. 3. 0		0. 0. 1	0. 0. 1			3. 3. 0
			PIGEONS/DOVES	**COLUMBIFORMES**							
	III/C	EN	Pink pigeon	*Nesoenas mayeri*	1. 0. 0					1. 0. 0	0. 0. 0
			PARROTS	**PSITTACIFORMES**							
ESB	I/A	VU	Mexican military macaw	*Ara militaris mexicana*	1. 1. 0						1. 1. 0
	I/A	CR	Citron-crested cockatoo	*Cacatua sulphurea citrinocristata*	1. 2. 0	0. 1. 0					1. 3. 0
			HORNBILLS ETC.	**CORACIIFORMES**							
	I/A	NT	Great hornbill	*Buceros bicornis*	1. 1. 0						1. 1. 0
ESB	NL	LC	Abyssinian ground hornbill	*Bucorvus abyssinicus*	1. 1. 0						1. 1. 0
			DOMESTIC FOWL								
			Australorp chicken	*Gallus gallus domestic australorp*	3. 4. 0						3. 4. 0
			Sussex chicken (light)	*Gallus gallus domestic sussex light*	1. 1. 0						1. 1. 0
			Brahma bantem	*Gallus gallus domestic brahma*	0. 3. 0				0. 1. 0		0. 2. 0
			Rhode Island red chicken	*Gallus gallus domestic rhode_island_red*	0. 2. 0						0. 2. 0
			Indian runner duck	*Anas platyrhynchos domestic indian_runner*	1. 1. 0						1. 1. 0
			CLASS: REPTILES	**REPTILIA**							
			CHELONES	**TESTUDINES**							
	II/B	CR	Annam pond turtle	*Mauremys annamensis*	2. 3. 0				0. 1. 0		2. 2. 0

	CITES	IUCN Status	SPECIES		Total at 01.01.17	Arrivals	Births	Dead within 30 Days	Dead	Departed	Total at 01.01.18
	III/C	EN	Chinese three-keeled pond turtle	*Mauremys reevesii*	0. 0. 1				0. 0. 1		0. 0. 0
	III/C	EN	Chinese stripe-necked turtle	*Mauremys sinensis*	1. 0. 0						1. 0. 0
	NL	NE	Central America wood turtle	*Rhinoclemmys pulcherrima manni*	0. 2. 0						0. 2. 0
	NL	LC	Yellow-bellied slider	*Trachemys scripta scripta*	1. 2. 0	0. 1. 0					1. 3. 0
	NL	LC	Red-eared slider	*Trachemys scripta elegans*	3. 0. 2				0. 0. 2		3. 0. 0
	II/B	NE	Red-footed tortoise	*Chelonoidis carbonaria*	1. 3. 0						1. 3. 0
	II/B	VU	Star tortoise	*Geochelone elegans*	2. 3. 0		0. 0. 4		1. 1. 0		1. 2. 4
	II/B	VU	African spurred tortoise	*Centrochelys sulcata*	1. 1. 0						1. 1. 0
			CROCODILES	**CROCODILIA**							
	I/A	LC	West African Crocodile	*Crocodylus niloticus suchus*	1. 1. 0						1. 1. 0
			LIZARDS	**SAURIA**							
	NL	NE	Green crested lizards	*Bronchocela cristatella*	10. 4. 5		4. 2. 3	0. 0. 1	5. 0. 2		9. 6. 5
	NL	LC	Forest dragon	*Hypsilurus magnus*	2. 0. 0				1. 0. 0		1. 0. 0
	/D	NE	Asian water dragon	*Physignathus cocincinus*	1. 0. 0					1. 0. 0	0. 0. 0
	II/B	LC	Panther chameleon	*Furcifer pardalis*	0. 0. 0	1. 1. 0					1. 1. 0
	I/A	CR	Turquoise dwarf gecko	*Lygodactylus williamsi*	0. 0. 0	1. 1. 0					1. 1. 0
	NL	LC	Leopard gecko	*Eublepharis macularius*	0. 2. 0						0. 2. 0
	NL	NE	Tokay gecko	*Gekko gecko*	1. 0. 0						1. 0. 0
	II/B	LC	Mangrove monitor	*Varanus indicus*	0. 1. 0						0. 1. 0
			SNAKES	**SERPENTES**							
	II/B	LC	Green tree python	*Morelia viridis*	1. 0. 0	1. 1. 0					2. 1. 0
	II/B	VU	Burmese rock python	*Python bivittatus*	2. 0. 0						2. 0. 0
	II/B	LC	Royal python	*Python regius*	0. 0. 3						0. 0. 3
	/D	NE	King ratsnake	*Elaphe carinata*	1. 1. 0						1. 1. 0
	NL	LC	Cornsnake	*Pantherophis guttatus*	2. 1. 0						2. 1. 0
	NL	LC	Common gartersnake	*Thamnophis sirtalis*	1. 0. 0						1. 0. 0

	CITES	IUCN Status	SPECIES		Total at 01.01.17	Arrivals	Births	Dead within 30 Days	Dead	Departed	Total at 01.01.18
			INVERTEBRATES	**INVERTEBRATA**							
			CLASS: ARACHNIDS	**ARACHNIDA**							
			SPIDERS	**ARANEAE**							
	NL	NE	Chilean rose tarantula	*Grammostola rosea*	0. 2. 0						0. 2. 0
			CLASS: INSECTS	**INSECTA**							
			STICK INSECTS	**PHASMATOPTERA**							
	NL	NE	Jungle nymph	*Heteropteryx dilatata*	0. 1. 0				0. 1. 0		0. 0. 0
	NL	NE	Spiny/Thorny stick insect	*Trachyaretaon brueckneri*	4. 2. 3				2. 2. 3		2. 0. 0
	NL	NE	Leaf insect	*Phyllium spp.*	0. 5. 0		0. 11. 0	0. 11. 0	0. 5. 0		0. 0. 0
	NL	NE	Indian green stick insects	*Carausius morosus*	0. 14. 0		0.4066.0	0. 4051.0	0. 20. 0		0. 9. 0
	NL	NE	Magnus stick insect	*Phoebaticus magnus*	0. 11. 0		0. 5. 0	0. 5. 0	0. 10. 0		0. 1. 0
	NL	NE	Macleays spectre	*Extatosoma tiaratum*	0. 25. 0		0. 49. 0	0. 31. 0	0. 28. 0		0. 15. 0
	NL	NE	Black beauty stick insect	*Peruphasma schultei*	5. 5. 0		5. 0. 147	0. 0. 123	10. 5. 0		0. 0. 24
	NL	NE	Zompro's/Thai stick insect	*Parapachymorpha zomproi*	0. 14. 0		0. 807. 0	0. 797. 0	0. 13. 0		0. 11. 0

** approximate numbers*

FOTA WILDLIFE PARK : DIRECTOR'S REPORT

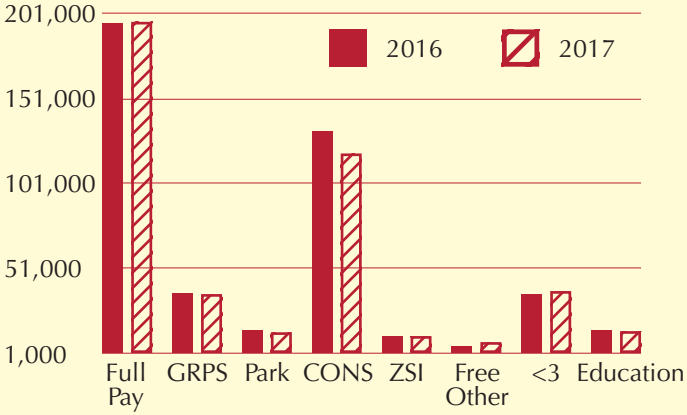
Fota Wildlife Park had another successful year with the 2nd highest attendance figures since opening in 1983 despite the difficult weather conditions for the months of July and August. Visitors numbers were down 12,500 between July and August in 2017 when compared to the same period in 2016. This variance primarily accounted for the drop of attendances in 2017 which can be attributed to the 20% higher than average rainfall during these months. Fota Wildlife Park remains the largest visitor attraction in the South West of Ireland with 455,559 visitors during 2017.

