

**ZSL** | **LET'S WORK  
FOR WILDLIFE**



**ANNUAL  
REPORT AND  
ACCOUNTS  
2018-19**



Over  
**500**

volunteers support ZSL.  
Find out more about ZSL's supporters  
on [page 46](#).

**259**

professional staff and 434 community  
members were trained in wildlife  
monitoring techniques across Africa  
and Asia. For more about our wildlife  
monitoring, see [page 18](#).



**226**

tonnes of fishing nets were diverted  
from the ocean through our  
Net-Works™ project. For more on how  
we're promoting the sustainable use  
of resources, see [page 22](#).

**100**

Desertas wolf spiderlings hatched at  
ZSL Whipsnade Zoo, only the second  
time that the species has been bred  
in captivity anywhere in the world.  
Find out more about how ZSL is helping  
bring wildlife back from the brink  
on [page 12](#).





Over  
**500**

women participated in our 31 Soapbox Science events, which were attended by more than 50,000 people. Find out more about our public events on [page 30](#).

**331**

citizen scientists were trained to help with surveys along the River Thames. For more about our work on the Thames, turn to [page 20](#).



**85**

wildlife professionals were supported by our training this year. For more on our veterinary work, see [page 40](#).



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# Welcome

**The President and Director General of the Zoological Society of London introduce our review of May 2018 to April 2019.**



**T**he science is clear: unsustainable human consumption is pushing nature to the very brink. Our latest *Living Planet Report*, produced in collaboration with WWF, points to a 60% decline in global populations of vertebrate species in less than 50 years. Freshwater species, hit hardest of all, have suffered 76% losses. These statistics make grim reading. But there is hope – change is afoot. We are increasingly aware

of the problems facing our planet, as we have seen from the protests in London and across the globe this year; as a result, governments are starting to take note. In December 2018 the UK Government backed the Blue Belt Charter, drafted by the Great British Oceans Coalition (of which ZSL is a partner). The Charter plans to protect Ascension Island's marine habitat, meaning that more than half of the UK's waters are now protected; and on 1 May 2019, the UK Parliament declared a national climate emergency, placing the environment squarely at the top of the political agenda.

ZSL – with the support of over 500 volunteers, 100,000 members, Fellows and Patrons, and almost 80 donors – is on the case. We have enabled millions of people to get closer to wildlife through our Zoos for almost 200 years, with a multitude of scientific discoveries and conservation successes to our name. Our new strategy – focused on the

## **The most threatened species need us to act now if we are going to bring them back from the brink of extinction**

priorities of Wildlife and People; Wildlife Back from the Brink; and Wildlife Health – means we are committed to supporting the UN Sustainable Development Goals and enables us to influence the agenda so that, together, we can reverse those terrifying statistics in the coming century.

Positive relationships between wildlife and people are essential for the long-term success of all conservation. This year, our Zoos welcomed nearly two million visitors, including 150,000 school students, helping people to build lasting connections with wildlife and inspiring future generations to get involved in conservation. Our conservationists worked with communities in countries such as Nepal and Cameroon to empower people to take action, develop sustainable livelihoods and protect their wildlife. Our Living Planet Index was used to inform policymakers in 190 countries about our collective progress against the Aichi Biodiversity Targets set by the Convention on Biological Diversity.

*In April 2019 ZSL Whipsnade Zoo welcomed a new baby reticulated giraffe, born as part of the European Breeding Programme for the endangered species*



The most threatened species need us to act now if we are going to bring them back from the brink of extinction. The Mauritius kestrel, which numbered just six individuals in 1974, is now found in the hundreds. There are over 160 scimitar-horned oryx – classified as Extinct in the Wild in the 1990s – now living wild in Chad. This work is run by the Government of Chad, the Environment Agency of Abu Dhabi and the Sahara Conservation Fund; ZSL contributes essential wildlife monitoring and training. We stepped up our efforts to safeguard the angel shark, the world's second most threatened family of shark, to include Welsh waters. Our Zoos contributed to a reintroduction of northern bald ibis in Spain. And, through our EDGE of Existence programme, we supported 44 conservationists in 23 countries on their mission to protect the most Evolutionarily Distinct and Globally Endangered species; we also launched our first-ever EDGE list for sharks and rays, identifying the most important species for protection.

It is increasingly clear that the wellbeing of humans, domestic animals and wildlife is connected. Many infectious diseases in humans have originated in wildlife – Ebola, Zika, swine flu and bird flu – while humans have been responsible for the spread of pathogens and pollutants that have crippled wildlife populations. ZSL brings together vets, ecologists and biological scientists in one organisation and is uniquely positioned to take on this challenge. This year we brought the dire plight of killer whales

to the world's attention and advanced our research into amphibian chytridiomycosis, pinpointing the fungus's global spread to the 20th century and calling for stringent safeguards for the movement of animals.

Exciting times are ahead for ZSL. In 2019 we opened a new Aquarium at ZSL Whipsnade Zoo, immersing visitors in the secret world of freshwater fish and raising awareness of their conservation needs, and we continue to develop plans for a world-leading centre for wildlife health at our Regent's Park HQ. Everything we achieve would not be possible without the dedication of our people and supporters: thank you all for your continued support and commitment.

**Professor Sir John Beddington CMG, FRS**  
President, Zoological Society of London

**Dominic Jerney CVO,**  
OBE Director General,  
Zoological Society of London

# ZSL in focus

ZSL works all over the world, but here we focus on some of the most important and biodiverse locations in three key regions. We are committed to a long-term presence in these regions, in order to make a difference in the face of huge conservation challenges.

## UK

Founded in 1826, **ZSL London Zoo** is the world's oldest scientific zoo. Every year, over one million Londoners, visitors from the rest of the UK and international tourists walk through our gates, developing relationships with wildlife and learning about our conservation work. A history of immersive exhibits runs deep, from the opening of the first reptile house and first public aquarium in the 1800s to the creation of Europe's first walk-through spider enclosure in 2015. It is our ambition for ZSL London Zoo to be the world's most immersive and international zoo, an ambition complemented by the strength of ZSL's scientific base, particularly in wildlife health.

**ZSL Whipsnade Zoo** is the UK's largest zoo and offers visitors the chance to meet some of the world's biggest animals – elephants, rhinos, bears, tigers and giraffes. Large-scale enclosures and the picturesque setting of the Chilterns put outdoor adventure and authentic wildlife experiences at the heart of the Zoo, and our zookeepers are recognised for their breeding expertise – celebrating the births of Amur tigers, Asian elephants, giraffes and



Przewalski's horses in recent years, as well as contributing to conservation breeding and reintroduction programmes.

The **River Thames** was declared biologically dead in the 1950s but now, as a result of conservation efforts, the river's murky surface conceals a growing and diverse range of species. We lead projects throughout Greater London and the Thames Estuary that aim to improve habitat quality for the river's wild residents. Much of our work relies on the help of citizen scientist volunteers who help us monitor the mammals, invertebrates and fish living in the river, including the critically endangered European eel. We work with London's policymakers to ensure that protection of wildlife in the Thames remains high on the agenda, and that pollution mitigation measures are implemented and adhered to.



**ZSL LONDON  
ZOO**



**ZSL WHIPSNAD  
ZOO**



**RIVER  
THAMES**



**BENIN**

## AFRICA

The **W-Arly-Pendjari conservation complex**, spanning Benin, Niger and Burkino Faso, is the last intact savannah system in West Africa – the final stronghold in the region for lions, elephants, giraffes, cheetahs and other iconic species. The region is seeing rapid land-use and demographic change as industrialisation takes hold, and maintaining space for nature is vital. We are working alongside governments and local NGOs to strengthen ranger patrols, implement effective species-monitoring protocols and study the effects of climate change on key species.



We have been working in Kenya's **Tsavo Conservation Area** since the 1980s, alongside the Kenya Wildlife Service (KWS). The critically endangered black rhino was reduced to just 10 individuals in Tsavo by poaching but, with our help, the population is recovering; a fifth of Kenya's rhinos are now found there. Our work focuses on the monitoring of rhinos, providing equipment and training for KWS rangers and developing the area's infrastructure to improve water supply and firebreaks (find out more on page 16).

**Cameroon** is home to many incredible but threatened species, including gorillas, chimpanzees, pangolins, forest elephants and the West African manatee. We have been working there for more than 10 years, supporting the Government and local communities in sustainably managing the country's natural resources for the benefit of wildlife and people. We are currently focusing our work in the Dja conservation complex to the east and the Douala-Edéa landscape to the west, one of Africa's last remaining coastal wildlands.



## ASIA

The island nation of **Indonesia** is one of the most biodiverse on the planet. It is the last refuge of critically endangered Sumatran tigers, Javan and Sumatran rhinos and orangutans, and the unique Sumatran elephant. Sadly, it also has some of the highest rates of deforestation and plastic pollution in the world. Our efforts are focused on Sumatra, an island greatly affected by Indonesia's social and economic boom. We are working with Indonesia's national and provincial governments and with communities and businesses to build wildlife corridors, monitor the health of ecosystems and promote sustainable resource management.

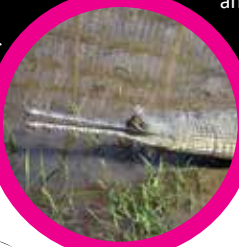
**Nepal** is a country rich in biodiversity, home to greater one-horned rhinos, Bengal tigers, the rare gharial and the critically endangered Chinese pangolin, but its wildlife faces sustained pressure from a growing human population and human-wildlife conflict. Alongside Nepal's Government and local partners, we are working on projects aimed at protecting biodiversity, linking up wildlife hotspots across the Terai Arc landscape and supporting local people's livelihoods.

Current predictions for plastic pollution and overfishing estimate there will be one tonne of plastic for every three tonnes of fish in the ocean by 2025. There is perhaps nowhere more important to reverse this trend than island nations like **the Philippines**, where a reliance on fishing and coastal habitats for food security and coastal protection is high. We are working with communities to strengthen sustainable income sources and to designate community-managed marine protected areas (MPAs) that give fish stocks time to recover and coastal people a sustainable future.

## CAMEROON



## NEPAL



## INDONESIA



## PHILIPPINES



## KENYA

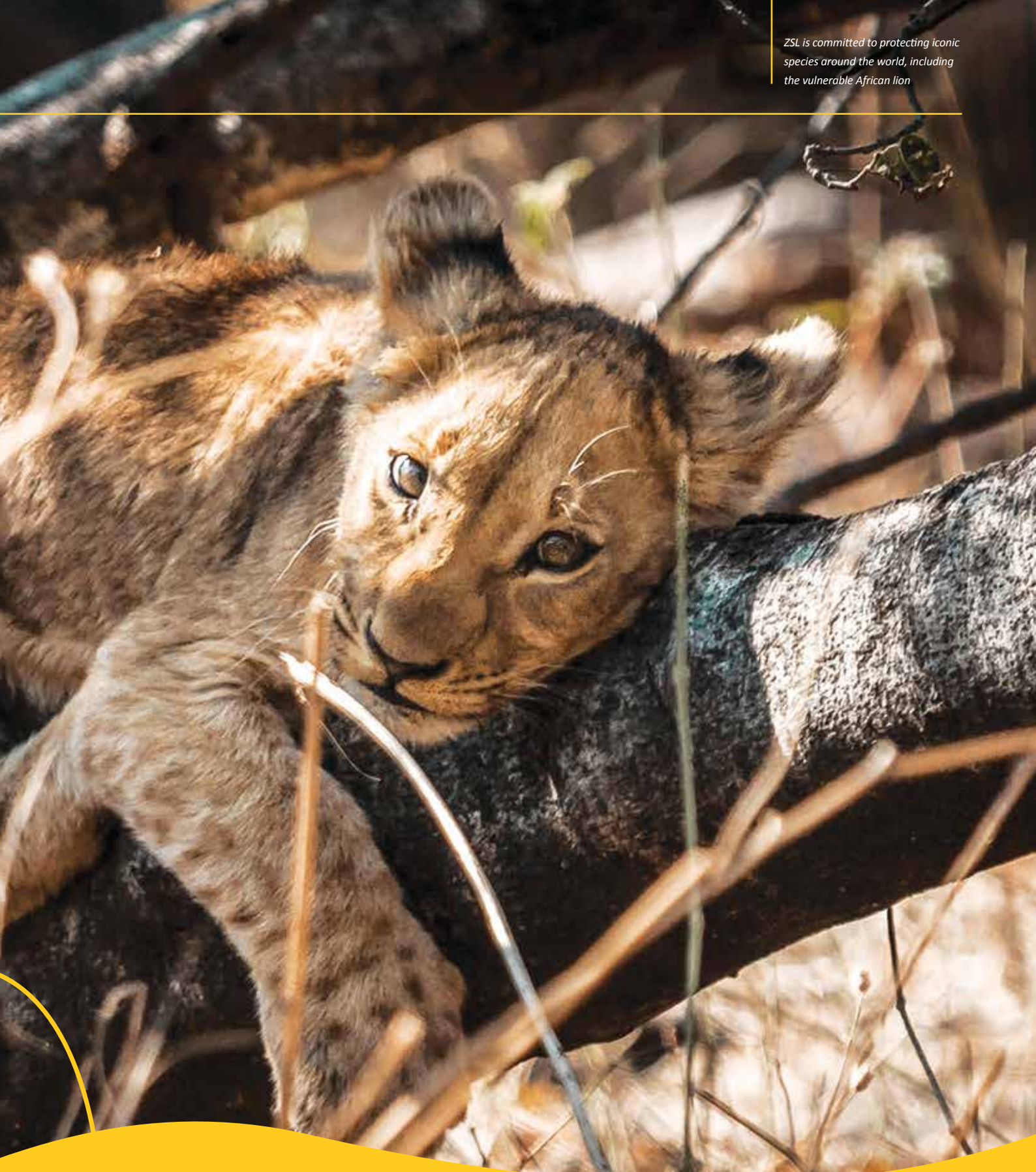


Our **vision** is a world where wildlife thrives.

Our **purpose** is to inspire, inform and empower people to stop wild animals going extinct.

**ZSL  
200**





## Our Royal Charter

ZSL's core aims, as set out in its Charter, are:

The advancement of zoology by, among other things, the conducting of scientific research, the promoting of conservation of biological diversity and the welfare of animals, the care for and breeding of endangered and other species, the fostering of public interest, the improvement and dissemination of zoological knowledge, and participation in conservation worldwide.

In shaping our aims for the year and planning our activities, ZSL's Trustees have considered the Charity Commission's guidance on public benefit and fee charging. Initiatives include educational visits at heavily discounted prices, free visits as part of the junior citizen initiative and Special Children's Days at discounted prices. We also fund and run a world-renowned zoological library, with open access at no charge.

**A**

lmost 200 years ago, we began life as the world's first scientific Zoo. Today, we continue to put science at the heart of what we do, through our world-class research, Zoos, conservation and education.

We inspire millions to work for wildlife, in ways big or small, through our two Zoos. We conduct groundbreaking research that helps us change wildlife

policy for the better. And we carry out conservation in countries around the world where animals need it most, collecting data and supporting rangers to ensure their protection.

In 2018 we launched our new strategy – ZSL 200 – which will define us and the way we work for the years to come. We will use the UN Sustainable Development Goals to measure our progress, with particular focus on Life Below Water and Life On Land, and we have identified three key areas where our knowledge, experience and expertise can make the biggest difference for wildlife.

**We inspire millions to work for wildlife, in ways big or small, through our two Zoos. We conduct groundbreaking research that helps us change wildlife policy for the better**



### Wildlife Back from the Brink

The illegal wildlife trade is consuming our world's most iconic wild species faster than they reproduce. Habitat loss is shrinking the space for animals to occupy. Climate change, pollution and over-exploitation of resources are having a catastrophic effect on our underwater wildlife.

For many species, the clock is already ticking, and our intervention is vital to prevent these animals being lost forever. We will focus on the species most critically in need and find the most appropriate interventions – from reintroductions to habitat protection – using scientific research to continually improve the effectiveness of our work and our Zoos to draw attention to and safeguard species.



### Wildlife & People

A reliance on mass production and a shift towards urban environments are resulting in an increasing disconnect with the natural world on which we depend. Rising population and consumption is putting pressure on our planet's support systems. Unsustainable use of resources is destroying habitat and jeopardising the livelihoods of many rural communities.

Human and wildlife coexistence is crucial to a sustainable, healthy world. Our focus will be on bringing people and wildlife closer through our Zoos, implementing and promoting sustainable use of the world's resources and creating ways for animals and people living side by side to share resources.



### Wildlife Health

Populations of amphibians are being ravaged by chytrid fungus. Pollution is pushing freshwater and marine species to the edge of extinction. Increased human movement is bringing animals and people into contact more than ever, and new diseases are emerging that can cause real damage to both wildlife and humans.

Our experts in veterinary medicine, ecology, biology and zoological husbandry allow us to assess and develop solutions to conservation issues in a holistic manner. We will identify and study the diseases that threaten wildlife conservation, increase our understanding of how they are spread, increase the number of wildlife health professionals globally and address wildlife health issues in the field.



*Below: Zookeepers working to save the extinct-in-the-wild Partula snail. Bottom: Our work to protect endangered species such as the Asian one-horned rhino is as vital as ever*

## **The Trustees present their Annual Report and Accounts of the charity for the year to 30 April 2019.**

The financial statements have been prepared in accordance with the accounting policies set out in note 1 of the accounts and comply with the charity's Charter and Byelaws, the Charities Act 2011 and Accounting and Reporting by Charities: Statement of Recommended Practice applicable to charities preparing their accounts in accordance with the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS 102), published on 16 July 2014.

The financial statements have been prepared to give a 'true and fair' view and have departed from the Charities (Accounts and Reports) Regulations 2008 only to the extent required to provide a 'true and fair' view. This departure has involved following Accounting and Reporting by Charities preparing their accounts in accordance with FRS 102 rather than the Accounting and Reporting by Charities: Statement of Recommended Practice effective from 1 April 2005, which has since been withdrawn.



# Wildlife back from the brink

With the loss of habitats worldwide and a continued decline in the numbers of many species, we focus our attention on rescuing the most threatened wildlife from the edge of extinction.





**161**

scimitar-horned oryx are now living wild in Chad. ZSL is participating in the reintroduction and contributed animals to the breeding herd from our group at ZSL Whipsnade Zoo

**T**ime is running out for many species – this was made clear in the *Living Planet Report* we published last year with WWF. Globally, populations of vertebrate species have, on average, declined by 60% in less than 50 years. Freshwater species populations have suffered a 76% decline, an average loss almost double that of land and marine species. It painted a sobering picture of the impact of human activity on the world’s wildlife, forests, oceans, rivers and climate, underlining the rapidly closing window for action and the urgent need for the global community to collectively rethink and redefine how we value, protect and restore nature.

### Safeguarding key landscapes

Habitat loss is the single greatest threat to wildlife and we – humans – are, more often than not, the driver. Protecting large habitats is crucial to preventing the extinction of the species that rely on them, but this is only possible through partnerships that bring together communities and organisations that have an interest in the area. We’re extremely proud of the partnerships we’ve built across the world – with governments, businesses, academia and other NGOs – and we draw on our expertise to help people take charge of the protection of their own wildlife.

Collaboration is particularly important for far-ranging species that move between conservation areas and across national boundaries. We lead on a project to protect two such predators, the African wild dog and cheetah, which has brought together 18 countries across Africa to establish range-wide conservation plans. This year we developed species action plans for Botswana, Zimbabwe and Zambia – all endorsed by the countries’ governments – and continued training national coordinators to oversee the creation of corridors between key habitats. We have taken a similar transboundary approach to the protection of tigers across India and Nepal’s Terai Arc Landscape (see page 24), and CITES will be rolling out this model for the conservation of other African carnivores. The Terai landscape of India and Nepal spans national boundaries, and here we work with governments, communities and local partners to secure and connect core tiger areas and help the people who live among them to thrive alongside wildlife.

In the W-Arly-Pendjari (WAP) Complex – a transboundary area spanning Benin, Niger and Burkina Faso – we worked with Panthera to establish a large carnivore monitoring plan to assess the numbers of remaining leopards, cheetahs, lions and hyenas. Meanwhile, in Mongolia, we are working with local herders to monitor four target species – the Siberian marmot, musk deer, saker falcon and steppe eagle – to understand the impact of a protected area, and we worked with rangers in the Gobi Desert to launch the largest and most robust Bactrian camel survey to date.



### This year we launched our EDGE Sharks and Rays list, an important initiative that gives a voice to those species that might otherwise silently disappear, and that marks the start of new projects to conserve them

In Cameroon, our monitoring team worked alongside the country’s Ministry of Forests and Wildlife to complete a wildlife inventory of the entire Dja Faunal Reserve, building population estimates of chimpanzees, gorillas, elephants, arboreal primates and several ungulates. We also conducted surveys of two of Cameroon’s biggest fish markets and identified 1,191 elasmobranchs – sharks, skates and rays. The results provide some of the first data on elasmobranchs in Cameroon and confirm the coastline is a key habitat for these marine and estuarine species.

The British Indian Ocean Territory protected area covers 640,000km<sup>2</sup> in the Indian Ocean, including the Chagos Archipelago, making it one of the largest and most remote marine protected areas in the world. We coordinate a team of 66 researchers plus 19 PhD students from 14 institutions studying sharks, seabirds, turtles and coral reefs in this unique environment, and in 2018 we continued our work to tag and collect DNA samples from sharks, seabirds and tuna. Their data helps us understand how different species use the protected area, the roles they play in the functional connectivity of the ecosystem and what management activities are most effective in relieving the pressures they face, such as increasing our illegal fishing prevention work or restoring islands to make them suitable for seabirds.

### Species on the EDGE

With limited resources and time, choosing which species to focus our attention on is a hard decision for

MICHAELJ SEALEY

We developed an acoustic tag for angel sharks; and (opposite) working with another EDGE species, the giant anteater, in Brazil

# 44

projects were supported by EDGE, and we provided training to 28 Fellows from 18 countries

# 40 million

people were reached by the Angel Shark Project: Wales launch, which generated £450,000 in EAV (Equivalent Advertising Value)

# How we conserve wildlife

Moses Wekesa describes his duties as Tsavo West Field Manager in Kenya.



“I’ve been working in Tsavo West National Park, home to over 20% of Kenya’s critically endangered black rhinos, for many years. My team of four drivers and one mechanic supports the Kenya Wildlife Service (KWS); we ensure they can go out on patrol and safeguard the black rhinos in the park. Before joining ZSL I was a park ranger myself in another area of Tsavo, and I am currently studying for a master’s degree in wildlife health management at the University of Nairobi.



I help with the operations and logistics at Tsavo West – driving the rangers and the rhino monitors, and delivering water and equipment – and work closely with the KWS platoon commander to identify the needs of their team. I also help with community relations, engaging with local chiefs and forging a working relationship. We aim to empower people to support conservation and build capacity for alternative livelihoods, so they’re not so dependent on national park resources.

It’s great to get involved with new technology, and we guide KWS on how

to use SMART, which helps us analyse the ranger patrol efforts, as well as other field data. We also fitted rhinos in the unfenced Intensive Protection Zone with transmitters to help the monitoring team track them every day across the vast landscape and in the

thick bush. I oversee the teams, ensuring the equipment we’ve provided is working well, and replacing it if needed.

The annual rhino night census is an important way of collecting data on Tsavo West’s rhinos.

We do the census during the dry season, when all the natural waterholes are empty, so the animals are dependent on artificially supplied water in the sanctuary. As we can

animals. For four consecutive nights in the months of August, September and

October, during the full moon, a team sits around the waterholes and counts each rhino that comes to sip that water.

This number of black rhinos is growing and we often see new births. The fact that we’ve had births and haven’t seen any unnatural deaths in recent times tells us that we’re doing our job right.

Over the past two years, we’ve had zero rhino poaching in Tsavo West. This is something each one of us is really proud of. We also know a lot more about the wildlife species we monitor, especially the black rhino. Our data is expertly managed, and we now have a very deep understanding of the black rhino in terms of individual identification, distribution, health and behaviour. The best parts of my job are when our relationships with our

## Over the past two years, we’ve had zero rhino poaching in Tsavo West – something each one of us is really proud of

guarantee these are the only water points, we’re sure the rhinos will come to drink at night, as they are water-dependent

partners and the communities are running smoothly, and of course it’s always exciting to see new rhino calves.”





