



DUBLIN



1831-2021

190  
YEARS

Annual Report 2021  
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 Lentaigue 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*
Sir Robert H. Woods	1922-26		

## LETTER FROM THE PRESIDENT

Dear Member,


The Board of the Zoological Society of Ireland (ZSI) presents the twenty-eighth annual report, together with the consolidated audited financial results of Dublin Zoo and Fota Wildlife Park, for the year ended 31 December 2021.

I am delighted to report that once again the performance and achievements in both Dublin and Fota were remarkable, as we had another year during which the Covid pandemic continued to have a serious impact on how we operated. Both facilities endured a prolonged closure for the first four months of the year. As charities, gate income is fundamental to our operations and, when we were able to open, the resourceful and committed teams were relentless in maximizing all opportunities. We can all be very proud of the achievements that followed.

In Dublin, the total visitor number for 2021 was 972,224 which, with only eight months of opening, is a record. We continued to have important support from the government with critical financial and much appreciated personal support, including a visit from the Taoiseach when we reopened on 26 April, and from the Minister of State for the Office of Public Works, who launched our new strategic plan in October. This ambitious plan, Dublin Zoo 200: Vision 2021 – 2031: a conservation organisation of national and global impact, was the culmination of considerable time, thought and work by the director and the Dublin team. The plan sets out the key objectives and actions required to achieve the paradigm shift of Dublin Zoo becoming a zoo-based conservation organisation. The appointment of a full-time conservation officer in

2021 is a key enabler for one of these objectives, which is the establishment of the ZSI National Centre for Species Survival. Underpinning the success of this journey will be our actions to nurture the conservationists of the future and, this year, the Discovery and Learning Team reached a new standard of delivery with the creation of two primary multi-media school programmes, Animal Adaptations and Champions for Conservation. At the heart of everything we do in ZSI is animal welfare, and in 2021 the introduction of structured welfare assessments and a welfare action plan will continue to ensure the highest level of care. At the end of the year, we were delighted to be able to reintroduce our spectacular Wild Lights event after two years where Covid prohibited it. Running from November 2021 to early January 2022 and attracting 217,401 visitors, the popularity and sheer magic of this event for our visitors was confirmed.

In Fota, the visitation number for 2021 was a remarkable 474,794, the highest ever annual number, evidence of the public appreciation for the Park as a great and much loved outdoor attraction. Again, the significant support from government was critical through the uncertain four months of closure. This year, an ambitious 10-year development plan was set out by the director and team. This plan, which targets Fota to become one of the top 10 zoological parks in Europe, has species conservation, public education and engagement at its core. A key pillar of this plan is the development of a new Conservation, Education and Research Centre, which will significantly expand our reach by building on Fota's award-winning education programmes, maximising existing relationships with institutions such as University College Cork and developing a dedicated research facility. Fota continued



its significant conservation and research activities with support of both indigenous and international projects, notable among which are the Natterjack toad head-start project in Kerry and the Irish Corncrake captive breeding and wild population augmentation project. In November 2021, the Minister for Public Expenditure and Reform opened the new Spider Monkey Habitat, accompanied by the Minister of State for the Office of Public Works. We are grateful to the government for capital funding for this project, without which it could not have been completed.

On behalf of the Board, I acknowledge with sincere thanks the enormous contributions of Dr Christoph Schwitzer, Director of Dublin Zoo, and Sean McKeown, Director of Fota Wildlife Park, and their skilled, hardworking and committed teams. Without the resilience, loyalty and expertise of the entire teams of employees, volunteers and other supporters like our veterinary teams, catering teams and others, we would not have achieved the results set out in this annual report.

We are extremely grateful to the government for their continued generous support for Dublin Zoo and Fota Wildlife Park.

I would also like to pay tribute to our very loyal members for their support throughout the year. More than ever, ZSI has an essential role to play in conserving biodiversity for the future, and we appreciate your support on this.

Finally, it is imperative that I acknowledge the support, dedication, experience and commitment of my colleagues on the Board of the Zoological Society of Ireland and the Board of Governors of Fota Wildlife Park. They all

give unselfishly and very generously of their time and expertise.

As well as the operational achievements of 2021, the work done on the strategic development plans for both Dublin Zoo and Fota prepares a strong platform and road map for our development over the next 10 years. It provides us with clarity and confidence to work together on these important objectives, and it is with great pleasure and anticipation that I look forward to working with the entire team on the journey ahead.

**Ann Keenan**  
**President**  
**Zoological Society of Ireland**





## 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, DublinZoo, Dublin 8 on 22 September 2022, 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 2021 (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 elect Emma Teeling as director of the Company with effect from 22nd September 2022.
4. To re-elect Andy Beer, who retires in accordance with the Articles of Association of the Company (the “Articles”) and is eligible for re-election, as a director of the Company.
5. To re-elect Tom Cassin, who retires in accordance with the Articles of Association of the Company (the “Articles”) and is eligible for re-election, as a director of the Company.
6. To note the election by the directors of Yvonne Buckley as director on 21 October 2021 and her subsequent resignation as director on 1 March 2022.
7. To re-appoint Deloitte Ireland LLP as statutory auditors of the Company.
8. To authorise the directors to approve the remuneration of the statutory auditors.

### BY ORDER OF THE BOARD

Tom Cassin  
Secretary

### Registered Office

The Zoological Society of Ireland  
Dublin Zoo  
Phoenix Park  
Dublin 8

Dated 22 July 2022

**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

For the second year in a row, all activities in Dublin Zoo were dominated by the Covid-19 pandemic. In accordance with government guidelines, the Zoo was closed from 1 January until 25 April. The total visitation to Dublin Zoo in 2021 was 760,196. An additional 212,028 people visited Wild Lights before the 31 December, thus bringing the total number of visitors for the year to 972,224. This was almost double the total of 497,483 visitors for 2020, which had included a single week of Wild Lights in January. It was, however, 300,378 visitors lower than the total in 2019.



On the first day of reopening on 26 April, we were delighted to welcome Taoiseach Micheál Martin to the Zoo. Visitor numbers were initially limited to 500 a day, spread evenly across seven slots. We steadily increased this number and in June we extended opening hours to 7.30 pm to add two additional visitation slots. The one-way system continued to be in operation with some minor adjustments, and we retained mandatory online booking. Indoor habitats, playgrounds and the Meerkat Restaurant remained closed during this period. Visitor numbers were strong over the summer months despite some remaining restrictions. After 22 October there were no restrictions on the daily number of visitors and from 1 November, we reopened indoor habitats, the Discovery and Learning Centre and the Elephant Exploration exhibit in Haughton House. All houses had clearly marked entrances and exits, with a one-way system in place in each and visitors were reminded to wear masks. All catering outlets operated as takeaway-only facilities for the entire year. The one-way system around the Zoo remained in place until the end of the year, including during Wild Lights.







Remote and hybrid working continued until the end of the year for staff who did not need to work onsite. Onsite team members, who had been working in pods, were brought back together after the 22 October with the Animal Care Team vacating Haughton House, the Discovery and Learning Centre and Family Farm, parts of which had been used for changing facilities and as mess rooms during the pandemic. However, due to the surge in Covid-19 cases in the last weeks of December, we moved the Animal Care Team back into their four pods. As a result of this surge, the Animal Care Team in particular were under pressure, mainly due to the isolation requirement for close contacts of a positive case. Despite this we were able to operate both the Zoo and Wild Lights as normal.

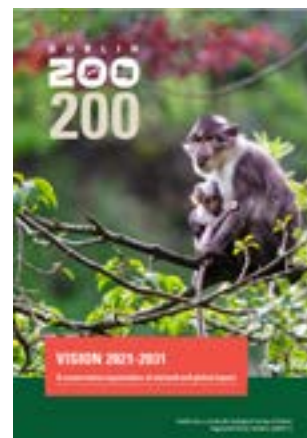


The pandemic interrupted progress on our main capital projects, the habitats for snow leopards and red pandas and the accessible toilets. Construction resumed in May, kindly supported by a capital grant from the Government of Ireland through the Office of Public Works (OPW). We were able to complete the extension to Lakeside Lodge. Dublin Zoo now has a suitable family home available

for the director. After serving as the superintendent/director's residence since 1868, Society House was decommissioned. Planning for an extensive renovation of the old building has commenced, and when completed, it will become the Zoological Society of Ireland's National Centre for Species Survival.

In May, the Council approved our strategic plan, Dublin Zoo 200: Vision 2021 – 2031. Considerable time, thought and discussion by the senior management team and the Board went into the ten-year plan. Focus group sessions were conducted with representatives from all Dublin Zoo

departments. This document describes a very ambitious and achievable vision for Dublin Zoo as we head towards our bicentennial in 2031. The objective is to take the Zoo to the centre of Ireland's efforts to be a global leader in species conservation, and thereby helping to fulfil the state's commitments under international frameworks such as the Convention on Biological Diversity and the United Nations 2030 Agenda for Sustainable Development. Five strategic imperatives are detailed: establishing a National Centre for Species Survival, operating a holistic visitor experience for all seasons, providing conservation leadership, increasing the Discovery and Learning programmes, and developing and embedding a sustainability strategy for the Zoo. The strategic plan was discussed with all members of the Zoo team including the volunteers. Following a joint funding bid with Fota





Wildlife Park for capital grants to support our strategic plan, we were notified that €1.5m had been set aside in the OPW's 2022 budget for Dublin Zoo and Fota combined. Of this, €1 million was allocated to Dublin Zoo. We are grateful to the Irish Government and the OPW for their ongoing support.



The perennial issue of visitor car parking arose with the publication of the Phoenix Park Transport and Mobility Options Study. During the year, parking was prohibited along Chesterfield Avenue to facilitate new cycle lanes. The Marketing Team organised an online visitor survey, the Facilities Department carried out surveys with regard to car parking spaces, and engineering consultants Hayes Higgins Partnership and town planners McGill Planning assisted us with our response to the study. Results from the online visitor survey indicated that 84 percent of participants came by car and of these 97 percent said they normally parked in the Phoenix Park. A lack of car parking spaces in the Phoenix Park would negatively affect the decision to visit the Zoo for 50 percent of respondents. Working closely with the OPW, solutions are in the pipeline, including the resurfacing of North Road with a

*(Above) Dublin Zoo director Christoph Schwitzer with minister Patrick O'Donovan,  
(Right) previous Dublin Zoo director Leo Oosterweghel*

view to making it a one-way traffic system and providing additional car parking spaces, as well as a new bus route with a stop close to the Zoo entrance.

In November, the National University of Ireland (NUI) conferred retired Dublin Zoo director Leo Oosterweghel with an Honorary Doctorate in Science for his tremendous achievements during his 19 years at the helm of the Zoo. The ceremony was presided over by NUI chancellor, Dr Maurice Manning, and attended by Alan Baird, Professor of Veterinary Physiology and Biology in the School of Veterinary Science, University College Dublin. It was held in Haughton House in the presence of members of the council, senior staff and invited guests. This was the first time the NUI had held a conferring outside its own premises.



*(Lower Right) Leo Oosterweghel's conferring in Haughton House*



## ANIMAL CARE

An analysis of the Zoo's animal collection completed in May showed that we kept 409 vertebrates in 66 species, plus four colonies of invertebrates in four species. In October, the annual zoo licence inspection took place with a full review of all habitats and animal facilities. The inspectors commented very positively on how Dublin Zoo was managing its animal collection and related processes, with particular regard to the Animal Welfare Assessments.

There were several important developments in the systematic monitoring and care for the animals. The Animal Welfare Assessment tool, which had been approved by the Ethics Committee towards the end of 2020, was implemented in 2021. This is a new, more structured approach for monitoring animals in Dublin Zoo and is based on standardised and approved tools from BIAZA and EAZA. Throughout the year welfare assessments were completed on all of the mammals and action plans have been produced accordingly. A Focal Welfare Assessment template, also based on existing systems, was introduced for individual animals that require intense monitoring. These might include, for example, elderly animals, those that have recently arrived or those that are recovering from a medical procedure. In addition, training records for working with different species were rolled out and are now being used to support our training process more consistently. Risk assessments were modified with an updated risk matrix that matches the scoring on the Zoo's risk register. Taxonomic risk assessments were added to the existing risk assessments, and extra control measures were added for working with dangerous animals. Numerous risk assessments were carried out, including for the operation of gates and doors across the Zoo, and for managing biological hazards.

The Ethics Committee of the Zoological Society of Ireland met quarterly this year. Since 2021 it has been chaired by Andy Beer. The committee approved several new policies, including the Animal Transportation Policy and the Policy on Surplus Animals. These replace the previous policy on animal movements. The committee recognised and shared the view of the Zoo management that ethical matters and animal welfare are paramount in the care of animal species in the collection. It concluded that issues arising throughout 2021 had been dealt with satisfactorily and resolved in a timely and appropriate manner in association with various partners. The committee thanked the Zoo management for their focus and aspiration to perform at the highest level and will continue to support them in these aspects of their work in the future.

Cases of avian influenza triggered us to once again lock all our birds in from 21 December 2020 following an instruction from the National Disease Control Centre. Humboldt penguins (*Spheniscus humboldti*), citron-crested cockatoos (*Cacatua citrinocristata*), Chilean flamingos (*Phoenicopterus chilensis*), common peafowl (*Pavo cristatus*), ostriches (*Struthio camelus*), northern ground hornbills (*Bucorvus abyssinicus*) and Waldrapp ibises (*Geronticus eremita*) were housed inside during winter 2020-21. Usually this virus stops circulating when the weather gets warmer, and during April, restrictions for birds were lifted gradually by the Irish health authorities. By May, all of our birds were returned to their outdoor habitats and were back on show again. At the end of the year an instruction to lock birds in again was issued by the Department of Agriculture. Our flamingos, ibises and hornbills were initially left in their habitats as they were



in netted or meshed aviaries, but were later moved inside due to the heightened risk from a very virulent strain of avian influenza. Protective measures were put in place to isolate all species in individual epidemiological units.

Deaths this year included five Sulawesi crested macaques (*Macaca nigra*) including an elderly 21-year-old female and two males; and two ostriches, a male and a female. The male ostrich, popularly known as Stewie, had been living in the Zoo since 2003; the female ostrich had mobility difficulties and the post mortem examination confirmed a pronounced arthritic condition. The only transfers of significance out of the Zoo this year were all eight white-cheeked pintails, which went to a private bird keeper in Kilkenny in July; we are no longer keeping this species.

Births included a male Sulawesi crested macaque; this is one of the few births we will see in this troop for the present as Dublin Zoo's genetic line is now well represented in the EAZA breeding programme and the recommendation from the coordinator was to limit reproduction. Following the reintroduction of four males to the group, the two macaque islands were refurbished with additional logs and trees to assist the socialisation of the animals. Other births included five Annam leaf turtles (*Mauremys annamensis*) of which four thrived, and seven common peafowl chicks in June, which were subsequently moved to private keepers off site. Arrivals included three female Zwartbles sheep (*Ovis aries*) received on loan for Family Farm; these are an unusual breed from the Netherlands and their lambs will be used in educational programmes. In May, a female Tamworth pig was brought in from a farm in Co. Kildare to restart


reproduction that had been on hold during the pandemic; she had 11 piglets of which ten survived.

With regard to our Asian elephants (*Elephas maximus*), we undertook a general review of all activities in the elephant house including husbandry protocols, housekeeping and other work routines. Foot care was identified as a priority, and early in the year a new training programme was put in place following a full assessment of the elephants' feet. During the year we commenced collaboration with the Elephant Working Group of BIAZA, and we will be submitting our data on qualitative behavioural assessment, daytime and night-time activity. Avani, the four-year old female Asian elephant that was raised by hand since birth, was successfully weaned onto solid food through a gradual reduction in her milk intake. Following discussions with the EAZA breeding programme coordinator, we received the official joint EEP and SSP recommendation to move part of our elephant herd, a family comprising two adult females and two young bulls, to Cincinnati Zoo and Botanic Gardens (CZBG), United States, in the summer of 2023. To ensure that the animals move to facilities that can guarantee similar husbandry and welfare standards, CZBG has commenced a large redevelopment and significant improvement to their elephant habitats, which is scheduled for completion in 2023.

One male California sea lion pup (*Zalophus californianus*) born to Seanna was weaned and an enrichment program was developed for him and for the two young males born the previous year.

An old male Humboldt penguin died after a short






episode of apathy and lethargy; the post mortem showed intrathoracic abscessation, a lung infection. Three chicks hatched this year and all are doing well. All of the penguins were named and wear coloured silicone bands for individual identification. 2021 was a good breeding season for the Waldrapp ibises; this was aided by some modifications to the birds' diet, the provision of more and better nesting material, and no adverse weather conditions such as those we experienced in 2020. The survival rate was very good; ten out of 13 chicks left their nests and are thriving. A 22-year-old male died. The flock of Chilean flamingos took ownership of their modified habitat and is getting interested in the extended breeding area. We had two deaths, a 23-year-old male and a 31-year-old male. We had no hatchings as no breeding activity took place, most probably due to their still becoming familiar with the new breeding area.

In the African Plains we split the chimpanzees (*Pan troglodytes*) into two subgroups following behavioral assessments after aggressive interactions between our 25-year-old breeding male Marlon and 18-year-old Bossou. Behavioural and welfare assessments done by the team supported this decision. Studies on the group's social relationships and their effects on individual stress levels were started by a student undertaking a Masters in Conservation Medicine through the University of Edinburgh. We are grateful to Dr. Marion Desmarchelier, assistant professor at the Veterinary College in the University of Montreal, Canada, who helped to evaluate the general situation and supported the approach to the group's management. The behavioural working group of the EAZA Great Ape TAG was also involved, and we thank them for their collegial help and advice. Cameras

were installed. We gave the animals full-time access to the outdoor habitat to provide them with more choice and control. One group was subsequently moved into a separate habitat. Both groups are stable and a specialist in chimpanzee training is working with the Dublin Zoo team. Meanwhile female Betty, the oldest mammal in the Zoo, will be 60 next year and is showing signs of moving more slowly and stiffly; she is being treated accordingly.

Grant's zebras (*Equus quagga boehmi*) female Kildare and male Striker were to be moved to another collection but, following a dental procedure in 2020, Kildare did not recover fully from the anaesthesia and in spite of all efforts, she had to be euthanized. Her companion, male Striker was successfully reintroduced to the main group when the weather became warmer and the herd was spending time outside. The two female African wild dogs (*Lycaon pictus*) were given contraceptive implants to make sure no inbreeding occurs and were successfully reintroduced to the two males.

The western lowland gorilla (*Gorilla gorilla gorilla*) troop thrived this year. The two young gorillas, a male and a female, born in 2019, grew in confidence and bonded with the silverback male, Bangui, including him in their play behaviours. All three adult females, Kafi, Vana and Kambiri, are now on the contraceptive pill to prevent pregnancies as advised by the EEP Committee for the species. As part of our animal welfare action plan and in line with best practice guidelines, we gave the troop 24-hours access to their outdoor habitat whenever possible. They can now spend time outdoors on the island late at night and early in the morning, except in inclement weather. In September gorilla Bangui had an anaesthetic



to carry out a clinical diagnostic examination with blood and faecal sampling; the procedure was assisted by UCD colleagues. The clinical exam was unremarkable, temperature and respiration rate were normal. Blood samples were taken and analysed in the Dublin Zoo veterinary hospital, using equipment recently acquired. A COVID-19 antigen test was carried out as a precautionary measure, showing a negative result.