Summary of 2017

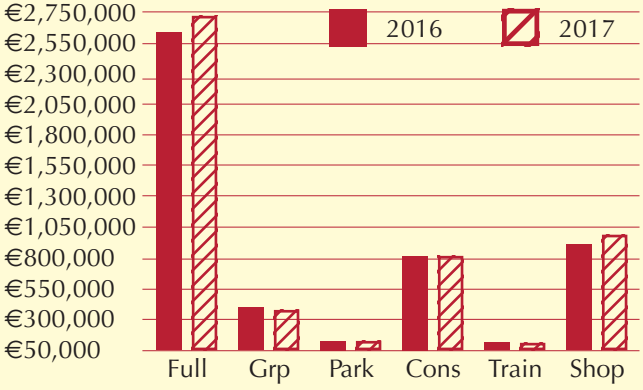
- Total visitor numbers for the year 2017 were 455,559 compared to 465,281 for 2016. The 2017 visitor numbers were down 9,722 or 2% on 2016.
- Membership sales in 2017 were 3% down for Park memberships and up 2% for Conservation memberships when compared to 2016 levels.
- Attendances by members fell 10% for those in possession of park membership and by 9% for those holding conservation membership.
- Full rate paying visitors are up 0.5% in 2017 compared to 2016. However, it was the number of member visits that fell by 14,627 or 9.5% which reduced attendances and again took place during the months of July and August.
- In 2017 total gate admission income increase by 3% on 2016. This was due mainly to the increase in the number of full-rate visitors to the Park.
- Gift Shop sales were up 9% and total visitor income was also up by 4% for 2017 compared to 2016 levels.

However, revenue from both gate receipts and retail (Gift Shop) grew during 2017 and the net profit for 2017 was €855,329 after depreciation (€580,114) compared to €721,583 for 2016.

2017 v 2016 Attendance



2017 v 2016 Income



(Above) Sean McKeown, Director, Fota Wildlife Park

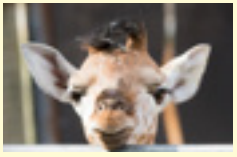
Animal Husbandry

Listed are the most notable births during 2017 with all three species of felids breeding during the year. Other notable births were 2 Humboldt penguins, 1 Columbian black spider monkey, 4 Scimitar-horned oryx and 2 European bison. There were 63 deaths amongst the total of 1149 specimens of fish, amphibian, reptile, bird and mammal species at Fota Wildlife Park during 2017. Fourteen animals were transferred out of Fota to other zoological centres with the most significant of which was a female Siamang gibbon and a female Agile gibbon both born at Fota and sent to Safari Niagara in Canada on breeding loan. On the flip side twenty-five animals were transferred to Fota from other zoological institutions of which the most noteworthy was a female Sumatran tiger, a pair of Northern cheetah and a female black & white ruffed lemur.

Births during 2017

All 3 big Felids Bred in 2017

- 1 Sumatran Tiger cub (6th May)
- 4 Northern Cheetah cubs (29th May)
- 3 Indian Lion cubs (end of August)



Other births in 2017 included

- A female Giraffe
- A male Tapir
- 2 Red Panda cubs

Capital Developments

South American Habitat (Tapirs, Capybaras, Darwin's rhea):

Construction of the new South American Habitat commenced in April 2017 and was completed in November 2017. It comprises a modern animal house that is well insulated and can accommodate the growing number of tapirs and capybara along with new species such as the endangered Darwin's rheas. The visiting public are now able to view the animals in their indoor accommodation through large windows during the winter period or in unpleasant weather which was not possible with the old house. There is a stream running through the enclosure to a pond in which the tapir and capybara can swim. The animal building is serviced from the rear of the enclosure away from the public viewing side.

Five Year Capital Development Plan 2018-2022

During 2017 a five-year plan, 2018-2022 was developed that will seek to secure and enhance the progress that Fota Wildlife Park has achieved during the past 7 years. This period has seen the development of a New Entrance Complex, Phases 1 to 3 of the Asian Sanctuary and an increase of over 100,000 visitors per annum to Fota Wildlife Park. There has also been the development of a new Staff Canteen, South American Habitat and Food Stalls in the Asian Sanctuary.

Over the next 5 year there will be four elements to the capital investment strategy within the Wildlife Park as follows:

- Continue redevelopment of the older exhibits and facilities within the Park
- Develop 3 to 4 indoor visitor interactive areas that will provide shelter, entertainment and education to the visiting public.
- Finish the development of the Asian Sanctuary to include the Bear and Takin habitats.
- Develop a large multi-purpose area along the lines of the 'Origins' project subject Fáilte Ireland funding.

Research

Undergraduate projects in 2017:

A total of four undergraduate research projects were completed in 2017 by final year students from the School of BEES in UCC.

- Valentine Joy Reiss-Woolever: The Effect of Feeding Regime on the Behaviour of Captive Humboldt Penguins, Spheniscus humboldti. Supervisor, John Quinn.
- Sara Leacy: The behaviour of ungulates at Fota Wildlife Park. Supervisor, Ruth Ramsay.
- Alyssa Laprise: The Foraging Behaviour of captive Snow Geese, Anser c caerulescens, Greylag Geese, Anser anser, and Barnacle Geese, Branta leucopsis, in Fota Wildlife Park. Supervisor, John Quinn.
- Chloe Webster-Kelleher: The behaviour of the two male and one female group of Lion-tailed Macaques, Macaca silenus, in their island enclosure at Fota Wildlife Park, including any effect of enrichment on behaviour. Supervisor, Ruth Ramsay.

Paper Published in 2017:

- Collins, C., Corkery, I., Haigh, A., McKeown, S., Quirke, T., O'Riordan, R. (2017). The effects of environmental and visitor variables on the behaviour of free-range ring-tailed lemurs, Lemur catta. Zoo Biology, in press. DOI 10.1002/zoo.21370.
- Damasceno, J., Genaro, G., O'Riordan, R., Quirke, T., McCarthy, S., McKeown, S. (2017). The effects of intrinsic enrichments on captive felids. Zoo Biology, 36(3), 186-192.
- Haigh, A., Butler, F, O'Riordan, R., Palme, R. (2017). Managed parks as a refuge for the threatened red squirrel, Sciurus vulgaris, in light of human disturbance. Biological Conservation, 211: 29-36.

PhD student Projects ongoing in 2017:

Courtney Keane: - The potential effect of zoo-based education programmes on children's learning.

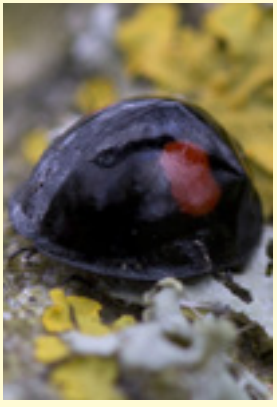
Rebecca Newman: - The influence of wild and captive environments on populations of Lion-tailed Macaques, Macaca silenus; behavioural responses to changes in population dynamics and different environments and the

influence of diet on health and behaviour.
Gill Weyman: - Status, threats and conservation of ladybirds in Ireland (commenced October 2015).