► conservationists. Our EDGE of Existence programme combines the International Union for Conservation of Nature (IUCN) Red List with the tree of life, to define the most Evolutionarily Distinct and Globally Endangered (EDGE) species that require conservation attention. This year we launched our EDGE Sharks and Rays list. Sharks and rays are some of the oldest and most threatened species on our planet, facing massive pressures from factors such as overfishing and pollution. This important initiative gives a voice to those species that might otherwise silently disappear, and marks the start of new projects to conserve them.

Through our EDGE programme, we also give financial support and training to EDGE Fellows: in-country, early-career conservationists championing those species we have identified as most in need. This year we supported more than 40 Fellows, and highlights of their work included re-establishing breeding populations of the critically endangered El Rincon stream frog in Argentina, and obtaining the very first GPS tracking data on the movements of the pygmy sloth in Panama. And for the first time we have awarded three EDGE Fellowships on a single species – the gharial – which is benefiting from our full range of skills in husbandry, research and conservation.

We were also able to scale up our efforts to protect the critically endangered angelshark this year; ranked fifth on our EDGE Sharks and Rays list. The Angel Shark Project's Canary Islands team, a collaboration of three organisations, conducted surveys of 18 beaches, confirming at least two nursery areas, and made eight key recommendations to the islands' governments for their protection. We developed an acoustic tag suitable for the angelshark, tagging 24 of them in a marine reserve north of Lanzarote and observing a breeding aggregation of over 100 angelsharks during fieldwork – a first for the project. The acoustic data will



be collected in November 2019 and will tell us how the angelshark uses its habitat throughout the year. In an effort to better understand the remaining angelsharks in our own waters, we also launched the Angel Shark Project: Wales with Natural Resources Wales. During our work with fishers and a community roadshow in five key areas, we collected almost 1,500 historic sightings and 69 recent sightings; vital data on where they might persist.

### New solutions to old challenges

Monitoring animals in challenging habitats has been an age-old problem for conservationists, but technology is offering new solutions. We have been working to reintroduce the hihi to New Zealand since 2004, but monitoring the success of a small bird with a preference for remote, pristine forest has always proved difficult. Newly developed software, paired with listening devices placed discreetly in their habitat, is allowing us to eavesdrop on the birds without physically entering and disturbing their environment. The technology has exciting implications for other difficult-to-monitor threatened species.

Monitoring can be a very costly process, particularly for marine species. Off-the-shelf tracking tags are expensive, and the nature of the habitat means there is every chance the technology will not be recovered. It is an extra hurdle for conservationists, when every penny can count in the preservation of a species, and often limits the scale of monitoring projects. With key partner the Arribada Initiative, we are working alongside collaborators to develop an open-source GPS tag for pelagic marine animals that could cut the costs tenfold and allow conservationists to monitor much larger populations. Our initial prototype, with Bluetooth connectivity, accelerometer, gyroscope, temperature and pressure sensors, was deployed on 30 green sea turtles across Cyprus and Guinea-Bissau, and funding has been secured for further development



**black rhinos were poached last year in Tsavo West National Park, Kenya, for the second year running**



**78,029km**  
were patrolled by foot in Tsavo West, double last year's effort

**51**  
individuals suspected of committing a wildlife crime were prosecuted this year, partially as a result of ZSL support

We work with governments and law enforcement agencies across Asia and Africa to help them improve the management effectiveness of protected areas – for example, by supporting rangers with training and field equipment



of the software platform and a cellular or satellite communication function.

Thinking SMART, tackling crime

The illegal wildlife trade is driving hundreds of species to extinction. Examples include corals, eels, pangolins and songbirds, as well as icons like elephants, rhinos, great apes and tigers. The industry is increasingly organised and well-armed, making it crucial that we focus our resources on hotspots of illegal activity.



One of the ways we do this is through patrol-based monitoring systems like SMART. Together with eight conservation and technology partners, we developed the Spatial Monitoring and Reporting Tool in 2011. Rangers log data from the field as they patrol, via an app on a smartphone or tablet, which feeds into centrally managed software that builds a landscape-wide picture of animal and human activity – enabling park managers to more effectively target resources. The results of patrol-based monitoring can be huge for conservation, leading to the dismantling of poacher camps and detention of intruders, the removal of snares and, in the case of Kenya’s Tsavo West, contributing to zero cases of rhino poaching for two years running.

Now in its sixth iteration, SMART continues to be employed along with other patrol-based monitoring systems across sites in Kenya, Cameroon, Indonesia, Thailand, Nepal, India and Russia. SMART take-up by protected areas has more than doubled across Asia, and we have put initial plans in place to establish the tool in Mongolia. SMART is now fully implemented by the public sector in South Sumatra, Indonesia, and is being used by 17 palm oil and forestry companies. In Cameroon, we have extended SMART monitoring into the Kom and Mengame Wildlife Complex and Boumba Bek National Park, and successfully lobbied the country to adopt SMART as its official patrol-based tool – ensuring its long-term implementation through national wildlife and forestry colleges. In Kenya, we support SMART in 21 sites across key conservation areas, exceeding 43,000km². This year we plan to extend training to support the use of SMART across the border into Ethiopia for the first time. The

tool also helps us to collect vital monitoring data on black rhinos in Tsavo West, one of the sites under our Rhino Impact Investment project (see page 16).

Aside from SMART, we also work with governments and law enforcement agencies across Asia and Africa to combat wildlife trafficking. This involves training rangers in law enforcement strategies, working with judicial authorities to improve the success rates of prosecution for wildlife crimes, providing field equipment to keep rangers effective and mobile or, in the case of Mongolia, building a partnership between the UK Border Force and Mongolian law enforcement to improve training of front-line officers and sniffer dogs at borders. This year our scientists drew attention to some lesser-known victims of wildlife trade – tarantulas – through the media, and we are working on a global assessment of spiders to build a better picture of how the pet trade has impacted their abundance.

Protecting Asia’s biggest cat

Numbers of Asia’s most iconic big cat, the tiger, have plummeted from an estimated 100,000 a century ago to fewer than 4,000 now – the victim of habitat loss and the illegal trade in its skin, bones and organs. We work in Nepal, India, Thailand, Russia and Indonesia to ensure that the population drops no lower, and this year we were delighted to have contributed to the doubling of Nepal’s tiger numbers in the last decade.

In our key landscapes in Indonesia and Russia – Berbak Sembilang National Park and Lazovsky Zapovednik State Nature Reserve – we completed tiger monitoring surveys using camera traps that estimate individual tiger numbers at 32 and 26 respectively. In the context of around 400 Sumatran tigers and 500 Amur tigers remaining in the wild today, the results make these areas hugely important for these subspecies.



## SMART thinking

# 170

intruders were detained as a result of SMART technology

# 83,478km<sup>2</sup>

of protected area are under SMART monitoring (a 160% increase on last year)

# 2,979

snares and traps were removed in Africa and Asia as a result of SMART technology

# 178

areas where staff are trained in SMART or using SMART techniques to monitor wildlife



# 142

tigers were identified in the six protected areas where we work in the Terai landscape of Nepal and India

In Thailand we work in a cluster of protected areas forming the southernmost part of the Western Forest Complex (WEFCOM), spanning the Thai-Myanmar border and one of the largest remaining forest blocks in South-east Asia. Since 2013 we have supported Thailand's Government in its monitoring and management of the area, conducting camera trap surveys and providing training to park rangers. The area has been almost devoid of tigers in recent decades, perhaps due to human disturbance and lack of prey, and we were delighted to record five new tigers this year. We have identified a number of wildlife corridors to the wider WEFCOM landscape and Thailand's largest population, so further immigration is entirely possible.

**Restoring lost species**

For some species, habitat interventions and improvements to protection are no longer enough. In such cases, our Zoos safeguard species and offer hope of a return to the wild. In 2016, the Government of Chad and the Environment Agency of Abu Dhabi launched a groundbreaking reintroduction programme for the scimitar-horned oryx in Chad's Ouadi Rimé-Ouadi Achim Faunal Reserve – having been classified as Extinct in the Wild two decades ago. We contributed oryx to help form a breeding herd, helped the Sahara Conservation Fund identify the reintroduction site, and have continued supporting monitoring of the oryx post-release. This year, we are pleased to report that more than 160 wild scimitar-horned oryx are living and breeding successfully in Chad. More reintroductions are planned until the herd reaches 500 individuals, and we are training Chadian rangers in field monitoring to ensure the project's long-term success.

Our zoological expertise is also proving invaluable in the restoration of several species. In Nepal, our reptile keepers are working with Chitwan's gharial breeding centre to improve husbandry and breeding techniques, feeding into a wider project to understand the threats facing the critically endangered crocodylian and improve reintroduction success. ZSL London Zoo has also been part of a project to reintroduce the northern ibis – recently improved to Endangered – and, in February 2019, sent four birds to Spain to join birds from other zoos. Meanwhile, bird keepers from ZSL have travelled to Mauritius for two years running to help hand-rear kestrel chicks and prepare them for release into the wild. Our researchers have been working with the Mauritian Wildlife Foundation for over 20 years to help restore and monitor the Mauritius kestrel.

**Raising the profile of threatened species**

Our Zoos also present the opportunity to raise the profile of vulnerable, lesser-known species. Our collection contains many extinct-in-the-wild, critically endangered and endangered species, enabling us to share their story, and the problems they face, with the public – not just visitors to our Zoos, but also the wider society through our communications reach.

In 2019 we opened a new Chinese giant salamander exhibit at ZSL London Zoo, rehoming four salamanders



confiscated by the UK Border Force. The Chinese giant salamander is the world's largest amphibian, but one of the most threatened, classified as Critically Endangered and ranked second on our EDGE

Amphibians list. The opening attracted national press coverage, drawing attention to historic over-exploitation of the species for food and the consequent problems with disease and genetic dilution now facing remaining wild Chinese giant salamanders.

Work also began this year on our new Aquarium at ZSL Whipsnade Zoo, which will share the survival challenges facing freshwater fish (see page 26).

**Surveying London's waterways**

The artery flowing through the heart of London, the River Thames is not only a busy urban waterway, but is also home to a fascinating and often unexpected array of wildlife. Since 2004, we have been working with partners and volunteers on a range of projects aiming to understand and further improve the ecology of the Thames Estuary and the wider river catchment.

In July 2018 we conducted our first seal breeding survey of the Greater Thames Estuary; combined with our annual seal population surveys, we can build a more detailed picture of seal population changes and push for the protection of key habitat. We continued our monitoring of critically endangered European eels along the Thames and its tributaries, installing new eel passes at Dorking Gauging Weir and Wilderness Weir and taking our total of additional habitat opened up for eels to 1.37km<sup>2</sup> since the project began.

All  
**16**

species of  
freshwater eel  
were reassessed  
for the IUCN  
Red List by the  
Anguillid Eel  
Specialist Group –  
hosted by ZSL

Clockwise from below: Our staff and volunteers continue to put their efforts into conservation work on the River Thames; one of the fish now populating the

river; we've recently helped to reintroduce the northern bald ibis to Spain; Chinese giant salamanders are among the world's most threatened amphibians

## What's next?



### Influencing policy

Our position as a politically neutral, science-based conservation agency has given us a great track record in providing governments and businesses with the information and unbiased advice needed to help shape policy affecting wildlife conservation. Our Policy Leadership Group works to identify ways in which our research and experience can influence policy, and will be contributing to discussions of key objectives in the build-up to the 15th Convention on Biological Diversity in Beijing next year. We will also be attending the 18th CITES Conference of the Parties, contributing to the targets set as part of the new UK Environment Act and maintaining pressure on the EU Council to implement an EU-wide ivory ban.

In March 2019 we hosted and co-organised a workshop alongside Defra and Cefas on cetacean bycatch (accidental capture). Bringing together voices from across fishing, academia, science and technology, the workshop was an important step in our efforts to prevent cetacean bycatch, and will feed into a government report on the issue as well as shaping future policy on the monitoring and prevention of cetacean bycatch in the UK.

### Protecting Africa's unique wildlife

We opened applications for the next EDGE Fellowships in Africa in March 2019, and in the coming year we will be choosing and supporting up to 15 candidates across the continent through the scheme. We will also be recruiting a Regional Project Manager to support our Fellows across Africa – completing our global support network

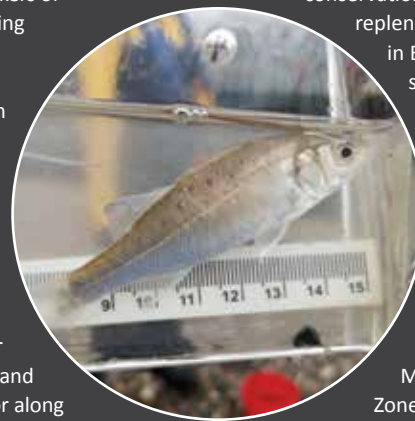
for Fellows across Latin America, Asia and Africa.

### State of the Thames

Declared biologically dead in the 1950s, the River Thames is now a hub of life thanks to dedicated conservation efforts – and a shining example of how wildlife can be brought back from the brink. In 2020 we will publish a report on the status of the Thames in how it has changed over those 60 years.

Identifying the key markers of a healthy river habitat, using evidence and statistics gathered from 15 nature conservation and research organisations, our *State of the Thames Report* will enable us and our partners to demand action and commitments from the UK Government, business and industry – from water quality to development – and communities working in or along the river to protect the Thames.

Throughout 2019/20 we will also be inviting Londoners to get involved in our Mother Thames campaign, from helping us to monitor wildlife in the Thames to simply buying a reusable drinking bottle.



### Restoring native oysters

Further out into the Thames Outer Estuary, we are also working on a project to restore lost oyster beds – the most endangered marine habitat in Europe. Historic overfishing was largely responsible for their decline, but pollution and infection from parasites are also issues. We chair the Essex Native Oyster Restoration Initiative (ENORI), a collaboration between oystermen, academia, local government and conservationists, which aims to

replenish native oyster beds in Essex and contribute to self-sustaining native oyster populations throughout the UK.

In 2018 we began planning to reintroduce adult *Ostrea edulis* to the Blackwater, Crouch, Roach and Colne Estuaries Marine Conservation Zone in Essex. In total, approximately 11,000 oysters

will be added to the restoration zone from May 2019, as well as 400m<sup>3</sup> of cultch – empty oyster shells, collected from Mersea Island in Essex and Borough Market in London – for oyster larvae to settle on.

**Declared biologically dead in the 1950s, the River Thames is now a hub of life thanks to dedicated conservation efforts**

# Wildlife and people

We bring wildlife and people together,  
building relationships that last and  
promoting sustainable use of resources for  
the benefit of both animals and humans.

# 1,855,759

visitors to our Zoos this year



# 153,851

students visited our Zoos for a school visit,  
and 60,201 of those students took part in an  
additional educational workshop



It is an enormous challenge to create a world where wildlife thrives, not least because humans share that world. We all depend on the same resources, but a rising human population and our increased consumption are placing unprecedented pressure on the planet’s ecosystems. Successful conservation projects that have a lasting impact require a sound understanding of the complex interdependencies between people and nature – and solutions that benefit everyone.

**Empowering communities to improve their livelihoods**

The depletion of the planet’s natural resources, increased pollution and climate change are often felt most sharply by poor and rural communities. These communities can also be caught in a cycle of unsustainable use, overusing depleted stocks of natural resources – whether forests or fisheries – while cut off from the wider economy which would allow them to break this cycle. We work with these communities to support development of community banks – helping people invest in more sustainable livelihood models – and community management of natural resources, including protected areas. These promote sustainable, resilient livelihoods and businesses, improve the lives of people living alongside wildlife and ultimately empower communities to protect their natural resources and wildlife.

In Indonesia, our KELOLA Sendang landscape project, in partnership with the government of South Sumatra, supports sustainable community livelihoods in 21 villages, mitigating the impacts of climate change on the local economy and ensuring the viability of key wildlife habitats.

Nepal’s population has doubled since 1980, and ever-greater demands for agriculture and natural resources are putting pressure on both people and wildlife. We are

working with communities across the Terai Arc Landscape (spanning Nepal and northern India) – home to the critically endangered gharial and endangered Bengal tiger, Asian one-horned rhino, Asian elephant and two species of pangolin – to ease the impact of farming and reduce instances of illegal wildlife trade. This involves promoting sustainable livelihoods, such as ecotourism or homestays; installing predator-proof corrals to reduce the likelihood of conflict between people and wild predators; setting up community banks; and building community fishponds around the protected area. We have trained and supported several anti-poaching units, made up of local people, to lead conservation efforts in the area.

Climate change has had a big impact on Mongolia, with temperatures rising at triple the global average rate, and a series of dry summers and cold winters has led to cattle-feed shortages – pushing squeezed rural communities to look for alternative income streams, such as poaching. In 2018 we established a community protected area in Arkhangai Aimag, central Mongolia, where we aim to improve people’s economic resilience. We held workshops on forest and pasture management, set up community banks, and have encouraged diversification of livelihoods into areas such as ecotourism and honey production.

For coastal communities in countries such as Mozambique, Cameroon and the Philippines, healthy fish stocks are paramount to the survival of both people and marine ecosystems. We work with villages to introduce community-managed protected areas that, crucially, give marine animals time to recover and ensure a long-term food source for people. In the Philippines we worked with communities to create two new marine protected areas totalling 16.2km<sup>2</sup>, which will benefit larger species with wider home ranges, such as sharks. We trained 45 river wardens – members of the community, many of whom are supported by the government or community banks we helped set up – to help protect 12 freshwater sanctuaries that provide habitat for freshwater eels and many other species.

Net-Works™, a project co-founded alongside carpet tile manufacturing company Interface, launched in the Philippines in 2012 and expanded into Cameroon in 2017. It has continued to deliver an alternative income stream through the collection of discarded nylon fishing nets (sold and recycled into nylon yarn by Econyl®) and, most recently in the Philippines, expanded to include the production of seaweed for carrageenan. Carrageenan, a seaweed extract used in food and cosmetic products, is expected to



187

community banks have been established around the world, from Mozambique to the Philippines



We work with communities in countries including Nepal (below) and Mozambique (left) to help promote

sustainable livelihoods and maintain healthy fish stocks; anti-poaching teams in Cameroon (bottom)



# 2,108km<sup>2</sup>

of buffer zones in Nepal is being managed by local communities, helped by ZSL

## 68

community-led anti-poaching units have been trained around Nepal's Chitwan National Park

## 87

predator-proof corrals have been built in Nepal





# How we connect people and wildlife

ZSL Whipsnade Zoo's new Aquarium opens this summer – Keeper Alex Cliffe explains how we're making it happen.

“**T**he new Aquarium will be the first ever at ZSL Whipsnade Zoo, as well as the first in the UK dedicated to conserving threatened and extinct-in-the-wild freshwater fish. It will showcase 10 of the planet's freshwater habitats. Just 1% of the world's water is fresh water, but nearly half of all fish species live in it. These fish often don't get the attention they deserve, but they'll tell you if a habitat is going to crash.

As well as a huge variety of threatened and extinct-in-the-wild fish, we're bringing in animals including crocodile lizards and tarantulas. Creating exhibits that bring together aquatic fish, reptiles and invertebrates, as well as geographically accurate plant life, takes a lot of planning, so we're working closely with other zookeepers and the horticulture team to bring it all together. You've got to make sure everything is right: the temperature, humidity, water chemistry, food, layout... You're creating a biome within that tank, right down to the essential bacteria that live in your tank filters.

One of the most challenging aspects is putting the life-support systems in place. The footprint for the life support is the same size as the exhibit. It holds the filters that get the tank clear, the pumps to keep

the water flowing around the exhibit, and the heating. There's also chilling, and ultraviolet sterilisation, which prevents the tanks getting murky. The big chambers with the filters in are living units, with billions of bacteria to keep the water clean.

Our Aquarium recreates natural habitats from around the world, providing a window into each one. We want to fly the flag for freshwater fish. If the fish go, they're one of the first species to show there's something wrong, whether that's pollution or an invasive species – and some are slipping away before our eyes. Freshwater habitats are among the most biodiverse ecosystems on Earth, but also the most threatened, by damming and draining of waterways, overfishing and pollution.

What we're doing at the Aquarium is linked to ZSL's conservation work in the wild. We created the Fish Net programme, which works with other zoos, aquariums and universities, to develop an aquarium-based management plan for threatened species. The new Aquarium houses 28 breeding groups that are essential to Fish Net's work, including five species thought to be extinct in the wild.

ZSL launched Fish Net in 2005, when researchers surveyed the habitats of the critically endangered Corfu killifish in the

streams and wetlands of western Greece and found far fewer of the fish than they had anticipated. This is in no way unique – populations of freshwater animals have fallen by an average of 83% since 1970. Fish Net now links local and international partners to protect freshwater habitats in Greece, Turkey and Madagascar, monitoring fish numbers and helping to repopulate suitable habitats. ZSL is also working with Derby University to research environmental DNA and the impacts of diurnal and seasonal cycles on aquatic microbes, linking this to fish health.

In 2013, a Fish Net expedition found the last wild Mangarahara cichlids in the pools of a dried-up riverbed in Madagascar. The project is now working with local communities and NGOs to sustainably manage ponds and rivers and establish back-up populations of these critically endangered fish.

It's important for keepers to visit these habitats in the wild and see how everything is connected. What we're doing in our Zoos can help conservation fieldwork. Our visitors need to understand what we're doing in the wild too, to bring home how important these habitats are. The new Aquarium will give an insight into the conservation work under way to rescue some fish species from the brink of extinction.”



▶ be a US\$1bn industry by 2021 and, produced sustainably, represents a real opportunity for communities to reduce their dependence on fisheries, support bigger, better MPAs and give marine ecosystems time to recover.

### Reducing demand for animal products

Demand for animal products often stems from cultural traditions that place medicinal or societal worth on the use of certain products; such is the case with pangolins, the world's most trafficked wild mammal. All eight species of pangolin are threatened with extinction, captured and consumed for their scales and meat. In China, one of the main hubs for the illegal trade in pangolins, we are working to develop a demand reduction campaign for pangolin products. We have been conducting research into consumer behaviour and in-depth interviews with traditional Chinese medicine practitioners to improve our understanding of why people use pangolin products. Our researchers spoke at a series of public events this year, called End Wildlife Crime in China, organised by the UK Foreign & Commonwealth Office.

### Mitigating human-wildlife conflict

Elephants are arguably the most prominent victims of the illegal wildlife trade, alongside rhinos, and we work to train and equip rangers in protected areas around the world to ensure their survival. However, unintended conflict with elephants is also a big problem that we want to address.

Thailand is home to around 10% of the world's remaining wild Asian elephants but, with much of their forest habitat lost or fragmented by agriculture, they are increasingly coming into conflict with people living nearby. Respectful of elephants, their national animal, local communities are nonetheless keen to have help with protecting their livelihoods. We work with three villages in western Thailand and have trialled several techniques to deter elephants,



including the set-up of formal elephant rapid response units, early-warning systems that alert communities when an elephant approaches crop fields, and the building of watchtowers. We have also supported and trained two members of the communities to collect information about incidents, so that we can build a better picture of the region's needs.

### Engaging with business

As well as working with rural communities, we believe it is important to engage with businesses to implement sustainable working practices that limit the negative impacts of human activity. In South Sumatra we continue to implement KELOLA Sendang, our largest-ever field conservation project. Designed to support the Sumatran Government's Green Growth Vision, the project aims to address the challenges of deforestation, peatland degradation and wildfires in an area that is home to half a million people, 30 agribusinesses (palm oil, timber, pulp and rubber) and around 38 critically endangered tigers. The project involves building sustainable livelihood models for 21 pilot villages, improving landscape management



More than  
**8,500**

people attended our Special Children's Day events at  
ZSL London and Whipsnade Zoos

The public loved events such as ZSL London Zoo's Special Children's Day (opposite), and our citizen scientists helped count and collect plastic bottles in the Thames

(below left). Visitors to ZSL Whipsnade Zoo enjoyed our bird displays (below) and watching the progress of our new-born Amur tiger cubs (below centre)



and working with businesses to implement sustainable production methods. So far, we have built relationships with businesses and communities that will lead to the restoration and protection of 3,000km<sup>2</sup> of rainforest; we have co-created land-use plans for 20 villages; signed agreements with 20 businesses; and trained almost 2,300 palm oil and rubber smallholders in sustainable management practices.

