

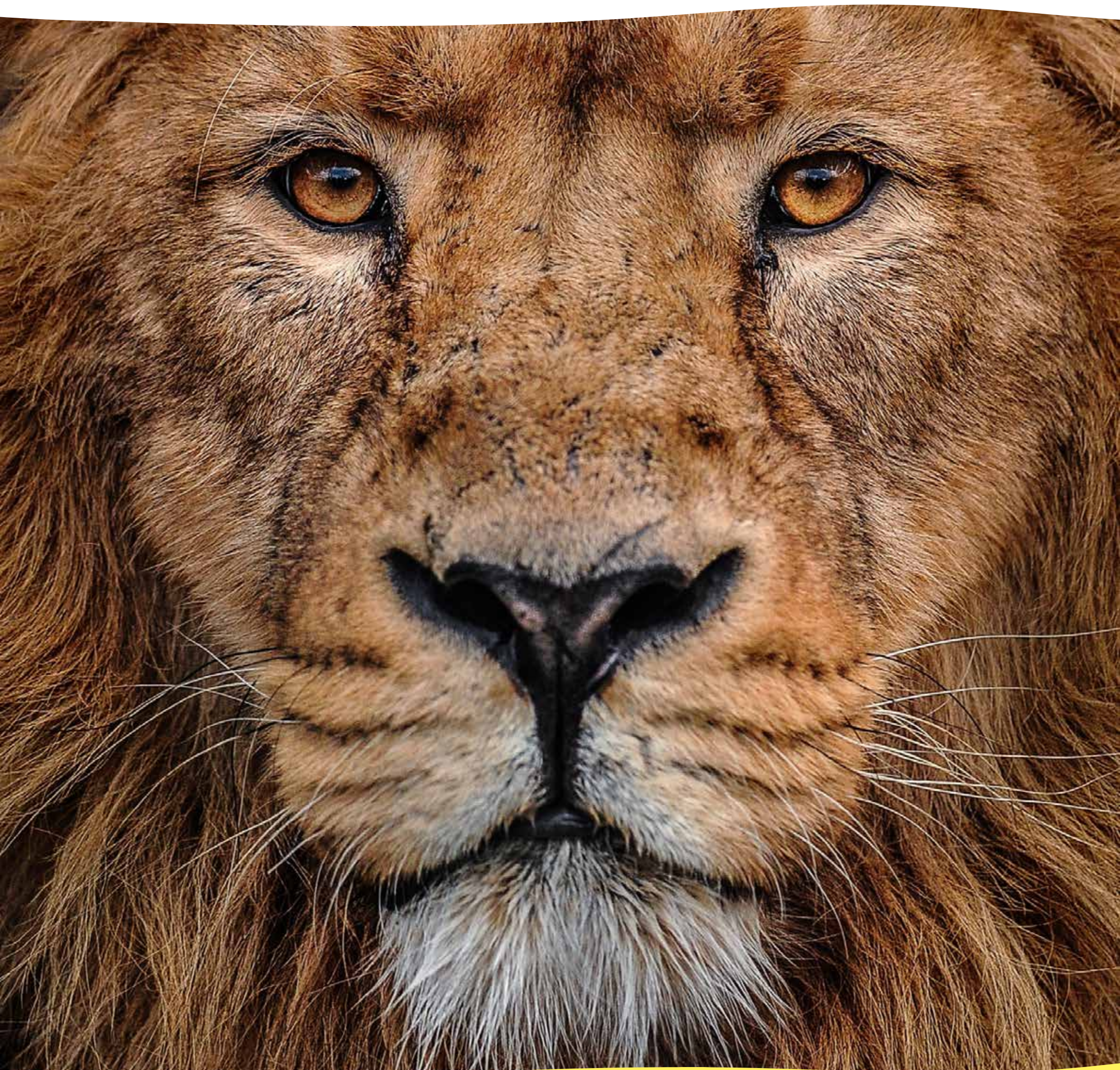


2019 ZOO REVIEW



Annual Review of the North of
England Zoological Society

www.chesterzoo.org



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A note....Since writing this review, much has changed in the world due to the Covid-19 pandemic. Sadly, this will have a significant impact on our future plans, but despite the challenges we are confident that the Society has the resilience to continue to be a global leader in PREVENTING EXTINCTION.

North of England Zoological Society

Our Trustees

Honorary Vice President

The Hon Lady Jane Heber-Percy

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Vice Chair (Mission Delivery) - William Beale

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(Chair: **Bruce Ursell**)

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(Chair: **Simon Venables**)

Ethical Review
(Chair: **Prof Russell Newton**)

Remuneration
(Chair: **Bruce Ursell**)

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Bruce Ursell, Chair of Trustees



Dr Mark Pilgrim, Chief Executive Officer



Jamie Christon, Chief Operating Officer

2019 was a very special year for Chester Zoo. For the first time we attracted over **2 MILLION VISITORS** and our society membership grew to 129,483; the highest it has ever been. Not only does this fund our work as a major conservation and education charity, but it enables us to better communicate how we pursue our mission of **PREVENTING EXTINCTION**, both in the zoo and around the world.



The growth was all the more noteworthy given that these record figures were achieved whilst Monsoon Forest in Islands, our largest ever investment, remained closed for the whole of 2019 following the fire in December 2018. All plants and trees will be replaced, once building work is complete, and then we can look forward to re-opening this fantastic building in 2020.

Our increased visitor numbers delivered record income for our mission, but the growth of the zoo of course led to increased costs. We continue to progress with our Strategic Development Plan which will reshape the zoo over time, highlighting the “one plan” approach to conservation, working in collaboration with others to save species, and our efforts around the globe which focus on key geographical areas of biodiversity.

As a major visitor attraction we really do recognise the importance of our further development and investment. This brings success to the local and sub-regional economy. Last year we employed over 1,000 staff at our peak periods, with over 200 volunteers.

We have achieved much that we feel reflects on the dedication and skill of our teams but to list just a few highlights of the year:

We opened the Madagascar zone, which includes our first primate walk-through habitat featuring some of the island’s most threatened species

We carried out the world’s first radio tagging of a giant pangolin, one of the world’s most trafficked species.

We led the return to Rwanda of a group of Eastern black rhino bred in European zoos.

We bred and returned 4,000 Bermudian snails to Nonsuch Island, Bermuda.

The Asiatic lions were given a fantastic new habitat

We saw our first ever successful treatment of an elephant calf to survive EEHV, a result of our ground-breaking research into this disease which is impacting heavily on Asian elephant numbers, both in zoos and in the wild.

We provided over 40,000 free education visits as part of the 130,000 school visits

We were named in the Sunday Times list of Top 100 Not for Profit Employers

Through our Conservation Scholars programme we trained 30 PhD students from 11 universities

Progressive zoos around the world have a pivotal part to play in reconnecting people to nature, encouraging a respect and love of wildlife and empowering people to make positive changes to protect it. This is vital, not only for wildlife but for all of us. We ultimately rely on clean water, clean air and a healthy thriving environment in which we live. We cannot and will not achieve this without radical changes if we want to conserve the world in which we live.

We recognise that the world has reached a critical milestone and the future of the planet relies on the advocacy of us and others to bring about real change in behaviour. 2019 marked a year when we finally saw governments around the world begin to highlight the impacts of climate change, where we saw young people campaign to protect their future and where we saw major companies start to place climate change and the carbon agenda front and centre of their mission.

Chester Zoo supported this by eliminating two million pieces of plastic from its operation, by championing Chester as the first sustainable palm oil city in the world, by lobbying politicians on the climate change emergency, by engaging with thousands of school children and weaving conservation into the education curriculum, and by working around the world supporting impactful programmes of change.

At the end of the year we created a Youth Board to support the Trustees and Executive to connect with and mobilise the ideas of a generation who are not usually regular zoo visitors but amongst whom there is real concern for the direction in which most countries and populations have been travelling.

We are privileged and proud to lead this organisation and its mission in all its aspects. Our teams are dedicated to preventing extinction as well as continuing to provide our visitors with a memorable and, hopefully enlightening, experience. As a charity, we rely on our members and visitors to join with us in helping us achieve our mission. We look forward to that support in 2020.