Conservation

The following are examples of the conservation projects which Fota Wildlife Park has supported or been actively involved in during 2017.

- 1020 Natterjack toads released back into the wild in Kerry. The Natterjack spawn was collected under the supervision of the National Parks and Wildlife Service (NPWS) in Kerry and taken to Fota for rearing to the toad stage before releasing them back into the wild in Kerry.
- Sponsoring of two Community Conservation Teams to protect the Critically Endangered (CR) Western Black Crested Gibbon and the Tonkin snub-nosed monkey in Vietnam.



- Part funding of the Captive Breeding Centre for Madagascar pochard which is Critically Endangered(CR) in Madagascar. There are only 90 birds left in the world of which 22 live in the wild and the rest are in the breeding centre.
- Co-fund with Irish Research Council a PhD project on The Status, threats and conservation of ladybirds in Ireland (commenced October 2015).
- Fota Wildlife Park has supported in-situ conservation for the Sumatran Tiger since January 2014 through 21st Century Tiger's work in the Kerinci Seblat National Park.

Education

In 2017, 15,000 students attended formal educational courses in Fota Wildlife Park dealing with ecology, biodiversity and conservation. The Education department represented Fota at the following prestigious events;

- BT Young Scientist and Technology Exhibition
- UCC Postgraduate Research Showcase

The education Department hosted three public educational events during the summer months which were well received by members of the public and facilitated the development of strategic and collaborative relations with several research facilities as well as an array of organizations representing the field of biodiversity conservation.

- Going Green – Staying Green (Environmental Awareness Weekend)
- Native Species Weekend
- Mad Scientist Weekend.

Fota 2017 Animal Inventory

	IUCN Status	SPECIES		Beginning	Births	Acquisitions	Dead	Dispositions	Ending
		INVERTEBRATA	**INVERTEBRATES**						
		CLASS: SCYPHOZA	**CLASS: JELLYFISH**						
		Aurelia aurita *	Moon jellyfish	0.0.0	0.0.0	0.0.5	0.0.0	0.0.0	0.0.5
		CLASS: MALACOSTRACA	**CLASS: CRUSTACEANS**						
		Pagurus hirsutiusculus *	Hairy hermit crab	0.0.1	0.0.0	0.0.0	0.0.1	0.0.0	0.0.0
		CLASS: INSECTA	**CLASS: INSECTS**						
		Papilionoidea *	Butterflies	0.0.140	0.0.0	0.0.0	0.0.0	0.0.0	0.0.140
		VERTEBRATA	**VERTEBRATES**						
		CLASS: PISCES	**CLASS: FISH**						
	NT	*Chiloscyllium punctatum*	Brownbanded bamboo shark	0.1.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
		Gymnomuraena zebra *	Zebra moray	0.0.2	0.0.0	0.0.0	0.0.1	0.0.0	0.0.1
	EN	*Sahyadria denisonii* *	Denison's barb	0.0.10	0.0.0	0.0.0	0.0.0	0.0.0	0.0.10
		Chromobotia macracanthus *	Clown loach	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
		Hyphessobrycon anisitsi *	Buenos Aires tetra	0.0.10	0.0.0	0.0.0	0.0.0	0.0.0	0.0.10
		Panaque nigrolineatus *	Royal plecostomus	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
	NT	*Bedotia madagascariensis* *	Madagascar rainbowfish	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
	VT	*Glossolepis incisus* *	Red rainbowfish	0.0.3	0.0.0	0.0.0	0.0.0	0.0.0	0.0.3
	EN	*Melanotaenia boesemani* *	Boeseman's rainbowfish	0.0.4	0.0.0	0.0.0	0.0.0	0.0.0	0.0.4
		Melanotaenia trifasciata *	Goyder River rainbowfish	0.0.5	0.0.0	0.0.0	0.0.0	0.0.0	0.0.5
	EW	*Ameca splendens* *	Butterfly splitfin	0.0.110	0.0.0	0.0.0	0.0.0	0.0.0	0.0.110
	EW	*Skiffia francesae* *	Golden sawfin	0.0.100	0.0.0	0.0.0	0.0.0	0.0.0	0.0.100
		Sargocentron xantherythrum *	Hawaiian squirrelfish	0.0.1	0.0.0	0.0.0	0.0.1	0.0.0	0.0.0
		Toxotes jaculatrix *	Banded archerfish	0.0.7	0.0.0	0.0.0	0.0.0	0.0.0	0.0.7
		Monodactylus sebae *	African silverfish	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
		Amphiprion ocellaris *	Peacock clownfish	0.0.5	0.0.0	0.0.0	0.0.0	0.0.0	0.0.5
		Chromis viridis *	Bluegreen chromis	0.0.4	0.0.0	0.0.0	0.0.0	0.0.0	0.0.4
		Chrysiptera cyanea *	Sapphire damselfish	0.0.4	0.0.0	0.0.0	0.0.0	0.0.0	0.0.4
		Chrysiptera parasema *	Goldtail damselfish	0.0.4	0.0.0	0.0.0	0.0.0	0.0.0	0.0.4

	IUCN Status	SPECIES		Beginning	Births	Acquisitions	Dead	Dispositions	Ending
		Stigmatogobius sadanundio *	Fandancer goby	0.0.3	0.0.0	0.0.0	0.0.2	0.0.0	0.0.1
		Scatophagus argus *	Spotted scat	0.0.0	0.0.0	0.0.1	0.0.0	0.0.0	0.0.1
		Siganus vulpinus *	Foxface rabbitfish	0.0.2	0.0.0	0.0.0	0.0.0	0.0.0	0.0.2
		Acanthurus fowleri *	Fowler's surgeon	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
		Zebrasoma desjardinii *	Red Sea sailfin tang	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
		Zebrasoma flavescens *	Yellow tang	0.0.2	0.0.0	0.0.0	0.0.0	0.0.0	0.0.2
		Sufflamen albicaudatus *	Bluethroat triggerfish	0.0.1	0.0.0	0.0.0	0.0.1	0.0.0	0.0.0
		Acreichthys tomentosus	Bristletail filefish	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
		CLASS: AMPHIBIA	**CLASS: AMPHIBIANS**						
	CR	*Ambystoma mexicanum* *	Axolotl	2.2.2	0.0.0	0.0.0	0.0.0	0.0.0	2.2.2
	CR	*Neurergus kaiseri* *	Emperor spotted newt	0.0.28	0.0.0	0.0.0	0.0.4	0.0.0	0.0.24
	EN	*Epipedobates tricolor* *	Phantasmal poison dart frog	0.0.14	0.0.0	0.0.0	0.0.0	0.0.0	0.0.14
	LC	*Trachycephalus venulosus* *	Veined tree frog	0.0.1	0.0.0	0.0.0	0.0.1	0.0.0	0.0.0
	LC	*Agalychnis callidryas* *	Red-eyed tree frog	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
	CR	*Agalychnis moreletii*	Morelet's tree frog	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
ESB	CR	*Leptodactylus fallax*	Mountain chicken frog	2.2.0	0.0.0	0.0.0	1.1.0	0.0.0	1.1.0
	CR	*Mantella aurantiaca* *	Golden mantella	0.0.8	0.0.0	0.0.0	0.0.0	0.0.0	0.0.8
	EN	*Mantella viridis* *	Green mantella	0.0.15	0.0.0	0.0.0	0.0.1	0.0.0	0.0.14
	LC	*Polypedates otilophus* *	Bornean eared frog	0.0.2	0.0.0	0.0.0	0.0.0	0.0.0	0.0.2
		Theloderma corticale	Tonkin bug-eyed frog	2.1.11	0.0.0	0.0.0	0.1.3	0.0.0	2.0.8
		CLASS: REPTILIA	**CLASS: REPTILES**						
		Chelonoidis carbonaria	Red-footed tortoise	1.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0
	EN	*Indotestudo elongata*	Elongated tortoise	1.3.2	0.0.0	0.0.0	0.0.2	0.0.0	1.3.0
	LC	*Chamaeleo calyptratus*	Veiled chameleon	0.0.0	0.0.0	2.2.0	0.2.0	0.0.0	2.0.0
	EN	*Brachylophus fasciatus*	Lau banded iguana	0.1.0	0.0.0	0.0.0	0.1.0	0.0.0	0.0.0
		Iguana iguana	Green iguana	1.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0
		Phelsuma madagascariensis	Madagascar giant day gecko	0.1.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
		Python regius	Royal/ball python	2.3.0	0.0.0	0.0.0	0.0.0	0.1.0	2.2.0
		Acrantophis dumerili	Dumeril's ground boa	3.0.0	0.0.0	0.0.0	0.0.0	0.0.0	3.0.0
	VU	*Epicrates subflavus*	Jamaican boa	0.0.3	0.0.0	0.0.0	0.0.0	0.0.0	0.0.3