Unsustainable palm oil, timber and pulp production poses a huge threat to wildlife, contributing to the loss of valuable ancient rainforest and woodland. We put pressure on industry to improve its land management practices through SPOTT (Sustainability Policy Transparency Toolkit), expanded this year to assess 120 companies on the clarity of their policies and commitments to environmental, social and governance best practice. The resulting league tables, published annually, provide investors and buyers with a guide to industry transparency. The average score of palm oil companies was 48%, while timber and pulp companies came in at just 31%, showing just how much work is still needed to improve transparency and sustainability.

One of the ways we hope to change this is in Cameroon, by encouraging logging companies to adopt low-impact logging practices and apply practical measures for conserving great apes and other threatened species in their concessions. Our wildlife management toolkit has been integrated into the curriculum of national forestry colleges, and we increased our efforts by training 20 teachers in Cameroon's two post-secondary institutions with forestry programmes. We also work with PALLISCO, a private company with concessions buffering the Dja Biosphere Reserve, and trained their two wildlife teams in SMART monitoring.

We are also helping to uncover the damage done by plastic. This year we launched a new project in the British Indian Ocean Territory to investigate the impacts plastic might be having on turtle breeding, and it is the

responsibility of governments, organisations and individuals around the world to help reduce plastic waste.

In London, we continue to lead the charge against ocean plastic by stopping it at source. Our collaborative #OneLess campaign is transforming London into a city that no longer uses single-use plastic water bottles, which are one of the most common items of ocean plastic all around the world. This year we teamed up with the Mayor of London to launch a network of water fountains across the capital, making it easier for people to refill their water bottles. In partnership with Thames21, we are also working with over 200 citizen scientists to monitor plastic bottles in the Thames, and with businesses and attractions to find sustainable ways to keep Londoners hydrated. Our #OneLess pioneer network continues to grow, with over 50 organisations signed up and taking action against plastic, and media coverage has reached 11 million readers.

### Bringing people and wildlife closer

Our two Zoos give us an opportunity to share our work and build connections between people and wildlife in a way that is unique among conservation organisations. This year, more than 1.8 million visitors came to our Zoos, experiencing wildlife up-close, learning about the challenges animals face in the wild and the role they can play in wildlife conservation. Having experienced a tough year in 2017-18, ►

Over  
**801,600**

plastic water bottles have been potentially removed from the waste stream due to our #OneLess campaign

affected by poor weather and three UK terror incidents, the almost 13% increase in visitors across both Zoos this year was a positive boost. We welcomed a new female Amur tiger to ZSL Whipsnade Zoo and were happy when three cubs were born shortly after. Classified as Endangered, the cubs are an important addition to the conservation breeding programme.

As work continues at ZSL London Zoo on redevelopment of the Snowdon Aviary, we are working in the local community to make sure the most vulnerable benefit from the new exhibit. This year we hired two Community Engagement Officers and held several events, including a family art workshop, an eight-day volunteering project for young people with autistic spectrum conditions, and a Christmas party for Westminster Children’s Palliative Care team. Almost 800 people have had the opportunity to visit us as part of the programme so far, with a further 500 tickets distributed through the Family Holiday Association to families facing a range of challenges.

We also bring London’s residents closer to their local freshwater wildlife through our work on the River Thames. The project establishes a feeling of stewardship that we believe is essential for the long-term success of the UK’s wildlife, and data collected by trained citizen scientists is used to influence London’s regulatory and commercial decision-makers.

**Inspiring the next generation of conservationists**

We were delighted to help UK Environment Secretary Michael Gove launch the Year of Green Action – a year-long drive to get more people from all backgrounds involved in projects to improve the natural world. The event at ZSL London Zoo in January 2019 saw Michael Gove and ZSL pledge their support to the #iwillfornature initiative, a campaign aimed at making environmental activities, such as litter-picking or planting pollinator-friendly flowers, the norm for young people across the country.

Each year thousands of school students visit our Zoos and take part in educational programmes that feed into the national curriculum. This year we developed a new workshop for school children, ‘Plastics: Impacts and Actions’, which helped students appreciate the value of marine and freshwater ecosystems, the impact that single-use plastic has on wildlife and how they can make a positive change to help. Over 1,000 students have taken part in the workshop since its launch and signed our #OneLess pledge to reduce their reliance on single-use plastic.

We also took our message on the road this year, appearing at Camp Bestival in July to perform our *Gruesome Nature Live!* musical. The show, originally performed at ZSL London Zoo in 2017, was designed to engage children with wildlife by presenting the unusual, gory or unpleasant aspects of the natural world, and featured a new section about plastics in the ocean.

**Sharing knowledge**

Educating and training future conservation scientists is central to our work, and we provide teaching to a range of



**We launched the Year of Green Action to get more people from all backgrounds involved in projects to improve the natural world, including litter-picking and planting pollinator-friendly flowers**

veterinarians, zoologists, biologists and ecologists – from undergraduate placements to postgraduate degrees.

Our online conservation courses, run in partnership with United for Wildlife, gained another 4,000 learners this year. We also carried out the first phase of a new global training programme to professionalise conservation within protected areas, a collaboration with the National Geographic Society and the World Commission on Protected Areas that will involve eight online courses and face-to-face training.

We host around 60 PhD students, who produce high-quality research that makes a real difference to conservation and, alongside the Royal Veterinary College, we are the only organisation in Europe to offer three-year residencies in wildlife population health and zoo health management. The training programmes are co-run with the Royal Veterinary College, governed by the European College of Zoological Medicine.

ZSL’s experts also hit the road this year to take our research to new audiences. Soapbox Science gave a platform to more women scientists than ever before, with 31 events across the globe and in new countries including Sweden, Tanzania and the US. In July we exhibited at the Royal Society Summer Science Exhibition, giving 12,000 visitors and school children the opportunity to hear about how we monitor the status and behaviour of animals around the world, and throughout the year we held free science and conservation events for the public on subjects as wide-ranging as rewilding to marine plastic pollution. We even managed to take the expertise of our zookeepers and researchers global this year via Skype sessions during British Science Week and Biology Week. Reaching over 600 students as far afield as Glasgow, Geneva and the US, our Skype sessions gave students who could not otherwise visit our Zoos the opportunity to talk to our experts about wildlife-related careers.



60

**PhD students studied with us this year**

190

**MSc students studied with us this year**

## What's next?



### A home for wildlife

Our animals are at the heart of who we are and what we do, playing a vital role in conservation and allowing us to inspire so many. It's important that we remain clear and focused on the impacts our animals allow us to make, which is why we're working on a species planning tool to evaluate the role species play in our Zoos. The database will measure every species against our strategic impact areas, linking to the IUCN Red List and ZSL Projects Database, and help our curators make important decisions about the best species for us to have here at our Zoos.

### Animal Adventure is reborn

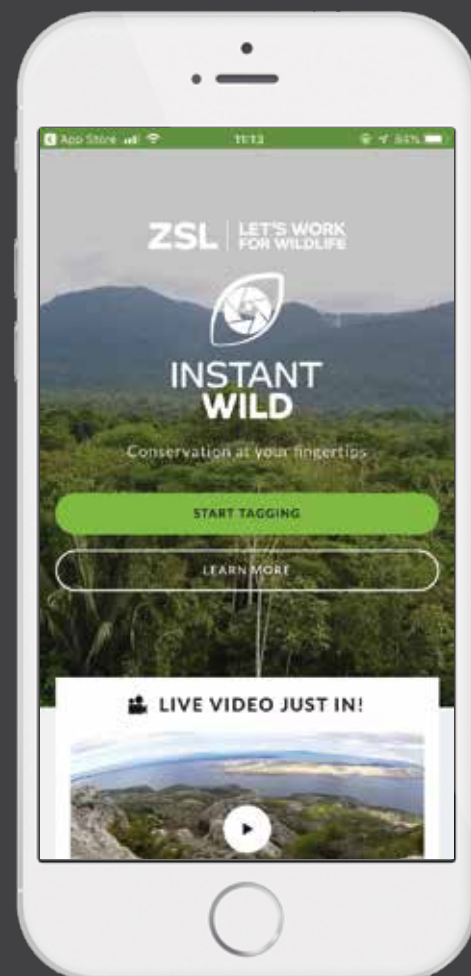
In summer 2019, ZSL London Zoo's new Animal Adventure area opened. The new exhibit replaces the area that was tragically destroyed by fire in 2017, and focuses on some of the epic journeys animals undertake throughout their lives – such as the llamas who help humans trek across the Andes, or the young meerkats setting out on their own to find a mate. Aimed at families, the new area brings visitors up-close with some of the natural world's amazing explorers and voyagers, and daily talks play a key role in bringing young visitors closer to wildlife. It also includes a play area and splash zone, café and picnic area, and changing facilities for children and adults with severe disabilities.

### Scaling up protection in the Philippines

As we turn to implementation of the two large MPAs in the Philippines (see page 24), we are also lobbying for the implementation of a further three.

### New conservation technology

In 2020 we will complete the redevelopment of two pieces of ZSL-designed technology – *Instant Wild* and *Instant Detect*. The *Instant Wild* app, which allows the public to help scientists identify species in images captured by camera traps, has been downloaded over 140,000 times since it was first launched in 2011. The new app will see it launched on Android (as well as Apple) with a much-improved interface, and we will continue to add new conservation projects and features. *Instant Detect 2.0*, our wildlife and threat monitoring system, has been completely upgraded to better equip it for use in the most demanding environments. The system allows the set-up of a network of camera traps and other sensors in remote areas with little or no infrastructure, and transmits images in near real-time to users anywhere in the world via satellite. The technology will help protected area managers respond to immediate threats – such as illegal human activity – and will be deployed in conservation sites across the globe.



# Wildlife health

Our scientists lead the way in identifying and mitigating diseases affecting species across the world.





Our research on amphibian chytridiomycosis is helping species such as the critically endangered

lemur leaf frog, whose population has fallen dramatically over the past decade



# 2,200

disease incident reports were received by Garden Wildlife Health this year

# Over 20

years of being at the forefront of research on amphibian chytridiomycosis



**D**isease does not respect borders. Infections and pollutants travel beyond their source locations, often fuelled by human activity – and they have become a global issue.

For over 20 years, we have been at the forefront of research on amphibian chytridiomycosis, a disease that has devastated amphibian populations globally. This year, for the first time, our research revealed the origins of the killer fungus behind the amphibian plague, pinpointing the source to East Asia and the spread to the past two centuries – coinciding with the industrial boom in international travel and trade.

The research, published in *Science*, is truly international, involving 38 institutions from around the world. It demonstrated that all known types of chytrid fungi that infect amphibians are present in the amphibian trade, explaining why the fungi are responsible for amphibian mass mortalities as far afield as Europe, Australia and the Americas. Our scientists are now leading the call, alongside several other wildlife conservation organisations, for the UK Government to impose tighter biosecurity across borders to ensure the survival of vulnerable species.

**Good news for the UK’s newts**

Our Garden Wildlife Health Project, a collaboration with multiple UK conservation charities, monitors disease trends in British garden wildlife using samples and reports submitted by the public. We were pleased to report this year that the UK’s wild newt population appears to be free from Bsal, a strain of chytrid fungus responsible for a 99% decline in a fire salamander population in the Netherlands and Belgium since 2010. Bsal is sadly widespread throughout the UK’s pet amphibian trade, and our researchers are urging private amphibian owners to enforce strict biosecurity measures to prevent an outbreak among wild newts.



The Garden Wildlife Health team also carries out post-mortem examinations on dead hedgehogs found by the public across Great Britain, as well as any found during the biannual hedgehog survey in London – with the most recent survey conducted earlier this year. ZSL London Zoo and the wider Regent’s Park are home to the only remaining population of hedgehogs in central London, and our science, veterinary and horticulture teams coordinate with Royal Parks to conduct the surveys



and provide support. Numbering just 30 individuals at the last count, this tiny hedgehog population is highly vulnerable to local extinction from factors such as disease and habitat change.

**Toxic waters**

Our announcement of the coming ‘killer whale apocalypse’, again in *Science*, received global news coverage. Research shows that current concentrations of polychlorinated

biphenyls (PCBs) – industrial chemicals banned across Europe in 1987 – in our oceans will lead to the crash of 10 of the world’s 19 known killer whale populations by 2070 unless governments increase international mitigation efforts.

The killer whale’s position as an apex predator means that they accrue the PCBs consumed by their prey and pass them down to their offspring through the mother’s milk. Our researchers have measured values as high as 1,300mg per kilo in the blubber of killer whales. To put that in context, studies show that animals with PCB levels as low as 50mg per kilo of tissue may show signs of infertility and a severely impacted immune system.

**Investigating zoonotic spillover**

Our work on wildlife health has wider relevance for human and domestic animal health, with an estimated three quarters of emerging infectious diseases that affect people originating from wildlife. Bats, in particular, have been implicated as a source of diseases that can cross over from wildlife to people. In collaboration with the University of Cambridge, the University of Ghana and others, we



# 303

news articles featured our research on the 'killer whale apocalypse'; published in *Science*

# 1,205

citizen scientists submitted their sick garden wildlife sightings to our Garden Wildlife Health team



# How we help to safeguard wildlife health

Dr Becki Lawson reflects on her work coordinating the Garden Wildlife Health project.

I am a Senior Research Fellow and my work focuses on wildlife disease and its impact on wild animal populations, including adverse impacts on biodiversity and man-made threats to animal welfare, and its implications for public or domestic animal health.

ZSL's research into the conditions affecting British garden wildlife began in the early 1990s, when we started appealing to members of the public to let us know when they saw signs of ill health in amphibians and garden birds, so we could investigate the cause. This is a citizen science project – a team effort between the scientists involved and the public. We'd never be able to monitor wildlife at a national scale throughout the calendar year without the public's help. In exchange, we provide information on the common diseases that affect British wildlife and offer advice on how people can best manage local habitats to safeguard wildlife health and welfare.

I got involved in 2005, setting up the Garden Bird Health Initiative. In 2013 we expanded to include hedgehogs and reptiles, and integrated our amphibian disease surveillance. We've now got a core team of four people working on the project, comprising wildlife vets and a microbiologist – we changed the name to Garden Wildlife Health and we work in partnership with the British Trust for Ornithology (BTO), Froglife and the Royal Society for the Protection of Birds. Now people report to us through our website ([gardenwildlifehealth.org](http://gardenwildlifehealth.org)); it used

to be telephone calls and letters in the early years.

The public upload photos of affected animals, which can help us make a presumptive diagnosis if it's a common condition with clear external signs, but we need to do a post-mortem examination to confirm the cause of death in the majority of cases. We combine these opportunistic reports with systematic surveillance from the BTO's Garden BirdWatch, an amazing network of people who provide information on the wildlife they see in their garden every week of the year. This gives us a much more structured data set to work with that allows us to control for observer effort.

We've recently published two scientific papers that illustrate the range of our research. The first investigated leg lesions in finches, where we used surveillance data over a two-year period to discover the patterns of occurrence of this condition in time and space. We had data from around 3,000 monitored sites, and around 3-4% of people a week who were seeing chaffinches regularly in their gardens reported seeing at least one affected bird. Then we looked at samples we've collected – post-mortem examinations of more than 1,000 finches over a 10-year period. We established that the cause of the lesions was a mite (*Cnemidocoptes*), a viral infection (papillomavirus), or a combination of both. There's no evidence that leg lesions are a conservation issue for our chaffinch population,

though if the condition is severe, the birds' welfare can be compromised. This study shows how we can capitalise on our massive volunteer network to learn a lot more about a disease that's been known about for a long time but has been challenging to study.

Another recent publication was on the emerging threat of salamander chytrid, or Bsal. Having proved so deadly in the Netherlands and Belgium, we wanted to investigate if Bsal was present in wild newts in the UK, so we studied skin swabs of newts that were collected for a previous survey, all of which tested negative for Bsal. We also conducted post-mortem examinations on newts found dead by the public – putting this information together suggested that Bsal was either absent or present at very low levels in the sites we sampled. We want to raise public awareness of the need to report newt mortality and to develop an early-warning system so we can detect the disease in the wild quickly.

I really enjoy working with a range of British wildlife species and collaborating with a wide network of organisations. Twice a year we hold a Garden Wildlife Health Forum and invite conservation and animal welfare NGOs, our government funders, universities, wildlife rehabilitation centres, representatives from the pet food trade and organisations with an interest in wildlife-friendly gardening – everybody comes together. It helps us look at things from different perspectives and maximise the benefits and the impacts of our work."



▶ continued a 12-year study into the ecology of viral pathogens carried by West African fruit bats in order to help understand the determinants of zoonotic spillover.

Fruit bats are keystone species because of their importance to ecosystem structure and function. Without bats dispersing seeds and pollinating forest and orchard trees, our diet would be depleted of many fruits, and tropical forests would fail to regenerate in their current form. In some regions of Africa, bats are widely hunted for food, increasing the potential for zoonotic disease transmission. Through understanding the ecology of pathogens in their natural hosts and the interactions between bats and people that lead to human infection, we hope to find ways of minimising public health risks – allowing bats and humans to coexist.

### Protecting populations on the brink

For endangered cats such as the Amur tiger and Amur leopard, disease represents a potentially lethal blow. Reduced to around just 500 and 100 individuals respectively and confined to pockets of habitat in the Russian Far East and north-east China, their small population sizes mean



they might no longer have the numbers or the genetic diversity to weather a disease outbreak.

A veterinary team supported by ZSL monitors disease in mesocarnivores – medium-sized predators that include badgers, foxes and raccoon dogs – and domestic animals in the Russian Far East for any

indication of disease outbreaks that could affect the big cats or their prey. The team also carried out a disease risk analysis of Lazovsky Zapovednik Nature Reserve ahead of plans to reintroduce the Amur leopard. ZSL coordinates the global conservation breeding programme in zoos for the Amur leopard, and we are working closely with Moscow Zoo and Russian authorities on a project to reintroduce these critically endangered cats.

In India there are just 600 remaining Asiatic lions, an endangered subspecies thought to have once ranged from as wide as Turkey to Bangladesh, but now confined to Gujarat's Gir Forest. Preserving a breeding population in zoos is crucial to safeguard the species and, as well as caring for our pride of four Asiatic lions at ZSL London Zoo, our veterinary team works closely with our partners – Wildlife Institute of India and Gujarat Forest Department – to improve husbandry and veterinary care expertise at Sakkarbaug Zoo. ▶

## 6

**species of previously  
extinct-in-the-wild  
Partula snail were  
bred in our Zoos  
and screened by  
our vets before their  
reintroduction to  
French Polynesia**

## 2

**Amur tigers were rehabilitated  
and released into the Russian  
Far East, with the veterinary  
support of ZSL**





**Ensuring disease-free reintroductions**

Our veterinarians support animal reintroductions around the world with their expertise in disease risk analysis and health surveillance. Across the Indian subcontinent, *Gyps* vulture populations plummeted by over 99% due to the use of the now-banned drug diclofenac. We were part of the research team in 2003 that identified the drug as the cause of the crash and are now helping with the project to reverse the vultures' decline. This year, our vets supported the breeding programmes in India and Nepal, performing pre-release health checks and monitoring the health of the 17 birds already released in Nepal. It is hoped releases will begin in India in 2019.

Closer to home, our vets have been working alongside Natural England since 1989 to restore wildlife to our isles. This year we conducted disease risk analyses for planned reintroductions of hen harriers, natterjack toads and pine martens, and took part in the reintroduction of the chequered skipper butterfly – extinct in England since the 1970s. Forty-two butterflies were collected in Belgium, where they still survive, and checked by a ZSL wildlife vet before being transported to the release site in Rockingham Forest, Northamptonshire, in time for them to lay eggs. ZSL researchers will be regularly monitoring the area and any caterpillars for disease, as well as assisting with additional releases over the next two years, to build a sustainable population.

**Influencing wildlife policy**

In the UK, as elsewhere around the world, the needs of agriculture can often appear at odds with wildlife. However, in the case of badgers, our research has demonstrated that our aims are aligned. It has provided the basis for a response to an independent review of the Government's 25-year strategy to eradicate bovine

TB from England (known as the Godfray Report). The Defra-commissioned report concluded that TB management has largely neglected improvements to cattle-based controls and put too great an emphasis on managing wildlife. This supports our research, which has shown that culling of badgers consistently increases the proportion of badgers with TB, as well as spreading infection to badgers and cattle in new areas. These changes are thought to occur because of the way that culling alters badger behaviour. Our research has also shown that badger vaccination has no detectable impact on badger behaviour, providing a viable alternative to the Government's culling policy.

**Raising in-country capacity**

The key to long-term wildlife health management is raising the capacity for veterinary care in countries where wildlife needs it. In Russia, alongside our on-the-ground work with tigers and leopards, we also work with students from Primorskaya State Academy of Agriculture (PSAA). This year, 70 PSAA students were trained by our wildlife veterinarian in post-mortem techniques, sample collection and diagnosing cause of death.

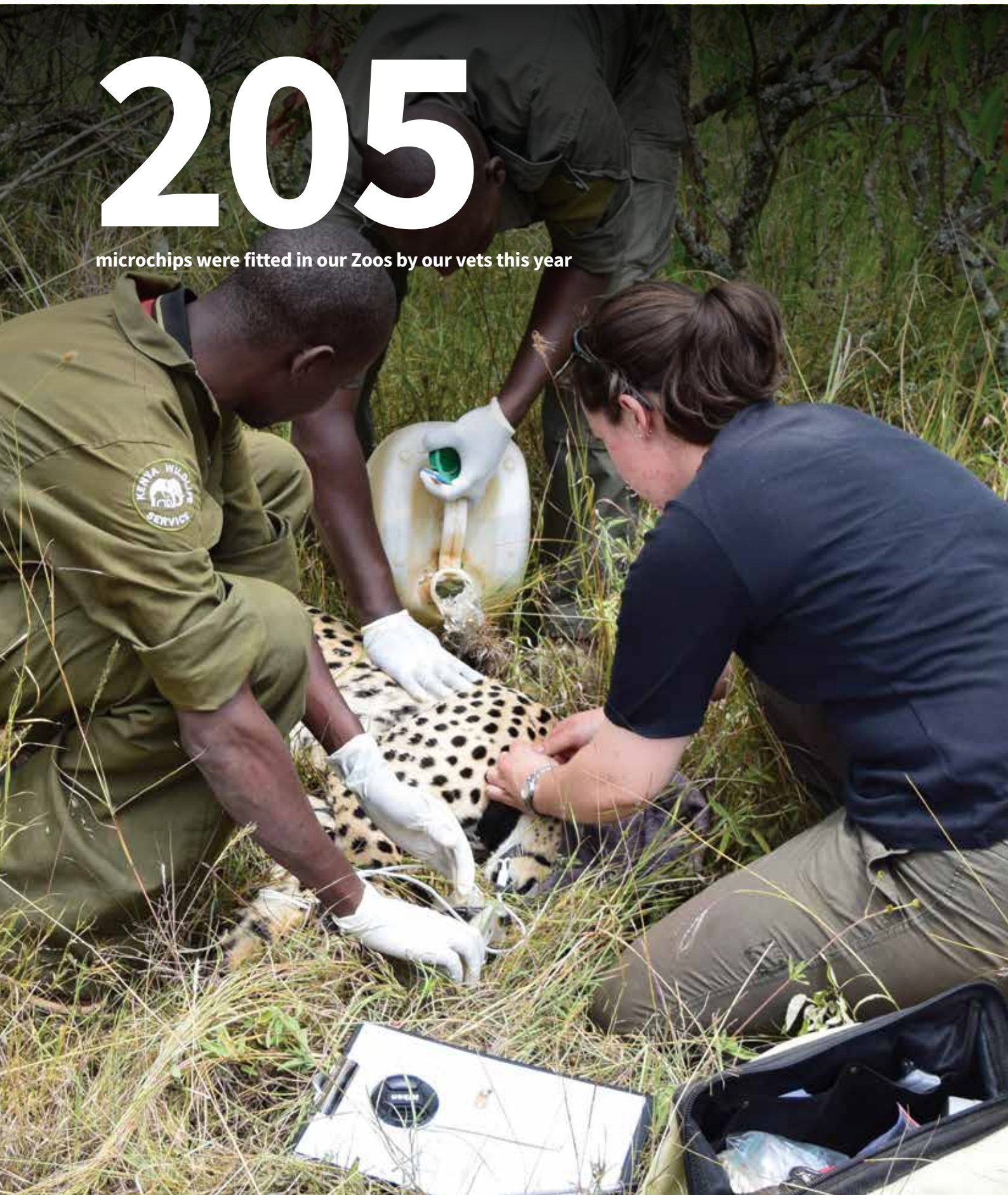
In India, we ran our third Interventions in Wild Animal Health field course in Sariska Tiger Reserve, Rajasthan. Twenty-four veterinarians attended and received in-depth, practical tuition in population monitoring,

**The key to long-term wildlife health management is raising the capacity for veterinary care in countries where wildlife needs it**



# 205

microchips were fitted in our Zoos by our vets this year



surveillance of wild animal disease, and physical and chemical restraint of wild animals. Of the attendees, 14 veterinarians were from biodiverse developing countries, including India, Afghanistan, Kenya and Indonesia, where more wildlife health professionals are desperately needed.