A management plan for the southern white rhinoceroses (*Ceratotherium simum simum*) was agreed. Chaka, our male rhino was successfully introduced to breeding female Nyala. The rhinos now have wider access to the main habitat as part of their new husbandry regime. Our male okapi (*Okapia johnstoni*) Kitabu and breeding female Lumara were successfully reunited to reinitiate breeding activity after female calf Dalia was weaned. Following a recommendation from the EEP, preparations are being made to move Dalia to Lisbon Zoo in 2022. Dalia, who was two years old at Halloween, was introduced to Kitabu over a number of sessions as part of the socialisation process she needs to undergo before leaving for Lisbon. She is now used to the presence of an adult male. Our male scimitar-horned oryx (*Oryx dammah*) was castrated and recovered well. No more breeding activity is planned with the current group, as full capacity of the habitat has been reached.

A breeding group of white-naped mangabeys (*Cercocebus lunulatus*) was brought together in various stages this year. In early summer, two new females were moved from the quarantine habitat to the island on the African Plains and presented to individual group members through mesh and then in smaller groups. One of our resident females

was neutered and returned to the group. The integration processes were successful and all of the animals are now together as one breeding group.

During the year, the veterinary hospital was upgraded with comprehensive IDEXX blood sampling equipment, including a Catalyst Biochemistry machine (for organ-specific enzymes), a Procyte Haematology machine (for RBC and WBC blood parameters), and a Vetstat analyser (for blood gas and electrolyte analysis during anaesthesia). The ability to carry out immediate and simultaneous testing means that we can make informed decisions at the time of examination or during procedures rather than having to outsource tests and wait for the results. A number of dental procedures were carried out including on 12-year-old Bako, a male red-capped mangabey (*Cercocebus torquatus*), who damaged a tooth. A multidisciplinary team led by veterinarian Frank O'Sullivan and including staff from Dublin Zoo, UCD and veterinary dentist Dr Nora Schwitzer successfully extracted the remainder of the tooth. Jasmina, the 13-year-old female red panda (*Ailurus fulgens fulgens*) had dental issues, which were spotted when she was observed to be lethargic. The dental issues were resolved with two molars removed. Several contraceptive procedures were also carried out including to Rano, a red ruffed lemur (*Varecia rubra*) male, Tema, a white-naped mangabey female who was neutered by fallopian conducts ligation, and Tundra, the female tiger (*Panthera tigris altaica*) who was anaesthetised to receive a contraceptive implant. We are grateful to all external specialists, and in particular to UCD's School of Veterinary Medicine, who provided help and support to the Dublin Zoo Veterinary Team throughout the year.

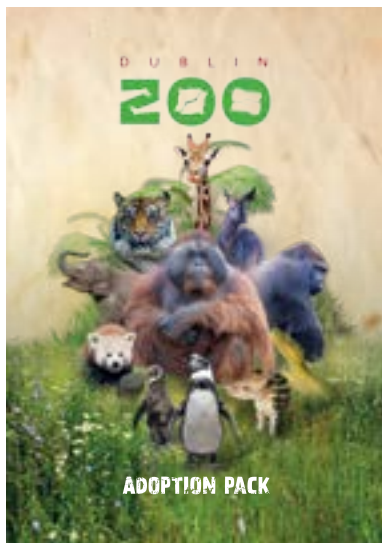




## RETAIL AND VISITOR SERVICES

Despite being closed for nearly four months in the early part of the year, the Retail and Visitor Services Team had a remarkable year. In February, the team worked closely with the Marketing Team to launch a new online gift shop called 'Zootique'. It offered a select range of products from the Dublin Zoo gift shop including Dublin Zoo branded plush toys, the Dublin Zoo clothing range, a book range, an eco-friendly range and the Dublin Zoo DVD series. Zootique performed strongly even after the Zoo reopened, and it continues to provide an online sales service. In May we introduced a click-and-collect system so that visitors could purchase gifts during their visit and collect them from our shop when they left. This proved to be very popular.

The strongest-selling items in the online shop were our animal adoption packs. Since launching the 'Save Dublin Zoo' campaign in November 2020, our adoption packs have consistently delivered strong sales results. In January, due to continued high demand, we relaunched the adoption packs in partnership with Digitickets. We had 13 adoption packs available, and the top-selling three were the Asian elephant, Humboldt penguin, and the red panda. In February we launched a limited edition of the



Chilean flamingo adoption pack for St Valentine's Day, in March we created a special Mother's Day adoption pack and in June we sold Father's Day adoption packages. Prior to Easter we ran a golden egg draw, which led to a spike in sales. Our Mother's Day adoption packs were featured on RTE.ie lifestyle in their 'Buy Irish this Mother's Day' list.



With the celebration of the 190th anniversary of Dublin Zoo, Mark Bowes, Senior Retail Services Manager, sourced branded merchandise for the shop including greeting cards, magnets, keyrings, mugs and posters. This range was available when the Zoo reopened at the end of April. In October, the team organised special ranges for Halloween with plush bats, wolves and mummies,

among other items. Later, in preparation for Wild Lights, a bespoke range of products was designed for the event; these included an official Dublin Zoo Wild Lights hoodie and a car sticker, magnets, keyrings, mugs, glow wands and hand-painted Wild Lights Christmas baubles. The hoodies and baubles were especially popular with our visitors, while the glow wands were the single bestselling product across all ranges during November and December. During Wild Lights, we opened two Christmas pop-up shop cabins, one of which was located in front of Society House and the other near Zoorassic World. These

proved to be very successful and all products in the range sold out. The gift cards sold well, with a sharp increase in demand in the weeks leading up to Christmas.

We maintained the online-only booking system for admission tickets. This allowed us to control the number of people visiting by the hour when restrictions were in place. Cash facilities were not officially reintroduced in 2021. Throughout the year, even during the busy summer months, we were able to bring our visitors into the Zoo with few queues.



(Above) Click and collect graphic

## CATERING

When the Zoo reopened in April, the Nakuru Café, The Cove and the Picnic Bench food outlets were also reopened. Early in the summer we reinstated many of our picnic benches across the site and opened a new food truck on the great lawn to sell hotdogs. The Cove restaurant was rebranded to sell chicken products. In response to a high demand for coffee, ice cream and similar items, the power supply was upgraded in the Picnic Bench Café to facilitate additional equipment and increase the speed of service. During the summer, the kiosk near the great lawn and the one by the okapis in the African Plains were opened, and several mobile

outlets selling hotdogs, burgers and ice creams were available around the Zoo. During Wild Lights, a doughnut cabin was set up near the entrance. Due to the Meerkat Restaurant being located at the beginning of the one-way trail, we left it closed until early December, when it was reopened for takeaway pizza. Prior to each reopening, all catering facilities were thoroughly inspected, cleaned and necessary repairs carried out by the Facilities Team. All catering outlets operated as takeaway-only until the end of the year and were operated by our caterers, Baxter Storey Ireland Ltd.









## FACILITIES DEPARTMENT

Early in the year, government restrictions due to Covid-19 meant that work on all capital projects remained suspended. When construction for residential houses was permitted from 12 April onwards, work commenced on the Lakeside Lodge extension. It was completed by the late summer. After Society House was decommissioned in October, it was surveyed in preparation for a complete refurbishment. Preparations on the restoration of the Cottage Orn , another heritage project, also commenced with hoarding celebrating the Zoo's 190th anniversary constructed around the small 1833 building.

In 2020, as part of the Save Dublin Zoo campaign, the government pledged €3 million through the OPW for capital projects in Dublin Zoo and Fota Wildlife Park in 2021. Dublin Zoo's allocation was €2 million, all of which was invoiced before the end of the year as per the agreement. Government permission to resume general construction was granted in May, so work on the snow leopard and red panda habitats and the accessible toilets recommenced. Both of these projects had been started early in 2020, but all work on them had ceased with the first lockdown in March of that year. In 2021, regular project management meetings took place from February onwards to reaffirm the existing plans. Later in the year, Mario Campos of Jones and Jones Architects spent a week in the Zoo to assess the contractors' progress. The accessible toilets will be ready for use by early 2022 and the snow leopard and red panda habitats will be opened in spring 2022.

Dublin Zoo undertook a number of additional infrastructural works and made improvements to habitats through the year. These included an upgrade to the animal

waste compound in the African Plains yard for better use of space and to enable waste recycling. The design included several bays for different types of substrates, a concrete base and some containing walls, as well as a new hay and straw shed to be added to the existing one in order to increase storage capacity. It was fully operational by the end of the year and now waste will be allowed to ferment and produce compost, reducing the frequency of external waste collection. Staff accommodation in the Africans Plains service yard was also reconfigured to provide more space. We undertook an extensive upgrading of systems in Sea Lion Cove and replaced all gate pulleys with stainless steel pulleys, and all cable with stainless steel rope. The pool was emptied, cleaned and refilled, and the filtration system reviewed and upgraded. Animal Care Team members were trained to assist the Facilities Department in maintaining the equipment and water quality. Other habitat work included enlarging the breeding beach in the Flamingo Lagoon. Around the Zoo, extensive painting, electrical work and other maintenance was carried out and Covid-related signage renewed in preparation for the lifting of restrictions. Boot cleaning/disinfectant stations were installed at twelve locations across the site to improve biosecurity in the light of avian influenza.

In the autumn, as more Covid-19 restrictions were lifted, the team undertook deep cleaning and installation of safety measures in catering facilities including the Meerkat Restaurant, indoor habitats, the Discovery and Learning centre, and the staff offices. One-way systems with signage were established in the indoor habitats. The team also prepared the Zoo to ensure the safe construction of the Wild Lights displays and the ease of movement for visitors.





## HUMAN RESOURCES DEPARTMENT

Our ten-year strategic plan, Dublin Zoo 200: Vision 2021 – 2031, recognises that our most treasured resource is our people, both employees and volunteers. We employ around 133 staff in 104 full-time equivalent positions. Some of our team members are second generation Zoo staff and many have decades of experience. All are highly committed to Dublin Zoo and to our purpose and vision. We are committed to attracting and retaining the talent and expertise that makes us unique and is needed to deliver our long-term plans. During 2021, we continued to develop a strong and positive organisational culture that defines who we are and how we conduct our business. In December, for the first time in the history of Dublin Zoo, we conducted an employee survey to gain an insight and understanding into how our team members felt about working for Dublin Zoo and to give them an opportunity to share their suggestions and concerns. 70 staff completed the survey. The responses will allow managers to monitor engagement levels and take action where necessary within their own departments. It will also be used to contribute to an inclusive working environment and to encourage all staff to take responsibility for improvements and the realisation of our strategic vision. The employee survey will be conducted at the end of

each year as a way of monitoring employee satisfaction and continually looking at ways to improve the working environment for everyone.

A revised and updated version of the Employee Handbook was printed and distributed to all staff with copies made available at the Zoo's reception desk. Dublin Zoo's Guiding Principles for Child Safeguarding, Child Safeguarding Statement and all associated policies and procedures were reviewed and updated. They were incorporated into the new Employee Handbook and shared amongst teams. The 'SARS-CoV-2 – Transmission between humans and animals at Dublin Zoo' guidance document was updated with new information from a comparative study on strepsirrhine primate ACE2 receptor binding capabilities, which showed that our two lemur species are in the second-highest risk group.

Routine training was organised throughout the year including induction training, manual handling, specialist equipment training and other health and safety training, GDPR refresher training and refresher first aid training. The focus, however, was on the return to work and getting everyone back safely and Covid compliant.

## HORTICULTURE

When the Zoo was closed, the team worked on a reduced-hours scheme as winter mulching, cutting back and protection for sensitive plants carried on. Hedge-trimming around the perimeter of the Zoo was completed before the start of the bird nesting period in March. In April, in preparation for reopening, paths and visitor viewing areas were cleared of excessive plant growth. Seasonal activities included pruning, weeding and removal of frost protection. The responsibility for sweeping the roads and pathways was passed to the contracted Cleaning Team to free capacity in the Horticulture Team to maintain and continue to develop the botanic collection.

The main activity for the summer was managing plant growth by cutting back, weeding and irrigation. Some works took place at Lakeside Lodge in preparation for a new lawn and improved garden. The African spurred tortoise habitat was air-spaded and reseeded; it was opened up to the animals after several weeks to allow for new growth.

During the year, new sweetgum trees were planted to replace three dead ones at the front gate. Tree surgeons were called in to deal with a large branch that fell down in the hippo habitat, and in the autumn tree surgeons carried out numerous pruning and felling jobs on site in anticipation of inclement winter weather. A new area at the end of the giraffe yard was cleared of vegetation to create space for contractor material storage. A woodchipper was purchased so that browse leftovers can be processed in-house, thus avoiding the cost of outsourcing this process, as was previously the case.

The Horticulture Team is once more an active part in the design and implementation of planting plans for new habitats. During 2021, the horticultural plan for the snow leopard and red panda habitats was reactivated when work on this project recommenced. The refurbishment and replanting of the Wolves in the Woods habitat with plans concerning substrates, plant species and an implementation schedule got underway. Plant species were propagated in the in-house nursery and will be used in some of those areas.



(Above) Horticulture at the African Savanna

## DISCOVERY AND LEARNING

In 2021, the Discovery and Learning Department engaged with 29,196 learners, which was a 54 percent improvement on 2020 but still a 52 percent drop on 2019. The department had 13,646 bookings for formal and informal programmes including virtual programmes; and 15,550 bookings for self-guided tours, hospital visits and community groups.



A highlight of the year was the creation of two virtual modules for primary school students sponsored by SSE Airtricity. These were 'Animal Adaptations' for senior infants to second class students, and 'Champions for Conservation' for third to sixth class students. Each programme includes a teacher resource pack, two PowerPoint-supported lessons, a 20-minute pre-recorded virtual video lesson from Dublin Zoo, two differentiated worksheets, extension activities and a follow-up virtual

question and answer session that is booked by the school with one of our zoo educators. The team put a large amount of work into the planning, design, delivery and editing of these resources. They were designed by Wilsons Designers, and Moondance Productions created the video lessons. Both programmes are curriculum-based and are purchased by schools; additional question and answer sessions are purchased if teachers wish to use the module with more than one group. These are by far the most sophisticated programmes that the Discovery and Learning Department has ever produced, and they deliver a very rich conservation learning to the young students. The prolonged closures in 2020 and 2021 gave us time to achieve this. The programmes were launched in February and we will be able to use them for several years to come.

In-person delivery of school group sessions resumed on site on Monday 26 April, although virtual programmes continued. Demand for face-to-face taught programmes was very high once it was announced that the Zoo was reopening, however only outdoor school programmes were offered onsite. Haughton House, the Discovery and Learning Centre and Family Farm were still being used to accommodate Animal Care and other staff who were working on site. A system of 'Meet and Greet' was established inside the Groups' Gate to welcome the large numbers of schools between 9.30 am and 11.00 am each morning. This helped to move the groups from the area quickly and ensured they were well briefed for their visit. The Zoo teachers were assisted by volunteers who were invaluable in the movement of groups along more restrictive paths. Schools were thrilled to have this rare outing in their difficult school year. In order to maintain limits on overall numbers of visitors to the Zoo, the



Discovery and Learning Department restricted the number of people on self-guided tours to 300 per day.



With only two teachers, the Discovery and Learning Team were booked to capacity in May for curriculum-linked programmes. The good performance was attributed to delivering a programme that was only 1–1.5 hours in duration and the continued provision of virtual programmes. Existing onsite programmes at primary level, which continued to be popular, were ‘African Adventurer’ and ‘Rainforest Ranger’. At the end of the calendar year, we were surprised at the number of primary school students who participated in face-to-face programmes; we usually do not receive any primary bookings in December. We also had 914 people on self-guided visits in December, which was triple 2019 figures.

*(Left) Primary school tour  
(Right) African Adventure with Alexandra Junior School*



At secondary level, the Ecology programme and the Conservation programme continued to prove very popular. In September, we were able to deliver both of these programmes on site and outdoors with a lot of careful management. The programmes were tailored for the students attending them and they were predominantly from transition year. A part-time teacher was employed in the autumn, which allowed us to deliver the course to a larger number of students. As winter set in, there were some cancellations due to an increase in positive Covid-19 cases and close contacts in schools.


Virtual programmes as part of our informal education offering continued throughout the year. In March, team lead Kelly Mara delivered a 30-minute virtual workshop on wellness, nature and animal care for a Wellbeing Week to a secondary school in Clondalkin, Dublin. Through positive Twitter feedback, more enquiries came in and we delivered the same workshop to 241 students in a Wexford secondary school later that month. We

developed a virtual hour-long Conservation programme for secondary schools; in April, 260 students participated across nine virtual workshops.

Kelly Mara and teacher John Muldowney delivered virtual lectures to QQI level five and six students at institutes in Meath, Cavan, Kilkenny, Limerick, Waterford and Athlone. Subjects were animal care, animal behaviour and ecology. Many of these organisations are new audiences for the Zoo and we will continue to offer these virtual lectures in our forthcoming education programme.

Discovery and Learning manager, Niamh Potter, and Kelly Mara delivered a virtual workshop on the topic of biodiversity loss as part of the Junior Cycle for Teachers/STEAM initiative, at which 73 teachers attended. The feedback was excellent, and teachers reported how they planned to use the content from the workshops in their own classrooms across a range of subjects including science, geography, CSPE and maths. Niamh and Kelly also delivered a virtual workshop on 'Practical Engagement Skills in Virtual Teaching and Learning' with support from John Muldowney and Discovery and Learning administrator Christine O'Connor. The workshop,





with capacity for 40 participants, was attended by education colleagues from various networks and locations around Ireland.


During the year, the Discovery and Learning Team organised special tours. In April, following a request by Cabra Gardaí, a 4-year-old local boy and his parents were hosted for a socially distanced tour and opportunities to see the keepers feeding the tigers and gorillas. The same month, Kelly Mara hosted two special visits for terminally ill children; the Retail Team presented them a goody bag and the Animal Care Team organised activities at the outdoor animal habitats. In October, two 'Zookeeper-for-a-day' events were organised for Make-A-Wish Ireland. During this month, teacher Kelly Mara took part in a short, filmed piece at Dublin Zoo with the organisation Lámh, which supports a manual sign system used by children and adults with intellectual disability to help them to communicate.

In February, five RTÉ Home School Hub sessions were recorded with John Muldowney and Kelly Mara. The animals featured were lemurs, tortoises and turtles, meerkats, oryx and macaques. They were broadcast in March in the third series of the RTÉ 2 Home School Hub. For Engineers Week, which took place between 27 February and 7 March, we tailored our secondary-level 'Giraffe Habitat Challenge' for primary school students and virtual presentation. It utilised high-quality videos and design elements from the 2019 SSE Airtricity-sponsored programme. Bookings and administration for the sessions to schools were managed by public libraries in Waterford, Cavan, Offaly, Leitrim and Dublin. It was very successful, and the feedback was very enthusiastic; for example, one

teacher said of the talk by John Muldowney, 'Not only did [the children] learn about giraffes and their habitats, but John got them thinking about sustainability and even opened up the possibility of new careers linked to this topic... The pandemic has been difficult, but it has also shown us what can be done when experts, using technology, share their time and expertise with our children.'