Strategic Direction

Our Strategic Development Plan, formalised in 2017, moved ahead in earnest in 2019. Major developments completed included a new Madagascar walkthrough lemur habitat, situated in the heart of the zoo. Work began on a 17 acre animal holding and breeding centre to the north of the zoo site, which will allow the development of Grasslands starting in late 2020, and Forest zones which will follow later in the decade. The facility will allow the temporary movement of a number of key species into brand new homes during the development of their former habitats.

Other key developments included a new facilities management building located alongside the A41, ready for occupation in early 2020. This will allow the refurbishment of the grade 2 listed stable block to complement the zoo's heritage zone, located alongside The Oakfield.

Later in 2019 the zoo team completed work on a new habitat for our group of Asiatic lions moving them away from their former home in the centre of the zoo. The combination of glazed indoor and outdoor elements enhanced this facility allowing a clear storyline to demonstrate our work with this endangered species.

Not visible in 2019 was the vast amount of work done in the planning and detailed design for Grasslands which will begin in 2020. Planning permission was granted in late 2019 for the multi-million pound reorganisation of the western side of the zoo, which will include a mixed species savannah, new indoor and outdoor space for African species, and a large restaurant. The plan also includes a site for overnight stays, a long-term aspiration of the society.

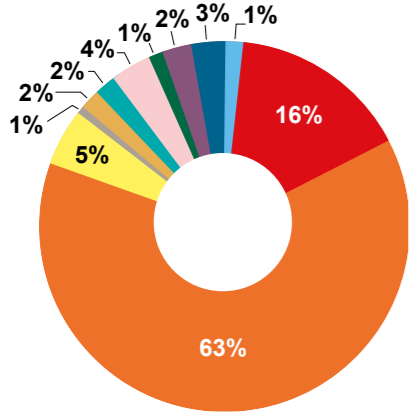
On top of this, the development team worked hard to re-establish our world-leading indoor habitat, Monsoon Forest. Following the devastating fire in December 2018, significant progress has been made in stripping and rebuilding parts of the building. It is envisaged Monsoon Forest will re-open to our visitors in the summer of 2020.



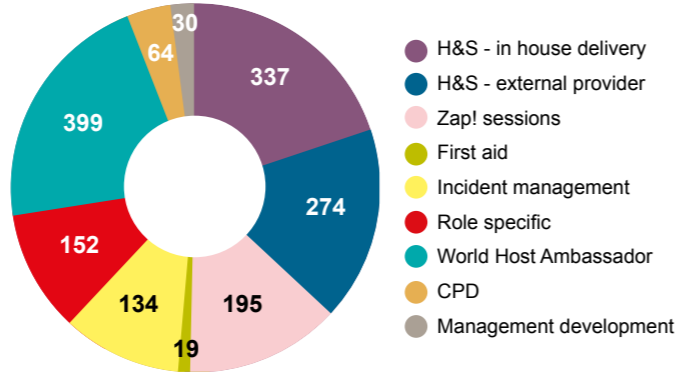
Our People

Chester Zoo is not only an inspiring and developing space for animals, plants, and our visitors, but is also a community of talented and committed individuals all working together to PREVENT EXTINCTION.

Over 1,000 people were employed by the zoo at peak season (522 permanent, 54 fixed term and 470 seasonal).



- Capital Development
- Collections
- Commercial Operators
- Conservation Education & Equipment
- Directorate
- Finance
- IT
- Marketing
- People Team
- Science & Conservation
- Site Operations



We continue to invest in the skills and knowledge of our teams and in 2019 delivered **1604 learning experiences** for them.

And the AWARD goes to...

In 2019 we were proud to accept numerous awards for our work. BIAZA awards were plentiful:

We also scooped some great awards, recognising the skills of our teams in their specialisms:

Gold Award for Sustainability: Sustainable Palm Oil City

Institute of Fundraising, National Awards: Winner, Regional Campaign of the Year: Me, You and the Zoo Auction

Gold Award for Horticulture: Bumblebee abode garden

Taste Cheshire Awards: Gold Award for Family Friendly Venue of the Year (The Oakfield)

Silver Award for Education: International educators training week

Taste Cheshire Awards: Gold Award for Best Newcomer (The Oakfield)

Bronze Award for Education: Developing a conservation curriculum

Sandford Award: Granted by the Heritage Education Trust in recognition of our outstanding contribution to heritage education and learning within the historic environment

Gold Award for Animal Husbandry, Care and Breeding: Preventing extinction - Javan green maggie

North-West in Bloom: Winners: The Gold Medal; and Trophy in the Best Large Tourist Attraction category

Gold Award for Animal Husbandry, Care and Breeding: Developing captive husbandry protocols that facilitate conservation translocation

Silver Award for Animal Husbandry, Care and Breeding: Creating dosing solutions for coral displays

Marketing Cheshire Annual Awards: Winner, Ethical, Responsible and Sustainable Tourism Award

Bronze Award for Animal Husbandry, Care and Breeding: Hand-rearing of Caribbean flamingos using an egg-based diet

PRCA Awards: Crisis and Issues Management Award: The Chester Zoo Fire (Monsoon Forest)

Gold Award for PR, Marketing, Digital and Events: Crisis communications during the Chester Zoo Monsoon Forest fire

PRCA Awards: In-house Team of the Year Award Public Sector: Highly Commended

Gold Award for Exhibits: Sumatra at Islands - a story of the wildlife trade

Bronze Award for Research: Monitoring the impacts of management interventions in a captive troop of Sulawesi crested macaques

Bronze Award for Research: Developing chytrid treatment protocols for highly threatened salamanders

Silver Award for Conservation: The Tequila splitfin reintroduction programme

Silver Award for Conservation: Action Indonesia: global species management plans for anoa, babirusa, banteng and Sumatran tiger

Gold Trailblazing Award presented to Cat Barton, Field Conservation Manager, for her work on sustainable palm oil



Volunteering

young people, we ran two Duke of Edinburgh volunteering projects during the year. These supported young people to develop their confidence and skills talking to visitors about our conservation campaigns, whilst also training them to enable them to make their own conservation campaign tools to share with their peers.

Over the summer we also worked with a small group of young volunteers, referred from Ancora House a child and adolescent mental health unit in Chester. Participants worked through a supportive training programme before taking on their volunteering roles in the zoo. We also supported them to work towards ASDAN qualifications. Several of our existing volunteers were trained as Youth Champions to support our younger volunteers with their training and in role.

New volunteer roles were recruited to support new developments at the zoo, with visitor engagement volunteers taking on key roles at the lemur walkthrough when it opened at Easter and at the Asiatic lions habitat in the Autumn. In both locations they have supported visitors to engage in the experiences, locate the animals within their large habitats and provide information to visitors about the species and their conservation. In the Summer, volunteers also revived their role interpreting our honeybee colonies and engaged over 10,000 visitors with bee conservation.

Building on the pilot work conducted in 2018 and our increasing work with

Our volunteer programme went from strength to strength in 2019...

OUR VOLUNTEER PROGRAMME CONTINUES TO SUPPORT OVER **200** VOLUNTEERS

VOLUNTEERS DONATED AN AMAZING **27,891** HOURS OF THEIR TIME OVER THE YEAR
9% increase on 2018

62 NEW VOLUNTEERS RECRUITED AND TRAINED DURING 2019

VOLUNTEERS INTERACTED WITH **369,705** VISITORS OVER THE YEAR
11% increase on 2018

CONSERVING SPECIES OF
LATIN AMERICA



In 2019 we achieved our long-held goal of setting up a European breeding programme (EEP) for the Lake Titicaca frog. This once common frog is confined to Lake Titicaca on the Peru / Bolivia border where it is now Critically Endangered. Sixty frogs were brought from the USA with the plan to disperse them across ten different zoos in Europe. We had an excellent start to the new breeding programme when the frogs very quickly spawned on arrival at Chester Zoo.

In Brazil our support for long-standing work on Giant anteaters and Giant armadillos continued, with some startling facts about the threats these animals face; a 27 month survey reported a staggering 558 Giant anteaters killed by traffic. A new initiative of the project will start to look at rehabilitation of young anteaters whose mothers are killed.

In Bolivia news was more positive from our Andean bear project, where camera-trapping has revealed a sighting of a second bear cub in two years, a great sign that the animals continue to live and reproduce in the area despite habitat loss and persecution. In the zoo, keepers were delighted that our current pair of Brazilian giant otters successfully reared their first pups.