	IUCN Status	SPECIES		Beginning	Births	Acquisitions	Dead	Dispositions	Ending
		CLASS: AVES	**CLASS: BIRDS**						
	LC	*Struthio camelus*	Common ostrich	2.4.0	0.0.0	0.0.0	0.0.0	0.0.0	2.4.0
	LC	*Numida meleagris*	Helmeted guineafowl	10.6.16	0.0.0	0.0.10	0.0.0	0.0.0	10.6.26
	LC	*Pavo cristatus*	Common peafowl	4.9.1	0.0.0	0.0.0	0.1.0	0.0.0	4.8.1
	LC	*Anser anser*	Greylag goose	11.8.14	0.0.0	0.0.0	0.0.2	0.0.0	11.8.12
	LC	*Anser brachyrhynchus*	Pink-footed goose	1.1.0	0.0.0	0.0.0	0.0.0	0.0.0	1.1.0
	LC	*Anser caerulescens*	Snow goose	1.6.6	0.0.0	0.0.0	0.0.0	0.0.0	1.6.6
	NT	*Anser canagicus*	Emperor goose	2.2.0	0.0.0	0.0.0	0.0.0	0.0.0	2.2.0
	VU	*Anser cygnoid*	Swan goose	0.2.0	0.0.0	0.0.0	0.1.0	0.0.0	0.1.0
	LC	*Anser indicus*	Bar-headed goose	9.7.5	0.0.0	0.0.0	0.0.0	0.0.0	9.7.5
	LC	*Branta leucopsis*	Barnacle goose	13.7.7	0.0.3	0.0.0	0.0.0	0.0.0	13.7.10
	VU	*Branta sandvicensis*	Ne-ne	1.0.0	0.0.0	2.0.0	0.0.0	0.0.0	3.0.0
	LC	*Cereopsis novaehollandiae*	Cereopsis goose	3.2.0	0.0.0	0.0.0	1.0.0	1.1.0	1.1.0
	LC	*Coscoroba coscoroba*	Coscoroba swan	1.4.0	0.0.0	0.0.0	0.0.0	0.0.0	1.4.0
	LC	*Aix galericulata*	Mandarin duck	14.6.11	0.0.0	0.0.0	2.0.0	0.0.0	12.6.11
	LC	*Aix sponsa*	North American wood duck	6.2.4	0.0.0	0.0.0	0.0.0	0.0.0	6.2.4
	LC	*Anas acuta*	Northern pintail	1.1.0	0.0.1	0.0.0	0.0.0	0.0.0	1.1.1
	LC	*Anas poecilorhyncha*	Spot-billed duck	0.0.1	0.0.0	0.0.0	0.0.1	0.0.0	0.0.0
	LC	*Aythya fuligula*	Tufted duck	4.3.11	0.0.0	0.0.0	0.0.0	0.0.0	4.3.11
	NT	*Aythya nyroca*	Common white-eye	2.1.2	0.0.0	0.0.0	0.0.0	0.0.0	2.1.2
	LC	*Netta rufina* *	Red-crested pochard	8.8.0	0.1.13	0.0.0	0.0.2	0.0.0	8.9.11
	LC	*Somateria mollissima*	Eider	3.2.4	0.0.0	0.0.0	0.0.1	0.0.0	3.2.3
	LC	*Tadorna cana*	South African shelduck	0.1.0	0.0.0	0.0.0	0.1.0	0.0.0	0.0.0
	LC	*Tadorna ferruginea*	Ruddy shelduck	0.1.0	0.0.0	0.0.0	0.1.0	0.0.0	0.0.0
	LC	*Tadorna variegata*	Paradise shelduck	1.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0
	LC	*Mareca strepera*	Gadwall	1.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0
	LC	*Phoenicopterus chilensis*	Chilean flamingo	2.4.0	0.0.0	0.0.0	0.0.0	0.0.0	2.4.0
	LC	*Crex crex*	Corncrake	14.11.0	1.0.0	0.0.0	4.2.0	0.0.0	11.9.0
EEP	VU	*Spheniscus humboldti*	Humboldt penguin	9.12.11	0.0.2	0.0.0	0.0.1	0.0.0	9.12.12
	LC	*Pelecanus onocrotalus*	Eastern white pelican	3.1.0	0.0.0	0.0.0	0.0.0	0.0.0	3.1.0
	LC	*Accipiter gentilis*	Northern goshawk	0.1.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
EEP	LC	*Haliaeetus albicilla*	White-tailed sea eagle	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	*Ara ararauna*	Blue-and-yellow macaw	3.3.0	0.0.1	0.0.0	0.0.0	2.2.0	1.1.1
	LC	*Ara chloropterus*	Green-winged macaw	1.0.0	0.0.0	0.0.0	0.0.0	1.0.0	0.0.0
	LC	*Ara macao*	Scarlet macaw	1.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0
	LC	*Amazona aestiva*	Blue-fronted amazon	0.0.0	0.0.0	0.0.1	0.0.0	0.0.0	0.0.1
		CLASS: MAMMALIA	**CLASS: MAMMALS**						
		MARSUPIALIA	**MARSUPIAL**						
ESB	LC	*Macropus giganteus*	Eastern grey kangaroo	5.10.1	0.0.3	0.0.0	1.1.3	0.0.0	4.9.1
	LC	*Macropus rufogriseus* *	Red-necked wallaby	0.0.52	0.0.0	0.0.0	0.0.4	0.0.0	0.0.48
		PRIMATES	**PRIMATES**						
ESB	EN	*Lemur catta*	Ring-tailed lemur	3.3.0	0.0.0	0.0.0	1.0.0	0.0.0	2.3.0
EEP	CR	*Varecia rubra*	Red ruffed lemur	0.1.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
EEP	CR	*Varecia variegata*	Black-and-white ruffed lemur	1.0.0	0.0.0	0.1.0	0.0.0	0.0.0	1.1.0
EEP	LC	*Pithecia pithecia*	White-faced saki	3.5.0	0.0.0	0.0.0	0.0.0	0.0.0	3.5.0
ESB	LC	*Alouatta caraya*	Black howler	2.2.0	0.0.0	0.0.0	0.0.0	0.0.0	2.2.0
EEP	CR	*Ateles fusciceps*	Black-headed spider monkey	2.3.1	0.1.0	0.0.0	1.1.0	0.0.0	2.4.1
	LC	*Lophocebus albigena*	Grey-cheeked mangabey	1.3.0	0.0.0	0.0.0	0.1.0	0.0.0	1.2.0
EEP	EN	*Macaca silenus*	Lion-tailed macaque	8.12.0	0.0.0	0.0.0	0.0.0	0.0.0	8.12.0
ESB	LC	*Colobus guereza*	Eastern black-and-white colobus	4.0.0	0.0.0	0.0.0	0.0.0	0.0.0	4.0.0
EEP	EN	*Trachypithecus francoisi*	Francois' langur	2.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.0.0
EEP	EN	*Hylobates agilis*	Agile gibbon	1.2.2	0.0.1	0.0.0	0.0.3	0.1.0	1.1.0
EEP	EN	*Hylobates lar*	Lar gibbon	1.3.0	0.0.0	0.0.0	0.0.0	0.0.0	1.3.0
EEP	EN	*Symphalangus syndactylus*	Siamang	4.2.0	0.0.0	0.0.0	0.0.0	0.1.0	4.1.0
		RODENTIA	**RODENTS**						
	LC	*Cynomys ludovicianus*	Black-tailed prairie dog	2.3.0	0.0.0	0.0.0	0.0.0	0.0.0	2.3.0
	NT	*Dolichotis patagonum* *	Patagonian mara	0.0.17	0.0.0	0.0.0	0.0.1	0.0.0	0.0.16
	LC	*Hydrochaeris hydrochaeris*	Capybara	1.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0
		CARNIVORA	**CARNIVORES**						
EEP	VU	*Acinonyx jubatus*	Cheetah	8.6.0	4 .3.0	1.1.0	1.1.0	1.0.0	11.9.0
EEP	EN	*Panthera leo*	Lion	1.2.0	1.2.0	0.0.0	0.0.0	0.0.0	2.4.0
EEP	CR	*Panthera tigris*	Tiger	2.1.0	0.1.0	0.1.0	0.0.0	0.0.0	2.3.0
	LC	*Suricata suricatta*	Slender-tailed meerkat	4.5.7	0.0.0	0.0.0	0.0.0	0.4.0	4.1.7
	LC	*Halichoerus grypus*	Grey seal	0.0.0	0.0.0	0.1.0	0.0.0	0.0.0	0.1.0

