



Annual Report 2023
Zoological Society of Ireland



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*	Prof. A. Francis Dixon	1927-31
The Duke of Leinster	1834*	Sir William Taylor	1932-33
Captain Portlock	1835-36*	Lord Holmpatrick	1934-42
Sir Philip Crampton	1837-38	Dr. R. Lloyd Praeger	1942-43
The Archbishop of Dublin	1839-40	Capt. Alan Gordon	1944-50
Sir Philip Crampton	1841-42	Prof. John McGrath	1951-53
The Archbishop of Dublin	1843-44	Dinnen B. Gilmore	1954-58
Sir Philip Crampton	1845-46	G.F. Mitchell	1959-61
The Duke of Leinster	1847-48	N.H. Lambert	1962-64
Sir Philip Crampton	1849-50	G. Shackleton	1965-67
The Marquis of Kildare	1851-52	Prof. P.N. Meenan	1968-70
Sir Philip Crampton	1853-54	Prof. J. Carroll	1971-73
Lord Talbot of Malahide	1855-56	A.E.J. Went	1974-76
Sir Philip Crampton	1857-58	Victor Craigie	1977-80
Doctor D.J. Corrigan	1859-63	Alex G. Mason	1981-83
Viscount Powerscourt	1864-69	Aidan Brady	1984-86
The Earl of Mayo	1870-71	John D. Cooke	1987-89
Earl Spencer	1872-74	Padraig O Nuallain	1990-91
J.W. Murland	1875-78	Prof. David J. McConnell	1992-93
Sir John Lentaigne C.P.	1879-84	Prof. David J. McConnell	1994-95*
Rev. Dr. Haughton F.R.S.	1885-89	Joe McCullough	1996-98*
Sir Robert Ball F.R.S.	1890-92	Sean Cromien	1998-2001*
Dr. Samuel Gordon	1893-97	Michael O'Grady	2001-04*
Field Marshal Earl Roberts	1898-1902	Barry Murphy	2004*
Prof. D.J. Cunningham F.R.S.	1903	Michael MacNulty	2005-08*
Earl of Dudley	1904-05	Derek McCleane	2008-11*
Rt. Hon. Jonathon Hogg D.L.P.C.	1906-10	Margaret Sinanan	2011-14*
Sir Charles Ball	1911-15	Tom Dunphy	2014-17*
W.E. Peebles	1916	Michael Daly	2017-20*
Sir Frederick Moore	1917-21	Ann Keenan	2020-23*
Sir Robert H. Woods	1922-26	Carmel O'Connor	2024*

LETTER FROM THE PRESIDENT

Dear Member,

The Board of the Zoological Society of Ireland (ZSI) is pleased to present the annual report and consolidated audited financial statements of Dublin Zoo and Fota Wildlife Park for the year ended 31 December 2023.

There were several significant achievements in both Dublin Zoo and Fota during the year, which I am delighted to highlight. These developments are integral to our ambitious 10-year strategic plans (Dublin Zoo 200 and Fota 2030 Vision) in furthering species conservation, animal care and welfare, and the cultivation of the next generation of conservationists.

In Dublin, the opening of the Centre for Species Survival (CSS) in November by Minister Malcolm Noonan TD was a pivotal moment in the evolution of Dublin Zoo. After several decades of extraordinary development, we now have the infrastructure to become a vital hub for local and international species conservation, offering an exceptional range of support and resources to our expanding network of conservation partnerships, which include the IUCN (International Union for the Conservation of Nature). The Centre has been established in our historical Society House, which was beautifully refurbished with new facilities including a boardroom, which was used for the first time by the ZSI Board in September.

The standards of animal care and welfare continue to rise, evidence of which was seen in the transfer of animals to other zoos as part of international breeding programmes. Dublin Zoo's Animal Care Team has, for many years, been training animals to co-operate with humans so that

medical procedures and other husbandry activities can be undertaken without stress to the animal. These skills are vital when the time comes for an animal to be transferred, and this year, Rothschild's giraffes, a bongo and a southern white rhino were amongst those crate-trained prior to successful moves. The outstanding achievement, however, was the successful move under protected contact principles of four of our elephants to Cincinnati Zoo in the United States. This enormous undertaking took several years of intensive and diligent preparation by the Animal Care Team. Another remarkable feat of the team was the vaccination of the entire bird collection against Highly Pathogenic Avian Influenza (bird flu), including our flock of 98 Chilean flamingos.

Dublin Zoo is fortunate to have the invaluable support of a team of dedicated volunteers. This year, when record rainfall caused a significant drop to our visitor numbers in July, the volunteers, together with the Marketing Team, created and delivered multiple high-quality family activities for visitors around the Zoo, resulting in a welcome surge in visitation.

Wild Lights was, once more, a great success, with the theme of 'The Enchanted Zoo' attracting many who had visited in a previous year. This year, in January and again in November, Wild Lights hosted a very special sensory friendly night, which was coordinated by the Visitor Operations Department with the support of the whole Zoo team. The response of one family, quoted in the director's report, sums up how special and quietly significant a trip to the Zoo can be for some of our visitors.

Fota Wildlife Park celebrated the 40th anniversary of

its opening achieving record-high visitation during the first half of the year, with the second half impacted by excessive rainfall in July.

Fota made considerable progress in the implementation of its 10-year strategic plan, with the undoubted highlight being the construction of the Education, Conservation and Research Centre (ECRC) in December 2023, on schedule and within budget. It was the most substantial project ever undertaken by the Park at a cost of €5.5m, with much appreciated support from the Government of Ireland through the Office of Public Works to the amount of €2.0m. The remaining €3.5m was funded from Fota Wildlife Park's own resources.

In 2023, Fota Wildlife Park continued to expand its important work in species conservation. As a result of ongoing conservation measures, two of the species in the Park, the scimitar-horned oryx and European bison, have had their 'Extinct in the Wild' IUCN Red List status reduced to "Endangered" and "Near Threatened", respectively.

Fota continued to assist the National Parks and Wildlife Service with key projects to augment the wild populations of three critically endangered native species, the curlew, the corncrake and the natterjack toad. The projects have facilitated the return of these three species to habitats within Ireland, with a total of 1,870 individuals returned to the wild during 2023.

In 2023, Fota Wildlife Park's award-winning Education Department welcomed in excess of 16,500 students through its formal education programmes. The Park also

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.

As President of the Society I would like to acknowledge the exceptional leadership of the director of Dublin Zoo, Dr Christoph Schwitzer, and the director of Fota Wildlife Park, Seán McKeown; together with their skilled and dedicated teams, they have delivered the results and achievements outlined in this report. It is the people of the Zoo and Fota, employees, volunteers and support partners, through their consistent and committed work in animal care, conservation education, retail and visitor services, catering, facilities management, finance and administration, who ensure the missions of Dublin Zoo and Fota Wildlife Park are lived out daily in both facilities.

I would also like to express our gratitude to the Irish Government through the Office of Public Works for the generous support of the capital programmes in the Zoo and Fota in 2023. Without your active partnership we would not be able to deliver on our ambitious strategic plans including the important milestones achieved in 2023.

Thank you to our loyal members and over 1.5m visitors for your support during 2023. Your visits to Dublin Zoo and Fota allow us to continue our critical work in conserving species for future generations. We look forward to further enhancing your experience in accordance with our strategic plans.

I wish to acknowledge and thank my colleagues on the Board of the Zoological Society of Ireland and the Chair and Governors of Fota Wildlife Park for giving generously of their time and expertise during 2023, and their support since I assumed the Presidency of the Society on 1 January 2024. In 2023, Nigel Bell and former president Michael Daly retired from the Board of ZSI after many years of service, and Ann Keenan retired from the position of president as per the Society's constitution. Their contributions, given enthusiastically and voluntarily, were very much appreciated, especially during the challenging Covid-19 period. We are delighted that Ann Keenan continues to serve on the Board as permitted by the constitution.

Since the year end we sadly mourned the passing on 7 April 2024 of one of our esteemed Board members, John (Johnny) McMahon. A retired OPW Commissioner, John made an incalculable contribution to Dublin Zoo over many years, serving on the Board since 2017. Ar dheis Dé go raibh a anam.

Building on the important achievements of 2023, I am confident that Dublin Zoo and Fota Wildlife Park can look forward with optimism to continued future success.

Carmel O'Connor
President
Zoological Society of Ireland



(Above) Red panda

NOTICE OF ANNUAL GENERAL MEETING

NOTICE is given that the annual general meeting of the Zoological Society of Ireland will be held at Haughton House, Dublin Zoo, Dublin 8 on 26 September 2024, at 18:00 for the following purposes:

Ordinary Business:

1. To receive and consider the statutory financial statements for the financial year ended 31 December 2023 (the “Financial Statements”), the report of 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.
3. To note that Carmel O’Connor is elected as president of the company with effect from 19 December 2023.
4. To elect Enda Faughnan as director of the company with effect from 26 September 2024.
5. To elect Peter McKenna as director of the company with effect from 22 July 2024.
6. To elect Ciaran O’Keefe as director of the company with effect from 22 July 2024.
7. To note that John McMahon was removed as director of the company as sadly passed away, with effect from 7 April 2024.
8. To re-appoint Deloitte Ireland LLP as statutory auditors of the Company.
9. To authorise the directors to approve the remuneration of the statutory auditors.

BY ORDER OF THE BOARD

Tom Cassin
Secretary

Registered Office

The Zoological Society of Ireland
Dublin Zoo
Phoenix Park
Dublin 8

Dated 22 July 2024

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.



DUBLIN ZOO: DIRECTOR'S REPORT

It was a year of great achievements for Dublin Zoo, with the opening the new Nocturnal House for our aye-eyes in July, the launch of the IUCN Centre for Species Survival in the historic Society House in November, and the move of four elephants to Cincinnati Zoo, USA, also in November. Inclement weather, particularly in July, had an irrecoverable impact on our visitor numbers. Despite our series of engaging family events over the summer months and our special 'golden ticket' competition, which offered four lifetime passes to the Zoo in September, we were unable to catch up on July's shortfall. By year's end, there were 937,921 day visitors to the Zoo and 224,016 visitors to Wild Lights, giving a total of 1,161,937 visitors to Dublin Zoo in 2023.



This year, Dublin Zoo received a capital grant of €2m from the government through the Office of Public Works (OPW), with an additional €1m going to Fota. We were immensely grateful for this support, which enabled us to complete several important capital works projects that were part-funded by the grant. The first of these was the Nocturnal House for the aye-eyes (*Daubentonia madagascariensis*). The construction of this habitat was an interesting challenge, as we needed to reverse the light-dark cycle to show visitors this interesting night-active species and their amazing adaptations. The installation of cameras, lighting and screens was carried out by Harry Shiels and Stephen Mahon of electricians Harry Shiels Ltd. They used Casambi, a technology that controls the

lighting within the environment, manipulating different grades of light in order to simulate sunrise and sunset. The main contractors on this project were Tom Connolly and Sons Ltd; Hayes Higgins Partnership worked in conjunction with Dublin Zoo to manage the project. In July, at a ceremony presided over by ZSI's President Ann Keenan, the Nocturnal House was officially opened. With less than 60 aye-eyes in the global zoo population, this species, classified as Endangered on the IUCN Red List, is not only an extremely rare primate in human care, but their anatomy, feeding strategy and general ecology make them unique. They are in urgent need of protection in their natural range in Madagascar, and we have the privilege of looking after them and contributing to the international aye-aye breeding programme.



In February, we signed a Memorandum of Understanding with the IUCN Species Survival Commission on the establishment of the Centre for Species Survival – Ireland (CSS). This was a huge milestone for Dublin Zoo and one of the primary objectives in our Conservation Master Plan. The CSS is a strategic partnership between Dublin Zoo and the IUCN Species Survival Commission, with the aim



ZOO
Nocturnal House
officially opened on 23rd July 2013
Funded by the Government of Ireland

Ireland 2013 CWI

of combining capacity for conservation status assessment, conservation planning and conservation action under one roof. It is based in the refurbished Society House and, in November, it was officially launched in the presence of Minister of State for Heritage and Electoral Reform Malcolm Noonan TD. Society House, built in 1868 as the home for the Zoo's superintendent (the title later changed to director), was extensively refurbished under the direction of Joana Nunes and Michael Horan of Axo Architects. The building was originally designed by John McCurdy, who also redesigned the Shelbourne Hotel. The roof was replaced and the 1957 two-storey extension to the rear of the building was gutted, reconfigured, and the outer walls wrapped for insulation. The distinctive look of the building was preserved and completed to a very high finish. Facilities within the building include offices, a library, a reading room, a lecture room, a boardroom, and accommodation for visiting guests. Kelbuild were the main contractors on the project. A conservation garden was created to the front of the building by the Dublin Zoo Horticulture Team, expertly supported by Stephen Butler, the Zoo's former curator of horticulture, whom we thank for his help with this project.

Another capital project completed this year was an off-show facility for bull rhinos with new access to the habitat. A dividing wall with a hydraulic gate was installed in the rhino habitat to enable flexible use of the new house. The steel work and concrete work were constructed to ensure that the structure could withstand the weight of a male rhino. The rock wall between the rhino and the giraffe habitats was raised. Water harvesting equipment was relocated to the new rhino house and weighing scales were installed. Meanwhile, planning commenced for

capital works to be delivered in 2024-25, including the new park restaurant and African aviary, new habitats for Irish native species (phase 1), as well as resurfacing and a new shelter for the African Savanna.

In November, we moved four elephants to Cincinnati Zoo in what was the largest and most complex animal transportation in Dublin Zoo's history. Asian elephant (*Elephas maximus*) mother Yasmin (33) and her daughter Anak (20) had arrived in Dublin from Rotterdam Zoo in 2006. They both bred successfully with bull Upali (now in Le Pal, France) and their calves included sons, Kabir and Sanjay (both 6 years old). The decision was made to split the Dublin Zoo herd and, after four years of planning and training, the two females and two young males were transferred by plane to the United States under protected contact principles. The transport itself was complex and involved crane and truck operators, the Gardai (who escorted the convoy to the airport), the Irish Aviation Authority, Dublin Airport Authority, cargo agents, handling companies, and many more – a big thank you to all of them for their assistance. All logistical and organisational aspects of this monumental undertaking were meticulously executed and reflect Dublin Zoo's unwavering commitment to the protected contact management of its elephants. A special acknowledgment goes to Miguel Bueno, Ciaran McMahon and the elephant care team for their tireless efforts throughout the entire project, as well as to our longstanding elephant consultant, Alan Roocroft, whose experience and skills were indispensable in the planning and execution of this transfer.

Meanwhile, steady progress was made during 2023 on our strategic plan, 'Dublin Zoo 200: Vision 2021 – 2031'.

This year, we launched the Conservation Education Master Plan 2023-2031 in the presence of Minister for Children, Equality, Disability, Integration and Youth, Roderic O’Gorman TD. We also added the Sustainability Master Plan, another crucial element of the strategic plan. Further details about these plans as well as the existing Conservation Master Plan are outlined in the departmental

reports in this document. The level of ambition in these plans, combined with the dependency of much of the Zoo’s business on external factors such as the weather, inevitably means that they have to be regarded as ‘living documents’ and that the sequence and pace of their implementation is being adjusted at times.



(Above) Asian elephants Yasmin, Anak, Kabir and Sanjay

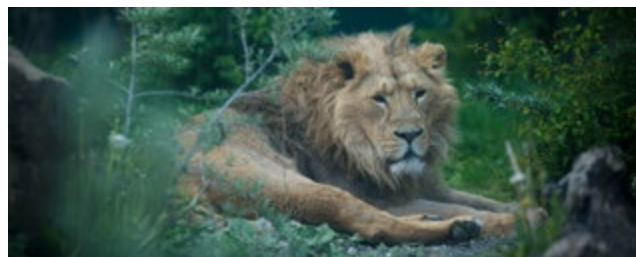
ANIMAL COLLECTION

The successful transfer of four of our elephants to Cincinnati Zoo in November under protected contact principles was a significant achievement for the Animal Care Team. Preparations commenced several years earlier when the decision was made to split the Dublin Zoo herd into its two matriarchal units. The Zoo had bred nine Asian elephants and the behaviours in the herd observed by the keepers signalled the readiness of the original females, Dina and Yasmin, to lead their own families. In previous years, the breeding male, Upali, and three of his sons, Budi, Kavi and Ashoka, had been transferred to other institutions. The additional space had allowed the independent management of two herds in the Kaziranga Forest Trail habitat and, in 2022, Dina's and Yasmin's families were separated. Mother Yasmin (33), her daughter Anak (20), and their sons, Kabir and Sanjay (both 6 years old) were trained over a two-year period under the guidance of our elephant consultant, Alan Roocroft, to become accustomed to their transport crates. The transfer was smooth and the animals arrived in Cincinnati Zoo in good health.



(Above) Elephant crate before loading onto transportation lorry
(Below) Elephant crates secured to the aircraft

Two young male Rothschild's giraffes (*Giraffa camelopardalis rothschildi*) were transferred out of Dublin Zoo on an EEP recommendation. Both were born in Dublin Zoo and are important animals in the EEP programme for Rothschild's giraffe conservation. In July, Zabuni was successfully loaded onto a Crossborder Services® trailer and transported to Port Lympne in Kent, England. In September, Sifa was transferred to Blair Drummond Safari Park, Scotland, to join a herd of females. Both animals walked into the giraffe trailer on their own without stress, thanks to the months of training by the African Plains team, who are using the skills they learnt from animal training specialist Barbara Heidenreich during her visits to Dublin Zoo in 2022.



In December, male Asian lion (*Panthera leo persica*) Kuno was transferred to Zoo Santo Inácio in Portugal, where he will join a lion group for breeding. Kuno is the offspring of one of our resident females, Sita, and male Kumar (currently at Frankfurt Zoo). The EEP programme coordinator for this species recommended his transfer, with a further recommendation that Dublin Zoo will soon receive an unrelated male. The population of Asian lions in European zoos is declining and Dublin Zoo has an important mission to breed with one or more of our resident females, helping to ensure the sustainability of the captive population. Since the turn of the twentieth

(Above) Asian lion, Kuno
(Far right) Rothschild's giraffes



century, the Asian lion's range has been restricted to the Gir National Park and surrounding areas in the Indian state of Gujarat. Historically, it used to cover much of southwest Asia to northern India.

A young Dublin-Zoo born male bongo, Tushi, was transferred to Beauval Zoo, France, in January, on the recommendation of the studbook keeper. Despite unavoidable delays, the bongo (*Tragelaphus eurycerus isaaci*) was very relaxed on the journey thanks, in no small part, to the extensive crate training undertaken by the African Plains team. At the end of



the year, the transfer of a male bongo to Dublin Zoo from Woburn was cancelled due to an outbreak of Bluetongue serotype 3 in Kent, which led to the implementation of a Temporary Control Zone (TCZ). The loss of disease freedom for Great Britain is now impacting planned zoo ungulate transfers. The UK's Department of the Environment (Defra) are working with the European Commission to lessen the impact and are negotiating for regionalisation in Britain, but the time frame for resolving these issues remains unclear. With regard to post-Brexit complications for UK-EU animal transports in general, BIAZA are continuing to take every opportunity (most recently providing a detailed report to the EFRA Select Committee) to raise the need for the UK Government to engage with the European Commission in discussions

over a UK-EU Sanitary and Phytosanitary (SPS) Agreement. This would significantly benefit Irish zoos, as we could then return to using the GB "land bridge" for transports to the continent.

Other transfers included four castrated male scimitar-horned oryx (*Oryx dammah*) to Zoo du Reynou, France, on an EEP recommendation. This allows Dublin Zoo to recommence a breeding programme, and an EEP recommendation has been received for a new breeding male to be transferred to Dublin from a European zoo. In October, two military macaws were transferred to Givskud, Denmark, and in December, a golden lion tamarin was transferred to Basel, Switzerland.



Notable births included a healthy female calf in January to southern white rhino (*Ceratotherium simum simum*) Nyala. This is five years after the birth of her first calf in Dublin Zoo. Based on the length of Nyala's first pregnancy, the Animal Care Team were able to estimate accurately the delivery date as between mid-December to early January; the calf arrived in the early evening of 2 January without any issues. The calf, named Malkia, was

let out into the Savanna habitat on the 8th of February and the introduction to the other females went very well. In February, the young male southern white rhino, Fionn, was transferred to Madrid Safari. In preparation for the journey, he was crate-trained; the transfer was smooth and he settled into his new habitat well.

This year, two white-naped mangabeys (*Cercocebus lunulatus*) were born in Dublin Zoo. Evita, one of the younger females, gave birth to her first baby in January and has proven to be an excellent mother. In September, Monifa, one of the older females who had reared several young, gave birth to a male. Both babies were strong and healthy, and integrated into the troop on the mangabey island. White-naped mangabeys, listed as Critically Endangered on the IUCN Red List, are a primate species from Ghana and Côte d'Ivoire in West Africa. Dublin Zoo is supporting West African Primate Conservation Action (WAPCA), who look after confiscated mangabeys at Accra Zoo and carry out conservation action and research on mangabeys in the wild.



Notable arrivals this year included male snow leopard (*Panthera uncia*) Otto III from Talinn, Estonia; the introduction to female Tashi went very well and the hope is that they will breed. Female siamang gibbon (*Symphalangus syndactylus*) Cayaha successfully gave birth to a healthy male offspring in December. And

(Above) White-naped mangabey parents Monifa and Danso with their infant

in April, a male aye-aye was born to Tahiri; with the completion of the new Nocturnal House, young male Feo, female Tahiri and the juvenile were moved into their new habitat where they settled well. The Animal Care Team developed enrichment schedules for this delicate species.

Notable deaths included female bongo Nanyuki, eleven years old, who was found dead in her habitat in December 2022. It was found in the necropsy that she had developed a large clot in one of the pulmonary arteries, which caused a collapse and her immediate death. In June, we lost two Humboldt penguins (*Spheniscus humboldti*) to foxes. On investigation, it was assumed that they had entered the site through an open gate during the day. In July, the female Lau banded iguana (*Brachylophus fasciatus*) received wounds to the neck and back area from the male's mating behaviour. We immediately removed the female from the habitat; however, she succumbed to her wounds not long after. In Zoorassic World, Sid the garter snake (*Thamnophis sirtalis*) displayed extending flaccid paresis resulting in a physical disability. This reduced his range of motion and led to a general decrease in his health, triggering an end-of-life assessment that resulted in euthanasia. Physical issues were reported in one of the green crested lizards (*Bronchocelea cristatella*) with a definite loss of motor control of the two hind legs. The animal was euthanised on welfare grounds.

Highly Pathogenic Avian Influenza (HPAI) continues to be a cause for concern. In April, the government's Avian Influenza housing order for poultry and other birds, in place during the winter, was lifted, but mandatory biosecurity measures remained in force for all birds.

While Dublin Zoo had decided to vaccinate our birds and leave most species in their habitats when the housing order was in place last year, we nevertheless had to move a few species inside, such as our Indian peafowl (*Pavo cristatus*) and our runner ducks for the duration of the order. During the summer, a 12-year-old Chilean flamingo (*Phoenicopterus chilensis*) died, and the postmortem confirmed a finding of HPAI; however, the postmortem also confirmed a different cause of death that was not viral. The Department of Agriculture's pathologists considered the HPAI to be incidental. As the disease was in a captive bird flock, it did not impact on Ireland's disease status for poultry exports and the flock did not need to be culled in its entirety as would be the case for poultry. The group samples we collected under the supervision of the department all returned negative. Dublin Zoo vet Frank O'Sullivan attended an Avian Influenza workshop in England, organised by BIAZA, which was also attended by staff from the Department of Agriculture. Information from the workshop helped us in our own case management and in discussions with the department. In October, all of Dublin Zoo's birds were given a booster vaccination; keepers from all of the animal sections helped with the vaccination of our flock of 98 Chilean flamingos.

The house in the Bornean orangutan (*Pongo pygmaeus*) habitat was fitted with straps from ceiling to floor to promote vertical locomotion and physical activity. Refresh harness training for the Animal Care Team was undertaken to allow them to access the roof in order to deliver roof feedings and enrichment. During the summer, we altered one of the main hatches in the grey wolf (*Canis lupus*

lupus) habitat to facilitate keeper management of the pack. The Far Side team worked with the wolves to desensitise them to the movement of the gate.

Several animals were subject to focal welfare assessments (FWA), a tool which has been developed so that the Animal Care Team can monitor individual animals through the five domains of animal welfare and give them special attention. The animals in question included 63-year-old chimpanzee (*Pan troglodytes*) Betty, who is on an FWA due to her advanced age. Particular attention was given to her eating habits and diet, but she is moving and behaving normally for an ageing chimpanzee. Advice on the geriatric care of chimpanzees is being shared by the TAG. Female Amur tiger (*Panthera tigris altaica*) Tundra is subject to a FWA due to her ongoing treatment for epilepsy. Her medication was altered and the Animal Care Team placed food around the habitat to check her responses and her sense of smell. By November, her condition was much improved and no hypersensitivity reactions or seizure-like episodes have been observed since. Regular FWAs were performed on female Sulawesi-crested macaque (*Macaca nigra*) Tabatha. Her colopexy surgery to correct her rectal prolapse was a success and she is thriving. She appears a little slower than her younger conspecifics, but this is probably due to her age.

In April, we welcomed Marc Enderby as Assistant Curator, a new position to support the Animal Care Team. He was Park Manager at Manor Wildlife Park near Tenby in Wales, and before that he was at Highland Wildlife Park in Scotland. Marc is the EEP Coordinator for the grey wolf and he brought this programme with him to Dublin Zoo.