Our national plant collection of Matucana cacti had a real boost during the year with the donation of more than 350 new specimens by cacti specialist Maurice Williams. These cacti are confined to Peru and around half of the species of Matucana are threatened with extinction; many of those donated to the zoo have details of their exact origins in the wild and so are particularly valuable for conservation. Also new to the zoo this year was our first pair of Southern tamandua; a beautiful species of South American climbing anteater.

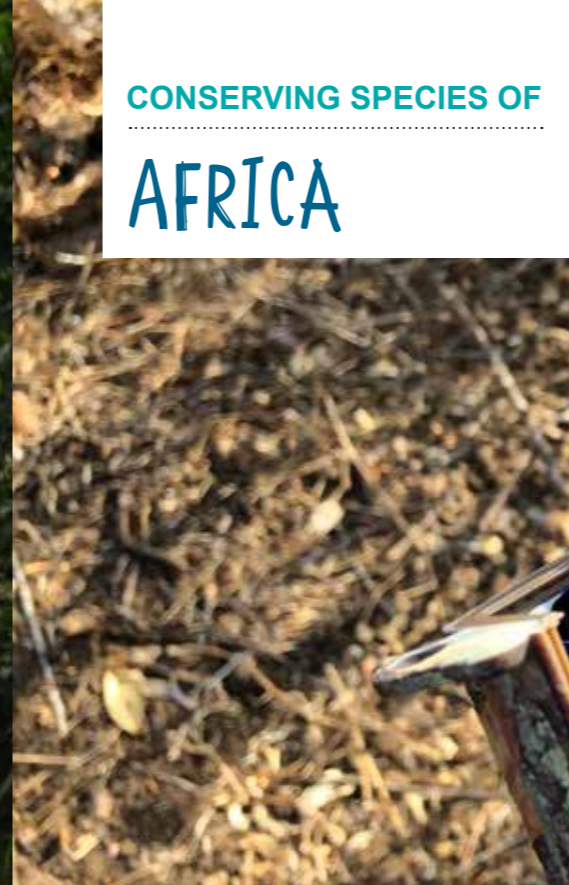
Our work with the Bermudan Government has reached a milestone with the first ever reintroductions of Greater Bermuda snails. A staggering 18,000 snails were sent back to Bermuda for two separate conservation translocations during the year; a real testament to how we are directly acting to prevent extinction. This paves the way for conservation translocations of Lesser Bermuda snail with plans already in place for 2020.

We also had further success with our Bermuda skinks, rearing a further 7 youngsters during the year and increasing the likelihood that we will be sending this Critically Endangered species back to Bermuda in the next few years.

Excellent news from Mexico confirmed that the Tequila splitfin fish, still considered as extinct in the wild, is now thriving at the sites of earlier reintroductions and has established a strong and growing population in the springs that form the headwater of the Teochitlan River. We are currently evaluating further candidate species for release with our partners the Mexican Fish Ark.

In Ecuador our field work on the ecology and conservation of Ecuadorian Amazon parrot continued with work on roosting and breeding sites. We also continue to work with our partners on societal change to hopefully reverse the plight of this parrot.

CONSERVING SPECIES OF
AFRICA



2019 ZOO REVIEW

We coordinate the European breeding programme (EEP) for black rhinos and during 2019 we spearheaded the largest ever translocation of rhinos from Europe to Africa. This exciting translocation was undertaken by the European Association of Zoos & Aquaria (EAZA), the Rwanda Development Board (RDB) and African Parks, which manages Akagera National Park in Rwanda, where the rhinos were released. The five animals moved from European zoos will bolster the original animals released in 2017 from South Africa. We continued our financial and practical support to combat poaching of rhinos and other wildlife in both eastern and southern Africa, providing finances, equipment, advice and training.

Following the milestone birth last year of chimpanzee 'Stevie', we were delighted to welcome another infant born into the group, when 'Annie' was born in the summer to mum, 'Alice'. In the field our great ape work has focussed on Uganda and

Gabon. This year an important MOU between Chester Zoo and the Uganda Wildlife Authority (UWA) was signed in which the zoo will lead and implement a number of exciting initiatives focussed on great apes, pangolins, black rhino, carnivores and okapi between now and 2025. Our expanding work in Gabon's western coastal forest has revealed an incredible diversity of wildlife including Western lowland gorilla, chimpanzee, forest elephant, giant pangolin and slender-snouted crocodiles; even marine turtles have been recorded travelling up lagoons and into forest to lay their eggs. These revelations have already influenced the issuing of local logging permits, with local communities now being increasingly consulted.

In Uganda staff assisted the Giraffe Conservation Foundation (GCF) with their satellite tagging programme, which is now the largest ever GPS satellite tagging project for giraffe. In the zoo we welcomed another two calves to our Rothschild giraffe herd, 'Mburo' born in March and 'Karamoja' born in May. Our okapi and mountain bongo populations in the zoo both benefitted from the arrival of new females.

We expanded our survey and training work on butterflies, moths and beetles this year working in Kenya, South Africa and Tanzania, assisting local communities and governments to better understand these poorly known species. Finally the arrival of three pairs of tiny bearded pygmy chameleons at the zoo enabled our keepers to gain the skills required to care for and breed these and similar species. Many are highly endemic to tiny regions of eastern and southern Africa and are becoming increasingly isolated and threatened in the wild.

CONSERVING SPECIES OF
SOUTH ASIA



We have scaled up our work on Asian elephants in Assam, India, in an exciting new partnership with the Wildlife Trust of India. Habitat fragmentation in this region has disrupted elephant migration routes and brought them into conflict with people in areas adjacent to the Manas National Park. Using our experience of finding practical solutions to this problem from the long-running Assam Haathi project, we aim to reduce human-elephant conflict around Manas to allow elephant populations to flourish. In its first year, the project has consulted with 60 villages across the Manas landscape, erected 5 km of electric fencing to protect crops from elephants and engaged with officials at local and regional Government level to develop long-term strategies for enabling peaceful co-existence between elephants and people.

In Nepal we completed the delivery of our Darwin Initiative funded project aimed at strengthening tiger conservation efforts by reducing human-tiger conflict in and around two national parks in the Terai lowland region. This has been successful in reducing predation of livestock by over 40%. To ensure that this continues long after the project has finished, we carried out a consultation exercise with local communities and stakeholders.

In the zoo, our red pandas gave birth to twins in June, providing a significant boost to the conservation breeding programme for this threatened species from the Himalayas and southwest China.



CONSERVING SPECIES OF
MADAGASCAR & MASCARENES



2019 ZOO REVIEW

The development of our Madagascar forest zone has allowed us to showcase our major field programme in the 270 km² Mangabe forest protected area in the east of the country where we continue to work with our partners, Madagasikara Voakajy. As well as lemurs, Mangabe forest is the last stronghold of the golden mantella frog. Fieldwork in January and February revealed 60% of potential breeding ponds occupied by golden mantellas with a higher percentage of ponds in good condition compared with the previous survey in 2017.

Elsewhere in Madagascar we stepped up our work to restore populations of an endemic fish, the pinstripe damba, to Lake Tseny in the north of the country. Our team travelled there in April to carry out histopathology and parasitological examinations on captive bred damba at the Andapa breeding facility. Results of this screening were used to produce a disease risk analysis report for Madagasikara Voakajy to inform plans for captive management and potential future conservation translocations.



In the zoo we were successful in hatching two radiated tortoises for the first time following painstaking work to determine their exact temperature requirements. This is a significant boost to conservation breeding efforts for this highly threatened species from the spiny forests of southern Madagascar where it is threatened in the wild by illegal trade and habitat loss.

In Mauritius, we continued our efforts to support the population of the echo parakeet. The first breeding attempt of released birds in the Bambous Mountain region was recorded this year, following releases between 2015 and 2017. The population is currently estimated to number over 700 birds and in November 2019 the echo parakeet was downlisted to Vulnerable (from Endangered) by the IUCN. This is testament to the success of the conservation work that has been carried out over many years by a number of organisations working in partnership, including Chester Zoo.



There has been rewarding progress this year on our projects in the Philippines. We launched the William Oliver Philippine Champion Award (honouring posthumously a dedicated conservationist of wildlife in the Philippines and long-time partner of the zoo). The six chosen recipients are already involved in the protection of ecosystems on the nation's many islands and on the cusp of launching 2-year projects.

