

# 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*

## NOTICE OF ANNUAL GENERAL MEETING

NOTICE is given that the annual general meeting of The Zoological Society of Ireland will be held at Dublin Zoo on 17 December 2020 at 18:00 for the following purposes:

# **Ordinary Business:**

- To receive and consider the statutory financial statements for the financial year ended 31 December 2019 (the "Financial Statements"), the report of the directors on the Financial Statements (the "Directors' Report") and the report of the statutory auditors on the Financial Statements and the Directors' Report.
- 2. To review the affairs of the Company.
- To re-elect Nigel Bell, who retires in accordance with the Articles of Association of the Company (the "Articles") and is eligible for re-election, as a director of the Company.
- 4. To re-elect Michael Daly, who retires in accordance with the Articles and is eligible for re-election, as a director of the Company.
- 5. To note that Paul Burke Kennedy retires as a director of the Company.
- 6. To note that Tom Dunphy retires as a director of the Company.
- 7. To re-appoint Deloitte LLP as statutory auditors of the Company.
- 8. To authorise the directors to approve the remuneration of the statutory auditors.

## BY ORDER OF THE BOARD

John Sweeney Secretary

# **Registered Office**

The Zoological Society of Ireland Dublin Zoo The Phoenix Park Dublin 8

Dated 19 October 2020

**Note**: A member entitled to attend and vote is entitled to appoint a proxy using the form set out in section 184 of the Companies Act 2014 (enclosed) to attend, speak and vote on his or her behalf. A proxy need not be a member of the Company. Proxies must be received at the registered office of the Company not less than 48 hours before the time of the meeting.

#### LETTER FROM THE PRESIDENT

Dear Member,

The Board of the Zoological Society of Ireland presents the twenty-sixth annual report, together with the consolidated audited financial results of Dublin Zoo and Fota Wildlife Park, for the year ended 31 December 2019.

As we look back at 2019 we have much to be pleased about; it was a year of sustained growth and development. We welcomed over 1.7 million visitors, making us the largest family attraction in Ireland. We continue to grow in popularity as a place to connect with wildlife and learn about conservation and the environment. We are in a unique and privileged position to provide opportunities for our visitors to enjoy encounters with animals that they may otherwise never see in the wild. Through our field conservation and research programmes, we've realised the incredible power zoos have to significantly influence the success and continuation of a species. With the world losing an alarming number of species each year, the role of accredited zoos has never been more critical. While we are fortunate to have approximately 500 animals representing around 80 species in Dublin, and over 600 animals representing 114 species in Fota, our priorities have been to include more endangered species in the collection and to increase conservation efforts at home and abroad. Without our visitors and especially our members none of this would be possible, and for that support we are most grateful.

We enjoyed many successes in 2019; our capital expenditure was significant with investment in the redevelopment of animal habitats and in creating new ways to connect with our visitors.

In Dublin, the most notable was the completion and opening of the Wolves in the Woods habitat. A space inspired by the natural habitat of the grey wolf, that's very linear allowing plenty of room for the wolves to explore, while offering visitors superb viewing points to see these fascinating animals. A new entry plaza was also opened, creating more circulation space and additional seating, allowing visitors to meet, relax and take in the vista.

In Fota, the Madagascan Village development was opened, comprising two houses for four species of lemurs as well as a separate interactive hub where visitors can learn about the various conservation projects that are undertaken in Madagascar. This project also included the refurbishment of 'Palm Walk', a plantation dating back to 1880; it now forms the centerpiece for Palm Island.

These exciting developments see us constantly evolving and staying at the forefront of animal care, conservation, education and inspiring behavioral change in our visitors that will positively impact wildlife.

I am writing this President's letter in the middle of the unprecedented COVID-19 pandemic which, in addition to the ongoing health concerns, is having a major negative impact on our operations. Dublin Zoo had to close its doors for a ten week period. Maintaining the highest standard of care for our animals was of paramount importance throughout this time.

Our primary concern at the moment is for the health and safety of our employees, volunteers, contractors, members, visitors and our animals. Like most businesses we are not immune to the economic and business disruption of the pandemic and have had to implement an unprecedented cost reduction programme to allow us to survive through this most difficult time. We are also sensitive to the ongoing volatility with respect to COVID-19 and will continue to monitor developments carefully to allow us to prioritise the health and wellbeing of all. I believe we have a wonderful offering and look forward to the day when the pandemic has abated, allowing us to once again reinvest and recommence our development programme, thus enhancing the experience for our members and visitors at both Dublin Zoo and Fota Wildlife Park.

I would like to thank the director of Dublin Zoo, Leo Oosterweghel and the director of Fota Wildlife Park, Sean McKeown for their leadership and commitment to the success and sustainability of both locations.

Every day we're grateful for the dedicated staff and volunteers without whom we'd be unable to create the memorable experiences that help people to appreciate and respect wildlife. Thank you for all you do for our animals and our visitors.

As I will complete my three years of presidency later this year, I want to say what a privilege it has been for me. I would like to thank my colleagues on the Board of the Zoological Society of Ireland and the Board of Governors of Fota Wildlife Park for their support so generously given to me.

Michael Daly President Zoological Society of Ireland



# **DUBLIN ZOO: DIRECTOR'S REPORT**

The annual attendance at Dublin Zoo in 2019 was 1,040,284. Wild Lights held in the winter months was a phenomenal success with 232,318 visitors, bringing the total number of visitors to Dublin Zoo in 2019 to 1,272,602. In figures published by Fáilte Ireland during the year, Dublin Zoo ranked third in the list of top tourist attractions in Ireland, free and fee-paying, coming behind the Guinness Storehouse and the Cliffs of Moher.

The major new habitat this year was 'Wolves in the Woods', which was inspired by the natural environment of the grey wolf. The long habitat is over 4000 square meters in size and, with three observation points along a winding birch-lined path, it immerses our visitors into the natural world of the grey wolf. It is a large and stimulating space for the wolves and includes rocky terrain, a water feature, a den and a dedicated feeding area. Every detail of the habitat was considered carefully with the wellness of the wolf pack in mind. Construction work on the steep site was challenging as the gradient of the slope had to be modified. 'Wolves in the Woods' was designed by Mario Campos and the Team from Jones & Jones in Seattle in the United States. There was particular input from landscape architect / horticulturist Duane Dietz of Jones & Jones who worked with the Dublin Zoo Horticulture Team on the design and extensive planting of the habitat. Project managers were Hayes Higgins Partnership. The contractors were T. Connolly and Sons. Interpretation was by the Zoo Team.

In August the Animal Care Team and the Veterinary Team moved the wolves from their temporary home in the Zoo to their new habitat. The animals had been trained to enter a safe area where they could be health checked before the move. Transferring potentially dangerous animals between areas always constitutes a challenge because of the inherent risks associated with the operation but the high level of professionalism and dedication of the Team made it an eventless move. An elderly male with significant health issues died shortly after being transferred. The wolf pack adapted quickly to their new habitat. On 28 August the habitat was officially opened by Dr. Kieran Hickey, a lecturer in the Department of Geography, NUI, Galway, and the author of the book Wolves in Ireland, a natural and cultural history. Later in the day Dr. Hickey delivered a lecture to staff and volunteers in the Discovery and Learning Centre.





In February, on a recommendation from the studbook keeper, our Asian bull elephant Upali was successfully transferred to Le Pal Zoo in France. For many weeks the 5,000kg elephant had been trained to walk into his transport box. Some of this training took place in the dark with artificial light so when, at 03:00 hours on 27 February, the time came for the move, Upali walked with ease into his transport box for the journey to France. A keeper and a veterinarian travelled with him, and a keeper flew to Le Pal Zoo to be present when he arrived. The transport was flawless and Upali arrived in excellent health. Reports from Le Pal Zoo in France have been good and Upali has mated with a number of females.



Meanwhile significant work was undertaken to place Kavi and Ashoka, the five-year old 1500kg Asian elephant bulls, in Sydney Zoo, a new zoo in Australia where the animals will be kept in protected contact. Due to strict quarantine arrangements, Knowsley Safari Park in Britain agreed to keep the bulls in the three-month quarantine required by the Australian authorities before shipment to Australia; quarantine at Dublin Zoo was not an option. Elephant expert, Alan Roocroft, assisted with the transport plan. The move to Britain took place on schedule in January 2020. Meanwhile in October, General Curator Miguel Bueno Brinkmann and Operations Manager Gerry Creighton attended an elephant management meeting in Denver, USA, to find additional interested parties for Dublin Zoo bred elephants.

There was a departure and two births in the western lowland gorilla troop during 2019. In March, Tebogo, a seven-year-old male western lowland gorilla, was transferred to Pairi Daiza Zoo in Belgium.

Tebogo, who came to Dublin from Wilhelma Zoo, Stuttgart, in 2016, was box-trained before he left and a keeper from Pairi Daiza visited Dublin Zoo to familiarise herself with Tebogo. In April, Kafi, a first time mother, gave birth to a female, named Asali. This was the first of two offspring for Bangui, the black-backed male who had arrived in 2018. The western lowland gorilla troop at Dublin Zoo is very young and inexperienced, requiring the Animal Care Team and the Veterinary Team to manage the troop carefully. In October 2019, Vana, also a first time mother, gave birth to a young male, Kivuli, and is doing an exceptional job looking after her baby.

The troop takes great interest in the baby and to have two young gorillas of similar age growing up together is very beneficial.

In October okapi Lumara gave birth to a healthy female calf. She was a first time mother and did an excellent job looking after her calf. Retired keeper from Rotterdam Zoo Rob van Loon, who had worked with the endangered okapi for many years and had witnessed twelve births, spent time with the Animal Care Team to advise on aspects of the management and care of the mother and calf. This is Dublin Zoo's first okapi calf.





(Top) Western lowland gorilla infant, Asali (Bottom) Western lowland gorilla infant, Kivuli

Other births included two healthy male Rothschild giraffes. Tafari was father to both, with Casey giving birth in September and the ageing giraffe Maeve giving birth in November. Two critically endangered primates, the Sulawesi crested macaques and the red ruffed lemurs, each gave birth to two healthy offspring. At the end of January, Bornean orangutan Mujur gave birth during the night but the male newborn was found dead in the morning. It was the first time Mujur gave birth and she recovered well. Dublin Zoo now has a proven breeder and it is believed that it is only a matter of time before she gives birth again and raises her young.

In May female Asian lion Kalini was transferred to Tehran Zoo; she was born in 2015 in Dublin Zoo. Kalini will be part of a conservation education programme to demonstrate that the species was native to Iran up to eighty years ago. In October Zuko, a Dublin Zoo bred white rhinoceros, was transferred to Port Lympne Zoo in Britain. He was extensively box-trained before the move and arrived in very good health. Two female California sea lions born in 2018 were transferred to Beauval Zoo, France in October.

The last of Dublin Zoo's Rodrigues fruit bats was euthanized following severe problems with its eyes. Dublin Zoo kept and bred the fruit bats from 1992 to December 2018 when all but two of the bats were moved to a big open-air flight area in Athens, Greece. Two females with poor eyesight remained on in Dublin Zoo together. One died of natural causes in June; the other was euthanized in October after ongoing monitoring and discussion with keepers, management and the Veterinary Team.

# **MAJOR VETERINARY PROCEDURES**

During the year, veterinarian Frank O'Sullivan, the Veterinary Team and the Animal Care Team carried out numerous procedures. Major procedures included:

March 2019 A procedure to drain abscesses on the back of Bornean orangutan Sibu. The straightforward procedure took much planning and preparation, including a detailed 27-point Standard Operating Procedure (SOP) to follow very strict health and safety protocols.

May 2019 Painted dog Taurai successfully underwent a veterinary procedure to treat a soft tissue swelling of the Achilles tendon.

August 2019 An emergency procedure took place on chimpanzee Pia who suffered a serious ovarian infection. A highly pregnant siamang also underwent a procedure to remove the full term foetus; she also had to receive a blood transfusion from her partner. Both animals recovered well.

September 2019 After observation and conservative treatment, a grey wolf had a foreign object removed from his eye under anaesthetic. The animal recovered well.

November 2019 A 'purse suture' was successfully used to treat a rectal prolapse in a female Sulawesi crested macaque. Two and a half year-old bull Asian elephant, Kavi, was treated with medication and daily cleaning for a tusk fracture.

December 2019 After observation, a male grey wolf was treated under anaesthetic for a piece of wood stuck in the upper palate between the teeth. He made a full recovery.

## **Appointment of Miguel Bueno Brinkmann**

Following a global search for a General Curator and a thorough selection and interview process, Miguel Bueno Brinkmann, a zoologist with very wide international experience working in zoos was appointed. His former positions included Curator of Marine Mammals and Birds in Madrid Zoo, Director of the Animal Collection in Buin Zoo in Chile, Curator of Living Collections in Twycross Zoo in Britain, and most recently Animal Care Manager in Fota Wildlife Park. He took up his position in Dublin Zoo on 1 July and introduced new procedures and systems of work focusing on the Animal Team structure, welfare audits and health and safety. Dublin Zoo welcomes Miguel Bueno Brinkmann to the Team.



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## WELLNESS AND ETHICS

Animal wellness and ethics continue to be at the heart of the work of the Dublin Zoo Team and this was recognised by inspectors from the Department of Culture, Heritage and the Gaeltacht during the regular zoo inspection. In 2019 the inspectors were Dr Neil Forbes and Dr M. Griffith with Amanda Maguire of the department's Biodiversity and Conservation Unit. In the preamble to their report, they stated: 'It has been a real pleasure for the inspection Team to inspect this very impressive enterprise, where animal welfare, visitor entertainment, public engagement, education and year on year redevelopment go hand in hand with a sound financial business enterprise.' Provision of opportunities for the animals to express most normal behaviour was commended in respect of the wolves, reptiles, elephants, orangutans and the planned lion habitat extension. The education department and facilities, the Wild Space, its 'many ground breaking programmes' and provision of Braille signage were commended as 'excellent and visionary in many respects.' The ongoing development of the webbased health and safety accident reporting system was complimented.

Arising from the report, the Dublin Zoo Ethics Committee chaired by Zoological Society of Ireland Board member, Dorothy Kilroy, held two meetings before the end of the year. The health and wellbeing of individual animals were discussed. Some general principles were noted, especially in relation to the elephant herd. Dublin Zoo is aware that old practices in zoos in America and Europe can reflect negatively on all zoos. For example it is noted that the bullhook, also known as the ankus, is still being used to manage elephants at a number of respectable zoos in America and Europe.

Dublin Zoo changed this archaic way of caring for elephants many years ago by moving to the protected contact management approach. The care philosophy is to seek the elephant's co-operation for foot care and basic veterinary procedures through trust and positive reinforcement. This form of management has been very successful and there is minimum stress within the herd. In discussing the potential transfer of young Dublin Zoo bred bull elephants, the Dublin Zoo Ethics Committee stressed that it was of paramount importance that future recipients of Dublin Zoo elephants adhere to a similar animal care philosophy. Anything less would be unethical.



Dublin Zoo also noted that there had been negative publicity concerning the pinioning of birds in a British wildlife park. Dublin Zoo had abolished the practice of pinioning birds many years ago, preferring the temporary measure of clipping wings where required. When the Flamingo Lagoon was opened in 2015, the practice of clipping became obsolete.

## RETAIL AND VISITORS' SERVICES

This year as we welcomed 1,272,602 visitors through the gates, the systems worked very well and queuing was kept to a minimum. Use of online ticketing increased and entry was fast, efficient and free of problems. For Wild Lights during the winter months, the Zoo was closed at 4.00pm and reopened at 5.00pm. At weekends many people arrived early but ticket scanning was rapid and visitors moved through the entrance very quickly.

Retail Manager Mark Bowes and the Team continued to work on sourcing items that adhered to the principles of sustainability, minimising plastic and free of palm oil. This was noted by the Dublin Zoo Ethics Committee, which commented on the excellent range of products now available in the Zoo Shop. This year additional products from the reliable Nature Planet range included Dublin Zoo branded reusable bottles and a reusable bottle for children with a message inside saying how the use of the bottle was reducing the amount of plastic being put into the ocean.

Other new items included biodegradable ponchos, bioplastic children's trucks and a range from Re-PETs made from recycled plastic bottles including soft animal toys. The Eco bags for children continued to sell very well, especially at the counter when completing a sale for another item. The Dublin Zoo gift shop continued to sell items where a percentage of sales goes to Save the Orangutans International or to Plan International.

Noel Duffy retired after 42 years working at Dublin Zoo. He started in 1977 in the Horticulture Department, moved to working in the stores and then in the late 1990s to working on the gate. He retired as Gate Manager in 2019. His son Alan is with the Animal Care Team. Dublin Zoo wishes Noel well on his retirement.





## DEVELOPMENT AND MAINTENANCE

The major project in 2019 was 'Wolves in the Woods'. It was a challenging project caused by the nature of the complex, narrow, steep and linear site. The main challenge for the contractors was the accessibility of the site and the staging of equipment and materials. They could not work at their normal pace so a six-week delay was agreed; the project was completed on the new schedule at the end of August. During the summer while the contractor T. Connolly and Sons were on site constructing 'Wolves in the Woods' the opportunity was taken to dredge the water around the two Sulawesi crested macaque islands near the entrance.

Another large project during the year was the creation of the new entry plaza designed with help from Jones & Jones. Work by Hayes Higgins Partnership and the contractor T. Connolly and Sons commenced in January after Wild Lights was finished. The old timber decking was removed and replaced with cobblelock paving. The decking was extended over the lake by a few metres. This has greatly improved visitor circulation on busy days, and by providing seating the area has also become a meeting place. Provision has been made to extend the ticketing booths, cash office and the gift shop in the future. The plaza was completed on schedule by early summer in time for the busy period.