	IUCN Status	SPECIES		Beginning	Births	Acquisitions	Dead	Dispositions	Ending
	LC	*Phoca vitulina*	Harbor seal	0.1.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
EEP	VU	*Ailurus fulgens*	Red panda	2.1.0	2.0.0	0.0.0	0.0.0	0.0.0	4.1.0
		PERISSODACTYLA	**ODD-TOED UNGULATES**						
	LC	*Equus quagga*	Plains zebra	3.2.0	0.0.0	0.0.0	0.0.0	0.0.0	3.2.0
EEP	VU	*Tapirus terrestris*	South American tapir	2.2.0	1.0.0	0.0.0	0.0.0	0.0.0	3.2.0
EEP	VU	*Rhinoceros unicornis*	One-horned rhinoceros	2.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.0.0
		ARTIODACTYLA	**EVEN-TOED UNGULATES**						
EEP	CR	*Sus cebifrons*	Visayan warty pig	1.1.0	0.0.0	0.0.0	0.0.0	0.0.0	1.1.0
EEP	EN	*Rusa alfredi*	Alfred's spotted deer	0.3.0	0.0.0	0.0.0	0.0.0	0.0.0	0.3.0
EEP	VU	*Giraffa camelopardalis*	Giraffe	4.8.0	0.1.0	0.0.0	0.0.0	0.0.0	4.9.0
EEP	VU	*Bison bonasus*	European wisent	3.8.0	1.1.0	0.0.0	0.1.0	0.0.0	4.8.0
EEP	EW	*Oryx dammah*	Scimitar-horned oryx	3.6.0	1.3.0	0.0.0	0.1.0	0.0.0	4.8.0
ESB	VU	Kobus leche	Southern lechwe	2.10.0	3.2.1	0.0.0	1.1.1	0.0.0	4.11.0
		TOTAL		224.237.686	14.15.25	5.6.17	14.15.36	5.10.0	224.233.692

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

(Far Right) Scimitar-horned oryx and calf

THE ZOOLOGICAL SOCIETY OF IRELAND

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

Reports and Consolidated Financial Statements for the financial year ended 31 December 2017

Registered number: 207824

CONTENTS

MEMBERS OF COUNCIL AND OTHER INFORMATION

Members of Council:

Council president	Michael Daly
Immediate past president	Tom Dunphy
Ordinary Council members	Dorothy Kilroy Paul Burke Kennedy Martin O'Grady Nigel Bell Ann Keenan James McMonagle John McMahon

Other information:

Past presidents	Joseph McCullough BE, C Eng, FZSI Seán Cromien BA, MRIA, FNCI, F (Mgt), IMI, FZSI Michael O'Grady FCIPD Joseph McCullough BE, C Eng, FZSI Michael MacNulty MBA (Harvard) Derek McCleane Margaret Sininan Tom Dunphy
Vice president	N/A
Honorary secretary	Dorothy Kilroy
Honorary treasurer	Nigel Bell
Secretary and registered office	John Sweeney The Zoological Gardens, Phoenix Park, Dublin 8

MEMBERS OF COUNCIL AND OTHER INFORMATION *(Continued)*

Auditors	Deloitte Ireland LLP 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, Dubin 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

COUNCIL'S REPORT

The Council presents its annual report together with the audited consolidated financial statements for the financial year ended 31 December 2017.

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 2017.

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 2017 at Dublin Zoo was 1,108,728 (2016: 1,143,908), there was also a special event evening event across November and December called Wild Lights in Dublin Zoo that had 155,572 visitors. This was the seventh year in a row that Dublin Zoo has had visitation surpassing the one million mark. The attendance at Fota Wildlife Park for the financial year ended 31 December 2017 was 455,559 (2016: 465,281).

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 67 and 68 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
Michael Daly
Nigel Bell
Ann Keenan
James McMonagle
John McMahon

Secretary:

John Sweeney

Richard Collins resigned as a director on 15 May 2017. James McMonagle was appointed as a director on 23 February 2017, John McMahon was appointed as a director on 14 September 2017.

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 11 times during 2017.

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 (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. Dublin Zoo supported more than 20 projects both in Ireland and abroad in 2017.

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.
The committee finished the Ethics Handbook during 2017.

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. During the 2017 an update of our external review on Health and Safety was carried out and continued improvements were recorded.

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.

GOING CONCERN

Further details regarding the adoption of the going concern basis can be found in Note 1.

STATEMENT ON RELEVANT AUDIT INFORMATION

Each of the persons who are directors at the time when this Directors' report is approved has confirmed that:

So far as each of the directors in office at the date of approval of the financial statements is aware:

- There is no relevant audit information of which the Company's auditors are unaware; and
- The Council Members have taken have taken all the steps that they ought to have taken as Council Members in order to make themselves aware of any relevant audit information and to establish that the Company's auditors are aware of that information.

AUDITORS

The auditors, Deloitte Ireland LLP., 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:

Michael Daly
Council President

Nigel Bell
Honorary Treasurer

Date: 13th June 2018

COUNCIL'S RESPONSIBILITIES STATEMENT

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.