SIGNIFICANT VETERINARY PROCEDURES

In February, Emer Lenihan, veterinary ophthalmologist, visited the Zoo, conducted a veterinary workshop on common eye emergencies and examined some of our ongoing eye cases. In spring, the Veterinary Council of Ireland carried out an inspection in relation to the licensing of our veterinary facilities; the inspection was passed successfully. We also had an inspection by a radiological engineer in preparation for Radiological Institute certification, which was received.



This year, several interesting veterinary procedures were carried out by our Veterinary Team, sometimes assisted by national and international specialists, to whom we are grateful for their support. Our newly acquired veterinary kit – digital and dental x-rays, ultrasound machine, and anaesthesia monitor – were all put to good use. In May, we undertook a planned surgical procedure to treat an acute dental abscess in male California sea lion (*Zalophus californianus*) Kobe. It was noticed that Kobe had a lump under his right jaw and had evidence of pulp cavity

exposure in both of his lower canine teeth. The dental procedure took place under general anaesthesia– the first ever sea lion anaesthesia in Dublin Zoo's history. As anaesthetising marine mammals is very complex and requires specialist knowledge, experts Claire Simeone and Shawn Johnson from Sea Change Health, Valencia, Spain, had an advisory role in the procedure. Kobe had multiple tooth extractions carried out on the day, including a very lengthy canine extraction. Prior to the procedure, the Near Side Team crate-trained Kobe, which allowed our Veterinary Team and veterinary dentist Dr Nora Schwitzer, with the assistance of specialists from UCD, to carry out their work promptly and efficiently. Kobe recovered well. In September, a further dental procedure was carried out on Kobe. The vets removed a number of incisors and premolars by both closed and surgical extraction. The removal of the canine took approximately an hour and a half, including breaking down the periodontal ligament with dental elevators, and an alveolectomy was performed, followed by use of a bone graft. He was separated from the group for a few days while he recovered.

In May also, an emergency procedure was carried out on young male gorilla (*Gorilla gorilla gorilla*) Kivuli. He had been observed by keepers to have a large facial swelling and was unable to feed as normal. He was anaesthetised to enable diagnostics and for a full oral exam to be performed by Nora Schwitzer. It emerged that he had a chip to the upper left canine, resulting in a tooth root abscess. This tooth, along with a second root fragment, was removed via closed extraction. Repeat antibiotic and pain relief was given by injection. We also used this opportunity to do a full examination of Kivuli, including

blood sampling and x-rays. He recovered quickly. In a follow-up procedure in August, Kivuli was castrated on the recommendation of the EEP, and his teeth were checked once more. All appeared well but it is suspected he will need a filling in a potential cavity when he is around 12 years of age.

In September, the African Plains Team and the Veterinary Team successfully undertook the challenging task of sedating two of our southern white rhinos, Zanta and Reni. The teams were joined by specialist vets from Berlin. Elderly female Reni was found to have kidney disease and ovarian cysts. One of her molars was also removed during the procedure. Zanta had a reproductive assessment carried out. Unhealthy uterine endometrium with cystic structures was visible, as well as cystic structures in both ovaries. The pathology found makes it extremely unlikely she will ever conceive.

Other veterinary procedures, all with successful outcomes, included a standing sedation for female okapi (*Okapia johnstoni*) Lumara to facilitate an x-ray examination of the left foot by the farrier and the Veterinary Team with UCD equine specialist Clodagh Kearney; the lesion observed was revealed as an abscess and drained by the farrier. The three female Asian lions were immobilised for contraceptive implant placement; the procedure ran very efficiently, and all recovered well. Male Burmese python (*Python bivittatus*) Brian had the distal part of his tail amputated as a result of a chronic bone infection affecting the last two vertebrae; the surgery went well and bloods taken revealed no abnormalities with organ function. A garter snake was anaesthetised for removal of two impacted and abnormal scent glands; his

prolapsed hemipenis was also removed at the same time. Male white-naped mangabey Danso and female Monifa were anaesthetised for dental procedures and health checks; both animals had a number of teeth extracted due to fractures. Female grey wolf Paulina was implanted with Suprelorin, a contraceptive, to prevent her from coming into the prolonged oestrus that was observed by the Animal Care Team and was the reason for the males fighting; this has worked well, and we have not observed any fighting since. And finally, male Rothschild's giraffe Tafari was darted for chemical castration; the system seems to have worked well so far since its implementation a few years ago; the group is being restructured to allow breeding again in the future.



Dublin Zoo vet Niamh McGill received her MSc in Conservation Medicine from Edinburgh University in November, graduating with a distinction.

(Above) Okapi hoof x-ray examination

ZOO LICENCE

The annual zoo licence inspection was conducted by the National Parks and Wildlife Service (NPWS) in April. The inspection report contained six licence conditions and four recommendations, which were discussed with the Ethics Committee at their subsequent meeting. All six conditions were discharged within the 28-day appeal period, so that none appeared on the new licence (although there will be one or two carried over from previous inspections that are still within the assigned timeframe). This year's inspection put particular emphasis on conservation and research, and the inspectors congratulated the Zoo on its work in this regard. It also stated that, with regard to the Discovery & Learning Department,

"The facilities, education programme and team were outstanding. There is clear passion in this department for not only providing the basics of zoo education to children and adult visitors, but also extending this to social action campaigns and educating school teachers. The inspectors were very impressed with the infectious enthusiasm and passion exhibited by the Head of Discovery and Learning."

In January, we received the NPWS report following the special zoo inspection that was prompted by a series of animal welfare allegations made anonymously against Dublin Zoo via a protected disclosure. The report was very comprehensive (252 pages long) and went into much detail on each of the 23 cases that were investigated by the NPWS inspectors. It put Dublin Zoo's animal welfare and veterinary programmes in a very positive light. The report acknowledged that Dublin Zoo is a well-run organisation with passionate and highly dedicated staff, that animal health and welfare are at the very heart of

everything we do, and that we are constantly striving to improve and be the best we can. Dublin Zoo continues to treat with utmost sensitivity and seriousness issues raised by members of staff, volunteers, or by anyone else working for or with us, whether about animal welfare or any other matter of concern.



(Above) Gorilla Rainforest

HORTICULTURE

Throughout the year, the Horticulture Team managed the seasonal tasks required to keep the gardens in good order. Early in the year, as regular winter jobs were carried out, weeding went on for some additional weeks due to relatively high temperatures. The team also worked with the derig of the Wild Lights displays. In spring and early summer, planting along the North Road habitats was completed. The manure heap in the African Plains was managed well, and the first annual cycle since the new bay was built and the new management system was put in place was completed. New beds were planted up in the staff car park and in front of the lion habitat. Late in summer, the team undertook tree management and improved visibility on the various island habitats. This was followed by the management of the autumnal leaves on the paths.

The Horticulture Team's major undertaking in 2023 was the creation of the new Conservation Garden in front of Society House, now the Centre for Species Survival (CSS). The remit was to plant a garden that would complement the Centre for Species Survival and reflect its national and international role. At the design and planning stages, retired Dublin Zoo horticulture curator, Stephen Butler, provided advice and assistance. The garden itself comprises a number of elements to display different habitats: native woodland and native wildflower meadow; mixed herbaceous plants, shrubs and trees; and many exotics to highlight the international aspect of the garden. Pollinators feature prominently, and a bee bank of soil for solitary mining bees was created. The wildlife pond in the Conservation Garden is designed to attract biodiversity. A mixed native species hedge was planted, highlighting the crucial role in biodiversity that hedgerows play in the Irish landscape.

Plants were selected with specific reference to their conservation value and because many are threatened or even extinct in the wild. Plants such as the Corncockle (*Agrostemma githago*), which is extinct in the wild in Ireland, and the Monkey Puzzle (*Araucaria arucana*), which is vulnerable in Argentina and rare in Chile, illustrate how critical the situation is in many diverse habitats and the important role the CSS can play in highlighting and conserving them. A number of Irish heritage plants were also selected. These are plants that have a specific link to Ireland, for example seedlings that were first found or grown in Ireland, or plant 'sports' (mutations) that were grown in Irish nurseries. Many of these have fallen out of cultivation. There is a concerted plan by the Irish Garden Plant Society to conserve these old varieties and, through our Conservation Garden, Dublin Zoo is playing its part in conserving these plants.



(Above) Conservation Garden at the Centre of Species Survival - Ireland

VISITOR OPERATIONS

The overall performance in our retail outlets in 2023 was remarkably strong, considering that our visitation figures were down due to adverse weather during the key summer months. This year, in line with our 10-year strategic vision, we created a new Visitor Operations Department to bring together responsibility for all visitor services, which were previously spread across a number of departments. These include the ticketing function, Wild Lights customer services, enquiries and visitor comments. The new department has the authority to make operational requests relating to the visitor experience to other Zoo departments, and to liaise with our catering provider and

other contractors. Visitor Operations comprises of staff from the previous Retail and Visitor Services Department and, while there were some internal promotions, there has not been an increase in head count. Mark Bowes, who joined the Retail and Visitor Services team as manager in 2007, was appointed first Head of Visitor Operations in July.

With approximately forty-two percent of our tickets now sold online, an outcome of the Covid pandemic, we moved the ticket office from the extensive ticket sales window to the former group entrance. This left an empty



gap, which the Retail Team filled with themed product displays visible from outside the Zoo. The displays showcase the range of items for sale in our shops, together with information highlighting products such as re-pets, which are made from 100% recycled plastic bottles, and identifying the Zoo's sustainability achievements. The Annual Pass office by the current ticket sales office was converted to a Visitor Services office with a public desk; the office handles information and general zoo enquiries, manages lost and found items, and organises the rental of our new mobility scooters. A new Retail storage area was created adjacent to the Admin Building.

In February, Mark Bowes and two members of his team visited the International Toy Fair in Nuremberg, Germany, to source new brands and potential partnerships, particularly with regard to sustainable products and bespoke Dublin Zoo merchandise. Arising from the fair, new products arrived in time for the busy season, and these included plush and other toys from Wild Republic, plush toys made with recycled materials from Aurora, and bracelets from Fahlo. The Fahlo bracelets are proving particularly popular; aimed at teenagers, each bracelet comes with a QR code which, when scanned, connects the purchaser to an app that tracks specific animals in conjunction with one of several wildlife organisations.

In preparation for Wild Lights, the Visitor Operations Team continued to work closely with our merchandise brands to design and source new products for the season. The range included bespoke products, branded products, as well as a range of products incorporating this year's theme 'The Enchanted Zoo'. Our festive range was available to purchase from the main gift shop and from three wooden

cabins located onsite for the duration of Wild Lights. In January, the Visitor Operations and Marketing teams prepared and delivered the first-ever Wild Lights Sensory Night, specifically welcoming neurodiverse children and adults with their families. This was inspired by a family who visits the Zoo regularly and is well known to the Visitor Operations team at the gate. Detailed planning went into it; we deliberately had a much-reduced visitor number that night, lowered the volume of the music, and provided a sensory map and some quiet spaces. Over 600 visitors made use of this offer, thus making it a great success. We held another Sensory Night in November for the new season and, again, we had many happy visitors. The value of this night was summed up in a letter we received from Grainne Lynch, whose son Cormac is autistic, and who kindly helped us with the initial idea and set-up of the sensory-friendly night; with her permission we have reproduced extracts from her letter.

CATERING

Our catering partner, Baxter Storey Ireland, continued to provide catering services throughout the year. These included the Meerkat Restaurant, the Cove Chicken Hut, HB at Cove, Picnic Bench, Wuuf Truck, Sophia's Ice Cream Parlour, Starbucks in the Nakuru Café, Okapi Hut and Wild Burger, as well as seasonal kiosks.

Representatives from Baxter Storey contributed to ongoing discussions to alter some existing food outlets with the aim of making Dublin Zoo more of an all-weather attraction. The focus is currently on developing The Cove catering facilities in 2024 and moving the main park restaurant to the African Plains in 2025/26.

SENSORY FRIENDLY WILD LIGHTS, by Grainne Lynch

Last night, I danced with my son. He's 20 years old, he's 6ft 4, and he happens to be autistic. We often dance at home in a fun way, but this time was special. Last night, Dublin Zoo produced the first Sensory Friendly Wild Lights experience. To be part of this amazing night and to share it with my husband and son was more powerful than most people could imagine.

Thousands of families have enjoyed the Wild Lights every year. Last night, we experienced the same light show, the same beautiful music and the same food outlets. Every member of staff including Zoo, Event, Health & Safety, Security, volunteers present understood that we needed a calmer experience. What was not said or referred to was any kind of diagnosis/ disability. Because this was about welcoming everyone for whom society is just too much to handle. There were families who had one or several members for whom an evening out has been impossible for

years. There were people with visible and hidden disabilities. There were people who just wanted to be there.

The most noticeable successes of the night were the smiles, the relaxed parents and people just absorbed in the moment. There was no feeling of judgement. There was no need to explain if anyone behaved in a different way. Everyone experienced it in their own unique way. For those like ourselves, the security of all of the above put us in a relaxed mode, which passed on to our son. We witnessed an amazing process happen.

Most of our days at present are spent at home. Acute anxiety means that, currently, we have virtually no contact with the outside world. It seems that it's just too much. The one place we feel secure is Dublin Zoo. Since our son was a tiny baby, it's been our special place, a place of security, a welcoming place, where we have always felt understood and accepted



just for who we were. When Mark Bowes said to me that the Zoo would love to open the gates to other families like ours to enjoy Wild Lights, I was delighted to be of any help that I could. Fast forward a few weeks, we, along with 600 other people wandered with a freedom and contentment we have seldom experienced before. There was a secret language between those present, an unwritten code, a smile, a nod, an acknowledgement that we walk the same path. In this place and at this time, we belonged and we counted.

Our son, who suffers acute anxiety in public, spoke to staff, bought his popcorn and chose presents for his cousins at the stall. All this with a confidence that only happens when someone knows they will not be mocked or teased for being different. He wandered (didn't need to run) and enjoyed every minute. He was so chuffed with himself because he knew he had achieved so many personal goals.

The significance of the blanket is the guide as to how anxious our son is about his surroundings. He uses a big animal print blanket to protect him from any surprise interaction or assaults to his senses. Last night, he handed me the blanket as we entered the zoo. He knew he was among friends and his own 'tribe'. Last night, the blanket was surplus to requirement. 'The Magic Dance' happened at the end of our walk, when he ran over to me, hugged me, saying 'This is wonderful Mam'. We danced right there as the lights on the Coral Island illuminated the smiles all around us, and all we felt was a sense of gratitude for this wonderful occasion and pride in our son.

Thank you to everyone who made this happen.
Grainne, Declan and Cormac Lynch



FACILITIES

General works carried out by the Facilities Department in 2023 included changes to the staff car park to provide a significant number of additional car parking spaces and to improve staff and visitor safety. The two macaque islands were refurbished with climbing structures for the animals and a new bridge connecting the islands. Wider bridges were installed from the macaque houses to each island to allow easier keeper access for cleaning and to support enrichment for the animals. In the African Savanna, path surfacing with coloured concrete and fence repairs commenced in 2022 and were completed in 2023 before the height of the summer season; the Horticulture Team planted the verges, and these improvements, which were required for safety reasons, have given the area a more immersive feel; this was the first time that we used low-carbon concrete in any project. New houses for the bongos and African wild dogs were completed and the areas newly planted; the two species are now on show to our visitors even in inclement weather, and we have added two new visitor viewing shelters as we work towards becoming an all-weather zoo. A new office was built on the ground floor of the Reception Building for the

recently appointed assistant curator; this allows the senior animal team to function as a coherent unit. Modifications were made to the gorilla house to satisfy the requirements of the zoo licence inspection. Arising from the inspection, also, the Burmese python habitat was refurbished to provide longer surfaces for the reptiles to stretch out and create more accessible hotspots to warm up. The citron-crested cockatoos (*Cacatua sulphurea citrinocristata*) habitat was refurbished and a concrete base added to prevent rodents from entering and predated the eggs. As mentioned elsewhere, the old ticket office was converted to a window display for Visitor Operations, and the Annual Pass office was converted to a Visitor Services office.

Routine tasks included decommissioning Wild Lights, removing all installations and returning the site to normal day operations; preparing all of the playgrounds, and cleaning the roads and picnic areas in preparation for the new season in spring. A plan was created in order to schedule the painting of high traffic areas such as the toilets, front of house, handrails and ground markings.



PARKING

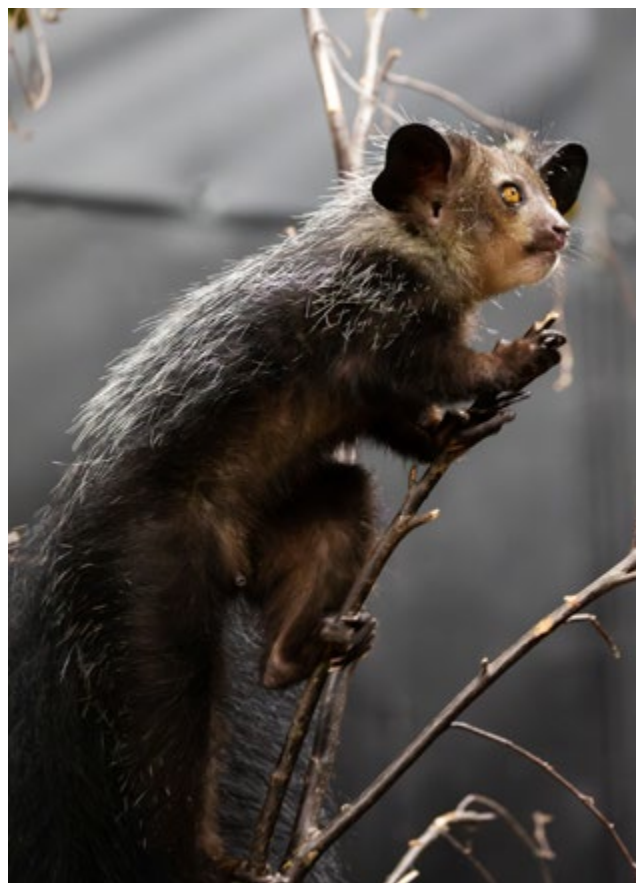
In April, the OPW published its Draft Parking Strategy for the Phoenix Park and launched a public consultation. Dublin Zoo submitted a response to the draft strategy in close consultation with our PR agency, Teneo. A new bus service, the number 99, running from Heuston Station to the Phoenix Park Visitor Centre with a stop at Dublin Zoo was launched in October. It is scheduled to run, on average, every 30 minutes, seven days a week from 8.30am to 6.30pm. Set up specifically to service Phoenix Park, the bus service aims to reduce private car usage, enhance sustainable transportation modes for visitors and commuters, and minimize the impact of vehicles on the park and its surroundings. The Zoo promotes the new bus as a sustainable option for travelling to and from Dublin Zoo

SUSTAINABILITY

The Dublin Zoo Sustainability Master Plan was approved at the September meeting of the Zoological Society of Ireland Board and is available in print and online on the Dublin Zoo website. Implementation started with the establishment of the Dublin Zoo Sustainability Team, chaired by consultant John Barcroft. Several projects got underway, including research into the installation of solar panels on a number of south-facing roofs to feed into Dublin Zoo's electrical infrastructure, and acquiring a Building Management System to monitor our consumption of resources and improve energy efficiency. Sustainability considerations are now a key part of design team meetings for all of the Zoo's capital projects. For the new restaurant scheduled for 2025, for example, the objective will be to achieve the equivalent of the LEED (Leadership in Energy and Environmental Design) Silver certification standard. Sustainability will also be a key

issue in replacing all equipment.

In November, the newly established Health, Safety and Sustainability Sub-Committee of the Board met for the first time. Membership includes the director, facilities manager, the Zoo's health & safety and sustainability consultants, as well as three members of the Board. The sub-committee works through relevant issues in detail before bringing them to the general Board meeting for resolution.



(Above) Aye-aye

HEALTH AND SAFETY

Many of the original safety policy documents date back to 2007 but, with advances in technology and revised safe working procedures, most policies have been reviewed and updated. During the year, this process continued, and updated policies in 2023 included those on Traffic Management, Playground Inspection and the Internal Driving policy. There are several different types of vehicles used within Dublin Zoo, including tractors, electric buggies and elevating platforms, all of which require various levels of driving skills. A comprehensive study of the demographics and the level of driver experience was undertaken. The new Internal Driving policy was extensively updated to take into account amendments to regulations, safety standards and state of the art technology; it specifies, among other features, speed controls, minimum levels of driver qualification, and training.

New policies are based on risk assessments being carried out on specific activities. This year, we assessed health and safety issues concerning experienced and qualified staff carrying out diving procedures in and around the sea lion pool for filter and other maintenance procedures; arising from this, a new Waterway Diving Policy was written.

A health and safety review of the new rhino house was carried out along with testing the many different types of gates in habitats across the entire Dublin Zoo site. The gates that present the greatest challenges are those operated remotely using a series of steel wires and pullies, which, due to factors such as the weather and, in the case of Sea Lion Cove, the salt water environment, can become difficult to operate over time. Consequently, regular

checks are required, leading to increased maintenance, which results in less strain on the keepers. In some cases, original components were replaced with a new design, including materials more suited to the environment.

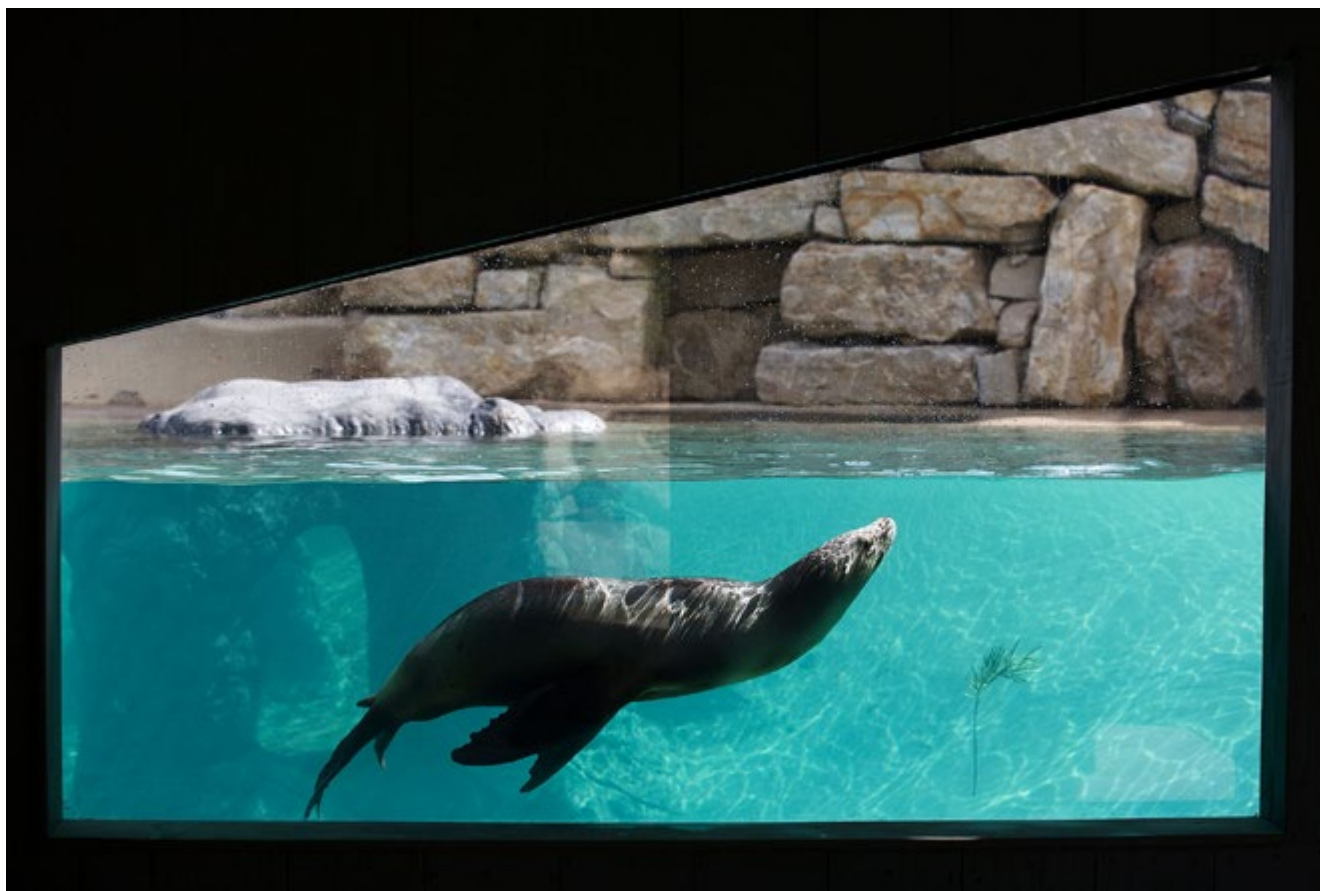
Health and safety related training continues on a regular basis, and several procedures were reviewed. Health and safety consultant, John Munro, and Brandon Agencies, evaluated new equipment for working at heights around the Zoo. The first such system to be assessed and installed was at the Bornean orangutan habitat, where the Far Side Team was trained to access the roof to provide various enrichment procedures. Other health and safety activities included the risk assessments of various machines and the subsequent training of staff in their safe use of machines such as the woodchipper. Risk assessments were carried out for student handling of animals in education sessions and for visitor behind-the-scenes animal experiences. A fire risk assessment was undertaken for the Meerkat Restaurant. Multiple health and safety training sessions



(Above) Roof of Bornean orangutan house

took place as required, including training in first aid, fire safety, manual handling, management of confined spaces, scaffolding inspection training, mobile elevated work platforms training, safe knife handling training, forklift training, tractor training, giant machine, fall arrest systems training, powered pole pruners training, food handling training and a fish quality workshop with Professor Orla Cahill of Technological University Dublin.