Our partners at the Katala Foundation in the Philippines lead conservation efforts on the Palawan population stronghold of the Critically Endangered Philippine cockatoo, and continued monitoring during 2019. The extreme drought has been taking its toll and despite record success in 2018, this year proved catastrophic with very poor breeding success.

A real high point of our South East Asia programme this year was the birth of a male Malayan tapir calf, the new habitat in the zoo giving visitors unparalleled close-up views of mother and youngster as it grew during the year. Also particularly noteworthy was the birth of seven Northern babirusa piglets during the year, making worthwhile all the hard work we have put into developing both a functioning breeding population here in the zoo and support for the Action Indonesia programme and Global Species management programme.

For the first time, we carried out reintroduction of two different species of Polynesian tree snails on the island of Huahine, French Polynesia. Both species are extinct in the wild and

have been prevented from total extinction by the work of a few zoos including Chester. We spearheaded the release of these two species with more than 2,000 snails.

Conservation breeding efforts in the zoo were significantly boosted this year with the birth of a male Sumatran orangutan to mum 'Subis', two Sulawesi crested macaques, two litters of Asian short-clawed otters during the year, and particularly pleasing, the first breeding for 13 years of our Sumatran Rhinoceros hornbills, which successfully reared two chicks. This was especially satisfying as this was the pair that was rescued from the fire in Monsoon Forest in December 2018. During the year our Aquarium team focussed activities on the Parosphromenus Project, a breeding project for this highly threatened group of fish, with the zoo now keeping five Endangered or Critically Endangered species of these fish and successfully breeding three of them during 2019.

We joined a partnership of 79 conservation organisations to produce the State of Nature report 2019 that highlights the continued plight of biodiversity in the UK. The report aims to inform forthcoming legislative change, such as the Environment Bill and calls for urgent action to restore biodiversity.

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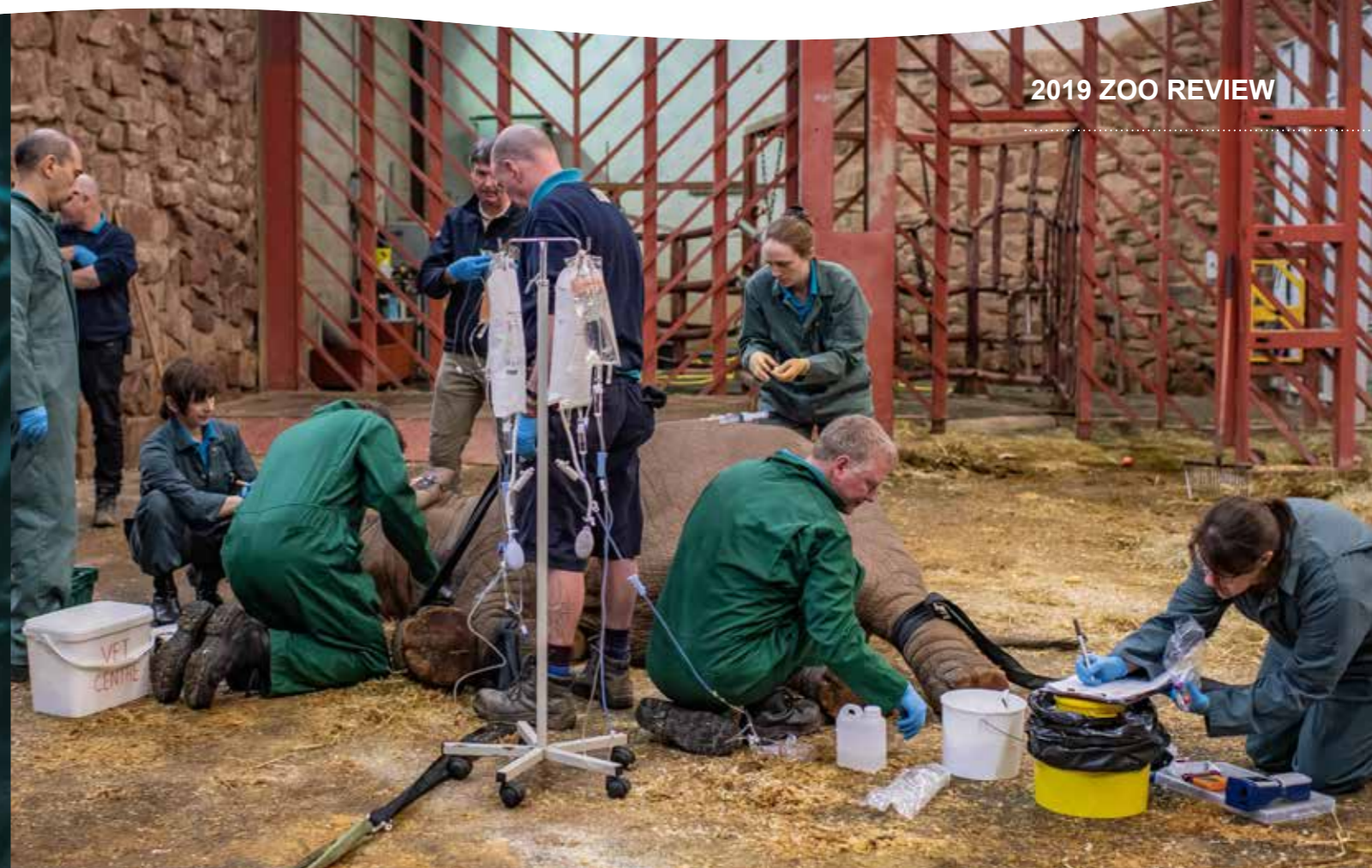
We have been supporting a major initiative to restore the lowland peatland habitats of northwest England. Most of this 'mossland' habitat has now disappeared as a result of decades of overexploitation and development, but some key areas have been restored through re-wetting. In May we began exciting new work with the North West Rare Plant Initiative, and its enthusiastic founder, Josh Styles. We assisted Josh with the reintroduction of five locally rare peatland plant species to restored mossland sites with secure management.

As well as plants, we are also helping to restore peatland invertebrates at these sites. Several large heath butterflies were captured under licence at Winmarleigh Moss and expert care from our invertebrate team led to over 150 caterpillars being produced.

Our horticulture team produced 91 native black poplar trees, ready for planting in winter 2019/20. This has doubled the number grown in recent years, providing a significant boost to the local population.

Following our support for the Vincent Wildlife Trust in their efforts to reintroduce pine martens to mid Wales, surveys of 200 transects for pine marten scats have found over 80 so far, providing evidence of their continued survival and dispersal.

On our own land around the zoo, camera traps and nocturnal surveys have revealed the presence of a number of nocturnal mammals that are benefiting from our habitat creation and conservation. This year we recorded our first polecat on the zoo estate (revealed by a camera trap). In the summer, two large maternity roosts of soprano pipistrelles and brown long eared bats were discovered, estimated at 200 and 50 individuals respectively. To encourage more bats on site, the MECX Construction Corporate Group funded and helped install more than 70 bat boxes around the Chester Zoo estate.



Our Specialisms

Conservation Breeding and Management

Conservation breeding and management is a core specialism that underpins the extensive animal and plant conservation work that we carry out.

An important element of this management is the expertise that we put into conservation planning. Many of the staff at Chester Zoo are acknowledged global leaders in this field and called upon to assist in planning the management of a multitude of animals and plants. Rigorous planning is the essential pre-cursor to effective conservation action and we plan in a consistent 'one plan' approach (with all actions and options being considered as part of an overall holistic strategy to save a species). We've been involved in planning activities across all six of our geographic regions on such diverse species as hornbills, snails, newts, deer, doves, pigs, primates, insects, and frogs.

This year has seen a number of new exciting species arrive at Chester Zoo. These include Lake Titicaca frog, Red-ruffed lemur, Crowned lemur, Red-bellied lemur, Great green macaw, Bearded Pygmy chameleon, Southern tamandua, Liquorice gourami fish. Most of these species are threatened with extinction in the wild and are part of coordinated EAZA conservation breeding programmes.