Significant time was invested in the schematic designs for a project titled 'Himalayan Forest' in the space between 'Wolves in the Woods' and the Amur tiger habitat. The 'Himalayan Forest' will have habitats for the snow leopard and red panda. Contractor T. Connolly and Sons took possession of the site in October and preparatory work commenced.

With the cooperation of the Phoenix Park, a builder's compound was constructed on the Park side of the Zoo boundary fence. Donal Higgins of Hayes Higgins Partnership is the project manager.



# **Health and safety**

The risk assessment module of the Health and Safety database is now fully operational. The Zoo Teams undertook training to use this sophisticated database. Applying Hazard Risk Numbers, our risk assessments now have a value that we can use to prioritise areas of risk and to implement simple and safe systems of work to effectively reduce the risk.

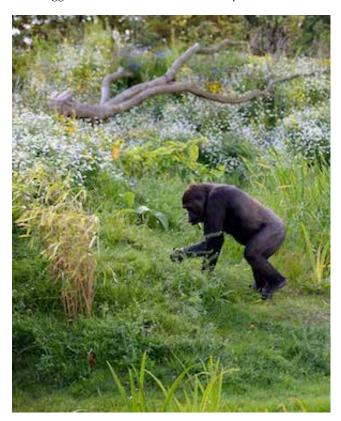
# **HORTICULTURE**

During 2019 the combination of the mild winter and fairly wet year overall resulted in an unusual increase in growth of vegetation across the whole Zoo. Some habitats experienced exceptional plant growth including the Gorilla Rainforest where the Horticulture and Animal Care Teams worked together to reduce dense vegetation to allow for long views across the habitat from the designated visitor viewing points. That cooperation took place in other areas as well, such as the African painted dog and the okapi habitats. Shed leaves from trees can be dangerous for okapis if they ingest them so a thorough cleaning is required regularly in that habitat.

A complete review of trees and the subsequent actions required to keep them in good shape was undertaken in 2019. Every tree was audited by our Horticulture Team with expert advice from a professional tree surgeon. Arising from the review, dense vegetation at height was cleared, damaged branches cut and dead trees were removed. Foliage around the perimeter of the Zoo was cleared to prevent damage to the boundary fence.

The Horticulture Team provided plants for the new 'Wolves in the Woods' habitat. These had been grown in the nursery for that purpose. The plants helped to stabilise the soil in the steep habitat. The Team also prepared a special mix of urban soil – a mixture of vegetal and mineral soil – and wood chips to cover the areas that the wolves would patrol constantly.

One of the tasks of the Horticulture Team is to be vigilant in preventing plant diseases and managing some species that may grow out of control. This can be a challenge, especially when avoiding the use of chemical products. In the tropical environment of the Zoorassic World habitats some insects found the perfect temperature and humidity to establish themselves. A number of those fed on plants and created defence mechanisms that could damage the plants, causing disease and death. Special biological control measures were applied with the help of specialists who suggested the introduction of other predator insects.



# **DISCOVERY AND LEARNING**

2019 was a solid year with 59,776 bookings across formal and informal programmes for all ages compared with 63,635 bookings in 2018. The number attending taught programmes was 20,848, down by 13% from last year. This is a reflection of the changes made to the Junior Cycle curriculum with many teachers opting not to bring students to curriculum based programmes in Science and Civil, Social and Political Education (CSPE). As a result junior cycle 'Ecology' bookings dropped by 30% and the once popular programme 'Zooardship' saw bookings drop by 70% in the autumn. However these changes were anticipated and two new modules 'Sustainability' and 'Evolution' responded to the new Junior Cycle curriculum. Additional capacity was achieved by hiring an ecology facilitator to allow permanent staff to deliver these new programmes. The Discovery and Learning Team is expanding their reach and diversity of programmes with a special emphasis on Science, Technology, Engineering and Maths (STEM) education and family learning programmes.

In 2019 SSE Airtricity came on board to support the Discovery and Learning activities in a variety of ways with a sponsorship budget of €15,000. This provided the Discovery and Learning Team with an opportunity to create resources to complement their teaching activities. These included a new high quality 'Ecology Fieldwork' students' booklet for Junior and Senior cycle students, an 'Eco Explorers Passport' to complete following the Eco-Explorers Trail, and an outdoor learning kit for 75 teachers attending the Primary Teachers' Continuous Professional Development course held in the summer.



The Head of Discovery and Learning, Aileen Tennant, worked with the Dublin Zoo Marketing Team and SSE Airtricity to launch a Science Week programme in November to design a giraffe habitat. The programme was designed, developed and delivered by the Discovery and Learning Team.

The 'Giraffe Habitat Challenge' was a big success with 1,034 primary and secondary school students participating. A video featuring the various professionals involved in habitat design in Dublin Zoo was recorded by Moondance Productions.

It featured Dublin Zoo team leader Helen Clarke, Meriel Engrand who is a civil and structural engineer, Miguel Slowey who is a project manager with Hayes Higgins Partnership, and Mia Fahey McCarthy who is Head of Sustainability with SSE Airtricity. It was sponsored by SSE Airtricity and the first prize in the two categories, primary and secondary, was €2,000 off the winning schools' electricity bill; these were won by fourth class, Paddock National School, Laois, and second and third year O'Connells Secondary School, Dublin, respectively. The runner-up prize in each category was a class trip for 30 students and three teachers to W5 in Belfast. Winners of this prize were fourth class St Andrews College Junior School, Dublin, and Transition Year in Elphin Community College, Roscommon.

In formal education, 'Dinosaur Explorer' and 'Farmtastic Foods' continued to be popular with the early childhood level.



Once again Dublin Zoo hosted a stand at the Early Childhood Ireland Conference in Croke Park in April. This forum continues to raise our profile as a pre-school destination. At primary level 7,088 students were taught by an educator on one of the five curriculum linked programmes. In addition 11,345 students and their teachers who missed out on these programmes were provided with educational engagements delivered by our volunteers on arrival and at strategic positions throughout the Zoo. Learners were also encouraged to take part in the 'Eco Explorer Trail' to find out more about the sustainability activities undertaken by Dublin Zoo. The Leaving Certificate 'Ecology Fieldwork' programme continues to be the strongest course in secondary schools followed by 'Conservation'.

In January the Discovery and Learning Team facilitated a stand at the BT Young Scientist and Technology Exhibition. The stand was packed each day and provided an excellent platform to connect with primary and secondary teachers. A competition to win a free class trip encouraged teachers to visit the stand, and teacher engagement increased by 30% with 182 entries compared to 140 entries in 2018.

In April, the Discovery and Learning Team hosted a stand at Irish Science Teachers Association Conference, which took place in Dublin City University. It was the first time Dublin Zoo participated in this annual conference and it provided another valuable platform to create awareness of the Discovery and Learning opportunities in Dublin Zoo. In spring an image of western lowland gorilla Bangui featured on the back page of the InTouch magazine, which was sent to 39,000 primary and secondary teachers around Ireland.

The Parent and Toddler programme, which is held twice per month from February to May and September to November continued to sell out. There was a great response from parents and guardians to the new facilities in the theatre; the Discovery and Learning Centre provides space for buggies and cloak room facilities, which allows busy families to move around with ease. For slightly older children, the 'Dinosaur Discovery - kids only' continues to book well with 149 children attending over seven sessions in spring and autumn. This was joined by a new programme, 'Dinosaur Discovery Families', an educational event for 188 guardians and children. Both of these programmes are very popular with nearly every space selling out.

The seasonal workshops and summer camps were also very popular. 147 participated in the spring, Easter and autumn junior workshops. During the summer Dublin Zoo ran camps for children 6 - 12 years old over five weeks with a total of 380 children participating.

This year new camp t-shirts were introduced. The Discovery and Learning Centre was the base for the camps. The Discovery and Learning Team were supported by external facilitators from Agri Aware and the National Parks and Wildlife Services, and by a special team of 16 Dublin Zoo volunteers who were recruited specifically to help with the camps. Events for teenagers were popular with a February workshop, 'Zoology, what's it all about?' booked out with 25 participants learning about life as a zoologist and zookeeper. 14 teens participated in the 'Young Conservationist' programme at Easter while 13 teens took part in 'Young Palaeontologist' in November.

Other informal programmes for children included 'Bird watching in Dublin Zoo' and 'Wild Behaviours'. A total of 88 children took part in these. The four-week after-schools programme, delivered by Discovery and Learning Team Lead Kelly Mara and teacher Fiona McCann, had 528 attendees.



In spring and summer, Aosóg Youth Services in Stoneybatter, Willow Grove Adolescent Unit, Kilmore West Youth Project, Stoneybatter Youth Service, Belvedere Youth Club, Ballymun Youth Block and Donnycarney Youth Project (X3) participated. In autumn the Team welcomed Willow Grove Adolescent and Donnycarney Youth service, Lourdes Youth and Community Services, Blakestown and Mountview Youth Initiative, St. Monica's Youth Centre in Edenmore. The CDETB Foundations Project also availed of our after-schools programme; this is a service that provides programmes for families using homeless support services or families who are at risk of homelessness.

'Forest Families', a new family-based programme designed for the Wild Space and held in April, sold out with 38 participants learning about native biodiversity. For the second year in a row Aileen Tennant secured \$12,000 from the Disney Conservation Fund and WAZA to repeat the 'Families Connecting with Nature' programme. This innovative programme, for which the Wild Space was specially designed, continues to inspire families. Planning and liaison with local schools and community groups began in April to select 50 families (180 participants) for this year's programme, which commenced in May and involved five themed workshops, each delivered across two days per month. Discovery and Learning Team Lead, Kelly Mara, managed the project and coordinated the families and facilitated each workshop. Themes included trees, biodiversity, flowers and pollinators, birds, and connecting with nature. Expert on pollinators, Lois Kinneen, and an ornithologist from Birdwatch Ireland, Niall Hatch, facilitated the families alongside Kelly Mara and four volunteers.



This was followed by a graduation in the Discovery and Learning Centre.

Discovery and Learning outreach programmes took place from February to April and from September to December, and performed well in 2019 with 1,422 primary students visited in schools and 736 primary students in libraries, as well as lectures to other groups. One such lecture was on the history of Dublin Zoo to the American Women's Club in the Clayton Hotel in Ballsbridge with 60 participants. A short schedule of programmes was organized by Agri Aware on Family Farm early in the year including 'Farm Safety Awareness', which was held in March and in April.

The Discovery and Learning Team continued to engage directly with teachers. In March, Kelly Mara and Aileen Tennant, on behalf of the BIAZA network, delivered a workshop 'Plastics in our Oceans' to 38 teachers as part of a training programme coordinated by the Junior Cycle for Teachers (JCT) initiative.

The Sustainable Energy Authority of Ireland (SEAI) and JCT Maths Team also delivered workshops on the same day, embedding the importance of teaching students how to lead more sustainable lives with emphasis on the reduction of plastic consumption and single use items. The evaluation from the session indicated a large increase in participants' knowledge of ocean litter and pollution, and a significant increase in their awareness about actions they can take to reduce plastic consumption in their own lives. In April Dublin Zoo received approval to increase the capacity of the very popular primary level teachers' summer course from 60 as in previous years to 75 participants in 2019. Tickets were sold out within a day of release. The five-day course was intense with a focus on outdoor learning. Facilitiators included the Discovery and Learning Team, members of the Animal Care Team as well as external teachers including Éanna Ní Lamhna, Paddy Madden, Niall Hatch and Kalyn Arias from Agri Aware. Feedback from the teachers was very positive.

On the evening of 19 June the Discovery and Learning Team and keeper, Brendan Walsh organised Dublin Zoo's fifteenth annual Dreamnight, a special cost-free evening for children and their families who are dealing with illness or disabilities. It was a splendid evening with over 300 children and their families attending. They were looked after by over 80 Zoo staff and volunteers.



#### Volunteers

2019 was a very successful year for the volunteers with up to 110 volunteers available for rosters during the summer months. The volunteer programme in 2019 received the highest number of applicants in many years. This was due in part to a presentation made at the Dublin City Volunteer Centre on 'Volunteering in Dublin Zoo' by Volunteer Coordinator Noreen Fitzsimons. Twenty-eight new volunteers graduated from the training programme in March; an additional 16 volunteers, mostly educators who work with young students, were recruited in July and August to help with the summer camps.

Dublin Zoo volunteers continued to deliver educational activities including tours, touch tables and support for the Discovery and Learning Department activities and Zoo events. The volunteers also delivered 15 day or weekend events over the year, all animal themed. These are events that the volunteers run in their entirety, from the initial ideas, planning and design, to the high-quality resources that they make and present in various strategic locations around the Zoo.



Thousands of visitors were engaged by these professional and memorable activities. In January the volunteers delivered a tiger themed weekend which coincided with the introduction of the Amur tiger cubs to the public; biofacts included an Amur tiger skull. In February volunteers ran an event 'Love in the Zoo' for Valentine's Day looking at the successful breeding programmes in Dublin Zoo. The following month native species touch tables, and arts, crafts and games located in Zoorassic World and Family Farm were organised for St. Patrick's Day. In April volunteers led Discovery Day, a very successful event with excellent engagement with visitors of all ages.

May and June were particularly busy with new programmes as well as pop up stations around the zoo to meet the visiting school children. On 25-26 May the volunteers delivered 'Sharing our Planet', a weekend programme engaging visitors with educational games and activities. In June volunteers delivered programmes for the Zoo's first Pride Weekend and for International Giraffe Day. They also delivered sustainability activities and games on the Great Lawn for 'SSE Airtricity Protect Our Planet Weekend' on 15-16 June; these included a mini worm excavation, demonstrations for children on how to build their own 'Bug Hotel', and SSE Airtricity's Eco Explorer Trail. The same month 490 ladybirds and leaders from Girl Guides Ireland came to the Zoo to celebrate the thirtieth birthday of the 'Ladybird' troop in Ireland.





(Top) Gimel Van der Linde - Orangutan Day (Bottom) Clive Symmons - Giraffe Weekend

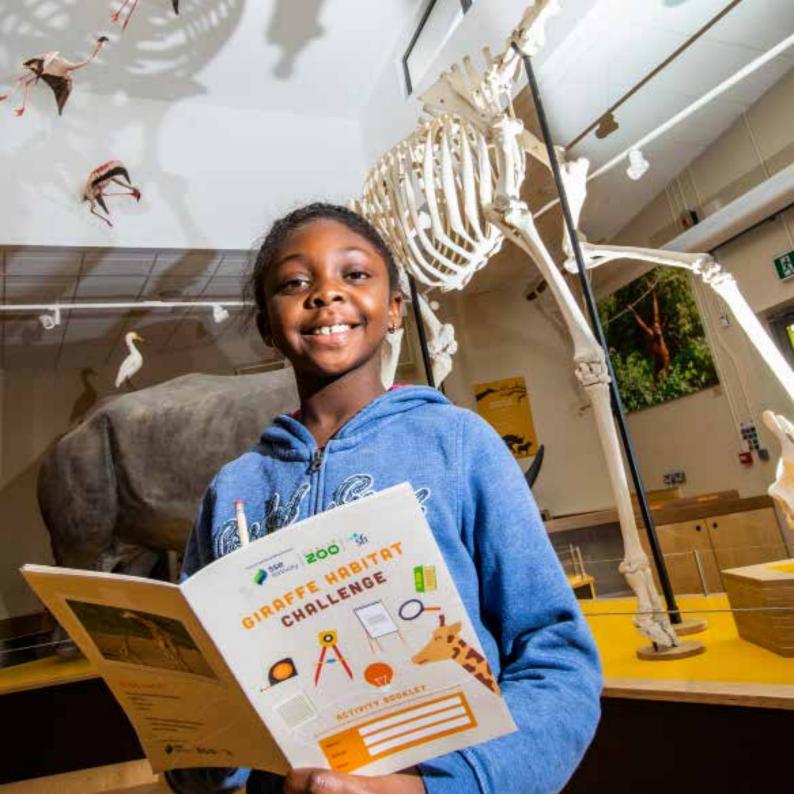
International Tiger Day was on 27 July with great numbers in attendance. Before that the Chimp Weekend in July took place by the chimpanzees' habitat in the African Plains; this was probably the busiest event for the volunteers as they organised activities such as chimpanzee identification, nest building, puzzle solving, chimp art as well as engaging visitors with information and facts about the chimpanzees and encouraging young visitors to do a knuckle walk.





This year late summer and autumn was particularly busy. In August 'Bug Bonanza' weekend coincided with the BIAZA campaign and provided bug trails, bug bingo, amazing bug facts with some high quality resources made by volunteers. Red Panda Day was on 21 September and proved that the Red Pandas have a huge fan base; volunteers hosted a touch table and information station about red pandas beside their habitat. Another very well attended volunteer-run event was Wolf Weekend in September which celebrated the new wolf habitat with a focus on our native species with interactive games, art and wolf watching. On 25 September volunteers set up a meet and greet table for the Senior Safari, delivered historical tours and created engaging touch tables throughout the zoo. In October tours continued to book steadily and the volunteers supported the Discovery and Learning ecology programmes. On 5-6 October, the volunteers delivered World Animal Weekend in Zoorassic World. In the weeks running up to Halloween, the volunteers carved pumpkins for enrichment activities for the Animal Care Team and for social media opportunities for the Halloween weekend. The 'Teeny Weeny Halloweeny Trail' took place from 29 October to 1 November to coincide with school holidays. The trail featured the 'Dark Zoo' in the South America House, 'Deadly Zoo' in Zoorassic World and 'Bone Zone' in the Discovery and Learning Centre. In November the volunteers supported the Giraffe Habitat Challenge for primary and secondary students.