Virtual spring workshops – 'Wonderful Wildlife' and 'Who's New at the Zoo?' - were a big success, and six additional workshops were added to the initial four to meet demand. Children from across Ireland took part, with some families in Britain and France also participating. This is the largest reach to date for the spring workshop programme. Other informal workshops held during the lockdown included two snake-themed workshops for Dun Laoghaire-Rathdown Libraries for St. Patrick's Day. Sessions were fully booked, with young participants dressed in green or face-painted for the occasion. We held 13 virtual Easter workshops in April. Themes of the workshops included 'Egg-Citing Animals', 'Remarkable Relatives' and 'Wildlife Weaponry'. Children participated from 25 counties across Ireland as well as from Edinburgh and London. Children who had attended the Halloween and spring workshops were also present, indicating that the virtual format and engagement levels are effective and attractive to little learners. In June, we delivered 'Incredible Invertebrates', a virtual workshop for primary school students for Fingal Libraries. In the summer, as part of a virtual animal safari series, Niamh Potter coordinated the video recording of two pieces by John Muldowney and Kelly Mara for the Science Foundation Ireland's Festival of Curiosity, Dublin's





annual international festival of science, arts, design and technology. Two videos were hosted on the Festival of Curiosity webpage between the 22 and 25 July. Six virtual workshops took place as part of the Dublin City Libraries Summer Programme for children. Thirteen children engaged in the virtual session held in July, and 39 children engaged across five virtual sessions in August. At Halloween, 27-30 October, we held six virtual workshops; on 29 October, the Halloween theme featured lemurs, the ghosts of Madagascar, to celebrate World Lemur Day.

During Science Week, we delivered a range of virtual activities for primary students who booked through the library network; 1,820 students engaged with these activities. This was comparable to 2020 and an increase of 42% on our physical outreach to schools for Science Week 2019. In addition, Science Foundation Ireland (SFI) sponsored a 15-minute, primary-level video, The Science behind Elephant Care at Dublin Zoo. It performed so well during Science Week that SFI asked if they could stream the film for another week due to demand from schools. Over 1,400 views were recorded of the video, which streamed predominantly into classrooms all around Ireland. A true figure of the viewership is difficult to determine, but we would expect between 10,000 and 25,000 viewers. 300 downloads of the associated worksheet were also recorded.

During the extended closure when our teachers had time, we were able to respond to requests for virtual informal family sessions. The workshops were tailored to each group and one, for example, included a 40-minute virtual penguin workshop delivered by John Muldowney

to a healthcare company. In this case approximately 40 employees and their children participated; they had conducted fundraising for the 'Save Dublin Zoo' campaign and had purchased penguin adoption packs. As a follow-up they booked this penguin-themed workshop. Kelly Mara also delivered a virtual 40-minute Earth Day-themed workshop for a pharmaceutical company, and twenty-three employees at the company participated. Once face-to-face teaching resumed, we did not have the capacity to continue to deliver these, although we took occasional bookings at weekends when we had the resources.

Education representatives from BIAZA members Dublin Zoo, Galway Atlantaquaria and Tayto Park, planned STEAM workshops, which are to be rolled out in 2022. These workshops are a support service for national junior cycle teachers, and we have been part of this initiative for five years. The intention is to bring real science and conservation into the school curriculum, and organisations like ours showcase teaching methodologies on different topics, such as looking at species and their habitats and putting students into the role of conservationists.

The Discovery and Learning Team undertook interpretation planning for the new snow leopard and red panda habitats. They also worked on interpretation for the existing Amur tiger habitat, which is to get a new look.



07.05.21

11:00-11:30  
11:30-12:00  
12:00-12:30  
12:30-1:00





## VOLUNTEERS

A total of 1,687 volunteer shifts were completed in our volunteer programme in 2021. This was a small improvement on the 1,519 shifts completed in 2020, but still low when compared to 2019, when shift numbers totaled 3,773. The low number can be attributed to the four-month closure and the limited need for volunteers resulting from continuing Covid-19 restrictions. The decision was made to postpone recruitment in 2021 due to the uncertainty created by the Covid-19 pandemic. During the lockdown, we conducted Children First training via a 90-minute e-learning programme. To complete the volunteers' training in this area, volunteer coordinator Noreen Fitzsimons followed this up with training on the Dublin Zoo Declaration of Guiding Principles for Child Safeguarding, the Child Safeguarding Statement and the Lost and Missing Child policies. The Volunteer Data Protection Policy was reviewed and updated, and approved by the Zoological Society's Board. Throughout the year, Noreen maintained contact with the volunteers, with weekly updates focussing on activities in the Zoo and information about the animals. In March, for example, the updates were themed around native species for St. Patrick's Day, mothers for Mother's Day, and trees during Tree Week. The same month, two catch-up Zoom calls also took place, with 40 volunteers and Discovery and Learning staff attending. In May, the weekly update prompted volunteers' childhood memories of Dublin Zoo to tie in with our 190-year celebrations.

When the Zoo reopened in April, volunteers supported visitors with wayfinding and general information. During this period, only 36 volunteers covered the shifts as a further 50 were either awaiting vaccinations, prevented from traveling to Dublin due to county restrictions or

falling into at-risk categories. Many of the volunteers on site worked an unprecedented five-hour shift on the trail. Noreen engaged individually with all non-duty volunteers to identify their volunteering status and availability. In June, an additional ten volunteers were returned to support the late openings and in July, another nine resting volunteers were brought on board to complete the busy roster and bring the number of duty volunteers to 53. Each received updated induction and training, including processes related to the Covid-19 pandemic. All volunteers returned to the Volunteer Programme on 22 October. The Discovery Centre reopened on 6 November, operating a one-way system and with no more than four pods/families allowed in at any one time. Hand sanitising units were placed throughout the centre, and the area was well ventilated. The stick insects were not returned due to the draft in the building caused by keeping doors open. The volunteers were delighted to be back on duty, supporting informal education in the Discovery Centre. Volunteers also supported the Discovery and Learning Team with their Ecology programme and undertook training from the teaching team. In December, volunteers helped to lead special tours. At the end of the year, we were once more able to plan for the recruitment of seasonal volunteers for 2022, and applications opened on 17 December with a January deadline. A back-up virtual plan was also put in place. Preparation for a comprehensive volunteer health and safety induction handbook was underway to be ready in time for the 2022 season.





## MARKETING AND PUBLIC RELATIONS

The Marketing Team had another very successful year despite the challenges of the lengthy closure from January to April. During the lockdown, the team played a critical role in communicating with our visitors and received considerable interest from print and broadcast media. In March, for example, Dublin Zoo appeared in over 40 features in print, TV, radio and online media. This year, we ran a major campaign around our 190th anniversary, hosted several high-profile broadcasts from the Zoo, and organised a hugely successful launch of Wild Lights. We continued to work with Teneo, who assisted us with our PR and public affairs.

This year, Dublin Zoo celebrated its 190th anniversary, having first opened its gates in September 1831. The Marketing Team ran a campaign that included PR, digital promotion, a week-long radio promotion, a live radio broadcast from the Zoo and online media competitions. With Wilson Creatives, the Marketing Team produced a design to celebrate this milestone. It featured on many of our own-brand products and on flags near the main gate. We partnered with 98fm and ran a week-long promotion on their breakfast show, with daily competitions and discussion including our memorable historic moments. The promotion was concluded with 98fm broadcasting live from the Zoo. On the Dublin Zoo website, the homepage was updated to reflect the 190th anniversary with historical photos; visitors were directed to the online shop, where they could buy themed merchandise and the Illustrated history of Dublin Zoo, and find links to read more about our history. We organised a competition in which we listed ten memorable moments from our history and asked people to vote for their favourite. Over two weeks, we listed one historic event daily on our

social media channels, giving people information about the event along with the photo and directing them to our website to vote for their favourite. The engagement was very high, and the response indicated that people enjoyed seeing the old photos and reminiscing. Overall, we had very strong media coverage for the campaign, with numerous features in print and online media, as well as radio interviews and discussion about the Zoo's history on Newstalk, RTÉ Radio One, 2FM, LMFM, and regional radio stations. In December, a historical story about Mimi, an elephant gifted to Dublin Zoo by President Patrick Hillary after a trip to Tanzania in 1980, featured in the Irish Times, the Irish Examiner and journal.ie.

On 19 June, the Today Show on RTÉ One did a live broadcast from the Zoo, which ran for two hours and was presented by Maura Derrane. Segments were filmed at the Orangutan Forest, the Kaziranga Forest Trail, the Great Lawn and the Zoo entrance, where they had a band playing music. Other footage included Sea Lion Cove and Flamingo Lagoon. As part of the filming, the presenter interviewed the director as well as team leader Ciaran McMahon and other members of the Animal Care Team. In September, RTÉ Lyric FM made sound recordings of animals and interviewed team leader Eddie O'Brien.

In October, the launch of the strategic plan, Dublin Zoo 200: Vision 2021 – 2031, with Minister Patrick O'Donovan, got good traction in the media with a piece on the 5.30 pm Virgin Media News, on radio including 98FM, Today FM, Newstalk, as well as 14 print and digital pieces. In autumn 'That's animal', a podcast presented by keeper Brendan Walsh, ran for six weeks on RTÉ Jr Radio with promotion on social media; it received a great



response. In November the RTÉ Home School Hub team came to Dublin Zoo to film the animals and interview keepers for their Christmas Day Special. The Amur tigers, red pandas and Humboldt penguins were featured, as were sections of Wild Lights. The programme was broadcast at 5.00 pm on Christmas Day.

The last episode of Nationwide on RTÉ One before Christmas was broadcast in its entirety from Dublin Zoo. There were interviews with the director and many of the Animal Care Team, as well as lots of footage of the animals. Wild Lights was also filmed that evening as part of the show. The viewership of Nationwide is very high,


and this was a fantastic opportunity to publicise Dublin Zoo.

In March, our sustainability partners, SSE Airtricity, launched a campaign, 'For Our World', in collaboration with the Zoo, with digital adverts running on programmatic platforms and on digipoles in all Musgraves shops as well as coverage on the Ray D'Arcy show, in the Irish Times and in the Sunday World. The campaign featured images of Dublin Zoo animals taken by wildlife photographer Mike Brown with facts about the animals and activities for kids. On 28 August, SSE Airtricity held their sunset safari night at the Zoo exclusively for rewards



(Above) Dublin Zoo's 190th Anniversary graphic





customers, with over 700 people in attendance. In October, as part of SSE Airtricity's launch of a National Geographic exhibition, a family pass to Wild Lights was given to everyone in the audience on The Late Late Show with Ryan Tubridy. Earlier in the year, in response to our 2020 'Save our Zoo' campaign, Harris Group donated a new van, which arrived this year and was branded with images of Dublin Zoo's animals together with our logo. We are grateful for their support.

The creativity and hard work of the entire Dublin Zoo team during the pandemic was recognised in two prestigious awards for our 'Save Dublin Zoo' fundraising campaign. In June, we won the Public Relations Consultants Association award for 'Best Communications Campaign by a not-for-profit organisation'; and in October, we won the Charity Excellence Award in the category 'Communications Campaign of the Year'. In September, our partnership with SSE Airtricity and the Dublin Zoo Eco Explorers Club won the 'Workplace Award' at Chambers Ireland – Sustainable Business Impact Awards. In November, SSE Airtricity/Edelman won 'Best for Sustainable Development' in Digital Media Awards (agency led) for the Eco Explorer Club online campaign. During the year, a national survey revealed that Dublin Zoo was voted second by the public as Ireland's top tourist attraction, after the Cliffs of Moher. Fota Wildlife Park came third.

Throughout the year, our website and social media platforms continued to perform very well and by the end of the year we had 330,832 Facebook followers, 40,496 Instagram followers and 103,402 Twitter followers. In the case of Instagram, this was a 16 percent growth year-on-

year. On 23 September, when tickets went on sale for Wild Lights, there were 77,637 visitors to our website and 290,614 for the month; this compares favourably with 2019, when, on 20 September, the day tickets went on sale: there were 24,498 visitors to the website and 181,387 for the month.

In November, we bid farewell to our Head of Marketing and PR, Emma Kiernan, who had joined Dublin Zoo in January 2011 and transformed our marketing department. Under her direction, the conservation role of Dublin Zoo was integrated into every aspect of our communication and the team won many marketing awards. In 2019, Emma was named Marketer of the Year by Marketing.ie. We wish her every success in her new position at Fáilte Ireland.

## Wild Lights

For the first time since 2019, we were able to hold a Wild Lights event again. The spectacular design, based on the theme 'Around the World', had been prepared for the 2020 event but was redesigned to make it suitable for the one-way system around the Zoo. For the first time, some of it was set up in the African Plains to reduce the size of crowds gathering along the route. Visitation was capped at 4,000 visitors per evening. In October and November, the event was open 5.00 pm to 10.00 pm, and in December and January from 4.00 pm to 9.00 pm, with the Zoo closing at 3.00 pm. We worked with Zenith Media on the advertising plan, including social media, digital ads on third-party websites, and outdoor advertising. 98fm once more agreed to be our radio media partner and the Irish Times was our print media partner. Media night on 25 October had about 2,000 attendees, and we got excellent coverage online.

There was a great sense of anticipation around the launch of Wild Lights. Tickets went on sale to the general public on 23 September, and by November the initial run was sold out. An extra five nights in November and another week in January 2022 were added. The total number of visitors to Wild Lights in 2021 was 212,028 bringing the total number of visitors to the zoo for 2021 to 972,224; by the time Wild Lights closed on 16 January 2022, the total was 262,719. Only one night, 7 December, had to be cancelled due to a weather warning; significant repairs to installations were carried out the following day, and Wild Lights reopened that evening. Despite the lower visitor numbers per night, this year's Wild Lights had the highest number of visitors since our first Wild Lights in 2017.

## Events

2021 was another very quiet year for events in the Zoo. Although the Zoo opened up in April and restrictions were gradually lifted, we were wary about taking bookings in case the situation changed. In the autumn, after restrictions had lifted, we held two 'Wake Up With The Elephants' events. Both of these had been postponed from 2020. They were held outdoors and socially distanced, with the food presented in picnic boxes and distributed from the Picnic Bench café. Later in the year, we accepted several corporate and family event bookings. Two of these were held in association with Wild Lights.



(Right) Wild Lights lanterns showing Egypt

## CONSERVATION AND RESEARCH

This year, our role in conservation and research took a major step forward, with the publication of our strategic plan, Dublin Zoo 200: Vision 2021 – 2031. Every aspect of this complex plan is designed to build our role as a national cultural institution with conservation and animal welfare at its core. These new developments will be guided by Dr Andrew Mooney, who was appointed to the position of Conservation and Research Officer in November. Andrew's doctorate in Trinity College Dublin was on how zoos and aquariums can contribute to global biodiversity conservation. He took over from Sandra Molloy, who was Registrar and Conservation and Research Coordinator since 2006 and who left to pursue postgraduate studies. Sandra's job was split, with Andrew taking on Conservation and Research, and Mel Sheridan, a member of the Dublin Zoo Animal Care Team since 2008, being appointed to manage record-keeping and animal transports on a part-time basis.

In 2021, Dublin Zoo was in a position to increase our support for field conservation projects slightly as compared to 2020. This year, we established a new relationship with the Lemur Conservation Association (AEECL), a consortium of European zoos that have joined forces to carry out lemur conservation and research in the Sahamalaza-Iles Radama National Park in northwest Madagascar. AEECL's aim is to conserve lemur species within the park, and their work includes research, protection and restoration of the vital ecosystems, which these threatened species inhabit. Although AEECL has a specific focus on the Critically Endangered blue-eyed black lemur (*Eulemur flavifrons*), their work also extends to other lemur species and habitats, including a reforestation programme. AEECL works in close

collaboration with local communities and authorities, connecting them to conservation work in their areas. By empowering local communities to become ambassadors for wildlife and habitats, AEECL is helping to create a sustainable future for lemurs in Madagascar. Similarly, AEECL heavily supports the education system in the periphery of the Sahamalaza National Park, highlighting the importance of protecting lemurs and their natural habitats. This education and community involvement is critical to the successful conservation of lemurs, as many local communities still rely on the land and local habitats to provide them with food, fuel and income. By supporting AEECL, Dublin Zoo are not only helping to protect lemurs and their habitat, but are also supporting rural communities to take ownership of the problems lemurs face and the solutions needed, creating a more sustainable and holistic approach to conservation. The zoo director has been Vice-President of the AEECL Board throughout 2021 and was confirmed as President-elect at the Association's AGM in November.

This year we also sent aid to Popa Langur Conservation in Myanmar to help this Critically Endangered species (*Trachypithecus popa*). The leaf-eating monkey was recently found in the remote forests of Myanmar and is new to science. It is named after its home on Mount Popa. It is believed to be in danger of extinction, with an estimated 200 – 250 individuals, which live in four isolated populations, remaining in the wild. Conservationists are working to protect the species through various measures, including outreach and awareness campaigns.



### **International conservation projects supported by Dublin Zoo, 2021**

- Bongo Surveillance Project, Kenya (eastern bongo)
- Frozen Ark
- IUCN Conservation Planning Specialist Group
- Lamandau Wildlife Reserve (Orangutan Foundation), Indonesian Borneo (Bornean orangutan)
- Lemur Conservation Association (AEECL), Madagascar (lemurs of Sahamalaza)
- Lowveld Rhino Trust (Save the Rhino), Zimbabwe (southern white rhino and black rhino)
- Okapi Conservation Project, Democratic Republic of Congo (okapi)
- Red Panda Network (Red Panda Forest Guardian Programme), Nepal (red panda)
- Scimitar-horned oryx reintroduction programme, Tunisia (scimitar-horned oryx)
- Selamatkan Yaki, Indonesia (Sulawesi crested macaque)
- Snow Leopard Trust, Asian range states (snow leopard)
- Tacugama Chimpanzee Sanctuary (Pan African Sanctuary Alliance), Sierra Leone (western chimpanzee)
- WAPCA - West African Primate Conservation Action, Ghana (white-naped mangabey)

### **Irish conservation projects supported by Dublin Zoo, 2021**

- Raptor Research and Monitoring – Bird Watch Ireland

### **Non-regular conservation payments, 2021**

- Popa Langur Conservation, Myanmar (Popa langur)

## **RESEARCH IN 2020**

### **Research by the Zoo Team**

- Flamingo feet in Dublin Zoo: collection and examination of images from the feet of Chilean flamingos.

### **University-led research**

- Quality testing of sea lion feed. Dublin Zoo provided access and fish samples. BSc, Technical University Dublin.
- Chemical and microbial analysis of the flamingo lagoon water quality and phytoremediation trials. Dublin Zoo provided access and water samples. BSc, Technical University Dublin.
- Developing a sustainability policy & procedure document for Dublin Zoo. BSc, Technical University Dublin.
- Levels of faecal glucocorticoid metabolites (FGM) in the chimpanzee group at the zoo. Dublin Zoo provided faecal samples. MRes, Royal (Dick) School of Veterinary Studies, University of Edinburgh.
- Water quality monitoring in the Zoo. Dublin Zoo provided access and water samples. University College Dublin.