In July, an unannounced Health and Safety Authority inspection took place, which led to a report being issued identifying a few areas the inspector considered may require additional attention. A response was submitted to address these points along with plans for implementation of amended policies where applicable. All the points raised were addressed with the inspector resulting in no additional visit required, and we continue to have a healthy relationship with the authority.



(Above) Sea Lion Cove viewing area

HUMAN RESOURCES

Dublin Zoo's Staff Development Fund received applications for a second year in 2023. We received 10 applications from staff across four different departments, all of which were approved by the panel. The total amount awarded was just over €18,950, plus some additional leave days to allow people to travel to various conferences. Examples of development activities for which funding was granted included a member of the Animal Care Team undertaking a MSc in Animal Behaviour and Welfare through Askham Bryan College, York, UK, and another member of the team attending a Zoo Nutrition Course in the Smithsonian National Zoo in Washington DC, USA. Other successful applicants who pursued a training development using the Staff Development Fund in 2023 included a new supervisor who was given assertiveness training; an elephant keeper who visited Chester Zoo to observe the training with their elephant herd, see their enrichment programme and

examine their habitat topography and maintenance; and a member of the Discovery & Learning Team, who was awarded funding to pursue the postgraduate certificate in Conservation and Sustainability Education in the University of Chester, which links directly with Dublin Zoo's new Conservation Education Master Plan.

Quarterly all-staff meetings were held during the year. At the December meeting, long service awards were given to staff who have 5, 10, 15, 20, 25, 30 and 35 years of service. In January, a staff survey took place and meetings were held with all senior managers to analyse and discuss the staff survey results. Managers were asked to complete detailed plans of action for their individual departments. The Employee Wellness and Social Group (EWSG) organised several visits to the Guinness Store House and to Emerald Park as part of our staff social calendar and ensured that as many staff as possible could participate.



DISCOVERY & LEARNING

This year, a total of 64,882 bookings were made through the department. This was a four percent drop on 2022 but a six percent rise on 2019, the most recent unrestricted year. 29,862 learners attended formal and informal education programmes, a rise of one percent on 2022 and 15 percent on 2019. The group bookings attracted a total of 35,020 learners; this was a drop of eight percent on 2022 and level with 2019. While learner numbers in 2023 were four percent lower than in the previous year, this was a good result given the reduction in overall Zoo visitation due to poor weather. The high number of programme bookings in the first half of the year was an excellent result which was helped by a well organised recruitment plan to cover the busy primary and secondary schools season.



In June, Dublin Zoo's first ever Conservation Education Master Plan 2023-2031 was officially launched in the presence of Minister Roderic O'Gorman TD. The Conservation Education Master Plan contributes to Dublin Zoo's mission to save wildlife by developing activities aimed at cultivating the next generation of conservationists. The plan prioritises increasing

conservation education opportunities for learners from a variety of socioeconomic backgrounds and those with additional needs, as well as creating a Youth Board to engage teenagers and young adults in conservation education. The plan attracted great interest from members of the international zoo community and is being used as an example of best practice by colleagues in other zoos. Head of Discovery & Learning Aileen Tennant was elected onto the Board of the International Zoo Educators Association (IZE) as the representative for Europe and the Middle East.

During the year, a Social Action Committee was formed with members from all departments across the Zoo, with the Discovery & Learning Department playing a major role. The committee will work on three campaigns to inspire our visitors to choose pro-environmental behaviours that will make a difference to wildlife and the planet. This will involve behaviour change training and identifying social action campaigns. Consultant Simon Garrett, previously head of public engagement at Bristol Zoological Society, delivered workshops with the Social Action Committee to prepare the team to identify the human behaviours that are negatively impacting wildlife and to identify the message, action and campaign we choose to work on in 2024.

The popular Parent & Toddler workshops took place every second Wednesday morning during the spring and autumn terms, with 660 toddlers and their parents or guardians in attendance. The purpose is to engage preschool children with nature to promote confidence, knowledge and a connection with wildlife as they get older; this is linked to the priorities of our Conservation

(Above) Dr Christoph Schwitzer, Minister Roderic O'Gorman TD, and Aileen Tennant at the launch of the Conservation Education Master Plan

Education Master Plan by providing access to conservation education to all ages and engaging the wider Dublin Zoo community with conservation education. It is also a social occasion for both adults and children. In 2023, each week had a different theme, such as native animals, birds, elephants, winter animals, and a fancy-dress Halloween workshop. In autumn, Zoo educator Vince Claire Damicog developed the learning programme to include more nature-based sensory activities such as nest-building and leaf rubbings for the children as well as different activities to engage the regular attendees; these included stories, crafts, nature-based sensory activities, exploring biofacts, preparing enrichment for animals, and visits to habitats. Dublin Zoo volunteers provided invaluable support to the Discovery & Learning staff, as did the Family Farm Animal Care Team, who provided the resources to allow toddlers to prepare enrichment for the farm animals – a highlight of each workshop.

Our formal education programmes at primary level included Dinosaur Explorer, African Adventurer and Rainforest Ranger. Meanwhile, interest in virtual programmes for primary school level such as Animal Adaptations, Champions for Conservation and sessions during Engineers Week fell in 2023, a trend that was widely seen across the informal education sector.

Two new formal programmes directly linked to the secondary level school curriculum were launched; these were 'Applied Genetics', a programme for senior cycle students, and 'Introduction to Genetics', a programme for transition and fifth year students. Both programmes are linked to the Senior Cycle Biology curriculum and were developed in conjunction with a panel of secondary



(Above) Primary school children in the Discovery and Learning Centre

school biology teachers. Our popular Sustainability programme for secondary schools was diversified into three themes – fast fashion, technology, and food choices - in response to requests from subject teachers. The purpose of the re-design was to deliver more focused themes and to provide a wider offering for teachers of science, home economics and materials technology. This diversification also allows us to delve deeper into the impact of unsustainable consumption practices on habitats and wildlife, and to offer solutions to support conservation. Our Junior Cycle Ecology field work sessions achieved the highest booking level in many years, with 1,918 students participating. Leaving Certificate Ecology also saw growth, with 4,870 students participating. Our revamped Evolution programme saw bumper bookings, with 730 students attending, over double the bookings of 2022.

In November this year, we switched our informal Science Week 2023 programme to a four-day on-site event after two years of virtual activities. The ‘Meet the Conservationists’ event was designed to engage secondary school students with the topic of wildlife conservation from various perspectives. The event marked the opening of the Centre for Species Survival (CSS) and showcased the important conservation work that will take place in that venue. Bite-size talks were delivered by the Conservation & Science Team and the Discovery & Learning Team, as well as Irish conservation partners Birdwatch Ireland and Kildare Wildlife Rescue. Despite Storm Debi impacting the first day of Science Week, resulting in school closures, the event still proved a huge success, with 894 teachers and students attending the event. An additional 597 students attended Zoo-teacher-led learning programmes on the same days, and

these students were also given the opportunity to take part in Science Week activities. The response was very enthusiastic; one teacher wrote, ‘I just wanted to thank you for organising the science week events at the Zoo this week. Our students had a fantastic time yesterday. Our teachers also enjoyed it very much. Please pass on our thanks to all the staff, in particular the volunteers who were available at all the different locations. They were really approachable, knowledgeable, and fantastic at answering myriad questions.’

Formal education programmes at third level included QQI Further Education, with 1,268 level five and six students attending third-level programmes such as Animal Behaviour, Big Cats & Wild Dogs, and Conservation and Ecology.

This year, there was a strong return to the numbers participating in informal programmes due to the increase in our Dino Discovery family sessions offered at weekends and during school holidays. 1,175 children and their family members attended these sessions, which was triple the numbers attending in 2022. This was due to increasing the number of workshops run on a Saturday to meet demand. Our very popular summer camps took place from 17 July to 11 August. All spaces were fully booked, and the positive feedback from parents and guardians was particularly high this year. Instead of the usual fifth week of summer camp, we rolled out 21 Dino Discovery Family and Kids-only sessions across the last two weeks of the summer holidays; 415 adults and children attended across the two weeks.

The group bookings category covers a wide range

of visitors, including students at every level on self-guided visits, social groups, as well as additional needs groups and groups visiting from the children's hospitals. Preschool group bookings increased, as well as bookings from charity and at-risk groups. The weather had an impact on the traditional primary school self-guided visits, and there was a 33% drop in the numbers visiting in June, compared to the same period last year. However, in May, large numbers of secondary school groups arrived in self-guided groups to make the most of the sun and the sense of freedom at the end of the school year. The Discovery & Learning Team coordinated these groups, with volunteers hosting meet-and-greet stations at the front gate and at learning hotspots around the Zoo.



In February, Discovery & Learning Manager Niamh Potter and Team Lead Kelly Mara delivered a STEAM workshop 'Conservationists of the Future' with BIAZA peers to the Junior Cycle teachers who booked the workshop. Meanwhile, the team rewrote our extremely popular Primary Teachers Summer Course programme in preparation for the delivery to 75 participants from 4 to 8 July 2023. The course, entitled 'Cultivating the Next Generation of Conservationists', reflects the commitments and priorities set out in our Conservation Education

Master Plan and the national priorities of the Education for Sustainable Development policy published by the Department of Education and Skills. The specific subject areas chosen overlapped with conservation education topics such as environmental sustainability, domestic and global conservation, and climate change education. The course was approved by Drumcondra Education Centre without any amendments. Significant improvement was seen between the pre- and post-evaluation with regard to the teachers' knowledge, confidence in the subject areas and outdoor learning skills. In November, Niamh Potter delivered a sustainability workshop at the BIAZA Conservation Education Conference. This was to showcase innovative methods of delivering conservation and sustainability education. The workshop methodologies followed an 'escape room' format, where participants had to unlock answers or key information at each stage of the workshop before they could progress to the next task. The session was booked to capacity. Since the workshop, members of the BIAZA network have been in touch with Dublin Zoo to use this innovative education resource.

The Discovery & Learning Team were very pleased to recommence their local community engagement programme, an afterschool programme for residents of Willow Grove, the adolescent residential unit in St Patricks Mental Health Services in Kilmmainham. The module content looked at themes of caring for animals or pets, nature connection activities for mental health, and other conservation-related themes. In October, a new after-school initiative commenced with local community group ClcikIn, who work with inner city secondary schools to encourage students to complete their secondary schooling and to seek opportunities to progress into third-

level education. The new four-week programme, designed by the Discovery & Learning Department, focuses on various animal care and conservation-based jobs, and liaises with Dublin Zoo staff members to discuss their own route to their career. A month earlier, three inner-city students who had recently completed their Leaving Certificate and had a particular interest in wildlife and animal care, participated in a bespoke careers talk with Dublin Zoo Educator Feidhlim Dockrell and Zookeeper Bri Walsh, with the support of ClklIn.

The Discovery & Learning Team members hosted a stand at the BT Young Scientist and Technology Exhibition in the RDS from 11 to 14 January. They ran a successful competition for teachers who attended the stand; the prize was a free class trip to the Zoo. Towards the end of the year, the team completed interpretation for the Centre for Species Survival, as well as for the African Wild Dog (*Lycaon pictus*) habitat and the Sulawesi crested macaque habitat.

On a June evening, we held the seventeenth iteration of Dreamnight for terminally ill children who are being cared for in Children's Hospital Ireland. Twenty-eight families arrived from CHI Crumlin and twenty-four families from CHI Temple Street and, in total, 254 adults and children joined us for the special night. Led by keeper Brendan Walsh and the Head of Discovery & Learning Aileen Tennant, as well as a Dreamnight organising committee, 106 volunteers from all departments in Dublin Zoo helped to prepare and then participate on the night of this very successful event. As in previous years, Baxter Storey kindly donated the catering. Since our last Dreamnight, our usual DJ, Derek (Mono) Monaghan, passed away, and his presence was greatly missed on the night. Since 2005, Derek was a key player in making the night a huge success, and to honour his tremendous contribution, we extended an invite to Derek's family to attend this year.



(Above) Educator Brandon Farrelly with a secondary school group

VOLUNTEERS

We started the year with 64 active volunteers, and this number grew during the summer season to 85 on our general duties roster and 10 volunteers supporting the summer camps. New fleeces for our volunteers were acquired; these are of higher quality and are a richer red colour than our previous fleeces. Volunteer Coordinator Noreen Fitzsimons and Head of Discovery & Learning Aileen Tennant prepared Welcome to the Troop, a handbook to assist in the induction process for new recruits. Applications for this year's programme drew a very enthusiastic response; an open day was held and the three-day training commenced. The programme was updated to ensure that strong public engagement skills were embedded amongst the team. In April, 31 volunteers graduated at our Volunteer Celebration Day ceremony; this was hosted at Dublin Zoo to celebrate the significant contribution of newly appointed and long-term members of the team. The summer camp volunteers, who support

the busy summer camp schedule in July and August, contributed an impressive 861 hours. This is the highest commitment rate we have had from these volunteers to date, and their feedback to us was very positive. Unfortunately, with multiple activities and requests for help from other departments, at times we had to limit the number of hours the Discovery Centre and the three SSE Discovery Carts were opened by volunteers.

During the year, the volunteers continued to support zoo visitors in the Discovery Centre, at the Discovery Carts and at pop-up stations around the Zoo. They delivered tours to groups, met visitors inside the main gate, addressed their queries, and advised on the times and locations of keeper talks. They also directed primary school self-guided groups to volunteer-led educational hotspots around the Zoo. In June, volunteers delivered a pop-up event called 'Rainforest Day' with games, learning



(Above) Volunteer Sonia with visitors at the opening of the Nocturnal House for aye-ayes

activities and biofacts at various stations around the Zoo. They organised and hosted Elephant Weekend in mid-August, with education stations, extra keeper talks and elephant-based arts and crafts. With the opening of the aye-aye habitat on 25 July, the volunteers assisted guests; they also delivered bespoke games, arts, craft activities and touch table displays for a special aye-aye weekend; supported animal care requests for observation of the animals in their new habitat; and supported the public who were visiting Dublin Zoo's first Nocturnal House in many years.

Savanna Safari took place on 24 and 25 September. This large event saw volunteers stationed at four huts throughout the African Plains, with various African-themed activities to engage visitors with conservation learning and fun crafts. The event was built on years of excellent resources developed by the volunteer team and was very successful. The team also used resources that had been originally developed for the World Chimpanzee Day in July but could not be fully utilised then because of very poor weather. World Animal Day was celebrated, with the volunteers organising a pop-up event in Zoorassic World; and International Sloth Day was celebrated with a pop-up event in the South American House on 21 October. At Halloween, volunteer-led events took place in the Farmhouse and in Zoorassic World. Over the Christmas holiday season, they delivered a public engagement activity called 'Santa's Silly Hat Trail', which engaged in excess of 850 children.

During Science Week 2023, volunteers delivered secondary-level engagement activities at habitats linked to our international conservation partnerships, including the

Orangutan Forest, the Nocturnal House, the Himalayan Hills and the Kaziranga Forest Trail. The aim was to inform secondary students about wildlife conservation from various perspectives and to mark the opening of the Centre for Species Survival. Excellent verbal and written feedback was shared from both schools and the visiting Irish conservation partners about the high standard of engagement and learning that took place at the volunteer stations. Volunteers also continued to support the teaching team with Ecology workshops throughout the school year.

The volunteers continue to create special memories for families facing challenging circumstances, with visits organised by Christine O'Connor in the Discovery & Learning Department. These included five Make-A-Wish Days, as well as a guided tour for the Make-A-Wish Ireland Team in September.



(Above) Volunteers Cian and Eleanor

MARKETING AND PUBLIC RELATIONS

2023 was another exciting year for the Dublin Zoo Marketing Team, with two major launches, some special new arrivals, a range of summer events and yet another successful Wild Lights. The arrival of the rhino calf was announced in February and received an impressive PR reach of 12.3 million, with a value of €163,779. The announcement landed coverage in all print media titles, with widespread coverage online and on radio news bulletins. Later that month, we partnered with 98FM and ran a weeklong rhino naming competition on their very popular breakfast show. As well as the on-air coverage, the campaign was heavily promoted on 98FM's social media channels. In March, to conclude the campaign, Helen Clarke did an interview with 98FM about the rhino herd at Dublin Zoo, the rhino calf and the Zoo's involvement in helping those who work for the survival of rhinos in the wild.

Several successful promotions were offered during the year. In February, we ran a 'Kids Go Free' promotion with Marks & Spencer's 'Sparks Loyalty Programme'. A highlight in May was a promotion for the Endangered Species Weekend, with online tickets offered at a 25% discount online for the weekend event. Also in May, the Marketing Team implemented a new email marketing strategy. This new strategy, which saw monthly e-newsletters being delivered to our entire database, gave us the opportunity to promote events, conservation projects, promotions, animal arrivals and births, as well as general Zoo news. The new strategy performed well, with consistent engagement on each campaign and strong audience growth.

The launch of the new Nocturnal House for aye-ayes in

July and the Centre for Species Survival (CSS) in Society House in November attracted extensive media coverage. The Nocturnal House achieved an unprecedented PR reach for the Zoo of over 30 million across print, broadcast and social media. A prominent picture of one of the aye-ayes appeared on the front page of the Irish Times. A week-long promotion also ran on Today FM, promoting the new habitat and competition giveaways. For the opening of the CSS, the director discussed Dublin Zoo's conservation work on radio and television. Other coverage included a very positive response to the release of the NPWS Special Inspection report in January, with many media outlets reporting that Dublin Zoo had been vindicated by the report.

Inclement weather in July prompted several successful marketing and promotional activities organised at short notice to promote footfall over the following months. In August, we ran events including a Dino Discovery Weekend, an elephant-themed weekend, a second SSE Eco Explorers Weekend and a Carnival Weekend. Effective marketing included press releases, competitions, influencer engagement, and video content on Instagram and Facebook.

The Marketing Team managed to secure a great opportunity for advertising in Dublin Airport to capture the tourist demographic. Dublin Zoo adverts ran on 15 aeropod screens within the arrivals section of Terminal 1. The ads ran for two advertising cycles - from 31 July until 13 August. We ran three variations of the ad to maximise our messaging and to showcase the diversity of species at Dublin Zoo. In September, a Golden Ticket competition was launched, offering four lifetime passes to Dublin



Zoo as the prize, one for each week of the month. Visitors to the Zoo could enter the free draw by answering a multiple-choice question. The novel promotion received widespread coverage across all media, including a great promotion from Ian Dempsey on his

Today FM breakfast show. The winners were announced across all of Dublin Zoo's social media channels. In September, also, Avonmore Soup ran a promotion as part of their 'Back to School' campaign. With the purchase of any Avonmore Soup carton, shoppers were given the chance to win annual passes to Dublin Zoo. Our branding appeared on in excess of 1 million Avonmore Soup cartons throughout the promotion, which was run at no cost to Dublin Zoo.



In October, the announcement of the birth of a new mangabey baby was accompanied by an offer of 50% off full-priced tickets for that same weekend. This announcement received widespread media coverage, and on Sunday 15 October we had our second-busiest day of the year, with a total of 9,590 visitors, a remarkable number for the time of year. In November, the Halloween

weekend event, which offered children dressed up in costume to go free to Dublin Zoo, was also a great success; Monday was the busiest day of the weekend, with 7,752 visitors.



This year saw our ongoing relationship with sponsors, SSE Airtricity, grow from strength to strength. Early in the year, we agreed on ways in which Dublin Zoo could amplify the partnership through our own channels, such as our e-newsletter, social media and website. By the end of 2023, we had delivered on all of these commitments. Throughout July and August, SSE Airtricity ran an advertising campaign to promote the 'Eco Explorers Club' and therefore drive awareness of the sustainability partnership with Dublin Zoo. The campaign featured the Dublin Zoo logo throughout and was great exposure for us and the partnership. The exclusive Roar and Snore competition returned in August, which again offered two lucky families the chance to win an overnight stay in Haughton House. Two SSE-Airtricity-sponsored Eco Explorers Weekends took place in June and August. During the August Eco Explorers Weekend, 'Pookie' was brought to life in a fully interactive live show, which

(Above) Terminal 1 Dublin Airport advertising
(Below) Creative for Avonmore Soup 'Back to School' promotion

(Above) SSE Eco Explorers Club advertising

included animation software and a live voiceover, allowing Pookie to speak directly with children in real time about sustainability. The events were a success, with a total of 24,900 visitors to Dublin Zoo over both weekends and 9,400 Eco Explorers Passports given out.

During the year, Dublin Zoo's digital content shifted towards short video pieces that touch on the full story of Dublin Zoo, from animal care to conservation efforts. The 'Elephant Pool Party' video created for social media, for example, had a reach of over two million, with 1.4 million views. The 'Halloween Fun' video was a top-performing post on Instagram in October – with 56,000 views and over 1,600 engagements. The 'Meet Our Conservation Interns' video was something new for our social media channels and had 22,000 views with 1,400 engagements. Based on the overall statistics, the audience is responding well to our new content styles, messaging and themes. By the end of 2023, we achieved a total of 494,750 social media followers, 12,857,029 social media reach and 961,688 social media engagements. We achieved a total of 62,399 newsletter sign ups, with an email open rate of 41%.

The Marketing Team won a Gold award at the BIAZA annual awards for 'Magic of Life', our 2022/23 Wild Lights show.

FUNDRAISING

In April, we engaged CCS Fundraising to help us fundraise €1.5 million for the construction of the Irish native species habitats. As this approach has not been used by the Zoo in recent times, it is a trial for a larger capital campaign.

It is also a way to future-proof our philanthropic fundraising and start building up an in-house fundraising resource with the help of CCS. Initially, the focus was on creating a compelling case for support that underscores the significance of these habitats in conserving and celebrating Ireland's native wildlife. In November, we held a special event for corporate bodies during Wild Lights.

WILD LIGHTS AT DUBLIN ZOO



Wild Lights had a very successful run in 2022-23. A post-event survey received nearly 13,000 responses, with 50% of respondents saying they had visited Wild Lights previously, of which 43% had visited twice before and 28% three times. 'The Enchanted Zoo' was the theme for the 2023-24 event, focussing on the magical and mythological secret life of the Zoo at night. Throughout the journey along each pathway, visitors encountered brightly lit fairies, mythical creatures, vibrantly coloured animals, a gnome village and even a dreamlike Candyland. The objective of 'The Enchanted Zoo' was

(Above) 'The Enchanted Zoo' Wild Lights event promotional image

to deliver an immersive experience that created a sense of magic through the silk lanterns and music. Part of that objective was to lure back visitors who may not have visited for several years, and in turn to excite attendees with new elements that would generate conversation. With this in mind, for the first time, this year's festival included a spectacular video projection onto a water feature in the lower lake.

Arising from the debrief at the end of the 2022-23 event, we reverted to the two-way route for the 2023-24 event. Due to projected building works in the African Plains, 'The Enchanted Zoo' only took place in the lower Zoo, as had been the case for all Wild Lights events prior to the Covid pandemic. By mid-year, the lanterns went into production in Zigong Vya Creative Lantern Group's workshops. Thierry Duguet, the project and design manager, was contracted through Vya; he had created many similar festivals for French zoos. An issue with visas for the 33 Chinese contractors from Vya delayed

the installation and manufacturing of the lanterns on site. When the Chinese team finally arrived, they completed the installation of Wild Lights in record time. Safe Events once again managed the running of the event.

We worked with Onecore media planners and Teneo on the delivery of a fully integrated marketing, advertising and PR campaign that ran across outdoor, digital, press and radio media.

Wilson Creative and Moondance Productions once again undertook the creative and video work for the campaign, which was announced to the media in October. We partnered with the Irish Times and secured well-placed print ads in the newspaper and



(Above) 'The Enchanted Zoo' Wild Lights advertisement on the DX screen at Dundrum Shopping Centre
(Below) 'The Enchanted Zoo' Wild Lights advertisement at the 'Golden Square' location in Dublin



magazine as well as digital ads on IrishTimes.com. We also partnered with 98FM, who promoted Wild Lights and their exclusive listener night on 15 November multiple times across their radio station and social channels. Two days before Wild Lights was officially opened to the public on 16 November, we held a preview night for invited media. It was a great success, with many influencers and celebrities sharing positive stories and content on their social channels. Thanks to the successful media night and an exciting new theme, our PR campaign delivered an overall PR reach of 64 million, which was a 175% increase on reach in comparison to our 2022 campaign. In another first, we teamed up with Barnardo's, the children's charity, so they could fundraise at the media review night. They had their mascot at the entrance, as well as volunteers, to encourage guests to donate to their bucket collection as well as tap-to-donate facilities. SSE had their annual exclusive Wild Lights night in November, and we ran two corporate nights with Google, also in November.

In January 2023, we held our first ever sensory-friendly Wild Lights night, which was hosted specifically to

welcome neurodiverse children and adults with their families to the festival. We deliberately had a much lower visitor number that night and over 600 visitors made use of this offer. On 22 November, for the new season, we held another sensory night, this time with 1520 guests. The importance of this night to our visitors is evident in the letter quoted in the Visitor Operations section of this report.





EVENTS

Corporate events were very much in demand this year, with organisations booking early in the year for a summer weekend. We had over 52 events, the largest being the Lidl Employee Weekend with 3,490 employees and their families attending, while smaller events included corporate meetings and team building days. In July, the Events Team organised the launch events for the opening of the Nocturnal House for the aye-eyes, and, in November, the opening of the Centre for Species Survival in Society House and the launch of Wild Lights. Also, in November, the Events Team assisted with a corporate cultivation event – a fundraising event for the new native Irish species habitats in Dublin Zoo; this event offered an opportunity for the Dublin Zoo team and Board members to speak with prospective donors about the purpose of the habitat.