This year volunteers spent many hours on orangutan and gorilla watch with the birth of Dublin Zoo's gorillas, and on observing behaviours of the California sea lions and their pups.



## MARKETING

The Marketing Team worked closely with public relations advisors Teneo PSG, on their public relations strategy throughout the year. Press releases celebrating births and new arrivals received superb coverage across all media. These included two Amur tiger cubs, two baby gorillas, three California sea lion pups and two giraffe calves. SSE Airtricity sponsored the naming competition of the female gorilla in June and awarded a prize of free electricity for a year to the winner. In November, Moondance filmed a beautiful clip of the young male gorilla, which received fantastic media interest especially online. Numerous interviews with keepers were arranged on broadcast, print and online media throughout the year. In April Agri Aware hosted a live broadcast with RTÉ Radio One show Countrywide from Family Farm at Dublin Zoo. An Taoiseach Leo Varadkar, team leader Eddie O'Brien, keeper Susan O'Brien and Registrar/Research and Conservation Coordinator Sandra Molloy were all featured.



This year Dublin Zoo's history was celebrated on radio and in print. In August, RTÉ Radio One broadcast 'There's something about elephants', a 40 minute documentary in its 'Doc on One' series. The story was driven by Amy Herron, a granddaughter of Jim Kenny, elephant keeper from 1933 to 1975, and focussed on what it was like to work with elephants and experience their close proximity during those decades. In September, a second edition of 'Dublin Zoo: an illustrated history' by zoo historian Catherine de Courcy was published. This edition included a new chapter covering the transformation of Dublin Zoo from 2000 to 2019. The Marketing Team produced four issues of Zoo Matters in 2019; cover stories featured the Amur tiger cubs, the western lowland gorilla births, the opening of 'Wolves in the Woods' and the giraffe calf births.

The ninth series of 'The Zoo' television programme aired on RTÉ 1, starting on Sunday 12 May at 18.30. There were eight episodes this season, each of outstanding quality. Features included the visit of Operations Manager Gerry Creighton to Kaziranga Forest in Assam to see how Dublin Zoo supports the in situ conservation programme. There was excellent media coverage about the new series. A well-attended media event 'Wake up with the Elephants' was held on the day of the first episode. Sponsorship from SSE Airtricity ensured the continuation of the series with stings at the start and end of each show featuring the slogan, 'If animals could choose they'd choose 100% green energy'. Viewing figures for 'The Zoo' in 2019 averaged 250,000 per episode with an average market share of 24%.

## Sustainability partnership

The Marketing Team worked closely with sponsors SSE Airtricity on a number of projects. There were two 'Protect our Planet' weekend events during the summer with fun activities and interactive talks featuring biodiversity specialists, eco rangers and SSE Airtricity energy experts. All the water refill stations, green picnic benches made of recycled plastic and the new recycling units around the Zoo were rebranded SSE Airtricity. In September in a press release about the birth of a giraffe calf, Dublin Zoo and SSE Airtricity announced 'Giraffe House Challenge', an initiative for primary and secondary schools; the Dublin Zoo Discovery and Learning Team organised the challenge as part of Science Week 2019 and the prizes were donated by SSE Airtricity. The initiative attracted excellent media coverage. In December, SSE Airtricity won the Best Sponsorship Brand at the Irish Sponsorship Awards against tough competition from major brands. They were also shortlisted in two further categories. The award recognises the wonderful work that SSE Airtricity has done with the Dublin Zoo Team since the partnership began in 2016.

After extensive research and user feedback, the new Dublin Zoo website was launched in September. It was created by the web development and design agency, Friday, in partnership with the Marketing Team. The website has a whole new look and feel that takes advantage of the Zoo's splendid image and video library. The website was designed for easy use on a mobile. It has a new events section, a facility for enquiries and an extensive animal encyclopaedia.

The website has been designed with user insight and data in mind to help increase ticket sales and engagement with the Dublin Zoo brand. The new website was nominated for best website at the Digital Media Awards.

Social media platforms grew from strength to strength. Instagram continues to be Dublin Zoo's fastest growing platform with 61,600 followers. Facebook fans increased to 309,380 in 2019. In September Dublin Zoo reached 1.4 million people with 88,000 engaged users due to the launch of Wild Lights, the opening of 'Wolves in the Woods', the birth of a giraffe calf and the announcement of a half price promotion. On Twitter, we now have 33,118 followers. In April, the Taoiseach Leo Varadkar and President Michael D. Higgins congratulated the Zoo on Twitter on the birth of the baby western lowland gorilla to mother Kafi and father Bangui.

In recognition of the outstanding work of the Marketing Team, Marketing Manager Emma Kiernan won the highly prestigious Marketer of the Year award at the twenty-seventh annual Marketing.ie industry awards. In the citation, Emma's work since 2011 was acknowledged: 'She has devised and implemented a marketing strategy that has transformed visitor numbers to Dublin Zoo to experience the world class centre of learning about wildlife and conservation and immersed visitors in an unforgettable experience. As well as generating recordbreaking visitor numbers she has also secured new commercial partnerships focused on sustainability with the values Education, Conservation and Family at the core of every business decision.' Dublin Zoo also won the Everymum award for the Best Family Friendly Attraction.

# Wild Lights

Wild Lights in 2019 attracted 232,318 visitors. In January Wild Lights 2018-19 was accepted into The 100 Archive, a showcase of the best of Irish graphic design, which captures and records the history of Irish visual communication design. The theme for Wild Lights in 2019-2020 was Stories, Myths and Legends. The comprehensive media campaign launched in September included outdoor advertising, advertising on public transport and in shopping centres, and advertisements projected onto a number of high profile buildings in Dublin's city centre. There was a huge amount of coverage online and offline in September, when the tickets went on sale. Dublin Zoo partnered with 98fm and INM (The Independent Group), both of which delivered very strong promotional campaigns.

#### **Events**

The high quality facilities in Haughton House continue to make it a popular venue for many events including weddings, award ceremonies, private family celebrations, corporate meetings, training and family days, and several 'Wake up with' events organised with SSE Airtricity. Regular events for the general public remained very popular with Senior Safari, Easter, Pride and the ever popular Santa's Grotto in November and December.







# **CONSERVATION AND RESEARCH**

In 2019, the Zoological Society of Ireland Board allocated €150,000 towards conservation and research in Dublin Zoo. Dublin Zoo's conservation policy is based on the World Zoo and Aquarium Conservation Strategy published by the World Association of Zoos and Aquariums (WAZA) in 2015. This strategy advocates that 'creating a clear connection between a live animal in a zoological facility and a conservation project in the field should be integrated into every master-planning process to make certain that adequate support is generated for saving species in the wild.' 85% of Dublin Zoo's conservation fund was used to support field conservation projects run by established conservation partners of the Zoo. Most of these projects linked directly to 20 different species cared for by the Zoo; our annual contributions are an important source of regular income for them. 12% of the budget was used for non-regular conservation payments.

In 2019, Dublin Zoo established a new partnership with two conservation projects: Supayang Gibbon Conservation Centre in Sumatra run by Kalaweit, and the Nubian Giraffe Conservation Working Group. Kalaweit was founded in 1998 with the objective of protecting gibbons and their habitats in Indonesia. The Supayang Gibbon Conservation Centre houses confiscated siamang along with other species of gibbons and bears. The centre provides proper care for these animals and when possible releases them back into the forest. Kalaweit also manages and patrols the Supayang Reserve which borders the centre and is home to wild siamang. The funding from Dublin Zoo in 2019 was used to build new housing to accommodate confiscated siamang.

Kalaweit receives regular support from other zoos, including the European Association of Zoos and Aquaria (EAZA) of which Dublin Zoo is a member. It is also endorsed by the IUCN Primate Specialist Group (Section on Small Apes).

Dublin Zoo supports the Nubian Giraffe Conservation Working Group through the Giraffe Conservation Foundation. Recent genetic research carried out by the Giraffe Conservation Foundation has found that Rothschild's giraffe is genetically similar to the Nubian giraffe and there are approximately 3,000 of this subspecies remaining in the wild. In 2018, the Kenyan Wildlife Service published the National Recovery and Action Plan for Giraffe in Kenya (2018-2022), which led to the establishment of the Nubian Giraffe Conservation Working Group. Dublin Zoo is providing financial support for this group to implement the conservation strategy, which includes investigating the current population and genetic viability in addition to identifying new areas in Kenya for Nubian giraffe. The Giraffe Conservation Foundation is the only NGO in the world that concentrates solely on the conservation and management of giraffe in the wild throughout Africa. This organisation is endorsed by the Giraffe EEP and is supported by several other EAZA zoos.



In addition to the annual funding to established partners (listed below), additional funding was given to the Okapi Conservation Project to celebrate the birth of the first okapi calf born in Dublin Zoo in October 2019. In November, Dublin Zoo supported an appeal for assistance to purchase a new vehicle for the work of West African Primate Conservation Action (WAPCA) in Ghana. Their current vehicle is 14 years old, has done over 150,000 km and is becoming increasingly unreliable. The vehicle is used by the WAPCA team to transport seedlings for reforestation, transport white-naped mangabeys, visit rural communities and attend meetings. Also in November, keeper Brendan Walsh and Moondance Productions travelled to Tunisia to film the oryx reintroduction programme in Tunisia for 'The Zoo' television series. The hospitality and assistance received from the team in Tunisia was outstanding and allowed Brendan and Moondance to observe first hand their vital conservation work and to get excellent footage. In recognition of the time and resources given to Brendan and Moondance, Dublin Zoo provided an additional donation.

In Ireland Dublin Zoo has responded to the National Biodiversity Action Plan for 2017-2021 published by the Department of Culture, Heritage and the Gaeltacht. The plan states that 'a significant proportion of Ireland's biodiversity is in a vulnerable state.' As a conservation organisation, Dublin Zoo is contributing to measures which seek to halt biodiversity loss in Ireland. Nineteen percent of Dublin Zoo's conservation fund was allocated to native species field projects in 2019. In October 2019, the Dublin Zoo Team raised €1,088 for the Irish Peatland Conservation Council Bog Restoration Fund at their end-of-season party. This amount was matched from the Dublin Zoo conservation budget.



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Of the non-regular payments, two were to vital conservation projects: the emergency rescue of lesser flamingos in South Africa and the EAZA Silent Forest Campaign. In January 2019, Dublin Zoo was alerted to an unfolding catastrophe at a breeding colony of lesser flamingos in South Africa. The breeding colony is located outside Kimberly and was drying up, causing parents to abandon thousands of eggs and chicks. The international zoo community were called upon to provide funding and expertise to save these young flamingos. Dublin Zoo provided funding to ring the hand-reared flamingo chicks before they were released back into the wild. With regard to the Silent Forest Campaign, every two years, EAZA runs a conservation campaign to raise awareness and funds for an important wildlife issue. From October 2017 to September 2019, EAZA ran the Silent Forest Campaign to address the serious decline in wild populations of songbirds in Southeast Asia. These songbirds are threatened with extinction due to excessive trade for songbird competitions, pets, export, traditional medicine and food. Demand for wild songbirds in Southeast Asia is extremely high; it affects hundreds of species and involves millions of individual birds each year. The trade is often illegal and evidently unsustainable.

In November 2019, Sumatran rhinos became extinct in Malaysia. The global population of this species is less than 80 individuals that live in four isolated populations in Indonesia. The International Rhino Foundation is a member of Sumatran Rhino Rescue, which is rescuing Sumatran rhinos and bringing them into the Sumatran Rhino Sanctuary to protect them and encourage them to breed. In 2019, they made an appeal to the wider conservation community to provide funding to help them to save the last of this species. Although Dublin Zoo does not keep this species, it was felt important to respond positively to this appeal.

In September, customs officials at Dublin Airport approached Dublin Zoo for assistance with the identification of cooked/smoked animal body parts that arrived in a suitcase on a flight from Africa. The bushmeat trade in Africa is a very serious threat to wildlife but unfortunately it is also a valued product and is often carried as a gift for friends and family.



# International conservation projects supported by Dublin Zoo, 2019

- Amur tiger conservation in Russia Phoenix Fund/ WildCats Conservation Alliance (Amur tiger)
- Conservation planning for elephants in the Kaziranga-Karbi Anglong landscape, India - Asian Nature Conservation Foundation
- Conservation Planning Specialist Group
- Frozen Ark
- Giraffe Conservation Foundation Nubian Giraffe Conservation Working Group
- Golden Lion Tamarin Association Brazil (golden lion tamarin)
- Kalaweit Supayang Gibbon Conservation Centre -Sumatra (siamang)
- Lamandau Wildlife Reserve Borneo Orangutan Foundation (Bornean orangutan)
- Lowland Tapir Conservation Initiative Brazil (Brazilian tapir)
- Lowveld Rhino Trust, Zimbabwe Save the Rhino (white rhino and black rhino)
- Mbeli Bai Study Republic of Congo (western lowland gorilla)
- Mountain Bongo Surveillance Project Kenya (eastern/mountain bongo)
- Okapi Conservation Project Democratic Republic of Congo (okapi)
- Painted Dog Conservation Zimbabwe (painted dog)
- Red Panda Forest Guardian Programme Red Panda network - Nepal (red panda)
- Red-ruffed lemur reintroduction feasibility project on Madagascar - GERP (red ruffed lemur)
- Scimitar-horned oryx reintroduction programme in Tunisia (scimitar-horned oryx)

- Selamatkan Yaki Sulawesi (Sulawesi-crested macague)
- Snow Leopard Trust Asian range states (snow leopard)
- Sphenisco Chile and Peru (Humboldt penguin)
- Tacugama Community Outreach Programme Sierra Leone (western chimpanzee)
- WAPCA West African Primate Conservation Action -Ghana (white-crowned mangabey)

# Irish conservation projects supported by Dublin Zoo, 2019

- Breeding wader conservation Irish Grey Partridge Conservation Trust
- Irish Peatland Conservation Council
- Little Tern Conservation at Baltray Louth Nature Trust
- Raptor Research and Monitoring BirdWatch Ireland

# Non-regular conservation payments, 2019

- Celebrating the first okapi birth in Dublin Zoo -Okapi Conservation Project – Democratic Republic of Congo
- Match-funding for monies raised by Dublin Zoo
  Team at the End-of-Season party for the Irish Peatland
  Conservation Council
- New vehicle appeal WAPCA West African Primate Conservation Action – Ghana
- South African flamingo rescue South Africa (lesser flamingo)
- Sumatran Rhino Rescue International Rhino Foundation
- 'The Zoo' television programme Scimitar-horned oryx reintroduction programme in Tunisia

## Animal research by the Zoo Team

- Keeper Louise McDermott, studied the breeding ecology of the flock of Chilean flamingos in Dublin Zoo. This research has been taking place each year the flamingos have bred since 2003.
- Registrar/Research and Conservation Coordinator Sandra Molloy, keeper Susan O'Brien, and horticulturist Chris Fusco, continued collecting samples from the Rothamsted moth trap.
- Registrar/Research and Conservation Coordinator Sandra Molloy continued monitoring nest-boxes in Dublin Zoo and submitted the data to the BTO Nest Records Scheme.

#### Student research

- Examining carnivore diversity using non-invasive genetic sampling – University College Dublin.
   Provided faecal samples for this research.
- Immune biome in non-human primates University College Cork. Provided faecal samples for this research.
- Prevalence of internal parasites of carnivores and reptiles – University College Dublin. Provided faecal samples for this research.
- Prevalence of zoonotic protozoa in zoo primates in Dublin Zoo – University College Dublin. Provided faecal samples for this research.

#### Multi-Zoo research

- Acyclicity to Cyclicity: Breeding the elusive Okapi (Okapia johnstoni) – Chester Zoo.
- Assessing vitamin D levels in zoo chimpanzees Ape Heart Project, Twycross Zoo.

- Callimico retinal atrophy South Devon Referrals
   Ophthalmology, UK. Endorsed by Goelid's monkey
   EEP.
- Evaluation of body condition of zoo giraffes -University of Zurich. EEP and TAG support.
- Gorilla subspecies and relatedness determination University of Pompeu Fabra, Spain and Copenhagen Zoo. Endorsed by Gorilla EEP.
- Great Ape Facilities and Management Survey University of Birmingham. Endorsed by BIAZA GAWG.
- Impacts of castration in the GEEP (PhD) Strausberg University. Dublin Zoo has provided funding for this research which is endorsed by the Gorilla EEP.
- Information and information use of animal archives of European Zoological Institutions – Artis Zoo, the Netherlands.
- Red panda hair loss Highland Wildlife Park.
- Red panda mucoid faeces study Wildlife Reserves Singapore. Endorsed by Red Panda EEP.
- Siamang genetic research Aspinall Foundation.
   Endorsed by Siamang EEP.
- The significance of the social welfare of zoo Asian elephants (PhD) – University of Liverpool and Chester Zoo.
- Survey Crested macaques with Diarrhoea Utrecht University and Rotterdam Zoo. Endorsed by Sulawesicrested Macaque EEP.
- TigrisID Czech Environmental Inspectorate.
   Endorsed by Tiger EEPs.
- Tinder for orangutans: identifying long-distance methods to test mate preference in zoo-housed orangutans (PhD) – Leiden University and supported by the Orangutan EEP.