**Finding the best veterinary techniques for our animals**

Besides our work overseas, our veterinarians are also at the top of their field when it comes to ensuring the health of the more than 700 species that have found a home in our Zoos. Our wildlife health services team works closely with our zookeepers to develop techniques that minimise stress during anaesthesia or check-ups – such as employing behavioural management techniques that allow us to hand inject rather than darting, or encouraging animals to display their teeth and gums for visual inspection through positive reward – and animal welfare comes first in everything we do.

We remain active in the fight against the disease caused by elephant endotheliotropic herpesvirus, a potentially deadly virus that affects young elephants in zoos and in the wild around the world. Our veterinary team has helped other zoos in Europe monitor and treat the disease through blood sample analysis this year; has published a scientific paper on the best way to monitor and treat the disease; and continues to work closely with fellow experts around the world.



Our veterinarians are also working to make common human treatments available for our animals. Mkia, a 17-year-old Diana monkey living at ZSL London Zoo, has a history of allergies. Alongside the Royal Veterinary College we have been able to run a skin test of 50 allergens and identify the variety of pollens, yeast and other environmental substances that have affected her. We have now been able to prescribe the correct immune-modulatory drugs, and her case is an important example of how human and animal medicine can learn from each other.

**Inspiring the next generation of vets**

ZSL's distinctive position as a scientific authority, conservation organisation and home of two Zoos means we are uniquely placed to bring wildlife health and our veterinary work to the attention of the public. We run biannual veterinary careers days, offering early-career vets a better insight into the work of our Zoo vets and nurses, and in February 2019 we scaled up our popular Vets in Action event, giving aspiring young vets the opportunity to experience life in a mock veterinary hospital at a field site, and to learn about different diagnostic techniques. To raise the profile of our veterinary work, we published a series of X-rays, taken during routine health checks at our Zoos, which featured in more than 250 national, international and broadcast media – including Fox News and BBC News.

70

**Russian students were trained by our wildlife vet to help them diagnose cause of death of tigers and leopards**

**257** features in national and broadcast media showed X-rays of our Zoo animals

**31** species were X-rayed by our vets this year



## What's next?



### Expanding strandings research into sharks

Our scientists coordinate the Cetacean Strandings Investigation Programme (CSIP), a collaboration with several conservation research bodies initiated in 1990 and supported by Defra. The programme investigates stranded whales, porpoises, dolphins, marine turtles and basking sharks through detailed post-mortem examinations, in order to learn about the threats these species face in UK waters.

The CSIP provides a vital source of data for monitoring the various health threats facing these species – from accidental entanglement in fishing gear (by-catch) and ship-strike, to the insidious effects of pollutants like PCBs (see page 34). New funding is now in place that will not only enable the CSIP to continue its investigations, but also expand our research into strandings of other species of large-bodied shark, such as the porbeagle shark and angel shark. The programme already holds one of the largest and longest-running collections of cetacean data and tissue samples in the world, and its expansion will enable us to more effectively influence government policies that affect marine species in the UK's waters.

### Researching amphibian disease

If we are to counter the global amphibian crisis it's important that we continue to learn about the interactions between the causative pathogen (*Bd*) and its amphibian hosts. This will include finding out whether amphibian species can exist alongside chytridiomycosis and, if so, how. Our research examines interactions between host life history and ecology, pathogen genetics, growth and reproductive rates, routes of transmission, microbiomes, climate change, pollutants and human-aided movement of pathogens and amphibians.

### Leading the way in science

Looking further ahead, we continue in our plans to develop a new Science for Conservation campus at ZSL London Zoo. Through this project we hope to join forces with University College London and the Royal Veterinary College to bring together the best minds and resources in human, wildlife and domestic animal health, so that we can drive the 'One Health' agenda.

We recognise that wildlife conservation has close links with the health of domestic

## We recognise that wildlife conservation has close links with the health of domestic animals and people, and that connections with wildlife can have a very positive impact on human health

animals and people, and that connections with wildlife can also have a very positive impact on human health. Our ambition is to transform the ability of the national and international research base to address these issues.

We already have a reputation for scientific excellence and we now need the facilities to allow us to scale up our science engagement, student intake and wildlife health research.

# Making our work possible

The reach of our global conservation work, our groundbreaking scientific research and the success of our two Zoos are only made possible by the dedication of our people, whose tireless efforts allow us to generate vital funds and develop essential resources.

**A** Zoo visit is a chance for us to inspire our visitors, inform them about the challenges facing wildlife, and empower them to take conservation action. Our army of over 500 volunteers are key to that, from our visitor engagement volunteers, who are on hand to share insights about our animals, to the people working behind the scenes as part of our conservation programmes and providing our zookeepers with extra support. Their time, expertise and passion are invaluable.

At our Zoos, work has focused on preparations for the new Aquarium at ZSL Whipsnade Zoo (see page 26), the opening of ZSL London Zoo's redeveloped Animal Adventure in summer 2019, and the transformation of the Snowdon Aviary into a home for our troop of colobus monkeys in 2020. These projects have brought together multiple teams – including zookeepers, grounds, horticulture, health and safety, fundraising and our creative studio – with their collaboration helping us deliver the best possible exhibits for both our animals and visitors.

## Investing in our people

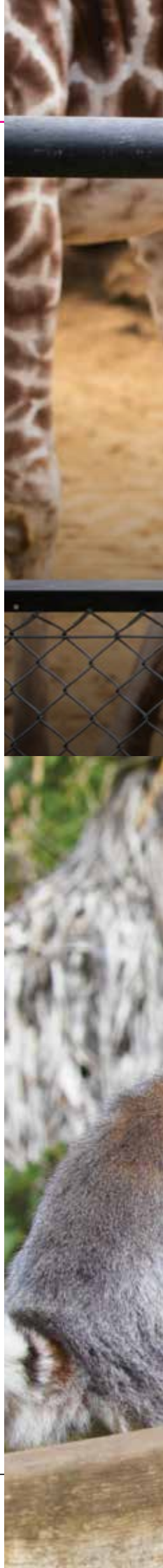
The passion, ingenuity and diversity of our people make life at ZSL unique and contribute to our ability to tackle challenges holistically. As we transition to delivering our new strategy, it's important we retain our culture of innovation and collaboration, and this year we held

almost 300 different internal training events, reaching over 1,000 people, covering topics such as dignity and respect, leadership development, managing change and wellbeing.

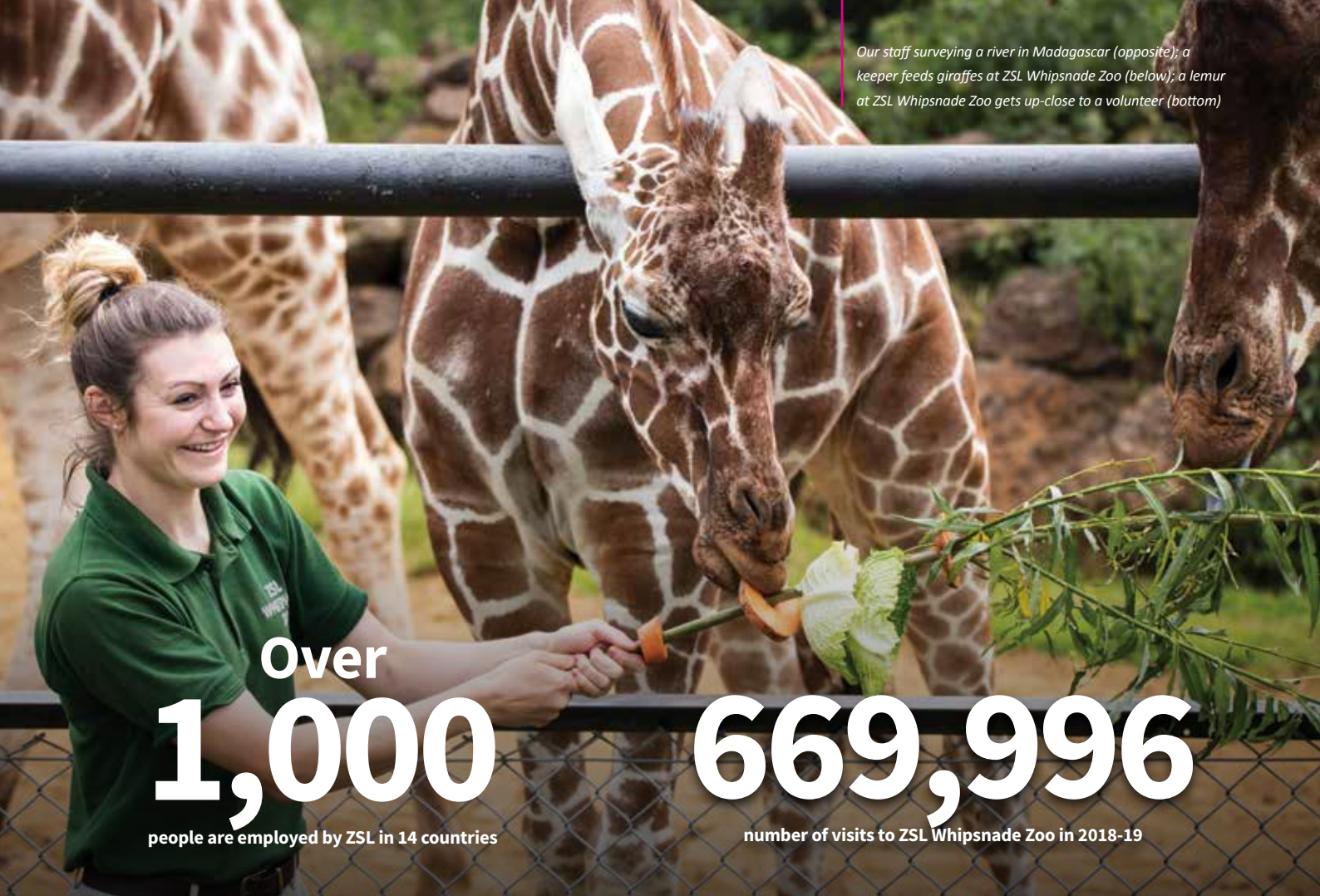
We ran 297 recruitment campaigns this year, including seasonal staff recruitment, and we were pleased to be able to offer seasonal positions to three refugees as part of The Entrepreneurial Refugee Network, in association with the Ice Academy. We are also in talks with Arsenal FC, which works with young adults from disadvantaged backgrounds, to see whether we can successfully integrate their services into our seasonal recruitment plans for 2020.

We are committed to achieving a diverse workforce by promoting a culture of inclusion through our policies, procedures and working practices. We were delighted to report this year that our median gender pay gap is 0.1% – down from 6.2% in 2017, and comparing very favourably to the UK median pay gap of 17.9% – and we will continue working to make sure that equality of pay is reflected in our remuneration policies. In July, the Institute of Zoology also received an Athena SWAN Bronze Award in recognition of our ongoing commitment to the advancement of gender equality and representation in the field of science.

We also know that the long-term success of ZSL's work means improving opportunities and education for our people. This year we led a group of 24 zoos, aquariums and wildlife parks to create the UK's first employer-led apprenticeship scheme for zookeepers and aquarists. Staff from across our Zoos helped to build the 'on-the-job', two-year route into zookeeping that also allows us to benefit from the Government's Apprenticeship Levy.



Our staff surveying a river in Madagascar (opposite); a keeper feeds giraffes at ZSL Whipsnade Zoo (below); a lemur at ZSL Whipsnade Zoo gets up-close to a volunteer (bottom)



Over  
**1,000**

people are employed by ZSL in 14 countries

**669,996**

number of visits to ZSL Whipsnade Zoo in 2018-19



Over  
**5,000**

working days have been donated this year by  
our learning volunteers at ZSL London and Whipsnade Zoos



**Expanding our audience**

With increased competition from visitor attractions across the UK, it is important that we continually develop new ways to attract visitors to our Zoos so we can inspire them to engage with wildlife and conservation.

Over the festive season we launched our first Christmas at London Zoo event. The illuminated trail, running throughout November and December, was designed to drive valuable revenue in a traditionally quiet time of the year for us, and it sold 55,000 tickets – a fifth of those surveyed were new visitors to ZSL. In tandem we ran a Christmas gift marketing campaign, using targeted social media and search-based advertising, and introduced gift admission tickets and memberships. The campaign proved a huge success, increasing online orders by 95% and revenue by 135% against the previous year.

In 2018 we also held a new macro photography workshop – a full-day experience led by a professional photographer with the help of our invertebrate and reptile teams. The day proved extremely popular, with all dates selling out, and gave us an opportunity to profile the incredible and unusual species we look after.

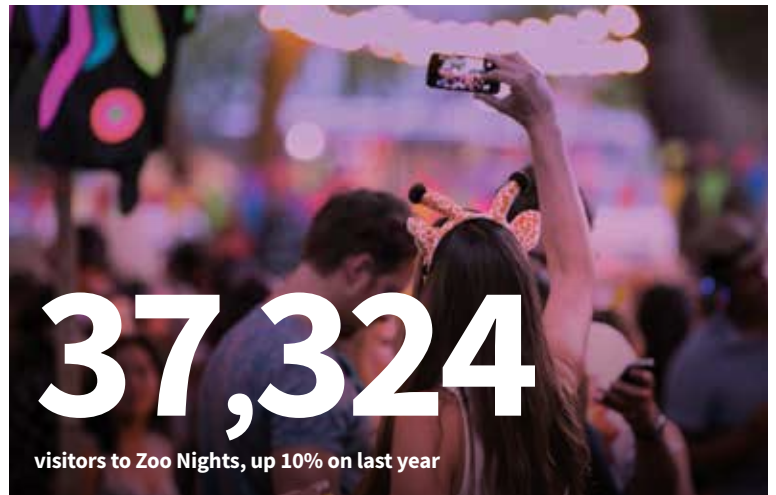
During the summer we continued to run the very successful, adults-only Zoo Nights. Running on eight Friday evenings during June and July, the event featured after-hours animal talks and tours throughout the Zoo, alongside an exciting array of food from London’s finest street-food vendors. Science stations offered adults the opportunity to meet some of our conservation scientists, learn about our projects and reconnect with wildlife after work.

For families, 2018 was Superhero Season at our Zoos. Events over Easter and summer included a Superhero trail and a Superhero Academy at both Zoos; opening visitors’ eyes to the ‘superpowers’ animals possess – such as the leafcutter ant’s ability to carry many times its own body weight – and the ‘evil forces’ ZSL is fighting against: ocean plastic, the illegal wildlife trade and climate change. The interactive events gave children the opportunity to test out animal superpowers and learn about our very own superheroes: vets, scientists and conservationists. The season was produced by our creative teams in collaboration with an external contractor and involved the team visiting recycling centres, building yards and even skips to source the materials – with none of the content sent to landfill once the event had finished.



Clockwise from far left: One of the amazing photos taken at the Reptile House by a budding photographer on our new photography workshop; zookeepers count and weigh

the Humboldt penguins at ZSL London Zoo, and red-billed hornbills at ZSL Whipsnade Zoo; Skyping a school group from the sea lion enclosure



# Supporting our work

**Our projects around the world, and the care of animals at our two Zoos, are made possible thanks to the support of individuals, businesses, governments and foundations.**

**A** major focus this year was raising funds for the first phase of our Snowdon Aviary appeal. We are delighted to have a new major donor on board, the Kusuma Trust, and we are grateful to the National Lottery Heritage Fund for its ongoing support of this project to restore and transform the Aviary. As part of the project we are changing the way we work in the local community and are putting on a range of activities for under-represented audiences to enjoy, including education sessions, and volunteering and apprenticeship opportunities.

## Building relationships with the private sector

Our engagement with the private sector allows us to build mutually beneficial and meaningful relationships with prominent businesses and their employees. We are proud of our long-standing relationships with organisations such as American Express, Bloomberg, Liontrust, Paper Round, Royal Bank of Canada, Shaftesbury and White & Case, whose support helps us conserve wildlife and enables businesses to deliver against the UN Sustainable Development Goals. We were also pleased to be selected as a Community TeamWorks partner by Goldman Sachs. We look forward to welcoming 140 Goldman Sachs employee volunteers, during its 150th anniversary, to our two Zoos.

## Individual support of our work

Our Patrons and Fellows have continued to make a remarkable contribution to ZSL's worldwide conservation work, not

only through their committed annual contributions and the Patron programme, but also through attending events such as our Safari in the City gala, which raised vital funds to support our fight against illegal wildlife trade. This year saw the highest income from the Patron programme in its 13-year history. We also invited Patrons to behind-the-scenes experiences and a VIP Zoo Nights evening in July, and we held drinks receptions for our Fellows at our regular scientific events.

## Support for global conservation

Our conservation work would not be possible without the continued support of foundations and organisations around the world. Thanks to the Bertarelli Foundation for its support of our work in the British Indian Ocean Territory; Fondation Segré for its support for pangolin conservation and our EDGE Fellowship programme; and the

Oak Foundation and Calouste Gulbenkian Foundation for their funding to help us inspire a refill revolution across London through the #OneLess campaign.

Thanks also to the National Geographic Society for its support of our Bactrian camel project in Mongolia, and through its partnership with EDGE and our Conservation Technology Unit; and to the Postcode Planet Trust, which helps us reach our targets. We work closely with the UK Government, whose funding through the Darwin Initiative and Illegal Wildlife Trade Challenge Fund has helped our efforts in

Nepal and the Philippines to counter illegal wildlife trade and help communities sustainably manage resources. UK aid from the Government, along with support from the Global Environment Facility through the UN Development Programme, continues to fund our landscape-level conservation programme in South

Sumatra, as well as support ongoing development of the innovative Rhino Impact Investment project.

We were also excited to welcome new supporters – the Julius Baer Foundation and Edge Foundation – which have contributed to our Net-Works™ project and EDGE of Existence project respectively. Thanks also to EIJ Philanthropies, which enabled ZSL's participation in, and satellite events ahead of, the UK Government's Illegal Wildlife Trade conference in October 2018.



# 330

guests attended our Safari in the City gala



# 226

trusts, foundations and individuals supported our Snowdon Aviary appeal

# 484

number of Patrons

# 4,498

number of Fellows

# 95,508

people are currently members of ZSL

# 31

businesses supported our work

# 7

governments supported our work

# Our supporters

**ZSL's achievements would not be possible without the generosity of its supporters. We would like to thank all the individuals and agencies mentioned in these pages, as well as those not listed here.**

Our cause and our supporters are at the heart of ZSL's approach to fundraising. There are lots of different ways that supporters can give to ZSL: from donating at one of our Zoos, to joining as a Patron, to planned giving, we understand that people want to support us in a way that is best for them and delivers the maximum impact. We update our supporters using a variety of channels, from direct mail to digital communications, and engage with external organisations to help us. We ensure that robust, monitored contracts are in place so that applicable laws, such as the General Data Protection Regulation and Data Protection Act 2018, are followed. We always strive for the highest standards.

ZSL's focus on individual fundraising is legacies and high-net-worth individuals, therefore we protect vulnerable individuals in how we target our fundraising activities. ZSL has had no complaints in the year and we do not use any external partners to fundraise on our behalf. However, if our supporters or any members of the public are unhappy with any aspect of our work, we encourage them to give feedback and have a dedicated Supporter Services team that ensures that any complaint or comment raised is treated seriously.

**Royal Patrons**

Her Majesty The Queen  
His Royal Highness  
The Prince of Wales

**Charities, trusts, foundations, statutory bodies and zoos**

A G Leventis Foundation  
Adventist Development and Relief Agency  
Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS)  
Conservation Fund  
Arcus Foundation  
Banister Charitable Trust  
Bertarelli Foundation  
Blue Action Fund  
Brevard Zoo  
The British Academy  
British Embassy in Manila, Philippines  
British Society for Parasitology  
Calouste Gulbenkian Foundation

Cambridge Conservation Initiative Fund  
Centre for Environment, Fisheries and Aquaculture Science (CEFAS)  
Chessington Zoo  
City Bridge Trust  
City to Sea  
Danish Cooperation for Environment in the Arctic (DANCEA)  
Darwin Plus  
The David and Lucile Packard Foundation  
Daytrippers  
Defra, through the Illegal Wildlife Trade Challenge Fund and Darwin Initiative  
Denise Coates Foundation  
DFID  
Disney Conservation Fund  
Dreamworld Wildlife Foundation  
ECOFAF  
Environment Canada  
Ernest Kleinwort Charitable Trust

The Esmée Fairbairn Foundation  
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European Union  
Fisheries Society of the British Isles  
Fondation Ensemble  
Fondation Segré  
Foundation for the Philippines Environment  
German Corporation for International Cooperation (GIZ)  
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Greater London Authority (GLA)  
Greenville Zoo  
Helsinki Zoo  
Historic England  
Howard G Buffett Foundation  
IUCN/KfW Integrated Tiger Habitat  
Conservation Programme  
Indianapolis Zoo

John Ellerman Foundation  
The John S Cohen Foundation  
Julius Baer Foundation  
Knowsley Safari Park  
Kolmården Fundraising Foundation  
Kusuma Trust UK  
Lewa Canada  
Lombard Odier  
Marine Management Organisation  
Mayor of London Greener City Fund  
Monitoring the Illegal Killing of Elephants (MIKE) programme, CITES  
National Centre for the Replacement, Refinement and Reduction of Animals in Research  
National Geographic Society  
The National Lottery Heritage Fund  
Natural England  
Natural Environment Research Council

The Nature Conservancy  
New Zealand Department of Conservation  
Oak Foundation  
Ocean Park Conservation Foundation, Hong Kong  
Oceanário de Lisboa  
On the EDGE Conservation Panthera  
Paradise Wildlife Park & Wildlife Heritage Foundation  
Parco Zoo Punta Verde  
Pauline Meredith Charitable Trust  
People's Trust for Endangered Species  
Players of People's Postcode Lottery  
Polynesian Government  
Queen Mary University, London  
Regina Bauer Frankenburg Foundation  
The Rose Foundation  
The Rothschild Foundation  
The Royal Foundation of The Duke and Duchess of Cambridge and The Duke and Duchess of Sussex  
The Royal Society  
The Rufford Foundation  
RSPCA  
Sahara Conservation Fund  
Save the Elephants  
Shark Conservation Fund  
Shining Foundation Ltd  
Shuttleworth Foundation  
Arribada Initiative  
St Andrews Prize  
St Louis Zoological Park  
Synchronicity Earth  
Tayto Park  
UK Aid from the Government  
UK Trust for Nature Conservation in Nepal  
UK Foreign and Commonwealth Office  
United Nations Development Programme (UNDP-GEF)  
University of Cambridge  
University of Helsinki  
US Department of State  
USAID  
USFWS – African Elephant Conservation Fund  
USFWS – Asian Elephant Fund  
USFWS – Combating Wildlife Trafficking  
USFWS – Rhino-Tiger Fund  
The Waterloo Foundation  
WCS Indonesia  
The Wixamtree Trust  
Welsh Government  
Wetlands International





WildCats Conservation Alliance  
The Woodchester Trust  
WWF International  
WWF Namibia  
Zoological Society of East Anglia  
ZSL America

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Dominic Jermy CVO OBE  
David Coffey  
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Michael Walker  
James Wren

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The Amey Family

The Anderson Family  
The Bacchus Family  
Francis and Jo Beddington  
Robin and Veronica Bidwell  
The Blackburn Family  
Dame Margaret Booth  
Emily and Oliver Brettle  
Simon and Elaine Brown  
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Mo Duncan  
Dr Sharif Ghali and Dr Neeti Ghali  
The Grant Family  
Peter Hamm  
Martin and Celestina Hughes  
The Humphreys Family  
The James Family  
Anjal Kariya and family  
Ann Louise Kinmonth CBE  
The Lohr Family  
The Longhurst Family  
The McCrodden Family  
Jan Mol  
Sylvia and Martyn Notley  
Jay Patel  
The Rt Hon Lord Paul and Lady Paul  
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James Thornton  
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The Warren Family  
Stephen Whittam and Darren Jordan  
Jo Windsor  
The Wirth Family  
Christopher Wood and Renée Zecha

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Jenny Akester  
Hassan Alaghband  
Kris Bailey  
John Barker

Jack Baucher  
Harry Becher  
Beth and David Blood  
Simon Brown  
George Bullard  
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Mike Staunton  
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Anastasia Vorontcova  
Will Wells  
Simon Weston  
Harry Wilkinson  
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Erdem Yurduanur

#### Legacies from the estates of

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Donald Evans  
Margaret Lorraine Gregory  
Doreen Hainsworth  
Evelyn Mary Hayes  
Fiona Agnes Love  
Anne Reilly  
Olive Sharman  
Dennis Shaw  
Margaret Smith

#### In memory and in celebration donors

Samantha Russell  
Rebecca Radley  
Maggie Garrett  
Professor Neill Alexander  
Kaiya Patel  
Edna Bryant  
Field Marshal Sir John Chapple and Lady Annabel Chapple and their family  
Giorgio at Giraffes

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Nigel Winser  
Jochen Zeitz

#### Donations to ZSL America

EJF Philanthropies  
Robert W Johnson Charitable Trust  
James Dankenbring  
James Karl Fischer  
Cynthia and Armins Rusic

# Financial summary

ZSL's charitable activities continue to be supported by the admission income from our Zoos, membership schemes, profits from our trading activities, donations and grants.