In March, we held our traditional events for St Patrick's weekend, with free family activities. These included a leprechaun on the lawn, a magician, traditional music from one of our elephant keepers, Albert Pamies, and his band in the Meerkat Restaurant, face-painting, a DJ, arts and crafts with the volunteers, extra keeper talks and a Dublin Zoo photo wall. It was the first time since Covid that we could organise activities at this level for our visitors. Unfortunately, the weather was not good, but the feedback was very positive. In June, there were eight events, including a very successful SSE Eco-Explorer Weekend. SSE set up a photo prop at the entrance plaza where an eco-explorer actor handed visitors an 'Eco Passport'; actors were stationed at each stop of the trail to stamp the passports. On completion of the passport, visitors got a 'Pookie' key ring to take home. Another SSE Eco-Explorer Weekend was held in August.





Additional public events were organised from August onwards with the intention of driving footfall following the poor weather in July. These included the Dublin Zoo Summer Carnival Weekend to celebrate the end of summer with activities such as circus style

acts, juggling, magicians, stilt walkers and hula hooping, along with face painting, a carnival stall and carnival decorations. Two very successful Dino Weekends were held, one in August and the other in September; activities included walkabout dinosaurs, a dino petting zoo, egg hatching, fossil making and short dino shows. In October, the three-day Halloween event was heavily promoted with Halloween-themed photos of Jinpa the red panda, and the gorillas with pumpkins taken by Patrick Bolger.

Santa's grotto was launched in September. Following feedback from 'Breakfast with Santa' in 2022, we reverted to the 'Grotto' format and installed two Santa's grottos in the farmhouse to maximise numbers. We constructed a new grotto, which worked very well; this was built to last at least five years and will keep costs down over that period. All tickets were sold out by mid-November, and Santa at the Zoo commenced on 18 November. For the fee, children received entry into the Zoo, a visit to Santa in the grotto, a key ring and magnet pack, and a high-quality gift. In 2023, ticket sales for Santa's grotto totalled 3,692.



*(Above): Carnival Weekend at Dublin Zoo 2023
(Right) Tom (in costume) who has been Santa's representative in Dublin Zoo for many years*

CONSERVATION AND SCIENCE

In December 2022, Dublin Zoo launched our Conservation Master Plan 2022–2031, which outlines the actions necessary to achieve our ambition of becoming a zoo-based conservation organisation of national and global significance over the next decade. In 2023, several key actions were realised, the most important of which was the official launch, in November, of the new IUCN Centre for Species Survival: Ireland. Earlier in the year, Dublin Zoo signed a Memorandum of Understanding with the IUCN Species Survival Commission (SSC) on the establishment of a Centre for Species Survival: Ireland (CSS). Further meetings were held with the SSC to discuss the initial development of the centre and priority actions. Meetings were held with the IUCN SSC to provide content for, and draft our response to, the IUCN SSC ‘Position Statement on the Role of Botanic Gardens, Aquariums and Zoos in Species Conservation’, which was launched in October. Discussions were held with the National Parks and Wildlife Service (NPWS) to discuss how the CSS can help support the Government’s priorities for species conservation in Ireland. In August, Louise Enderby, a keeper in Dublin Zoo, was appointed our first Species Survival Officer, a role that will enhance the capacity of the CSS. A team from CSS: New Mexico BioPark provided mentoring support for the new appointee. Branding and interpretation, as well as website content, for the CSS were finalised.

In February, a biological safety cabinet was delivered as part of the equipment required for us to become a biobanking hub for Ireland, as outlined in the Conservation Master Plan. This will allow us to prepare samples for cryopreservation in the future. In July, Conservation & Research Officer, Dr Andrew Mooney,

gave a radio interview for Newstalk radio’s Futureproof on the conservation value and potential of cryopreservation. He was lead author on an article for the journal Zoo Biology, looking at the conservation potential of cryobanks globally. Also in July, approval was received from the Health Products Regulatory Authority for proposed cryopreservation sampling at Dublin Zoo.

Establishing international links is another key objective in our Conservation Master Plan and, in February, Andrew Mooney was appointed a member of the BIAZA Research Committee; he also attended a meeting, and became a member, of the EAZA Cryopreservation Interest Group. The BIAZA Research Database and EAZA Conservation Database were updated with Dublin Zoo’s contributions from 2022. In March, Andrew was invited to become a member of the newly formed IUCN SSC Animal Biobanking for Conservation Specialist Group.

As part of our Conservation Master Plan, we launched a Conservation Lecture Series, inviting leading conservationists from Ireland and around the world to share their first-hand experiences as they work to save wildlife. We held four lectures in 2023 with the support of the Marketing and Events team. Speakers included representatives from the Golden Lion Tamarin Association, Giraffe Conservation Foundation, Bat Rehabilitation Ireland and West African Primate Conservation Action.

During the year, we created and publicly advertised three paid internships of between 16 and 19 weeks for recent graduates or final-year university students who wished to get experience in the field of zoo conservation and science. In July, Dylan Moore from University

(Right) Dr Andrew Mooney, Dr Christoph Schwitzer, Ann Keenan and Minister Malcom Noonan TD at the opening of the CSS - Ireland



College Cork took up one of the internships and, along with existing Conservation and Science interns Kelly McCall and Scott Bastow, conducted daily behavioural observations of Dublin Zoo's Asian elephants as part of a long-term monitoring project before the animals moved to Cincinnati Zoo, USA, in November; Cincinnati Zoo continued these observations after the elephants' arrival. The interns completed our pollinator monitoring efforts around the Zoo for this year, contributing to both the All-Ireland Pollinator Plan's Bumblebee Monitoring Scheme and Flower-Insect Timed (FIT) Counts. They also conducted behavioural observations of Dublin Zoo's Amur tigers upon request from the Animal Care Team.



(Right) Conservation and Science team members Louise Enderby, Dr Andrew Mooney and Kelly McCall

In 2023, we established new partnerships with several Irish conservation organisations, strengthening our Irish native species conservation portfolio. This includes Bat Rehabilitation Ireland, which was founded by Susan Kerwin with a mission to rescue, rehabilitate and release all species of Irish bats, whilst promoting bat conservation through education and scientific research. Bat Rehabilitation Ireland has cared for 1,500 bats from across the country since opening in 2019. With 1,400 recognised species, bats make up 20% of all known mammal species. Ireland is home to nine species, which are all nocturnal and insect eaters. Several of the species, including common pipistrelles, Daubenton's bats, brown long-eared bats, and Nathusius' pipistrelles, can be found at Dublin Zoo. Unfortunately, Irish bats are becoming increasingly threatened due to habitat loss, human disturbance, and the use of pesticides in agriculture, making the work of Bat Rehabilitation Ireland vital to the conservation of bats across the island. In 2022, prior to commencing the major refurbishment of Society House, four night-time surveys were conducted on the 1868 building to ensure there were no bats present; this is a legal, ecological requirement. No bats were found in the house; however, five bat species were recorded on the zoo grounds. In early August, we facilitated training for about 20 staff from the National Parks and Wildlife Service as part of a workshop to develop bat identification and monitoring skills. The purpose was to give NPWS staff involved in licensing the chance to see a bat and bat roost up-close, highlighting the practical considerations they need to be aware of when reviewing applications. At the end of the year, we facilitated on-site ringing of Nathusius' pipistrelle as part of a long-term bat monitoring project conducted by the NPWS.

A partnership was also established with Kildare Wildlife Rescue, a rescue centre for injured wildlife in County Kildare to which the Zoo provides financial and logistical support as part of our vision to expand our native species conservation programme. We also established a partnership with Seal Rescue Ireland, a registered charity based in County Wexford that is dedicated to the rescue, rehabilitation and release of sick, injured and orphaned seals from across Ireland; the charity is also involved in community engagement and education initiatives. They care for both grey seals (*Halichoerus grypus*) and harbour seals (*Phoca vitulina*). Both of these species are considered Protected Species in Ireland under the Irish Wildlife Act (1976) and the EU's Marine Mammal Protection Act (1972). Harbour seals are considered a species of special concern in Ireland, as their numbers have been slowly declining, with only 3,000 – 4,000 remaining today. Grey seals almost went extinct in Ireland in the early 1900s due to hunting, but protections have allowed their numbers to recover, and today they number approximately 8,000 – 10,000. Dublin Zoo's support will allow Seal Rescue Ireland to continue caring for new patients as they arrive.

This year saw continued engagement with the NPWS, with a view to a potential collaboration between Dublin Zoo and NPWS for the conservation of freshwater pearl mussels. A meeting was also held with Jen Nightingale from Bristol Zoological Society to discuss their very successful conservation project for native white-clawed crayfish and get advice on how to start a similar project at Dublin Zoo. Further meetings on this topic included Sean McKeown (Fota) and colleagues from the Marine Institute in Galway to discuss a conservation breeding and reintroduction project for native white-clawed crayfish.

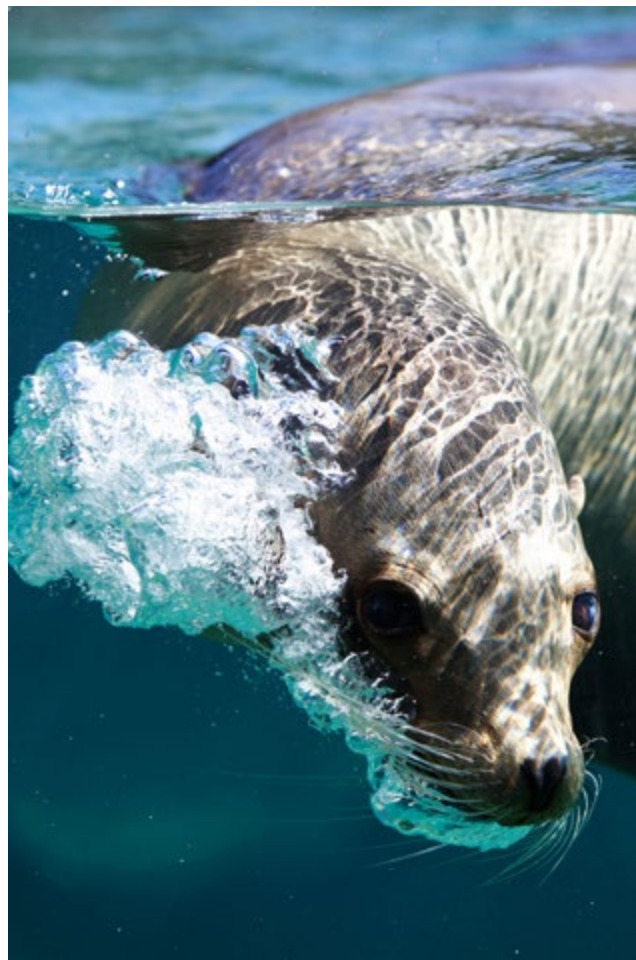
Internationally, Dublin Zoo continues to support 23 organisations who are working in situ to conserve wildlife, support local communities and build capacity. For example, the Zoo has been supporting the Orangutan Foundation since 2015, and in particular the work they are doing in the Lamandau Wildlife Reserve in Borneo. This reserve was established in 1998 from two former logging concessions and is now home to a viable, self-sustaining population of over 600 Bornean orangutans. The Orangutan Foundation has a team of 65 local staff in Lamandau, who monitor the forest and its wildlife, protecting them from illegal activity. In addition to population monitoring and public outreach, the Orangutan Foundation also operates five camps throughout the reserve, where orphaned orangutans learn the skills necessary for a life in the wild. The Bornean orangutan is considered Critically Endangered on the IUCN Red List, with approximately 100,000 left in the wild.

This year we began working in partnership with Save the Rhino International, other international conservation organisations and dedicated Indonesian NGOs to support the work of the Government of Indonesia to increase the population of Critically Endangered Sumatran rhinos. Sumatran rhinos once roamed across much of East and Southeast Asia, but are now confined to fragments of primary forest in Sumatra's Gunung Leuser and Way Kambas National Parks, while a few isolated animals inhabit central Kalimantan (Indonesian Borneo). The Sumatran rhino is considered Critically Endangered under the IUCN Red List, with as few as 34-47 animals left in the world. The Government of Indonesia and international rhino conservation experts have agreed that the only

way to bring the Sumatran rhino back from the brink of extinction is to bring together the fragmented and widely dispersed wild populations into managed breeding facilities under an emergency action plan. Dublin Zoo is supporting the main Sumatran Rhino Sanctuary in Way Kambas National Park, where ten animals currently form the only captive breeding group of Sumatran rhinos in the world. Each of the rhino bomas at the sanctuary is approximately 30 acres in size, providing access for the rhinos to native plant species for food and mud wallows for bathing. This centre has seen some incredible successes, and in November 2023 a new male calf was the latest addition to the group at the Sanctuary. It is hoped that, in time, these rhinos may form the ‘founder’ group that can repopulate former safe rhino habitat.

In 2023, Dublin Zoo was involved in a total of 45 different research projects in collaboration with 30 different organisations and institutions, including 24 universities around the world. In total, the projects contributed to 15 undergraduate degrees (BA/BSc), eight master’s degrees (MSc/MRes) and nine doctoral degrees (PhD). Dublin Zoo also helped co-author, contributed data to, or financially supported, 12 peer-reviewed scientific publications, and a WAZA journal article, which highlighted the launch of our Conservation Master Plan. In July, during the annual BIAZA Research Conference, Dr Andrew Mooney was elected vice chair of the BIAZA Research Committee, having joined the committee earlier in the year. Dublin Zoo’s efforts to increase our research engagement and outputs were also presented during the EAZA Annual Conference in Helsinki, with Andrew presenting during the EAZA Research Committee session. He also continued supervision of PhD student James Brereton (Chester

Zoo and Nottingham Trent University) and MSc student Becky Chapman (University of Chester). This year, Dublin Zoo took part in a Placement Programme with Queen’s University Belfast, providing 12-week conservation and science placement opportunities for postgraduate students. Andrew also took part in a mentorship programme with students from Queen’s University Belfast.



(Above) California sea lion

DUBLIN ZOO CONSERVATION PARTNERS

Africa

- Giraffe Conservation Foundation (Nubian Giraffe Conservation Working Group), Kenya (Nubian giraffe).
- Lemur Conservation Association (AEECL), Madagascar (several lemur species, including blue-eyed black lemur).
- Mountain Bongo Surveillance Project, Kenya (mountain bongo).
- Okapi Conservation Project, Democratic Republic of the Congo (okapi).
- Painted Dog Conservation, Zimbabwe (African wild dog).
- Re:wild/Swiss Center for Scientific Research in Côte d'Ivoire, Ivory Coast (Miss Waldron's red colobus).
- Save the Rhino (Lowveld Rhino Trust), Zimbabwe (black and white rhinos).
- Scimitar-Horned Oryx Reintroduction Programme, Tunisia (scimitar-horned oryx).
- Tacugama Chimpanzee Sanctuary, Sierra Leone (western chimpanzee).
- West African Primate Conservation Action, Ghana (several primate species, including white-naped mangabey).

Asia

- Asian Turtle Program (Mauremys annamensis Project), Vietnam (Vietnamese pond turtle).
- BirdLife/Burung Indonesia and the Zoological Society for the Conservation of Species and Populations (ZGAP), Sumba, Indonesia (citron-crested cockatoo).
- Orangutan Foundation (Lamandau Wildlife Reserve), Indonesia (Bornean orangutan).
- Red Panda Network, Nepal (red panda).
- Selamatkan Yaki, Sulawesi, Indonesia (Sulawesi crested

macaque).

- Snow Leopard Trust, Central Asian Range States (snow leopard).
- Sumatran Rhino Sanctuary (Save the Rhino), Sumatra, Indonesia (Sumatran rhino).
- WildCats Conservation Alliance, China (Amur tiger and Amur leopard).
- Wildlife Trust of India (Right Of Passage: National Elephant Corridors Project), India (Asian elephant).

South America

- Golden Lion Tamarin Association, Brazil (golden lion tamarin).
- Sphenisco, Chile and Peru (Humboldt penguin).

Europe

- Proyecto Eremita, Spain (waldrapp ibis).

Ireland

- Bat Rehabilitation Ireland, Limerick (all nine species of bat in Ireland).
- BirdWatch Ireland (raptors, barn owl).
- Irish Grey Partridge Conservation Trust (breeding waders, curlew).
- Irish Peatland Conservation Council, Kildare (marsh fritillary butterfly).
- Kildare Wildlife Rescue, Kildare (Irish wildlife).
- Louth Nature Trust, Louth (little tern).
- Seal Rescue Ireland, Wexford (grey seal and harbour seal).

Global

- IUCN Conservation Planning Specialist Group

RESEARCH PROJECTS

Staff-led research at Dublin Zoo

- All-Ireland Bumblebee Monitoring Scheme (as part of the All-Ireland Pollinator Plan).
- Analysis of the behavioural activity budget of giraffe at Dublin Zoo before and after dietary alterations.
- Behavioural analysis of a Chinese stripe-necked turtle at Dublin Zoo with the aim of reducing the expression of stereotypic behaviours.
- The behavioural and hormonal adaptation of a related herd of Asian elephants to a transatlantic inter-zoo transfer.
- Chimpanzee Behaviour and Habitat Use Assessment at Dublin Zoo.
- Flower-Insect Timed Count (as part of the All-Ireland Pollinator Plan).
- Flamingo feet in Dublin Zoo.
- Examine the levels of faecal glucocorticoid metabolites (FGM) in the chimp group at Dublin Zoo.

University-led research at Dublin Zoo

- Analysis of the activity budget of a captive *Hippopotamus amphibius* pre and post intervention with the aim of reducing the expression of stereotypic behaviours. BA. Trinity College Dublin.
- Assessing the change in the behavioural response, habitat usage, and arboreal behaviour of captive Red Pandas (*Ailurus fulgens*) in response to housing with different conspecific enclosure mates. MSc. Trinity College Dublin.
- Comparative microscopy study of the morphological features of human and animal hairs. BSc. Technological University Dublin, Tallaght.
- The effect of carcass feeds and subsequent starve days on lion behaviour. MSc. Trinity College Dublin.

- The Effects of Visitor Density and Visitor Noise on the Behaviour of *Pongo pygmaeus* and *Symphalangus syndactylus* in Dublin Zoo. BSc. Open University, UK.
- Elephant diet analysis using metabarcoding. University College Dublin.
- Energy analysis of Dublin Zoo's reptile house and improvement of facility environment with consideration of reptile species' indigenous habitats. BSc. Technological University Dublin.
- Habitat use of Bornean orangutans (*Pongo pygmaeus pygmaeus*) in Dublin Zoo. MSc. Trinity College Dublin.
- An investigation on the change in behaviours of captive red pandas in response to the introduction of new enclosure mates. BA. Trinity College Dublin.
- Microbiological and chemical analysis of sea lion and penguin feed in Dublin Zoo. BSc. Technological University Dublin.
- Observing space usage and social interactions of the Ring-Tailed Lemurs and Red Ruffed Lemurs. BA. Trinity College Dublin.
- Optimising metabarcoding for detecting species diversity in ponds. BSc. University College Dublin.
- Optimising non-invasive DNA sampling for white rhino. BSc. University College Dublin.
- Red-Capped Mangabey Welfare and Enrichment Study. BA. Trinity College Dublin.
- Validation of the HACCP plan in the carnivore kitchens in Dublin Zoo. BSc. Technological University Dublin.

Multi-institution research

- All-Ireland Nathusius's Pipistrelle bat project. NPWS and All-Ireland Nathusius's Pipistrelle Bat Working

Group.

- An Analysis of the Critical Public Display Components that Make Up the Design of Great Animal Exhibit in Zoos. PhD. Universiti Sains Malaysia.
- Behavioural and social impacts on a Western lowland gorilla (*Gorilla gorilla gorilla*) troop following the introduction of a sub-adult male at Dublin Zoo. MSc. Bishop Burton College.
- Breeding success of species of *Cacatua* in captivity. BSc. University Centre Sparsholt.
- A comparison of the natural environment and zoo maintenance conditions of tiger (*Panthera tigris*) and snow leopard (*Panthera uncia*). BA. Warsaw University of Life Sciences.
- Conservation begins at home: The role of British and Irish zoos on the conservation of native species. MSc. University Centre Askham Bryan.
- Curating organisational knowledge in cultural heritage management. PhD. University College London.
- Developing a novel personality and welfare tool for use with elephants cared for in zoos. PhD. University of Chester and Chester Zoo.
- Diversity and Inclusion in Zoos: Do adults with hidden disabilities feel supported in BIAZA zoos? BSc. University Centre South Devon.
- EAZA Elephant TAG EEHV Fund. EAZA, Erasmus University Rotterdam and University of Houston.
- The Effect of Choice in Enrichment on Animal Participation and Welfare. MSc. University of St Andrews.
- Husbandry and enclosure design management of captive gibbons (*Hylobatidae*): what is current practice and how do we link in scientific evidence? PhD. University of Birmingham.
- Individual variation of delaying gratification in a socially tolerant primate. PhD. University of Portsmouth.
- Investigating the benefits of multi-species enclosures in a zoo setting for the development and testing of movement models. PhD. University College Cork.
- Is there a benefit in training zoo animals in regard to veterinary treatment, and general health checks. FdA. University of Plymouth.
- Mapping the recombination landscape in scimitar-horned oryx (*Oryx dammah*). University of Edinburgh.
- More-than-food: Reimagining diets in the modern zoo and the impact of zoo professionalisation on changing captive primate diets. PhD. University of Exeter.
- Retrospective mortality review of the ex-situ population of scimitar-horned oryx (*Oryx dammah*) in European zoos from 2012-2022. MSc. University of Edinburgh and Zoological Society of London.
- Stocking density of endangered solitary animals with a focus on red pandas (*Ailurus fulgens*). BSc. Writtle University College.
- Tinder for orangutans: identifying long-distance methods to test mate preference in zoo-housed orangutans. PhD. Leiden University and Apenheul.
- Using zoos to protect climate change threatened taxa and understand species traits for wildlife tourism. PhD. Chester Zoo and Durham University.
- Zoos are places where primates meet: How knowledge about others affects intersecting perceptions between nonhuman primates and humans? – PRIMAZOO. Muséum National d'Histoire Naturelle.

PUBLICATIONS BY DUBLIN ZOO STAFF OR SUPPORTED BY DUBLIN ZOO

(Dublin Zoo staff highlighted in **bold** font)

Bartlett, A., Grinsted, L., Freeman, M.S. (2023). Behaviour, Furnishing and Vertical Space Use of Captive Callimico (*Callimico goeldii*): Implications for Welfare. *Animals*, 13(13), 2147. <https://doi.org/10.3390/ani13132147> [Dublin Zoo provided behavioural observation access for this study.]

Bartolomé, A., Carazo, P., Font, E. (2023). Environmental enrichment for reptiles in European zoos: Current status and perspectives. *Animal Welfare*, 32, E48. <https://doi.org/10.1017/awf.2023.43> [Dublin Zoo contributed data to this report (via an electronic questionnaire) about our reptiles.]

Depauw, S., Verbist, L., Stevens, J., Salas, M. (2023). Feeding management of giraffe towards positive welfare. *Journal of Zoo and Aquarium Research*, 11(4), 400–413. <https://doi.org/10.19227/jzar.v11i4.769> [Dublin Zoo Keeper, Clodagh Walsh, provided photos of our giraffe for the article.]

Dublin Zoo. (2023). Sustainability master plan 2023–2031: Our journey to becoming a sustainable zoo. Dublin Zoo. 32 pp.

Dublin Zoo. (2023). Your official guide to Dublin Zoo. Dublin Zoo. 58 pp.

Greenwell, P.J., Riley, L.M., Lemos de Figueiredo, R., Brereton, J.E., **Mooney, A.**, Rose, P.E. (2023). The Societal Value of the Modern Zoo: A Commentary on How Zoos Can Positively Impact on Human Populations Locally and Globally. *Journal of Zoological and Botanical Gardens*, 4(1),

53-69. <https://doi.org/10.3390/jzbg4010006>

Meliane, M. K., Saidi, A., Petretto, M., Gilbert, T., Nasri-Ammar, K. (2023). Temporal and spatial distribution of dorcas and slender-horned gazelles in a Saharan habitat. *Journal of Wildlife Management*, e22408. <https://doi.org/10.1002/jwmg.22408> [Dublin Zoo provided financial support for this publication through our conservation partner focussing on the reintroduction of scimitar-horned oryx in Tunisia (Marwell Wildlife).]

Meliane, M. K., Saidi, A., Petretto, M., Nasri-Ammar, K., Taghouti, E., Guidara, H., Boufaroua, M., Woodfine, T., Gilbert, T. (2023). African houbara (*Chlamydotis undulata undulata*) confirmed in Sidi Toui National Park, Tunisia. *African Journal of Ecology*, 61, 482–484. <https://doi.org/10.1111/aje.13117> [Dublin Zoo provided financial support for this publication through our conservation partner focussing on the reintroduction of scimitar-horned oryx in Tunisia (Marwell Wildlife).]

Meliane, M. K., Saidi, A., Petretto, M., Woodfine, T., Riordan, P., Gilbert, T., Taghouti, E., Guidara, H. (2023). The crested porcupine in Tunisia's semi-arid steppes. *Oryx*, 57(1), 10-10. <https://doi.org/10.1017/S0030605322001247> [Dublin Zoo provided financial support for this publication through our conservation partner focussing on the reintroduction of scimitar-horned oryx in Tunisia (Marwell Wildlife).]