### **Multi-zoo research**

- Play, joy and humour in great apes. Endorsed by EAZA Great Ape TAG and relevant EEPs. (Postdoctoral research). University of California, Los Angeles. Dublin Zoo completed questionnaire.
- Estimating the accuracy of identifying individuals using remotely triggered cameras. Snow Leopard Trust. Dublin Zoo provided camera trap images taken at the Zoo.

- Bongo Thyroid Project. Endorsed by EEP. Chester Zoo. Dublin Zoo provided post-mortem reports (2009-2021) and histopathology samples.
- Tinder for orangutans: identifying long-distance methods to test mate preference in zoo-housed orangutans. Endorsed by EEP. (PhD). Leiden University and Apenheul Primate Park. Dublin Zoo provided funding and images of our orangutans.
- Citron-crested cockatoo EEP research to investigate relatedness among the founders. Endorsed by EEP. Heidelberg University / Giessen University. Dublin Zoo manages the studbook for the citron-crested cockatoo.
- Keeper perceptions of nutritional and welfare aspects of captive primate diets. (MSc). Winchester University, England. Dublin Zoo completed a questionnaire.
- Retrospective analysis of rectal prolapse in Sulawesi crested macaques (*Macaca nigra*). Endorsed by BIAZA and EEP. (MSc). Zoological Society of London and Royal Veterinary College, London.
- An analysis of the nutritional components of Linnaeus's two-toed sloth (*Choloepus didactylus*) diets in captivity. (BSc). University Centre Sparsholt, England. Dublin Zoo completed a questionnaire and provided diet information.
- A review of the contribution of zoological parks to the conservation of lions (*Panthera leo*) and the visibility of West and Central African populations to the general public. Endorsed by EEP. (PhD). University of Pretoria. Dublin Zoo completed a questionnaire.
- An estimate of cases of urolithiasis in giraffes (*Giraffa camelopardalis*) and risk factors associated with the disease in European zoos. (MSc). University of Bristol. Dublin Zoo completed a questionnaire and shared diet and blood results.
- A retrospective study describing ophthalmic findings in captive Pinnipeds in the UK and Ireland. Endorsed by BIAZA. (BSc). Royal Veterinary College, London. Dublin Zoo completed a questionnaire and shared data on eye issues and medical notes.
- Elephant Facial Recognition Program. (Postdoctoral research). Indiana University Bloomington. Dublin Zoo provided images of elephants.
- Gorilla Sub-Species Determination Project. Endorsed by EEP. Gorilla EEP. Dublin Zoo provided samples from our gorillas.
- Genetic determination of the White-naped mangabey EAZA population. Endorsed by EEP. University of Pompeu Fabra and Copenhagen Zoo. Dublin Zoo provided hair samples from two of our white-naped mangabeys.
- Genetic study regarding possible hybridisation inside EAZA Rothschild's giraffe population. Endorsed by EEP. University of Edinburgh. Dublin Zoo provided a sample from one of our giraffes.
- Callimico husbandry research. Endorsed by EEP and TAG. University Centre Sparsholt. Dublin Zoo completed a questionnaire.
- Captive breeding potential of reptile and amphibian taxa newly listed and/or moved between Appendix I and II since the last CITES CoP18. Endorsed by Reptile TAG and Mauremys EEP. Deutsche Gesellschaft für Herpetologie und Terrarienkunde and CITES. Dublin Zoo completed a questionnaire.
- Evaluation of the use of environmental enrichment in European zoos for reptiles. (MSc). University of Valencia. Dublin Zoo completed a questionnaire.
- Breeding curlew and large carnivore faeces as fox

deterrent. IGPCT. Dublin Zoo provided large carnivore faeces.

- Elephant tusk fracture research - Epidemiology of traumatic tusk fractures of elephants in human care. Endorsed by EAZA and AZA Elephant TAGs. (Diploma). American College of Zoological Medicine. Dublin Zoo completed a questionnaire.
- Trunk laterisation study. (BSc). University of Chester. Dublin Zoo provided permission to use the webcams on our website for research.
- Swan research. Irish Midlands Ringing Group. Dublin Zoo provided data on hatching and survivorship of cygnets.
- Immune biome in non-human primates. University College Cork. Dublin Zoo provided faecal samples from great apes.

## PUBLICATIONS SUPPORTED BY DUBLIN ZOO

(Dublin Zoo staff highlighted in bold font)

Brady, A., McMahon, B. J., & Naulty, F. (2021). Estimates of locomotion in Asian elephants *Elephas maximus* using video monitoring at Dublin Zoo, Ireland. *Journal of Zoo and Aquarium Research*, 9(2), 124–133. <https://doi.org/10.19227/jzar.v9i2.502>

Buckley, K., Gorman, C.O., Martyn, M. et al. (2021). Coexistence without conflict, the recovery of Ireland's endangered wild grey partridge *Perdix perdix*. *European Journal of Wildlife Research*, 67(58). <https://doi.org/10.1007/s10344-021-01470-w>

**De Courcy, C.** (2021). *Dublin Zoo – An illustrated history*. New edition. Dublin, Mabel Wray Press.

**Dublin Zoo** (2021). *Dublin Zoo 200: vision 2021 – 2031: a conservation organisation of national and global impact*. Dublin, Zoological Society of Ireland.

Law, S., Prankel, S., **Schwitzer, C.**, & Dutton, J. (2021). Inter-specific interactions involving *Lemur catta* housed in mixed-species exhibits in UK zoos. *Journal of Zoo and Aquarium Research*, 9(4), 247–258. <https://doi.org/10.19227/jzar.v9i4.629>

Mittermeier, R. A., Langrand, O. M., Wilson, D. E., Rylands, A. B., Ratsimbazafy, J., Reuter, K. E., Andriamanana, T., Louis, Jr., E. E., **Schwitzer, C.**, & Sechrest, W. (2021). *Mammals of Madagascar: With the Comoros, the Seychelles, Réunion and Mauritius*. Lynx Edicions.

Reuter, K.E., Mittermeier, R.A., **Schwitzer, C.**, McCabe, G., Rylands, A.B., Jerusalinsky, L., Konstant, W., Kerhoas, D., Ratsimbazafy, J., Strier, K.B., Webber, A.D., Williamson, E.A. & Wise, J. (2021). The 25 most endangered primates list: impacts on conservation fundraising and policy. In: Freedman, E., Shipley Hiles, S., & Sachsman, D.B. (eds.) *Communicating Endangered Species: Extinction, News and Public Policy*. Routledge Studies in Environmental Communication and Media. London: Routledge, 101-115. <https://doi.org/10.4324/9781003041955-9>

**Schwitzer, C.** (2021). Editorial. *Lemur News: The Newsletter of the Madagascar Section of the IUCN SSC Primate Specialist Group*, 23, 1.



## CONFERENCES AND SELECTED TRAINING

### February

The director attended the virtual EAZA Zoo Nutrition Conference, as well as two BIAZA meetings with the chief executive officers of Britain's charitable zoos.

### March

The director chaired a meeting of the BIAZA Finance and Resource Committee and attended a meeting of the EAZA Prosimian Taxon Advisory Group. In his role as Deputy Chair of the IUCN SSC Primate Specialist Group, he attended an introductory meeting with the new Mammal Coordinator based at the Center for Species Survival at Indianapolis Zoo, and a meeting with colleagues from San Diego Zoo Global to talk through the recent SARS-CoV-2 outbreak in their gorilla troop.

The director gave a lecture on the roles of the modern zoo to a cohort of MSc World Heritage Management and Conservation students at UCD.

Volunteers and Discovery and Learning staff completed Children First Training via a 90-minute e-learning programme.

### April

In his role as chair of BIAZA, the director chaired meetings of BIAZA Council and of the Chairs of Committees.

Child Safeguarding Training was rolled out to the Animal Care, Horticulture, Facilities, Finance and Marketing teams.

### May

The registrar/research and conservation coordinator, the curator and the Zoo's veterinary surgeon, Frank O'Sullivan, completed a seven-week course on conservation planning with the IUCN SSC Conservation Planning Specialist Group.

The Discovery and Learning manager participated in the EAZA Academy - Conservation Education Evaluation Course hosted virtually by Chester Zoo.

### June

In his role as chair of BIAZA, the director chaired the Annual General Meeting as well as a meeting of BIAZA Council. He also gave a welcome address and chaired a session at the BIAZA Annual Conference. He attended a Board meeting of the Association Européenne pour l'Etude et la Conservation des Lémuriens (AEECL) in his role of vice president of the association.

### September

The director attended a meeting of the EAZA Conservation Committee.

### October

The director attended the virtual EAZA Annual Conference between 20 and 23 September. He also attended meetings of the Callitrichid Taxon Advisory Group and the EAZA Conservation Committee. He chaired two strategy sessions of BIAZA Council.

A horticulture talk took place with former Curator of Horticulture Stephen Butler on 9 September. Twenty-five volunteers participated, as well as members of the senior

management, the Horticulture Team and Discovery and Learning Team.

An off-site link manager training course took place at Weston Airport over two weekends in October and was attended by eight staff members.

### **November**

The director attended the virtual AGM of AEECL, the Lemur Conservation Association. He was confirmed as President-elect of the AEECL Board.

The director attended a meeting of the BIAZA Finance & Resources Committee and chaired a meeting of BIAZA Council.

The head of Discovery and Learning, the Discovery and Learning manager and the team lead delivered presentations at the virtual BIAZA Conservation Education Conference on 17 November.

On 19 November, the Regional BIAZA Educators' meeting took place virtually after a last-minute cancellation of the face-to-face meeting due to the rising Covid case numbers. Dublin Zoo was due to host the event.

Two team leaders and the two Health and Safety staff representatives completed a specialist IOSH course on Safety Management.

### **December**

Staff in the Animal Care team attended a Food Hygiene and HACCP Awareness Course (Levels 1 & 2).

## **SELECTED VISITORS AND VISITING**

### **April**

The Taoiseach, Micheál Martin visited Dublin Zoo on 26 April, the day the Zoo reopened after the lockdown. It was widely covered in the media.

### **June**

Minister of State for Heritage and Electoral Reform, Malcolm Noonan TD, and his family visited the Zoo. Minister Noonan's portfolio includes the National Parks and Wildlife Service.

The Tánaiste, Leo Varadkar TD, accompanied by Minister of State for the OPW Patrick O'Donovan TD, Senator Emer Currie and a number of advisors and OPW officials visited the Zoo on 16 June.

Minister of State for Sport and the Gaeltacht Jack Chambers TD and his advisor visited the Zoo on 25 June for a tour of the site.

### **October**

Minister of State for the OPW, Patrick O'Donovan TD, visited Dublin Zoo on 6 October for the official media launch of the ten-year strategic plan.

### **November**

The Lord Mayor of Dublin, Cllr. Alison Gilliland, visited Dublin Zoo on 9 November for a tour of the site and to observe an elephant feeding session.

The director visited Fota Wildlife Park, Tayto Park and Belfast Zoo together with members of the Independent

Zoo Enthusiasts Society. They were given guided tours by director Sean McKeown, park manager Lee Donohoe, and curator Raymond Robinson, respectively.

### **December**

The director visited Frankfurt Zoo and Opel-Zoo Kronberg. In Kronberg, he met with zoo director Dr Thomas Kauffels, who is also Chair of EAZA.





# CENSUS OF ANIMALS IN DUBLIN ZOO DURING 2021

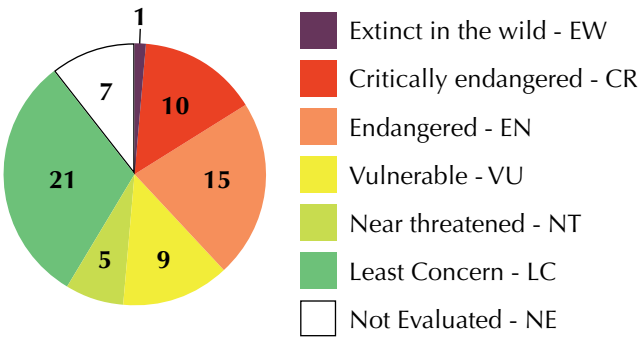
Summary of Census of Animals in Dublin Zoo on 31st December 2021

Taxon	Total Species	Total Specimens
Mammals	40	187
Birds	10	175
Reptiles	19	46
<b>Total vertebrates</b>	<b>69</b>	<b>408</b>
Invertebrates	4	4 colonies

Summary of Births and Hatchings of Animals in Dublin Zoo during 2021

Taxon	Total Species	Total Specimens
Mammals	4	15
Birds	3	31
Reptiles	1	5
<b>Total vertebrates</b>	<b>8</b>	<b>51</b>

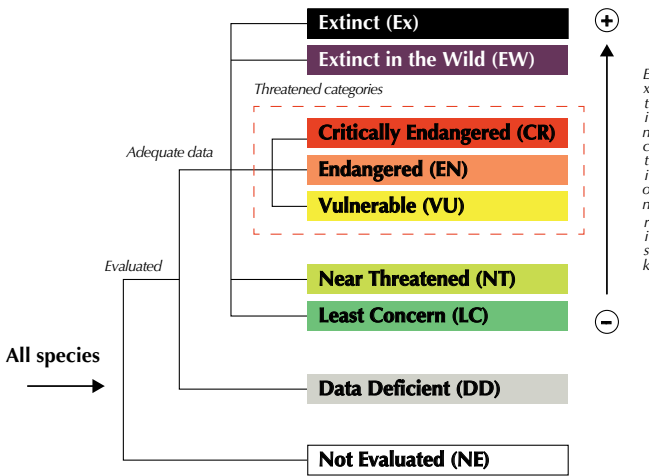
Number of species/subspecies



Summary of Animal Taxa on the IUCN Red List of Threatened Species in Dublin Zoo during 2021

IUCN status	Number of species/ subspecies
Extinct in the wild – EW	1
Critically endangered – CR	10
Endangered – EN	15
Vulnerable – VU	9
Near threatened – NT	5
Least Concern – LC	21
Not Evaluated – NE	7

Source: IUCN 2022. The IUCN Red List of Threatened Species.  
Version 2022-1 Available at: <http://www.iucnredlist.org>



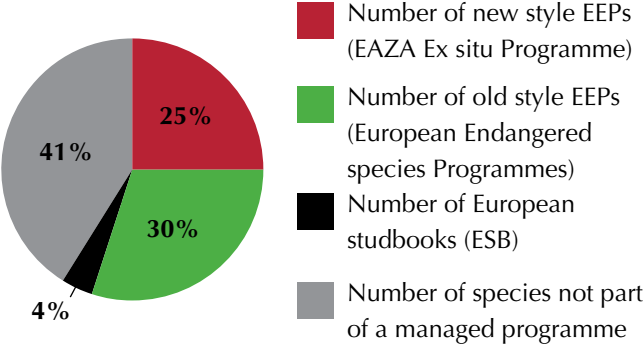
During 2021, Dublin Zoo held a total of 74 species/subspecies, 68 of which are recognized on the IUCN Red List. 35 (52%) of these have been assessed as globally threatened i.e. Vulnerable to Extinct in the Wild. A further 5 of these species/subspecies fall into the Near Threatened category. The remaining species/subspecies are of Least Concern (#21 – 31%) or have not been evaluated yet (#7 – 10%).

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 2021

Number of new style EEPs (EAZA Ex situ Programme)	17
Number of old style EEPs (European Endangered species Programmes)	21
Number of European studbooks (ESB)	3
Number of species not part of a managed programme	28

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



Of the 74 species/subspecies held at Dublin Zoo, 41 (55%) 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 a European Endangered Species Programme (EEP)
- ESB** Recorded in a European studbook
- CITES** (Convention on International Trade in Endangered Species of Wild Fauna and Flora) listing determined by the EU Wildlife Trade Regulations
- Appendix /Annex** Appendix E.g. I/A = Appendix I and Annex A

- Column 1:** The number of animals in the collection at 1st January 2021.
- Column 2:** The number of animals received in 2021 through donation, loan or exchange.
- Column 3:** The number of animals born or hatched during 2021.
























- Column 4:** The number of animals dying within 30 days of birth or hatching, in 2021.
- Column 5:** The number of animals dying having survived more than 30 days, in 2021.
- Column 6:** The number of animals leaving the collection through donation, loan, exchange, etc. during 2021.
- Column 7:** The number of animals in the collection at 31st December 2021.