#### Other

- Forensic analysis of mammalian hair from a variety of species – Forensic Science Ireland.
- Mute Swan Project Irish Midlands Ringing Group.
- Nathusius pipistrelle trapping and ringing Dublin Bat Group.

# Publications supported by Dublin Zoo

- Ana P. Vale, DVM, MVS, PhD, Ciara Cousins, Athina Tzora, DVM, PhD, Mari-Therese McCarron, BSc, Aisleen Green, BSc, Sandra Molloy, BSc, John Bainbridge, MVB, and Finola Leonard, MVB, PhD. (2019) Molecular characterization of faecal *E. coli* isolated from zoo animals. Journal of Zoo and Wildlife Medicine 50(4): 813–821.
- Conde, D.A., et al., (2019) Data gaps and opportunities for comparative and conservation biology. Proceedings of the National Academy of Sciences 116 (19), pp. 9658-9664. [Dublin Zoo has been contributing data on their animals since 1991.]
- de Courcy, Catherine (2019) Dublin Zoo: an illustrated history, 2nd edition. Dublin, Mabel Wray Press for Dublin Zoo.
- Deacon, F., Muller, Z., Strauss, M., Carter, K., Scheijen, C., Lee, D. (2019) Giraffe translocations: a review of knowledge to improve outcomes and develop best practices. Under review with African Journal of Ecology. [Funding provided for this research via the Rothschild's Giraffe Project.]
- Hammerton, R., Hunt, K.A. and Riley, L. M. (2019)
   An investigation into keeper opinions of great ape diets and abnormal behaviour. Journal of Zoo and Aquarium Research 7(4) 2019. [Completed questionnaire]

- Lucas, P.S., Alves-Eigenheer, M., Francisco, TM.,
  Dietz, J and Ruiz-Miranda, CR (2019) Spatial
  Response to Linear Infrastructures by the Endangered
  Golden Lion Tamarin. Diversity. 2019; 11(7):100.
  [Funding provided for this research via the Lion
  Tamarins of Brazil Fund.]
- Moreno Mañas, E., Gonzálvez Juan, M., Ruiz de Ybáñez Carnero, MDR., Gilbert, T., Ortiz, J., Espeso, G., Benzal, J., Ibáñez, B., Valera Hernández, F. (2019) Survey of husbandry practices for bovidae in zoos: the importance of parasite management for reintroduction programmes, Veterinary Record 184, 282. [Provided data for this research in 2010.]
- Muller, Z. (2019). Rothschild's giraffe Giraffa camelopardalis rothschildi (Linnaeus, 1758) in East Africa: A review of population trends, taxonomy and conservation status. African Journal of Ecology, 57(1), 20-30. [Funding provided for this research via the Rothschild's Giraffe Project.]
- Muller, Z., Cuthill, I. C., & Harris, S. (2019). Giraffe (Giraffa camelopardalis) social networks in areas of contrasting human activity and lion density. Ethology, 125(10), 702-715. [Funding provided for this research via the Rothschild's Giraffe Project.]
- Muller, Z., Cuthill, I. C., Harris, S. (2019) Association patterns of adult female giraffes as a function of calf status. Under review with Journal of Mammalogy. [Funding provided for this research via the Rothschild's Giraffe Project.]
- Murphy, Christine, (2019). Allosuckling in the Asian elephant herd of Dublin Zoo in De Harpij, a quarterly publication for Dutch and Belgian zoo professionals. Winter 2019, pp 16-23.

- Navas-Suárez, P., Díaz-Delgado, J., Fernandes-Santos, R. C. & Testa-José, C. & Da Silva, Reinaldo & Sansone, Marcelo & Medici, E. & Catão-Dias, J. (2019) Pathological Findings in Lowland Tapirs (*Tapirus terrestris*) Killed by Motor Vehicle Collision in the Brazilian Cerrado. Journal of Comparative Pathology. 170. 34-45. 10.1016/j.jcpa.2019.05.004. [Published in conjunction with the Lowland Tapir Conservation Initiative for which Dublin Zoo contributes funding.]
- Paulin Wendler et al. (2019) Food health of Asian elephants (*Elephas maximus*) in European zoos.
   Journal of Zoo and Wildlife Medicine, 50(3): 513-527. [Data from elephants in Dublin Zoo contributed to this research.]
- Tennant, Aileen (2019) The Discovery and Learning Centre opens in Dublin Zoo. BIAZA newsletter, issue 21, p. 27.
- Walsh, Brendan, (2019) Sleep in Asian elephants in De Harpij, quarterly publication for Dutch and Belgian zoo professionals. Winter 2019, 7-15.
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   Zooquaria, Summer 2019. pp. 28-29.
- Zoo Matters (2019). Four issues of the newsletter published by Dublin Zoo.

# Population management publications

Bruslund, S., Molloy, S. and Heidenreich, B. (2019) Ethical considerations on parrots in presentations and current recommendations by the EAZA Parrot Taxon Advisory Group - Supplement to the Best Practice Guidelines on Birds in Demonstrations. EAZA Parrot TAG Available on www.eaza.net

Bruslund, S., and Molloy, S. (2019) EAZA TAG Annual Report 2018 - Parrot TAG. Available on www.eaza.net

Molloy, S. (2019) Moluccan cockatoo (Cacatua moluccensis) - EEP Annual Report 2018. Available on www.eaza.net

Molloy, S. (2019) Citron-crested cockatoo (Cacatua sulphurea citrinocristata) - EEP Annual Report 2018. Available on www.eaza.net

O'Brien S. (2019) Goeldi's monkey (Callimico goeldii) -EEP Annual Report 2018. Available on www.eaza.net

# **Training and conferences**

## January 2019

Presentation in Dublin Zoo by Andrew Mooney (PhD student in Trinity College and member of the Species360 Conservation Science Alliance) entitled, 'Does Size Matter?' This presentation was also given at the WAZA conference in Bangkok and examines the relationship between the size of the animals within a zoological collection and visitor attendance.

Head of Discovery and Learning Aileen Tennant attended the BIAZA Educators meeting at Belfast Zoo.

#### March

Barbara Heidenreich presented a lecture to the Animal Care Team on how science-based training can be utilised by zoos to improve animal wellness.

Director Leo Oosterweghel and Registrar/Research and Conservation Coordinator Sandra Molloy attended the BIAZA Regional meeting held in Dublin Zoo. Talks included a presentation by Dr. Kirsten Pullen, director of BIAZA, about the impact of Brexit on animal transports between zoos within the region.

Head of Discovery and Learning Aileen Tennant attended the EAZA Educators Conference in Skansen in Sweden.

## April

Veterinary presentation to the Animal Care Team on 'Contingency planning for Avian Influenza at Dublin Zoo', by David Beehan from the Department of Agriculture.

Presentation with specific reference to rhinos and elephants by John Lewis of Wildlife Vets International to the Animal Care Team and the Veterinarian Team.

Keeper and Goeldi's monkey EEP Coordinator Susan O'Brien participated in the ICAP (Integrated Conservation Action Plan) workshop for the Callitrichid TAG in Artis Zoo.

Discovery and Learning teacher Enya Cody delivered a presentation outreach in Dublin Zoo to the Discovery Primary Science and Maths Network Meeting.

Discovery and Learning Team participated in public engagement skills training with CREW Training UK; CREW works with zoos, museums, science centres and visitor attraction.

Discovery and Learning Team participated in mentoring training to support staff doing CREW training levels 1 and 2 skills.

Volunteer Coordinator Noreen Fitzsimons attended the Volunteer Managers Conference in Marino Institute of Education, Dublin.

#### May

A workshop on zoonosis was delivered by Dublin Zoo veterinarian Frank O'Sullivan to members of the Animal Care Team.

Registrar/Research and Conservation Coordinator Sandra Molloy attended the midyear BirdTAGs meeting in Berlin Zoo.

African Plains team leader Helen Clarke attended the Great Ape TAG midyear meeting.

Dublin Zoo teams undertook training on the electronic health and safety database.

#### June

Training on Zoonosis by Dublin Zoo veterinarian Frank O'Sullivan to members of the Animal Care Team. Presentation by Lucy Wagstaff, UCD School of Veterinary Medicine entitled 'Prevalence of internal parasites of carnivores and reptiles'.

#### August

An expert on ultra violet light, Frances Baines, delivered a workshop to the Animal Care Team.

On 28 August following the official opening of 'Wolves in the Woods' habitat, Dr Kieran Hickey of the Department of Geography, NUI, Galway, and the author of Wolves in Ireland, a natural and cultural history delivered a lecture to staff and volunteers at the Discovery and Learning Centre.

#### September

General Curator Miguel Bueno Brinkmann , Registrar/ Research and Conservation Coordinator Sandra Molloy, and keeper Susan O'Brien attended the EAZA Annual Conference in Valencia, Spain.

#### October

General Curator Miguel Bueno Brinkmann, and Operations Manager Gerry Creighton, attended an elephant management meeting in Denver, USA.

Dublin Zoo hosted training for managers on Public Engagement Training with CREW, levels 1, 2 and 3. 77 participants from various cultural and wildlife organisations in Ireland took part. 50 places were provided to Dublin Zoo staff; volunteers and representatives from the Discovery and Learning, Retail, Events and Animal Care teams attended.

#### November

The Veterinary Team gave a presentation on elephant herpes transmission and management to members of the Animal Care Team.

Head of Discovery and Learning Aileen Tennant and Discovery and Learning Team Lead Kelly Mara attended the BIAZA Educator and Presenters Conference in Edinburgh. Aileen Tennant delivered a talk on 'Zoorassic World - Looking at the Involvement of Professional Educators from Planning, Design and Delivery in Interpretation Planning'. Kelly Mara did a poster presentation on our programme 'Families Connecting with Nature'.

# Notable visitors and visiting

# January

The Director of Twycross Zoo, Dr. Sharon Redrobe, visited Dublin Zoo with a major interest in design and marketing. The General Director Roel Welsing of Apenheul Primate Park in the Netherlands visited Dublin Zoo. Approximately ten years ago Apenheul assisted Dublin Zoo with the design of the Gorilla Rainforest and the visit allowed Mr. Welsing to see how well the gorilla habitat had matured.

#### May

Harry Hilser from Selamatkan Yaki visited Dublin Zoo and met with Sandra Molloy.

#### September

Dr Megan Ross, Director of Lincoln Park Zoo visited Dublin Zoo. Dr Ross was taken around the Zoo by Director Leo Oosterweghel and showed a great interest in the Dublin Zoo design principles. She discussed the transformation of Lincoln Park Zoo into a well-funded conservation zoo.

Dr Madelon Willemsen, the recently appointed CEO of BIAZA, visited Dublin Zoo. Dr Willemsen was taken around the Zoo by Director Leo Oosterweghel and met with members of the Zoo Team later in the day to discuss the requirements for the proposed BIAZA Annual Conference and AGM in June 2020. The new Discovery and Learning Centre in Dublin Zoo is capable of hosting conferences with approximately 100 attendees.

#### October

General Curator Miguel Bueno Brinkmann and Operations Manager Gerry Creighton, attended a meeting at Denver Zoo, USA, of North American zoos that are holders of elephants. Besides sharing new and important information about elephants, the future splitting of the Dublin Zoo herd was discussed.

#### November

Retired okapi keeper from Rotterdam Zoo, Rob van Loon, spent time with the Animal Care Team to advise on aspects of the management and care of okapis.

Zoo Relations Volunteer for the Red Panda Network, Alana Kordon, visited Dublin Zoo and met with Registrar/ Research and Conservation Coordinator Sandra Molloy and keeper Susan O'Brien.

#### December

On 28 December the Lord Mayor of Dublin and his family visited Wild Lights. The following evening President Michael D. Higgins and his family visited Wild Lights.



## **CENSUS OF ANIMALS IN DUBLIN ZOO DURING 2019**

## Summary of Census of Animals in Dublin Zoo on 1st January 2019

Taxon	Total Species	<b>Total Specimens</b>
Mammals	38	221
Birds	13	174
Reptiles	19	45
<b>Total vertebrates</b>	70	440
Invertebrates	9	81

## Summary of Births and Hatchings of Animals in Dublin Zoo during 2019

Taxon	Total Species	<b>Total Specimens</b>
Mammals	13	48
Birds	3	52
Reptiles	1	1
<b>Total vertebrates</b>	17	101
Invertebrates	4	5679

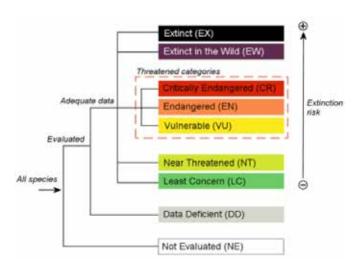
# Summary of European Endangered species Programmes & European Studbooks which Dublin Zoo participated in throughout 2019

Number of European Endangered species Programmes (EEP)	38
Number of European studbooks (ESB)	5

## Summary of Animal Taxa on the IUCN Red List of Threatened Species in Dublin Zoo during 2019

IUCN status	Number of species/ subspecies
Extinct in the Wild – EW	1
Critically Endangered – CR	10
Endangered – EN	15
Vulnerable – VU	12
Near Threatened – NT	5
Least Concern – LC	26
Not Evaluated – NE	12

Source: IUCN 2020. The IUCN Red List of Threatened Species.



Version 2020-1. Available at: www.iucnredlist.org

## **Key to Census Tables Opposite**

- Part of a European Endangered Species Programme (EEP)
- Recorded in a European studbook
- **Column 1:** The number of animals in the collection at 1st January 2019
- **Column 2:** The number of animals received in 2019 through donation, loan or exchange.
- **Column 3:** The number of animals born or hatched during 2019.
- **Column 4:** The number of animals dying within 30 days of birth or hatching, in 2019.
- **Column 5:** The number of animals dying having survived more than 30 days, in 2019.
- **Column 6:** The number of animals leaving the collection through donation, loan, exchange etc. during 2019.
- **Column 7:** The number of animals in the collection at 1st January 2020.

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
o <sup>*</sup>	Q	?

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.

		Status	SPECIES		Total at 01.01.19	Arrivals	Births	Dead within 30 Days	Dead	Departed	Total at 01.01.20
			VERTEBRATES	VERTEBRATA							
			CLASS:MAMMALS	MAMMALIA							
			BATS	CHIROPTERA							
73	II/A	EN	Rodrigues flying fox	Pteropus rodricensis	0. 2. 0				0. 2. 0		0. 0. 0
			PRIMATES	PRIMATES							
*	I/A	EN	Ring-tailed lemur	Lemur catta	5. 2. 0						5. 2. 0
*	I/A	CR	Red ruffed lemur	Varecia rubra	5. 3. 0		0. 0. 2				5. 3. 2
*	I/A	VU	Goeldi's monkey	Callimico goeldii	2. 2. 0	1. 0. 0	1. 0. 0	1. 0. 0		2. 1. 0	1. 1. 0
7	II/B	LC	Eastern pygmy marmoset	Cebuella pygmaea niveiventris	1. 0. 0				1. 0. 0		0. 0. 0
7	I/A	EN	Golden lion tamarin	Leontopithecus rosalia	1. 1. 0	1. 0. 0			1. 0. 0		1. 1. 0
78	II/B	LC	Bolivian squirrel monkey	Saimiri boliviensis boliviensis	4. 0. 0						4. 0. 0
737	II/B	LC	White-faced saki	Pithecia pithecia	3. 1. 0						3. 1. 0
7	II/B	EN	White-naped mangabey	Cercocebus lunulatus	3. 4. 0		0. 0. 1	0. 0. 1		1. 1. 0	2. 3. 0
7	II/B	EN	Red-capped mangabey	Cercocebus torquatus	4. 0. 0						4. 0. 0
7	II/B	CR	Sulawesi crested macaque	Macaca nigra	15. 9. 2		0. 0. 2		1. 1. 0		14. 8. 4
*	I/A	EN	Siamang	Symphalangus syndactylus	1. 1. 0		0. 1. 0	0. 1. 0			1. 1. 0
787	I/A	CR	Western lowland gorilla	Gorilla gorilla gorilla	2. 3. 0		1. 1. 0			1. 0. 0	2. 4. 0
*	I/A	EN	Chimpanzee	Pan troglodytes	2. 1. 0						2. 1. 0
737	I/A	CR	Western chimpanzee	Pan troglodytes verus	1. 3. 0						1. 3. 0
737	I/A	CR	Bornean orangutan	Pongo pygmaeus pygmaeus	1. 4. 0		1. 0. 0	1. 0. 0			1. 4. 0
			XENARTHRANS	XENARTHRA							
ESB	NL	LC	Linne's two-toed sloth	Choloepus didactylus	1. 1. 0						1. 1. 0