The interface of our conservation breeding and propagation work and conservation management is never more obvious than when we are translocating individual animals and plants back to wild. These release programmes require the utmost skill and care and are where our expertise in planning is vitally important. This year we were involved more than ever in these activities, returning Eastern black rhinoceros to Rwanda, tree snails to French Polynesia, Curlews to England, Great Orme cotoneaster to Wales, Greater Bermuda snails to Bermuda and several other programmes around the world.

Further afield our skills have been used in developing a project on pitcher plant (Nepenthes) conservation and propagation in Indonesia with our partner the Indonesian Institute of sciences (LIPI) and it is hoped that a greenhouse facility in Indonesia will form the centrepiece of this work. We have also been applying the same endocrinology skills that we use in the zoo for conservation management of our mammals to use in Kenya for the assessment of wildlife in the region.

Our Specialisms

Wild life Health and Wellbeing

The health and wellbeing of our animals is of paramount importance and during 2019 Chester Zoo's expert staff have cared for over 35,000 animals of around 600 species. Ensuring that every animal receives the very best care is a formidable task. For many animals we work with, very little is known about their biology or needs, so learning the skills to be able to care for them appropriately is critical to our mission. This knowledge is often transferable to other species and animals in the wild.

This year proved to be a milestone in our work to combat Elephant Endotheliotropic Herpes Virus (EEHV). We have put huge effort over the last few years into understanding this disease and developing effective treatments and prevention for EEHV; this is critically important for safeguarding the future of Asian elephants both in zoos and the wild. In March Indali

our two year old Asian elephant calf tested positive for EEHV during one of her thrice weekly blood tests. Our keepers and veterinary team worked tirelessly to provide her with the very latest therapies available, including blood plasma transfusions, anti-viral medications and immune boosting treatments. After 14 days of highly intensive treatments Indali's condition improved and she began the process of recovery from the disease. This is a significant breakthrough in the treatment of EEHV.

Our expertise in animal health and wellbeing has also been an important element of our field programme work and during the year we have provided support to health screening activities for some of our conservation translocation work on species such as greater Bermuda snails and pinstriped damba fish in Madagascar. We delivered workshops in Indonesia to support rescue centres in the region in dealing with the increasing number of reptiles and amphibians they are receiving due to a change in the law. The workshop focused on building their skills and capacity in handling, restraint and care of reptiles and amphibians. Veterinary support and advice for wildlife conservation and especially orangutan issues continued during 2019 with our continued support for the Orangutan Veterinary Advisory Group (OVAG).



Our Specialisms

Biodiversity Survey & Monitoring

The skills our staff acquire through working so closely with animals and plants are often perfect for application in the wild to survey and monitor wildlife. This survey work is frequently the first part of the puzzle in determining how rare species are and how their distributions are changing. Equally surveys give us the opportunity to upskill many local partners who help us in the field so that they too can carry out similar work and build their own expertise.

It has been a particularly busy year for survey and monitoring work in Africa. A landmark was the first ever GPS and VHF radio-tagging of a Giant pangolin in Uganda at the Ziwa White Rhino Reserve. Giant pangolins have been an increasing focus of our work in light of the massive illegal trade in all pangolins and especially the lack of information on distribution and status in African species. We were also involved in the largest ever GPS tagging project on giraffes, assisting our partner the Giraffe Conservation Foundation (GCF) to fit

trackers in Uganda. This intensive tagging and monitoring often follows on from more extensive survey work and we have been camera trapping in Uganda (more than 1 million images captured!) and Gabon with more than 60 camera traps documenting previously unrecorded Western lowland gorilla populations. We have also been expanding our survey and particularly field skills training work for smaller animals with butterfly, moth and beetle survey work in South Africa, Kenya and Tanzania during 2019.



Our Specialisms

Human-Wildlife Conflict

We continue to take an evidence-based approach to finding practical solutions to the complex problem of human-wildlife conflict to prevent extinction in the field.

As reported in the South Asia regional programme section, we have scaled up our work on Asian Elephants in India in order to increase our impact on elephant conservation by tackling human-wildlife conflict in Assam. The north-eastern state is home to a variety of communities attempting to live in an environment where human-wildlife conflict (HWC) arises every day. As a result of human-elephant conflict, 3627 human lives have been lost over the last eight years, as well as those of 628 elephants. We are working with the Wildlife Trust of India (WTI) as part of their Manas Landscape project. They carried out a baseline survey of attitudes to elephants with 60 villages that revealed a high level of respect for the animals despite the challenges of conflict. During field visits over the year, zoo conservationists were encouraged to see elephant proof electric fencing that had been provided through our Darwin Initiative projects in the past still fully maintained and effective. The success of our approach would seem to be associated

with ensuring that people are provided with the means and motivation to maintain electrical equipment beyond the lifetime of the project.

In Mauritius we have continued our research into the causes of conflict between humans and flying foxes. As well as the more obvious link with fruit growers, we have also established an important connection between the image of the bats in the media and public opinion. We ran two workshops during the year to tackle these issues. The first was attended by backyard fruit growers who had not previously had the opportunity to share their experiences and concerns over fruit losses due to bats. The second was held with the media and attended by journalists and media students which aimed to explore how the media present bats to the general public and to discuss ways in which NGOs and the media can work together more closely.



Our Specialisms

Livelihoods and sustainable development

Working to improve the livelihoods of people living alongside wildlife often goes hand-in-hand with conservation of species. This is especially important in poorer regions of the world where poverty alleviation can reduce pressure on wildlife. This approach is at the heart of our Living with Tigers project In Nepal where we completed the delivery of our three year Darwin Initiative funded project. Through our workshops, growing more food to provide for families' needs was identified as a priority activity to reduce people going into the community forests. The workshops develop skills to enable to people to get higher yields from their crops to help with their own food and to generate more income.

Another Chester Zoo project funded by the Darwin Initiative aims to boost the populations of Andean Bears in the Tarija region of Bolivia through reductions in conflict with humans and habitat disturbance. Again, improving livelihoods of local people is the key to its success and the project provided training and equipment for beekeeping to communities. The first honey harvests were made by participating communities and Tremarctos Honey was launched in Bolivia as a new output from the Human-Bear coexistence project! It is hoped that these sustainable alternative livelihood options will reduce retaliation on bears that roam into cropland looking for food.



Our Specialisms

Visitor and community engagement

Research on the positive impact of our walk-through exhibits on visitor engagement with conservation was published in the Journal of Zoo & Aquarium Research this year. Our results demonstrate the value of deeper level conversations that visitors have with zoo rangers and volunteers and showed a positive change in attitudes towards pro-conservation themes as a result. This research was been important in shaping how we designed and managed the interpretation of the lemur walk-through exhibit that opened during the year and proves the value of having a continuous presence from staff and volunteers to engage visitors as they pass through.

Another way of sharing our work and building conservation capacity is by engaging our field partners with our evaluative approach to learning. We assisted a number of them in 2019 to develop their own education strategies that will deliver effective learning and behaviour change, including the HEAP project in Malaysian Borneo and colleagues at the Grand Montagne nature reserve in Rodrigues.

The impact of our work on encouraging pro-conservation behaviours is a key focus and during 2019 we teamed up with the leading US-based behaviour change experts 'Rare' to prepare a motion to the World Conservation Congress in 2020 that encourages the global conservation community to 'think big' around this important topic.

Discovery and Learning

Our work in schools focused on supporting teachers to deliver their own wildlife conservation focused curricula. Alongside pedagogical experts and Ignite Teaching School Alliance, we supported 23 schools to develop conservation-focused projects, with a further 30 schools joining us in September for training that will see them delivering curriculum projects in 2020.

This brings the total number of schools we have worked with on a conservation curriculum to 84. In October, the amazing work of some of these schools was celebrated at the zoo when we hosted our first IgniteZoo Takeover Day. Pupils from 11 schools worked with our Zoo Ranger team to prepare and then deliver their own talks about conservation issues. On the evening of the Takeover Day we hosted a debate event with RSA North and colleagues from University of Manchester to share the work we have done on conservation curriculum with academics, educators and conservationists and ask how we can all work to make conservation in schools the norm. A position paper from these discussions is expected in 2020, but some of the key arguments for putting conservation into school curricula were summarised in an open letter from us and Ignite TSA to politicians in advance of the general election in December.