**D**espite 2018 having one of the hottest summers on record, which kept some visitors away from outdoor attractions across the country, the year ending 30 April 2019 saw an increase of 13% on last year's visitor numbers to our Zoos. The terror incidents in the UK in 2017 had impacted visitor numbers in 2017-18, as some tourists and young families avoided city-centre attractions. It is pleasing therefore to see that Zoo visitor numbers increased, and that this had a positive impact on admissions, catering and retail income in 2018-19.

In terms of expenditure on our conservation field programmes, which form an important part of our charitable activities, 2018-19 was a record year. In 2018-19, £15.3m was spent on delivering ZSL's conservation programmes globally (2017-18: £13.4m), with technical and administrative support from our overseas

offices in Asia and Africa. We have continued to secure new large-scale grants for our conservation and science work in the UK and overseas, in addition to the funding generated through our Zoos and from donations. Funds are raised from individuals, trusts and foundations, research institutions, companies and Government agencies, and there is a pipeline of funding going forward for the continuation of our conservation and science work.

ZSL's total income for the year ending 30 April 2019 was £5.1m higher than the prior year (2018-19: £70.7m; 2017-18: £65.6m). The insurance claim relating to the fire that damaged our Animal Adventure area at ZSL London Zoo in December 2017 has been settled, and £1.4m of insurance proceeds are included in other income. The area has been redeveloped and reopened in the summer of 2019.

Notwithstanding the increase in our income, ZSL incurred an increased unrestricted deficit of £2.8m in 2018-19 (2017-18: £0.6m) after

depreciation of £3.7m (2017-18: £3.7m). We chose to hold our admission prices during the year to support visitation and engagement with our Zoos in recognition of the difficult external market conditions. However, as with many other organisations, we incurred ongoing inflation costs and increased regulatory requirements driving an increase in our costs. We are working on a business plan for launch in 2020 that will bring our surplus into a positive position in the future, enabling us to increase our investment in our sites to support our charitable activities.

## Income

For 2018-19, ZSL's total income increased 7.8% compared with 2017-18 (2017-18: £65.6m; 2018-19: £70.7m). More than two-thirds of ZSL's income comes from the Zoos' visitors and members in the form of admissions, Gift Aid, membership schemes, merchandising, catering, lodges and our engagement experiences. The remainder comes from grants and donations. ▶

## FINANCIAL HIGHLIGHTS

£m	2018-19 12 MONTHS			
	CHARITABLE ACTIVITIES <sup>1</sup>	TRADING <sup>2</sup>	OTHER <sup>3</sup>	TOTAL
INCOME	54.6	14.4	1.7	70.7
COSTS	(61.5)	(13.1)	(1.2)	(75.8)
SURPLUS/DEFICIT	(6.9)	1.3	0.5	(5.1)

£m	2017-18 16 MONTHS			
	CHARITABLE ACTIVITIES <sup>1</sup>	TRADING <sup>2</sup>	OTHER <sup>3</sup>	TOTAL
INCOME	54.4	11.1	0.1	65.6
COSTS	(54.4)	(9.9)	4.9	(59.4)
SURPLUS/DEFICIT	0.0	1.2	5.0	6.2

£m	2018-19 12 MONTHS	2017-18 16 MONTHS
	£m	£m
CAPITAL EXPENDITURE	1.2	2.7
CASH AND INVESTMENTS	23.8	23.2
GENERAL RESERVES <sup>4</sup>	5.3	7.0
UNRESTRICTED LIQUIDITY <sup>5</sup>	6.5	6.9

<sup>1</sup> Includes Zoos, membership, education, conservation programmes and science (Institute of Zoology), donations and legacies.

<sup>2</sup> Includes retail, catering, lodges at both Zoos and events/conferences.

<sup>3</sup> Includes gains on investments, insurance rebates and movements on pension liabilities.

<sup>4</sup> Funds not tied up in tangible fixed assets and other designated funds, restricted funds, and after pension asset and liabilities.

<sup>5</sup> Unrestricted liquidity comprises total cash balance after restricted funds.

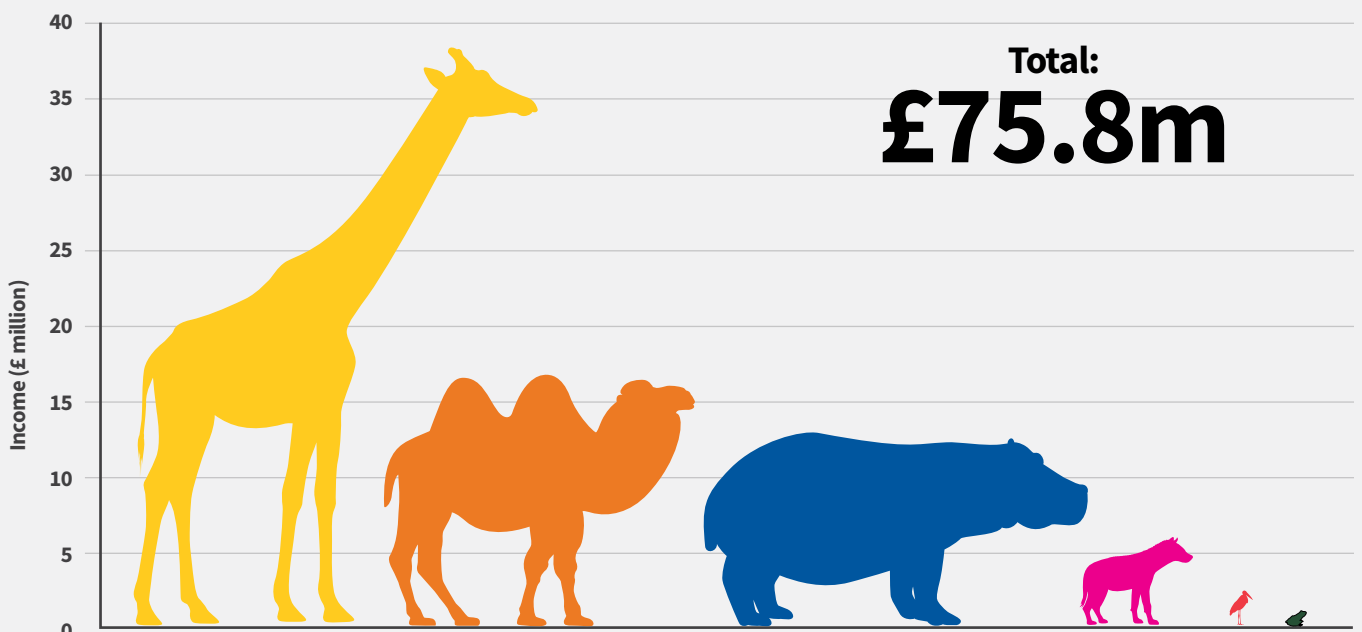
## WHERE OUR INCOME CAME FROM IN 2018-19 (12 MONTHS)

Zoo admissions	£27.8m	Grants and foundations	£13.5m	Trading	£14.4m
Memberships	£7.3m	Donations and legacies	£4.8m	Investment income	£0.3m
Other income	£2.6m				



## WHERE OUR MONEY WAS SPENT IN 2018-19 (12 MONTHS)

Zoo animal collection and conservation	£37.9m	Field conservation	£15.3m	Costs of trading	£13.1m
Science and research	£6.2m	Cost of raising funds	£2.1m	Other	£1.2m



### Zoo admissions and membership schemes

With the increase in visitor numbers in 2018-19 at both ZSL London (14%) and Whipsnade Zoos (11%), their respective admissions income rose by 17% and 19% on the previous year. Although membership income fell by 8% overall for the year, the numbers subscribing to our membership schemes started to rise in the latter half of the year.

### Commercial income

ZSL's trading subsidiary, Zoo Enterprises Limited, provides merchandising, food and beverage offerings, overnight experiences in our lodges at ZSL London and Whipsnade Zoos, and other commercial activities. It distributes its net profits to the Society annually. Its turnover in 2018-19 was £14.4m, an increase of 31% on the previous year, which is discussed further in the Subsidiaries section.

### Donations and legacies

Donations and legacies in 2018-19 totalled £4.8m, compared with £4.4m in 2017-18. Corporate sponsorships and promotions are becoming an increasingly important source of income for us, and we are actively seeking to grow our regular giving and legacy programmes.

### Grant income

Grant income from institutional donors, Government agencies, trusts, foundations and private individuals provides essential funding for our field conservation, science and research work. Grant income fell by 12% to £13.5m in 2018-19, down from £15.1m in 2017-18. This income is primarily restricted to the specific projects that we undertake. The income recognition policy means that income may not necessarily match expenditure in the period in which it is incurred, as income is often received in arrears when certain criteria have been met that entitle us to the funding.

### Investment income

We hold listed investments provided from restricted endowments and a scientific fund, together with funds held on our general reserves. The investment portfolio grew 5% in the year, reaching £6m.

### Expenditure

In 2018-19, we spent £75.8m (2017-18: £64.2m). Total spending on our charitable activities, including the costs of maintaining the animal collection, field conservation, science and research, together with related support costs, totalled £59.4m (2017-18: £55.7m, excluding the exceptional pension curtailment gain of £2.9m, which arose from

the closure of the ZS 1988 pension scheme to future accrual). The increase in costs is mostly due to increases in direct costs of £2.3m in running our Zoos and £1.3m for our conservation fieldwork.

In November 2018, we carried out a restructuring in order to realign our operations to support the delivery of our new ZSL 200 strategy. Direct staff costs have decreased by £0.9m, in spite of wage inflation, primarily due to unfilled vacancies. Indirect staff costs that are included in other support costs, on the other hand, have increased by £1.3m due to the need to increase the capacity of our management, governance and administrative functions to support the ongoing expansion of our conservation work internationally and to enable us to meet increasing regulatory requirements.

In addition, we spent £2.1m (2017-18: £1.5m) generating our voluntary income.

Zoo Enterprises Limited incurred costs of £13.1m (2017-18: £9.9m) and made a net profit of £1.3m (2017-18: £1.1m), which it donated to ZSL.

During the year, we spent £15.3m (2017-18: £13.4m) on field conservation work in the UK and internationally, which was £3.8m (2017-18: £3.2m) more than the funding we received from Government agencies, trusts, foundations and private individuals in the year for the specific projects we carried out. This additional expenditure was funded from the income that we generated through our Zoos and unrestricted donations, which are vital sources of funding for our conservation work, and from our unrestricted reserves.

We also spent £6.2m (2017-18: £5.5m) on our conservation science and research work, of which £1.1m (2017-18: nil) was funded from our unrestricted income and reserves.

### Capital expenditure

During 2018-19, ZSL spent £1.2m (2017-18: £2.7m) on capital expenditure. This included improvements to our infrastructure, exhibits and visitor experience. We also commenced work on the new Animal Adventure area at ZSL London Zoo to replace the exhibit that was damaged by a fire in December 2017. The asset was impaired in 2017-18 and the insurance evaluation was concluded with receipt of the insurance proceeds in July 2019. This children's adventure-play and animal-interaction destination reopened in the summer of 2019.

Work also commenced on the new Aquarium at ZSL Whipsnade Zoo, which opened in the summer of 2019. This is the UK's first aquarium dedicated to conserving the world's most endangered freshwater fish.

### Reserves policy

Reserves are maintained at a level that enables the Charity to manage financial risk and short-term income volatility. They allow the Charity to sustain optimal levels of science, research and conservation programme work over the long term, provide appropriate care for the animals in our Zoos and maintain the infrastructure that allows us to operate, ensuring that financial commitments can be met as they fall due.

ZSL's Council of Trustees has set a minimum liquidity and general reserves requirement to ensure the financial sustainability of the Society. The reserves target is based on the relationship between readily realisable cash and investments, future liabilities for committed capital developments, the cash requirements for sustaining ZSL's operations for a period of time and the level of general reserves required to support this.

ZSL's policy concerning the level of cash and investments and general reserves is to have funds available to cover the costs of running the Zoos during an emergency closure to the public for a period of up to three months, funding for ZSL's pension commitments and to meet liabilities as they fall due.

The Trustees' minimum liquidity and general reserves target is to hold readily realisable cash, investments and general reserves in excess of £6.7m. The policy is reviewed annually in connection with the setting of revenue and capital budgets and the charitable activities planned for the year.

At 30 April 2019, ZSL held £7.2m of unrestricted cash (2018: £6.9m), plus £2.2m of unrestricted readily realisable investments (2018: £2.2m).

Total funds held at 30 April 2019 amounted to £66.9m (2018: £72m), of which £9.6m (2018: £10.5m) is restricted. Included within restricted funds are endowment funds of £1m (2018: £0.9m) relating to the De Arroyave, Fantham Bequest and Davis investments, as well as restricted funds relating to grant-funded conservation and science projects of £4.8m (2018: £6.5m) for research work expected to be carried out in future periods.

Unrestricted funds held at 30 April 2019 totalled £57.2m (2018: £61.4m). This was made up of designated funds of £52m (2018: £54.5m), of which the majority related to fixed assets of £46.3m (2018: £49m), and predominately reflects land and buildings on our Regent's Park and Whipsnade sites, which includes our Zoos, and science and animal welfare facilities. Other designated balances of £5.7m (2018: £5.5m) include £2.6m (2018: £2.2m) to support the development of our science work. During the year, we



# £15.3m

was spent on ZSL's global conservation field programmes in 2018-19 – that's £1.9m more than the previous year

consolidated our butterfly, crocodile, elephant and lion conservation funds, along with our conservation, science and education mission funds into one new ZSL 200 Strategic implementation fund to support the future implementation of our ZSL 200 strategy.

Free reserves (that is, those unrestricted funds not tied up in tangible fixed assets or other designated funds, and excluding any pension asset) increased during 2018-19 to £5.2m at 30 April 2019 (30 April 2018: £3.8m). This is after recognising a liability of £0.5m (30 April 2018: nil) for paid annual leave for the first time.

The free reserves at 30 April 2019 are £1.5m below ZSL's general reserves target (2018: £2.9m below) of £6.7m. Due to the seasonal nature of zoo visitor income, March and April are when general reserves are at their lowest, peaking in September at the end of the high season.

The Trustees are committed to increasing the level of general reserves through commercial activity and visitor income from our Zoos, general fundraising activities and through managing the phasing of future capital developments in order to build up the general reserves to reach their target level.

### Investment policy

The investment policy is designed to support the reserves policy. The Charity seeks to adopt a cautious, prudent and well-diversified investment stance to balance potential returns with appropriate levels of risk, having regard to our mission objectives.

The Charter and Byelaws of ZSL give the Trustees the right to invest the funds of the Society in such investments, securities or property as may be thought fit. Investments are managed by Newton Investment Management Limited, BlackRock and M&G Investments, which have been instructed not to make direct investments that are contrary to the Society's stated purpose and objectives.

Specific areas of constraint in investment include companies involved in animal testing, marine harvesting, high environmental impact products and practices using Red List ingredients and substances, and those using tropical hardwoods from unsustainable sources.

In addition, all shareholder voting is to be actively conducted in line with these socially responsible guidelines and principles.

ZSL holds most of its available funds in bank and short-term deposits, which at 30 April 2019 totalled £17.8m (30 April 2018: £17.5m), being the total of restricted,

designated and general funds. In addition, ZSL holds listed investments of £6m (2018: £5.7m), the majority in Newton Investment Management Limited's Socially Responsible Investment (SRI) Fund for Charities. This SRI Fund for Charities contains a mixture of funds with the intention of providing a balance between capital growth and income. The remainder is held in M&G Investment's Charifund, BlackRock and a small number of listed investments.

The Charity ensures that performance is managed against appropriate benchmarks. The income from investments for the year was £0.1m (2017-18: £0.1m) and investment gains totalled £0.3m (2017-18: £0.3m).

A review of the investment policy is conducted every year.

### Pension schemes

The valuation of our ZS 1988 defined-benefit pension scheme per the Financial Reporting Council's Financial Reporting Standard 102 shows a surplus of £1.7m at 30 April 2019 (2018: surplus of £3.2m) due to changes in the assumptions principally around the discount rates.

The approach used for setting assumptions is intended to reflect market conditions at the year-end, expected pay inflation and mortality assumptions.

Funding levels of the ZS 1988 scheme continue to be monitored by ZSL and the pension fund trustees on a regular basis. Following the closure of the scheme to future accrual in the previous year, the pension fund trustees have reviewed the investment strategy and have implemented a liability-driven investment strategy to reduce the volatility on the scheme valuation and limit exposure to inflation and interest rates.

In addition, per Financial Reporting Standard 102, ZSL is required to account for its share of the future contributions required to address the deficit to the Universities Superannuation Scheme (USS). As at 30 April 2019, the provision in respect of these contributions was £1.1m (2018: £0.4m).

### Subsidiaries

Merchandising and catering are undertaken by Zoo Enterprises Limited, a subsidiary trading company, with the taxable net profits distributed to the Society annually.

Total income of Zoo Enterprises Limited during 2018-19 was £14.4m (2017-18: £11.1m), with a profit of £1.3m (2018-19: £1.1m). The increase in income is partly attributable to the increase in visitor numbers in 2018-19 but also due to the change in

the basis of our catering contract in 2017-18. For the first six months of 2017-18, ZSL received commission from the outsourced catering company, but in the second half of the year, ZSL recognised the full value of catering sales.

Both Whipsnade Wild Animal Park Limited and Zoo Operations Limited remained dormant for the year.

### Financial position and 'going concern' status

The Council of Trustees considers that there are sufficient general reserves and designated assets held at the year-end to manage any foreseeable downturn in the UK and global economies. The Trustees consider that there is a reasonable expectation that ZSL has adequate resources to continue in operational existence for the foreseeable future and, for this reason, the Council of Trustees continues to adopt the 'going concern' basis in preparing the accounts.

### Remuneration policy

The Trustees determine and agree the overall policy for the remuneration and pension arrangements for all the Charity's employees and oversee any major changes to employee benefits.

The Charity's reward principles are to ensure the same remuneration system applies to all, except where there are justifiable reasons for making separate arrangements. For example, the Institute of Zoology's remuneration policy is aligned to the higher education sector and has a separate remuneration committee linked to University College London (UCL), in line with the type of work carried out by the department.

The Charity aims to provide an overall reward package that is competitive within the sector it operates in. In assessing levels of remuneration, the Charity uses external professional advice and salary survey databases from public, private and charity sectors. While the charity recognises that it should not and does not compete directly with the private sector on remuneration, it does aim to provide an overall reward package that is competitive, to attract and retain high-calibre staff that are aligned with our mission, vision and values.

The Remuneration Committee reviews and approves the remuneration, benefits and pension arrangements of the Director General and the Director Group. Each position within the Director Group is individually benchmarked.

*Our two new tamandua pups attracted visitors to ZSL London Zoo; despite hot weather affecting tourism, we saw a 10% increase in visitor numbers to both Zoos in 2018-19 compared to the previous year*



7.8%

was the year-on-year increase in ZSL income in 2018-19

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£70.7m

was the total income generated by ZSL in 2018-19

# Principal risks and uncertainties

**Every organisation must address uncertainty – and we have a robust system in place for identifying, managing and mitigating the risks we face.**

**Z**SL is a diverse organisation operating our strategic priorities in a number of discrete areas, each with their own unique set of challenges. In delivering all of our objectives we accept that we must face a range of risks, varying in substance and significance. We have strict procedures in place to identify and evaluate risk, and to design and implement effective measures not only to reduce the likelihood of risks occurring, but to limit the potential impact if those risks occur.

## Our risk management process

We manage a Society-wide strategic risk register that contains the key risks owned and managed by the executive leadership team and the Council of Trustees. This tracks and evaluates the strategic, operational, finance and compliance risks that we face. We have risk assessment processes embedded in management and operational processes and a dedicated Head of Risk Management to track risks from an organisational perspective. Where relevant, the corporate risk register is supported by underlying operational risk registers across the Society for the operational and charitable activities we undertake. Specifically for health and safety, under the guidance of the Head of Safety and Security, we have a detailed system for monitoring risks and issues, as well as actions taken.

Risk is a standing item on the agenda of the monthly meeting of the executive leadership team, where each risk has a named owner and date for review. The risks and mitigations are reviewed on a rolling basis each month by the executive leadership team. Any new risks are also added through this forum or – if something is considered particularly urgent – through their shorter weekly meetings. In this way, the risks can be considered, and suitable mitigation plans developed and implemented.

ZSL's risk register is reviewed and assessed annually by our Finance and General Purposes Committee and our Council of Trustees, who

have collective responsibility to identify, assess and manage risks, and ensure that risk management arrangements are robust, appropriate and comprehensive. Any significant changes made to the risk register during the year are reported to our Finance and General Purposes Committee, and the minutes of these meetings are provided to our Council of Trustees.

## Risk assessment

Risks are assessed according to their likelihood to occur, and their likely impact on the organisation. These values combine to provide a score that allows us to identify the principal risks to the organisation and prioritise management actions accordingly.

A programme of implementation activity for the EU General Data Protection Regulation (GDPR) was led by ZSL's Data Protection Lead, with oversight from ZSL's executive leadership team. This included an all-staff training and awareness programme, an extensive data-mapping exercise, and a review of all relevant ZSL contracts, policies, procedures and data-processing activities and arrangements. It built on the preparatory work done by an internal, cross-divisional working group and an internal audit review of ZSL's GDPR management plans. In line with guidance from the Information Commissioner's Office, we recognise the need to continue to work on embedding good practice, corporate responsibility and senior accountability to meet the enhanced data protection requirements of GDPR. ZSL's statement required by the Modern Slavery Act 2015 is available on our website.