Mooney, A. (2023). Dublin Zoo's Conservation Master Plan, *WAZA Magazine* 2023(02), 24-25. <https://www.waza.org/wp-content/uploads/2023/07/WAZA-magazine-2023-web.pdf>

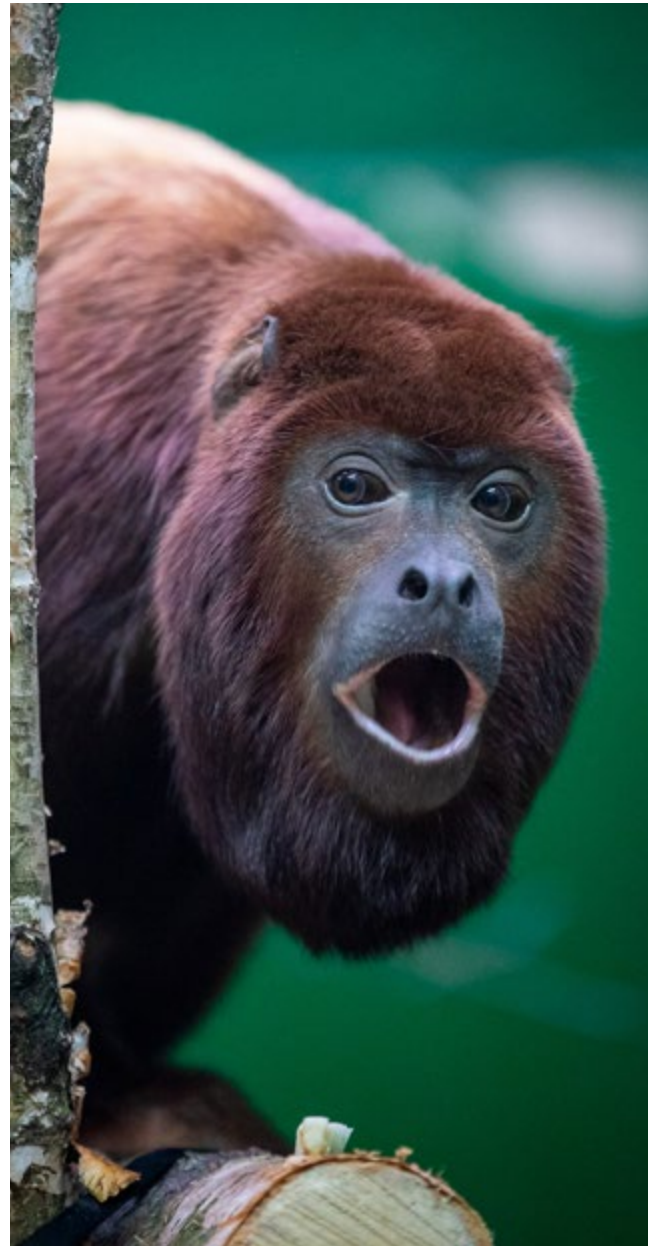
Mooney, A., McCall, K., Bastow, S., Rose, P. (2023). Changes in Environment and Management Practices Improve Foot Health in Zoo-Housed Flamingos. *Animals*, 13(15), 2483. <https://doi.org/10.3390/ani13152483>

Mooney, A., Ryder, O. A., Houck, M. L., Staerk, J., Conde, D. A., Buckley, Y. M. (2023). Maximizing the potential for living cell banks to contribute to global conservation priorities. *Zoo Biology*, 42, 697–708. <https://doi.org/10.1002/zoo.21787>

Mooney, A., Teare, J. A., Staerk, J., Smeele, S., Rose, P., King, C., Conrad, L., Edell, H., Conde, D. A., Buckley, Y. M. (2023). Flock size and structure influence reproductive success in four species of flamingo in 753 captive populations worldwide. *Zoo Biology*, 42, 343–356. <https://doi.org/10.1002/zoo.21753>

O'Hanlon, J., Moge, R., Walker, S. L., Roffe, S., **Clarke, H.,** Edwards, K. L. (2023). Utilising Routine Non-Invasive Faecal Samples for the Detection of Oestrus and Early Gestation in Okapi (*Okapi johnstoni*). *Theriogenology Wild*, 3, 100047. <https://doi.org/10.1016/j.therwi.2023.100047> [Dublin Zoo provided faecal samples for this project.]

Visser, F., Drouilly, M., Moodley, Y., Michaux, J. R., Somers, M. J. (2023). Mismatch between conservation needs and actual representation of lions from West and Central Africa in in situ and ex situ conservation. *Conservation Letters*, 16, e12949. <https://doi.org/10.1111/conl.12949> [Survey responses provided by Dublin Zoo staff.]



(Above) Venezuelan red howler monkey

CONFERENCE ATTENDANCES, PROFESSIONAL VISITS AND VISITORS

January

Conservation & Science Officer Dr Andrew Mooney attended the fourth IEA Ecology and Evolution Ireland conference, hosted by Trinity College Dublin, and gave a talk to zoology students at UCD on conservation and research at Dublin Zoo.

Keepers Brendan Walsh, Clodagh Walsh, Susan O'Brien and Alan Duffy attended the EAZA Nutrition Conference in Riga, Latvia. Keeper Sarah Byrne, as vice chair of the EAZA Nutrition TAG, attended and co-chaired the meeting. Dublin Zoo vet Frank O'Sullivan attended this event, too.

General Curator Miguel Bueno attended the BIAZA Field Conservation Conference in Edinburgh.

Zoo vet Niamh McGill spent three days visiting the veterinary team at Chester Zoo.

February

Director Dr Christoph Schwitzer chaired meetings of the newly established EAZA European Species Working Group and of the AEECL Board, and attended meetings of the BIAZA Board and the BIAZA Conservation Directors Group.

The Discovery & Learning Team travelled to Chester Zoo as part of professional development training for all team members. The purpose of the two-day trip was to provide an opportunity for the team to upskill and share best practice in teaching, volunteer management and administrative activities. In addition, the goal was to provide opportunities for the team to look at ways to

develop our learning programmes and to identify ways to engage with various types of audiences at Dublin Zoo.

March

Keeper Garth de Jong attended the British Herpetological Society conference in Drayton Manor, England.

Keeper Christina Murphy attended the BIAZA Pinniped Husbandry Conference, held in Colchester Zoo, England.

April

New conservation lecture series launched with talk by Jim and Lou Ann Dietz about their work with the Associação Mico-Leão Dourado (Golden Lion Tamarin Association). Dublin Zoo has supported the AMLD since 2000.

Dr Mooney attended the EAZA Parrot Taxon Advisory Group Regional Collection Planning Workshop at Beauval Zoo in France. He currently acts as the EEP Coordinator for the citron-crested cockatoo and is a member of the EAZA Cockatoo Working Group.

Dr Mooney attended the IUCN SSC Center for Species Survival Inaugural Summit, hosted by Indianapolis Zoo and the Global Center for Species Survival, in the USA. He gave a talk on engagement with external stakeholders as part of the development of the Centre for Species Survival: Ireland.

Dr Schwitzer chaired meetings of the EAZA European Species Task Force and of the Lemur Conservation Association (AEECL) board. He also chaired an extraordinary general meeting of AEECL.

Dr Schwitzer gave a lecture on the role of the modern zoo to students on UCD's MSc World Heritage Management & Conservation programme.

Chris Booy, the Deputy Chair of Bristol Zoological Society's Board of Trustees, visited Dublin Zoo with his wife; Dr Schwitzer gave them a tour of the zoo.

Head of Discovery & Learning Aileen Tennant attended the EAZA Conservation Education Conference at Wroclaw Zoo, Poland. She was invited to speak at a panel discussion about 'Situating Conservation Education in the EAZA Vision'.

Keeper Susan O'Brien attended the Callitrichid Mid-Year TAG meeting in Yorkshire Wildlife Park, England.

Team leader Helen Clarke attended the Mid-year APE TAG meeting in Ouwehands Zoo, Rhenen, the Netherlands.

May

Dr Schwitzer chaired a meeting of the EAZA European Species Task Force and attended the EAZA Conservation Committee mid-year meeting at Copenhagen Zoo, Denmark. He also attended a BIAZA Board meeting.

Dr Mooney took part in the EAZA21+ workshop "the brand-new Kunming-Montreal Global Biodiversity Framework and its targets: what role is there for progressive zoos and aquariums?" and gave a presentation on Dublin Zoo's Conservation Master Plan, and how it aligns with global conservation priorities.

The Discovery & Learning Team, members of the Events

team and 42 volunteers took part in public engagement skills training with the training body 'CREW'. This interactive training focused on one-to-one engagement skills with visitors to promote learning and enrich visitor experiences while visiting Dublin Zoo.

June

Zoo vets Frank O'Sullivan and Niamh McGill attended the EAZWV Conference in Valencia, Spain.

July

In the second of our new Conservation Lecture series, Steph and Julian Fennessy delivered both a staff and public lecture on the work of the Giraffe Conservation Foundation.

Dr Mooney attended the BIAZA Research Conference, hosted by Dudley Zoo and Castle in the UK. He gave a presentation on flamingo foot health, and was also elected as Vice Chair of the BIAZA Research Committee.

Dublin Zoo vet Frank O'Sullivan attended an Avian Influenza workshop at WWT Slimbridge, England, organised by BIAZA, which was also attended by staff from the Department of Agriculture. Several cases of captive birds in British zoos contracting HPAI were presented, including individual case management and regulatory interventions.

Aileen Tennant delivered a presentation at the EAZA 21+ webinar on Dublin Zoo's Conservation Education Master Plan and provided advice to other EAZA organisations in developing their own conservation education strategic documents.

August

On 1 August, World Mangabey Day, Andrea Dempsey from the Western African Primate Conservation Action (WAPCA) gave a talk to Zoo staff and volunteers about 'Saving Ghana's Primates' as part of the conservation lecture series. She also delivered a second talk later in the evening, to 75 members of the public. Dublin Zoo was one of eleven European zoos that helped to create WAPCA in 2001, and we have provided more than €80,000 in support since then.

General Curator Miguel Bueno visited Cincinnati Zoo for a few days to inspect their new elephant habitat as part of the elephant transfer preparations.

Assistant Curator Marc Enderby, team Leader Ciaran McMahon and Miguel Bueno attended an Elephant Workshop in Chester Zoo, England.

The Dublin Zoo veterinary team welcomed Gabby Drake, vet at Chester Zoo, for case-sharing and discussion.

September

Dublin Zoo hosted the annual meeting of the UK-based Independent Zoo Enthusiasts Society on the 29 July. Dr Schwitzer gave the group an extensive tour of the Zoo.

Dr Schwitzer chaired a meeting of the EAZA European Species Task Force and attended a meeting of the IUCN SSC Primate Specialist Group's Executive Committee and a meeting of the BIAZA Board. He also hosted Bristol Zoo's Director of People, Hannah Windross, for a visit to Dublin Zoo.

Dr Schwitzer attended the annual Zoohistorica meeting at Rheine Zoo, Germany. He also gave a talk about the roles of modern zoos at the Phoenix Park Honey Show on invitation from the OPW.

Dr Schwitzer, Miguel Bueno, Marc Enderby and Dr Mooney attended the EAZA Annual Conference in Helsinki, Finland. Dr Schwitzer gave presentations at the Prosimian Taxon Advisory Group and the EAZA Conservation Committee meetings. Dr Mooney presented on a recent flamingo publication and on Dublin Zoo's research policy and initiatives, and Marc Enderby presented on the grey wolf studbook.

Dr Mooney attended the Origins of Ireland's Biodiversity Conference, hosted by Fota Wildlife Park and University College Cork.

October

Dr Schwitzer attended the 78th Annual Conference of WAZA, the World Association of Zoos and Aquariums, hosted by San Diego Zoo Wildlife Alliance. The conference had a focus on species conservation, with updates on the 'Reverse the Red' initiative (a partnership between WAZA and the IUCN to help reduce the extinction risk faced by a growing number of species across the planet). He participated in a panel discussion about the IUCN Centres for Species Survival.

Dr Mooney attended the inaugural meeting of the IUCN SSC Animal Biobanking for Conservation Specialist Group, hosted by the San Diego Zoo Wildlife Alliance, and gave a presentation on strategic biobanking. He attended the IUCN CPSG Annual Meeting and the WAZA

Annual Conference, where he presented a poster on Dublin Zoo's new Conservation Master Plan.

Dr Mooney participated in a stakeholder workshop as part of the development process for the National Invasive Alien Species Management Plan, hosted by NPWS and the National Biodiversity Data Centre.

Susan Kerwin from Bat Rehabilitation Ireland gave an evening public talk as part of the Conservation Lecture Series. Bat Rehabilitation Ireland is one of Dublin Zoo's new Conservation Partners and works to rescue, rehabilitate and release all nine species of native Irish bat.

Aileen Tennant attended the International Zoo Educators Conference in Wellington Zoo, New Zealand. She was voted onto the IZE Board as the regional rep for Europe and the Middle East. Aileen will also sit on the EAZA Conservation Education Committee.

November

Dr Schwitzer hosted Matthew Gould, CEO of the Zoological Society of London, for a visit of Dublin Zoo.

President of the Zoological Society of Ireland, Ann Keenan, and Dr Schwitzer hosted Ann Lamont, the Executive Chair of the Two Oceans Aquarium Foundation, Cape Town, for a meeting to discuss joint interests in conservation, science and governance.

Miguel Bueno, Dr Mooney and Dr Schwitzer visited Seal Rescue Ireland and Secret Valley Wildlife Park, both in Co. Wexford.

Dr Schwitzer attended a BIAZA Board meeting.

Discover & Learning Manager Niamh Potter attended the BIAZA Conservation Educators' Conference at Knowsley Safari Park, UK. She delivered a sustainability workshop from our Primary Teachers Summer Course to showcase innovative methods to deliver conservation education.

December

Dr Mooney presented at a meeting for all EAZA Atlantic puffin EEP holders, proposing a conservation and research project for puffins in Ireland, in collaboration with BirdWatch Ireland.

Dr Schwitzer chaired the AGM of AEECL, the Lemur Conservation Association.

Aileen Tennant attended a 'Youth Advocacy and Engagement in Ireland' event in Airfield Estate.



CENSUS OF ANIMALS IN DUBLIN ZOO DURING 2023

Summary of census of animals in Dublin Zoo on 31st December 2023

Taxon	Total Species	Total Specimens
Mammals	41	170
Birds	8	160
Reptiles	18	44
Total vertebrates	68	374
Invertebrates	4	4 colonies

Summary of births and hatchings of animals in Dublin Zoo during 2023

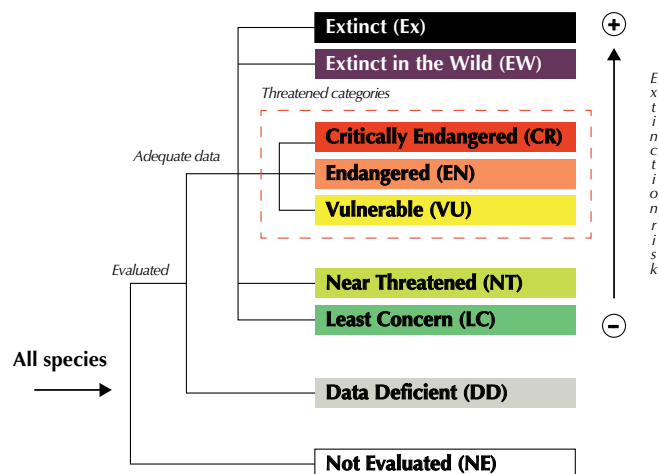
Taxon	Total Species	Total Specimens
Mammals	6	15
Birds	2	7
Reptiles	1	3
Total vertebrates	9	25

Summary of animal taxa on the IUCN Red List of Threatened Species in Dublin Zoo during 2023

IUCN status	Number of species/ subspecies
Extinct in the Wild – EW	1
Critically Endangered – CR	11
Endangered – EN	16
Vulnerable – VU	6
Near Threatened – NT	6
Least Concern – LC	21
Not Evaluated – NE	8

Source: IUCN 2021. The IUCN Red List of Threatened Species.

Version 2021-1. <https://www.iucnredlist.org>



During 2023, Dublin Zoo held 65 non-domestic species/subspecies, of which 34 (52%) were assessed as being globally threatened, i.e. falling into the IUCN Red List categories from Vulnerable to Extinct in the Wild. A further 6 species/subspecies fell into the Near Threatened category. The remaining species/subspecies were either of Least Concern (#21 – 32%) or had not been evaluated yet (#8 – 12%).

Note – the domestic breeds in Family Farm are not included in these figures.

Summary of species management programmes which Dublin Zoo was part of during 2023

Number of new style EEPs (EAZA Ex situ Programme)	19
Number of old style EEPs (European Endangered species Programmes)	19
Number of European studbooks (ESB)	3
Number of species not part of a managed programme	28

During 2023, Dublin Zoo held 69 species/subspecies, of which 41 (59%) were part of an EAZA species management programme. Historically, EAZA had two categories for species management; EEP (European Endangered species Programme) and the less intensively managed ESB (European Studbook). However, in recognition that these two management options were not suited to all species, EAZA redeveloped the species management programmes. All new species management programmes are called European Ex situ Programmes (EEPs), with each programme being designed to fit the

needs of species. This redevelopment process is taking place over several years and therefore, some species are still part of old style EEPs and ESBs, while others are now part of the new style EEPs.

Key to Census Tables Opposite



Part of an EEP (EAZA Ex situ Programme/ European Endangered species Programme).

ESB

Recorded in a European studbook.

Column 1: The number of animals in the collection at 1st January 2023.

Column 2: The number of animals received in 2023 through donation, loan or exchange.

Column 3: The number of animals born or hatched during 2023.




Column 4: The number of animals dying within 30 days of birth or hatching, in 2023.

Column 5: The number of animals dying having survived more than 30 days, in 2023.

Column 6: The number of animals leaving the collection through donation, loan, exchange, theft etc. during 2023.



















Column 7: The number of animals in the collection at 31st December 2023.










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






Male	Female	Unknown
		

This census does not include animals which have been sent on loan to other collections, nor does it include wild animals living within the zoo e.g. many native bird species.

	CITES	IUCN Status	SPECIES		Total at 01.01.23	Arrivals	Births	Deaths within 30 Days	Deaths	Departures	Total at 31.12.23
			VERTEBRATES	VERTEBRATA							
			CLASS: MAMMALS	MAMMALIA							
			PRIMATES	PRIMATES							
	I/A	EN	Ring-tailed lemur	<i>Lemur catta</i>	5. 1. 0						5. 1. 0
	I/A	CR	Red ruffed lemur	<i>Varecia rubra</i>	3. 5. 0				0. 1. 0		3. 4. 0
	I/A	VU	Goeldi's monkey	<i>Callimico goeldii</i>	1. 0. 0	0. 1. 0					1. 1. 0
	I/A	EN	Golden lion tamarin	<i>Leontopithecus rosalia</i>	1. 1. 0					0. 1. 0	1. 0. 0
	II/B	LC	Bolivian squirrel monkey	<i>Saimiri boliviensis boliviensis</i>	4. 0. 0						4. 0. 0
	II/B	LC	White-faced saki	<i>Pithecia pithecia</i>	3. 1. 0						3. 1. 0
	II/B	VU	White-naped mangabey	<i>Cercocebus lunulatus</i>	2. 4. 0		0. 1. 1				2. 5. 1
	II/B	EN	Red-capped mangabey	<i>Cercocebus torquatus</i>	4. 0. 0					2. 0. 0	2. 0. 0

	CITES	IUCN Status	SPECIES		Total at 01.01.23	Arrivals	Births	Deaths within 30 Days	Deaths	Departures	Total at 31.12.23
	II/B	CR	Sulawesi crested macaque	<i>Macaca nigra</i>	14. 7. 0						14. 7. 0
	I/A	EN	Siamang	<i>Symphalangus syndactylus</i>	1. 1. 0		0. 0. 1				1. 1. 1
	I/A	CR	Western lowland gorilla	<i>Gorilla gorilla gorilla</i>	2. 4. 0						2. 4. 0
	I/A	EN	Chimpanzee	<i>Pan troglodytes</i>	2. 0. 0						2. 0. 0
	I/A	CR	Western chimpanzee	<i>Pan troglodytes verus</i>	1. 3. 0						1. 3. 0
	I/A	CR	Bornean orangutan	<i>Pongo pygmaeus pygmaeus</i>	1. 3. 0						1. 3. 0
	II/B	LC	Venezuelan red howler	<i>Alouatta seniculus</i>	2. 0. 0						2. 0. 0
	I/A	EN	Aye aye	<i>Daubentonia madagascariensis</i>	2. 1. 0		0. 0. 1				2. 1. 1
			XENARTHANS	XENARTHRA							
ESB	NL	LC	Linne's two-toed sloth	<i>Choloepus didactylus</i>	1. 1. 0						1. 1. 0
			CARNIVORES	CARNIVORA							
	II/A	LC	Grey wolf	<i>Canis lupus</i>	6. 1. 0						6. 1. 0
	NL	EN	Painted dogs	<i>Lycaon pictus</i>	1. 1. 0						1. 1. 0
	I/A	EN	Red panda	<i>Ailurus fulgens fulgens</i>	1. 4. 0						1. 4. 0
	NL	LC	Slender-tailed meerkat	<i>Suricata suricatta</i>	6. 0. 0				2. 0. 0		4. 0. 0
	I/A	EN	Asiatic lion	<i>Panthera leo persica</i>	1. 3. 0					1. 0. 0	0. 3. 0
	I/A	EN	Amur tiger	<i>Panthera tigris altaica</i>	1. 1. 0						1. 1. 0
	I/A	VU	Snow leopard	<i>Panthera uncia</i>	1. 1. 0						1. 1. 0
	NL	LC	California sealion	<i>Zalophus californianus</i>	3. 3. 0						3. 3. 0
	II/B	EN	Dhole	<i>Cuon alpinus</i>	5. 0. 0						5. 0. 0
			ELEPHANTS	PROBOSCIDAEE							
	I/A	EN	Asiatic elephant	<i>Elephas maximus</i>	2. 7. 0					2. 2. 0	0. 5. 0
			ODD-TOED UNGULATES	PERISSODACTYLA							
	NL	NT	Common/Grant's zebra	<i>Equus quagga boehmi</i>	2. 4. 0						2. 4. 0
	II/B	VU	South American tapir	<i>Tapirus terrestris</i>	0. 2. 0						0. 2. 0
	I/A	NT	Southern white rhinoceros	<i>Ceratotherium simum simum</i>	2. 4. 0		0. 1. 0			1. 0. 0	1. 5. 0

	CITES	IUCN Status	SPECIES		Total at 01.01.23	Arrivals	Births	Deaths within 30 Days	Deaths	Departures	Total at 31.12.23
			EVEN-TOED MAMMALS	CETARTIODACTYLA							
	NL	LC	Red river hog	<i>Potamochoerus porcus</i>	3. 0. 0						3. 0. 0
	II/B	VU	Hippopotamus	<i>Hippopotamus amphibius</i>	0. 1. 0						0. 1. 0
	II/B	VU	Giraffe	<i>Giraffa camelopardalis</i>	2. 1. 0						2. 1. 0
	II/B	NT	Baringo/Rothschild's giraffe	<i>Giraffa camelopardalis rothschildi</i>	4. 2. 0					2. 0. 0	2. 2. 0
	NL	EN	Okapi	<i>Okapia johnstoni</i>	2. 1. 0						2. 1. 0
	III/C	LC	Blackbuck	<i>Antilope cervicapra</i>	0. 3. 0				0. 1. 0		0. 2. 0
	NL	NT	Eastern bongo	<i>Tragelaphus eurycerus isaaci</i>	1. 1. 0					1. 0. 0	0. 1. 0
	I/A	EW	Scimitar-horned oryx	<i>Oryx dammah</i>	5. 5. 0					4. 0. 0	1. 5. 0
			DOMESTIC								
			Tamworth pig	<i>Sus scrofa scrofa tamworth</i>	7. 5. 0		0. 0. 9		0. 0. 4	6. 4. 5	1. 1. 0
			Friesian cow	<i>Bos taurus taurus friesland</i>	0. 1. 0						0. 1. 0
			Kerry cow	<i>Bos taurus taurus kerry</i>	0. 1. 0		0. 0. 1	0. 0. 1			0. 1. 0
			Small East African goat	<i>Capra hircus domestic small_east_african</i>	0. 3. 0						0. 3. 0
			Domestic Sheep	<i>Ovis aries</i>	0. 2. 0						0. 2. 0
		EN	European rabbit	<i>Oryctolagus cuniculus</i>	1. 0. 0	1. 0. 0					2. 0. 0
			CLASS: BIRDS	AVES							
			PENGUINS	SPHENISCIFORMES							
	I/A	VU	Humboldt penguin	<i>Spheniscus humboldti</i>	9. 8. 0		2. 0. 0		2. 1. 0		9. 7. 0
			HERONS/STORKS	CICONIIFORMES							
	I/A	CR	Waldrapp ibis	<i>Geronticus eremita</i>	14. 16. 1				1. 1. 0		13. 15. 1
	/A	LC	Little egret	<i>Egretta garzetta</i>	1. 0. 0				1. 0. 0		0. 0. 0
			FLAMINGOS	PHOENICPTERIFORMES							
	II/B	NT	Chilean flamingo	<i>Phoenicopterus chilensis</i>	57. 44. 0				2. 2. 0		55. 42. 0