	CITES	IUCN Status	SPECIES		Total at 01.01.19	Arrivals	Births	Dead within 30 Days	Dead	Departed	Total at 01.01.20
			CARNIVORES	CARNIVORA							
*	II/A	LC	Grey wolf	Canis lupus	7. 1. 0				1. 0. 0		6. 1. 0
737	NL	EN	Painted dog	Lycaon pictus	3. 3. 0						3. 3. 0
737	I/A	EN	Red panda	Ailurus fulgens fulgens	1. 1. 0						1. 1. 0
	NL	LC	Slender-tailed meerkat	Suricata suricatta	7. 5. 0						7. 5. 0
737	I/A	EN	Asiatic lion	Panthera leo persica	1. 4. 0					0. 1. 0	1. 3. 0
737	I/A	EN	Amur tiger	Panthera tigris altaica	1. 4. 0						1. 4. 0
137	I/A	VU	Snow leopard	Panthera uncia	1. 1. 0						1. 1. 0
707	NL	LC	California sealion	Zalophus californianus	2. 5. 0		1. 2. 0			1. 2. 0	2. 5. 0
*	I/A	EN	ELEPHANTS  Asiatic elephant	PROBOSCIDAE  Elephas maximus	5. 7. 0					1. 0. 0	4. 7. 0
			ODD-TOED UNGULATES	PERISSODACTYLA							
	NL	NT	Common/Grant's zebra	Equus quagga boehmi	2. 5. 0						2. 5. 0
707	II/B	VU	South American tapir	Tapirus terrestris	1. 2. 0						1. 2. 0
737	I/A	NT	Southern white rhinoceros	Ceratotherium simum simum	4. 4. 0				1. 0. 0	1. 0. 0	2. 4. 0
			EVEN-TOED UNGULATES	ARTIODACTYLA							
100	NL	LC	Red river hog	Potamochoerus porcus	4. 1. 0						4. 1. 0
ESB	II/B	VU	Hippopotamus	Hippopotamus amphibius	0. 1. 0						0. 1. 0
737	II/B	VU	Giraffe	Giraffa camelopardalis	2. 1. 0						2. 1. 0
7	II/B	NT	Baringo/Rothschild's giraffe	Giraffa camelopardalis rothschildi	3. 3. 0		2. 0. 0				5. 3. 0
137	NL	EN	Okapi	Okapia johnstoni	1. 1. 0		0. 1. 0				1. 2. 0
	III/C	LC	Blackbuck	Antilope cervicapra	1. 3. 0				1. 0. 0		0. 3. 0
137	NL	CR	Eastern bongo	Tragelaphus eurycerus isaaci	1. 2. 0						1. 2. 0
7	I/A	EW	Scimitar-horned oryx	Oryx dammah	4. 5. 0		1. 1. 0				5. 6. 0

	CITES	IUCN Status	SPECIES		Total at 01.01.19	Arrivals	Births	Dead within 30 Days	Dead	Departed	Total at 01.01.20
			DOMESTIC								
			Domestic rabbit	Oryctolagus cuniculus domestic	2. 1. 0						2. 1. 0
			Tamworth pig	Sus scrofa scrofa	1. 1. 0		8. 17. 4	0. 0. 4		3. 9. 0	6. 9. 0
			Friesian cow	Bos taurus taurus	0. 1. 0	0. 1. 0				0. 1. 0	0. 1. 0
			Kerry cow	Bos taurus taurus	0. 0. 0	0. 1. 0	0. 1. 0	0. 1. 0			0. 1. 0
			Small East African goat	Capra hircus domestic	0. 4. 0						0. 4. 0
			Cheviot sheep	Ovis aries	0. 0. 0	0. 2. 0				0. 1. 0	0. 1. 0
			Lanark sheep	Ovis aries	0. 0. 0	0. 2. 0				0. 1. 0	0. 1. 0
			CLASS: BIRDS	AVES							
			OSTRICHES	STRUTHIONIFORMES							
	NL	LC	Ostrich	Struthio camelus	1. 4. 0						1. 4. 0
			PENGUINS	SPHENISCIFORMES							
8	I/A	VU	Humboldt penguin	Spheniscus humboldti	8. 6. 0						8. 6. 0
			HERONS/STORKS	CICONIIFORMES							
	/A	LC	Little egret	Egretta garzetta	1. 0. 0						1. 0. 0
707	I/A	EN	Waldrapp ibis	Geronticus eremita	13. 14. 0				0. 1. 0	2. 2. 0	11. 11. 0
			FLAMINGOS	PHOENICOPTERIDAE							
	II/B	NT	Chilean flamingo	Phoenicopterus chilensis	39. 30. 27		0. 0. 14	0. 0. 8	1. 0. 0		38. 30. 33
			GALLINACEOUS BIRDS	GALLIFORMES							
	III/C	LC	Common peafowl	Pavo cristatus	3. 3. 0		0. 0. 11	0. 0. 2		0. 0. 7	3. 3. 2
	NL	NT	Crested wood partridge	Rollulus rouloul	2. 0. 0						2. 0. 0

	CITES	IUCN Status	SPECIES		Total at 01.01.19	Arrivals	Births	Dead within 30 Days	Dead	Departed	Total at 01.01.20
			DUCKS/GEESE/SWANS	ANSERIFORMES							
	NL	LC	White-cheeked pintail	Anas bahamensis	0. 0. 5		0. 0. 27	0. 0. 25			0. 0. 7
			PARROTS	PSITTACIFORMES							
ESE	I/A	VU	Mexican military macaw	Ara militaris mexicana	1. 1. 0						1. 1. 0
72	I/A	CR	Citron-crested cockatoo	Cacatua sulphurea citrinocristata	2. 3. 0						2. 3. 0
			HORNBILLS ETC.	CORACIIFORMES							
737	I/A	VU	Great hornbill	Buceros bicornis	1. 1. 0					1. 1. 0	0. 0. 0
ESE	NL	VU	Abyssinian ground hornbill	Bucorvus abyssinicus	1. 1. 0						1. 1. 0
			DOMESTIC FOWL								
			Australorp chicken	Gallus gallus domestic	2. 3. 0				1. 1. 0	0. 1. 0	1. 1. 0
			Sussex chicken (light)	Gallus gallus domestic	0. 1. 0				0. 1. 0	0. 1. 0	0. 0. 0
			Brahma bantam	_					0. 1. 0		
				Gallus gallus domestic	0. 1. 0						0. 1. 0
			Indian runner duck	Anas platyrhynchos domestic	1. 1. 0						1. 1. 0
			CLASS: REPTILES	REPTILIA							
			CHELONES	TESTUDINES							
2	I/A	CR	Annam pond turtle	Mauremys annamensis	2. 2. 0						2. 2. 0
737	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. 3. 0					1.3.0	0. 0. 0
	NL	LC	Red-eared slider	Trachemys scripta elegans	2. 1. 0					2. 1. 0	0. 0. 0
	II/B	NE	Red-footed tortoise	Chelonoidis carbonaria	1. 3. 0						1.3.0
	I/A	VU	Indian star tortoise	Geochelone elegans	1. 2. 4						1. 2. 4
	II/B	VU	African spurred tortoise	Centrochelys sulcata	1. 1. 0						1. 1. 0

	CITES	IUCN Status	SPECIES		Total at 01.01.19	Arrivals	Births	Dead within 30 Days	Dead	Departed	Total at 01.01.20
			CROCODILES	CROCODILIA							
	I/A	NE	West African Crocodile	Crocodylus suchus	1. 1. 0						1. 1. 0
			LIZARDS	SAURIA							
	NL	NE	Green crested lizard	Bronchocela cristatella	12. 3. 0		0. 0. 1	0. 0. 1	6. 3. 0		6. 0. 0
	NL	LC	Forest dragon	Hypsilurus magnus	1. 0. 0				1. 0. 0		0. 0. 0
	II/B	LC	Panther chameleon	Furcifer pardalis	1. 1. 0	1. 0. 0			1. 1. 0		1. 0. 0
SB	I/A	CR	Turquoise dwarf gecko	Lygodactylus williamsi	1. 1. 0				0. 1. 0		1. 0. 0
	NL	LC	Leopard gecko	Eublepharis macularius	0. 2. 0				0. 1. 0		0. 1. 0
	II/B	LC	Mangrove monitor	Varanus indicus	0. 1. 0						0. 1. 0
			SNAKES	SERPENTES							
	II/B	LC	Green tree python	Morelia viridis	2. 1. 0						2. 1. 0
	II/B	VU	Burmese python	Python bivittatus	2. 0. 0						2. 0. 0
	II/B	LC	Royal python	Python regius	0. 0. 2						0. 0. 2
	/D	NE	King ratsnake	Elaphe carinata	1. 1. 0						1. 1. 0
	NL	LC	Cornsnake	Pantherophis guttatus	1. 1. 0						1. 1. 0
	NL	LC	Viperine snake	Natrix maura	0. 0. 0	0. 0. 1					0. 0. 1
	NL	LC	Common gartersnake	Thamnophis sirtalis	1. 0. 0						1. 0. 0

CITES	IUCN Status	SPECIES		Total at 01.01.19	Arrivals	Births	Dead within 30 Days	Dead	Departed	Total at 01.01.20
		INVERTEBRATES	INVERTEBRATA							
		CLASS: ARACHNIDS	ARACHNIDA							
		SPIDERS	ARANEAE							
NL	NE	Chilean rose tarantula	Grammostola rosea	0. 1. 0						0. 1. 0
NL	NE	Dark earth tiger tarantula	Chilobrachys sp Kaeng Kraken		0. 0. 1					0. 0. 1
II/B	LC	Indian ornamental tarantula	Poecilotheria regalis		0. 0. 1					0. 0. 1
NL	NE	Suntiger tarantula	Psalmopoeus irminia		0. 0. 1			0. 0. 1		0. 0. 0
NL	NE	Brazilian blue tarantula	Pterinopelma sazimai		0. 0. 1					0. 0. 1
NL	NE	Tanzanian chestnut baboon tarantula	Heterothele villosella		0. 0. 1					0. 0. 1
		CLASS: INSECTS	INSECTA							
		STICK INSECTS	PHASMATOPTERA							
NL	NE	Indian green stick insect	Carausius morosus	0. 30. 0		0.4579*. 0	0.4546*. 0	0. 37. 0		0. 26. 0
NL	LC	Macleays spectre	Extatosoma tiaratum	0. 4. 0	0. 2. 0	0. 65*. 0	0. 45*. 0	0. 14. 0		0. 12. 0
NL	CR	Black beauty stick insect	Peruphasma schultei	2. 1. 0		0. 0. 146*	0. 0. 93*	0. 1. 35		2. 0. 18
NL	NE	Zompro's/Thai stick insect	Parapachymorpha zomproi	0. 18. 0		0. 889*. 0	0. 847*. 0	0. 24. 0	0. 18. 0	0. 18. 0

<sup>\*</sup> approximate numbers



#### FOTA WILDLIFE PARK: DIRECTOR'S REPORT

In 2019 Fota Wildlife Park welcomed 462,043 visitors which is the second largest annual visitation since the Wildlife Park opened to the public in 1983 and was only surpassed in 2016 with 465,281 visitors. Nevertheless, the 2019 attendance figures represent an increase of 8.7% in visitor numbers when compared to the 2018 visitor attendance figure of 424,986.

As can be seen from the graph below, higher than average annual rainfall generally results in lower visitor growth while lower than average rainfall results in higher visitor growth on an annual basis. However, the timing of the annual rainfall can also impact annual visitor numbers as was the case in the year 2019 versus 2018. The Easter holiday in 2019 was very warm and dry and the opposite in 2018 when the Easter was cold and wet, which resulted in a differential of 29,000 visitors over the Easter period for these two years. During Easter of 2019, the Wildlife Park had two of the highest daily visitor attendances on record since the Park opened in 1983. It is also interesting to note that during the six-year period - 2014 to 2019 referred to in the graph below, the Wildlife Park had 2,682,369 visitors.



On the 8th August 2019 Catherine Cullinane from Tuam, Co. Galway became the 10 millionth tourist to visit Fota Wildlife Park since it opened in June 1983. Catherine and her family celebrated her decision to holiday in Cork which resulted in her becoming the 10 millionth visitor to Fota, and she won a safari holiday to South Africa for two people.

#### **Animal Husbandry**

Twelve pot-bellied seahorses arrived in early January 2019 from Oceanografic Valencia in Spain and settled into their new home in the Tropical House very quickly. They were all captive bred at the aquarium in Valencia and form part of our strategy to obtain our fish and aquatic species from sustainable sources where possible. In the interim, these pot-bellied seahorses bred and have produced a total 15 surviving offspring during 2019.



(Above) Pot-bellied seahorse



Seven Critically Endangered elongated tortoises were also hatched in the Tropical House during 2019 which has been a significant breakthrough in the breeding of this species. When the initial four elongated tortoises arrived at Fota in September 2013 from Port Lympne Wild Animal Park in the UK they were considered Vulnerable (VU) in the wild but within just six years this species has become extremely rare in the wild and is now considered Critically Endangered (CR). Other threatened species that are breeding well in the Tropical House include the following; 25 phantasmal poison arrow frogs (Endangered) (EN), 55 Madagascar rainbow fish (EN), 30 golden skiffia Extinct in the Wild (EW), 12 Madagascar killifish (VU), 6 powder blue killifish (VUN), and 40 clown fish which are considered Least Concern (LC) in the wild.



Three Madagascan giant day geckos, *Phelsuma grandis* were also raised in the Tropical House during 2019 and it is the first time that this species has been bred at Fota Wildlife Park. They were placed on public display in the new Madagascan Village in early 2020. Another species new to Fota and the Tropical House was a male two-toed sloth that arrived in February 2019 from Stuttgart Zoo, Germany.

In the avian section a pair of blue throated macaws, *Ara glaucogularis*, endemic to a small area of north-central Bolivia arrived at Fota in June 2019 from Loro Parque Foundation in Spain. Recent population and range estimates suggest there are only 350–400 individual blue-throated macaws remaining in the wild and they are regarded as Critically Endangered (CR). The main causes of their demise are habitat loss and capture for the pet trade. Other notable bird species transferred to Fota during 2019 include the following; two male Darwin rheas from Belfast Zoo and a female Coscoroba swan from Castle Espie Wildfowl and Wetlands Trust in Co. Down.

With the looming possibility of a 'No Deal Brexit' during 2019 Fota Wildlife Park had to move several animals between Fota and the United Kingdom. The animal department was very busy with shipment arrangements and animal movements in and out of Fota in the six weeks prior to proposed Brexit dates. The most significant of these moves was the addition of five drills from Bristol Zoo and Stuttgart Zoo to Fota.

The drill, *Mandrillus leucophaeus*, (EN) is amongst Africa's most endangered mammals and is listed by the IUCN as the highest conservation priority of all African primates. Drills are found only in the wild in Cross River State, Nigeria; southwestern Cameroon; and on Bioko Island, Equatorial Guinea. Their entire world range is less than 40,000 km², equivalent to half the size of the island of Ireland. Drill numbers have been declining in all known habitat areas for decades as a result of illegal hunting, habitat destruction, and human development and now as few as 3,000 drills remain in the wild. Drills are rarely held in zoos and at present a very small captive population exists in Europe where 60 individuals are found in 13 collections and an estimated 16 individuals are held between four collections in North America.



Traditionally drills have been exhibited as breeding pairs or trios and have not fared well with little or no increase in the captive population. Fota with its purpose-built facility aspires to keep drills in a larger and more natural group size of 15 to 20 animals. The drills were on public display from the 12th April 2019.

Another significant animal transfer was the move of the Sumatran tiger 'Dharma' from Fota to Edinburgh Zoo. This female tiger was born in May 2017 and was the first tiger born at Fota. However, our breeding pair of Sumatran tigers gave birth to male cub 'Dash' on 25th June 2019. The mother 'Dourga' looked after the cub very well, however the cub had a small setback when he had to have an umbilical hernia removed which was successfully treated by the vet.



Five Asiatic lion cubs were born on the 20th February 2019 to the female Gira who previously had successfully reared three cubs. Unfortunately, one of the cubs was malformed and still born but Gira continued to rear the other four cubs and they progressed very well during 2019. They went on public display on 18th April just in time for the Easter weekend and received extensive press and media coverage, appearing in all the national papers and television stations. They also appeared on social media in the USA and the UK mainly due to the impressive photos that were part of the press release.





Three northern cheetahs were sent to Flamingo Land in England during early August and a male northern cheetah was also sent to Landau Zoo, Germany, in September. These moves were a recommendation as part of the EEP Programme for the management of this species, which Fota Wildlife Park coordinates.

A 13-year-old female cheetah with a long-term digestive issue was euthanised in mid-December due to deteriorating health. The following animals had to be euthanised by the vet on humane grounds; two Humboldt penguins and a male Eastern white pelican which formed part of the animal collection when Fota Wildlife Park opened to the public over 37 years ago and were at least 40 years old.

The two baby lion-tailed macaques (EN) that were born in early November 2019 gained extensive media coverage after the Christmas period, which helped to bolster the visitor numbers over this school holiday period. Both babies settled in well into the group which has now grown to 18 macaques. Another notable primate birth was that of a Colombian black spider monkey (CR) born to female 'Batty', in late December.





One of the male black and white colobus monkeys moved from Fota's bachelor group to a breeding group in Krefeld Zoo, Germany during September. A male François langur (CR) was transferred from Twycross Zoo in England to Fota in August to join the single male in Fota. These moves were all recommended as part of the EEP (European Zoo Association) Programme for the management of these species.

Fota's pair of black and white ruffed lemurs (CR) gave birth to two young in early May out on their island in the main lake. Ruffed lemurs are an unusual lemur species that displays very primitive primate behaviour in that they build nests and give birth to the young in a nest. The young are almost naked at birth and are unable to cling to their mother, as in other primates. The female will often carry the young in her mouth when moving them from one nest to another. However, both males and females will guard the nest and leave their offspring in the nest while they forage for food etc. When the young are three to four weeks of age, they are then capable of clinging to the mother while she moves through the forest.

The black and white ruffed lemur is native to Madagascar and is Critically Endangered in the wild and will feature in the Fota documentary series that will be screened on Virgin Media in 2020. They are also one of the main lemur species that are on display in the Madagascan Village located on Palm Walk that was constructed and opened to the public in 2019.