With large numbers of day visitors coming to the zoo, the Zoo Ranger team saw increased numbers participating in their daily programme of talks, discover sessions, storytelling and other events. Supporting the Big Cats and Predators exhibitions and the opening of the new Madagascar area and Asiatic lions habitat saw the team develop a range of new activities to entertain and support the learning of our visitors throughout the year. In total, 222,914 visitors took part in 5,313 Zoo Ranger activities during the year.

Alongside our scientists, we developed new activities to showcase the science work of the

zoo, at both the Blue Dot and New Scientist Live events. At Blue Dot, the Zoo Rangers delivered their first large scale science show inviting attendees to find out more about 'poo science' and the other scientific techniques we use to prevent extinction around the world.

In our community engagement work we focused on developing our Wildlife Connections campaign and supporting communities in areas local to the zoo, such as Blacon and Lache in Chester, to take action for UK wildlife. Our Wildlife Connections Festival brought 2,375 people over two days to enjoy music, storytelling and a whole variety of wildlife themed activities down at our nature reserve.

Internationally we continue to support a large number of our field partners with their education work. As part of our role leading the Education Working Group of the Action Indonesia GSMPs, we led the first ever Action Indonesia day in August, through which 42 organisations delivered activities focused on some of the less well-known Indonesian species of anoa, babirusa and banteng and the ways in which they can be protected. Our Head of Discovery and Learning travelled to Mauritius to support the Mauritian Wildlife Foundation to develop a new education strategy and members of the team visited Hutan in Borneo and Big Life Foundation in Kenya to provide technical support on the design and delivery of their education and community programmes.



132,227
EDUCATIONAL VISITS

31,457
STUDENTS TAKING PART IN
ZOO-LED WORKSHOPS

78,047
OUTREACH PARTICIPATIONS

222,914
VISITORS TOOK PART IN
5,313
ZOO RANGER ACTIVITIES

PUPILS FROM **11**
SCHOOLS INVOLVED IN THE
FIRST EVENT IGNITEZOO
TAKEOVER DAY

Welcoming our visitors

Raising Awareness of Threatened Big Cats – February 2019

A pride of life-sized big cats including lions, cheetahs, tigers and jaguars, delighted our visitors between February and April 2019. Nearly 550,000 visitors came to see them, whilst visiting the zoo, who were also able to take part in a number of Zoo Ranger led activities.



The opening of Madagascar – April 2019

A new 6000 m² Madagascar habitat opened in April bringing a taste of the world's most diverse island to the UK, including the zoo's first ever 'walk through' primate experience.



"World First" Predator Exhibition – May 2019

A never-seen-before exhibition showcasing over 200 million years of lost predator species highlighting that extinction is a very real threat to animals on the planet today. Giant animatronic mega-beasts included a 12-foot-tall giant bear, a ferocious sabre-toothed big cat, and a six-metre-long Titanoboa snake. Over 400,000 visitors saw the animatronic hunters during the summer months.



Lion habitat - October 2019

The zoo's pride of Asiatic lions explored their new home for the first time in October. Lionesses, Kumari & Kiburi, and male, Iblis relocated to a new state-of-the-art conservation facility for the world's rarest lion species.



The Lanterns – December 2019

Showcasing much-loved animal illuminations and characters from years gone by, over 111,000 visitors journeyed through nine unique worlds as part of this year's 'The Lanterns' experience. New worlds transported guests from tropical dreamlands to a night sky adventure all created by the zoo in partnership with multi award-winning outdoor arts producers, Wild Rumpus.



In 2019 our visitors bought:

160,223

SOFT TOYS

122,816

CONFECTIONERY ITEMS

206,493

TOYS

65,330

FRIDGE MAGNETS

14,532

PERSONALISED ITEMS

32,756

BRACELETS

28,604

BOOKS

28,865

PENS

11,321

MUGS

36,934

KEYRINGS

659607

ICE CREAMS, INCLUDING

123,211 scoops of Cheshire Farm Ice Cream and 110,737 of Wall's Magnums

119874 BAGS OF CRISPS

29598

HOT CHILDREN'S MEALS

34,611 CHILDREN'S SANDWICH BOXES

612007 HOT DRINKS

(approx. 208,106 litres) –

this includes 55,000 cups of tea

79223 CHEESE BURGERS,

2463 VEGGIE BURGERS

671 VEGAN BURGERS

32961 HOTDOGS

145198 CUPS OF SLUSH

(49,367 litres)



Environmental Management

The zoo has developed an environmental management system which is certified to ISO14001:2015 and is an internationally recognised and independently audited to an environmental standard.

We have had success in achieving sustainable palm oil city status for Chester, removing over 2 million of pieces of single use plastic from our operation and ensuring that all of our electricity used on site is sourced from renewable supplies. Other environmental impacts being targeted, monitored and worked on to improve include energy reduction, water, waste, sustainable construction and procurement.

Wales Expedition 2019



In June 2019, we delivered our first annual expedition that focused on native species conservation. Zoo staff from all working areas of the zoo came together to form our largest ever expedition team. We collaborated with local conservation organisations including Record, the Wildlife Trusts, the Woodland Trust and Cambrian Wildwood, for two weeks of intense conservation action in mid-wales.

Our expedition fulfilled three distinct objectives fundamental to wildlife conservation: wildlife recording, habitat management, and public engagement. Working with the Wildlife Trusts during week one, we took part in their Living Seas Project based around Aberystwyth, New Quay and Llanrhystud beaches. We collected data on marine mammal occurrence and behaviour, and on shoreline species prevalence and density. We recorded at least 38 species on the shores of the Welsh coast, including 13 types of brown, green and red seaweed (algae), eight molluscs, seven crustaceans and one fish species! Our mini bio-blitzes also recorded 80 species along the coastal path, a highlight being watching a peregrine falcon feeding on the cliffs. This data allows the Wildlife Trusts to monitor ongoing trends, and highlight areas in need of protection and conservation support. Any spare time we had during this week was spent beach cleaning when we removed nearly 2500 pieces of litter.

We also ran a fantastic public event to celebrate World Oceans Day, welcoming over 700 people.

We kick-started week two with an intense day of habitat management with the Woodland Trust in a site of ancient Welsh woodland, Cefn Coch, near Machynlleth, where invasive non-native rhododendron and western hemlock trees are choking out and taking away essential resources from native tree species.

Working with the Summit to Sea Project, we carried out more surveys, trialled an exciting new walking route, and assisted with traditional construction techniques to build facilities to enable people to explore the Welsh countryside. We conducted baseline surveys to record wildlife. The data we gathered will help to inform future conservation action, including action to manage and protect priority species and habitats.