CITES	IUCN Status	SPECIES		Total at 01.01.23	Arrivals	Births	Deaths within 30 Days	Deaths	Departures	Total at 31.12.23
		GALLINACEOUS BIRDS	GALLIFORMES							
/C	LC	Common peafowl	<i>Pavo cristatus</i>	2. 3. 0		0. 0. 5		1. 0. 0	0. 0. 5	1. 3. 0
NL	NT	Crested wood partridge	<i>Rollulus rouloul</i>	2. 0. 0						2. 0. 0
		PARROTS	PSITTACIFORMES							
 I/A	CR	Citron-crested cockatoo	<i>Cacatua sulphurea citrinocristata</i>	1. 3. 0						1. 3. 0
		HORNBILLS	CORACIIFORMES							
 NL	LC	Abyssinian ground hornbill	<i>Bucorvus abyssinicus</i>	1. 1. 0						1. 1. 0
		DOMESTIC FOWL								
	NE	Indian runner duck	<i>Anas platyrhynchos domestic indian_runner</i>	1. 3. 2						1. 3. 2
		CLASS: REPTILES	REPTILIA							
		CHELONES	TESTUDINES							
 I/A	CR	Annam pond turtle	<i>Mauremys annamensis</i>	2. 2. 5		0. 0. 3				2. 2. 8
 III/C	EN	Chinese stripe-necked turtle	<i>Mauremys sinensis</i>	1. 0. 0						1. 0. 0
NL	NE	Central America wood turtle	<i>Rhinoclemmys pulcherrima manni</i>	0. 2. 0						0. 2. 0
II/B	NE	Red-footed tortoise	<i>Chelonoidis carbonaria</i>	1. 3. 0				1. 0. 0		0. 3. 0
 I/A	CR	Indian star tortoise	<i>Geochelone elegans</i>	0. 2. 4						0. 2. 4
II/B	EN	African spurred tortoise	<i>Centrochelys sulcata</i>	1. 1. 0						1. 1. 0
		CROCODILES	CROCODILIA							
NL	NE	West African Crocodile	<i>Crocodylus suchus</i>	1. 1. 0						1. 1. 0

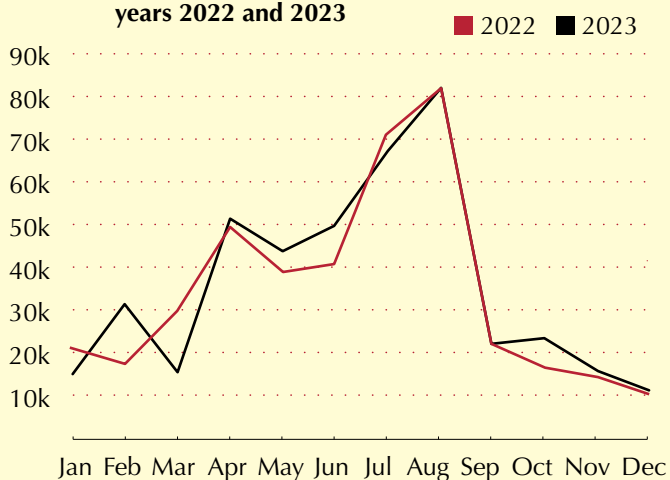
	CITES	IUCN Status	SPECIES		Total at 01.01.23	Arrivals	Births	Deaths within 30 Days	Deaths	Departures	Total at 31.12.23
			LIZARDS	SAURIA							
	NL	NE	Green crested lizard	<i>Bronchocela cristatella</i>	5. 0. 0				1. 0. 0		4. 0. 0
	II/B	LC	Panther chameleon	<i>Furcifer pardalis</i>	1. 0. 0						1. 0. 0
ESB	I/A	CR	Turquoise dwarf gecko	<i>Lygodactylus williamsi</i>	1. 0. 0						1. 0. 0
	NL	LC	Leopard gecko	<i>Eublepharis macularius</i>	0. 1. 0					0. 1. 0	0. 0. 0
ESB	I/A	EN	Lau Banded Iguana	<i>Brachylophus fasciatus</i>	1. 1. 0				0. 1. 0		1. 0. 0
	II/B	LC	Mangrove monitor	<i>Varanus indicus</i>	0. 1. 0					0. 1. 0	0. 0. 0
			SNAKES	SERPENTES							
	II/B	LC	Green tree python	<i>Morelia viridis</i>	1. 0. 0						1. 0. 0
	II/B	VU	Burmese python	<i>Python bivittatus</i>	2. 0. 0						2. 0. 0
	II/B	LC	Royal python	<i>Python regius</i>	0. 0. 2						0. 0. 2
	/D	NE	King ratsnake	<i>Elaphe carinata</i>	1. 1. 0						1. 1. 0
	NL	LC	Cornsnake	<i>Pantherophis guttatus</i>	1. 0. 0				1. 0. 0		0. 0. 0
	NL	LC	Viperine snake	<i>Natrix maura</i>	0. 0. 1						0. 0. 1
	NL	LC	Common gartersnake	<i>Thamnophis sirtalis</i>	1. 0. 0				1. 0. 0		0. 0. 0
			INVERTEBRATES	INVERTEBRATA							
			CLASS: INSECTS	INSECTA							
			STICK INSECTS	PHASMATOPTERA							
	NL	NE	Indian green stick insects	<i>Carausius morosus</i>	1 colony						1 colony
	NL	LC	Macleays spectre	<i>Extatosoma tiaratum</i>	1 colony						1 colony
	NL	CR	Black beauty stick insect	<i>Peruphasma schultei</i>	1 colony						1 colony
	NL	NE	Zompro's/Thai stick insect	<i>Parapachymorpha zomproi</i>	1 colony						1 colony

* approximate numbers

FOTA WILDLIFE PARK: DIRECTOR'S REPORT

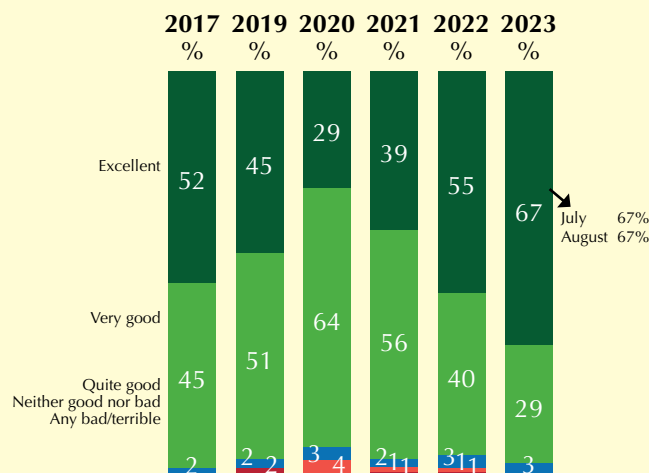
Overall, visitor numbers to Fota Wildlife Park were up by 3.6% in 2023 year on year, and the park's income increased accordingly. In 2023, Fota Wildlife Park achieved record-high visitation and income during the first half of the year, surpassing similar periods since the park opened in 1983 (see Graph 1). This was accomplished as a result of higher visitor attendance numbers during the months of February, May and June. However, excessive rainfall in the months of March and July had a detrimental effect on visitor numbers, resulting in a significant reduction of 16,812 visitors against the budgeted numbers for July. This corresponded with the 220% increase on the average monthly rainfall received during this month in 2023.

Graph 1. Comparison of monthly visitor numbers for the years 2022 and 2023



The total annual rainfall for 2023 was 44% higher compared to the long-term average. Attendances for the latter five months of the year were stable and slightly up in the month of October 2023.

There was a 22% reduction in the number of visitors holidaying in the Cork area in 2023, largely due to the lack of available accommodation for potential visitors when compared to pre-2021 levels. These changes in customers attending were coupled with the ever-increasing inflationary costs associated with holidaying in Ireland (Behavioural & Attitudes Survey of Fota Visitors 2023).



Excellent ratings continue to climb, more than doubling from the low levels recorded in 2020 and improving by twelve percent points on last year.

As part of its 10-year strategic plan (Fota 2030 Vision), Fota Wildlife Park made ongoing improvements to its buildings, infrastructure, and animal enclosures during 2023. These enhancements contributed to an impressive visitor experience rating of 96%, with those surveyed citing it as excellent or very good. The "excellent" rating increased by 12% to its highest level since the visitor surveys began in 2011 (Behavioural & Attitudes Survey of Fota Visitors 2023).

PARK ACTIVITIES AND DEVELOPMENTS

CAPITAL PROJECTS

Education, Conservation and Research Centre (ECRC), 'Understanding our Sustainable Future'

Fota Wildlife Park's 10-year development strategy, Fota 2030 Vision, prioritised the construction of a cutting-edge Education, Conservation and Research Centre (ECRC) as a development project for the time period 2022–2023.

Having received planning approval in June of 2022, construction of the ECRC project commenced in early November 2022 and was completed in December 2023, both on schedule and within budget. It was the most substantial project ever undertaken by the park and one of major significance, as its development coincides with the 40th anniversary of the opening of the Wildlife Park in 1983.



*(Above) Entrance to the new Education, Conservation and Research Centre at Fota Wildlife Park
(Above right) Lecture theatre inside the Education, Conservation and Research Centre*

The ECRC was developed at a cost of €5.5m, with the continued generosity and much appreciated support from the Government of Ireland through the Office of Public Works to the amount of €1m in 2022 and a further €1m received in 2023. The remaining €3.5m were funded from Fota Wildlife Park's own resources.



The completion of this sustainably built, passive design development emphasises Fota Wildlife Park's 40th anniversary pledge and its commitment to be a leading contributor to the conservation of national and global biodiversity through education, research, the breeding of endangered species, and by actively supporting conservation projects worldwide. This building complex has sustainability at its core, with solar panels and batteries providing the necessary energy, rainwater harvesting providing 80% of the required water, a heat recovery ventilation system, as well as substantial insulation in the external walls, which greatly reduces the energy demand of the ECRC complex.

Recycled and reusable products have been used throughout the construction of this complex, and they include timber parquet flooring in the theatre area made from recycled Middleton Distillery whiskey barrels that were no longer suitable for whiskey storage. The outer walls of the entrance to the complex have been clad with Robinia timber, which does not require any painting or maintenance, and will last for up to 80 years. It will be instrumental in helping to provide habitats for both native birds and bats. The land on the interior side of the development has been landscaped with native plant species, many of whom are under threat of extinction in Ireland.

The ECRC features three state-of-the-art classrooms and a lecture theatre that can accommodate up to 265 people, resulting in a combined capacity of 500 students that can be accommodated on site daily for educational courses. The centre also offers changing facilities for people with additional needs, a café, and an open-air plaza with a fixed canopy cover to allow outdoor seating that provides dining facilities for schools and the visiting public. The ECRC also houses a large boardroom, which can accommodate up to 50 people, making it suitable for corporate meetings, and the large atrium acts as a suitable breakout area during conferences and other corporate events.

Other Capital Items

- New animal transport van to enable transfer of animals to and from other zoological parks.
- Installation of new back-up generator at the Giraffe House.
- Fitting of new windows, doors and roof covering at the

Oasis Café.

- Provision of new animal handling facility for Lechwe and Oryx.
- The Park reviewed its fixed asset register during the year. This review resulted in the disposal for accounting purposes of a number of assets. These assets had a cumulative original cost of c €4.8m and a cumulative written down value of €112k. These assets were purchased and utilised in full over the last 30 years.

SPECIES CONSERVATION PROJECTS

In 2023, Fota Wildlife Park continued to expand its work with ex-situ and in-situ conservation projects in line with the International Union for Conservation of Nature's One Plan approach. This includes species conservation in association with field biologists and zoos developing management strategies and conservation actions for all populations of a species, whether inside or outside their natural range, that focus on integrated conservation planning. Many species in zoological parks are close to extinction in the wild, at a global or regional level, and these ex-situ populations are important genetically and demographically to ensure a species survives for future generations in the wild. Examples of these species include scimitar-horned oryx and European bison, and both species had their 'Extinct in the Wild' Red List status reduced to 'Endangered' and 'Near Threatened', respectively.

In the reporting period, Fota Wildlife Park assisted with the augmentation of wild populations of three critically endangered native species, namely the curlew, corncrake

and natterjack toad. The projects have facilitated the return of these three species to habitats in Ireland, and a total of 1,870 animals were returned to the wild during 2023, which was 60% more than the total of 1,170 animals in the care of Fota at the end of 2023.



Curlews

This year, Fota Wildlife Park expanded the trial curlew head-starting project that had commenced the year before. In 2022, a single nest of four eggs had been removed from the wild by the NPWS in Kerry and subsequently incubated and reared at Fota, resulting in the return of four curlew fledglings to Kerry. In 2023, 39 curlew eggs were collected from the wild by the NPWS throughout the west of Ireland as part of the head-starting project and brought to Fota for incubation and rearing. A total of 35 curlew fledglings were returned to the NPWS for release into the wild. The success of this curlew head-starting programme resulted in its inclusion in the European Innova-

tion Partnership Project for Breeding Waders. This project will include the following breeding wader species: curlew, dunlin, golden plover, lapwing, redshank and snipe, some of which have seen population declines of 98% in Ireland. This EIP project is funded by the EU and overseen by the NPWS and the Department of Agriculture, with Irish Rural Link as the lead partner and with seven other partners, including Fota Wildlife Park and Dublin Zoo.

European bison

To date, 14 European bison (Europe's largest land mammal) born in Fota Wildlife Park have been reintroduced to the wild in countries such as Poland, Romania, Spain and England, with the most recent reintroduction to Shahdag National Park in the Caucasus Mountains of Azerbaijan having taken place in September 2022. While there was no reintroduction of bison in 2023, Fota continued to breed the species, with a male born in early May.

Corncrakes

Fota Wildlife Park is an Associated Beneficiary in the Corncrake EU Life Project, which began in January 2021. One of its main objectives is to develop protection, rescue and research initiatives for the species and to ensure suitable capacity for egg incubation, hatching and rearing of chicks is made available in Fota. In June 2022, a corncrake nest that was disturbed by a farmer cutting silage in the Fanad Peninsula in Donegal resulted in the rearing and return of nine corncrake fledglings back to the wild on Fanad. In 2023, there was an increase in the number of corncrakes recorded on the Fanad Peninsula, which could be attributed to the return of the nine fledglings reared at Fota in 2022.

During 2023, Fota continued to assist in the development of research involving the use of dogs to detect 'at risk' corncrake nests in the wild. This project made considerable progress during the year.

Natterjack toads

It was an exceptional year for the natterjack toad head-starting project in 2023, with 1,835 natterjack toadlets released back into the wild in Castlegregory, Co Kerry. This brings the total number of natterjack toadlets released in Kerry by Fota Wildlife Park to 9,000 since the project started in 2016. The Minister of State for Heritage, Malcolm Noonan TD, assisted with the release of natterjack toadlets into shallow ponds on the farm of Tommy Reidy in Castlegregory, Kerry, during August 2023.

Minister Noonan said: "It's wonderful to see the support and enthusiasm among the local community for the natterjack toad. The habitat here in Castlegregory is unique, and the efforts of local farmers to enhance it by creating ponds will undoubtedly have a positive impact on the fortunes of these beloved amphibians. The farmers will see benefits, too, through a new results-based scheme designed specifically to support these measures. I'd like to

congratulate the conservation teams in the National Parks and Wildlife Service and Fota Wildlife Park, as well as the amazing community here in Kerry that is so committed to the conservation of the habitats and species that also call the Kingdom home."

Notable animal births in 2023

The most notable births during 2023 included four cheetah cubs born in February 2023, one of which did not survive. The three cubs can be seen in the photo with their mother 'Grainne', who was also born in Fota in May 2017 and has produced three litters of cubs.

Another endangered species bred at Fota in 2023 was the red panda, with three cubs born to female 'Laxmi', who herself was born in Longleat Safari Park and came to Fota four years ago.

Other notable births/hatchings during 2023 included five corncrakes, six red-breasted geese, 22 filed-eared tree frogs in the Tropical House, three black-and-white colobus monkeys, four ring-tailed lemurs and one Francois' langur, which is the first time that this endangered species has successfully bred at Fota.



FOTA WILDLIFE PARK'S EDUCATIONAL ACTIVITIES DURING 2023

In 2023, Fota Wildlife Park's education department welcomed in excess of 16,500 students through its formal education programmes in the absence of a dedicated education complex. Two prefabricated classrooms provided an interim solution as the proposed Education, Conservation and Research infrastructural development was under construction. Notable increases were associated with a greater level of demand for both the secondary practical field ecology module and the primary conservation module.

Fota's education department received the Sandford Award in September of 2023, and the Park is the only zoological facility in Ireland and the UK to have received this accreditation on four consecutive occasions. The Sandford Award is an independently assessed, quality assured assessment of formal, curriculum-aligned and site-led heritage learning programmes across both Ireland and the UK. Recognition is also given to informal learning such as family programmes and self-guided provision. Below is a citation from the Sandford Award lead assessor.

"Fota Wildlife Park's education service is distinguished by its expert staff and its extensive collection of exotic and indigenous fauna and flora. As well as delivering essential knowledge and skills, the learning experiences at Fota Wildlife Park extend far beyond the curriculum. The staff's passion for conservation and the plight of Ireland's and the world's endangered species is present throughout, with the aim of inspiring pupils and visitors to take action to help protect the environment. The service is very well managed, and the new Education, Conservation and Research Centre has the potential to deliver further improvements to facilities and resources".

The park's education department organised several public engagement events throughout the summer, aimed at encouraging and inspiring visitors to actively participate in biodiversity conservation efforts. 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 a number of external exhibitions, including the Cork Carnival of Science hosted by Science Foundation Ireland



(Above) Cheetah cubs with their mother 'Grainne'

(SFI) in association with Cork City Council. The event attracted in excess of 15,000 visitors over the two-day period and provided exhibitors with a platform to engage both adults and children alike in the fields of science, technology, maths, and engineering.

Research Activities at Fota Wildlife Park

Throughout 2023, 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 2023

Fota continued to work with Fourth Year Honours research projects completed by students from the School of BEES in UCC.

Projects completed in the Academic Year 2022-2023:

- **Ciara Keane** – Introduction of a new male Drill, *Mandrillus leucophaeus*, to three female Drills at Fota Wildlife Park. Supervisors: Dr Courtney Collins and Dr Ger Killeen.
- **Conor Phelan** – Enrichment of hoofstock species in Fota Wildlife Park. Supervisors: Ruth Ramsay and Rebecca Newman.
- **Clóideach Walsh** – Successful integration of a new male lion into a captive pride of two female Asiatic lions '*Panthera leo persica*'. Supervisor: Dr Ger Killeen.
- **Dylan Moore** – Compare the meerkat: A multi-zoo behavioural comparison of meerkats, *Suricata suricatta*, including the introduction of a new diet. Supervisors: Dr Ruth Ramsey and Dr Courtney Collins.

Postgraduate Degrees undertaken at Fota Wildlife Park

The research work undertaken by researchers Daniel Moloney, Dr Rebecca Newman and Dr Arezoo Sanei at Fota Wildlife Park would not have been possible without the valuable co-funding provided by the Irish Research Council. The Irish Research Council provided two thirds of the funding and Fota Wildlife Park provided the remaining third for these three research projects.

Doctoral Degree (PhD)

- **Daniel Moloney** – An investigation into how conservation strategies, employed both in captive and wild settings, inform our understanding of animals' movement and behaviour. Supervisor: Dr Ruth Ramsey. Commenced 1st September 2021.
- **Dr Cai** – Behaviour of the black-and-white ruffed lemurs. Supervisors: Dr Ruth Ramsey and Dr Fidelma Butler. Commenced September 2023.

Post-Doctoral

- **Dr Rebecca Newman** – Improving animal welfare through environmental enrichment: creating practical enrichment assessment for use in zoos. Supervisor: Dr Ruth Ramsey. Commenced March 2022.
- **Dr Arezoo Sanei** – Developing a habitat restoration framework with respect to the optimum reference condition for efficient enhancement of the conservation measures focusing on the Asiatic cheetah and the Persian leopard in Iran. Supervisors: Dr Fidelma Butler and Dr Ruth Ramsey. Commencement date September 2023, but delayed until January 2024.

Conservation Projects funded by Fota Wildlife Park

Species Conservation Supported by direct Fota Wildlife Park Funding	Summary of Conservation Project Aims
Western black-crested gibbon, an FFI Project in Mu Cang Chai, Vietnam	Main Sponsor of local community patrols to protect Western black crested gibbons in Mu Chang Chai, Vietnam with Fauna and Flora International.
Tonkin snub-nosed monkey FFI Project in Quan Ba District, Vietnam	Main Sponsor of local community patrols to protect Tonkin snub-nosed monkey in Quan Ba District, Vietnam with Fauna and Flora International.
Cheetah Conservation Fund's work in Somaliland	Support for cheetah conservation in Somaliland and the care of the captive husbandry of 92 confiscated Northern cheetah, <i>Acinonyx jubatus soemmeringii</i> .
Madagascan Pochard Captive Breeding and Release Project in Madagascar.	Support for the captive breeding and re-introduction of Madagascan pochard in conjunction with Durrell Wildlife Conservation Trust.
Cork Otter Survey	Support for a survey of Otters in Cork City and educational pack for Cork schools in conjunction with Cork Nature Network.
Membership and funding to IUCN Conservation Planning Specialist Group (CPSG).	This funding goes to the CPSG to assist them with to develop conservation plans for many of the world's endangered species.
Corncrake EU Life Project to protect and conserve and increase the wild population of Corncrake in Ireland.	One of its main objectives of this project is to develop protection, rescue, and research initiatives for Corncrakes in Ireland and to ensure suitable capacity for egg incubation, hatching and rearing of chicks of rescues nests at Fota.

Species Conservation Supported by direct Fota Wildlife Park Funding

Summary of Conservation Project Aims

Origins of Irish Biodiversity Conference with publication of the presentations in 2024.

The Origins of Irelands Biodiversity conference brought experts in this field to be understand the current research on origins of Irish Biodiversity and discussed the formation of Irelands early biodiversity and ecosystem, and its contemporary biodiversity.

Sumatran tiger conservation in Kerinci Seblat National Park, Sumatra

This funding supports the efforts by FFI to protect the wild populations of Sumatran tigers in the Kerinci Seblat National Park.

Funding to support Red pandas in Nepal.

This funding assists the Red Panda Network in Nepal to protect and save the last remaining Red pandas in Nepal

Irish Breeding Waders European Innovation Partnership

Trail of Curlew Head-starter project in collaboration with the National Parks and Wildlife Park. This has resulted in the rearing of 35 Curlew fledglings for release into the wild.