A male Rothschild's giraffe was born to female 'Sapphire' in mid-September and as she was a very experienced mother, the calf progressed well with both receiving good media coverage in September. Two female scimitar-horned oryx were sent to La Pal Zoo, France and two female European bison also transferred to New Forest Wildlife Park in England. A 19-year-old female European Bison 'Erica' who was one of the original bison herd to arrive at Fota in 2003 was euthanised due to ongoing chronic health issues. The 16-year old male Eastern grey kangaroo 'Rocky' was also euthanised as he had deteriorated in condition due to age.

Several new species transferred to Fota during November made their new home in the Madagascar Village and included four red-bellied lemurs, Madagascan rainbow fish, Madagascar killifish, powder blue killifish, hissing cockroach and Madagascan walking stick insects.



## **2019 CAPITAL PROJECTS:**

### Madagascan Village

The Madagascan Village development was constructed on the eastern side of the Palm-walk and now forms the centrepiece of palm island. It is composed of two lemur indoor accommodation areas (houses) that provide accommodation for four species of lemurs. Visitors to the Wildlife Park will now be able to view these lemurs in their indoor housing which previously was not possible with the ruffed lemurs during the winter or inclement weather. The lemurs will either be free-ranging around palm walk as with the current ring-tailed lemurs or be on the adjacent islands of the old main lake as in the case of the black-and-white ruffed lemurs.

The third house of this 'village' is a visitor interactive hub where the public can learn about the various conservation projects that Fota undertakes particularly in Madagascar. This project also included the refurbishment of 'Palmwalk' that was initially planted with Chusan palms in 1880. Over the last 140 years, some of the palms have died and required replacement, and the centre walkway was also resurfaced.

The Madagascan Village was officially opened by the Minister of State for Tourism Brendan Griffin on the 14th of December. There was a good attendance from local politicians and other invited guests and the event went very well as can be seen from the photos. Minister Griffin and his family spent over two hours in the Wildlife Park and had a most enjoyable and informative visit.



Prof. John O'Halloran, Chair of the Fota Board of Governors strolling along Palm Walk with Brendan Griffin TD (Minister of State for Tourism), Sean McKeown and David Stanton TD (Minister of State for Equality, Immigration and Integration).

#### Playground at Oasis Cafe

The second capital project completed in 2019 was the replacement of the old timber playground near the Oasis Café with a new modern children's playground that is fenced off from the rest of the visiting public.

Work commenced on this project in late February and it was completed and opened to the public at the end of March in preparation for the Easter school holidays. This new playground is now the main play area within the Park and has a pirate theme with various animal play items.

#### Education

Fota Wildlife Park's education department welcomed in excess of 18,600 students through its formal education programmes in 2019. This marks an increase of 17% in attendance figures when compared to the 2018 season. Notable increases were associated with a greater level of demand for both the secondary practical field ecology module and the recently devised Junior Certificate biodiversity module.

The park's education department also hosted several educational events during the summer period designed to engage and enthuse the visiting public to become actively involved in biodiversity conservation. All three exhibitions (Native Species Weekend, Mad Scientist Exhibition, BIAZA Bug Bonanza) were well attended and positively reviewed by those in attendance.

Furthermore, the education team also participated in several external exhibitions including the Cork Carnival of Science hosted by Science Foundation Ireland (SFI) in association with Cork City Council.

The event attracted in excess of 12,000 visitors over the two-day period and provided exhibitors with a platform to engage both adults and children alike in the fields of science, maths and engineering.

During the autumnal period, the team participated in a Science Week exhibition which was held in University College Cork and sponsored by SFI. Science Week 2019 focussed on climate action and sought to help people understand climate change and how science and technology can help to create a positive climate future for all.

The park's education team also availed of further COD opportunities in 2019. Several members of the education team participated in a variety of training workshops hosted by the National Biodiversity Data Centre in Waterford. These formal training programmes have proven to be instrumental in enhancing and developing both the knowledge and skill sets of team members.

During 2019, the park's education officer attended the European Zoo Educators Conference in Sweden while Lynda Mc Sweeney (Head of Education) attended the British and Irish Zoo Educators Conference in Edinburgh. Both conferences proved to be highly beneficial and emphasised the importance of a blended learning environment within the context of a zoological setting. Both conferences also offered a variety of practical workshops which provided participants with multiple opportunities to learn about and engage with the latest technologies designed to support formal student learning.



## RESEARCH AND CONTRIBUTION TO FIELD CONSERVATION PROJECTS IN 2019

#### **Conservation Research**

Throughout 2019, Fota Wildlife Park continued its long-term collaboration with the School of Biological, Earth and Environmental Sciences (BEES), University College Cork, in the fields of animal behaviour, environmental enrichment, population biology and ecology.

## Undergraduate projects completed in 2019

Fourth Year Honours research projects completed in 2019 by students from the School of BEES in UCC.

- D. Holohan- Analysis of behaviour and enclosure use in five Sumatran tigers (Panthera tigris sumatrae) at Fota Wildlife Park.
- D. Moloney- Comparative behavioural analysis of Asiatic lions, *Panthera leo persica*, at Fota Wildlife Park.
- Y. Gardezi- Behaviour study of the red pandas
   (Ailurus fulgens) at Fota Wildlife Park under differing
   weather conditions.
- C. Holland-Behaviour of lion-tailed macaques, Macaca silenus, at Fota Wildlife Park.

## PhD student projects 2019

Two PhDs were completed in 2019.

 Courtney Collins. The potential effect of zoo-based education programmes on children's learning. Cosupervised by Ruth Ramsay with Dr Declan Kennedy (Education). She successfully defended her thesis on 22nd November and was conferred on 21st February 2019. • 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. EPSPG/2014/88. (2014-2018). Rebecca was co-supervised by Dr Tom Quirke, with Mr. Sean McKeown, Director of Fota, as the Enterprise Partner. Rebecca submitted in October 2018, successfully defended her thesis on 29th January and should be conferred in June 2019.

#### One PhDs student project ongoing in 2019

Gill Weyman: - Status, threats and conservation of ladybirds in Ireland (commenced October 2015). This project is documenting the occurrence and spread of the invasive Harlequin ladybird, *Harmonia axyridis*, which was first recorded in Ireland during 2010. The main aims of this research project are as follows;

- To identify patterns of status and distribution of native ladybirds and the harlequin ladybird in Ireland.
- To identify the ecological and physical factors that influence the patterns of distribution of ladybird species in Ireland.
- To assess the pest control ecosystem service provided by ladybirds and the potential threat to this service by the harlequin ladybird.
- To propose conservation strategies for endangered/ vulnerable native ladybirds in Ireland, which will include a conservation breeding programs where necessary.
- To produce an education and awareness-raising programme on native ladybirds to complement a module on Ecology and Biodiversity for Fota.

#### Papers Published in 2019

#### **Publication**

Collins, C., Quirke, T., McKeown, S., Flannery, K., Kennedy, D. & O'Riordan, R. (2019). Zoological education: Can it change behaviour? Applied Animal Behaviour Science, 220, 104857.

#### Presentations

- Newman, R., McKeown, S., Quirke, T., O'Riordan, R.M. "The effectiveness of water enrichment in pair-house lion-tailed macaques (*Macaca silenus*)" at the International Conference on Environmental Enrichment (ICEE) 2019, Kyoto, Japan, June 2019.
- Collins, C., Kennedy, D. & O'Riordan, R. "Humananimal interactions in the zoo setting" International Symposium of Integrative Zoology, Auckland, New Zealand, December 2019.
- McKeown, S. & O'Riordan, R.M. "Fota Wildlife Park and University College Cork: an example of how zoos and universities can collaborate on research and conservation projects", International Symposium of Integrative Zoology, Auckland, New Zealand, December 2019.
- Newman, R., McKeown, S., Quirke, T. & O'Riordan, R. "A comparative study of multiple captive groups of lion-tailed macaques (*Macaca silenus*); the effect of group size and enclosure complexity", International Symposium of Integrative Zoology, Auckland, New Zealand, December 2019.

#### **Posters**

- Moloney, D., O'Riordan, R.M. Collins, C., Newman, R. "Comparative behavioural analysis of Asiatic lions (*Panthera leo persica*) at Fota Wildlife Park", All Ireland Mammal Symposium, Dublin, November 2019.
- Moloney, D., O'Riordan, R.M. Collins, C., Newman, R. "Comparative behavioural analysis of Asiatic lions (*Panthera leo persica*) at Fota Wildlife Park", International Symposium of Integrative Zoology, Auckland, New Zealand, December 2019.

#### **Field Conservation Projects**

Fota Wildlife Park continued to make direct funding available to conservation programmes that have a direct conservation benefit to both indigenous and exotic species.



The conservation of the Critically Endangered Madagascan pochard is the most extensive conservation project which Fota has been involved with in recent years.



Within the last nine years, the project has witnessed significant progress in efforts to save this Critically Endangered species, whose wild population was reduced to 21 birds in May of 2012. The captive population continues to grow with a total of 154 captive Madagascan pochard, an increase of 30 birds from the previous year. During October 2018 Fota Wildlife Park staff visited the Pochard Captive Breeding Centre in Madagascar as part of a Virgin Media documentary production on the Wildlife Park and witness the introduction of 22 captive Madagascan pochard ducks back to the wild in Lake Sofia. This reintroduction of juvenile Madagascan pochard to the wild will feature in the television documentary series on Fota Wildlife Park to be aired in early 2020.

Our commitment to the Madagascan pochard conservation and breeding project continues with the provision of €20,000 towards the running costs of the Madagascan Pochard Captive Breeding Centre. This project is run in conjunction with the Durrell Wildlife Conservation Trust and the Wildfowl and Wetlands Trust.



(Above) Western black crested gibbon

In June 2015 Fota Wildlife Park signed another threeyear MOU with Flora & Fauna International (FFI) to fund the training, equipment and salaries of two Community Conservation Teams (CCTs) to protect the Critically Endangered Western black crested gibbon and Tonkin snub-nosed monkey (CCT) in Mun Cang Chai and Quan Ba District, respectively, in Vietnam. In 2018 this MOU was renewed for a further four years up to June 2022. The work of these CCT's in these protected areas has been very successful in safeguarding these two primate species. It has ensured continuous on-the-ground protection of the last remaining populations of the Critically Endangered Tonkin snub-nosed monkey and Western black crested gibbon (pictured opposite). The CCTs have maintained their vigilance, monitoring biodiversity and infringements in the habitat of these primates. The CCTs have also received training in law enforcement from FFI and Forest Protection Department staff and have shown ongoing improvements in patrol data recording and reporting of both habitat loss/degradation and poaching that threaten the survival of these primates. The good news is that the decline of both primate populations has been halted and turned into an increase in some cases, and this is only possible by the work of the CCT's and FFI.

During 2019, in conjunction with the National Parks and Wildlife Service (NPWS), 1,100 Natterjack toads were released back into the wild in Kerry. The Natterjack spawn was collected in Kerry under the supervision of the NPWS and taken to Fota to rear to the toad stage before releasing them back into the wild in Kerry. This augmentation process of the wild Natterjack toad population was also documented on film and will be part of a television documentary series on Fota Wildlife Park to be aired in early 2020.

### Meetings Etc.

PURE CORK, the destination Brand for Cork and the overall body for leisure and business tourism in Cork City and County, held a board meeting in Fota Wildlife Park on 31st May 2019. The Park Director gave a presentation to the Pure Cork board on the history and development of the Wildlife Park and on the future development plans including the ORIGINS Project concept and plan. The board were very impressed with the current socioeconomic benefit of €200m annually that Fota Wildlife Park adds to the Cork region. They were also enthusiastic and supportive of the ORIGINS Project and are willing to assist where possible.

#### Conferences

- The Park Director attended the EAZA Directors
   Conference and AGM on 23-25 April 2019 that was
   hosted by Jersey Zoo. The Park Director is a Council
   Member, Executive Committee member and Treasurer
   of the European Association of Zoos and Aquaria
   (EAZA).
- The Park Director attended the BIAZA Annual Conference in Drayton Manor Park, England on 11-13 June 2019 hosted by Drayton Manor. The Park Director is a Council member, member of the Finance and Resources Committee, and a member of the Membership and Licensing Committee of the British and Irish Association of Zoos and Aquarium (BIAZA).
- The Park Director attended the EAZA Annual Conference in Valencia, Spain on 17-21 September 2019 hosted by Bioparc Valencia. The Park Director Coordinates the EEP programme for Northern cheetah.





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(Left) Four Asiatic lion cubs born in Feb 2019 (Right) Opening of the Madagascan Village by Minister of State for Tourism Michael Griffin TD in Dec 2019.



## Fota 2019 Animal Inventory

IUCN Status	SPECIES		Beginning	Births	Acquisitions	Dead	Dispositions	Ending
	INVERTEBRATA	INVERTEBRATES						
	CLASS: SCYPHOZA	CLASS: JELLYFISH						
	Aurelia aurita *	Moon jellyfish	0.0.0	0.0.20	0.0.16	0.0.15	0.0.0	0.0.2
	CLASS: INSECTA	CLASS: INSECTS						
	Gromphadorhina oblongonota *	Madagascar hissing cockroach	0.0.0	0.0.0	0.0.20	0.0.0	0.0.0	0.0.2
	Achrioptera manga *	Walkingstick	0.0.0	0.0.0	0.0.20	0.0.0	0.0.0	0.0.2
	Papilionoidea *	Butterflies	0.0.140	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
	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	0.0.1	0.0.0	0.0.0	0.0.1	0.0.0	0.0.0
	Sahyadria denisonii *	Denison's barb	0.0.10	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
	Chromobotia macracan- thus *	Clown loach	0.0.3	0.0.0	0.0.0	0.0.0	0.0.0	0.0.3
	Beaufortia leveretti *	Loach	0.0.5	0.0.0	0.0.0	0.0.0	0.0.0	0.0.
	Hyphessobrycon anisitsi *	Buenos Aires tetra	0.0.34	0.0.0	0.0.0	0.0.0	0.0.0	0.0.3
	Panaque nigrolineatus *	Royal plecostomus	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.
NT	Bedotia madagascariensis *	Madagascar rainbowfish	0.0.5	0.0.50	0.0.0	0.0.0	0.0.0	0.0.5
VN	Glossolepis incisus *	Red rainbowfish	0.0.28	0.0.0	0.0.0	0.0.0	0.0.0	0.0.2
EN	Melanotaenia boesemani *	Boeseman's rainbowfish	0.0.57	0.0.0	0.0.0	0.0.0	0.0.0	0.0.5
	Melanotaenia trifasciata *	Goyder River rainbowfish	0.0.34	0.0.0	0.0.0	0.0.0	0.0.0	0.0.3
	Pachypanchax omalonota *	Powderblue panchax	0.0.0	0.0.0	0.0.12	0.0.0	0.0.0	0.0.1
	Pachypanchax sakaramyi *	Panchax	0.0.0	0.0.0	0.0.12	0.0.0	0.0.0	0.0.1
EW	Ameca splendens *	Butterfly splitfin	0.0.110	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
EW	Skiffia francesae *	Golden sawfin	0.0.20	0.0.0	0.0.12	0.0.0	0.0.0	0.0.3
	Hippocampus abdominalis *	Pot-bellied seahorse	0.0.0	0.0.6	0.0.12	0.0.1	0.0.0	0.0.1
	Cephalopholis miniata	Vermilion grouper	0.0.1	0.0.0	0.0.0	0.0.1	0.0.0	0.0.0

	IUCN Status	SPECIES		Beginning	Births	Acquisitions	Dead	Dispositions	Ending
		Toxotes jaculatrix *	Banded archerfish	0.0.15	0.0.0	0.0.0	0.0.0	0.0.0	0.0.15
		Monodactylus argenteus	Diamond fish	0.0.10	0.0.0	0.0.0	0.0.1	0.0.0	0.0.9
		Monodactylus sebae *	African silverfish	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
		Paretroplus kieneri *	Kieneri cichlid	0.0.0	0.0.0	0.0.6	0.0.0	0.0.0	0.0.6
		Amphiprion ocellaris *	Clown anemonefish	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
		Scatophagus argus *	Spotted scat	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
		Siganus vulpinus *	Foxface rabbitfish	0.0.2	0.0.0	0.0.0	0.0.1	0.0.0	0.0.1
		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
		CLASS: AMPHIBIA	CLASS: AMPHIBIANS						
	CR	Ambystoma mexicanum *	Axolotl	1.0.2	0.0.0	0.0.0	1.0.0	0.0.0	0.0.2
	CR	Neurergus kaiseri *	Emperor spotted newt	0.0.33	0.0.0	0.0.0	0.0.1	0.0.0	0.0.32
	EN	Epipedobates tricolor *	Phantasmal poison dart frog	0.0.24	0.0.11	0.0.0	0.0.10	0.0.0	0.0.25
	LC	Agalychnis callidryas *	Red-eyed tree frog	0.0.1	0.0.0	0.0.0	0.0.1	0.0.0	0.0.0
ESB	CR	Leptodactylus fallax	Mountain chicken frog	1.0.0	0.0.0	1.1.0	0.0.0	0.0.0	2.1.0
	CR	Mantella aurantiaca *	Golden mantella	0.0.4	0.0.0	0.0.0	0.0.0	0.0.0	0.0.4
	EN	Mantella viridis *	Green mantella	0.0.6	0.0.0	0.0.0	0.0.0	0.0.0	0.0.6
	LC	Polypedates otilophus *	File-eared Tree 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	1.0.8	0.0.0	0.0.0	1.0.0	0.0.0	0.0.8
	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	2.0.8	0.0.0	0.0.0	1.0.0	0.0.0	1.0.8
		CLASS: REPTILIA	CLASS: REPTILES						
		Chelonoidis carbonarius	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	0.0.8	0.0.0	0.0.1	0.0.0	1.3.9