INDEPENDENT AUDITOR'S REPORT TO THE MEMBERS OF THE ZOOLOGICAL SOCIETY OF IRELAND

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

Report on the audit of the financial statements

Opinion on the financial statements of The Zoological Society of Ireland (A company limited by guarantee and not having a share capital) (the 'company')

In our opinion the group and parent company financial statements:

- Give a true and fair view of the assets, liabilities and financial position of the group and parent company as at financial year ended 31 December 2017 and of the profit of the group and parent company 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.

The financial statements we have audited comprise:

- The Consolidated Income and Expenditure Account;
- The Consolidated Statement of Comprehensive Income;
- The Consolidated Balance Sheet;
- The Consolidated Statement of Changes in Equity;
- The Consolidated Statement of Cash Flows; and
- The Company Balance Sheet;
- The Company Statement of Changes in Equity; and
- The related notes 1 to 21, including a summary of significant accounting policies as set out in note 1.

The relevant financial reporting framework that has been applied in the preparation of the group and trade union financial statements is FRS 102 "The Financial Reporting Standard applicable in the UK and Republic of Ireland ("the relevant financial reporting framework").

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (Ireland) (ISAs (Ireland)) and applicable law. Our responsibilities under those standards are described below in the "Auditor's responsibilities for the audit of the financial statements" section of our report.

We are independent of the group and parent company in accordance with the ethical requirements that are relevant to our audit of the financial statements in Ireland, including the Ethical Standard issued by the Irish Auditing and Accounts Supervisory Authority, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Conclusions relating to going concern

We have nothing to report in respect of the following matters in relation to which ISAs (Ireland) require us to report to you where:

- The directors' use of the going concern basis of accounting in preparation of the financial statements is not appropriate; or
- The directors have not disclosed in the financial statements any identified material uncertainties that may cast significant doubt about the group or parent company's ability to continue to adopt the going concern basis of accounting for a period of at least twelve months from the date when the financial statements are authorised for issue.

Other information

The directors are responsible for the other information. The other information comprises the information included in the Directors' Report and Consolidated Financial Statements for the financial year ended 31 December 2017, other than the financial statements and our auditor's report thereon. Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in our report, we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement in the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact.

We have nothing to report in this regard.

Responsibilities of directors

As explained more fully in the Directors' Responsibilities Statement, the directors 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, and for such internal control as the directors determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the directors are responsible for assessing the group and parent company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the group and parent company or to cease operations, or have no realistic alternative but to do so.

Auditor's responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (Ireland) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with ISAs (Ireland), we exercise professional judgment and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the group and parent company's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the directors.
- Conclude on the appropriateness of the directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the group and parent company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of the auditor's report. However, future events or conditions may cause the entity (or where relevant, the group) to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content

of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the business activities within the group to express an opinion on the consolidated financial statements. The group auditor is responsible for the direction, supervision and performance of the group audit. The group auditor remains solely responsible for the audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that the auditor identifies during the audit.

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 auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the company and the company's members as a body, for our audit work, for this report, or for the opinions we have formed.

Report on other legal and regulatory requirements

Opinion on other matters prescribed by the Companies Act 2014

Based solely on the work undertaken in the course of the audit, we report that:

- 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 parent company were sufficient to permit the financial statements to be readily and properly audited.
- The parent company financial statements are in agreement with the accounting records.
- In our opinion the information given in the directors' report is consistent with the financial statements and the directors' report has been prepared in accordance with the Companies Act 2014.

Based on the knowledge and understanding of the group and the parent company and its environment obtained in the course of the audit, we have not identified material misstatements in the directors' report.

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.

Richard Howard
For and on behalf of Deloitte Ireland LLP
Chartered Accountants and Statutory Audit Firm
Deloitte & Touche House, Earlsfort Terrace, Dublin 2.

Date: 13th June 2018

CONSOLIDATED INCOME AND EXPENDITURE ACOUNT FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2017

	Notes	**2017 €'000**	2016 €'000
INCOME	3	**21,439**	19,432
EXPENDITURE			
Operating costs		**(17,932)**	(15,752)
Administration expenses		**(892)**	(834)
TOTAL EXPENDITURE		**(18,824)**	(16,586)
OPERATING SURPLUS	5	**2,615**	2,846
Interest payable	6	**(46)**	(50)
Interest income	6	**8**	9
Amortisation of government grants	14	**32**	32
SURPLUS FOR THE FINANCIAL YEAR		**2,609**	2,837

CONSOLIDATED INCOME AND EXPENDITURE ACOUNT FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2017

	Notes	**2017** **€'000**	2016 €'000
SURPLUS FOR THE FINANCIAL YEAR		**2,609**	2,837
Remeasurement of net defined benefit asset	15	**-**	(31)
TOTAL COMPREHENSIVE INCOME		**2,609**	2,806

CONSOLIDATED BALANCE SHEET AS AT 31 DECEMBER 2017

	Notes	2017 €'000	2016 €'000
FIXED ASSETS			
Tangible assets	8	**25,973**	23,364
CURRENT ASSETS			
Stocks	10	**273**	235
Debtors	11	**968**	856
Cash at bank and in hand			
– Restricted - OPW grant	12	**30**	30
– Unrestricted		**7,085**	6,251
		8,356	7,372
CREDITORS: (Amounts falling due within one year)	12	**(5,012)**	(3,786)
NET CURRENT ASSETS		**3,344**	3,586
TOTAL ASSETS LESS CURRENT LIABILITIES		**29,317**	26,950
CREDITORS: (Amounts falling due after more than one year)	13	**(120)**	(330)
OTHER DEFERRED GRANTS	14	**(347)**	(379)
NET ASSETS EXCLUDING PENSION		**28,850**	26,241
Pension asset	15	**279**	279
NET ASSETS INCLUDING PENSION ASSET		**29,129**	26,520

Represented by:		
Accumulated surplus	**7,857**	5,252
Development reserve	**19,000**	19,000
Emergency reserve	**2,272**	2,268
	29,129	26,520

The financial statements were approved and authorised for issue by the Board of Directors on 24 May 2018 and signed on its behalf by:

Michael Daly	Nigel Bell
Council President	**Honorary Treasurer**

COMPANY BALANCE SHEET
AS AT 31 DECEMBER 2017 (Continued)

	Notes	2017 €'000	2016 €'000
FIXED ASSETS			
Tangible assets	8	**15,562**	12,941
Financial assets	9	**500**	500
		16,062	13,441
CURRENT ASSETS			
Stocks	10	**179**	174
Debtors			
– Due within one year	11	**995**	1,021
– Due after one year	11	**500**	700
Cash at bank and in hand:			
– Restricted - OPW grant	12	**30**	30
– Unrestricted		**5,976**	5,446
		7,680	7,371
CREDITORS: (Amounts falling due within one year)	12	**(3,723)**	(2,595)
Net current assets excluding pension asset		**3,957**	4,776
Pension asset	15	**167**	167
Net current assets including pension asset		**4,124**	4,943
NET ASSETS		**20,186**	18,384

Represented by:		
Accumulated surplus	**6,939**	5,141
Development reserve	**10,975**	10,975
Emergency reserve	**2,272**	2,268
	20,186	18,384

The financial statements were approved and authorised for issue by the Board of Directors on 24 May 2018 and signed on its behalf by:

Michael Daly	Nigel Bell
Council President	**Honorary Treasurer**

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2017

	Notes	Development Reserve €'000	Emergency Reserve €'000	Accumulated Surplus €'000	Total €'000
Balance at 1 January 2016		12,000	2,264	9,450	23,714
Surplus for the financial year		–	–	2,837	2,837
Remeasurement of net defined benefit asset		–	–	(31)	(31)
Transfers between reserves		7,000	4	(7,004)	–
At 31 December 2016		19,000	2,268	5,252	26,520
Surplus for the financial year		-	-	2,609	2,609
Transfers between reserves			4	(4)	–
At 31 December 2017		**19,000**	**2,272**	**7,857**	**29,129**

The Council members have decided to transfer €4,000 (2016: €4,000) from the accumulated surplus to the emergency 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 2017

	Notes	Development Reserve €'000	Emergency Reserve €'000	Accumulated Surplus €'000	Total €'000
Balance at 1 January 2016		7,000	2,264	7,018	16,282
Surplus for the financial year		–	–	2,120	2,120
Remeasurement of net defined benefit asset		–	–	(18)	(18)
Transfers between reserves		3,975	4	(3,979)	0
At 31 December 2016		10,975	2,268	8,985	18,384
Surplus for the financial year		-	-	1,802	1,802
Transfers between reserves			4	(4)	–
At 31 December 2017		**10,975**	**2,272**	**6,939**	**20,186**

The Council members have decided to transfer €4,000 (2016: €4,000) from the accumulated surplus to the emergency reserve. The Council members continue to monitor the strategic development of Dublin Zoo and have set aside funds to finance future capital investment projects.