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 01.01.21	Arrivals	Births	Dead within 30 Days	Dead	Departed	Total at 31.12.21
			<b>VERTEBRATES</b>	<b>VERTEBRATA</b>							
			<b>CLASS: MAMMALS</b>	<b>MAMMALIA</b>							
			<b>PRIMATES</b>	<b>PRIMATES</b>							
	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						3. 5. 0
	I/A	VU	Goeldi's monkey	<i>Callimico goeldii</i>	1. 2. 0		0. 0. 2	0. 0. 2			1. 2. 0
	I/A	EN	Golden lion tamarin	<i>Leontopithecus rosalia</i>	1. 1. 0						1. 1. 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	EN	White-naped mangabey	<i>Cercocebus lunulatus</i>	2. 5. 0						2. 5. 0
	II/B	EN	Red-capped mangabey	<i>Cercocebus torquatus</i>	2. 0. 0					2. 0. 0	2. 0. 0
	II/B	CR	Sulawesi crested macaque	<i>Macaca nigra</i>	14. 10. 2		1. 0. 0		2. 1. 2		13.9. 0

	CITES	IUCN Status	SPECIES		Total at 01.01.21	Arrivals	Births	Dead within 30 Days	Dead	Departed	Total at 31.12.21
	I/A	EN	Siamang	<i>Symphalangus syndactylus</i>	2. 1. 0						2. 1. 0
	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
			<b>XENARTHANS</b>	<b>XENARTHRA</b>							
ESB	NL	LC	Linne's two-toed sloth	<i>Choloepus didactylus</i>	1. 1. 0						1. 1. 0
			<b>CARNIVORES</b>	<b>CARNIVORA</b>							
	II/A	LC	Grey wolf	<i>Canis lupus</i>	6. 1. 0						6. 1. 0
	NL	EN	Painted dogs	<i>Lycaon pictus</i>	2. 2. 0						2. 2. 0
	I/A	EN	Red panda	<i>Ailurus fulgens fulgens</i>	1. 1. 0						1. 1. 0
	NL	LC	Slender-tailed meerkat	<i>Suricata suricatta</i>	7. 3. 0				1. 0. 0		6. 3. 0
	I/A	EN	Asiatic lion	<i>Panthera leo persica</i>	1. 3. 0						1. 3. 0
	I/A	EN	Amur tiger	<i>Panthera tigris altaica</i>	1. 2. 0						1. 2. 0
	I/A	VU	Snow leopard	<i>Panthera uncia</i>	1. 1. 0						1. 1. 0
	NL	LC	California sealion	<i>Zalophus californianus</i>	2. 3. 0		1. 0. 0				3. 3. 0
			<b>ELEPHANTS</b>	<b>PROBOSCIDAE</b>							
	I/A	EN	Asiatic elephant	<i>Elephas maximus</i>	2. 7. 0						2. 7. 0
			<b>ODD-TOED UNGULATES</b>	<b>PERISSODACTYLA</b>							
	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>	1. 2. 0						1. 2. 0
	I/A	NT	Southern white rhinoceros	<i>Ceratotherium simum simum</i>	2. 4. 0						2. 4. 0
			<b>EVEN-TOED MAMMALS</b>	<b>CETARTIODACTYLA</b>							
	NL	LC	Red river hog	<i>Potamochoerus porcus</i>	4. 0. 0						4. 0. 0
ESB	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. 3. 0						4. 3. 0
	NL	EN	Okapi	<i>Okapia johnstoni</i>	1. 2. 0						1. 2. 0
	III/C	LC	Blackbuck	<i>Antelope cervicapra</i>	0. 3. 0						0. 3. 0
	NL	CR	Eastern bongo	<i>Tragelaphus eurycerus isaaci</i>	2. 2. 0						2. 2. 0
	I/A	EW	Scimitar-horned oryx	<i>Oryx dammah</i>	5. 6. 0						5. 6. 0



	CITES	IUCN Status	SPECIES		Total at 01.01.21	Arrivals	Births	Dead within 30 Days	Dead	Departed	Total at 31.12.21
			<b>DOMESTIC</b>								
			Tamworth pig	<i>Sus scrofa scrofa tamworth</i>	1. 0. 0	0. 1. 0	2. 8. 1	0. 0. 1		2. 8. 0	1. 1. 0
			Friesian cow	<i>Bos taurus taurus friesian</i>	0. 1. 0						0. 1. 0
			Kerry cow	<i>Bos taurus taurus kerry</i>	0. 1. 0						0. 1. 0
			Small East African goat	<i>Capra hircus domestic small east african</i>	0. 4. 0						0. 4. 0
			Domestic Sheep	<i>Ovis aries</i>	0. 0. 0	1.7. 0			0. 1. 0	1. 3. 0	0. 3. 0
			<b>CLASS: BIRDS</b>	<b>AVES</b>							
	NL	LC	<b>OSTRICHES</b>	<b>STRUTHIONIFORMES</b>							
			Ostrich	<i>Struthio camelus</i>	1. 2. 0				1. 1. 0		0. 1. 0
			<b>PENGUINS</b>	<b>SPHENISCIFORMES</b>							
	I/A	VU	Humboldt penguin	<i>Spheniscus humboldti</i>	10. 6. 0		0. 1. 2		1. 0. 0		9. 7. 2
			<b>HERONS/STORKS</b>	<b>CICONIIFORMES</b>							
	/A	LC	Little egret	<i>Egretta garzetta</i>	1. 0. 0						1. 0. 0
	I/A	EN	Waldraap ibis	<i>Geronticus eremita</i>	11. 11. 0		5. 6. 4	0. 0. 5	1. 0. 0		14.16.1
			<b>FLAMINGOS</b>	<b>PHOENICOPTERIFORMES</b>							
	II/B	NT	Chilean flamingo	<i>Phoenicopterus chilensis</i>	60.45.0				2. 0. 0		58. 45. 0
			<b>GALLINACEOUS BIRDS</b>	<b>GALLIFORMES</b>							
	/C	LC	Common pea fowl	<i>Pavo cristatus</i>	3. 4. 0		0. 0. 13	0. 0. 6		1. 0. 7	2. 4. 0
	NL	NT	Crested wood partridge	<i>Rollulus rouloul</i>	2. 0. 0						2. 0. 0
			<b>DUCKS/GEESE/SWANS</b>	<b>ANSERIFORMES</b>							
	NL	LC	White-cheeked pintails	<i>Anas bahamensis</i>	1. 3. 0	3. 2. 0			0. 1. 0	4. 4. 0	0. 0. 0
			<b>PARROTS</b>	<b>PSITTACIFORMES</b>							
	I/A	CR	Citron-crested cockatoo	<i>Cacatua sulphurea citrinocristata</i>	2. 3. 0						2. 3. 0
			<b>HORN BILLS ETC.</b>	<b>CORACIIFORMES</b>							
	NL	VU	Abyssinian ground hornbill	<i>Bucorvus abyssinicus</i>	1. 1. 0						1. 1. 0
			<b>DOMESTIC FOWL</b>								
			Indian runner duck	<i>Anas platyrhynchos domestic indian runner</i>	1. 3. 2						1. 3. 2

	CITES	IUCN Status	SPECIES		Total at 01.01.21	Arrivals	Births	Dead within 30 Days	Dead	Departed	Total at 31.12.21
  	I/A	CR	<b>CLASS: REPTILES</b> <b>CHELONES</b>	<b>REPTILIA</b> <b>TESTUDINES</b>							
			Annam pond turtle	<i>Mauremys annamensis</i>	2. 2. 1		0. 0. 5	0. 0. 1			2. 2. 5
	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. 3. 0
	I/A	VU	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
			<b>CROCODILES</b>	<b>CROCODILIA</b>							
	NL	NE	West African crocodile	<i>Crocodylus suchus</i>	1. 1. 0						1. 1. 0
			<b>LIZARDS</b>	<b>SAURIA</b>							
	NL	NE	Green crested lizard	<i>Bronchocela cristatella</i>	5. 0. 0						5. 0. 0
	II/B	LC	Panther chameleon	<i>Furcifer pardalis</i>	1. 0. 0						1. 0. 0
	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
	II/B	LC	Mangrove monitor	<i>Varanus indicus</i>	0. 1. 0						0. 1. 0
			<b>SNAKES</b>	<b>SERPENTES</b>							
	II/B	LC	Green tree python	<i>Morelia viridis</i>	2. 1. 0			1. 0. 0			1. 1. 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
ESB	NL	LC	Cornsnake	<i>Pantherophis guttatus</i>	1. 0. 0						1. 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

	CITES	IUCN Status	SPECIES		Total at 01.01.21	Arrivals	Births	Dead within 30 Days	Dead	Departed	Total at 31.12.21
			<b>INVERTEBRATES</b>	<b>INVERTEBRATA</b>							
			<b>CLASS: INSECTS</b>	<b>INSECTA</b>							
			<b>STICK INSECTS</b>	<b>PHASMATOPTERA</b>							
	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

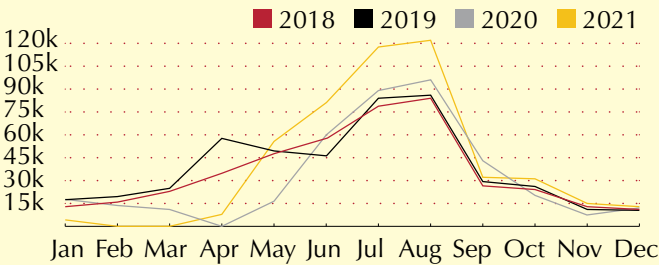
\* approximate numbers



# FOTA WILDLIFE PARK: DIRECTOR'S REPORT

2021 turned out to be a dramatic and turbulent year that can be split into three phases. During the first four months of 2021, the Wildlife Park was closed to the public with no visitor income. The second phase after the Wildlife Park reopened saw record monthly visitor numbers and income for the four months of May to August, and the third phase saw visitor numbers and income return to normal 2019 levels during the last 4 months of 2021. The three different visitor attendance phases are clearly visible in Graph 1 below, which compares the monthly visitor numbers for the years 2018 to 2021.

**Graph 1. Monthly Visitor numbers from 2018 to 2021**



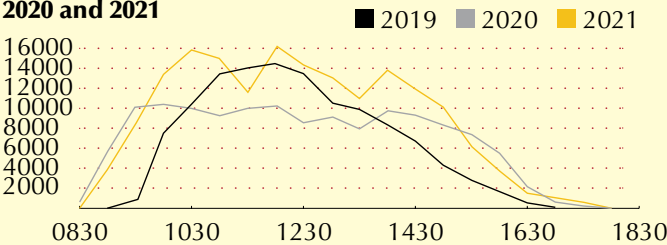
When the Wildlife Park reopened on the 26th of April, it performed exceptionally well, with record attendance figures for the months of May, June, July, and August 2021 despite Covid restrictions being in place in relation to the numbers of people visiting the Wildlife Park. There is no doubt that the staycation effect boosted attendances during the summer months, but extending the Wildlife Park's opening hours to 8pm during six weeks of July and August also assisted in achieving the exceptional visitor numbers during these two months. After the Covid lockdown restrictions eased and the Park reopened, visitor numbers were limited to 500 individuals being allowed in the Park at any one time, which was equivalent to 1,500 visitors per day. This was similar to the visitor

limits imposed in the park when we reopened to the public in May 2020 after lockdown, following the first wave of Covid. However, given the 2020 experience, the visitor limits were quickly increased to 3000 per day by the May bank holiday in 2021 and to 5000 per day by the June bank holiday, and eventually to 6000 at the beginning of July.

Nevertheless, Fota Wildlife Park was also cognisant that if the numbers of visitors were raised too high and if visitors felt that social distancing and Covid mitigation measures were not up to standard, then the Wildlife Park could have quickly lost the public's trust with a corresponding decrease in visitor numbers. Throughout all of 2021, the Tropical House and playgrounds remained closed to the public, the Tour Train did not operate, and daily public engagement events such as animal talks and feeding were also not available. The retail outlets and souvenir shop were opened, but mask wearing was required in all of these public indoor areas, and there was no indoor dining.

The park's educational programmes recommenced in May and continued until the end of 2021 at less than 50% capacity due to Covid restrictions. However, 7,500 students participated in onsite educational classes and field programmes during 2021.

**Graph 2. Daily distribution of visitor numbers in 2019, 2020 and 2021**



The above Graph 2 shows the effect that the pre-paid booking of half-hourly time slots in 2020 and 2021 had on evenly distributing visitor numbers throughout the day. We also saw that opening early and closing later in 2020 and 2021 assisted with spreading visitor entry times and maximum visitor numbers within the Wildlife Park throughout the daily time slots. This eased the flow of visitors around the park, enhanced their enjoyment of the Wildlife Park and their associated customer experience at various food and gift outlets. It also aided and ensured that there was sufficient parking capacity available throughout the day, which resulted in an avoidance of queues of cars entering and exiting the entrance from the main Fota road. The online prepaid booking system, which was part of the new website development and integration project, was the core element in the successful management of visitor capacity, enjoyment and welfare during the Covid pandemic restrictions.



## Animal Husbandry

One of the most significant species to breed during 2021 at Fota was the Critically Endangered black-and-white ruffed lemurs, with three young born in early June to female 'Cloud'. This brings the total number of this species held at Fota to nine, of which eight were born at the Wildlife Park. On the island of Madagascar, only very low numbers of black-and-white ruffed lemurs remain in the wild, in contrast to 100 years ago, when there were estimated to be over 200,000. It is possible that with the current trends in forest and habitat degradation in Madagascar, black-and-white ruffed lemurs could be extinct in the wild by 2030.



Another significant birth at Fota in 2021 were five endangered northern cheetah cubs born to female 'Grainne' and sired by the older male 'Archie', and this brings the total number of cheetahs born at Fota to 238 since 1984. Cheetahs can produce large litters, with the largest number born in captivity being eight cubs. The

largest number of cubs born in a single litter at Fota was seven cubs. Fota Wildlife Park coordinates the Northern Cheetah EEP and Studbook, which is one of over 400 (EAZA) European Association of Zoos and Aquaria breeding and population management programmes.

Two Critically Endangered elongated tortoises hatched at Fota Wildlife Park during 2021, bringing the total number of this species bred at Fota to 16 since 2016. We are now one of the most successful breeders of this species in the world.



Fota Wildlife Park has for the first time bred the endangered Kotsovato fish, *Paretroplus kieneri*, which is a cichlid fish species from north-western Madagascar. As presently defined, its range spans only a few river basins and is threatened in the wild by habitat loss and competition from introduced species of fish, but this could possibly include more than one species.

Ring-tailed lemurs have been resident in Fota Wildlife Park since it opened and were one of four primate species on view when the Wildlife Park opened in June 1983. They were allowed to go free-range around the Wildlife Park in 1984 and have always been one of the



public's favourite animal species. Many ring-tailed lemurs were born at Fota and sent around the world; however, our group at Fota had grown older and had not bred since 2008. By the beginning of 2019, the group consisted of only one old male and 3 older females. It was decided to bring in a small group of 4 females from Emmen Zoo to start a new breeding group with the remaining male. The new females were successfully integrated together, and along with our older animals, they went on display in the new Madagascar Village at the end of 2019. We were hoping for some births in spring of this year as mating was observed in late 2020. Unfortunately, our only male ring-tailed lemur 'Collins' died on the 11th of March, and the primate staff had lost hope that any young would be born that year. However, when the primate staff came to work on the morning of the 12th of March, they got an amazing surprise, one of the females had given birth to twins, the offspring of 'Collins'. The fabulous news quickly spread around the staff and lifted their morale during the Covid lockdown.

Other births included an agile gibbon and two eastern grey kangaroos, three European bison, one red-breasted goose and three Humboldt penguins. The old female



Rothschild's giraffe had to be euthanized after a recurring twisted intestinal issue which did not respond to treatment. The female was 19 years old and had given birth to six calves during that period. She was born in Edinburgh Zoo and transferred to Fota when she was two years old.

## RESEARCH AND CONTRIBUTION TO FIELD CONSERVATION PROJECTS in 2021

### Conservation Research

Throughout 2021, 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.

### Fourth Year Honours research projects completed in 2021 by students from the School of BEES in UCC and other Universities.

- **Aoife Callanan** - The addition of enrichments in the enclosures of hoof stock at Fota Wildlife Park. Is it worth the effort? Supervisors: Professor Ruth Ramsay and Dr Courtney Collins
- **Rowan Collier** - Multi-species Behavioural Comparison and Enclosure Utilisation Study after Enclosure expansion. Supervisors: Professor Ruth Ramsay and Dr Courtney Collins
- **Michael Feeney** - The Influence of seasonal weather conditions on the temporal distribution of territorial vocalisations by captive Asiatic lions *Panthera leo leo*. Supervisor: Ger Killeen
- **Bridin Foster** - A Behavioural Study of the Ongoing

Integration of Drill monkeys, *Mandrillus leucophaeus* to Fota Wildlife Park. Supervisors: Professor Ger Killeen and Dr Courtney Collins

- **Calvin Jordan** - Behaviour dynamics in reforming a group of Ring-tailed lemurs (*Lemur catta*) in Fota Wildlife Park. Supervisors: Professor Ruth Ramsay and Dr Courtney Collins
- **Rory Lucey** - How diet affects a dominance-based hierarchy in captive Siamang gibbons, *Symphalangus syndactylus*. Supervisors: Professor Ruth Ramsay and Dr Courtney Collins
- **David Twomey** – Night-time Behaviour of Captive Giraffes in Fota Wildlife Park. Supervisors: Professor Ruth Ramsay and Dr Courtney Collins.

### MSc student Project 2021

- **Natalie Barry:** Observations on visitor interactions with free ranging animals and birds at Fota Wildlife Park, Waterfowl, Wallabies and Kangaroos. University of Bristol.

### PhD student Projects 2021

- **Gill Weyman:** - Status, threats and conservation of ladybirds in Ireland (commenced October 2015). This project is documenting the occurrence and spread of the invasive Harlequin ladybird, *Harmonia axyridis*, which was first recorded in Ireland during 2010. The main aims of this research project are as follows:
  - To identify patterns of status and distribution of native ladybirds and the Harlequin Ladybird in Ireland.
  - To identify the ecological and physical factors that influence the patterns of distribution of ladybird species in Ireland.

- To assess the pest control ecosystem service provided by ladybirds and the potential threat to this service by the Harlequin Ladybird.
- To propose conservation strategies for endangered/vulnerable native ladybirds in Ireland, which will include a conservation breeding programs where necessary.
- To produce an education and awareness-raising programme on native ladybirds to complement a module on Ecology and Biodiversity for Fota Wildlife Park

This project was suspended in 2020 due to the Covid-19 pandemic and associated restrictions but recommenced in May 2021 which enabled the remaining fieldwork to be completed by the end of August 2021.

- **Daniel Moloney:** 'An investigation into how conservation strategies, employed both in captive and wild settings, inform our understanding of animals' movement and behaviour'. This PhD project commenced in September 2021. Due to an ever-increasing need for more effective conservation efforts both in captivity and in the wild, there is a requirement for research which improves our understanding of what is essential for creating successful conservation projects. The overall aim of this study is to examine how analysis of animal behaviour and movement of captive species can be used to improve the success of projects such as the European Endangered Species Programme (EEP).



## Scientific Papers Published in 2021

### Publications

- **Newman, R., McKeown, S., Quirke, T., & O'Riordan, R. M. (2021).** The effect of a new enclosure on the behaviour of a large captive group of lion-tailed macaques *Macaca silenus*. *Journal of Zoo and Aquarium Research*, 9(1), 20-25.
- **Collins, C. K., McKeown, S., & O'Riordan, R. (2021).** Does an Animal-Visitor Interactive Experience Drive Conservation Action? *Journal of Zoological and Botanical Gardens*, 2(3), 473-486.
- **Collins, C., McKeown, S., McSweeney, L., Flannery, K., Kennedy, D. and O'Riordan, R., 2021.** Children's conversations reveal in-depth learning at the Zoo. *Anthrozoös*, 34(1), pp.17-32.

## Native Species Conservation Field Projects

### Corncrakes



Fota Wildlife Park took part in the first steering committee meeting at the end of January 2021 for the LIFE18 NAT/IE/000090 LIFE Atlantic Crax project aka Corncrake LIFE 2020-2024 (operating 2021-2025). The National Parks and Wildlife Service planning and application process for this Corncrake EU Life Project began in late 2017, and Fota Wildlife Park was invited to take part in the process in early 2018. On receipt of funding in 2019, the project was due to commence in 2020 but was postponed to 2021 due to the Covid pandemic.

The overall objective of this Corncrake project is to improve its conservation status in Ireland through the enhancement of the SPA network and surrounding farmland. This project will take place on eight project sites (in nine SPAs and adjacent supporting farmland) which are predominantly privately owned (see map below). Adjacent supporting farmland is critical to the project as circa 85% of the population occurs within the SPAs and associated hinterland. These areas (referred to as “Corncrake catchments”) will be targeted in the project.

The specific component objectives of the project are, in decreasing order of importance:

- promoting the Corncrake as an asset for local areas and communities.

A5	Developing efforts to better inform applied conservation action for this project and beyond
A6	Development of protection, rescue and research initiatives for Corncrake
C7	Underpinning scientific support to inform decision making
C8	Thermal Imaging trials to locate Corncrakes
D2	Assessment of the applicability, reliability and feasibility of innovative technologies in Corncrake conservation
E3	Promoting local community engagement
F2	Project management and monitoring of project progress & risk by Project Steering Group, Coordinating Beneficiary and Associated Beneficiaries

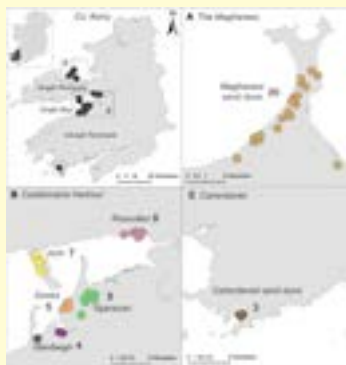
The above photo shows nine Corncrake chicks that were rescued from the wild as eggs from a nest which had been damaged during mowing and their subsequent transfer to Fota for incubation, hatching and rearing.