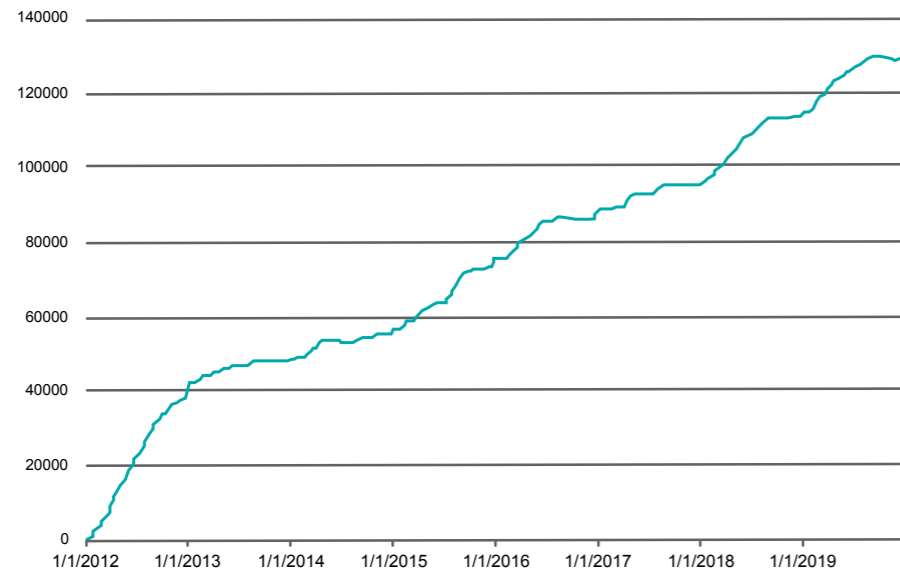


Our Campaigns and Partnerships

Membership

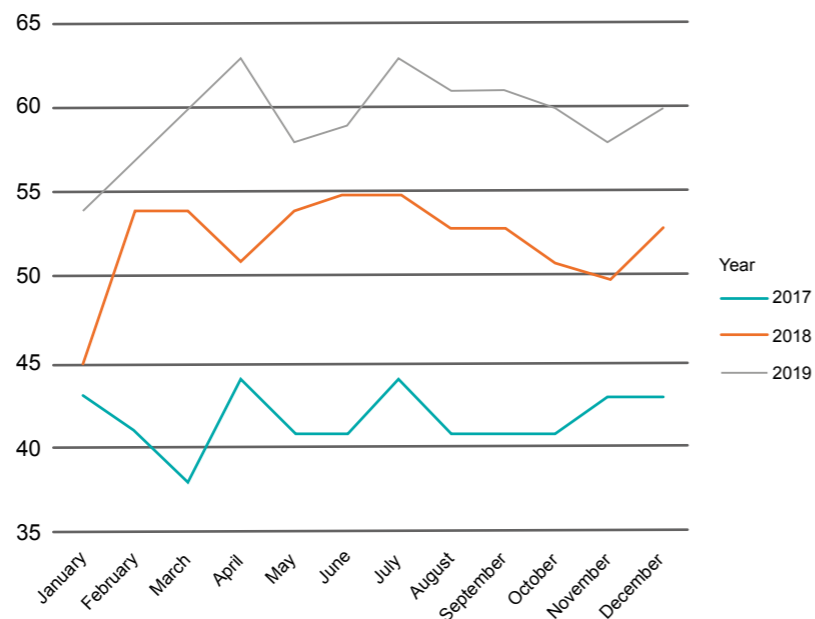
We ended 2019 with a record total of 129,483 members which is 14% increase on the previous year.

Number of members over time



Membership renewals were up significantly on the previous year. We have seen large increases in March, April and August due to rolling monthly direct debit payment option. Of course where a large number of new sales are shown in 2018, the renewal figure is reflected in the 2019 renewals. Our retention was at 61% at the end of December 2019.

Renewed %



PR

A month-by-month overview of the topics which featured in the media each month.

JANUARY

- Monsoon Forest aftermath
- Record zoo visitors
- Lego/lions announced
- Soccoro doves hatch



APRIL

- Grasslands plans announced
- Dusky pademelon born
- Six ring-tailed lemurs born
- Joy as Indali Hi Way enters recovery phase



JULY

- Malayan tapir calf born
- Zoo visitors witness chimpanzee birth
- Meerkat pups emerge



OCTOBER

- Red panda cubs emerge
- Zoo unveils new lion habitat
- Eastern bongo calf born



FEBRUARY

- Critically endangered Madagascan tortoises hatch
- Lego big cats arrive
- Zoo cameras capture rare giant pangolins



MAY

- 42,000 tickets given away to school children
- Predators exhibition launches
- Giraffe calf born



AUGUST

- Red panda cubs born
- Trio of rock hyrax pups born
- Zoo announces sleepover as part of Wildlife Connections festival
- Large heath caterpillars destined for wild hatch



NOVEMBER

- Sumatran orangutan born
- The Lanterns opens,



MARCH

- Indali Hi Way fights EEHV
- Madagascar walk-through opens
- Giraffe calf born



JUNE

- Black rhino introduced to Rwanda
- Monorail closure announced
- Zoo announces Lanterns tickets to go on sale
- Bermuda snails returned to wild

SEPTEMBER

- Collared trogon chicks hatch after parents rescued from illegal wildlife trade
- Zoo gets go ahead for Grasslands project



DECEMBER

- Asian short-clawed otter pups born
- How zoo is bouncing back a year after Monsoon Forest fire

2M VISITORS FOR FIRST TIME IN ZOO'S HISTORY

Thank you

At the start of 2019, we continued to be humbled by the sheer number of people who wanted to demonstrate their support of our mission through generous donations following the fire in Monsoon Forest. Over 9,000 amazing donors helped raise over £260,000 for vital conservation work. This fund has already had a positive impact on the species represented within Monsoon Forest, and will continue to do so for many years to come.

We particularly want to highlight Katie Morrison from our elephant team, who held the year-long fundraiser My Mammoth Year. Throughout 2019, Katie took on a different challenge every month, ranging from learning to crochet and going vegan all the way to the Three Peaks Challenge. Katie inspired friends, family, colleagues and zoo visitors to join her on this journey.

2019 also saw the launch of Race for the Rainforest, the brainchild of our local business community, which aims to engage companies and their employees with our sustainable palm oil campaign. After training and fundraising together, participants will take part in the epic Borneo Ultra-Trail Marathon™ in 2021, all to provide support for our reforestation work.

We are grateful to new and existing corporate supporters, who in 2019 shared our ambition and purpose, and used their

sector influence to change consumer behaviour, cultivate a new audience of conservation ambassadors and supported us through funding, expertise and volunteering hours.

With legacies received in 2019 we have been able to build conservation capacity in the Philippines, boost existing programmes and scope brand new projects with our global field partners.

Always stepping up to the challenge, all our supporters have come together over the past year to enable a wide range of conservation initiatives. From kitting out our laboratories in Africa, making homes for native bat populations, to concocting cocktails to help fund the fight against EEHV; we are creating a unique fundraising environment, full of playful curiosity and inclusivity, which will safeguard our planet for generations to come.



With huge thanks to all our supporters:

Conservation Champions

Co-op
Craghoppers
MECX Group
Saputo Dairy UK
Rhino Products Ltd

Corporate Champions

Airbus
Bank of America
Darwin Escapes
MBNA

Corporate Supporters

3D Squared
Barclays Bank
M&S Bank
Stagecoach
Sykes Cottages Ltd
Toyota Motor Manufacturing Ltd

Retail Partners

Charlie Bears
Joe Davies Ltd
Swarovski

Trusts, Grants & Major Gifts

Charles Brotherton Trust
Eric & Dorothy Leach Charitable Trust
Lord Leverhulme's Charitable Trust
Marjorie Coote Animal Charity Trust
Marsh Christian Trust
Philip Barker Charity
Ronald & Kathleen Pryor Charity
World Association of Zoos & Aquariums
William Dean Countryside and Educational Trust

Incredible Individual Gifts

The Kershaw Family
Chris McDermott
Professor and Mrs Verbov
Lesley Wilks

To all those remembered with love through gifts in wills and on the Chester Zoo Giving Tree, and to those who wish to remain anonymous: you're incredible.

Our corporate adopters, 51 Sustainable Palm Oil City Champions and our innovative corporate participators.





Financial Review 2019

The year ended 31st December 2019 was a record year for The North of England Zoological Society (the Society) in terms of zoo visitor numbers, income and expenditure on our charitable activities.

Our underlying income rose to £47.4m (2018: £44.3m) whilst underlying expenditure rose to £43.4m (2018: £40.9m). These figures exclude exceptional income of £7.7m receivable from insurers in respect of the Monsoon Forest fire (2018: £5.2m) and exceptional costs relating to the fire of £0.9m (2018: £5.5m).

Having taken account of the net £6.8m increase in funds in respect of these exceptional items the Society reported a £10.8m net increase in funds (2018: £3.0m increase in funds after a net expense of £0.4m relating to exceptional items).

Incoming resources

The bulk of the Society's income comes from the zoo's visitors and members, in the form of admissions and other charges. Visitor numbers reached a record 2,086,785 in 2019, up 6% from 1,969,768 in 2018 with over a third of those visits made by our members. Membership numbers increased by 14% to 129,483 (2018: 114,007) during the year.

Our winter Lanterns event attracted over 111,000 visitors and we welcomed 132,000 education visitors, more than 42,000 of whom visited the zoo free of charge during the winter months under an initiative launched in 2017.

Total visitor related income for 2019, which includes admission fees and membership income, rose by 9% to £30.6m (2018: £28.1m).

As a registered charity, the Society generates voluntary income from visitor donations, Gift Aid, animal adoptions, grants, legacies and other donations. Donations and Gift Aid on general admission was consistent with prior year at £2.9m (2018: £2.9m) reflecting a change in the mix of visitors, with an increasing proportion of visits from the growing membership. Fundraising income, which includes animal adoptions, grants, legacies and other donations fell slightly to £1.2m (2018: £1.3m).