	IUCN Status	SPECIES		Beginning	Births	Acquisitions	Dead	Dispositions	Ending
	LC	Chamaeleo calyptratus	Veiled chameleon	2.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.0.0
		Brachylophus fasciatus	Lau banded iguana	0.0.0	0.0.0	1.0.0	0.0.0	0.0.0	1.0.0
		Iguana iguana	Green iguana	1.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0
		Phelsuma grandis	Giant madagascar day gecko	1.2.0	0.0.5	0.0.0	0.0.0	0.0.0	1.2.5
		Python regius	Royal/ball python	2.2.0	0.0.0	0.0.0	0.0.0	0.2.0	2.0.0
		Acrantophis dumerili	Dumeril's ground boa	3.0.0	0.0.0	0.0.0	0.0.0	0.0.0	3.0.0
EEP	VU	Chilabothrus subflavus	Jamaican boa	0.0.3	0.0.0	0.0.0	0.0.1	0.0.0	0.0.2
		CLASS: AVES	CLASS: BIRDS						
	LC	Struthio camelus	Common ostrich	1.3.0	0.0.0	0.0.0	0.0.0	0.0.0	1.3.0
	LC	Rhea pennata	Lesser rhea	0.0.0	0.0.0	2.0.0	0.0.0	0.0.0	2.0.0
	LC	Numida meleagris	Helmeted guineafowl	9.6.23	0.0.8	0.0.0	1.0.2	0.0.0	8.6.29
	LC	Pavo cristatus	Common peafowl	5.14.1	0.0.0	0.0.0	0.0.0	0.0.0	5.14.1
	LC	Dendrocygna	Whistling duck	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
	LC	Dendrocygna autumnalis	Black-bellied whistling duck	0.1.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
	LC	Anser anser	Greylag goose	11.8.18	0.0.0	0.0.0	0.0.0	0.0.0	11.8.18
	LC	Anser brachyrhynchus	Pink-footed goose	0.1.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
	LC	Anser caerulescens	Snow goose	3.4.0	0.0.0	0.0.0	0.1.0	0.0.0	3.3.0
	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 cygnoides	Swan goose	0.1.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
	LC	Anser indicus	Bar-headed goose	9.7.4	0.0.0	0.0.0	2.0.0	0.0.0	7.7.4
	LC	Branta bernicla	Brant goose	1.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0
	LC	Branta leucopsis	Barnacle goose	13.6.26	0.0.0	0.0.0	0.1.2	0.0.0	13.5.24
	EN	Branta ruficollis	Red-breasted goose	1.1.0	0.0.2	3.2.0	0.1.1	0.0.0	4.2.1
	VU	Branta sandvicensis	Ne-ne	3.0.0	0.0.0	0.0.0	1.0.0	0.0.0	2.0.0
	LC	Cereopsis	Cereopsis goose	1.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0
	LC	Cereopsis novaehollandiae	Cereopsis goose	0.1.0	0.0.0	0.0.0	0.1.0	0.0.0	0.0.0
	LC	Coscoroba coscoroba	Coscoroba swan	2.1.0	0.0.0	0.1.0	0.2.0	0.0.0	2.0.0
	LC	Aix galericulata	Mandarin duck	12.6.11	0.0.0	0.0.0	1.0.0	0.0.0	11.6.11
	LC	Aix sponsa	North American wood duck	5.2.4	0.0.0	0.0.0	0.0.0	0.0.0	5.2.4

	Status	SPECIES		Beginning	Births	Acquisitions	Dead	Dispositions	Ending
	LC	Anas acuta	Northern pintail	1.1.1	0.0.0	0.0.0	0.0.0	0.0.0	1.1.1
	CR	Aythya baeri	Baer's pochard	0.4.0	0.0.0	0.0.0	0.2.0	0.0.0	0.2.0
	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	Ferruginous duck	2.1.2	0.0.0	0.0.0	0.0.0	0.0.0	2.1.2
	LC	Chloephaga picta	Magellanic goose	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
	LC	Netta rufina	Red-crested pochard	5.5.0	0.0.0	0.0.0	1.1.0	0.0.0	4.4.0
	LC	Somateria mollissima	Common eider	6.3.5	0.0.0	0.0.0	1.1.0	0.0.0	5.2.5
	LC	Tadorna variegata	Paradise shelduck	1.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0
	LC	Phoenicopterus chilensis	Chilean flamingo	1.4.0	0.0.0	0.0.0	0.0.0	0.0.0	1.4.0
	LC	Crex crex	Corncrake	8.7.0	0.0.0	0.0.0	0.1.0	0.0.0	8.6.0
	VU	Spheniscus humboldti	Humboldt penguin	10.12.10	0.0.3	0.0.0	1.0.2	0.0.0	9.12.11
	LC	Pelecanus onocrotalus	Eastern white pelican	3.1.0	0.0.0	0.0.0	1.1.0	0.0.0	2.0.0
EEP	LC	Haliaeetus albicilla	White-tailed sea eagle	0.2.0	0.0.0	0.0.0	0.0.0	0.0.0	0.2.0
EEP	CR	Ara glaucogularis	Blue-throated macaw	0.0.0	0.0.0	1.1.0	0.0.0	0.0.0	1.1.0
		CLASS: MAMMALIA	CLASS: MAMMALS						
		MARSUPIALIA	MARSUPIAL MAMMALS						
		DIPROTODONTIA	KOALAS, WOMBATS & KANGA- ROOS						
ESB	LC	Macropus giganteus	Eastern grey kangaroo	7.6.0	1.1.0	1.0.0	3.0.0	1.1.0	5.6.0
	LC	Macropus rufogriseus *	Red-necked wallaby	0.0.183	0.0.0	0.0.0	0.0.3	0.0.0	0.0.180
		PLACENTALIA	PLACENTAL MAMMALS						
		PILOSA	SLOTHS & ANTEATERS						
ESB		Choloepus didactylus	Linne's two-toed sloth	0.0.0	0.0.0	1.0.0	0.0.0	0.0.0	1.0.0
		PRIMATES	PRIMATES						
EEP	EN	Eulemur rubriventer	Red-bellied lemur	0.0.0	0.0.0	0.4.0	0.0.0	0.0.0	0.4.0
	EN	Lemur catta	Ring-tailed lemur	1.2.0	0.0.0	0.4.0	0.0.0	0.0.0	1.6.0
	CR	Varecia rubra	Red ruffed lemur	0.1.0	0.0.0	0.0.0	0.1.0	0.0.0	0.0.0



	IUCN Status	SPECIES		Beginning	Births	Acquisitions	Dead	Dispositions	Ending
EEP	CR	Varecia variegata	Black-and-white ruffed lemur	1.1.0	0.0.2	0.0.0	0.0.0	0.0.0	1.1.2
EEP	LC	Pithecia pithecia	White-faced saki	3.3.0	0.0.2	0.0.0	0.0.0	0.0.0	3.3.0
EEP	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	Geoffroy's Spider Monkey	2.4.0	0.0.1	0.0.0	0.0.0	0.0.0	2.4.1
EEP	EN	Cercopithecus roloway	Roloway monkey	0.2.0	0.0.0	1.0.0	0.0.0	0.0.0	1.2.0
	LC	Lophocebus albigena	Grey-cheeked mangabey	1.2.0	0.0.0	0.0.0	0.0.0	0.0.0	1.2.0
EEP	EN	Macaca silenus	Lion-tailed macaque	9.12.0	2.1.1	0.0.0	0.0.1	0.0.0	11.13.0
EEP	EN	Mandrillus leucophaeus	Drill	0.0.0	0.0.0	1.4.0	0.0.0	0.0.0	1.4.0
EEP	LC	Colobus guereza	Eastern black-and-white colobus	4.0.0	0.0.0	0.0.0	0.0.0	1.0.0	3.0.0
EEP	EN	Trachypithecus francoisi	Francois' langur	2.0.0	0.0.0	1.0.0	1.0.0	0.0.0	2.0.0
	EN	Hylobates agilis	Agile gibbon	1.1.1	0.0.0	0.0.0	0.0.0	0.0.0	1.1.1
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	4.1.0	0.0.1	0.0.0	0.0.0	0.0.0	4.1.1
		RODENTIA	RODENTS						
	NT	Dolichotis patagonum *	Patagonian mara	0.0.5	0.0.0	0.0.0	0.0.2	0.0.0	0.0.3
	LC	Hydrochoerus hydrocha- eris	Capybara	2.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.0.0
		CA PAUL OR A	CARNINADEC						
		CARNIVORA	CARNIVORES						
EEP	VU	Acinonyx jubatus	Cheetah	11.12.0	1.0.1	0.0.0	1.2.1	4.0.0	7.10.0
EEP	EN	Panthera leo	Lion	2.4.0	1.4.0	0.0.0	1.0.0	0.2.0	2.6.0
EEP	CR	Panthera tigris	Tiger	2.3.0	1.0.0	0.0.0	0.0.0	0.1.0	3.2.0
	LC	Suricata suricatta	Slender-tailed meerkat	2.2.0	0.0.0	0.0.0	0.0.0	0.0.0	2.2.0
	LC	Halichoerus grypus	Grey seal	0.1.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
	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	0.2.0	0.0.0	1.2.0	0.0.0	0.1.0	1.3.0
		PERISSODACTYLA	ODD-TOED UNGULATES						

	IUCN Status	SPECIES		Beginning	Births	Acquisitions	Dead	Dispositions	Ending
	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	3.2.0	1.1.0	0.0.0	0.0.0	0.0.0	4.3.0
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	0.2.0	0.0.0	0.0.0	0.0.0	0.0.0	0.2.0
EEP	VU	Giraffa camelopardalis	Giraffe	3.9.0	1.0.0	0.0.0	1.0.0	0.0.0	3.9.0
EEP	VU	Bison bonasus	European wisent	5.10.0	0.2.0	0.0.0	0.0.0	0.2.0	5.10.0
EEP	EW	Oryx dammah	Scimitar-horned oryx	6.9.0	0.0.0	0.0.0	0.0.0	0.0.0	6.9.0
ESB	VU	Kobus leche	Southern lechwe	4.8.0	3.1.0	0.0.0	4.2.0	0.0.0	3.7.0
		TOTAL		218.225.891	11.10.119	14.19.110	26.17.48	6.9.0	211.228.1072

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



## THE ZOOLOGICAL SOCIETY OF IRELAND

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

Reports and Consolidated Financial Statements for the financial year ended 31 December 2019

Registered number: 207824

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## THE ZOOLOGICAL SOCIETY OF IRELAND

## MEMBERS OF BOARD AND OTHER INFORMATION

Members of Board:

**Ordinary Board members** 

Board president Michael Daly

Immediate past president Tom Dunphy

Dorothy Kilroy Paul Burke Kennedy

Nigel Bell Ann Keenan John McMahon Carmel O'Connor

Andy Beer Tom Cassin

Other information:

Past presidents Derek McCleane

Margaret Sinanan Tom Dunphy

Honorary treasurer Nigel Bell

Honorary secretary Dorothy Kilroy

Secretary and registered office John Sweeney

The Zoological Gardens, Phoenix Park, Dublin 8

## MEMBERS OF BOARD 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, 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** 20003715

Company Number 207824

## THE ZOOLOGICAL SOCIETY OF IRELAND

#### **BOARD'S REPORT**

The Board presents its annual report together with the audited consolidated financial statements for the financial year ended 31 December 2019.

#### Consolidation

These accounts form the Consolidated Accounts of the Zoological Society of Ireland which include the results of both Dublin Zoo and Fota Wildlife Park for the financial year ended 31 December 2019.

## 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 2019 at Dublin Zoo was 1,040,284 (2018: 1,019,910), there was also a special cultural event that had 232,318 visitors. This was the ninth 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 2019 was 462,047 (2018: 424,889).

The Board do not foresee any significant change to the activities in the short term

### Principal risks and uncertainties

The Board 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, uncertainty impacting visitor numbers due to health issues as has been the case with the recent Covid-19 pandemic, and changes in the economic environment.

The Society is conscious of the financial impact of the above conditions and maintains adequate cash reserves to allow the Society to continue to trade in the event of risks which may impact the Society's ability to generate cashflow.

## 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 and balance sheet on pages 79 & 80.

## **Board and Secretary**

## **Secretary:**

John Sweeney

## **Legal status**

The Society is limited by guarantee and has no share capital

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

Tom Dunphy James McMonagle
Dorothy Kilroy John McMahon
Paul Burke Kennedy Carmel O'Connor
Michael Daly Andy Beer

Michael Daly Andy Beer Nigel Bell Tom Cassin

Ann Keenan

James McMonagle resigned 24 July 2019 and Tom Cassin was appointed 29 July 2019.

#### **Subsidiaries**

The statutory information concerning subsidiary undertakings is provided in Note 10 to the financial statements.

#### Governance

The Society is governed by a Board of directors, who under the Society's Articles of Association, are not entitled to remuneration for their services. The members of Board bring their varied experience in their respective fields to bear on guiding the Society. The members of Board are legally responsible for the overall control and management of the Society.

The Board 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, are the main day to day decision making fora of the Society and Fota Wildlife Park.

The Board 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 Board retaining control of major decisions, with the Director responsible for devising strategy and policy within authority delegated to him by the Board. The Board is responsible for providing leadership, setting strategy and ensuring control.

The Society has a clear and detailed process for reporting management information to the Board. The Board is provided with regular information, which includes key performance and risk indicators for all aspects of the organisation. The Board meets regularly as required and met 10 times during 2019.

The Board recognise their overall responsibility for the Society'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 Board to meet its responsibilities for the integrity and accuracy of the Society's accounting records.

The Board is supported by a number of sub-committees (not confined to Board members) established for good governance, as follows:

#### THE ZOOLOGICAL SOCIETY OF IRELAND

#### **Finance Committee**

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

#### **Governance Committee**

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

#### **Conservation & Research Committee**

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

#### **Ethics Committee**

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

## **Programme Committee**

The responsibility of this Committee is to oversee management processes and ensure that any changes and improvements are implemented. The Committee comprises three members of Board.

#### **Risk 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 Board and the Zoo Director.

## **Accounting Records**

The measures that the directors have taken to secure compliance with the requirements of sections 281 to 285 of the Companies Act 2014 with regard to the keeping of accounting records, are the employment of appropriately qualified accounting personnel and the maintenance of computerised accounting systems. The company's accounting records are maintained at the Society's registered office in The Zoological Gardens, Phoenix Park, Dublin 8.

#### **Post Balance Sheet Events**

At the date these financial statements have been approved, future disruptions related to the COVID-19 virus remain uncertain and both Dublin Zoo and Fota Wildlife Park were closed for a period of time after the year end as part of the national shut down. Both facilities reopened subsequently but have been trading at reduced volumes due to the requirement for social distancing. The Group will continue to assess the economic and financial impact of this crisis as the situation evolves.

### **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 3 to the financial statements.

#### **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 Board Members have taken have taken all the steps that they ought to have taken as Board 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 Nigel Bell

**Board President** Honorary Treasurer

Date: 17th September 2020

### **BOARD'S RESPONSIBILITIES STATEMENT**

The directors are responsible for preparing the directors' report and the financial statements in accordance with the Companies Act 2014.

Irish company law requires the directors to prepare financial statements for each financial year. Under the law, the directors have elected to prepare the financial statements in accordance with FRS 102 The Financial Reporting Standard applicable in the UK and Republic of Ireland issued by the Financial Reporting Council ("relevant financial reporting framework"). Under company law, the directors 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 company as at the financial year end date and of the profit or loss of the company for the financial year and otherwise comply with the Companies Act 2014.

In preparing those financial statements, the directors are required to:

- Select suitable accounting policies for the Company 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 company will continue in business.

The directors are responsible for ensuring that the company keeps or causes to be kept adequate accounting records which correctly explain and record the transactions of the company, enable at any time the assets, liabilities, financial position and profit or loss of the company to be determined with reasonable accuracy, enable them to ensure that the financial statements and directors' 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 company 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 31 December 2019 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 group financial statements:

- the Consolidated Income and Expenditure Account;
- the Consolidated Balance Sheet;
- the Consolidated Statement of Changes in Equity;
- the Consolidated Statement of Cash Flows; and
- the related notes 1 to 19, including a summary of significant accounting policies as set out in note 1...

The parent company financial statements:

- the Balance Sheet;
- · the Statement of Changes in Equity; and
- the related notes 1 to 19, 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 financial statements is the Companies Act 2014 and FRS 102 "The Financial Reporting Standard applicable in the UK and Republic of Ireland" issued by the Financial Reporting Council ("the relevant financial reporting framework"). The relevant financial reporting framework that has been applied in the preparation of the parent company financial statements is the Companies Act 2014 and FRS 102 "The Financial Reporting Standard applicable in the UK and Republic of Ireland" issued by the Financial Reporting Council ("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 Accounting 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 Reports and Consolidated Statements for the financial year ended 31 December 2019, 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.

#### Matters on which we are required to report by exception

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.