The Natterjack toad, *Epidalea calamita*, native to sandy and heathland areas of Europe is considered at Least Concern (LC) in Europe. However, in Ireland, the National Parks and Wildlife Service consider it to be a Red List species, Endangered [B2a,b(iii)]. Below is the distribution



map of Natterjack toads in Ireland, and it has a very restricted distribution in county Kerry.

The National Parks and Wildlife Service had introduced a scheme in 2008 to encourage farmers in and around Natterjack toad habitat in Kerry to develop up to two ponds on their land to assist the expansion of the Natterjack population using translocated spawn.



In 2015, the NPWS approached Fota to see if it was possible to improve the survival rate of translocated Natterjack toads using a head-starter programme. The head-starter project involved the collection of spawn by NPWS, and Fota took responsibility for rearing the spawn from the egg stage through to the toadlet stage, in preparation for release into designated ponds in the wild.

The Natterjack toad head-starter began in 2016 with the first collection of spawn by NPWS. By 2021, Fota Wildlife Park had released over 6,500 Natterjack toadlets back to the wild in Kerry under the supervision of



the NPWS. The Minister for Heritage, Malcolm Noonan TD, took part in the release of 800 toadlets from Fota back to the wild in Kerry during the summer of 2021.

### **Department of Housing, Local Government and Heritage (NPWS) Grant**

This Grant of €550,000 was paid into Fota Wildlife Park's account on 16th December 2020 and was allocated to assist with the running costs during the winter when the Wildlife Park was closed to visitors. As the Wildlife Park was not closed to the public until the 8th January 2021, it was decided to defer most of these funds to the running cost for the year 2021 as it was apparent that the Wildlife Park was unlikely to reopen before April 2021 and would therefore not have any visitor income during this period. Fota Wildlife Park is very grateful to the Department of Housing, Local Government and Heritage for this grant which allowed the Wildlife Park to maintain the high standards of animal care and welfare during the difficult first four months of 2021.

### **Government 2021 Capital Grant via the Office of Public Works (OPW)**

In mid-November 2020, Fota Wildlife Park and Dublin Zoo made a joint application for funding to the Dept. of Public Expenditure and Reform seeking capex funding mainly to finish capital projects (listed in table below) that had commenced in 2020 but could not be completed in 2020 due to lack of funds because of the Covid-19 pandemic restrictions. It was also emphasised that due to ongoing issues with the Covid pandemic into 2021 it was unlikely that these projects could be completed in 2021 or even perhaps 2022. In December 2020, the OPW confirmed that one million euros would be made

available to Fota Wildlife Park in 2021 for the completion of capital projects. Fota Wildlife Park signed a MoU with the OPW on the 21st of May 2021, regarding the OPW €1m funding for the three capital projects outlined below.

### **1. Construction of Spider Monkey Habitat including House.**



This included the redevelopment of the Spider Monkey Habitat with a new house with public viewing areas and the landscaping of the old enclosure. The spider monkeys are the 4th most popular animal species in Fota. This project was officially opened in December 2021 by the Minister for the OPW Patrick O'Donovan TD and Minister for Public Expenditure and Reform Michael McGrath TD.

### **2. Completion of Monkey House 9 and Flood protection at Railway Station end of the Park.**

This includes the completion of Monkey House 9 (Howler and Pelican Habitat) and the installation of a sluice gate and flood protection at the station gate end of the park. It also includes work to repair the edges around part of


the main lake. Work had commenced on this project in February 2020, but work was terminated due to the Covid lockdown in March 2020. Work re-commenced in May 2021 and finished in early 2022.



### **3. The Southern Seawall Flood Protection and Repair.**



This seawall and embankment prevent the lower end of the Wildlife Park from flooding, particularly at high tides. However, in the last six to eight years, with rising sea levels, the sea water flows over the top of this wall on a more frequent basis (every two to three months), and during 2020 it was planned to increase the height



of this wall by 45cms. Works to the main seawall were completed by February 2022, with a total 450 meters of seawall repaired, foundations were underpinned, and the wall was raised by 45cms.

### **Education 2021 Review:**

All of Fota Wildlife Park's formal and informal educational activities were severely curtailed due to Covid-19 restrictions during the 2021 season. Despite the park being closed to the public for the first three months of 2021, in excess of 7,500 students participated in a variety of formal educational modules during the 2021 season. Both the practical field ecology module and the primary conservation module continued to attract the highest attendances, with almost 5,700 students participating in them.

In the absence of the park's annual public engagement events, the education team were invited to participate virtually in a number of events with the aim of highlighting the role of STEM (Science, Technology, Engineering and Maths) in zoological collections. "The Great Irish Zoo Off" was a collaborative project between Fota Wildlife Park and Galway Atlantaquaria and was coordinated by the Rediscovery Centre (The National Centre for the Circular Economy in Ireland) on receipt of Science Foundation Ireland funding. This virtual event highlighted the diversity of species held in both collections and the importance of STEM in facilitating both in and ex situ conservation efforts. The aim was to reach into classrooms all over Ireland and specifically to encourage a greater level of engagement from disadvantaged areas and DEIS schools and to generate both an interest and curiosity amongst students in relation to STEM.

In excess of 14,000 primary and secondary students engaged with the virtual workshop and a further 1000 views have been accrued since it has been uploaded to YouTube.

The education team were invited by Science Foundation Ireland to participate in National Science Week (Nov 7-14). A virtual workshop titled "Giraffes - Head and Shoulders above the rest" was devised by the park's education team and highlighted the various anatomical adaptations possessed by giraffes and the role of Fota Wildlife Park in conserving the Rothschild's giraffe subspecies. The workshop was well received with over 2000 views accumulated during National Science Week alone.

In March of 2021, Fota Wildlife Park's Head of Education (Lynda Mc Sweeney) was appointed as BIAZA Regional Co-ordinator for Conservation Education in Ireland. This role is designed to provide support to fellow zoo and aquarium educators in Ireland, advance conservation education practices, and advocate for the importance of conservation education in accomplishing conservation goals.

## Fota Wildlife Park 2021 Animal Inventory

	IUCN Status	SPECIES		Beginning	Births	Acquisitions	Dead	Dispositions	Ending
		<b>INVERTEBRATES</b>	<b>INVERTEBRATA</b>						
		<b>CLASS: INSECTS</b>	<b>CLASS: INSECTA</b>						
		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> *	0.0.0	0.0.0	0.0.100	0.0.0	0.0.0	0.0.100
		<b>VERTEBRATES</b>	<b>VERTEBRATA</b>						
		<b>CLASS: FISH</b>	<b>CLASS: PISCES</b>						
LC		Laced moray	<i>Gymnothorax favagineus</i>	0.0.0	0.0.0	0.0.1	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	0.0.0	0.0.0	0.0.10
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
		Loach	<i>Beaufortia leveretti</i> *	0.0.5	0.0.0	0.0.0	0.0.0	0.0.0	0.0.5
		Buenos Aires tetra	<i>Hyphessobrycon anisitsi</i> *	0.0.34	0.0.0	0.0.0	0.0.2	0.0.0	0.0.32
		Royal plecostomus	<i>Panaque nigrolineatus</i> *	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
EN		Madagascar rainbowfish	<i>Bedotia madagascariensis</i> *	0.0.55	0.0.0	0.0.0	0.0.1	0.0.0	0.0.54
VU		Red rainbowfish	<i>Glossolepis incisus</i> *	0.0.28	0.0.0	0.0.0	0.0.0	0.0.0	0.0.28
EN		Boeseman's rainbowfish	<i>Melanotaenia boesemani</i> *	0.0.57	0.0.0	0.0.0	0.0.0	0.0.38	0.0.19
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> *	0.0.12	0.0.0	0.0.0	0.0.1	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> *	0.0.32	0.0.25	0.0.0	0.0.0	0.0.0	0.0.57
LC		Pot-bellied seahorse	<i>Hippocampus abdominalis</i> *	0.0.17	0.0.6	0.0.0	0.0.1	0.0.0	0.0.22
LC		Banded archerfish	<i>Toxotes jaculatrix</i> *	0.0.15	0.0.0	0.0.0	0.0.1	0.0.0	0.0.14
LC		Diamond fish	<i>Monodactylus argenteus</i>	0.0.9	0.0.0	0.0.0	0.0.0	0.0.0	0.0.9
		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		Teardrop butterflyfish	<i>Chaetodon unimaculatus</i>	0.0.0	0.0.0	0.0.2	0.0.0	0.0.0	0.0.2
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>	0.0.0	0.0.0	0.0.3	0.0.0	0.0.0	0.0.3
LC		French angelfish	<i>Pomacanthus paru</i>	0.0.0	0.0.0	0.0.1	0.0.0	0.0.0	0.0.1
VU		Kieneri cichlid	<i>Paretroplus kieneri</i> *	0.0.6	0.0.4	0.0.0	0.0.0	0.0.0	0.0.10



	IUCN Status	SPECIES		Beginning	Births	Acquisitions	Dead	Dispositions	Ending
ESB		Clown anemonefish	<i>Amphiprion ocellaris</i> *	0.0.60	0.0.0	0.0.0	0.0.0	0.0.50	0.0.10
		Bluegreen chromis	<i>Chromis viridis</i> *	0.0.4	0.0.0	0.0.0	0.0.0	0.0.0	0.0.4
		Sapphire damselfish	<i>Chrysiptera cyanea</i> *	0.0.4	0.0.0	0.0.0	0.0.0	0.0.0	0.0.4
		Goldtail damselfish	<i>Chrysiptera parasema</i> *	0.0.4	0.0.0	0.0.0	0.0.0	0.0.0	0.0.4
	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>	0.0.0	0.0.0	0.0.1	0.0.0	0.0.0	0.0.1
	LC	Red Sea sailfin tang	<i>Zebrasoma desjardinii</i> *	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
	LC	Yellow tang	<i>Zebrasoma flavescens</i> *	0.0.2	0.0.0	0.0.0	0.0.0	0.0.0	0.0.2
		<b>CLASS: AMPHIBIANS</b>	<b>CLASS: AMPHIBIA</b>						
	CR	Axolotl	<i>Ambystoma mexicanum</i> *	0.0.2	0.0.0	0.0.4	0.0.1	0.0.0	0.0.5
	CR	Emperor spotted newt	<i>Neurergus kaiseri</i> *	0.0.32	0.0.0	0.0.0	0.0.0	0.0.0	0.0.32
	EN	Phantasmal poison dart frog	<i>Epipedobates tricolor</i> *	0.0.25	0.0.20	0.0.0	0.0.1	0.0.0	0.0.44
	CR	Mountain chicken frog	<i>Leptodactylus fallax</i>	0.1.0	0.0.0	0.0.0	0.1.0	0.0.0	0.0.0
	CR	Golden mantella	<i>Mantella aurantiaca</i> *	0.0.4	0.0.0	0.0.0	0.0.0	0.0.0	0.0.4
	EN	Green mantella	<i>Mantella viridis</i> *	0.0.6	0.0.0	0.0.0	0.0.0	0.0.0	0.0.6
	LC	Sambava tomato frog	<i>Dyscophus guineti</i>	0.0.5	0.0.0	0.0.0	0.0.2	0.0.0	0.0.3
	LC	File-eared Tree Frog	<i>Polypedates otitophus</i> *	0.0.2	0.0.0	0.0.0	0.0.0	0.0.0	0.0.2
		Tonkin bug-eyed frog	<i>Theloderma corticale</i>	0.0.8	0.0.0	0.0.0	0.0.0	0.0.0	0.0.8
		<b>CLASS: REPTILES</b>	<b>CLASS: REPTILIA</b>						
		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
	CR	Elongated tortoise	<i>Indotestudo elongata</i>	1.3.10	0.0.2	0.0.0	0.0.0	0.0.0	1.3.12
	LC	Veiled chameleon	<i>Chamaeleo calyptatus</i>	1.0.0	0.0.0	0.0.0	1.0.0	0.0.0	0.0.0
	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

	IUCN Status	SPECIES		Beginning	Births	Acquisitions	Dead	Dispositions	Ending
EEP		<b>CLASS: BIRDS</b>	<b>CLASS: AVES</b>						
	LC	Common ostrich	<i>Struthio camelus</i>	1.2.0	0.0.0	0.0.0	0.0.0	0.0.0	1.2.0
	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
	LC	Helmeted guineafowl	<i>Numida meleagris</i>	7.6.33	0.0.10	0.0.0	0.0.12	0.0.0	31
	LC	Grey partridge	<i>Perdix perdix</i>	0.0.0	0.0.0	1.1.0	0.0.0	0.0.0	1.1.0
	CR	Vietnam pheasant	<i>Lophura edwardsi</i>	0.0.0	0.0.0	1.0.0	0.0.0	0.0.0	1.0.0
	LC	Common peafowl	<i>Pavo cristatus</i>	5.14.1	0.1.0	0.0.0	0.0.0	0.0.0	5.15.1
	LC	Black-bellied whistling duck	<i>Dendrocygna autumnalis</i>	0.1.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
	LC	Greylag goose	<i>Anser anser</i>	11.8.20	0.0.3	0.0.0	0.0.1	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
	LC	Snow goose	<i>Anser caerulescens</i>	1.2.0	0.0.0	0.0.0	1.2.0	0.0.0	0.0.0
	NT	Emperor goose	<i>Anser canagicus</i>	1.1.0	0.0.0	0.0.0	0.1.0	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>	1.2.0	0.0.0	0.0.0	0.1.0	0.0.0	1.1.0
	LC	Brant goose	<i>Branta bernicla</i>	1.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.0.0
	LC	Barnacle goose	<i>Branta leucopsis</i>	6.2.0	0.0.0	0.0.0	2.1.0	0.0.0	4.1.0
	EN	Red-breasted goose	<i>Branta ruficollis</i>	1.3.0	0.1.0	0.0.0	0.0.0	0.0.0	1.4.0
	VU	Ne-ne	<i>Branta sandvicensis</i>	2.0.0	0.0.0	0.0.0	1.0.0	0.0.0	1.0.0
	LC	Cereopsis goose	<i>Cereopsis</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	0.0.0	0.0.0	1.0.0
	LC	Mandarin duck	<i>Aix galericulata</i>	3.2.0	1.3.0	1.1.0	3.4.0	0.0.0	2.2.0
	LC	Northern pintail	<i>Anas acuta</i>	1.0.0	0.0.0	0.0.0	1.0.0	0.0.0	0.0.0
	CR	Baer's pochard	<i>Aythya baeri</i>	0.1.0	0.0.0	0.0.0	0.1.0	0.0.0	0.0.0
	LC	Tufted duck	<i>Aythya fuligula</i>	4.3.11	0.0.0	0.0.0	0.0.0	0.0.0	4.3.11
	NT	Ferruginous duck	<i>Aythya nyroca</i>	2.1.2	0.0.0	0.0.0	0.0.0	0.0.0	2.1.2
	LC	Red-crested pochard	<i>Netta rufina</i>	1.1.0	0.1.3	0.0.0	0.0.3	0.0.0	1.2.0
	NT	Common eider	<i>Somateria mollissima</i>	1.1.0	0.0.0	0.0.0	0.0.0	0.0.0	1.1.0
	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>	11.4.0	0.0.0	0.0.0	2.1.0	2.0.0	7.3.0
	VU	Humboldt penguin	<i>Spheniscus humboldti</i>	12.12.4	0.2.8	0.0.0	2.6.12	0.0.0	10.8.0
	LC	Eastern white pelican	<i>Pelecanus onocrotalus</i>	2.0.0	0.0.0	0.0.0	0.0.0	0.0.0	2.0.0
EEP	LC	White-tailed sea eagle	<i>Haliaeetus albicilla</i>	0.2.0	0.0.0	0.0.0	0.0.0	0.0.0	0.2.0
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

	IUCN Status	SPECIES		Beginning	Births	Acquisitions	Dead	Dispositions	Ending
		<b>CLASS: MAMMALS</b>	<b>CLASS: MAMMALIA</b>						
		<b>MARSUPIAL MAMMALS</b>	<b>MARSUPIALIA</b>						
		KOALAS, WOMBATS & KANGAROOS	DIPROTODONTIA						
ESB	LC	Eastern grey kangaroo	<i>Macropus giganteus</i>	7.8.0	2.0.0	0.0.0	1.0.0	0.0.0	8.8.0
	LC	Red-necked wallaby	<i>Macropus rufogriseus</i> *	0.0.157	0.0.0	0.0.0	0.0.0	0.0.0	0.0.157
		<b>PLACENTAL MAMMALS</b>	<b>PLACENTALIA</b>						
		SLOTHS & ANTEATERS	PILOSA						
ESB	LC	Linne's two-toed sloth	<i>Choloepus didactylus</i>	1.1.0	0.0.0	0.0.0	0.0.0	0.0.0	1.1.0
		<b>PRIMATES</b>	<b>PRIMATES</b>						
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>	1.6.0	1.2.0	0.0.0	1.1.0	0.0.0	1.7.0
EEP	CR	Black-and-white ruffed lemur	<i>Varecia variegata</i>	4.2.0	1.2.0	0.0.0	0.0.0	0.0.0	5.4.0
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>	2.2.0	0.0.0	0.0.0	1.0.0	0.0.0	0.2.0
EEP	EN	Geoffroy's Spider Monkey	<i>Ateles fusciceps</i>	3.5.0	0.0.0	0.0.0	0.0.0	0.0.0	3.5.0
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>	10.13.0	0.0.0	0.0.0	0.0.0	0.0.0	10.13.0
EEP	EN	Drill	<i>Mandrillus leucophaeus</i>	1.4.0	0.0.0	0.0.0	1.0.0	0.0.0	0.4.0
EEP	LC	Eastern black-and-white colobus	<i>Colobus guereza</i>	3.0.0	0.0.0	0.0.0	0.0.0	0.0.0	3.0.0
EEP	EN	Francois' langur	<i>Trachypithecus francoisi</i>	2.0.0	0.0.0	0.0.0	1.0.0	0.0.0	1.0.0
	EN	Agile gibbon	<i>Hylobates agilis</i>	1.2.0	1.0.0	0.0.0	0.0.0	0.0.0	2.2.0
EEP	EN	Lar gibbon	<i>Hylobates lar</i>	1.3.0	0.0.0	0.0.0	0.0.0	0.0.0	1.3.0
EEP	EN	Siamang	<i>Symphalangus syndactylus</i>	5.1.0	0.0.0	0.0.0	0.0.0	0.0.0	5.1.0
		<b>RODENTS</b>	<b>RODENTIA</b>						
	NT	Patagonian mara	<i>Dolichotis patagonum</i> *	0.0.1	0.0.0	0.0.0	0.0.0	0.0.0	0.0.1
	LC	Capybara	<i>Hydrochoerus hydrochaeris</i>	2.0.0	0.0.0	0.0.0	1.0.0	0.0.0	1.0.0