## Risk management statement

Our Trustees have given consideration to the principal risks to which ZSL and its subsidiary undertaking is exposed, and satisfied themselves that suitable procedures have been established in order to identify and manage those risks. The following principal risks were identified during the 2018-19 accounting period. Specific actions are in place to manage each risk.



DESCRIPTION OF PRINCIPAL RISKS	SUMMARY OF MITIGATION ACTIONS
<p>Britain's decision to leave the European Union (EU) triggers a period of political and economic uncertainty which has a negative impact on the number of overseas visitors to our Zoos. Additionally, changes in UK legislation, policy and rules once Britain has left the EU result in increased operating and capital costs. It may also result in difficulties and increased costs in moving animals between European zoos as part of European conservation breeding programmes</p>	<ul style="list-style-type: none"> <li>• Monitoring changes in legislation and potential impact on the Society</li> <li>• Review of our operations and activities to identify potential risks and mitigations in relation to the impact of the implementation of Article 50</li> <li>• Adapting strategy to changing circumstances</li> <li>• Monitoring income and expenditure, general reserves and cash-flow forecast</li> <li>• Managing capital allocations, marketing strategy and fundraising strategy</li> </ul>
<p>Stability of external fundraising to provide investment in our mission, capital investment and funding for our operating costs</p>	<ul style="list-style-type: none"> <li>• Monitoring the external environment</li> <li>• Diversifying income streams and funders</li> <li>• Managing income and fundraising strategy</li> <li>• Monitoring income and expenditure, general reserves and cash-flow forecast</li> <li>• Managing our capital allocations</li> </ul>
<p>Stability of commercial income to cover operating costs, provide investment in our mission and capital investment funding</p>	<ul style="list-style-type: none"> <li>• Diversifying income streams</li> <li>• Monitoring income and expenditure, general reserves and cash-flow forecast</li> <li>• Managing our commercial and marketing strategies and monitoring the external environment</li> </ul>
<p>Protection of personal data in accordance with data protection legislation</p>	<ul style="list-style-type: none"> <li>• Designated Data Protection Lead monitoring personal data management strategy</li> <li>• Continual improvement of data protection compliance systems procedures</li> <li>• Updated data protection and privacy policies and procedures</li> <li>• Annual refresher training for all staff, alongside targeted training and support for particular teams</li> <li>• Model personal data clauses included in new contracts where relevant</li> </ul>
<p>Any safeguarding incident which may harm ZSL people or individuals we are working with, which in turn could cause us to be in breach of our legal obligations (eg those under a grant agreement or those owed to our staff) and/or damage our reputation</p>	<ul style="list-style-type: none"> <li>• We have a safeguarding policy with a clear process for reporting any concerns</li> <li>• We have nominated and trained safeguarding officers</li> <li>• We have a clear process for any significant concerns to be raised quickly at the most senior levels in the charity</li> <li>• We have a named lead safeguarding Trustee</li> <li>• Planned mandatory training for all staff (to take place in the 2019-20 financial year)</li> </ul>
<p>Insufficient level of capital investment to adequately drive footfall to the Zoos and generate the surplus required to fund our charitable work and operations, and maintain our infrastructure and exhibits</p>	<ul style="list-style-type: none"> <li>• Develop a clear property strategy linked to new site masterplans for each of our UK sites that will deliver against our new ZSL 200 strategy</li> <li>• Monitor and actively manage the financial performance of ZSL and take mitigating actions to respond to and manage any downturn in income</li> <li>• Increasing the diversification of our income streams</li> <li>• Increase levels of unrestricted fundraising to enable ZSL to cover its operating costs and capital investment</li> </ul>



# Governance

Our work as a charity is directed and controlled by our Council of Trustees and expert committees, outlined here.

## CORPORATE STATUS

The Zoological Society of London (ZSL) is a charity incorporated under Royal Charter, registered in England and Wales with the Charity Commission (No. 208728). Certain of the commercial operations of the two Zoos, principally catering and shops, are carried out through its wholly owned subsidiary company, Zoo Enterprises Limited, a company registered in England and Wales with company number 01178687 (together referred to below as ‘the group’).

## ORGANISATION Council

The Society is governed by the Charter, the current version of which dates from 1995, and by Byelaws and Regulations. The Byelaws set out requirements concerning membership, the Officers (President, Secretary and Treasurer), the election and proceedings of Council, and general and other meetings. The Council is the ruling body of the Society, meets five times each year, and is responsible for establishing and monitoring the strategy and policies of the Society. Council members (‘the Trustees’) are elected from and by the membership (‘Fellows’) of the Society by ballot and serve for periods of four years. Invitations are circulated to all Fellows to nominate Trustees, and Fellows are advised of the retiring Trustees and specialist skills that the Council considers would be helpful to the Society. The election is by ballot of the complete Fellowship of the Society, and electronic voting has been introduced for the first time in the 2019 election cycle. New Trustees are invited to an induction meeting prior to taking up their role, where, in accordance with Charity Commission guidance, they are briefed on their legal obligations under charity law, the Charter and Byelaws of the Society, the committee and decision-making process, Directors’ reports and the financial performance of the Society. Additional training, if required, is provided internally and externally to Trustees.

## Council members/Trustees

The following were Council members in the period 1 May 2018 to the date of this report, unless otherwise indicated.

**President:** Professor Sir John Beddington

CMG FRS

**Secretary:** Professor Geoff Boxshall FRS

**Treasurer:** Paul Rutteman CBE

Sheila Anderson MBE (Vice President)\*\*

Lynne Abbess+

Dr Brian Bertram

Martin Cooke+

Ray Heaton

Dr Andrew Kitchener

Alexander Large+

Elizabeth Passey

Professor Maggie Redshaw+

Sean Rovai

Martin Rowson\*

Ken Sims\*

Paul Wilson

Victoria Wilson++

Robert Wingate

\*to November 2018 \*\*resigned with effect April 2019

+from November 2018 ++on agreed one-year sabbatical

as Trustee

## COMMITTEES

In addition to Council, the Society operates through a number of committees and boards, whose terms of reference and membership are shown below (\*retired during 2018-19, +joined during 2018-19).

### Finance and General Purposes Committee

**Terms of reference:** To monitor the financial management of the Society and act as an audit committee, and to preview and prepare papers for Council requiring policy or capital investment decisions.

**Membership:** Paul Rutteman CBE (Chair), Lynne Abbess+, Alison Beckett+~, Professor Sir John Beddington CMG FRS, Professor Geoff Boxshall FRS, Rupert Hambro CBE, Professor Maggie Redshaw+, Martin Rowson\*, Ken Sims\*, Paul Wilson, Loraine Woodhouse~  
~non-voting advisory members

### Animal Welfare Committee

**Terms of reference:** To advise Council and Directors on matters relating to animal welfare in the Collections, at both ZSL London Zoo and ZSL Whipsnade Zoo,

and in the work of the Institute of Zoology and in the work of Conservation Programmes.

**Membership:** Dr Maggie Redshaw (Chair), Georgina Allen+, Sheila Anderson, Dr Heather Bacon, Dr Brian Bertram+, Sally Binding+, Dr Matthew Brash, Neil D’Cruze, Troy Gibson, Miranda Stevenson+, Robert Wingate+

### Awards Committee

**Terms of reference:** Council presents a number of awards for contributions to zoology and conservation. The committee advises Council on all matters relating to these awards and the appointment of Honorary Fellows.

**Membership:** Professor Ashleigh Griffin (Chair), Professor Geoff Boxshall, Professor Helen Chatterjee, Professor Anjali Goswami+, Professor Ben Hatchwell+, Professor David Hosken, Professor Chris Jiggins, Professor Ken Norris, Dr Debbie Pain, Professor Emily Rayfield, Professor Jane Reid+, Professor David Sims

### Joint University College London/ ZSL Committee

**Terms of reference:** To determine, in the light of the policies and plans of the Society and where appropriate those of the University, the academic policy and development of the IoZ, and to advise the Director of Science of the Society thereon. To coordinate and monitor the implementation of the IoZ’s policies and plans, including planned staffing levels, student numbers and its financial management, and to submit an annual report thereon to the Council of the Society and the General Board of the Faculties of the University. To undertake other business as may be assigned to it by the Society or the University.

**Membership:** Professor Frances Brodsky (Chair)^, Professor Geoff Boxshall, Sir Cyril Chantler, Professor Helen Chatterjee^, Professor Jonathan Elliott+, Dominic Jermy, Professor Ian Owens\*, Professor Andrew Pomiankowski^, Professor Geraint Rees^

^a non-ZSL member (ie a nominee of UCL or an external representative). The rest are ZSL nominees.

## Zoos Advisory Committee

**Terms of reference:** To provide specialist advice on the objectives of the Zoos and on specific aspects of their management; to review the annual business and financial plans for the Zoos and to recommend them to Council; to review any material variances to the plans and, where necessary, recommend to Council remedial actions; to review and recommend to Council any capital developments.

**Membership:** Dr Simon Tonge (Chair), Martin Rowson (Vice Chair), James Breheny (corresponding member), Dr Brian Bertram, Mark Challis, Ray Heaton, Dr Andrew Kitchener, Ruth Padel, Colomba de La Panouse, Mark Ridgway, Sean Rovai, Ken Sims+, Paul Wilson, Victoria Wilson

## Day-to-day management

The day-to-day management of ZSL is delegated to the Director General and the six other Directors (together, the executive leadership committee) and monitored by Council. All significant matters of policy are determined by Council.

## Remuneration Committee

**Terms of reference:** To determine the remuneration and pension arrangements of Executive Directors. In the event of termination of employment of an Executive Director, to consider and (if appropriate) authorise any payment owing to that person.

**Membership:** Professor Geoff Boxshall (Chair), Professor Sir John Beddington CMG FRS, Dominic Jermey, Paul Rutteman CBE, two members of F&GPC. *(NB – the Director General does not discuss or vote on, and is not present for, any consideration of their own remuneration or pension.)*

## DIRECTORS

During 2018, the ZSL leadership team worked together, with guidance from the Trustees and feedback from ZSL staff, to design a new senior management organisational structure that aligns to ZSL's key delivery areas and strategy (the strategy being formally adopted in November 2018). Following this restructure, the executive leadership committee comprises:

**Director General:** Dominic Jermey  
**Chief Financial Officer and Managing Director of Business Services (formerly Finance Director):** Amanda Smith

**Human Resources Director:** Fiona Evans

**Director of Conservation and Policy:** Matthew Hatchwell (to October 2018), Katherine Secoy (interim to 31 March 2019), Dr Andrew Terry (from 1 April 2019)

**Director of Science:** Professor Ken Norris  
**Managing Director, Zoos and Engagement (formerly Commercial and Communications Director):** Rich Storton

**Director of Fundraising (formerly Development Director):** James Wren

## THE FINANCIAL STATEMENTS AND TRUSTEES' RESPONSIBILITIES

The Trustees are responsible for preparing the Trustees' Report and the financial statements in accordance with applicable law and UK Accounting Standards (UK Generally Accepted Accounting Practice). The law applicable to charities in England and Wales requires the Trustees to prepare financial statements for each financial year, which give a true and fair view of the state of affairs of the Charity and the group, and of the incoming resources and application of resources of the Charity and the group for that period.

In preparing these financial statements, the Trustees are required: to select suitable accounting policies and then apply them consistently; to observe the methods and principles in the Charities Statement of Recommended Practice (SORP); to make judgements and estimates that are reasonable and prudent; to state whether applicable UK

accounting standards have been followed, subject to any material departures disclosed and explained in the financial statements; and to prepare the financial statements on the going concern basis, unless it is inappropriate to presume that the Charity will continue in business.

The Trustees are responsible for keeping proper accounting records that disclose with reasonable accuracy at any time the financial position of the Charity and the group, and enable them to ensure that the financial statements comply with the Charities Act 2011, the Charity (Accounts and Reports) Regulations 2008 and the provisions of the Royal Charter. They are also responsible for safeguarding the assets of the Charity and the group, and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities. The Trustees are also responsible for the maintenance and integrity of the Charity and the group, and for financial information included on the Charity's website.

## Auditor

A resolution to reappoint RSM UK Audit LLP, chartered accountants, as auditor will be put to the Council before the end of the next financial year.

## REFERENCE AND ADMINISTRATIVE INFORMATION

<b>Principal address:</b>	Regent's Park London NW1 4RY	<b>Principal bankers:</b>	<b>Barclays Bank PLC</b> 1 Churchill Place London E14 5HP
<b>Also at:</b>	ZSL Whipsnade Zoo Bedfordshire LU6 2LF	<b>Statutory auditor:</b>	<b>RSM UK Audit LLP</b> 25 Farringdon Street London EC4A 4AB
<b>Registered office:</b>	Regent's Park London NW1 4RY	<b>Investment advisors:</b>	<b>Newton Investment</b> 160 Queen Victoria Street London EC4V 4LA
<b>Lawyers:</b>	<b>Hempsons Solicitors</b> 100 Wood Street London EC2V 7AN		

Approved by Council on 11 September 2019

Trustees' Report signed on behalf of Council

Professor Sir John Beddington CMG FRS, President

# Independent Auditor's Report to the Trustees of The Zoological Society of London

## Opinion

We have audited the financial statements of The Zoological Society of London (the 'Charity') and its subsidiaries (the 'Group') for the year ended 30 April 2019, which comprise the Consolidated Statement of Financial Activities, the Consolidated and Charity Balance Sheets, the Consolidated Statement of Cash Flows and notes to the financial statements, including a summary of significant accounting policies. The financial reporting framework that has been applied in their preparation is applicable law and United Kingdom Accounting Standards, including FRS 102 'The Financial Reporting Standard applicable in the UK and Republic of Ireland' (United Kingdom Generally Accepted Accounting Practice).

### In our opinion, the financial statements:

- give a true and fair view of the state of the Group's and Charity's affairs as at 30 April 2019, and of their incoming resources and application of resources for the year then ended;
- have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice; and
- have been prepared in accordance with the requirements of the Charities Act 2011.

### Basis for opinion

We have been appointed as auditors under s.151 of the Charities Act 2011 and report in accordance with regulations made under s.154 of that Act.

We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs (UK)) and applicable law. Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the financial statements section of our report. We are independent of the Group and parent Charity in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, including the Financial Reporting Council's (FRC's) Ethical Standard and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

### Conclusions relating to going concern

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

- the Trustees' use of the going concern basis of accounting in the preparation of the financial statements is not appropriate; or
- the Trustees have not disclosed in the financial statements any identified material uncertainties that may cast significant doubt about the Group's or parent Charity's ability to continue to adopt the going concern basis of accounting for a year of at least 12 months from the date when the financial statements are authorised for issue.

### Other information

The Trustees are responsible for the other information. The other information comprises the information included in the Annual Report other than the financial statements and our auditor's report thereon. Our opinion on the financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

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

that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

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

We have nothing to report in respect of the following matters where the Charities Act 2011 requires us to report to you if, in our opinion:

- the information given in the financial statements is inconsistent in any material respect with the Trustees' Report; or
- sufficient accounting records have not been kept by the parent charity; or
- the parent charity financial statements are not in agreement with the accounting records and returns; or
- we have not received all the information and explanations we require for our audit.

### Responsibilities of Trustees

As explained more fully in the Statement of Trustees' responsibilities set out on page 59, the Trustees are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the Trustees 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 Trustees are responsible for assessing the Group's and parent Charity'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 Trustees either intend to liquidate the Group or parent Charity 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 (UK) 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 provided on the FRC's website at [frc.org.uk/auditorsresponsibilities](http://frc.org.uk/auditorsresponsibilities). This description forms part of our auditor's report.

### Use of our report

This report is made solely to the Charity's Trustees as a body, in accordance with the Charities Act 2011. Our audit work has been undertaken so that we might state to the Charity's Trustees 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 Charity and the Charity's Trustees as a body, for our audit work, for this report, or for the opinions we have formed.

### RSM UK Audit LLP

Statutory Auditor  
Chartered Accountants  
25 Farringdon Street  
London  
EC4A 4AB

Date: 19 September 2019

RSM UK Audit LLP is eligible to act as an auditor in terms of s.1212 of the Companies Act 2006.

*RSM UK Audit LLP*

## Consolidated Statement of Financial Activities

For the year ended 30 April 2019

	Notes	Unrestricted £000	Restricted £000	Endowment £000	2018/19 Total £000	2017/18 Total £000
<b>Income and endowments from</b>						
Donations and legacies	2	2,487	2,313	–	4,800	4,445
Charitable activities:						
Zoo species collection and conservation	3	35,883	3	–	35,886	34,203
Science and research		2,339	2,668	–	5,007	5,637
Conservation and policy		88	8,806	–	8,894	10,154
Trading activities	4	14,430	–	–	14,430	11,051
Investment income	5	199	64	–	263	107
Other income*		1,404	–	–	1,404	–
<b>Total income</b>		56,830	13,854	–	70,684	65,597
<b>Expenditure on</b>						
Raising funds:						
Costs of generating voluntary income		1,453	662	–	2,115	1,532
Fundraising trading:						
Cost of goods sold and other costs	4	13,141	–	–	13,141	9,908
Charitable activities:						
Zoo species collection and conservation		37,915	14	–	37,929	33,897
Science and research		3,443	2,779	–	6,222	5,472
Conservation field programmes		3,842	11,425	–	15,267	13,401
<b>Total expenditure</b>	6	59,794	14,880	–	74,674	64,210
Net gains on investments	11	172	117	(14)	275	261
<b>Net income/(expenditure)</b>		(2,792)	(909)	(14)	(3,715)	1,648
Other recognised gains/(losses):						
Remeasurement of defined benefit obligation**	17	(1,360)	–	–	(1,360)	4,591
Transfers between funds	15	13	(13)	–	–	–
<b>Net movement in funds</b>		(4,139)	(922)	(14)	(5,075)	6,239
<b>Reconciliation of funds:</b>						
Total funds brought forward	15	61,440	9,571	941	71,952	65,713
<b>Total funds carried forward</b>		57,301	8,649	927	66,877	71,952

\*Includes exceptional insurance income of £1,404,000 (2018: nil).

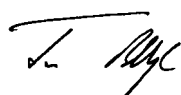
\*\* Prior year figure includes exceptional pension curtailment gain of £2,897,000 (2019: nil). See note 17.

## Consolidated and Charity Balance Sheets

As at 30 April 2019

	Notes	Group		Charity	
		2019 £000	2018 £000	2019 £000	2018 £000
<b>Fixed assets</b>					
Intangible assets	9	511	622	511	622
Tangible assets	10	45,810	48,400	45,810	48,400
Investments	11	5,971	5,696	7,744	7,469
		<u>52,292</u>	<u>54,718</u>	<u>54,065</u>	<u>56,491</u>
<b>Current assets</b>					
Stocks	12	568	447	–	–
Debtors	13	6,970	6,599	13,275	11,958
Cash at bank and in hand		17,787	17,461	10,803	11,470
		<u>25,325</u>	<u>24,507</u>	<u>24,078</u>	<u>23,428</u>
<b>Liabilities</b>					
Creditors: amounts falling due within one year	14a	(11,302)	(10,072)	(11,838)	(10,776)
		<u>14,023</u>	<u>14,435</u>	<u>12,240</u>	<u>12,652</u>
Net current assets					
Creditors: amounts falling due in more than one year	14b	(1,164)	(382)	(1,164)	(382)
Net assets excluding pension scheme assets/(liabilities)		65,151	68,771	65,141	68,761
Defined benefit pension scheme assets/(liabilities)	17	1,726	3,181	1,726	3,181
		<u>66,877</u>	<u>71,952</u>	<u>66,867</u>	<u>71,942</u>
<b>Net assets</b>					
<b>Funds</b>					
Unrestricted funds excluding pension liability:					
– General		5,232	3,781	5,222	3,771
– Designated		51,955	54,478	51,955	54,478
		<u>57,187</u>	<u>58,259</u>	<u>57,177</u>	<u>58,249</u>
Unrestricted – Pension reserve		600	3,181	600	3,181
Holiday pay accrual		(486)	–	(486)	–
		<u>57,301</u>	<u>61,440</u>	<u>57,291</u>	<u>61,430</u>
Restricted funds					
– Endowments		927	941	927	941
– Other		8,649	9,571	8,649	9,571
Total restricted funds		<u>9,576</u>	<u>10,512</u>	<u>9,576</u>	<u>10,512</u>
		<u>66,877</u>	<u>71,952</u>	<u>66,867</u>	<u>71,942</u>
<b>Total funds</b>	15				

Approved by Council on 11 September 2019 and signed on their behalf by:



Professor Sir John Beddington, CMG FRS, President



Paul Rutteman, FCA, Treasurer

## Consolidated Statement of Cash Flows

For the year ended 30 April 2019

		Group	
	Notes	2018/19 £000	2017/18 £000
<b>Cash flows from operating activities</b>	20	1,309	4,282
<b>Cash flows from investment activities</b>			
Interest received on bank and cash balances		159	12
Investment income		104	95
Purchase of tangible fixed assets		(1,137)	(84)
Purchase of intangible fixed assets		(109)	(2,568)
<b>Net cash used in investing activities</b>		<b>(983)</b>	<b>(2,545)</b>
Change in cash and cash equivalents in the reporting year		326	1,737
Cash and cash equivalents at the beginning of the year		17,461	15,724
<b>Cash and cash equivalents at the end of the year</b>	20	<b>17,787</b>	<b>17,461</b>

## Notes to the Financial Statements For the year ended 30 April 2019

### 1. Accounting policies

The Zoological Society of London is a registered charity in England and Wales (charity number 208728). The registered address is Regent's Park, London NW1 4RY.

#### **Basis of preparation and assessment of going concern**

The financial statements have been prepared in accordance with the Statement of Recommended Practice (SORP): Accounting and Reporting by Charities preparing their accounts in accordance with the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS 102) issued on 16 July 2014, FRS 102 and the Charities Act 2011.

The financial statements have been prepared under the historical cost convention with items recognised at cost or transaction value unless otherwise stated in the relevant note to these financial statements.

The financial statements have been prepared to give a 'true and fair' view and have departed from the Charities (Accounts and Reports) Regulations 2008 only to the extent required to provide a 'true and fair view'. This departure has involved following Accounting and Reporting by Charities preparing their accounts in accordance with the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS 102) issued on 16 July 2014 rather than the Accounting and Reporting by Charities: Statement of Recommended Practice effective from 1 April 2005, which has since been withdrawn.

The Society constitutes a public benefit entity as defined by FRS 102.

The Trustees consider that there are no material uncertainties about the Charity and Group's ability to operate as a going concern. Financial performance is monitored regularly and closely with regular forecasting to ensure ZSL's financial situation is secure. External fundraising, commercial income and ZSL's medium-term financial sustainability are regularly reviewed by management, F&GPC and Council as part of ZSL's risk management processes.

The Consolidated Financial Statements are presented in sterling, which is the functional currency of the Society.

Monetary amounts in these financial statements are rounded to the nearest whole £1,000 except where otherwise indicated.

The Charity has taken advantage of the paragraph 1.11 Section 1, Cash flows, of FRS 102 and as such has not shown an individual Charity cash flow statement within these financial statements on the basis that it is a qualifying entity and the Consolidated Statement of Cash Flows included within these financial statements includes the Charity's own cash flows.

#### **Consolidation**

The financial statements consolidate on a line-by-line basis the results and the assets and liabilities of the Society and its wholly owned subsidiaries – Zoo Operations Limited, Zoo Enterprises Limited and Whipsnade Wild Animal Park Limited. The Consolidated Statement of Financial Activities represents the results of both the charitable and non-charitable activities of the Group. A separate Statement of Financial Activities for the Charity itself is not presented; however, a summary statement of Financial Activities for the charity itself is presented in note 25. The results for the activities carried out by the Society's subsidiaries are set out in note 4 in respect of catering and merchandising, and in note 11 in respect of other activities.