IUCN Status	SPECIES		Beginning	Births	Acquisitions	Dead	Dispositions	Ending
	INVERTEBRATES	INVERTEBRAT						
	CLASS: INSECTS	CLASS: INSECTA						
	Madagascar hissing cockroach	<i>Gromphadorhina oblongonota</i> *	0. 0. 20	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 20
	Walkingstick	<i>Achrioptera manga</i> *	0. 0. 20	0. 0. 20	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 40
	Butterflies	<i>Papilionoidea</i> *	0. 0. 80	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 80
	VERTEBRATES	VERTEBRATA						
	CLASS: FISH	CLASS: PISCES						
LC	Laced moray	<i>Gymnothorax favagineus</i>	0. 0. 1	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 1
EN	Denison's barb	<i>Sahyadria denisonii</i> *	0. 0. 10	0. 0. 0	0. 0. 0	0. 0. 5	0. 0. 0	0. 0. 5
LC	Clown loach	<i>Chromobotia macracanthus</i> *	0. 0. 3	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 3
	Buenos Aires tetra	<i>Hyphessobrycon anisitsi</i> *	0. 0. 32	0. 0. 0	0. 0. 0	0. 0. 2	0. 0. 24	0. 0. 6
	Royal plecostomus	<i>Panaque nigrolineatus</i> *	0. 0. 1	0. 0. 0	0. 0. 0	0. 0. 1	0. 0. 0	0. 0. 0
EN	Madagascar rainbowfish	<i>Bedotia madagascariensis</i> *	0. 0. 54	0. 0. 0	0. 0. 0	0. 0. 2	0. 0. 26	0. 0. 26
VU	Red rainbowfish	<i>Glossolepis incisus</i> *	0. 0. 28	0. 0. 0	0. 0. 0	0. 0. 5	0. 0. 12	0. 0. 11
EN	Boeseman's rainbowfish	<i>Melanotaenia boesemani</i> *	0. 0. 19	0. 0. 0	0. 0. 0	0. 0. 1	0. 0. 0	0. 0. 18
LC	Goyder River rainbowfish	<i>Melanotaenia trifasciata</i> *	0. 0. 34	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 34
EN	Powderblue panchax	<i>Pachypanchax omalonota</i> *	0. 0. 11	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 11
EN	Panchax	<i>Pachypanchax sakaramyi</i> *	0. 0. 11	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 11
CR	Butterfly splitfin	<i>Ameca splendens</i> *	0. 0. 110	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 110
EW	Golden sawfin	<i>Skiffia francesae</i> *	0. 0. 57	0. 0. 0	0. 0. 0	0. 0. 1	0. 0. 0	0. 0. 57
LC	Pot-bellied seahorse	<i>Hippocampus abdominalis</i> *	0. 0. 14	0. 0. 0	0. 0. 0	0. 0. 3	0. 0. 0	0. 0. 11
LC	Banded archerfish	<i>Toxotes jaculatrix</i> *	0. 0. 14	0. 0. 0	0. 0. 0	0. 0. 2	0. 0. 6	0. 0. 6
LC	Diamond fish	<i>Monodactylus argenteus</i>	0. 0. 9	0. 0. 0	0. 0. 0	0. 0. 3	0. 0. 0	0. 0. 6
	African silverfish	<i>Monodactylus sebae</i> *	0. 0. 1	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 1
LC	Copperband butterflyfish	<i>Chelmon rostratus</i>	0. 0. 1	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 1
LC	Schooling coachman	<i>Heniochus diphreutes</i>	0. 0. 3	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 3
LC	French angelfish	<i>Pomacanthus paru</i>	0. 0. 1	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 1
VU	Kieneri cichlid	<i>Paretroplus kieneri</i> *	0. 0. 10	0. 0. 0	0. 0. 0	0. 0. 4	0. 0. 0	0. 0. 6
	Clown anemonefish	<i>Amphiprion ocellaris</i> *	0. 0. 10	0. 0. 0	0. 0. 0	0. 0. 4	0. 0. 0	0. 0. 6
	Goldtail damselfish	<i>Chrysiptera parasema</i> *	0. 0. 4	0. 0. 0	0. 0. 0	0. 0. 2	0. 0. 0	0. 0. 2

	IUCN Status	SPECIES		Beginning	Births	Acquisitions	Dead	Dispositions	Ending
	LC	Spotted scat	<i>Scatophagus argus</i> *	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
	LC	Foxface rabbitfish	<i>Siganus vulpinus</i> *	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
	LC	Fowler's surgeon	<i>Acanthurus fowleri</i> *	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
	LC	Palette surgeonfish	<i>Paracanthurus hepatus</i>	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
	LC	Red Sea sailfin tang	<i>Zebrasoma desjardini</i> *	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
		CLASS: AMPHIBIANS	CLASS: AMPHIBIA						
	CR	Axolotl	<i>Ambystoma mexicanum</i> *	0.0.5	0.0.0	0.0.0	0.0.1	0.0.0	0.0.4
	EN	Natterjack toad	<i>Epidalea calamita</i>	3.5.0	0.0.0	0.0.0	0.0.0	0.0.0	3.5.0
	CR	Emperor spotted newt	<i>Neurergus kaiseri</i> *	0.0.32	0.0.0	0.0.0	0.0.6	0.0.0	0.0.26
	EN	Phantasmal poison dart frog	<i>Epipedobates tricolor</i> *	0.0.44	0.0.0	0.0.0	0.0.0	0.0.0	0.0.44
EEP	CR	Mountain chicken frog	<i>Leptodactylus fallax</i>	0.0.2	0.0.0	0.0.0	0.0.0	0.0.0	0.2.0
	CR	Golden mantella	<i>Mantella aurantiaca</i> *	0.0.3	0.0.0	0.0.0	0.0.1	0.0.0	0.0.3
	EN	Green mantella	<i>Mantella viridis</i> *	0.0.3	0.0.0	0.0.0	0.0.1	0.0.0	0.0.2
	LC	Sambava tomato frog	<i>Dyscophus guineti</i>	0.0.1	0.0.0	0.0.0	0.0.1	0.0.0	0.0.0
	LC	File-eared Tree Frog	<i>Polypedates ottilophus</i> *	0.0.1	0.0.19	0.0.10	0.0.0	0.0.0	0.0.30
		Tonkin bug-eyed frog	<i>Theloderma corticale</i>	0.0.2	0.0.0	0.0.0	0.0.1	0.0.0	0.0.1
		CLASS: REPTILES	CLASS: REPTILIA						
		Red-footed tortoise	<i>Chelonoidis carbonarius</i>	1.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0
EEP	CR	Elongated tortoise	<i>Indotestudo elongata</i>	7.4.3	0.0.0	0.0.0	0.0.0	0.0.0	7.4.3
	EN	Lau banded iguana	<i>Brachylophus fasciatus</i>	1.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0
	LC	Green iguana	<i>Iguana iguana</i>	1.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0
	LC	Giant madagascar day gecko	<i>Phelsuma grandis</i>	1.2.5	0.0.0	0.0.0	0.0.0	0.0.0	1.2.5
	LC	Royal/ball python	<i>Python regius</i>	2.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.0.0
	LC	Dumeril's ground boa	<i>Acrantophis dumerili</i>	3.0.0	0.0.0	0.0.0	0.0.0	0.0.0	3.0.0
EEP	VU	Jamaican boa	<i>Chilabothrus subflavus</i>	0.0.2	0.0.0	0.0.0	0.0.0	0.0.0	0.0.2
		CLASS: BIRDS	CLASS: AVES						
	LC	Common ostrich	<i>Struthio camelus</i>	1.3.0	0.0.0	0.0.0	0.0.0	0.0.0	1.3.0
	NT	Lesser rhea	<i>Rhea pennata</i>	2.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.0.0

	IUCN Status	SPECIES		Beginning	Births	Acquisitions	Dead	Dispositions	Ending
	LC	Helmeted guineafowl	<i>Numida meleagris</i>	0. 0. 27	0. 0. 15	0. 0. 0	0. 0. 1	0. 0. 0	0. 0. 41
	LC	Grey partridge	<i>Perdix perdix</i>	1. 1. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	1. 1. 0
EEP	CR	Vietnam pheasant	<i>Lophura edwardsi</i>	1. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	1. 0. 0	0. 0. 0
	LC	Common peafowl	<i>Pavo cristatus</i>	4. 9. 3	2. 1. 0	0. 0. 0	0. 0. 0	0. 0. 0	6. 10. 3
	LC	Greylag goose	<i>Anser anser</i>	11. 8. 20	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	11. 8. 20
	LC	Pink-footed goose	<i>Anser brachyrhynchus</i>	0. 1. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 1. 0
	NT	Emperor goose	<i>Anser canagicus</i>	1. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	1. 0. 0
	VU	Lesser white-fronted goose	<i>Anser erythropus</i>	1. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	1. 0. 0
	LC	Bar-headed goose	<i>Anser indicus</i>	2. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	2. 0. 0
	LC	Barnacle goose	<i>Branta leucopsis</i>	1. 1. 0	0. 0. 0	0. 0. 0	0. 1. 0	0. 0. 0	2. 0. 0
	EN	Red-breasted goose	<i>Branta ruficollis</i>	3. 3. 1	2. 5. 1	0. 0. 0	0. 0. 2	0. 0. 0	5. 8. 0
	VU	Ne-ne	<i>Branta sandvicensis</i>	1. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	1. 0. 0
	LC	Coscoroba swan	<i>Coscoroba coscoroba</i>	1. 0. 0	0. 0. 0	0. 0. 0	1. 0. 0	0. 0. 0	0. 0. 0
	LC	Mandarin duck	<i>Aix galericulata</i>	4. 3. 0	0. 0. 8	0. 0. 0	1. 0. 0	0. 0. 0	3. 3. 8
	LC	Red-crested pochard	<i>Netta rufina</i>	2. 1. 0	0. 0. 1	0. 0. 0	0. 0. 1	0. 0. 0	2. 1. 0
	NT	Common eider	<i>Somateria mollissima</i>	0. 1. 0	0. 0. 0	0. 0. 0	0. 1. 0	0. 0. 0	0. 0. 0
	NT	Chilean flamingo	<i>Phoenicopterus chilensis</i>	1. 4. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	1. 4. 0
	LC	Corncrake	<i>Crex crex</i>	6. 5. 0	1. 1. 1	0. 0. 0	2. 2. 0	0. 0. 0	4. 4. 1
EEP	VU	Humboldt penguin	<i>Spheniscus humboldti</i>	10. 8. 0	0. 0. 1	0. 0. 0	1. 1. 1	0. 0. 0	9. 7. 0
	LC	Eastern white pelican	<i>Pelecanus onocrotalus</i>	2. 0. 0	0. 0. 0	0. 0. 0	1. 0. 0	0. 0. 0	1. 0. 0
EEP	LC	White-tailed sea eagle	<i>Haliaeetus albicilla</i>	0. 2. 0	0. 0. 0	0. 1. 0	0. 0. 0	0. 0. 0	0. 3. 0
EEP	CR	Blue-throated macaw	<i>Ara glaucogularis</i>	1. 1. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	1. 1. 0
		CLASS: MAMMALS	CLASS: MAMMALIA						
		MARSUPIAL MAMMALS	MARSUPIALIA						
		KOALAS, WOMBATS & KANGAROOS	DIPROTODONTIA						
EEP	LC	Eastern grey kangaroo	<i>Macropus giganteus</i>	7. 10. 0	0. 3. 0	0. 0. 0	2. 1. 0	0. 0. 0	5. 12. 0
	LC	Red-necked wallaby	<i>Macropus rufogriseus</i> *	0. 0. 156	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 156
		PLACENTAL MAMMALS	PLACENTALIA						
		SLOTHS & ANTEATERS	PILOSA						
ESB	LC	Linne's two-toed sloth	<i>Choloepus didactylus</i>	1. 2. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	1. 2. 0

	IUCN Status	SPECIES		Beginning	Births	Acquisitions	Dead	Dispositions	Ending
		PRIMATES	PRIMATES						
EEP	VU	Red-bellied lemur	<i>Eulemur rubriventer</i>	0. 4. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 4. 0
EEP	EN	Ring-tailed lemur	<i>Lemur catta</i>	2. 6. 0	3. 1. 0	0. 0. 0	1. 1. 0	0. 0. 0	4. 6
EEP	CR	Black-and-white ruffed lemur	<i>Varecia variegata</i>	6. 6. 0	0. 0. 0	0. 0. 0	0. 0. 0	3. 0. 0	3. 6. 0
EEP	LC	White-faced saki	<i>Pithecia pithecia</i>	1. 3. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	1. 3. 0
EEP	NT	Black howler	<i>Alouatta caraya</i>	1. 2. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	1. 2. 0
EEP	EN	Geoffroy's Spider Monkey	<i>Ateles fusciceps</i>	4. 5. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	4. 5. 0
EEP	CR	Roloway monkey	<i>Cercopithecus roloway</i>	1. 2. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	1. 2. 0
	VU	Grey-cheeked mangabey	<i>Lophocebus albigena</i>	1. 2. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	1. 2. 0
EEP	EN	Lion-tailed macaque	<i>Macaca silenus</i>	8. 13. 0	0. 0. 4	0. 0. 0	0. 0. 1	0. 0. 0	7. 13. 3
EEP	EN	Drill	<i>Mandrillus leucophaeus</i>	1. 3. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	1. 3. 0
EEP	LC	Eastern black-and-white colobus	<i>Colobus guereza</i>	3. 4. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	3. 4. 0
EEP	EN	Francois' langur	<i>Trachypithecus francoisi</i>	1. 2. 0	0. 0. 1	0. 0. 0	0. 0. 0	0. 0. 0	1. 2. 1
	EN	Agile gibbon	<i>Hylobates agilis</i>	2. 1. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	2. 1. 0
EEP	EN	Lar gibbon	<i>Hylobates lar</i>	1. 2. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 1. 0	1. 2. 0
EEP	EN	Siamang	<i>Symphalangus syndactylus</i>	4. 2. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	4. 2. 0
		RODENTS	RODENTIA						
	NT	Patagonian mara	<i>Dolichotis patagonum</i> *	0. 0. 1	1. 1. 6	6. 6. 0	3. 2. 1	0. 0. 0	4. 5. 6
	LC	Capybara	<i>Hydrochoerus hydrochaeris</i>	1. 0. 0	0. 0. 0	0. 2. 0	0. 0. 0	0. 0. 0	1. 2. 0
		CARNIVORES	CARNIVORA						
EEP	NT	Cheetah	<i>Acinonyx jubatus</i>	1. 14. 0	2. 1. 1	0. 0. 0	1. 0. 1	0. 5. 0	2. 10. 0
EEP	EN	Lion	<i>Panthera leo</i>	1. 2. 0	0. 0. 0	0. 1. 0	1. 0. 0	0. 0. 0	1. 3. 0
EEP	CR	Tiger	<i>Panthera tigris</i>	2. 1. 0	0. 0. 0	0. 1. 0	0. 1. 0	1. 0. 0	1. 1. 0
	LC	Slender-tailed meerkat	<i>Suricata suricatta</i>	1. 2. 0	1. 2. 0	0. 3. 0	0. 2. 0	0. 0. 0	2. 5. 0
	LC	Grey seal	<i>Halichoerus grypus</i>	0. 1. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 1. 0
	LC	Harbor seal	<i>Phoca vitulina</i>	0. 1. 0	0. 0. 0	0. 0. 0	0. 1. 0	0. 0. 0	0. 0. 0
EEP	EN	Red panda	<i>Ailurus fulgens</i>	1. 2. 0	1. 2. 0	0. 1. 0	0. 0. 0	0. 0. 0	2. 5. 0

	IUCN Status	SPECIES		Beginning	Births	Acquisitions	Dead	Dispositions	Ending
		ODD-TOED UNGULATES	PERISSODACTYLA						
	NT	Plains zebra	<i>Equus quagga</i>	3. 2. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	3. 2. 0
EEP	VU	South American tapir	<i>Tapirus terrestris</i>	2. 2. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	2. 2. 0
EEP	VU	One-horned rhinoceros	<i>Rhinoceros unicornis</i>	3. 1. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	3. 1. 0
		EVEN-TOED MAMMALS	CETARTIODACTYLA						
EEP	CR	Visayan warty pig	<i>Sus cebifrons</i>	1. 1. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	1. 1. 0
EEP	EN	Alfred's spotted deer	<i>Rusa alfredi</i>	1. 2. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	1. 2. 0
EEP	VU	Giraffe	<i>Giraffa camelopardalis</i>	2. 7. 0	0. 1. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 8. 0
EEP	NT	European wisent	<i>Bison bonasus</i>	5. 4. 0	1. 0. 0	0. 0. 0	4. 0. 0	0. 0. 0	2. 4. 0
EEP	EW	Scimitar-horned oryx	<i>Oryx dammah</i>	2. 7. 0	0. 0. 0	0. 0. 0	0. 0. 0	0. 0. 0	2. 7. 0
EEP	EN	Southern lechwe	<i>Kobus leche</i>	3. 9. 0	0. 1. 0	2. 0. 0	3. 2. 0	0. 0. 0	2. 8. 0
		TOTAL		131. 184. 822	17. 19. 78	8. 15. 10	21. 15. 54	5. 6. 68	130. 197. 788

* = 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 2023**

Registered number: 207824

Registered Charity Number: 20003715

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THE ZOOLOGICAL SOCIETY OF IRELAND

MEMBERS OF BOARD AND OTHER INFORMATION

Members of Board:

Board President

Carmel O'Connor

Immediate past President

Ann Keenan

Ordinary Board members

Nigel Bell (Resigned 21/09/2023)
Michael Daly (Resigned 21/09/2023)
John McMahon (Deceased 07/04/2024)
Andy Beer
Tom Cassin
Emma Teeling
Yvonne Buckley
Sharon McCabe

Other information:

Past Presidents

Michael Daly
Tom Dunphy

Secretary and registered office

Tom Cassin
The Zoological Gardens
Phoenix Park
Dublin 8

Auditors

Deloitte Ireland LLP
Chartered Accountants and Statutory Audit Firm
Deloitte & Touche House
Earlsfort Terrace
Dublin 2

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

MEMBERS OF BOARD AND OTHER INFORMATION *(Continued)*

Bankers

Bank of Ireland
2 College Green
Dublin 2

AIB
66 South Mall
Cork

Ulster Bank Limited
33 College Green
Dublin 2

Solicitors

Mason Hayes & Curran
South Bank House
Barrow Street
Dublin 4

A&L Goodbody
3 Dublin Landings
North Wall Quay
IFSC
Dublin 1

Ronan Daly Jermy
85 South Mall
Cork

Charity Number

20003715

Charity Tax Number

CHY 2964

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 2023.

Consolidation

These financial statements form the consolidated financial statements 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 2023.

Principal activities, business review and future developments

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

- a. The operation of a Zoo in the Phoenix Park, Dublin.
- b. The operation of a Zoo at 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 and the prior year was as follows:

	2023	2022
Dublin (incl Wild Lights)	1,161,937	1,276,930
Wild Lights	224,016	269,821
Fota Wildlife Park	430,024	415,200

Dublin Zoo was also able to hold the very popular Wild Lights event once again during November and December. With the support of the public, this event was successful, confirming the Zoo as a year-round outstanding family attraction.

The directors would like to acknowledge and thank the Government through the Office of Public Works (OPW) for its continuing support, which included capital grants of €3m for 2023. The directors are also very grateful to the public for its continued generous support of Dublin Zoo and Fota Wildlife Park.

The Group has recorded a surplus of €131k for 2023. Both Zoos continue to implement their respective 10-year Strategic Plans. These plans envisage significant capital expenditures on both existing and new animal habitats.

Dublin Zoo's Vision 2021-2031 ambition is to become a zoo-based conservation organisation of national and global significance with a focussed investment in species survival, conservation, research and environmental sustainability both nationally and globally. Full details of the strategic plan are available on the Dublin Zoo website.

Fota Wildlife Park's 2030 Vision sets the target to become one of the Top 10 zoological parks in Europe with species conservation, public education and engagement at its core to enable a more sustainable and biodiverse future at national and global level.

Capital Expenditure

The Group spent €8.8m on Capital Expenditure during 2023 compared to €5.5m in 2022. Key projects included the completion of the Society House restoration and aye-aye, tiger, and rhino habitat works in Dublin and the new Education, Conservation & Research Centre in Fota Wildlife Park.

These projects have been facilitated by the receipt of Government capital grants of €3m through the OPW, existing reserves and continuing operating surpluses.

The directors have authorised Capital Expenditure projects amounting to €2.2m for the year 2024. This expenditure will be funded from the surplus generated in 2023, future planned surpluses, together with existing reserves and 2024 capital grants.

Reserves Policy

The Board strives to maintain reserves at a level that enables the Group to manage financial risk and any volatility in its annual income streams.

An amount of €3m (2022: €3m) has been set aside by the Board at 31 December 2023, to help protect against any future pandemic outbreaks, the threat of zoonotic disease or any other emergency that might impact on the ongoing finances of the group.

Principal risks and uncertainties

The Board has established clear procedures to establish the Company's appetite for risk and define and communicate policies and procedures regarding the management and oversight of risk to which it may be exposed.

These procedures allow the Board and the senior management team to design and implement mitigating controls to reduce the likelihood of risks occurring, and to limit the potential impact if these risks do occur.

Risk Management process

The Board sets out and reviews the Society's risk appetite statement on an annual basis. This statement sets out the amount of risk that the company is willing to seek or accept in the pursuit of its objectives. It also sets out the framework in which the company's risk management policies and procedures operate.

The Company has a detailed risk register that contains the key risks that the senior management team and the Board consider apply to it. Risk management is an integrated part of all organisational activities, and procedures have been established for the monitoring and mitigation of risk.

Risk Assessment

Risks are assessed according to their likelihood to occur and their potential impact on the Company. This provides a score that identifies the principal risks and the documenting of the controls in place to mitigate these risks.

THE ZOOLOGICAL SOCIETY OF IRELAND

The risk register is a standing item for the Board. The register is reviewed and assessed annually by the Board. Any significant changes proposed to be made to the register are reported to the Board and minuted.

Principal risks and uncertainties

The Board has considered the principal risks to which the Group is exposed and is satisfied that suitable processes have been put in place to identify and manage these risks.

The following principal risks and uncertainties were applicable during 2023:

- Potential impact on visitor numbers due to adverse weather conditions;
- The effect of climate change impacting animals and visitor numbers;
- Uncertainty impacting on the Group relating to an outbreak of animal disease;
- Changes in the economic environment;
- Cyber Security and Data Protection; and
- Health and Safety.

Specific actions have been put in place to manage each of the risks identified above.

The Board is also conscious of the financial impact of the above risks and strives to maintain adequate cash reserves to allow it to continue to trade in the event of risks which may impact its 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 100 and 101.

Board and secretary

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

Ann Keenan
Michael Daly
(resigned 21/09/2023)
Nigel Bell
(resigned 21/09/2023)
John McMahon
(Deceased 07/04/2024)

Carmel O'Connor
Andy Beer
Tom Cassin
Emma Teeling
Yvonne Buckley
Sharon McCabe

Secretary:

Tom Cassin

Legal status

The Company is limited by guarantee and has no share capital. The Company has charitable status and is registered with the Charities Regulatory Authority.

Subsidiaries

The statutory information concerning subsidiary undertakings is provided in Note 8 to the financial statements.

Structure and governance

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

The Articles of Association set out the procedures regarding the appointment and retirement of board members and the proceedings of meeting. Training is provided for directors through their terms of office. A detailed Board Induction Pack is provided to new board members. The Board has also approved and adopted a Code of Conduct for its directors.

Conflict of Interest

The Company has a conflict of interests' policy and all board members sign a conflict of interest form annually. In addition, directors sign a register of interests' declaration. Conflict of interest is a standing agenda item at all board meetings. If a board member has a perceived or real conflict of interest, the director concerned should declare his/her interest at the earliest possible opportunity and withdraw from any discussion, decision or action relating to the conflict.

Board Evaluation

In 2021 the Board conducted a self-evaluation, with guidance from an independent expert firm. The conclusion from the evaluation was that the Board operates effectively, with a strong governance structure in place. Certain recommendations arising from the Board evaluation to improve effectiveness were implemented during 2023 and will continue to be implemented during 2024.

Governance

The Board delegates the management of the day-to-day operation of the Company and Fota Wildlife Park, and the implementation of policy and strategy to the Directors (Chief Executives) of both Zoos. 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 Zoos.

The Board believes that committing to a high level

THE ZOOLOGICAL SOCIETY OF IRELAND

of corporate governance is essential to achieving the optimal standard of operation of the Group's activities. To accomplish this, the Group has competent executive teams. There is clear division of responsibility, with the Board retaining control of major decisions, with the Zoo Directors responsible for devising strategy and policy within authority delegated to them by the Board. The Board is responsible for providing leadership, setting strategy and ensuring control.

There are clear and detailed processes 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 eight times during 2023.

The Board is satisfied that the Company is in compliance with the Charities Governance Code, and all relevant legal and regulatory requirements relating to its operations. The Board reviews its compliance with the Code on an annual basis.

The Board also considered the Guidelines for Charitable Organisations on Fundraising from the Public in respect of its digital fundraising initiatives and has adopted a Fundraising Policy, Donor Charter and Donor Complaints policy.

The Board recognises its overall responsibility for the Company's systems of internal control and for reviewing their effectiveness. It has 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 Company's accounting records.

Committees

The Board is supported by a number of sub-committees (not confined to Board members) established for good governance. The terms of reference for all Board committees are updated and approved by the Board on a regular basis

ESG (Environment, Social and Governance) considerations are to the fore in all decisions made by the Zoological Society of Ireland, and underpin both Dublin Zoo's and Fota Wildlife Park's strategic plans. These areas are also a specific focus of the Board sub-committees. Environment forms part of the remit of the Conservation, Education and Research Committee, and the Health, Safety and Sustainability Committee. Social matters are considered by both the Ethics Committee and the Governance and People Committee, and Governance is overseen by the Governance and People Committee.

Finance and Audit Committee

The function of the Finance and Audit Committee is to assist the Board of the Company on matters of financial management and in fulfilling its responsibilities by providing an independent review of financial reporting, by satisfying itself as to the effectiveness of the Company's internal controls and as to the sufficiency of the external audit process.

The Committee also monitors and reviews the financial

performance of the Company, the annual budget for recommendation to the Board, and advises on remuneration and commercial contract issues. The Committee comprises three board members and met twice during the year. The Committee members also supported management on an informal basis throughout the year.

Governance and People Committee

The principal objective of the Governance and People Committee is to advise the board on good corporate governance and, in particular, to monitor compliance with the Governance Code for Charity Organisations in Ireland. In addition, the Committee ensures that there is a robust and effective process for evaluating the performance of the Board to ensure that it fulfils its responsibilities. The Committee is also responsible for identifying and appointing suitably skilled directors to the Board, taking into account the existing balance of skills, knowledge, experience and diversity of the Board. The Committee also oversees strategic HR matters. It comprises one board member, two former Presidents of the Society and the current President and met three times during the year.

Conservation, Education and Research Committee

The purpose of the Conservation, Education and Research Committee is to assist the Board of the Company on matters relating to the Conservation and Education of visitors through a range of different media and to initiate and participate in appropriate Research projects and studies of endangered species and habitats within Ireland and other International Countries where the Company

has an interest. The Committee helps to formulate the conservation strategy of the Company and recommends to the Board the direction this should take and which national and international initiatives are worthy of its financial support. The Committee proposes to the Board the level of support which is appropriate for nominated Conservation projects. The Committee also liaises with, and delegates to employees of the Company where appropriate, the responsibility to commission or engage in research in partnerships with relevant Universities, Higher Education Institutes or Conservation Organisations. The Committee comprises three members of the Board, a former President of the Society, the Zoo Director and some internal and external appointees (including the Head of Discovery and Learning and the Conservation Officer). The Committee met three times during the year.

During 2023, the Zoo continued the Conservation Lecture series, covering such diverse areas as Bat Conservation Ireland, White Naped Mangaby conservation & Species Survival Commission and the IUCN. The Zoo was established as a Centre for Species Survival, which is based in the recently renovated Society House.

The Zoo established a working relationship with Nature's Safe on the cryopreservation of tissue samples which will be stored at the future biobank hub.

The Conservation Masterplan formulated in 2022, was very well received at the 2023 WAZA annual meeting and the Head of Discovery and Learning presented the Zoo's Conservation Education Masterplan at the EAZA 21+ webinar. The Zoo was also represented at the International

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Zoo Educators Conference in Wellington Zoo in October 2023.

During the year the Zoo spent €162k supporting 28 conservation partners in Ireland and around the world.

The Conservation Officer proposed and developed the concept of the Conservation euro as a fund-raising initiative.

During 2023, the Zoo supported a total of 38 research projects.

Ethics Committee

The purpose of the Ethics Committee is to provide a forum for advice, audit, ethical review and support of animal health, animal welfare, and ethical aspects of conservation and research activities carried out or supported by Dublin Zoo to achieve its purpose and deliver its charitable objects. In compliance with the provisions of the Irish Standards of Modern Zoo Practice (Appendix 3), the Ethics Committee fulfils the requirement to ensure a robust and documented ethical review process. The Committee comprises two members of the Board, the Zoo Director and some internal and external appointees and met four times during the year.

During 2023, the Committee supported the management in its preparation for the transportation of the elephant group to Cincinnati Zoo which involved a period of intensive training.