	IUCN Status	SPECIES		Beginning	Births	Acquisitions	Dead	Dispositions	Ending
		<b>CARNIVORES</b>	<b>CARNIVORA</b>						
EEP	EN	Northern cheetah	<i>Acinonyx j. soemmeringii</i>	7.10.0	2.3.0	0.0.0	2.0.0	0.0.0	7.13.0
EEP	EN	Asiatic lion	<i>Panthera l. leo</i>	1.2.0	0.0.0	0.0.0	0.0.0	0.0.0	1.2.0
EEP	CR	Sumatran tiger	<i>Panthera t. sondaica</i>	3.2.0	0.0.0	0.0.0	0.0.0	0.0.0	3.2.0
	LC	Slender-tailed meerkat	<i>Suricata suricatta</i>	2.2.0	0.0.0	2.0.0	1.0.0	0.0.0	3.2.0
	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	0.0.0	0.0.0	0.1.0
EEP	EN	Red panda	<i>Ailurus fulgens</i>	1.5.0	0.0.0	0.0.0	0.0.0	0.2.0	1.3.0
		<b>ODD-TOED UNGULATES</b>	<b>PERISSODACTYLA</b>						
	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>	4.3.0	0.0.0	0.0.0	0.0.0	2.0.0	2.3.0
EEP	VU	One-horned rhinoceros	<i>Rhinoceros unicornis</i>	2.1.0	0.0.0	0.0.0	0.0.0	0.0.0	2.1.0
		<b>EVEN-TOED MAMMALS</b>	<b>CETARTIODACTYLA</b>						
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>	0.1.0	0.0.0	0.0.0	0.0.0	0.0.0	0.1.0
EEP	EN	Northern giraffe	<i>Giraffa c. camelopardalis</i>	3.9.0	0.0.0	0.0.0	1.1.0	0.0.0	2.8.0
EEP	NT	European wisent	<i>Bison bonasus</i>	6.9.0	2.1.0	0.0.0	0.4.0	0.2.0	8.6.0
EEP	EW	Scimitar-horned oryx	<i>Oryx dammah</i>	6.7.0	0.0.0	0.0.0	1.0.0	0.0.0	2.7.0
ESB	EN	Southern lechwe	<i>Kobus leche</i>	3.10.0	0.1.0	0.0.0	0.0.0	0.0.0	3.11.0
		TOTAL		180.204.889	10.16.95	4.2.112	24.23.38	4.2.88	166.197.970

\* = 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 2021**

Registered number: 207824

Registered Charity Number: 20003715



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# THE ZOOLOGICAL SOCIETY OF IRELAND

## MEMBERS OF COUNCIL AND OTHER INFORMATION

**Members of Board:**

<b>Board President</b>	Ann Keenan
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<b>Immediate past President</b>	Michael Daly
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<b>Ordinary Board members</b>	Nigel Bell John McMahon Carmel O'Connor Andy Beer Tom Cassin
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**Other information:**

<b>Past Presidents</b>	Tom Dunphy Michael Daly
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<b>Secretary and registered office</b>	Tom Cassin The Zoological Gardens Phoenix Park Dublin 8
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<b>Auditors</b>	Deloitte Ireland LLP Chartered Accountants and Statutory Audit Firm Deloitte & Touche House Earlsfort Terrace Dublin 2
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(A company limited by guarantee and not having a share capital)

## MEMBERS OF COUNCIL AND OTHER INFORMATION *(Continued)*

### Bankers

Ulster Bank Limited  
33 College Green  
Dublin 2

Bank of Ireland  
2 College Green  
Dublin 2

AIB  
66 South Mall  
Cork

### Solicitors

Mason Hayes & Curran  
South Bank House  
Barrow Street  
Dublin 4

Ronan Daly Jermyn & Company  
12 South Mall  
Cork

### 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 2021.

#### Consolidation

These financial statements form the Consolidated Financial statements of the Zoological Society of Ireland which includes the results of both Dublin Zoo and Fota Wildlife Park for the financial year ended 31 December 2021.

#### 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, Cork.
- (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.

Due to the continuing impact of the Covid-19 pandemic, both Dublin Zoo and Fota Wildlife Park were closed for the first four months of the year with a corresponding loss of income. During that period both Zoos relied on continuing Government Covid-19 related supports for their continuing viability. Dublin Zoo also utilised funds raised from the public in November 2020 for essential animal wellbeing purposes.

Both Zoos reopened on 26th April 2021 on a reduced capacity basis and under strict health and safety protocols.

The response to the reopening from the public was exceptional and enabled both organisations to return to profitable operations.

The attendance for the financial year ended 31 December 2021 at Dublin Zoo was 972,224 (2020: 460,483) which includes Wild Lights visitors.

The attendance at Fota Wildlife Park was 474,794 (2020: 384,901).

Dublin Zoo was able to hold the very popular Wild Lights event once again during November and December. With the support of the public, this event was hugely successful and had 212,028 visitors attending in 2021. This re-confirms the Zoo as a wonderful family attraction throughout the year.

The directors would like to acknowledge and thank the Government for its continuing support, which included capital grants of €3m and additional capital grant aid of €1.5m for 2022. The directors are also very grateful to the public for its generous contributions.

Thanks to the support of both the Government and the public, together with a significant focus on cost control throughout the year, the Group has recorded a surplus of €3.5m as compared to the deficit of €564,000 recorded in 2020.

The successful return to operations during 2021 has allowed both Zoos to launch 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 €3.7m on Capital Expenditure during 2021 compared to €1m in 2020. Key projects included the Red Panda and Snow Leopard habitats in Dublin and the Spider-Monkey habitat in Fota Wildlife Park.

The completion of these projects was facilitated by the receipt of Government capital grants of €3m.

Since year end, the directors have given approval for the commencement of the design phase of Capital Expenditure projects amounting to an estimated €10m for the period 2022-2024. This expenditure will be funded from the surplus generated in 2021, planned surpluses and the Government Capital grants referred to above.

### **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.

The surplus for the year has permitted the Board to reinstate the Emergency Reserve Fund which had been utilised in 2020 as a result of the Covid 19 pandemic. An amount of €2.5m has been set aside by the Board at 31 December 2021, 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 Group'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 also to limit the potential impact if these risks do occur.

### **Risk Management process**

The Board sets out and reviews the company'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 ZOOLOGICAL SOCIETY OF IRELAND

A detailed risk register is maintained 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 risk register is a standing item on the agenda of monthly Board meetings. 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 2021:

- Continuing uncertainties arising from the ongoing impact on visitor numbers due to the Covid-19 pandemic;
- Uncertainty impacting on the Group relating to an outbreak of animal disease;

- Changes in the economic environment;
- Cyber Security and Data Protection;
- 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.

### Board and secretary

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

Ann Keenan	Carmel O'Connor
Michael Daly	Andy Beer
Dorothy Kilroy	Tom Cassin
(resigned 16/09/2021)	Yvonne Buckley
Nigel Bell	(appointed 21/10/2021,
John McMahon	resigned 01/03/2022)

### Secretary:

John Sweeney (resigned 28/04/2022)  
Tom Cassin (appointed 28/04/2022)

## **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 10 to the financial statements.

## **Structure and governance**

The Company is governed by a Board of Directors, who under the 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. Recommendations arising from the Board evaluation to improve effectiveness are being implemented during 2022.

## **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, is the main day to day decision making forum of the Zoos.

The Board believe that committing to a high level of corporate governance is essential to achieving the optimal standard of operation of the groups' activities. To accomplish this, the group has competent executive



## THE ZOOLOGICAL SOCIETY OF IRELAND

teams. There is clear division of responsibility with the Board retaining control of major decisions, with the 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 11 times during 2021.

During 2020 and 2021, the Board undertook a detailed review of its regulatory and compliance obligations. Arising from this review 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 also considered the Guidelines for Charitable Organisations on Fundraising from the Public in respect of its digital fundraising initiatives and approved and 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. They have delegated responsibility for the implementation of this system to the executive team. This system includes financial controls, which enable the Board to meet its responsibilities for the integrity and accuracy of the Company's accounting records.

### **Committees**

The Board is supported by a number of sub-committees (not confined to Board members) established for good governance. As part of the regulatory and compliance review undertaken in 2020/21, the terms of reference for all Board committees were updated and approved by the Board.

#### **Finance and Audit Committee**

The function of the Finance and Audit Sub-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 also advises on remuneration issues. The Committee comprise three board members and met four times during the year.

#### **Governance Committee**

The principal objective of the Governance Sub-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 comprises three board members and a former President of the Society and met twice during the year.

### **Conservation & Research Committee**

The purpose of the Conservation and Research Committee is to assist the Board on matters relating to the conservation 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 two members of the Board, the Zoo Director and some internal and external appointees and met twice during the year.

### **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.

### **Programmes Committee**

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

The Sub-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 comprises four members of Board and met

## THE ZOOLOGICAL SOCIETY OF IRELAND

three times during the year.

### Health and Safety Committee

The purpose of the Health and Safety 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'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 one member of the board, a former president of the Society, the Zoo Director, and

some external and internal appointees. The committee met twice during the year.

### Accounting records

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

### Post balance sheet events

Although there is some continuing uncertainty in relation the ongoing impact of the Covid 19 pandemic, the Group expects to remain open during 2022 and to generate a surplus to help fund its strategic objectives.

### Health and safety policy

The Company has prepared a health and safety policy 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

The Group's financial performance was closely monitored during 2021. Thanks to the better than anticipated operating performance and the support of Government and the public, the Group remains in a very strong financial position.

The Board and the executive team continue to monitor the external environment very closely. Conservative projections have been prepared for 2022/3, taking account of continued restrictions on attendances, and these projections indicate that the Group will remain cash positive.

On this basis the Board has concluded that it is appropriate to continue to adopt the going concern basis of accounting in the preparation of the annual financial statements.

Further details regarding the adoption of the going concern basis can be found in Note 3 to the financial statements.

## Statement on relevant audit information

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

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

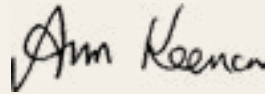
- There is no relevant audit information of which the Company's auditors are unaware; and

- The Board Members have taken 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:



**Ann Keenan**  
Board President



**Tom Cassin**  
Director/Secretary

Date: 19 July 2022

## 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

## THE ZOOLOGICAL SOCIETY OF IRELAND

("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.

### 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 2021 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 frameworks and, in particular, with the requirements of the Companies Act 2014.

The financial statements we have audited comprise:

the group financial statements:

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

the parent company financial statements:

- the Balance Sheet;
- the Statement of Changes in Equity; and
- the related notes 1 to 21, including a summary of significant accounting policies as set out in note 1



The relevant financial reporting framework that has been applied in the preparation of the group financial statements is the Companies Act 2014 and FRS 102 'The Financial Reporting Standard applicable in the UK and Republic of Ireland' issued by the Financial Reporting Council ("the relevant financial reporting framework"). The relevant financial reporting framework that has been applied in the preparation of the parent company financial statements is the Companies Act 2014 and FRS 101 'Reduced Disclosure Framework' issued by the Financial Reporting Council.

### **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 year ended 31 December 2021, 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 year ended 31 December 2021. 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.

## THE ZOOLOGICAL SOCIETY OF IRELAND

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

We have nothing to report in this regard.

### Responsibilities of directors

As explained more fully in the Directors' Responsibilities Statement, the directors are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view and otherwise comply with the Companies Act 2014, and for such internal control as the directors determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

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

### Auditor's responsibilities for the audit of the financial statements

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

A further description of our responsibilities for the audit of the financial statements is located on IAASA's website at: [http://www.iaasa.ie/getmedia/b2389013-1cf6-458b-9b8f-a98202dc9c3a/Description\\_of\\_auditors\\_responsibilities\\_for\\_audit.pdf](http://www.iaasa.ie/getmedia/b2389013-1cf6-458b-9b8f-a98202dc9c3a/Description_of_auditors_responsibilities_for_audit.pdf). 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.

Richard Howard

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

22 July 2022

## THE ZOOLOGICAL SOCIETY OF IRELAND

### CONSOLIDATED INCOME AND EXPENDITURE ACCOUNT FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2021

	Notes	2021 €'000	2020 €'000
<b>INCOME</b>	4	<b>20,352</b>	14,168
<b>EXPENDITURE</b>			
Operating costs		<b>(18,069)</b>	(14,976)
Administration expenses		<b>(838)</b>	(895)
<b>TOTAL EXPENDITURE</b>		<b>(18,907)</b>	(15,871)
<b>OPERATING SURPLUS/(DEFICIT) BEFORE COVID RELATED INCOME SUPPORTS</b>	6	<b>1,445</b>	(1,703)
Covid Related Income Supports	8	<b>2,128</b>	1,104
<b>OPERATING SURPLUS/(DEFICIT)</b>		<b>3,573</b>	(599)
Interest income	7	-	3
Amortisation of grants	14	<b>3</b>	32
<b>SURPLUS/(DEFICIT) FOR THE FINANCIAL YEAR</b>		<b>3,576</b>	(564)

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

## CONSOLIDATED BALANCE SHEET AS AT 31 DECEMBER 2021

	Notes	2021 €'000	2020 €'000
<b>Fixed Assets</b>			
Tangible assets	9	<u>27,703</u>	<u>27,535</u>
<b>Current Assets</b>			
Stocks	11	253	203
Debtors	12	897	670
Cash at bank and in hand			
– Restricted - OPW grant		-	30
– Restricted – Save the Zoo funds		-	2,285
– Restricted – Lemur fund		12	12
– Unrestricted		<u>15,392</u>	<u>5,101</u>
		<b>16,554</b>	8,301
Creditors: Amounts falling due within one year	13	<u>(6,797)</u>	<u>(4,979)</u>
<b>Net current assets</b>		<u><b>9,757</b></u>	<u>3,322</u>
Total assets less current liabilities		<b>37,460</b>	30,857
Government Grants Deferred Credit	14	<u>(3,278)</u>	<u>(251)</u>
<b>NET ASSETS EXCLUDING PENSION</b>		<b>34,182</b>	30,606
Pension asset	15	<u>279</u>	<u>279</u>
<b>NET ASSETS INCLUDING PENSION ASSET</b>		<u><b>34,461</b></u>	<u>30,885</u>





## THE ZOOLOGICAL SOCIETY OF IRELAND

### CONSOLIDATED BALANCE SHEET AS AT 31 DECEMBER 2021 (Continued)

Accumulated surplus	11,999	10,246
Development reserve	19,962	19,962
Emergency reserve	<u>2,500</u>	<u>677</u>
	<u><b>34,461</b></u>	<u><b>30,885</b></u>

The financial statements were approved and authorised for issue by the Board of Directors on 19 July 2022 and signed on its behalf by

Ann Keenan  
**Board President**

Tom Cassin  
**Director/Secretary**

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

## COMPANY BALANCE SHEET AS AT 31 DECEMBER 2021

	Notes	2021 €'000	2020 €'000
<b>Fixed Assets</b>			
Tangible assets	9	<b>16,647</b>	16,950
Financial assets	10	<u><b>500</b></u>	<u>500</u>
		<b>17,147</b>	17,450
<b>Current Assets</b>			
Stocks	11	<b>129</b>	92
Debtors			
-Due within one year	12	<b>774</b>	522
Cash at bank and in hand:			
-Restricted - OPW grant		-	30
-Restricted – Save the Zoo funds		-	2,285
-Restricted – Lemur fund		<b>12</b>	12
-Unrestricted		<u><b>10,946</b></u>	<u>3,145</u>
		<b>11,861</b>	6,086
<b>Creditors: Amounts falling due within one year</b>	13	<u><b>(5,346)</b></u>	<u>(3,185)</u>
Net current assets		<b>6,515</b>	2,901
<b>Total assets less current liabilities</b>		<b>23,662</b>	20,350
Government Grants Deferred Credit	14	<u><b>(2,030)</b></u>	<u>-</u>
<b>NET ASSETS EXCLUDING PENSION</b>		<u><b>21,632</b></u>	<u>20,351</u>
Pension asset	15	<b>167</b>	167

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NET ASSETS	21,799	20,518
Represented by:		
Accumulated surplus	8,324	8,865
Development reserve	10,975	10,975
Emergency reserve	<u>2,500</u>	<u>678</u>
	<u>21,799</u>	<u>20,518</u>

The financial statements were approved and authorised for issue by the Board of Directors on 19 July 2022 and signed on its behalf by:

Ann Keenan  
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 2021

	Development	Emergency	Accumulated	
	Reserve	Reserve	Surplus	Total
Notes	€'000	€'000	€'000	€'000
<b>Balance at 1 January 2020</b>	19,000	2,272	10,155	31,427
Deficit for the financial year	–	–	(564)	(564)
Reserve movement	–	–	22	22
Transfers between reserves	962	(1,595)	633	–
<b>At 31 December 2020</b>	19,962	677	10,246	30,885
Surplus for the financial year	–	–	3,576	3,576
Transfers between reserves	–	1,823	(1,823)	–
<b>At 31 December 2021</b>	<b>19,962</b>	<b>2,500</b>	<b>11,999</b>	<b>34,461</b>

The Board continue to monitor the strategic development of the Zoo & Fota Wildlife Park facilities and have set aside funds to finance future capital investment projects which is funds in the development reserve.

In prior years, the board created an Emergency Reserve to set aside funds to protect against the impact of any zoonotic disease or other emergency which might affect the ongoing finances of the group. These funds were called upon during the 2020 as a result of the Covid-19 pandemic. The Board has restated and increased this reserve as a result of the surplus generated in 2021.

## THE ZOOLOGICAL SOCIETY OF IRELAND

### COMPANY STATEMENT OF CHANGES IN EQUITY FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2021

	Development	Emergency	Accumulated	
	Reserve	Reserve	Surplus	Total
Notes	€'000	€'000	€'000	€'000
<b>Balance at 1 January 2020</b>	10,975	2,273	8,508	21,756
Deficit for the financial year	–	–	(1,238)	(1,238)
Transfers between reserves	–	(1,595)	1,595	–
<b>At 31 December 2020</b>	10,975	678	8,865	20,518
Surplus for the financial year	–	–	1,281	1,281
Transfers between reserves	–	1,823	(1,823)	–
<b>At 31 December 2021</b>	<b>10,975</b>	<b>2,500</b>	<b>8,324</b>	<b>21,799</b>

In prior years, the board created an Emergency Reserve to set aside funds to protect against the impact of any zoonotic disease or other emergency which might affect the ongoing finances of the group. These funds were called upon during the 2020 as a result of the Covid-19 pandemic. The board has restated and increased this reserve as a result of the surplus generated in 2021.