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: 28th September 2020

## CONSOLIDATED INCOME AND EXPENDITURE ACOUNT FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2019

TOR THE THAT WEIGHT ENDED ST DECEMBER 2015			
		2019	2018
	Notes	€′000	€′000
INCOME	4	22,212	20,759
EXPENDITURE			
Operating costs		(19,826)	(19,188)
Administration expenses		(904)	(806)
TOTAL EXPENDITURE		(20,730)	(19,994)
OPERATING SURPLUS	6	1,482	765
Interest payable	7	(12)	(25)
Interest income	7	10	14
Amortisation of government grants	14	32	32
SURPLUS FOR THE FINANCIAL YEAR		1,512	

## CONSOLIDATED BALANCE SHEET AS AT 31 DECEMBER 2019

		2019	2018
	Notes	€′000	€′000
FIXED ASSETS			
Tangible assets	9	29,919	28,363
CURRENT ASSETS			
Stocks	11	313	302
Debtors	12	1,431	958
Cash at bank and in hand		,	
<ul> <li>Restricted - OPW grant</li> </ul>	13	30	30
<ul><li>Unrestricted</li></ul>		6,174	6,174
		7,948	7,464
CREDITORS: (A resource falling due within a resource)	10	(6.426)	(F. 0.76)
<b>CREDITORS:</b> (Amounts falling due within one year)	13	(6,436)	(5,876)
NET CURRENT ASSETS		1,512	1,588
TOTAL ASSETS LESS CURRENT LIABILITIES		31,431	29,951
OTHER DEFERRED GRANTS	14	(283)	(315)
NET ASSETS EXCLUDING PENSION		21 140	20.626
Pension asset	15	31,148 279	29,636 279
Tension asset	13		
NET ASSETS INCLUDING PENSION ASSET		31,427	29,915
			====

### Represented by:

10,155	8,643
19,000	19,000
2,272	2,272
31,427	29,915
	19,000 2,272

The financial statements were approved and authorised for issue by the Board of Directors on 17<sup>th</sup> September 2020 and signed on its behalf by:

Michael Daly Nigel Bell

**Board President** Honorary Treasurer

COMPANY BALANCE SHEET AS AT 31 DECEMBER 2019		2019	2018
		€′000	€′000
FIXED ASSETS	Notes		
Tangible assets	9	<b>18,88</b> 2	17,811
Financial assets	10	500	500
		19,382	18,311
CURRENT ASSETS			
Stocks	11	212	170
Debtors			
- Due within one year	12	1,451	1,169
- Due after one year	12	100	300
Cash at bank and in hand:			
- Restricted - OPW grant	13	30	30
- Unrestricted		5,287	4,999
		7,080	6,668
<b>CREDITORS:</b> (Amounts falling due within one year)	13	(4,873)	(4,451)
Net current assets excluding pension asset		2,207	2,217
Pension asset	15	167	167
Net current assets including pension asset		2,374	2,384
NET ASSETS		21,756	20,695

### Represented by:

Accumulated surplus	8,509	7,448
Development reserve	10,975	10,975
Emergency reserve	2,272	2,272
	21,756	20,695

The financial statements were approved and authorised for issue by the Board of Directors on  $17^{th}$  September 2020 and signed on its behalf by:

Michael Daly Nigel Bell

**Board President** Honorary Treasurer

## CONSOLIDATED STATEMENT OF CHANGES IN EQUITY FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2019

		Development	0 ,		
		Reserve	Reserve	Surplus	Total
	Notes	€′000	€′000	€′000	€′000
Balance at 1 January 2018		19,000	2,272	7,857	29,129
Surplus for the financial year		_	-	786	786
Transfers between reserves					
At 31 December 2018		19,000	2,272	8,643	29,915
Surplus for the financial year		_	_	1,512	1,512
Transfers between reserves					
At 31 December 2019		19,000	2,272	10,155	31,427

The Board members continue to monitor the strategic development of Dublin Zoo and have set aside funds to finance future capital investment projects in the emergency reserve.

## COMPANY STATEMENT OF CHANGES IN EQUITY FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2019

		Development	0 ,		T ( )
		Reserve	Reserve	Surplus	Total
	Notes	€′000	€′000	€′000	€′000
Balance at 1 January 2018		10,975	2,272	6,939	20,186
Surplus for the financial year		_	=	509	509
Transfers between reserves					
At 31 December 2018		10,975	2,272	7,448	20,695
Surplus for the financial year		_	_	1,061	1,061
Transfers between reserves					
At 31 December 2019		10,975	<u>2,272</u>	8,509 ====	21,756

The Board members continue to monitor the strategic development of Dublin Zoo and have set aside funds to finance future capital investment projects in the emergency reserve.

CONSOLIDATED STATEMENT OF CASH FLOWS		2242	2212
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2019		2019	2018
NIET CACILINIFI ON		€′000	€′000
NET CASH INFLOW	17	E 024	4.627
FROM OPERATING ACTIVITIES	17	5,034	4,627
Cash flows from investing activities			
Payment to acquire tangible fixed assets		(4,912)	(5,317)
Interest received		10	14
Interest paid		(12)	(25)
Net cash outflow from investing activities		(4,914)	(5,328)
Cash flows from financing activities			
Repayment of bank loan		(120)	(210)
		<u> </u>	
Net cash outflow from investing activities		(120)	(210)
MOVEMENT IN CASH			
IN THE FINANCIAL YEAR	17	_	(911)
Cash and cash equivalents at beginning of financial year		6,204	7,115
Cash and Cash Equivalents at Deginning of Infancial year		0,204	7,113
Cash and cash equivalents at end of financial year		6,204	6,204
		===	===

### NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2019

#### 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 68. The nature of the company's operations and its principal activities are set out in the Board's report on pages 70 to 73.

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 2019.

The functional currency of the Zoological Society of Ireland is considered to be Euro because that is the currency of the primary economic environment in which the company operates.

#### Income

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

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

Other income comprises the value of sales, excluding VAT 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	331/3%
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 straightline 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.

## 2. CRITICAL ACCOUNTING JUDGEMENTS AND KEY SOURCES OF ESTIMATION UNCERTAINTY

In the application of accounting policies, which are described in note 1, the Board 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 Board 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.

#### 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.

#### 3. GOING CONCERN

The financial statements have been prepared using the going concern basis of accounting.

Subsequent to the year end, the Covid-19 pandemic resulted in both Dublin Zoo and Fota Wildlife Parks being closed for a period of time with the result that the Group expects to incur a loss for the year to 31 December 2020. The Directors have reviewed the performance of the Company and Group to date in 2020 and also considered future cashflow projections to the end of 2021, together with existing cash resources and banking facilities available. Having considered future cashflow projects and existing cash resources, the Directors consider that the Company and Group have adequate resources to continue in operational existence for the foreseeable future. On this basis the Directors continue to adopt the going concern basis of accounting in preparing the annual financial statements.

4. INCOME	2019	2018
Income arises from the following activities undertaken wholly within Ireland.	€′000	€′000
Gate receipt income	15 <i>,</i> 149	14,054
Annual pass and membership income	2,907	2,733
Shop income	2,979	2,720
Other income	1,177	1,252
	22,212	20,759

### **5. EMPLOYEE INFORMATION**

	2019	2018
Staff numbers and costs		
Average number of employees:		
Management	16	16
Administration	17	18
General staff		
- full time	70	71
- part time	37	37
Shop	27	21
	167	163
The aggregate payroll costs of these persons were as follows	2242	2010
	2019	2018
	€′000	€′000
W I I I	6.200	6.163
Wages and salaries	6,389	6,163
Social welfare costs	780	753
Retirement benefit costs (Note 15)	245	282
	7 /1/	7,198
	7,414	7,190

The total remuneration for sixteen key management personnel for the financial year totalled €1,171,116. (2018: €1,002,828 for fourteen key management personnel)

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

6. OPERATING SURPLUS	2019	2018
The operating surplus is stated after charging:	€′000	€′000
Remuneration of Board members	-	-
Auditor's remuneration in respect of		
- the audit of the entity	22	22
- the audit of subsidiary entity	8	8
- tax services	14	30
- other services	2	-
Depreciation	3,357	3,017
Operating lease charges	25	25

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

7. INTEREST Interest payable	2019 €′000	2018 €′000
On bank loans due within five years		<u>25</u>
Interest income Deposit interest	2019 €′000	2018 €′000
	10 10	14 14

### 8. TAXATION

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

### 9. 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 2019	191	4,264	1,117	582	40,854	47,008
Additions		<u>171</u>	46	123	4,572	4,912
At 31 December 2019	<u>191</u>	4,435	1,163	705	45,426	51,920
Depreciation:						
At 1 January 2019	_	3,817	1,079	459	13,289	18,644
Charge for financial year		<u>171</u>	27	38	3,121	3,357
At 31 December 2019		3,988	1,106	<u>497</u>	16,410	22,001
Net Book Value:						
At 31 December 2019	<u>191</u>	<u>447</u>	<u>57</u>	<b>208</b>	<u>29,016</u>	<u>29,919</u>
At 31 December 2018	191 	<u>447</u>	<u>37</u>	<u>123</u>	27,565	28,363

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2019 (Continued)

### 9. TANGIBLE FIXED ASSETS (Continued)

Company		Plant			Buildings	
		Machinery &	Computer	Motor	&	
	Land	equipment	equipment	vehicles	Habitats	Total
	€′000	€′000	€′000	€′000	€′000	€′000
Cost:						
At 1 January 2019	191	2,012	1,116	247	26,518	30,084
Additions	- <del>-</del>	— <del>-</del>	46	90	3,676	3,812
At 31 December 2019	191	2,012	1,162	337	30,194	33,896
	===					
Depreciation:						
At 1 January 2019	_	1,800	1,079	244	9,150	12,273
Charge for financial year	_	70	27	7	2,637	2,741
,					<del></del>	
At 31 December 2019	_	1,870	1,106	251	11,787	15,014
Net Book Value:						
At 31 December 2019	191	142	56	86	18,407	18,882
	===			===		
At 31 December 2018	191	212	37	3	17,368	17,811
ACT December 2010	====		===	===	====	

#### 10. FINANCIAL ASSETS

Company	2019	2018
	€′000	€′000
At beginning and end of financial year	<b>500</b>	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	Principal activity	
Fota Wildlife Park Limited	Incorporation Ireland	Operation of a wildlife park	
In respect of prior financial year		2019	2018
At beginning and end of financial year		€′000 	€′000 500

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2019 (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	Princi	pal activity
Fota Wildlife Park Limited		Ireland	Operation of a	wildlife park
11. STOCKS		Group	Comp	any
	2019	2018	2019	2018
	€′000	€′000	€′000	€′000
Shops	290	278	190	146
Consumables		24	22	24
	<u>313</u>	<u>302</u>	<u>212</u>	170

12. DEBTORS	Group		Group		C	ompany
	2019	2018	2019	2018		
	€′000	€′000	€′000	€′000		
Amounts falling due within one y	ear:					
Trade debtors	465	435	436	363		
Prepayments and other debtors	532	506	428	397		
VAT	434	17	381	-		
Amounts due from subsidiary	_	_	6	9		
Loan to subsidiary			200	400		
	1,431	<u>958</u>	1,451	1,169		
Amounts falling due after more the Loan to subsidiary	an one year —	: 	100	300		

During the financial year Fota Wildlife Park repaid €400,000 of its intercompany loan.

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2019 (Continued)

#### 13. CREDITORS

(Amounts falling due within one year)		Group	Company	
	2019	2018	2019	2018
	€′000	€′000	€′000	€′000
D 11		120		
Bank loan	-	120	_	_
Trade creditors	2,415	2,149	1,959	1,853
Accruals	957	587	589	248
Deferred income	2,655	2,467	1,984	1,900
PAYE/PRSI	379	380	311	277
VAT	_	143	_	143
	6,406	5,846	4,843	4,421
O.Ph.V				
OPW grant		30		30
	6,436	5,876	4,873	4,451
	===			===

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 2019, €30,000 (2018: €30,000) remained unspent from the grant received and has been included in creditors and cash.

### 14. OTHER DEFERRED GRANTS

	Group	
	2019	2018
	€′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	520	488
Amortised to income and expenditure	32	32
At end of financial year	552	520
Net book amount	283	315

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 2019 (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 2019 was €46,000 (2018: €182,306).

### 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 2018.

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

	2019	2018
	%	%
Rate of general increase in salaries	3.0	3.1
Rate of increase in pensions in payment	0.0	0.0
Discount rate of scheme liabilities	1.0	1.8
Inflation	1.5	1.6
	=	

#### 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	21.8	22.3
65 in 25 years	24.8	25.7

#### **Pension Asset**

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

	2019	2018
	€′000	€′000
Current service cost	(46)	(54)
Net interest income	11	13
	(35)	<u>(41)</u>
Recognised in other comprehensive income		
Total cost relating to defined benefit scheme	(35)	(41)

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2019 (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:

	2019	2018
	€′000	€′000
Fair value of assets	4,261	3,805
Present value of defined benefit obligations	(3,849)	(3,183)
Asset Ceiling	(133)	(343)
Net asset recognised in the balance sheet	279	279

In assessing the carrying value of the defined benefit asset, the Directors 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:

	2019	2018
	€′000	€′000
At 1 January	3,805	3,861
Contributions	0	43
Benefits paid	(72)	(67)
Expected return on pension scheme assets	68	69
Actual return less expected return on pension scheme assets	460	(101)
At 31 December	4,261	3,805

### 15. PENSION ASSET (Continued)

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

	2019	2018
	€′000	€′000
At 1 January	3,183	3,110
Service cost	46	54
Interest cost	57	56
Benefits paid	(72)	(67)
Actuarial loss/(gain)	635	30
	<del></del>	
At 31 December	3,849	3,183

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

	Fair value	Fair value
	at	at
	<b>31 December</b> 3	1 December
	2019	2018
	€′000	€′000
Equities	851	896
Bonds	3,262	2,795
Property	33	24
Other	115	90
Total market value of assets	4,261	3,805

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2019 (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 2019 was €197,862 (2018: €148,778).

### **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.

### 15. PENSION ASSET (Continued)

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

	2019	2018
	€′000	€′000
	()	( \
Current service cost	(32)	(32)
Net interest income	7	8
	(25)	(24)
Recognised in other comprehensive income	(105)	79
necessaria in earle comprehensive meesine		
Total cost relating to defined benefit scheme	(130)	(103)
Total cost relating to defined benefit sellent	<del>(130)</del>	====

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

	2019 €′000	2018 €′000
Fair value of assets	2,557	2,283
Present value of defined benefit obligations	(2,309)	(1,910)
Asset Ceiling	(81)	(206)
Net asset recognised in the balance sheet	167	167
	===	

### NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2019 (Continued)

### 15. PENSION ASSET (Continued)

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

	2019	2018
	€′000	€′000
At 1 January	2,283	2,317
Contributions	-	26
Benefits paid	(43)	(40)
Expected return on pension scheme assets	41	41
Actual return less expected return on pension scheme assets	276	(61)
At 31 December	2,557	2,283

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

	2019	2018
	€′000	€′000
At 1 January	1,910	1,866
Service cost	28	32
Interest cost	34	34
Benefits paid	(43)	(40)
Actuarial loss/(gain)	381	18
At 31 December	2,310	1,910

### **16. FINANCIAL INSTRUMENTS**

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

	2019 €′000	2018 €′000
Financial assets		
<ul><li>Measured at undiscounted amount receivable</li><li>Trade debtors (Note 12)</li></ul>	465	<u>436</u>
	2019 €′000	2018 €′000
Financial liabilities		
Measured at undiscounted amount payable		
• Trade and other payables (Note 12)	2,415	2,149
	2,445	2,298
	2019	2018
	€′000	€′000
Interest expense		
<ul> <li>Interest expense on financial liabilities measured at amortised cost (Note 7)</li> </ul>	12	<u>25</u>

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2019 (Continued)

### 16. FINANCIAL INSTRUMENTS (Continued)

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

	2019 €′000	2018 €′000
Financial assets		
Measured at cost less impairment		
• Investment in subsidiary (Note 10)	500	500
Measured at amortised cost		
• Loan to subsidiary (Note 12)	300	700
Measured at undiscounted amount receivable		
• Trade and debtors (Note 12)	436	363
• Amount due from subsidiary (Note 12)	6	9

### 16. FINANCIAL INSTRUMENTS (Continued)

er i I II I I I I I	2019 €′000	2018 €′000
Financial liabilities		
<ul> <li>Trade and other payables (Note 13)</li> </ul>	1,959	1,853
	<del></del>	
	2019	2018
	€′000	€′000
Interest income		
<ul> <li>Interest income on financial assets measured at</li> </ul>		
amortised cost	10	14
	=	==
Reconciliation of operating surplus to cash generated by operations	2019 €′000	2018 €′000
Operating surplus	1,482	765
Depreciation of tangible fixed assets	3,357	3,017
Adjustment for retirement benefit plan	_	=
Increase in stocks	(12)	(29)
Decrease / (Increase) in debtors	(473)	10
Increase in creditors	679	864
mercase in erealtors		
Cash generated by operations	5,034	4,627

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2019 (Continued)

### 17. CASH FLOW STATEMENT (Continued)

Analysis of movement in net funds

	At beginning of year	Cashflows	At end of year
	€′000	€′000	€′000
Cash at bank and in hand	6,204	(30)	6,174
Bank Ioan	(120)	210	-
	<del></del>		
Net funds	6,084	90	6,174

### **18. COMMITMENTS AND CONTINGENCIES**

	2019	2018
	€′000	€′000
Authorised and contracted for commitments	2,250	3,000
Authorised but not contracted for commitments	_	_

#### 19. POST BALANCE SHEET EVENTS

At the date these financial statements have been approved, future disruptions related to the COVID-19 virus remain uncertain and both Dublin Zoo and Fota Wildlife Park were closed for a period of time after the year end as part of the national shut down. Both facilities reopened subsequently but have been trading at reduced volumes due to the requirement for social distancing. The Group will continue to assess the economic and financial impact of this crisis as the situation evolves.





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