#### **Funds**

The Society maintains a number of internal funds, including both restricted and unrestricted funds:

##### ***Unrestricted – general fund***

The general fund contains the free funds of the Society.

##### ***Unrestricted – designated funds***

These funds are derived from donations, grants, bequests and other resources set aside to be used in accordance with the resolutions passed by the Council of the Society. Both the capital and income may be spent. Until expended, the funds are held in cash or tangible fixed assets.

##### ***Restricted – endowment funds***

These funds are derived from bequests to the Society, are held permanently by the Trustees, and comprise investments, the income from which may be used to support Society activities.

##### ***Restricted – other funds***

These funds are subject to specific restriction imposed by the donor, by the purpose of an appeal or are received for a specific purpose.



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### **Fund transfers**

Restricted funds are transferred to unrestricted funds on occasions when restricted income has been used and restrictions no longer apply. For example, in the acquisition of tangible fixed assets, when the asset is purchased, the equal value of the restricted fund is transferred to unrestricted funds.

### **Income**

In accordance with the SORP, all income, including Gift Aid on admissions, becoming receivable by the Society during the year are recognised in the Consolidated Statement of Financial Activities, regardless of their source or of the purpose to which they are to be put or have been put. The exception to this relates to membership income and similar income, which is deferred to the extent that it relates to a service to be provided in future years, and grants and donations that are deferred where milestones and conditions for recognition are expected to be met in future years.

Where income is received for a specific purpose, the income is included in restricted funds.

Income from conservation and scientific research grants is recognised in accordance with the recognition criteria of the SORP when entitlement is assured, there is probability of receipt and when the amount can be reliably measured. Government grants are recognised when received.

Legacies are recognised when the Society is entitled to the asset and have been advised that it is probable that payment will be made or assets transferred and the amount involved can be reasonably quantified.

Gift aid is recognised using the same methodology as the income upon which it is claimed. Where the respective income is deferred, the related Gift Aid is also deferred over the same period.

### **Expenditure**

Expenditure is recognised when a liability is incurred. Expenditure is allocated to categories in accordance with the main activity of the staff concerned or the substance of the costs incurred as set out in note 6. Resources expended include the costs of raising funds and charitable expenditure, including support, management and administration costs.

Governance costs are a component of support costs and include those expenses incurred in the governance of the Society's assets and are primarily associated with constitutional and statutory requirements and include an appropriate proportion of senior management time. Total support costs have been allocated to each of the charity's core chargeable activities in the proportion that the activity has to the total of all other costs as set out in note 6. Support costs are those costs incurred in support of expenditure on the objectives of the Society, as set out in note 6.

### **VAT**

Admissions income is treated as VAT exempt and, accordingly, as a partially exempt body, ZSL may not recover all VAT paid. The exception is VAT incurred in connection with the catering and merchandising operations that operate through subsidiary companies, which is fully recoverable. Irrecoverable VAT is included within the category of expenditure to which it related within support costs, and any irrecoverable VAT incurred on capital works is capitalised along with the cost. Catering and merchandising income is stated excluding VAT.

### **Tangible assets and depreciation**

Fixed assets acquired by purchase or gift are initially recognised at cost or valuation and are subsequently depreciated (with the exception of freehold land and assets under construction, which are not depreciated) on a straight-line basis at rates appropriate to write off the cost over their expected useful lives. Freehold buildings are depreciated over five to 50 years; leasehold buildings from three years to the shorter of the lease term, and 50 years; plant and equipment five to 15 years; and motor vehicles one to five years.

Assets under construction consist of expenditure incurred in respect of tangible assets in the course of their construction and installation and that are directly attributable to bringing the asset into operation; these assets are not depreciated. Transfers are made to the relevant fixed assets category as and when the assets are available for use.

The carrying values of tangible fixed assets are reviewed for impairment when events or changes in circumstances indicate the carrying value may not be recoverable.

Tangible fixed assets with a cost below £5,000 are charged to expenditure and are not capitalised.

### **Intangible assets and amortisation**

Intangible assets are stated at cost less accumulated amortisation. Amortisation is calculated using the straight-line method to allocate the depreciable amount of the assets to their residual values over their estimated useful lives. Intangible assets comprise software and the website and are amortised between three and five years.

The carrying values of intangible fixed assets are reviewed for impairment when events or changes in circumstances indicate the carrying value may not be recoverable.

Intangible assets with an original cost of under £5,000 are charged to expenditure and are not capitalised.

Assets under construction consist of expenditure incurred in respect of intangible assets in the course of their construction and installation and that are directly attributable to bringing the asset into operation; these assets are not depreciated. Transfers are made to the relevant fixed assets category as and when the assets are available for use.

### Foreign currencies

Transactions in foreign currencies are recognised at the rate of exchange at the date of the transaction. Any exchange differences are recognised through the Consolidated Statement of Financial Activities. Foreign exchange monetary assets and liabilities are recognised at the rate of exchange ruling at the balance sheet date.

### Investments

Listed investments are included in the balance sheet at market value based on their published bid prices with realised and unrealised gains or losses recognised in the Consolidated Statement of Financial Activities, in the year in which they arise. Investment income is accounted for on an accruals basis.

Other investments comprise investments in subsidiaries and are initially measured at cost and subsequently measured at cost less any accumulated impairment losses.

### Stocks

Stocks are stated at the lower of direct cost (determined on a first-in, first-out basis) and net realisable value.

### Animals

The animals are generally acquired by the Society from other zoological organisations at zero cost or bred in our Zoos, and a realistic valuation cannot be placed thereon. Many of the animals acquired are held in trust with other zoological societies at zero cost.

### Heritage assets

ZSL holds a collection of books and artwork located at the ZSL London Zoo site, which is held to support ZSL's charitable objectives, being the advancement of zoology. The Trustees do not consider that reliable cost or valuation information can be obtained for the vast majority of items held in the collection of books and artwork. This is because of the unique features of the assets held, the number of assets held and the lack of comparable market values.

Furthermore, the Trustees believe the cost of obtaining a valuation of these assets would be onerous compared with the benefit that would be derived by users of the financial statements in assessing their stewardship of the assets. The Society does not therefore recognise these assets on its balance sheet. In accordance with the requirement of Section 34 of FRS 102 and Section 18 of SORP FRS 102, note 23 to the financial statements provides additional disclosures on the nature and scale of the Charity's heritage assets as well as collections, management policy and the extent to which access is permitted to the collection.

The collection of books and artwork is held to advance zoology by facilitating the improvement and dissemination of zoological knowledge.

### Redundancy payments

Termination benefits are payable when employment is terminated. The charity recognises termination costs at the point at which management is committed to incur these costs.

### Donated facilities

The Society leases the Regent's Park site from the Department for Culture, Media and Sport. The lease was renewed in 1999 for a term of 56 years at no annual rent. The Trustees do not believe it is practicable to reasonably quantify and measure the benefit conferred to the Society under this rent-free arrangement due to the Zoo's unique location and, as such, have not included the value of this donated facility in the Consolidated Statement of Financial Activities.

### Advertising costs

Costs incurred in relation to advertising are charged to the Consolidated Statement of Financial Activities at the time the advertisements appear in the media or are otherwise made public. Amounts invoiced but not yet taken to the Consolidated Statement of Financial Activities are included in prepayments.

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## **Pension costs**

The Society participates in various defined benefit and defined contribution pension schemes:

### ***Defined benefit schemes***

The cost of providing benefits under the ZS 1988 defined benefit plan is determined using the projected unit credit method, and is based on actuarial advice.

The change in the net defined benefit liability arising from employee service during the year is recognised as an employee cost. The cost of plan introductions, benefit changes, settlements and curtailments are recognised as an expense in measuring profit or loss in the year in which they arise.

The net interest element is determined by multiplying the net defined benefit liability by the discount rate, taking into account any changes in the net defined benefit liability during the year as a result of contribution and benefit payments. The net interest is recognised in the Consolidated Statement of Financial Activities as other finance revenue or cost.

Remeasurement changes comprise actuarial gains and losses, the effect of the asset ceiling and the return on the net defined benefit liability excluding amounts included in net interest. These are recognised immediately in the other recognised gains and losses in the year in which they occur and are not reclassified to the net income/expenditure in subsequent years.

The defined net benefit pension asset or liability in the balance sheet comprises the total for each plan of the present value of the defined benefit obligation (using a discount rate based on high-quality corporate bonds), less the fair value of plan assets out of which the obligations are to be settled directly. Fair value is based on market price information and, in the case of quoted securities, is the published bid price. The value of a net pension benefit asset is limited to the amount that may be recovered either through reduced contributions or agreed refunds from the scheme.

The Society participates in the Universities Superannuation Scheme. The scheme is a hybrid pension scheme, providing defined benefits (for all members), as well as defined contribution benefits. The assets of the scheme are held in a separate Trustee-administered fund. Because of the mutual nature of the scheme, the assets are not attributed to individual employers and a scheme-wide contribution rate is set. The Society is therefore exposed to actuarial risks associated with other institutions' employees and is unable to identify its share of the underlying assets and liabilities of the scheme on a consistent and reasonable basis. As required by Section 28 of FRS 102 'Employee benefits', the Society therefore accounts for the scheme as if it were a wholly defined contribution scheme. As a result, the amount charged to the Consolidated Statement of Financial Activities represents the contributions payable to the scheme. Since the Society has entered into an agreement (the Recovery Plan) that determines how each employer within the scheme will fund the overall deficit, the Society recognises a liability for the contributions payable that arise from the agreement (to the extent that they relate to the deficit) and therefore an expense is recognised.

### **Defined contribution scheme**

Contributions to defined contribution schemes are recognised in the Consolidated Statement of Financial Activities in the year in which they become payable. Any unpaid (or prepaid) contributions are separately disclosed within note 17.

### **Leasing commitments**

Rentals payable under operating leases are charged to the Consolidated Statement of Financial Activities on a straight-line basis over the lease term.

### **Financial instruments**

Financial instruments are classified and accounted for according to the substance of the contractual arrangement as financial assets or financial liabilities.

### **Debtors and creditors**

Trade and group debtors, which are receivable within one year are initially measured at the transaction price. Trade and group debtors are subsequently measured at amortised cost, being the transaction price less any amounts settled and any impairment losses.

Other creditors and trade creditors payable within one year that do not constitute a financing transaction are initially measured at the transaction price and subsequently measured at amortised cost, being the transaction price less any amounts settled.

### **Critical accounting estimates and judgements**

The Society makes estimates and assumptions concerning the future. The resulting accounting estimates and assumptions will, by definition, seldom equal the related actual results. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are those used by the scheme actuary in calculating the Society's defined benefit pension scheme liability (see note 17 for details).

## 2. Donations and legacies

	2018/19			2017/18		
	Unrestricted £000	Restricted £000	Total £000	Unrestricted £000	Restricted £000	Total £000
Donations	2,183	2,293	4,476	1,456	2,711	4,159
Legacies	304	20	324	259	19	286
	<u>2,487</u>	<u>2,313</u>	<u>4,800</u>	<u>1,715</u>	<u>2,730</u>	<u>4,445</u>

## 3. Charitable activities income

	2018/19 £000	2017/18 £000
<b>Zoo animal collections and conservation</b>		
Admissions	27,839	24,986
Membership	7,288	7,807
Other	759	1,410
	<u>35,886</u>	<u>34,203</u>
<b>Science and research</b>		
Grants	4,698	5,495
Studentships	304	141
Other	5	1
	<u>5,007</u>	<u>5,637</u>
<b>Conservation field programmes</b>		
Grants	8,770	9,943
Other	124	211
	<u>8,894</u>	<u>10,154</u>
<b>Total income from charitable activities</b>	<u>49,787</u>	<u>49,994</u>

Income from Zoo animal collections and conservation includes those derived from providing: access to ZSL London Zoo and ZSL Whipsnade Zoo to view the collections and to learn about animals and conservation; animal adoption services, animal-keeping experiences; and animal and conservation educational services inside and outside (outreach programmes) the Zoos.

### Income from Science and research and Conservation field programmes includes the following Government grants:

	2018/19 £000	2017/18 £000
<b>Government grants</b>		
Research England	1,968	2,125
Department for Environmental Food & Rural Affairs (Defra) [Darwin Initiative]	739	372
Department for International Development (DFID)	2,730	3,396
United Nations	401	518
European Commission	203	782
EU Funded	22	188
Welsh Government	64	–
	<u>6,127</u>	<u>7,381</u>

Of the total for Government grants above, £4,009,000 (2017-18: £5,257,000) were contractual payments for the purposes of specific scientific research. The remaining amount was from grants for general purposes. There were no unfulfilled commitments relating to these grants as at 30 April 2019 (2018: none).

No other form of assistance has been received from the Government (2017-18: none).

#### 4. Trading activities

The Society wholly owns Zoo Enterprises Limited (ZEL), which undertakes the merchandising, catering activities, overnight experiences in our lodges at London Zoo and Whipsnade Zoo and other commercial activities.

Taxable net profits are distributed to the Society annually.

The turnover and net contribution to the Society from catering and merchandising in ZEL were as follows:

	<b>2018/19</b>	<b>2017/18</b>
	<b>£000</b>	<b>£000</b>
Turnover:		
Catering	4,809	5,458
Merchandising	8,002	4,133
Other Commercial income	1,619	1,458
	<u>14,430</u>	<u>11,051</u>
Cost of activities	(11,288)	(8,525)
Trading income (net)	<u>3,142</u>	<u>2,526</u>
Support and overhead costs	(1,853)	(1,383)
Interest receivable	18	–
Net profit for the year before distribution	<u>1,307</u>	<u>1,143</u>

Catering, merchandising and other commercial activity turnover of £14.4m (2017-18: £11.1m) is included in the Consolidated Statement of Financial Activities within 'trading activities'. Cost of activities, support and overhead costs of £13.1m (2017-18: £9.9m) are included within fundraising trading with £18,000 (2017-18: nil) interest receivable.

#### 5. Interest and investment income

	<b>2018/19</b>	<b>2017/18</b>
	<b>£000</b>	<b>£000</b>
Interest on bank and cash balances	159	12
Investment income	104	95
	<u>263</u>	<u>107</u>

#### 6. Group analysis of total expenditure

	<b>Direct</b>	<b>Direct</b>	<b>Other</b>	<b>2018/19</b>	<b>2017/18</b>
	<b>staff costs</b>	<b>costs</b>	<b>support costs</b>	<b>£000</b>	<b>£000</b>
	<b>£000</b>	<b>£000</b>	<b>£000</b>		
Charitable activities:					
Zoo animal collection and conservation	12,082	19,777	6,070	37,929	33,897
Science and research	3,325	1,901	996	6,222	5,472
Conservation field programmes	4,843	7,982	2,442	15,267	13,401
	<u>20,250</u>	<u>29,660</u>	<u>9,508</u>	<u>59,418</u>	<u>52,770</u>
Expenditure on raising funds:					
Cost of generating voluntary income	838	938	339	2,115	1,532
Subsidiary costs of goods sold and other costs	2,000	9,288	1,853	13,141	9,908
	<u>2,838</u>	<u>10,226</u>	<u>2,192</u>	<u>15,256</u>	<u>11,440</u>
Total Group expenditure in 2018/19	<u>23,088</u>	<u>39,886</u>	<u>11,700</u>	<u>74,674</u>	<u>–</u>
Total Group expenditure in 2017/18	<u>24,008</u>	<u>32,933</u>	<u>7,269</u>	<u>–</u>	<u>64,210</u>

**Analysis of support costs**

	<b>2018/19</b>	<b>2017/18</b>
	<b>£000</b>	<b>£000</b>
Staff and related costs	6,840	5,585
Computer services	667	467
Depreciation	330	371
Insurance	464	436
Bank charges	213	257
Irrecoverable VAT	328	697
Other costs	1,787	1,678
Pensions costs on ZS 1988 scheme and USS scheme	486	(2,343)
Governance costs	99	121
Holiday accrual	486	–
	11,700	7,269

These costs have been allocated to the activities on the basis of total expenditure by activities.

**7. Net (income)/expenditure**

Net income before other recognised gains/(losses) is stated after charging/(crediting) the following items:

	<b>2018/19</b>	<b>2017/18</b>
	<b>£000</b>	<b>£000</b>
Insurance income	(1,404)	–
Auditor's remuneration:		
Audit services – charged by RSM UK Audit LLP	73	70
Audit services for pension scheme – charged by RSM UK Audit LLP	9	9
Non-audit services – charged by RSM UK Tax and Accounting Limited:		
Tax advisory	52	28
Other financial services	10	–
Amortisation	220	338
Depreciation	3,726	3,757
Operating lease rentals in respect of plant, equipment and motor vehicles	682	664
Foreign exchange gains on overseas balances and transactions	(36)	(118)
Trustees' expenses	3	5

Trustees' expenses consist mainly of the reimbursement of travel expenses. In the current year these Trustees' expenses relate to eight (2017-18: eight) Trustees who served as Council members during the year. None of the Trustees, nor any persons connected to the Trustees, received remuneration for their services. The Society pays the insurance premiums on behalf of the Trustees in respect of professional indemnity insurance. The premium paid is incorporated with the general professional liability premiums and so is not separately disclosable.

There are no other reportable transactions with Trustees. The auditor's remuneration for non-audit services is in respect of fees in connection with general tax advice and financial consultancy.

**8. Staff costs and remuneration of key management personnel**

	<b>2018/19</b>	<b>2017/18</b>
	<b>£000</b>	<b>£000</b>
Salaries and wages (including those of key management personnel)	25,553	25,354
Social security costs	2,165	2,198
Pension costs – Defined benefit (excluding finance costs)	180	1,417
Pension costs – Defined contribution	2,653	1,148
Gain on settlement and curtailment of ZS 1988 Scheme	–	(2,897)
Other staff costs	972	–
	31,523	27,220

Included within salaries and wages above is £220,000 of redundancy payments in the year (2017-18: £254,000) and in addition to the above, the cost of temporary staff in the year was £83,000 (2017-18: £50,000).

The average actual number of employees during the year was as follows:

	Average monthly headcount	
	2018/19 No.	2017/18 No.
Zoo animal collection and conservation	474	462
Science and research	64	61
Conservation field programmes	264	287
Cost of generating funds – voluntary income	18	14
Cost of generating funds – voluntary trading	71	98
Support staff	86	94
	<u>977</u>	<u>1,016</u>

The above is based solely on number of employees on a monthly basis; given the large number of part-time seasonal staff, the FTE is significantly lower than this.

The number of employees with emoluments in excess of £60,000pa (high-paid employees) exclusive of pension contributions was:

Band	2018/19 No.	2017/18 No.
£60,001-£70,000	23	13
£70,001-£80,000	7	7
£80,001-£90,000	2	2
£90,001-£100,000	3	5
£100,001-£110,000	2	1
£110,001-£120,000	1	1
£120,001-£130,000	1	–
£130,001-£140,000	1	–
£200,001-£210,000	1	–

The key management personnel of ZSL comprise the Trustees, who are not remunerated, as well as the Directorate, which includes the Director General, Chief Finance Officer and Managing Director of Business Services, Human Resources Director, Director of Conservation and Policy, Director of Science, Managing Director of Zoos and Engagement, and Director of Fundraising. The total employee benefits including employer pension contributions of the key management personnel of ZSL were £930,000 (2017-18: £967,000) and employee NI contributions for these personnel were £104,000 (2017-18: £108,000). The emoluments of the person in the top pay band in 2018-19 include a taxable allowance in lieu of employer pension contributions.

## 9. Intangible assets

### Group and Charity

	Software assets £000	Total £000
<b>Cost:</b>		
At 1 May 2018	1,039	1,039
Additions during the period	109	109
At 30 April 2019	<u>1,148</u>	<u>1,148</u>
<b>Amortisation:</b>		
At 1 May 2018	417	417
Charge for the period	220	220
At 30 April 2019	<u>637</u>	<u>637</u>
<b>Net book value:</b>		
NBV at 30 April 2019	<u>511</u>	<u>511</u>
NBV at 30 April 2018	<u>622</u>	<u>622</u>

## 10. Tangible assets

	Freehold land and buildings £000	Buildings on leased land £000	Assets under construction £000	Plant and equipment £000	Motor vehicles £000	Total
<b>Group and Charity</b>						
<b>Cost:</b>						
At 1 May 2018	28,619	65,343	–	8,119	661	<b>102,741</b>
Additions during the year			752	384	–	<b>1,137</b>
Transfers of assets under construction	281	252	(533)	–	–	–
Disposals	(1,020)	(1,774)		(443)	(24)	(3,261)
At 30 April 2019	27,880	63,821	219	8,060	637	<b>100,617</b>
<b>Depreciation:</b>						
At 1 May 2018	16,014	30,583	–	7,114	631	<b>54,342</b>
Charge for the year	1,041	2,433	–	233	19	3,726
Disposals	(1,020)	(1,774)	–	(443)	(24)	(3,261)
At 30 April 2019	16,035	31,242	–	6,904	626	<b>54,807</b>
<b>Net book value:</b>						
At 30 April 2019	<b>11,845</b>	<b>32,579</b>	<b>219</b>	<b>1,156</b>	<b>11</b>	<b>45,810</b>
At 30 April 2018	12,605	34,760	–	1,005	30	<b>48,400</b>

All tangible fixed assets are held by ZSL and substantially all are used for the charitable purposes of the Society.

The land at ZSL Whipsnade Zoo was purchased by the Society many years ago at negligible cost. In the absence of a formal valuation, it is not considered practicable to quantify the market value of the land at Whipsnade.

The Trustees are not aware of any other material difference between the carrying value and the market value of land and buildings.



## 11. Investments

	Valued at 1 May 2018 £000	Acquisition £000	Unrealised net gains/losses £000	Valued at 30 April 2019 £000
<b>Group and Charity</b>				
Listed investments at market value:				
Fixed interest (UK)	2	–	–	2
Other (UK)	5,694	–	275	5,969
<b>Total Group investments</b>	<b>5,696</b>	<b>–</b>	<b>275</b>	<b>5,971</b>
<b>Charity</b>				
Unlisted investments at cost:				
Investment in Zoo Enterprises Limited	112	–	–	112
Investment in Zoo Operations Limited	1,661	–	–	1,661
<b>Total Charity investments</b>	<b>7,469</b>	<b>–</b>	<b>275</b>	<b>7,744</b>
Listed investments historical cost	3,853	–	–	3,853

The unlisted investment in the wholly owned subsidiary, Zoo Operations Limited (ZOL) (company number 2226414), is carried in the Charity balance sheet at its net asset value and has remained as the investment holding company for its wholly owned subsidiary, Whipsnade Wild Animal Park Limited (WWAP) (company number 990860), and is incorporated in the UK. Both of these companies ceased trading on 31 December 2015.

ZSL's wholly owned subsidiary, Zoo Enterprises Limited (ZEL) (company number 1178687), undertakes the merchandising, catering and commercial operations at ZSL London Zoo and ZSL Whipsnade Zoo and Gift Aids its profits to ZSL annually. The results of Zoo Enterprises Limited are set out in note 4.