CONSOLIDATED STATEMENT OF CASH FLOWS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2017

	Notes	**2017** **€'000**	2016 €'000
NET CASH INFLOW FROM OPERATING ACTIVITIES	17	**6,231**	4,016
Cash flows from investing activities			
Payment to acquire tangible fixed assets		**(5,149)**	(4,704)
Interest received		**8**	3
Interest paid		**(46)**	(50)
Net cash outflow from investing activities		**(5,187)**	(4,751)
Cash flows from investing activities			
Receipt of bank loan		**-**	250
Repayment of bank loan		**(210)**	(210)
Net cash inflow from financing activities		**210**	40
DECREASE IN CASH IN THE FINANCIAL YEAR	17	**(834)**	(695)
Cash and cash equivalents at beginning of financial year		**6,281**	6,976
Cash and cash equivalents at end of financial year		**7,115**	6,281

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2017

1. ACCOUNTING POLICIES

The principal accounting policies are summarised below. They have all been applied consistently throughout the current and 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 58 to 61.

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 2017.

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 Gate receipts, 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 and discounts, 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.

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 1/3%
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 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.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2017 (Continued)

3. INCOME	**2017**	2016
Income arises from the following activities undertaken wholly within Ireland.	**€'000**	€'000
Gate receipt income	**14,171**	12,577
Annual pass and membership income	**2,775**	2,583
Shop income	**2,797**	2,621
Other income	**1,696**	1,651
	21,439	19,432

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2017 (Continued)

4. EMPLOYEE INFORMATION

	2017	2016
Staff numbers and costs		
Average number of employees:		
Management	**10**	10
Administration	**26**	26
General staff		
– full time	**95**	95
– part time	**11**	13
Shop	**20**	15
	162	159

The aggregate payroll costs of these persons were as follows	**2017**	2016
	€'000	€'000
Wages and salaries	**5,859**	5,634
Social welfare costs	**679**	672
Retirement benefit costs (Note 15)	**144**	269
	6,682	6,575

The total remuneration for fourteen key management personnel for the financial year totalled €1,067,737 (2016: €920,924 for thirteen key management personnel)

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

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2017 (Continued)

5. OPERATING SURPLUS	**2017**	2016
The operating surplus is stated after charging:	**€'000**	€'000
Remuneration of Council members	**-**	-
Auditor's remuneration in respect of		
• the audit of the entity	**19**	19
• the audit of subsidiary entity	**7**	7
• tax services	**12**	11
• other services	**-**	1
Depreciation	**2,541**	**2,221**
Operating lease charges	**6**	7

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

6. INTEREST	**2017**	2016
Interest payable	**€'000**	€'000
On bank loans due within five years	**46**	50

Interest income	**2017**	2016
	€'000	€'000
Deposit interest	**8**	3
Other finance income (Note 15)	**-**	6
	8	9

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 2017 (Continued)

8 . TANGIBLE FIXED ASSETS

Group

	Land €'000	Plant Machinery & Equipment €'000	Computer Equipment €'000	Motor Vehicles €'000	Buildings & Habitats €'000	Total €'000
Cost:						
At 1 January 2017	191	3,878	990	520	30,872	36,451
Additions	–	263	81	33	4,772	5,149
At 31 December 2017	**191**	**4,141**	**1,071**	**553**	**35,644**	**41,600**
Depreciation:						
At 1 January 2017	-	3,440	870	400	8,377	13,087
Charge for financial year	–	156	191	32	2,162	2,540
At 31 December 2017	**–**	**3,595**	**1,061**	**432**	**10,539**	**15,627**
Net Book Value:						
At 31 December 2017	**191**	**546**	**10**	**121**	**25,105**	**25,973**
At 31 December 2016	191	438	120	120	22,495	23,364

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2017 (Continued)

8. TANGIBLE FIXED ASSETS (Continued)

Company	**Land**	**Plant Machinery & equipment**	**Computer equipment**	**Motor vehicles**	**Buildings & Habitats**	**Total**
	€'000	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
Cost:						
At 1 January 2017	191	1,859	990	246	17,586	20,872
Additions	-	73	81	-	4,427	4,581
At 31 December 2017	**191**	**1,932**	**1,071**	**246**	**22,013**	**25,453**
Depreciation:						
At 1 January 2017	-	1,699	870	235	5,127	7,931
Charge for financial year	–	37	191	7	1,725	1,960
At 31 December 2017	**–**	**1,736**	**1,061**	**242**	**6,852**	**9,891**
Net Book Value:						
At 31 December 2017	**191**	**196**	**10**	**4**	**15,161**	**15,562**
At 31 December 2016	191	160	120	11	12,459	12,941

Included in habitats at 31 December 2017 are assets under construction which amounted to €571,319.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2017 (Continued)

9 . FINANCIAL ASSETS

Company	**2017**	2016
	€'000	€'000
At beginning and end of financial year	**500**	500

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	**2017**	2016
	€'000	€'000
At beginning and end of financial year	**500**	500

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2017 (Continued)

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

10. STOCKS	**Group**		**Company**	
	2017	2016	**2017**	2016
	€'000	€'000	**€'000**	€'000
Shops	**247**	212	**153**	151
Consumables	**26**	23	**26**	23
	273	235	**179**	174

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2017 (Continued)

11. DEBTORS	Group		Company	
	2017	2016	**2017**	2016
	€'000	€'000	**€'000**	€'000
Amounts falling due within one year:				
Trade debtors	**505**	455	**466**	356
Prepayments and other debtors	**433**	400	**297**	273
VAT	**30**	1	**-**	-
Amounts due from subsidiary	**-**	-	**32**	41
Loan to subsidiary	**–**	–	**200**	220
	968	856	**995**	890
Amounts falling due after more than one year:				
Loan to subsidiary	**–**	–	**500**	700

During the financial year Fota Wildlife Park repaid €200,000.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2017 (Continued)

12. CREDITORS

(Amounts falling due within one year)	Group		Company	
	2017	2016	**2017**	2016
	€'000	€'000	**€'000**	€'000
Bank loan (Note 13)	**210**	210	**-**	-
Trade creditors	**1,447**	1,212	**1,135**	922
Accruals	**462**	674	**284**	417
Deferred income	**2,307**	1,433	**1,775**	1,042
PAYE/PRSI	**422**	178	**365**	135
VAT	**134**	49	**134**	49
	4,982	3,756	**3,693**	2,565
OPW grant	**30**	30	**30**	30
	5,012	3,786	**3,723**	2,595

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 2017, €30,000 (2016: €30,000) remained unspent from the grant received and has been included in creditors and cash.