The Society's trading subsidiary, Chester Zoo Enterprises Limited, which provides retail and food & beverage offerings across the zoo site had a turnover of £12.7m in 2019 (2018: £12.0m) which includes the first full year of trading for The Oakfield gastro pub which opened in July 2018.

Exceptional income of £7.7m reflects further income recoverable from insurers in relation to the fire in the Monsoon Forest building. Of this amount £3.6m relates to the reinstatement of the building itself (in addition to £5.2m recognised in 2018), £1.2m relates to contributions from insurers to cover the cost of constructing buildings to house animals displaced by the fire and £2.8m relates to compensation for loss of income and increased costs of working.

An analysis of the sources of 2019 underlying income is shown in the chart [opposite]:

Resources expended

In 2019 the Society spent £43.4m (2018: £40.9m), excluding capital expenditure and exceptional costs relating to the Monsoon Forest fire.

Resources expended on our charitable activities, including the costs of maintaining the animal and plant collection, the visitor facilities, science and education and our field conservation programmes, together with related support costs totalled £31.3m (2018: £29.7m). In addition we spent £0.4m (2018: £0.3m) generating our voluntary income.

Chester Zoo Enterprises Limited had costs of £11.8m (2018: £10.9m), excluding £0.7m of rents paid to the Society (2018: £0.7m), and it made an operating profit of £0.2m in 2019 (2018: £0.4m) which is donated to the Society.

By far the biggest element of expenditure (2019: £18.1m, 2018 £16.3m) relates to our employees and the cost continues

to be impacted by both increases in the number of employees and the ongoing increases to the national living wage. Our average Full Time Equivalent (FTE) headcount for 2019 rose to 618 from 579 in 2018. A third of these employees worked directly in support of the Society's charitable objectives, either with our animal and plant collection or in education, science and research. In addition we benefitted from the hard work of a team of over 200 passionate volunteers.

The chart [below right] shows an analysis of 2019 expenditure (excluding exceptional costs):

Exceptional costs in relation to the fire in the Monsoon Forest were £0.9m (2018: £5.6m) and reflect professional costs and reinstatement costs that are not covered by insurance. The comparative figure of £5.5m in 2018 included a £5.2m impairment charge in relation to elements of the building structure and its fixtures and fittings which were damaged in the fire.

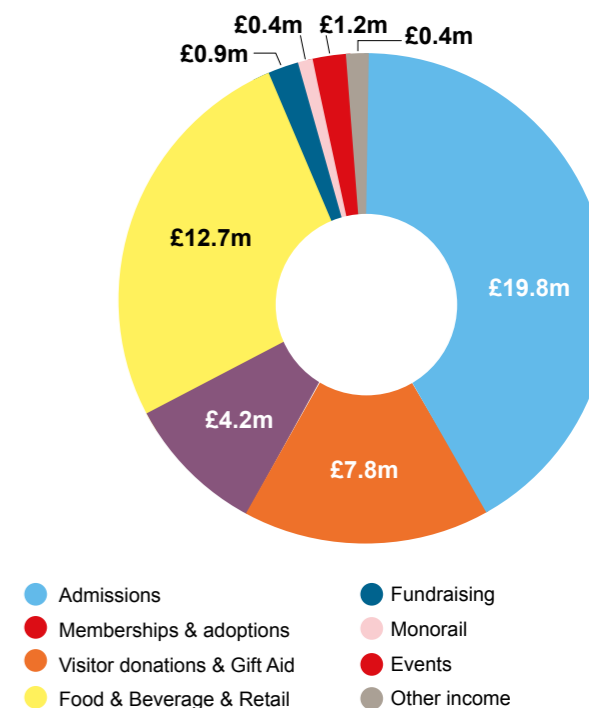
Capital expenditure

During 2019 the Society spent £20.4m on capital expenditure (2018: £10.4m). Of this £5.8m related to the rebuild of the Monsoon Forest and construction of buildings to house animals displaced by the fire. Other capital projects included the opening of our new Madagascar zone, completion of a new habitat for our Asiatic Lions, design and feasibility work on the Grasslands development, which received planning permission in late 2019. Construction of an off show facility that will allow for management and breeding of our collection ahead of the planned Grasslands development, construction of a new maintenance facility and investment in new IT systems.

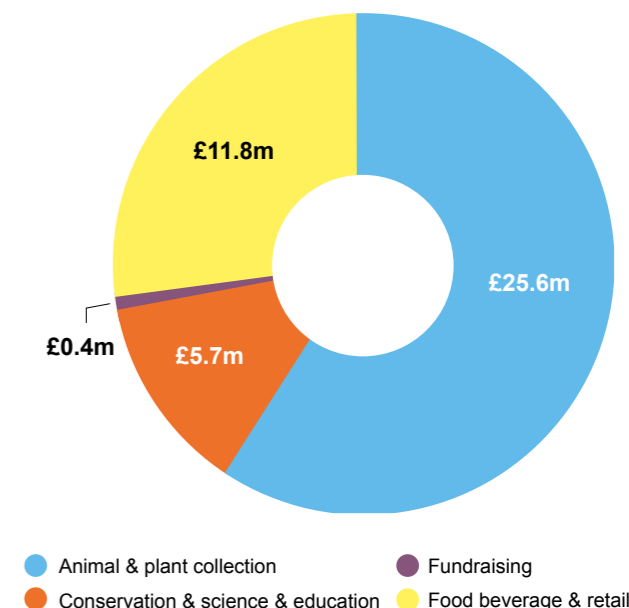
Borrowings, investments and reserves

At the end of 2019 the Society had borrowed £12.1m and had £4.8m of cash reserves, including £1.7m of cash reserves held in escrow for future funding of the defined benefit pension scheme which was closed to future accrual in 2012. At 31 December 2019 the Society had access to £7.9m of undrawn borrowings and £3.1m of cash reserves.

2019 Income



2019 Expenditure



Highlights of the year

JANUARY



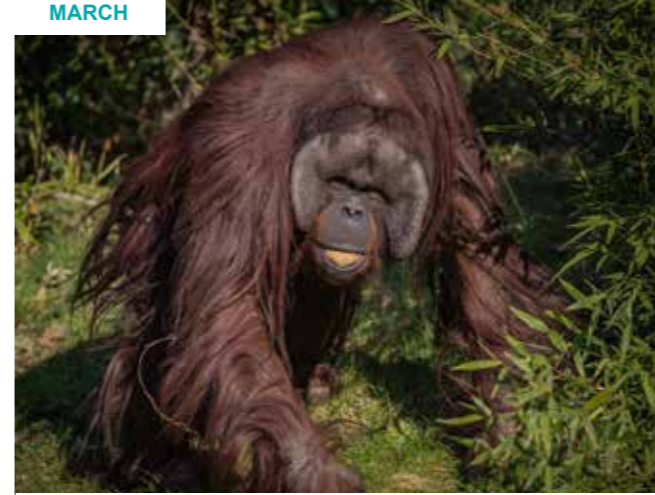
Two Socorro dove chicks – a species that was declared extinct in the wild in the 1970s – hatch at the zoo

FEBRUARY



The first colour camera trap footage ever recorded of giant pangolins in Uganda is captured by zoo researchers

MARCH



Chester is named the world's first Sustainable Palm Oil City, following a major zoo campaign

APRIL



The first dusky pademelon joey ever to be born at the zoo starts to peek out of its mum's pouch

MAY



A world first exhibition of robotic predators opens, showcasing over 200 million years of lost species

JUNE



Elephant calf Indali Hi Way makes a full recovery from EEHV, after receiving ground-breaking treatment

JULY



Star in stripes and spots! Staff celebrate the birth of an endangered Malayan tapir

AUGUST



Rare caterpillars, destined for release in parts of North West England where they have been extinct for a century, hatch

SEPTEMBER



Collared trogon chicks hatch in a world first after parents are rescued from illegal wildlife traders

OCTOBER



A pride of Asiatic lions – the world's rarest lion species – takes its first steps in a specially-created new home

NOVEMBER



A critically endangered Sumatran orangutan is born to mum, Subis

DECEMBER



Zoo announces record attendance figures with two million visitors recorded for the first time

Front cover: Cassowary

www.chesterzoo.org

Registered Charity Number 306077
Registered Company Number 287902

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