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

## CONSOLIDATED STATEMENT OF CASH FLOWS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2021

	Notes	2021 €'000	2020 €'000
<b>NET CASH INFLOW FROM OPERATING ACTIVITIES</b>	18	<b><u>8,665</u></b>	<u>2,294</u>
<b>Cash flows from investing activities</b>			
Payment to acquire tangible fixed assets		(3,689)	(1,073)
Capital grant received relating to fixed assets		3,000	-
Interest received		<u>-</u>	<u>3</u>
Net cash outflow from investing activities		<u>(689)</u>	<u>(1,070)</u>
<b>MOVEMENT IN CASH IN THE FINANCIAL YEAR</b>	18	<b><u>7,976</u></b>	<u>1,224</u>
<b>Cash and cash equivalents at beginning of financial year</b>		<b><u>7,428</u></b>	<u>6,204</u>
<b>Cash and cash equivalents at end of financial year</b>		<b><u>15,404</u></b>	<u>7,428</u>

## THE ZOOLOGICAL SOCIETY OF IRELAND

### NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2021

#### 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 The Zoological Gardens, Phoenix Park, Dublin 8. The nature of the company's operations and its principal activities are set out in the Board's report.

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 2021.

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 are 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 1/3%
Motor vehicles	20%
Habitats	10%

Land and assets under construction are not depreciated.

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

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

Where indicators exist for a decrease in impairment loss, the prior impairment loss is tested to determine reversal. An impairment loss is reversed on an individual impaired asset to the extent that the revised recoverable value does

not lead to a revised carrying amount higher than the carrying value had no impairment been recognised.

## Financial Fixed Assets

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 company 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 company 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.

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

## THE ZOOLOGICAL SOCIETY OF IRELAND

### 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.

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

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

In the application of accounting policies, which are

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

The following are the critical judgements and estimates that the Board members have made in the process of applying the accounting policies and that have the most significant effect on the amounts recognised in the financial statements:

### **Retirement Benefit Obligations**

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

### **Useful economic lives**

The annual depreciation charge for tangible fixed assets is sensitive to changes in the estimated useful economic



## THE ZOOLOGICAL SOCIETY OF IRELAND

lives and residual values of the assets. Determination of appropriate useful economic lives is a key judgement and the useful economic lives and residual values are re-assessed annually. They are amended when necessary to reflect current estimates, based on technological advancement, future investments, economic utilisation and the physical condition of the assets.

### 3. GOING CONCERN

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

Due to the continuing impact of the Covid 19 pandemic, both Dublin Zoo and Fota Wildlife Park were closed for the first four months of the year. During that period both Zoos relied on continuing Government Covid 19 related supports and Dublin Zoo also utilised the funds raised from the public in November 2020, to ensure its' continued viability.

Both Zoos reopened on 26th April 2021 on a reduced capacity basis and under strict health and safety protocols. The response to the reopening from the public was exceptional and enabled both organisations to return to profitable operations.

The group's financial performance was closely monitored during 2021. Thanks to the better than anticipated operating performance and the support of Government and the public, the group remains in a very strong financial position.

The board and the executive team continue to monitor the external environment very closely. Conservative projections have been prepared for 2022/3, these indicate that the group will remain cash positive.

On this basis the board have concluded that it is appropriate to continue to adopt the going concern basis of accounting in the preparation of the annual financial statements.

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS** *(Continued)*  
**FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2021**

**4. INCOME**

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

	<b>2021</b>	2020
	<b>€'000</b>	€'000
Gate receipt income	<b>14,169</b>	7,576
Annual pass and membership income	<b>1,792</b>	2,167
Shop income	<b>2,905</b>	1,578
Other income	<b><u>1,131</u></b>	<u>604</u>
Operating income	<b>19,997</b>	11,925
Fundraising income (a)	<b><u>355</u></b>	<u>2,243</u>
	<b><u>20,352</u></b>	<u>14,168</u>

- (a) In 2020, the Covid-19 pandemic resulted in both Dublin Zoo and Fota Wildlife Park being closed for a period of time and the Group suffered a reduction in income.

In order to maintain the viability of operations, Dublin Zoo developed a digital fundraising initiative to raise funds from the public to meet the costs of animal care and welfare.

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

## THE ZOOLOGICAL SOCIETY OF IRELAND

### NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS *(Continued)* FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2021

#### 5. EMPLOYEE INFORMATION

	2021	2020
<b>Staff numbers and costs</b>		
Average number of employees:		
Management	16	16
Administration	14	12
General staff		
- full time	60	56
- part time	29	28
Shop	<u>16</u>	<u>12</u>
	<u>135</u>	<u>124</u>

The aggregate payroll costs of these persons were as follows

	2021 €'000	2020 €'000
Wages and salaries	5,230	4,613
Social welfare costs	619	366
Retirement benefit costs (Note 15)	<u>223</u>	<u>246</u>
	<u>6,072</u>	<u>5,225</u>

The total remuneration for 17 key management personnel for the financial year totalled €1,159,518 (2020: €1,088,463 for sixteen 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 2021**

**6. OPERATING SURPLUS/(DEFICIT)**

	<b>2021</b> <b>€'000</b>	2020 €'000
The operating surplus is stated after charging:		
Remuneration of Board members	-	-
Auditor's remuneration in respect of		
- the audit of the entity	<b>26</b>	26
- the audit of subsidiary entity	<b>8</b>	8
- tax services	<b>14</b>	14
- other services	-	-
Depreciation	<b>3,515</b>	3,444
Loss on disposal of fixed assets	<b>6</b>	-
Operating lease charges	<b>5</b>	6
	<u><u>          </u></u>	<u><u>          </u></u>

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

**7. INTEREST**

	<b>2021</b> <b>€'000</b>	2020 €'000
Interest income		
Deposit interest	<u>-</u>	<u>3</u>
	<u><u>-</u></u>	<u><u>3</u></u>

## THE ZOOLOGICAL SOCIETY OF IRELAND

### NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS *(Continued)* FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2021

#### 8. COVID RELATED INCOME SUPPORTS

During 2021, the Group received government support through wage subsidy schemes together with grant aid to support animal welfare. These are one off items relating to the Covid pandemic supports that do not form part of on-going turnover.

#### 9. TANGIBLE FIXED ASSETS

Group	Land €'000	Plant & machinery €'000	Computer equipment €'000	Motor vehicles €'000	Buildings & Habitats €'000	Total €'000
Cost:						
At 1 January 2021	191	4,547	1,170	707	46,363	52,978
Additions	-	376	-	139	3,174	3,689
Disposals	—	—	—	(31)	—	(31)
<b>At 31 December 2021</b>	<u>191</u>	<u>4,923</u>	<u>1,170</u>	<u>815</u>	<u>49,537</u>	<u>56,636</u>
Depreciation:						
At 1 January 2021	-	4,160	1,139	540	19,606	25,445
Charge for financial year	-	178	24	46	3,267	3,515
On disposals	—	—	—	(27)	—	(27)
<b>At 31 December 2021</b>	<u>—</u>	<u>4,338</u>	<u>1,163</u>	<u>559</u>	<u>22,873</u>	<u>28,933</u>
<b>Net Book Value:</b>						
At 31 December 2021	<u>191</u>	<u>585</u>	<u>7</u>	<u>256</u>	<u>26,664</u>	<u>27,703</u>
At 31 December 2020	<u>191</u>	<u>397</u>	<u>31</u>	<u>167</u>	<u>26,749</u>	<u>27,535</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 2021**

**9. TANGIBLE FIXED ASSETS**

Company	Land €'000	Plant Machinery equipment €'000	Computer equipment €'000	Motor vehicles €'000	Buildings & Habitats €'000	Total €'000
Cost:						
At 1 January 2021	191	2,013	1,170	337	31,055	34,766
Additions	<u>-</u>	<u>294</u>	<u>-</u>	<u>-</u>	<u>2,164</u>	<u>2,458</u>
<b>At 31 December 2021</b>	<u>191</u>	<u>2,307</u>	<u>1,170</u>	<u>337</u>	<u>33,219</u>	<u>37,224</u>
Depreciation:						
At 1 January 2021	-	1,928	1,139	269	14,481	17,817
Charge for financial year	<u>-</u>	<u>89</u>	<u>24</u>	<u>18</u>	<u>2,629</u>	<u>2,760</u>
<b>At 31 December 2021</b>	<u>-</u>	<u>2,017</u>	<u>1,163</u>	<u>287</u>	<u>17,110</u>	<u>20,577</u>
<b>Net Book Value:</b>						
At 31 December 2021	<u>191</u>	<u>290</u>	<u>7</u>	<u>50</u>	<u>16,109</u>	<u>16,647</u>
At 31 December 2020	<u>191</u>	<u>85</u>	<u>31</u>	<u>68</u>	<u>16,574</u>	<u>16,950</u>

# THE ZOOLOGICAL SOCIETY OF IRELAND

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS *(Continued)* FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2021

### 10. FINANCIAL ASSETS

Company	2021 €'000	2020 €'000
At beginning and end of financial year	<u>500</u>	<u>500</u>

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

Details in respect of Fota are set out below:

Name and registered office	Country of Incorporation	Principal activity
Fota Wildlife Park Limited	Ireland	Operation of a wildlife park
In respect of prior financial year		
	2020 €'000	2019 €'000
At beginning and end of financial year	<u>500</u>	<u>500</u>

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

(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 2021

### 10. FINANCIAL ASSETS *(Continued)*

Details in respect of Fota are set out below:

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

### 11. STOCKS

	Group		Company	
	2021	2020	2021	2020
	€'000	€'000	€'000	€'000
Shops	229	133	105	68
Consumables	<u>24</u>	<u>70</u>	<u>24</u>	<u>24</u>
	<u>253</u>	<u>203</u>	<u>129</u>	<u>92</u>

### 12. DEBTORS

	Group		Company	
	2021	2020	2021	2020
	€'000	€'000	€'000	€'000
Amounts falling due within one year:				
Trade debtors	492	214	456	173
Prepayments and other debtors	393	330	287	236
VAT	12	126	-	102
Amounts due from subsidiary	<u>-</u>	<u>-</u>	<u>31</u>	<u>11</u>
	<u>897</u>	<u>670</u>	<u>774</u>	<u>522</u>

## THE ZOOLOGICAL SOCIETY OF IRELAND

### NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS *(Continued)* FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2021

#### 13. CREDITORS: (Amounts falling due within one year)

	Group		Company	
	2021	2020	2021	2020
	€'000	€'000	€'000	€'000
Trade creditors	1,785	912	1,579	664
Accruals	710	911	503	765
Deferred income	3,782	3,019	2,806	1,689
PAYE/PRSI	247	95	185	25
VAT	<u>261</u>	<u>-</u>	<u>261</u>	<u>-</u>
	6,785	4,937	5,334	3,143
Lemur fund	12	12	12	12
OPW grant	<u>-</u>	<u>30</u>	<u>-</u>	<u>30</u>
	<u>6,797</u>	<u>4,979</u>	<u>5,346</u>	<u>3,185</u>

OPW grant has been reclassified to Government Grants Deferred Credit in 2021 – please see note 14.

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS** *(Continued)*  
**FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2021**

**14. GOVERNMENT GRANTS DEFERRED CREDIT**

	<b>Group</b>		<b>Company</b>	
	<b>2021</b>	<b>2020</b>	<b>2021</b>	<b>2020</b>
	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Received and receivable				
At beginning of financial year	<b>835</b>	835	-	-
Reclassified from creditors	<b>30</b>	-	<b>30</b>	-
Received during the financial year	<b><u>3,000</u></b>	<u>-</u>	<b><u>2,000</u></b>	<u>-</u>
At end of financial year	<b><u>3,865</u></b>	<u>835</u>	<b><u>2,030</u></b>	<u>-</u>
Amortisation				
At beginning of financial year	<b>584</b>	552	-	-
Amortised to income and expenditure	<b><u>3</u></b>	<u>32</u>	<u>-</u>	<u>-</u>
At end of financial year	<b><u>587</u></b>	<u>584</u>	<u>-</u>	<u>-</u>
Net Book Value	<b><u>3,278</u></b>	<u>251</u>	<b><u>2,030</u></b>	<u>-</u>

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



# THE ZOOLOGICAL SOCIETY OF IRELAND

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS *(Continued)* FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2021

### 15. RETIREMENT BENEFIT SCHEMES

#### Group

##### Defined contribution scheme

The Group operates a defined contribution retirement benefit scheme for all qualifying employees. The total expense charged to income and expenditure in the financial year ended 31 December 2021 was €223,000 (2020: €246,000).

##### 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:

	2021	2020
	%	%
Rate of general increase in salaries	2.5	2.5
Rate of increase in pensions in payment	0.0	0.0
Discount rate of scheme liabilities	0.7	0.7
Inflation	1.9	1.0

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS** *(Continued)*  
**FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2021**

**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

<b>AGE</b>	<b>Males</b>	<b>Females</b>
65	23.8	24.9
65 in 25 years	25.4	26.4

## THE ZOOLOGICAL SOCIETY OF IRELAND

### NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS *(Continued)* FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2021

#### 16. PENSION ASSET

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

	2021 €'000	2020 €'000
Current service cost	(47)	(54)
Net interest income	<u>2</u>	<u>6</u>
	<u>(45)</u>	<u>(48)</u>
Recognised in other comprehensive income )	<u>-</u>	<u>-</u>
Total cost relating to defined benefit scheme	<u>(45)</u>	<u>(48)</u>

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

	2021 €'000	2020 €'000
Fair value of assets	3,934	4,401
Present value of defined benefit obligations	(3,477)	(4,030)
Asset Ceiling	<u>(178)</u>	<u>(92)</u>
Net asset recognised in the balance sheet	<u>279</u>	<u>279</u>

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS** *(Continued)*  
**FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2021**

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

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

	<b>2021</b>	2020
	<b>€'000</b>	€'000
At 1 January	<b>4,401</b>	4,261
Contributions	-	-
Benefits paid	<b>(91)</b>	(106)
Expected return on pension scheme assets	-	-
Actual return less expected return on pension scheme assets	<b><u>(376)</u></b>	<u>246</u>
At 31 December	<b><u>3,934</u></b>	<u>4,401</u>

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

	<b>2021</b>	2020
	<b>€'000</b>	€'000
At 1 January	<b>4,030</b>	3,849
Service cost	<b>47</b>	54
Interest cost	<b>28</b>	38
Benefits paid	<b>(91)</b>	(106)
Actuarial (gain)/loss	<b><u>(537)</u></b>	<u>195</u>
At 31 December	<b><u>3,477</u></b>	<u>4,030</u>

# THE ZOOLOGICAL SOCIETY OF IRELAND

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS *(Continued)* FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2021

### 16. PENSION ASSET *(Continued)*

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

	Fair value at 31 December 2021 €'000	Fair value at 31 December 2020 €'000
Equities	-	-
Bonds	3,934	4,401
Property	-	-
Other	-	-
Total market value of assets	<u>3,934</u>	<u>4,401</u>

### Company

#### *Defined contribution scheme*

Dublin Zoo operates a defined contribution retirement benefit schemes for all qualifying employees. The total expense charged to income and expenditure in the financial year ended 31 December 2021 was €142,000 {2020: €152,000}.

#### *Defined benefit scheme*

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



**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS** *(Continued)*  
**FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2021**

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

	<b>2021</b> <b>€'000</b>	2020 €'000
Current service cost	(47)	(54)
Net interest income	<u>2</u>	<u>4</u>
	<u>(45)</u>	<u>(50)</u>
Recognised in other comprehensive income	<u>-</u>	<u>-</u>
Total cost relating to defined benefit scheme	<u>45</u>	<u>50</u>

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

	<b>2021</b> <b>€'000</b>	2020 €'000
Fair value of assets	<b>2,360</b>	2,640
Present value of defined benefit obligations	<b>(2,086)</b>	(2,418)
Asset Ceiling	<b>(107)</b>	(55)
Net asset recognised in the balance sheet	<b>167</b>	167

## THE ZOOLOGICAL SOCIETY OF IRELAND

### NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS *(Continued)* FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2021

#### 16. PENSION ASSET *(Continued)*

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

	2021 €'000	2020 €'000
At 1 January	2,641	2,557
Contributions	-	-
Benefits paid	(55)	(63)
Expected return on pension scheme assets	-	-
Actual return less expected return on pension scheme assets	<u>(226)</u>	<u>147</u>
At 31 December	<u>2,360</u>	<u>2,641</u>

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

	2021 €'000	2020 €'000
At 1 January	2,418	2,310
Service cost	28	32
Interest cost	17	23
Benefits paid	(55)	(64)
Actuarial (gain)/loss	<u>(322)</u>	<u>117</u>
At 31 December	<u>2,086</u>	<u>2,418</u>

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS** *(Continued)*  
**FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2021**

**17. FINANCIAL INSTRUMENTS**

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

	<b>2021</b>	2020
	<b>€'000</b>	€'000
Financial assets		
Measured at undiscounted amount receivable		
• Trade debtors (Note 12)	<b><u>492</u></b>	<u>214</u>

	<b>2021</b>	2020
	<b>€'000</b>	€'000
Financial liabilities		
Measured at undiscounted amount payable		
• Trade payables (Note 13)	<b><u>1,785</u></b>	<u>912</u>

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

	<b>2021</b>	2020
	<b>€'000</b>	€'000
Financial assets		
Measured at undiscounted amount receivable		
• Trade debtors (Note 12)	<b>456</b>	173
• Amount due from subsidiary (Note 12)	<b>31</b>	11

## THE ZOOLOGICAL SOCIETY OF IRELAND

### NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS *(Continued)* FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2021

#### 17. FINANCIAL INSTRUMENTS *(Continued)*

	2021 €'000	2020 €'000
<b>Financial liabilities</b>		
Measured at undiscounted amount payable		
• Trade and other payables (Note 13)	<u>1,579</u>	<u>664</u>
<b>Interest income</b>		
• Interest income on financial assets measured amortised cost	<u>-</u>	<u>3</u>

#### 18. CASH FLOW STATEMENT

Reconciliation of operating surplus to cash generated by operations	2021 €'000	2020 €'000
Operating surplus/(deficit)	3,576	(564)
Depreciation of tangible fixed assets	3,515	3,443
Loss on disposal of fixed assets	6	-
Government grants received	-	31
Grant amortisation	(3)	(31)
Decrease/(increase) in stocks	(50)	111
Decrease / (increase) in debtors	(227)	761
(Decrease)/increase in creditors	<u>1,848</u>	<u>(1,457)</u>
<b>Cash generated by operations</b>	<u>8,665</u>	<u>2,294</u>

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

## Analysis of movement in net funds

	At beginning of year €'000	Cashflows €'000	At end of year €'000
Cash at bank and in hand	7,428	7,976	15,404
Bank loan	—	—	—
<b>Net funds</b>	<u>7,428</u>	<u>7,976</u>	<u>15,404</u>

## 19. COMMITMENTS AND CONTINGENCIES

	2021 €'000	2020 €'000
Authorised and contracted for commitments	-	-
Authorised but not contracted for commitments	3,000	2,250

## 20. TAXATION

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

## 21. POST BALANCE SHEET EVENTS

Although there is some continuing uncertainty in relation the ongoing impact of the Covid-19 pandemic, both parks have been and expect to remain open during 2022 and the Group expects to generate a surplus for the year to 31 December 2022.







*(Left) Tamworth piglets  
(Above) Annam leaf turtle*



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Fota Wildlife Park, Carrigtwohill, Co. Cork, Ireland  
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