	2017	2016
	€'000	€'000
At beginning and end of financial year	**30**	30

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2017 (Continued)

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

In respect of prior financial year	**2016**	2015
	€'000	€'000
At beginning of financial year	**30**	30

13. CREDITORS: Amounts falling due after more than one year

	Group	
	2017	2016
	€'000	€'000
Bank loan	**120**	330

Loan maturity analysis:	**2017**	2016
	€'000	€'000
In one year or less, or on demand	**210**	210
Between two and five years	**120**	330
After more than five years	**–**	–
	330	540

The bank loan is repayable in installments over the next five years. It is subject to an interest rate of 1 - 3%

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2017 (Continued)

14. OTHER DEFERRED GRANTS

	Group	
	2017	2016
	€'000	€'000
Government grants		
Received and receivable:		
At beginning of financial year	**835**	835
Received during the financial year	**–**	–
At end of financial year	**835**	835
Amortisation:		
At beginning of financial year	**456**	424
Amortised to income and expenditure	**32**	32
At end of financial year	**488**	456
At end of financial year	**347**	379

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 2017 (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 2017 was €164,682 (2016: €144,111).

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 8 March 2017.

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

	2017	2016
	%	%
Rate of general increase in salaries	**3.10**	3.00
Rate of increase in pensions in payment	**0.00**	0.00
Discount rate of scheme liabilities	**1.80**	1.80
Inflation	**1.60**	1.50

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2017 (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	24.5	25.4

Pension Asset

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

	2017	2016
	€'000	€'000
Current service cost	**(55)**	(54)
Net interest income	**5**	6
	(50)	(48)
Recognised in other comprehensive income	**-**	(31)
Total cost relating to defined benefit scheme	**(50)**	(79)

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2017 (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:

	2017	2016
	€'000	€'000
Fair value of assets	**3,861**	3,720
Present value of defined benefit obligations	**(3,110)**	(3,441)
Asset Ceiling	**(472)**	-
Net asset recognised in the balance sheet	**279**	279

In assessing the carrying value of the defined benefit asset, the council have assessed what value is recoverable by the company in the foreseeable future. On that basis, the value of the asset has been kept at €279,000, reflecting the value of the reduced contributions over the foreseeable future.

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

	2017	2016
	€'000	€'000
At 1 January	**3,720**	3,499
Contributions	**83**	83
Benefits paid	**(83)**	(83)
Expected return on pension scheme assets	**67**	77
Actual return less expected return on pension scheme assets	**74**	144
At 31 December	**3,861**	3,720

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2017 (Continued)

15. PENSION ASSET (Continued)

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

	2017	2016
	€'000	€'000
At 1 January	**3,441**	3,224
Service cost	**55**	54
Interest cost	**62**	71
Benefits paid	**(83)**	(83)
Actuarial loss/(gain)	**(365)**	175
At 31 December	**3,110**	3,441

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

	Fair value at 31 December 2017	Fair value at 31 December 2016
	€'000	€'000
Equities	**1,270**	1,619
Bonds	**2,385**	1,811
Property	**32**	34
Other	**174**	256
Total market value of assets	**3,861**	3,720

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2017 (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 2017 was €133,000 (2016: €110,765).

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.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2017 (Continued)

15. PENSION ASSET (Continued)

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

	2017	2016
	€'000	€'000
Current service cost	**(33)**	(32)
Net interest income	**3**	4
	(30)	(28)
Recognised in other comprehensive income	**263**	(18)
Total cost relating to defined benefit scheme	**233**	(46)

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

	2017	2016
	€'000	€'000
Fair value of assets	**2,317**	2,232
Present value of defined benefit obligations	**(1,866)**	(2,065)
Asset Ceiling	**(284)**	-
Net asset recognised in the balance sheet	**167**	167

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2017 (Continued)

15. PENSION ASSET (Continued)

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

	2017	2016
	€'000	€'000
At 1 January	**2,232**	2,099
Contributions	**50**	50
Benefits paid	**(50)**	(50)
Expected return on pension scheme assets	**40**	47
Actual return less expected return on pension scheme assets	**45**	86
At 31 December	**2,317**	2,232

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

	2017	2016
	€'000	€'000
At 1 January	**2,065**	1,934
Service cost	**33**	32
Interest cost	**37**	43
Benefits paid	**(50)**	(50)
Actuarial loss/(gain)	**(219)**	105
At 31 December	**1,866**	2,064

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2017 (Continued)

16. FINANCIAL INSTRUMENTS

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

	2017	2016
	€'000	€'000
Financial assets		
Measured at undiscounted amount receivable		
• Trade and other debtors (Note 11)	**938**	855

	2017	2016
	€'000	€'000
Financial liabilities		
Measured at amortised cost		
• Bank loans (Note 12 & 13)	**330**	540
Measured at undiscounted amount payable		
• Trade and other payables (Note 12)	**1,477**	3,559
	1,777	4,099

	2017	2016
	€'000	€'000
Interest expense		
• Interest expense on financial liabilities measured at amortised cost (Note 6)	**46**	50

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2017 (Continued)

16. FINANCIAL INSTRUMENTS (Continued)

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

	2017	2016
	€'000	€'000
Financial assets		
Measured at cost less impairment		
• Investment in subsidiary (Note 9)	**500**	500
Measured at cost less impairment		
• Loan to subsidiary (Note 11)	**700**	900
Measured at undiscounted amount receivable		
• Trade and other debtors (Note 11)	**763**	629
• Amount due from subsidiary (Note 11)	**32**	172
	1,995	2,201

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2017 (Continued)

16. FINANCIAL INSTRUMENTS (Continued)

	2017	2016
	€'000	€'000
Financial liabilities		
Measured at undiscounted amount payable		
Trade and other payables (Note 12)	**1,135**	922

	2017	2016
	€'000	€'000
Interest income		
• Interest income on financial assets measured at amortised cost	**8**	20

17. CASH FLOW STATEMENT

Reconciliation of operating surplus to cash generated by operations

	2017	2016
	€'000	€'000
Operating surplus	**2,615**	2,846
Depreciation of tangible fixed assets	**2,540**	2,221
Adjustment for retirement benefit plan	**-**	(29)
(Increase)/decrease in stocks	**(38)**	(19)
Increase in debtors	**(112)**	(327)
Increase in non OPW creditors	**1,226**	(676)
Cash generated by operations	**6,231**	4,016

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2017 (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	**6,281**	834	7,115
Bank loan	**(500)**	170	(330)
Net funds	**5,781**	1,004	6,785

18. COMMITMENTS AND CONTINGENCIES

	2017 €'000	2016 €'000
Authorised and contracted for commitments	**3,700**	2,474
Authorised but not contracted for commitments	–	–

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2017 (Continued)

19. 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.

20. COMPARATIVE AMOUNTS

Comparative amounts have been reclassified, where necessary, on the same basis as those for the current financial year.

21. APPROVAL OF FINANCIAL STATEMENTS

The consolidated financial statements were approved by the Council on 24 May 2018.

(Above) Beth Healy gazing that the Diplodocus mural at Zoorassic World
(Cover photo) Alfie Conroy at the opening of Zoorassic World

100% Recycled Paper. Post-Consumer Waste Content 75%

Dublin Zoo, Phoenix Park, Dublin 8.
T: (01) 474 8900 F: (01) 677 1660 E: info@dublinzoo.ie W: www.dublinzoo.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, Darragh Kane, Gearóid O'Sullivan Sean Mc Keown

Design by Wilson Creative