The Committee also continued its scrutiny and review of the animal-related emergencies protocol and the simulation of the Zoo's animal escape procedures. A modification of the reporting template form was approved to include identification of areas for improvement of the team's response.

A revised Animal Welfare Policy which is a more comprehensive policy containing improved pathways for reporting and monitoring of internal observations by staff was approved.

Programmes Committee

The purpose of the Programmes Committee is to ensure that Dublin Zoo has implemented effective security strategies, programmes and measures to protect its people, information and assets.

The Committee has the responsibility to:

- Ensure the company has in place an effective set of programmes and procedures to protect its people, information and assets.
- Set the direction and priority and provide guidance for the development and implementation of improvements to the security infrastructure and associated procedures and guidelines.
- Monitor and oversee the implementation of systems pertaining to GDPR, Cybersecurity and Business Continuity.
- Ensure annual assessments are undertaken for GDPR, Cybersecurity and Business Continuity and review all

reports received together with the steps management has taken to monitor and control any exposures arising.

The Committee comprised of two members of the Board and a former President of the Society and met once during the year. The company recruited an Information Technology specialist during 2023. As a result, the responsibilities of the Committee were taken over by the Finance and Audit Committee.

Health, Safety and Sustainability Committee

The purpose of the Health, Safety and Sustainability Committee is to assist the Board to fulfil its responsibilities in ensuring that the Company's policies, procedures and working practices regarding Health and Safety meet or exceed any legal obligations, with the object of promoting the well-being and safety of the Zoo employees, the public, suppliers and others who may be affected by its activities. The Committee also oversees strategic sustainability matters and the implementation of the Zoo's Sustainability Master Plan.

The Committee's responsibilities include:

- To maintain an overall assessment of the Zoo's key health and safety risks from which priorities for action are set and reviewed annually.
- To review and approve the Zoo's Health and Safety policy, and all other policies, standards and strategy for the management of health and safety at work within the Zoo and compliance with health and safety

legislative and other requirements.

- To review safety performance indicators (accidents and near misses), investigations of significant failures, independent inspection and audit reports and associated remedial actions.
- To ensure that it and the Board is kept abreast of any regulatory changes in relation to health and safety and the impact such changes may have on the activities of the Zoo.

The Committee comprises two members of the board, two former Presidents of the Society, the Zoo Director, and some external and internal appointees. The committee met twice during the year.

Capital Projects Committee

This Committee was established in 2023 to support the executive management in the assessment and evaluation of certain major capital projects.

The Committee comprises of two members of the board, the Zoo Director and certain internal and external appointees.

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 accounting records

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are maintained at the Society's registered office in The Zoological Gardens, Phoenix Park, Dublin 8.

Post balance sheet events

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

Health and safety policy

The Company has a health and safety policy in place which is being complied with and satisfactorily operated.

Political donations

The Company 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 as follows:

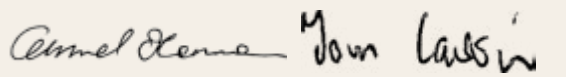
So far as each of the directors in office at the date of approval of the financial statements is aware:

- There is no relevant audit information of which the Company's auditors are unaware; and
- The Board Members have taken 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:



Carmel O'Connor
Board President

Tom Cassin
Director/Secretary

Date: 22 July 2024

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.

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

Report on the audit of the financial statements

Opinion on the financial statements of the Zoological Society of Ireland ("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 2023 and of the profit of the group 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 Cash Flow Statement; and
- the related notes 1 to 18, including a summary of significant accounting policies as set out in note 1.

the parent company financial statements:

- the Company Balance Sheet;
- the Company Statement of Changes in Equity; and
- the related notes 1 to 18, including a summary of significant accounting policies as set out in note 1.

The relevant financial reporting framework that has been applied in their preparation is the Companies Act 2014 and FRS 102 'The Financial Reporting Standard applicable in the UK and Republic of Ireland' 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

In auditing the financial statements, we have concluded that the directors' use of the going concern basis of accounting in the preparation of the financial statements is appropriate.

Based on the work we have performed, we have not identified any material uncertainties relating to events or conditions that, individually or collectively, may cast significant doubt on the group and parent company's ability to continue as a going concern for a period of at least twelve months from when the financial statements are authorised for issue.

Our responsibilities and the responsibilities of the directors with respect to going concern are described in the relevant sections of this report.

Other information

The other information comprises the information included in the Reports and Consolidated Financial Statements for the financial year ended 31 December 2023, other than the financial statements and our auditor's report thereon. The directors are responsible for the other information contained within the Reports and Consolidated Financial Statements for the financial year ended 31 December 2023. 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.

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.

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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.

A further description of our responsibilities for the audit of the financial statements is located on IAASA's website at: <https://iaasa.ie/publications/description-of-the-auditors-responsibilities-for-the-audit-of-the-financial-statements>. This description forms part of our auditor's report.

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 balance sheet is 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

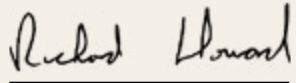
Based on the knowledge and understanding of the group and parent company and its environment obtained in the course of the audit, we have not identified material misstatements in the directors' report.

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.

Use of our report

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.

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



Richard Howard

For and on behalf of Deloitte Ireland LLP
Chartered Accountants and Statutory Audit Firm
Deloitte & Touche House, 29 Earlsfort Terrace, Dublin 2

23 July 2024

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CONSOLIDATED INCOME AND EXPENDITURE ACCOUNT FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2023

	Notes	2023 €'000	2022 €'000
INCOME	4	<u>25,107</u>	<u>24,637</u>
EXPENDITURE			
Operating costs		<u>(24,341)</u>	(22,454)
Administration expenses		<u>(1,252)</u>	<u>(1,084)</u>
TOTAL EXPENDITURE		<u>(25,593)</u>	<u>(23,538)</u>
OPERATING (DEFICIT) / SURPLUS		<u>(486)</u>	<u>1,099</u>
Amortisation of grants	12	<u>617</u>	<u>230</u>
SURPLUS FOR THE FINANCIAL YEAR		<u>131</u>	<u>1,329</u>

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

CONSOLIDATED BALANCE SHEET AS AT 31 DECEMBER 2023

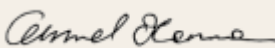

	Notes	2023 €'000	2022 €'000
Fixed Assets			
Tangible assets	7	<u>34,165</u>	<u>29,666</u>
Current Assets			
Stocks	9	389	394
Debtors	10	3,305	1,000
Cash at bank and in hand			
– Restricted – Lemur fund		12	12
– Unrestricted		<u>13,409</u>	<u>17,225</u>
		17,115	18,631
Creditors: Amounts falling due within one year	11	<u>(7,180)</u>	<u>(6,724)</u>
Net current assets		<u>9,935</u>	<u>11,907</u>
Total assets less current liabilities		44,100	41,573
Government Grants Deferred Credit	12	<u>(8,444)</u>	<u>(6,048)</u>
NET ASSETS		<u>35,656</u>	<u>35,525</u>

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CONSOLIDATED BALANCE SHEET AS AT 31 DECEMBER 2023 (Continued)

Accumulated surplus	12,694	12,563
Development reserve	19,962	19,962
Emergency reserve	<u>3,000</u>	<u>3,000</u>
	<u>35,656</u>	<u>35,525</u>

The financial statements were approved and authorised for issue by the Board of Directors on 22 July 2024 and signed on its behalf by:

Carmel O'Connor
Board President

Tom Cassin
Director/Secretary

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

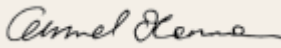

COMPANY BALANCE SHEET AS AT 31 DECEMBER 2023

	Notes	2023 €'000	2022 €'000
Fixed Assets			
Tangible assets	7	18,935	17,630
Financial assets	8	500	500
		19,435	18,130
Current Assets			
Stocks	9	248	227
Debtors			
- Due within one year	10	2,834	775
Cash at bank and in hand:			
- Restricted – Lemur fund		12	12
- Unrestricted		10,946	12,862
		14,040	13,876
Creditors: Amounts falling due within one year	11	(5,476)	(5,276)
Net current assets		8,564	8,600
Total assets less current liabilities		27,999	26,730
Government Grants Deferred Credit	12	(5,283)	(3,832)
NET ASSETS		22,716	22,898
Represented by:			
Accumulated surplus		8,741	8,923

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Development reserve	10,975	10,975
Emergency reserve	3,000	3,000
	<u>22,716</u>	<u>22,898</u>

The financial statements were approved by the Board on 22 July 2024 and signed on its behalf by:

Carmel O'Connor
Board President

Tom Cassin
Director/Secretary

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

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2023

	Development Reserve €'000	Emergency Reserve €'000	Accumulated Surplus €'000	Total €'000
Balance at 1 January 2022	19,962	2,500	11,999	34,461
Surplus for the financial year	-	-	1,329	1,329
Remeasurement of pension asset	-	-	(265)	(265)
Transfers between reserves	-	500	(500)	-
At 31 December 2022	19,962	3,000	12,563	35,525
Surplus for the financial year	-	-	131	131
At 31 December 2023	<u>19,962</u>	<u>3,000</u>	<u>12,694</u>	<u>35,656</u>

The Development Reserve represents funds which were set aside to fund capital investment in prior periods.

The Emergency reserve represents funds set aside by the Board to protect against the impact of any zoonotic disease or other emergency which might affect the ongoing finances of the Group.

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COMPANY STATEMENT OF CHANGES IN EQUITY FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2023

	Development Reserve €'000	Emergency Reserve €'000	Accumulated Surplus €'000	Total €'000
Balance at 1 January 2022	10,975	2,500	8,324	21,799
Surplus for the financial year	-	-	1,266	1,266
Remeasurement of pension asset	-	-	(167)	(167)
Transfers between reserves	<u>-</u>	<u>500</u>	<u>(500)</u>	<u>-</u>
At 31 December 2022	10,975	3,000	8,923	22,898
Deficit for the financial year	<u>-</u>	<u>-</u>	<u>(182)</u>	<u>(182)</u>
At 31 December 2023	<u>10,975</u>	<u>3,000</u>	<u>8,741</u>	<u>22,716</u>

The Development Reserve represents funds which were set aside to fund capital investment in prior periods.

The Emergency reserve represents funds set aside by the Board to protect against the impact of any zoonotic disease or other emergency which might affect the ongoing finances of the Group.

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

CONSOLIDATED STATEMENT OF CASH FLOWS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2023

	Notes	2023 €'000	2022 €'000
NET CASH INFLOW FROM OPERATING ACTIVITIES	15	<u>2,004</u>	<u>4,315</u>
Cash flows from investing activities			
Payment to acquire tangible fixed assets		(8,835)	(5,496)
Capital grant received relating to fixed assets		3,013	3,000
Proceeds on disposal of tangible assets		<u>2</u>	<u>14</u>
Net cash outflow from investing activities		(5,820)	(2,482)
MOVEMENT IN CASH IN THE FINANCIAL YEAR		<u>(3,816)</u>	<u>1,833</u>
Cash and cash equivalents at beginning of financial year		<u>17,237</u>	<u>15,404</u>
Cash and cash equivalents at end of financial year		<u>13,421</u>	<u>17,237</u>

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2023

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 84. The nature of the company's operations and its principal activities are set out in the Board's report on pages 86-94.

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 2023.

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 of gate receipts, annual pass, donations, government funding and membership subscriptions relating to the current period. Where subscriptions are received in advance or income relates to future performance requirement, the related revenue is included in deferred income in creditors and released to the income and expenditure account in the relevant period.

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.

Restricted cash

Where cash balances are ring-fenced for specific purposes

and may not be available for general use by the Group, the cash balance is noted as being restricted.

Tangible Fixed Assets and Depreciation

Tangible fixed assets are stated at cost less accumulated depreciation and any provision for impairment. The charge for depreciation is calculated to write down the cost of tangible fixed assets to their estimated residual values by equal annual instalments over their expected useful lives as follows:

Plant, machinery and equipment	20%
Computer equipment and software	33%
Motor vehicles	20%
Habitats	10%

Land and assets under construction are not depreciated.

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

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

Where indicators exist for a decrease in impairment loss, the prior impairment loss is tested to determine reversal.

An impairment loss is reversed on an individual impaired asset to the extent that the revised recoverable value does not lead to a revised carrying amount higher than the carrying value had no impairment been recognised.

Financial Fixed Assets

Financial fixed assets are 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.

Government Support/Grants

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

In prior periods grants under the Government Capital Investment Programme in the Group were provided and accounted for by the Office of Public Works (OPW) and any related assets were therefore excluded in the financial statements. The facilities provided under this Programme are used by the Group 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.

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Government revenue grants received are accounted for when received or if conditions exist, when those conditions are met.

Leases

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

Animals

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

Stocks

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

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.

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 13.

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

THE ZOOLOGICAL SOCIETY OF IRELAND

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

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

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

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2023

4. INCOME

Operating Income arising from the following activities undertaken wholly within Ireland.

	2023	2022
	€'000	€'000
Gate receipt income	16,642	16,736
Annual pass and membership income	2,951	2,899
Shop income	3,537	3,704
Other income	<u>1,977</u>	<u>1,298</u>
Operating income	<u>25,107</u>	<u>24,637</u>

Given the nature of the Group's activities, goods and services are donated to the Group by other organisations where the fair value of such goods and services may not be readily determinable.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS *(Continued)* FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2023

5. EMPLOYEE INFORMATION

	2023 €'000	2022 €'000
Staff numbers and costs		
<i>Average number of employees:</i>		
Management	19	17
Administration	17	20
General staff		
- full time	108	103
- part time	18	15
Shop	19	20
	<u>181</u>	<u>175</u>

The aggregate payroll costs of these persons were as follows:

	2023 €'000	2022 €'000
Wages and salaries	6,954	6,626
Social welfare costs	763	712
Retirement benefit costs (Note 13)	325	271
	<u>8,042</u>	<u>7,609</u>

The total remuneration for 19 key management personnel for the financial year totalled 1,479,648 (2022: €1,182,169 for 17 key management personnel).

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

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2023

6. OPERATING SURPLUS

	2023	2022
	€'000	€'000
The operating surplus is stated after charging:		
Remuneration of Board members	-	-
Auditor's remuneration in respect of		
- the audit of the entity	27	31
- the audit of subsidiary entity	16	16
- tax services	22	14
- other services	-	-
Depreciation	4,146	3,533
Loss on disposal of fixed assets	188	-

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

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS *(Continued)* FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2023

7. TANGIBLE FIXED ASSETS

Group	Land €'000	Plant & Equipment €'000	Computer Equipment €'000	Motor vehicles €'000	Build & Habitats €'000	Total €'000
Cost:						
At 1 January 2023	191	5,137	1,347	913	54,491	62,079
Additions	-	72	95	53	8,615	8,835
Disposals	-	(1,904)	-	(24)	(3,039)	(4,967)
At 31 December 2023	<u>191</u>	<u>3,305</u>	<u>1,442</u>	<u>942</u>	<u>60,067</u>	<u>65,947</u>
Depreciation:						
At 1 January 2023	-	4,484	1,212	604	26,114	32,414
Charge for financial year	-	184	85	68	3,809	4,146
On disposals	-	(1,903)	-	(22)	(2,853)	(4,778)
At 31 December 2023	<u>-</u>	<u>2,765</u>	<u>1,297</u>	<u>650</u>	<u>27,070</u>	<u>31,782</u>
Net Book Value						
At 31 December 2023	<u>191</u>	<u>540</u>	<u>145</u>	<u>292</u>	<u>32,997</u>	<u>34,165</u>
At 31 December 2022	<u>191</u>	<u>653</u>	<u>135</u>	<u>310</u>	<u>28,377</u>	<u>29,666</u>

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

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2023

7. TANGIBLE FIXED ASSETS *(Continued)*

Company	Land €'000	Machinery & fixtures & fittings €'000	Computer equipment €'000	Motor vehicles €'000	Habitats €'000	Total €'000
Cost:						
At 1 January 2023	191	2,387	1,347	390	36,669	40,984
Additions	-	-	95	-	4,716	4,811
Disposals	-	-	-	-	(162)	(162)
At 31 December 2023	<u>191</u>	<u>2,387</u>	<u>1,442</u>	<u>390</u>	<u>41,223</u>	<u>45,633</u>
Depreciation:						
At 1 January 2023	-	2,092	1,212	279	19,771	23,354
Charge for financial year	-	85	85	37	3,227	3,433
On disposals	-	-	-	-	(89)	(89)
At 31 December 2023	<u>-</u>	<u>2,177</u>	<u>1,297</u>	<u>316</u>	<u>22,908</u>	<u>26,698</u>
Net Book Value						
At 31 December 2023	<u>191</u>	<u>210</u>	<u>145</u>	<u>74</u>	<u>18,315</u>	<u>18,935</u>
At 31 December 2022	<u>191</u>	<u>294</u>	<u>134</u>	<u>111</u>	<u>16,899</u>	<u>17,630</u>

THE ZOOLOGICAL SOCIETY OF IRELAND

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS *(Continued)* FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2023

8. FINANCIAL ASSETS

Company	2023	2022
	€'000	€'000
At beginning and end of financial year	500	500

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

Details in respect of Fota are set out below:

Name and registered office	Country of Incorporation	Principal activity
Fota Wildlife Park CLG Carrigtwohill Co. Cork	Ireland	Operation of a wildlife park for exhibition and conservation of wildlife worldwide

9. STOCKS

	Group		Company	
	2023	2022	2023	2022
	€'000	€'000	€'000	€'000
Shops	365	370	224	203
Consumables	<u>24</u>	<u>24</u>	<u>24</u>	<u>24</u>
	<u>389</u>	<u>394</u>	<u>248</u>	<u>227</u>

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

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2023

10. DEBTORS

	Group		Company	
	2023	2022	2023	2022
	€'000	€'000	€'000	€'000
Amounts falling due within one year:				
Trade debtors	2,416	491	2,424	466
Prepayments and other debtors	606	473	410	309
VAT	283	36	-	-
	<u>3,305</u>	<u>1,000</u>	<u>2,834</u>	<u>775</u>

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

	Group		Company	
	2023	2022	2023	2022
	€'000	€'000	€'000	€'000
Trade creditors	2,667	1,821	2,176	1,685
Accruals	753	618	355	423
Deferred income	3,211	3,812	2,445	2,744
PAYE/PRSI	175	276	126	228
VAT	362	185	362	184
	7,168	6,712	5,464	5,264
Lemur fund	12	12	12	12
	<u>7,180</u>	<u>6,724</u>	<u>5,476</u>	<u>5,276</u>

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS *(Continued)* FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2023

12. GOVERNMENT GRANTS DEFERRED CREDIT

Group	2023 €'000	2022 €'000
Grants received		
At beginning of financial year	6,865	3,865
Received during the financial year	<u>3,013</u>	<u>3,000</u>
At end of financial year	9,878	6,865
Amortisation:		
At beginning of financial year	817	587
Amortised to Income and Expenditure	<u>617</u>	<u>230</u>
At end of financial year	<u>1,434</u>	<u>817</u>
Net book amount	<u>8,444</u>	<u>6,048</u>

Grants received to date of €200,000 from SECAD are 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. SECAD Partnership CLG, a local development company, is a dynamic and pioneering social enterprise which works in partnership with diverse stakeholders to provide services, facilities, and investments for the benefit of the communities it serves and on behalf of a number of funding authorities such as Irish Government Departments and State Bodies.

Government grants will be amortised over the same period as the related asset is depreciated.

Grant funding received from the Office of Public Works in 2023 and 2022 was used in the following capital projects:

Dublin Zoo 2023 OPW Grant – Society House restoration and Aye-Aye, Tiger and Rhino Habitat works.
Fota Wildlife Park 2023 OPW Grant – Education, Conservation & Research Centre.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2023

Dublin Zoo 2022 OPW Grant – Society House, Amur Tiger Habitat, Walkway repairs and IT infrastructure.
Fota Wildlife Park 2022 OPW Grant – Education, Conservation & Research Centre.

Company

	2023	2022
	€'000	€'000
Grants received:		
At beginning of financial year	4,030	2,030
Received during the financial year	<u>2,000</u>	<u>2,000</u>
At end of financial year	6,030	4,030
Amortisation:		
At beginning of financial year	198	-
Amortised to Income and Expenditure	<u>549</u>	<u>198</u>
At end of financial year	<u>747</u>	<u>198</u>
Net book amount	<u><u>5,283</u></u>	<u><u>3,832</u></u>

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS *(Continued)* FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2023

13. 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 2023 was €196,734.41 (2022: €173,866.00).

Defined benefit pension scheme

The Group operates a defined benefit pension scheme. Pension costs for the defined benefit pension scheme members are assessed in accordance with the advice of independent qualified actuaries using the projected unit method.

The most recent actuarial valuation of the Group's pension scheme was carried out as at 1 April 2022.

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

	2023	2022
	%	%
Rate of general increase in salaries	3.2	3.4
Rate of increase in pensions in payment	0.0	0.0
Discount rate of scheme liabilities	3.15	3.65
Inflation	2.6	2.80
	<u><u> </u></u>	<u><u> </u></u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2023

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	23.9	25.0
65 in 15 years	25.8	26.5

Pension Asset

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

	2023	2022
	€'000	€'000
Current service cost	(26)	(41)
Net interest income	11	5
	(15)	(36)
Recognised in other comprehensive income	-	279
Total charge relating to defined benefit scheme	(15)	243

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS *(Continued)* FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2023

13. RETIREMENT BENEFIT SCHEMES *(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:

	2023	2022
	€'000	€'000
Fair value of assets	2,864	2,616
Present value of defined benefit obligations	(2,517)	(2,382)
Asset Ceiling	<u>(347)</u>	<u>(234)</u>
Net asset recognised in the balance sheet	<u>-</u>	<u>-</u>

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 reduced to €Nil.

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

	2023	2022
	€'000	€'000
At 1 January	2,616	3,934
Contributions	113	49
Benefits paid	(100)	(93)
Expected return on pension scheme assets	96	45
Actual return less expected return on pension scheme assets	<u>139</u>	<u>(1,319)</u>
At 31 December	<u>2,864</u>	<u>2,616</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2023

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

	2023	2022
	€'000	€'000
At 1 January	2,382	3,477
Service cost	26	41
Interest cost	85	40
Benefits paid	(100)	(93)
Actuarial (gain) / loss	124	(1,083)
At 31 December	<u>2,517</u>	<u>2,382</u>

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

	Fair value at	Fair value at
	31 December	31 December
	2023	2022
	€'000	€'000
Bonds	2,852	2,616
Other	12	-
Total market value of assets	<u>2,864</u>	<u>2,616</u>

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS *(Continued)* FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2023

13. RETIREMENT BENEFIT SCHEMES *(Continued)*

Company

Defined contribution scheme

Dublin Zoo 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 2023 was 149,277 (2022: €130,775).

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 CLG (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.

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

	2023 €'000	2022 €'000
Current service cost	(16)	(41)
Net interest income	<u>7</u>	<u>5</u>
	<u>(9)</u>	<u>(36)</u>
Recognised in other comprehensive income	<u>-</u>	<u>167</u>
Total charge relating to defined benefit scheme	<u>(9)</u>	<u>131</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2023

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

	2023	2022
	€'000	€'000
Fair value of assets	1,718	1,570
Present value of defined benefit obligations	(1,510)	(1,429)
Asset Ceiling	<u>(208)</u>	<u>(141)</u>
Net asset recognised in the balance sheet	<u>-</u>	<u>-</u>

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

	2023	2022
	€'000	€'000
At 1 January	1,821	2,641
Contributions	68	31
Benefits paid	(60)	(56)
Expected return on pension scheme assets	58	27
Actual return less expected return on pension scheme assets	<u>83</u>	<u>(822)</u>
At 31 December	<u>1,970</u>	<u>1,821</u>

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS *(Continued)* FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2023

13. RETIREMENT BENEFIT SCHEMES *(Continued)*

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

	2023	2022
	€'000	€'000
At 1 January	1,761	2,418
Service cost	16	25
Interest cost	51	24
Benefits paid	(60)	(56)
Actuarial (gain)/loss	74	(650)
At 31 December	1,842	1,761

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2023

14. FINANCIAL INSTRUMENTS

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

	2023	2022
	€'000	€'000
Financial assets		
<i>Measured at undiscounted amount receivable</i>		
• Trade debtors (Note 10)	2,416	491
	2023	2022
	€'000	€'000
Financial liabilities		
<i>Measured at undiscounted amount payable</i>		
• Trade payables (Note 11)	2,667	1,821

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

	2023	2022
	€'000	€'000
Financial assets		
<i>Measured at undiscounted amount receivable</i>		
• Trade debtors (Note 10)	2,424	466
	2023	2022
	€'000	€'000
Financial liabilities		
<i>Measured at undiscounted amount payable</i>		
• Trade and other payables (Note 11)	2,176	1,685

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS *(Continued)* FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2023

15. CASH FLOW STATEMENT

Reconciliation of operating surplus to cash generated by operations

	2023	2022
	€'000	€'000
Operating surplus	131	1,329
Depreciation of tangible fixed assets	4,146	3,533
Amortisation of government grants	(617)	(230)
Loss on disposal of tangible fixed assets	188	-
Decrease/(increase) in stocks	5	(141)
Decrease / (increase) in debtors	(2,306)	(103)
(Decrease)/increase in creditors	457	(73)
Cash generated by operations	<u>2,004</u>	<u>4,315</u>

16. COMMITMENTS AND CONTINGENCIES

	2023	2022
	€'000	€'000
Authorised and contracted for commitments	1,530	9,898
Authorised but not contracted for commitments	667	500

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

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*
FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2023

17. TAXATION

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

18. POST BALANCE SHEET EVENTS

No post balance sheet events noted.

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