The value of investments at 30 April 2019 where ZSL owns more than 5% of the holding included the following significant investments:

	£000
Newton SRI Fund for Charities	5,139
Zoo Enterprises Limited	112
Zoo Operations Limited	<u>1,661</u>

The financial position of the individual subsidiaries was as follows:

	Assets 2019 £000	Liabilities 2019 £000	Funds 2019 £000	Assets 2018 £000	Liabilities 2018 £000	Funds 2018 £000
Zoo Enterprises Limited	8,257	(8,145)	112	6,864	(6,752)	112
Zoo Operations Limited	1,661	–	1,661	1,661	–	1,661
Whipsnade Wild Animal Park Limited	357	–	357	357	–	357

## 12. Stock

	Group		Charity	
	2019 £000	2018 £000	2019 £000	2018 £000
Finished goods	568	447	–	–
	<u>568</u>	<u>447</u>	<u>–</u>	<u>–</u>

For the year to 30 April 2019, the amount of stocks recognised as an expense was £2.2m (2017-18: £2.2m)

## 13. Debtors

	Group		Charity	
	2019 £000	2018 £000	2019 £000	2018 £000
Trade debtors	2,869	2,898	2,173	2,500
Amounts owed by group companies	–	–	7,012	5,785
Other debtors	529	1,181	528	1,158
Prepayments and accrued income	3,572	2,520	3,562	2,515
	<u>6,970</u>	<u>6,599</u>	<u>13,275</u>	<u>11,958</u>

## 14a. Creditors due in less than one year

	Group		Charity	
	2019 £000	2018 £000	2019 £000	2018 £000
Trade creditors	2,729	2,036	2,631	1,856
Amounts owed to group companies	–	–	1,314	1,314
Taxation and social security	973	956	973	956
Accruals and deferred income	7,361	6,960	6,681	6,530
Other creditors	239	120	239	120
	<u>11,302</u>	<u>10,072</u>	<u>11,838</u>	<u>10,776</u>

The movement in deferred income included within creditors amounts falling due within one year is analysed below:

	Group		Charity	
	2019 £000	2018 £000	2019 £000	2018 £000
Deferred income at 1 May	4,566	4,533	4,195	4,232
Amounts released from prior year	(4,566)	(4,533)	(4,195)	(4,232)
Incoming resources deferred	4,797	4,566	4,330	4,195
Deferred income at 30 April	<u>4,797</u>	<u>4,566</u>	<u>4,330</u>	<u>4,195</u>

Deferred income comprises membership and similar income, which relates to services that will be provided in future years, and grants and donations where milestones and conditions for recognition are expected to be met in future years.

## 14b. Creditors due in more than one year

	Group		Charity	
	2019 £000	2018 £000	2019 £000	2018 £000
USS pension liability (note 17)	1,164	382	1,164	382
	<u>1,164</u>	<u>382</u>	<u>1,164</u>	<u>382</u>

## 15. Funds

### Movement of funds for the year – Group

	At 1 May 2018 £000	Income £000	Expenditure £000	Transfers £000	Gains/ (losses) £000	At 30 April 2019 £000
<b>Unrestricted funds:</b>						
General fund before pension (liability)/asset	3,781	56,421	(58,344)	3,202	172	5,232
Holiday pay accrual	–	–	(486)	–	–	(486)
Pension (liability)/asset	3,181	85	(889)	(417)	(1,360)	600
<b>General fund after pension (liability)/asset</b>	<b>6,962</b>	<b>56,506</b>	<b>(59,719)</b>	<b>2,785</b>	<b>(1,188)</b>	<b>5,346</b>
<b>Designated funds</b>						
Lion conservation	370	–	–	(370)	–	–
Conservation, science and education mission	218	–	(17)	(201)	–	–
Science projects	2,248	324	(58)	54	–	<b>2,568</b>
Butterfly and crocodile conservation	65	–	–	(65)	–	–
Elephant conservation	180	–	–	(180)	–	–
ZSL 200 Strategic implementation fund	–	–	–	816	–	<b>816</b>
Tangible and intangible fixed asset fund	49,022	–	–	(2,700)	–	<b>46,322</b>
Tangible fixed asset commitments	969	–	–	(126)	–	<b>843</b>
Change reserve	1,406	–	–	–	–	<b>1,406</b>
	<b>54,478</b>	<b>324</b>	<b>(75)</b>	<b>(2,772)</b>	<b>–</b>	<b>51,955</b>
<b>Restricted funds:</b>						
<b>Endowment funds</b>						
De Arroyave	900	–	–	–	(12)	<b>888</b>
Fantham Bequest	39	–	–	–	(2)	<b>37</b>
Davis	2	–	–	–	–	<b>2</b>
	<b>941</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>(14)</b>	<b>927</b>
<b>Other restricted funds</b>						
Scientific	2,520	–	–	–	117	<b>2,637</b>
Curatorial projects	48	16	(14)	73	–	<b>123</b>
Fundraising development	461	1,361	(662)	(86)	–	<b>1,074</b>
Conservation and science	6,542	12,477	(14,204)	–	–	<b>4,815</b>
	<b>9,571</b>	<b>13,854</b>	<b>(14,880)</b>	<b>(13)</b>	<b>117</b>	<b>8,649</b>
<b>Total funds</b>	<b>71,952</b>	<b>70,684</b>	<b>(74,674)</b>	<b>–</b>	<b>(1,085)</b>	<b>66,877</b>

### Movement of funds for the year – Charity

	At 1 May 2018 £000	Income £000	Expenditure £000	Transfers £000	Gains/ (losses) £000	At 30 April 2019 £000
<b>Unrestricted funds:</b>						
General fund before pension (liability)/asset	<b>3,771</b>	43,280	(45,203)	3,202	172	<b>5,222</b>
Holiday pay accrual	–	–	(486)	–	–	<b>(486)</b>
Pension (liability)/asset	3,181	85	(889)	(417)	(1,360)	<b>600</b>
<b>General fund after pension (liability)/asset</b>	<b>6,952</b>	<b>43,365</b>	<b>(46,578)</b>	<b>2,785</b>	<b>(1,188)</b>	<b>5,336</b>

**Movement of funds for the year – Charity (continued)**

	At 1 May 2018 £000	Income £000	Expenditure £000	Transfers £000	Gains/ (losses) £000	At 30 April 2019 £000
<b>Designated funds</b>						
Lion conservation	370	–	–	(370)	–	–
Conservation, science and education mission	218	–	(17)	(201)	–	–
Science projects	2,248	324	(58)	54	–	2,568
Butterfly and crocodile conservation	65	–	–	(65)	–	–
Elephant conservation	180	–	–	(180)	–	–
ZSL 200 Strategic implementation fund	–	–	–	816	–	816
Tangible and intangible fixed asset fund	49,022	–	–	(2,700)	–	46,322
Tangible fixed asset commitments	969	–	–	(126)	–	843
Change reserve	1,406	–	–	–	–	1,406
	<b>54,478</b>	324	(75)	(2,772)	–	<b>51,955</b>
<b>Restricted funds:</b>						
<b>Endowment funds</b>						
De Arroyave	900	–	–	–	(12)	888
Fantham Bequest	39	–	–	–	(2)	37
Davis	2	–	–	–	–	2
	941	–	–	–	(14)	927
<b>Other restricted funds</b>						
Scientific	2,520	–	–	–	117	2,637
Curatorial projects	48	16	(14)	73	–	123
Fundraising development	461	1,361	(662)	(86)	–	1,074
Conservation and science	6,542	12,477	(14,204)	–	–	4,815
	9,571	13,854	(14,880)	(13)	117	8,649
<b>Total funds</b>	<b>71,942</b>	<b>57,543</b>	<b>(61,533)</b>	<b>–</b>	<b>(1,085)</b>	<b>66,867</b>

**Unrestricted – general fund:** The general fund is the free fund of the Society.

**Unrestricted – designated funds:** These funds are derived from donations, grants, bequests and other resources set aside to be used in accordance with the resolutions passed by the Council of the Society. Both the capital and income may be spent. Until expended, the funds are held in cash or tangible fixed assets. Designated funds are as follows:

Lion conservation fund – this represents resources set aside to meet lion conservation project expenditure. This has now been amalgamated into the ZSL 200 Strategic implementation fund.

Conservation, science and education mission fund – this represents resources set aside to meet conservation, science and education project expenditure. This has now been amalgamated into the ZSL 200 Strategic implementation fund.

Science projects – this represents resources set aside to meet science and education project expenditure.

Butterfly and crocodile conservation fund – this represents resources set aside to meet butterfly and crocodile conservation project expenditure. This has now been amalgamated into the ZSL 200 Strategic implementation fund.

Elephant conservation fund – this represents resources set aside to meet elephant conservation project expenditure. This has now been amalgamated into the ZSL 200 Strategic implementation fund.

ZSL 200 Strategic implementation fund – this has been designated in the year to create a fund which will be used to implement the ZSL 200 strategy.

Tangible and intangible fixed assets fund – this represents those resources that have been used to acquire tangible and intangible fixed assets. The value of this fund at the year end represents the net book value of tangible and intangible fixed assets.

Tangible fixed asset commitment fund – this represents the resources required for assets under construction to be brought to completion in the coming years.

Change reserve – this represents those resources which have been prioritised to carry out a formal organisational review and deliver key operational changes.

Designated funds are set aside for specific charitable purposes. They are released as required and when a formal management request is submitted to F&GPC.

**Restricted – endowment funds:** These funds are derived from bequests to the Society, are held permanently by the Trustees, and comprise investments, the income from which may be used to support Society activities. These funds are:

De Arroyave Fund and Davis Fund – these funds are held permanently by the Trustees, and comprise investments, the income from which, being unrestricted, may be used to support Society activities.

Fantham Bequest – this fund is held permanently by the Trustees, and comprises investments, the income from which is to be used to endow a Memorial Research Fellowship for research in parasitology or aquatic animal ecology.

**Restricted – other funds:** These funds are as follows:

Scientific fund – this fund was derived from grants and donations, and the Society, by trust deed dated 30 May 1991, created a trust over the fund and converted it into a restricted fund that can be used for the ‘advancement of zoology and animal physiology’.

Curatorial projects – this represents restricted donations received to support animal curatorial and conservation project expenditure.

Fundraising development – this represents restricted donations acquired as a result of fundraising activities.

Conservation and Science – this represents grants and donations received to cover conservation, science and project expenditure.

#### **Fund transfers**

Transfers from restricted funds totalling £13,000 are the result of donations received specifically for the build of the Whipsnade Aquarium, which were released as they were used in the year. This was also net of a £73,000 transfer to reflect the ownership of the curatorial funds, which were previously sat within fundraising.

Net funds transfers of £2,772,000 have been made from designated funds to general funds. These transfers include £2,700,000 from the tangible fixed assets fund, £126,000 due to capital spend on the new Whipsnade Aquarium and offset by £54,000 to the Science projects fund, representing the surplus generated by science activities in the year, and designated for future science use, as agreed by the Trustees.

Transfers within designated funds totalling £816,000 have been made following the agreement of the Trustees to designate the new ZSL 200 Strategic implementation fund, which has been disclosed above.

Transfers between unrestricted funds totalled £417,000, which was a transfer of the USS pension scheme into the pension reserve to better reflect the true unrestricted funds of the Society.

#### **Movement of funds for the year – Group (prior period)**

	At 1 May 2017 £000	Income £000	Expenditure £000	Transfers £000	Gains/(losses) £000	At 30 April 2018 £000
<b>Unrestricted funds:</b>						
General fund before pension (liability)/asset	6,641	49,578	(51,986)	(600)	148	3,781
Pension (liability)/asset	(3,443)	–	2,033	–	4,591	3,181
<b>General fund after pension (liability)/asset</b>	<b>3,198</b>	<b>49,578</b>	<b>(49,953)</b>	<b>(600)</b>	<b>4,739</b>	<b>6,962</b>
<b>Designated funds</b>						
Students’ awards	3	–	(1)	(2)	–	–
Lion conservation	370	–	–	–	–	370
Conservation, science and education mission	253	–	(100)	65	–	218
Science projects	751	–	(170)	1,667	–	2,248
Butterfly and crocodile conservation	65	–	–	–	–	65
Elephant conservation	180	–	–	–	–	180
Tangible and intangible fixed asset fund	50,775	–	–	(1,753)	–	49,022
Tangible fixed asset commitments	969	–	–	–	–	969
Change reserve	1,500	–	(94)	–	–	1,406
	<b>54,866</b>	–	(365)	(23)	–	<b>54,478</b>

Movement of funds for the year – Group (prior period) (continued)

	At 1 May					At 30 April
	2017	Income	Expenditure	Transfers	Gains/(losses)	2018
	£000	£000	£000	£000	£000	£000
<b>Restricted funds:</b>						
<b>Endowment funds</b>						
De Arroyave	880	–	–	–	20	900
Fantham Bequest	51	–	–	–	(12)	39
Davis	2	–	–	–	–	2
	933	–	–	–	8	941
<b>Other restricted funds</b>						
Scientific	2,372	–	–	43	105	2,520
Library support	79	–	–	(79)	–	–
Curatorial projects	–	126	(78)	–	–	48
Fundraising development	505	604	(437)	(211)	–	461
Conservation and science	3,760	15,289	(13,377)	870	–	6,542
	6,716	16,019	(13,892)	623	105	9,571
<b>Total funds</b>	<b>65,713</b>	<b>65,597</b>	<b>(64,210)</b>	<b>–</b>	<b>4,852</b>	<b>71,952</b>

Movement of funds for the year – Charity (prior period)

	At 1 May					At 30 April
	2017	Income	Expenditure	Transfers	Gains/(losses)	2018
	£000	£000	£000	£000	£000	£000
<b>Unrestricted funds:</b>						
General fund before pension (liability)/asset	6,631	39,670	(42,078)	(600)	148	3,771
Pension (liability)/asset	(3,443)	–	2,033	–	4,591	3,181
<b>General fund after pension (liability)/asset</b>	<b>3,188</b>	<b>39,670</b>	<b>(40,045)</b>	<b>(600)</b>	<b>4,739</b>	<b>6,952</b>
<b>Designated funds</b>						
Students' awards	3	–	(1)	(2)	–	–
Lion conservation	370	–	–	–	–	370
Conservation, science and education mission	253	–	(100)	65	–	218
Science projects	751	–	(170)	1,667	–	2,248
Butterfly and crocodile conservation	65	–	–	–	–	65
Elephant conservation	180	–	–	–	–	180
Tangible and intangible fixed asset fund	50,775	–	–	(1,753)	–	49,022
Tangible fixed asset commitments	969	–	–	–	–	969
Change reserve	1,500	–	(94)	–	–	1,406
	54,866	–	(365)	(23)	–	54,478
<b>Restricted funds:</b>						
<b>Endowment funds</b>						
De Arroyave	880	–	–	–	20	900
Fantham Bequest	51	–	–	–	(12)	39
Davis	2	–	–	–	–	2
	933	–	–	–	8	941
<b>Other restricted funds</b>						
Scientific	2,372	–	–	43	105	2,520
Library support	79	–	–	(79)	–	–
Curatorial projects	–	126	(78)	–	–	48
Fundraising development	505	604	(437)	(211)	–	461
Conservation and science	3,760	15,289	(13,377)	870	–	6,542
	6,716	16,019	(13,892)	623	105	9,571
<b>Total funds</b>	<b>65,703</b>	<b>55,689</b>	<b>(54,302)</b>	<b>–</b>	<b>4,852</b>	<b>71,942</b>

## 16. Analysis of group net assets between funds

### Group

#### Fund balances at 30 April 2019 are represented by

	Tangible and intangible assets £000	Investments £000	Other net assets £000	Total £000
Unrestricted funds	46,321	2,405	8,575	57,301
Restricted funds				
– Endowment funds	–	927	–	927
– Other restricted funds	–	2,639	6,010	8,649
	46,321	5,971	14,585	66,877

### Charity

#### Fund balances at 30 April 2019 are represented by

	Tangible and intangible assets £000	Investments £000	Other net assets £000	Total £000
Unrestricted funds	46,321	4,178	6,792	57,291
Restricted funds				
– Endowment funds	–	927	–	927
– Other restricted funds	–	2,639	6,010	8,649
	46,321	7,744	12,802	66,867

### Group – prior year

#### Fund balances at 30 April 2018 are represented by

	Tangible and intangible assets £000	Investments £000	Other net assets £000	Total £000
Unrestricted funds	49,022	2,365	10,053	61,440
Restricted funds				
– Endowment funds	–	941	–	941
– Other restricted funds	–	2,390	7,181	9,571
	49,022	5,696	17,234	71,952

### Charity – prior year

#### Fund balances at 30 April 2018 are represented by

	Tangible and intangible assets £000	Investments £000	Other net assets £000	Total £000
Unrestricted funds	49,022	4,138	8,270	61,430
Restricted funds				
– Endowment funds	–	941	–	941
– Other restricted funds	–	2,390	7,181	9,569
	49,022	7,469	15,451	71,942

## 17. Pension schemes

The Society has contributed to both defined benefit and defined contribution schemes during the year and defined benefit schemes are accounted for as if they were defined contribution schemes if required by FRS 102 Section 28 'Employee benefits'. Employees join the appropriate scheme, depending on their employment terms. The total cost to the Society for the year ended 30 April 2019 in respect of pension contributions has been allocated between expenditure categories in proportion to staff costs and charged to the Consolidated Statement of Financial Activities as appropriate, as follows:

	<b>2018/19</b> <b>£000</b>	<b>2017/18</b> <b>£000</b>
Defined benefit scheme contributions	–	644
Defined contributions schemes*	2,653	1,360
	<u>2,653</u>	<u>2,004</u>

At 30 April, there were outstanding employer's and employees' contributions, including any additional voluntary contributions, to the schemes as follows:

	<b>2019</b> <b>£000</b>	<b>2018</b> <b>£000</b>
Defined benefit scheme contributions	–	–
Defined contribution schemes*	5	10
	<u>5</u>	<u>10</u>

\*Includes amount in respect of the USS, which is a defined benefit scheme, but as required by FRS 102 Section 28 'Employee benefits', is accounted for as if it were a defined contribution scheme.

Most employees who participate in a scheme do so in either the Zoological Society 1988 Pension Scheme (ZS 1988), which is the Society's own self-administered occupational pension scheme, or the Universities Superannuation Scheme, which is contracted out of the State Second Pension (S2P) or the Friends Life schemes. As the ZS 1988 scheme was closed to employees joining after 30 June 2011, a Friends Life stakeholder-defined contribution scheme is available for those employees.

The date of the last triennial actuarial valuation was 30 June 2017.

### ZS 1988 Pension Scheme

	<b>At year end</b> <b>30 April 2019</b> <b>£000</b>	<b>At period end</b> <b>30 April 2018</b> <b>£000</b>
<b><i>Changes in present value of the defined benefit value of obligation</i></b>		
Defined benefit obligation at the start of the period	48,435	53,408
Current service cost	–	1,160
Interest cost	1,317	1,480
Actuarial (gain)/loss	3,411	(3,588)
Benefits paid	(1,128)	(1,128)
Change due to settlements or curtailments	–	(2,897)
Benefit obligation at the end of the period	<u>52,035</u>	<u>48,435</u>
<b><i>Changes in fair value of plan assets</i></b>		
Fair value of plan assets at the start of the period	51,616	49,965
Interest income	1,402	1,389
Employer contribution	–	644
Benefits paid (including expenses)	(1,308)	(1,385)
Return on plan assets (excluding net interest on the net defined benefit liability)	2,051	1,003
Fair value of plan assets at the end of the period	<u>53,761</u>	<u>51,616</u>



**Amounts recognised in the balance sheet**

Plans that are wholly unfunded and plans that are wholly or partly funded:

Present value of wholly or partly funded obligations	52,035	48,435
Fair value of plan assets	53,761	51,616
<b>(Surplus)/Deficit for funded plans and net (assets)/liabilities</b>	<b>(1,726)</b>	<b>(3,181)</b>

	At year end 30 April 2019 £000	At period end 30 April 2018 £000
<b>Components of pension cost</b>		
Current service cost	–	1,160
Pension scheme expenses	180	257
Settlements or curtailment gain	–	(2,897)
Net finance expense	(85)	91
Pension cost recognised in net income	95	(1,389)
<b>Other recognised gains and losses</b>		
Return on plan assets less income on plan assets	(2,051)	(1,003)
Actuarial (gain)/loss	3,411	(3,588)
Total of pension cost recognised in the Consolidated Statement of Financial Activities	1,455	(5,890)

Actual return on plan assets for 2019 is £3,453,000 (2018: £2,392,000).

**Principal actuarial assumptions****Weighted average assumptions used to determine benefit obligations**

	At year end 30 April 2019 %	At period end 30 April 2018 %
Discount rate	2.6	2.8
Future salary increase	N/A	N/A
Rate of price inflation (Retail Price Index)	3.2	3.2
Rate of price inflation (Consumer Price Index)	2.2	2.2
Future pension increases:		
Retail Price Index capped at 5%	3.1	3.1
Retail Price Index capped at 5% subject to a minimum of 3%	3.6	3.6

**Plan assets****Fair value of plan assets**

	At year end 30 April 2019 £000	At period end 30 April 2018 £000
Cash and cash equivalents	836	1,098
Equity investments	17,830	25,239
Diversified growth funds	5,204	3,881
Debt investments	22,316	20,179
Real estate	–	1,219
Fixed income	7,420	–
Annuities	155	–
	53,761	51,616

**Assumed life expectancy on retirement age at 65**

	30 April 2019		30 April 2018	
	Male	Female	Male	Female
Retiring today (member age 65)	22.1	23.9	22.0	23.9
Retiring in 25 years (member age 40 today)	23.8	25.8	23.8	25.8

**Plan assets**

Percentage of plan assets by asset allocation

	<b>2019</b>	<b>2018</b>
	%	%
Equity securities	42	56
Debt securities	42	39
Property	–	2
Cash	2	3
Fixed income	14	–
Annuities	–	–
Total	100	100

**Contributions**

There were no outstanding contributions payable to the plan at 30 April 2019 (2018: nil) and no further contributions will be paid due to the closure of the scheme and the updated agreement between ZSL and the Trustees of the scheme.

**Universities Superannuation Scheme (USS)**

**Key sources of estimation uncertainty**

The total cost charged to the Consolidated Statement of Financial Activities is £709,000 (2017-18: gain of £190,000).

The latest available complete actuarial valuation of the Retirement Income Builder section of the Scheme as at 31 March 2017 (the valuation date), which was carried out using the projected unit method. The valuation as at 31 March 2018 is under way but not yet completed.

Since the Society cannot identify its share of Retirement Income Builder section of the Scheme assets and liabilities, the following disclosures reflect those relevant for the section as a whole.

The 2017 valuation was the fourth valuation for USS under the scheme-specific funding regime introduced by the Pensions Act 2004, which requires schemes to adopt a statutory funding objective, which is to have sufficient and appropriate assets to cover their technical provisions. At the valuation date, the value of the assets of the Scheme was £60.0bn and the value of the Scheme's technical provisions was £67.5bn, indicating a shortfall of £7.5bn and a funding ratio of 89%.

Defined benefit liability numbers for the Scheme for accounting purposes have been produced using the following assumptions as at 30 April 2018 and 2019.

	<b>2019</b>	<b>2018</b>
Discount rate	2.44%	2.64%
Pensionable salary growth	N/A	N/A
Pensions increases (CPI)	2.11%	2.02%

The main demographic assumption used relates to the mortality assumptions. These assumptions have been updated for the 31 March 2019 accounting position, based on updated analysis of the Scheme's experience carried out as part of the 2017 actuarial valuation. The mortality assumptions used in these figures are as follows:

	<b>2019</b>	<b>2018</b>
<b>Mortality base table</b>	<p><b>Pre-retirement:</b> 71% of AMC00 (duration 0) for males and 112% of AFC00 (duration 0) for females.</p> <p><b>Post retirement:</b> 96.5% of SAPS S1NMA 'light' for males and 101.3% of RFV00 for females.</p>	<p><b>Pre-retirement:</b> 71% of AMC00 (duration 0) for males and 112% of AFC00 (duration 0) for females.</p> <p><b>Post retirement:</b> 96.5% of SAPS S1NMA 'light' for males and 101.3% of RFV00 for females.</p>
<b>Future improvements to mortality</b>	CMI_2016 with a smoothing parameter of 8.5 and a long-term improvement rate of 1.8%pa for males and 1.6% for females.	CMI_2016 with a smoothing parameter of 8.5 and a long-term improvement rate of 1.8%pa for males and 1.6% for females.

The current life expectancies on retirement at age 65 are:

	<b>2019</b>	<b>2018</b>
Males currently aged 65 (years)	24.6	24.5
Females currently aged 65 (years)	26.1	26.0
Males currently aged 45 (years)	26.6	26.5
Females currently aged 45 (years)	27.9	27.8
	<b>2019</b>	<b>2018</b>
Scheme assets	£60.0bn	£63.6bn
Total scheme liabilities	£67.5bn	£72.0bn
FRS 102 total scheme deficit	£7.5bn	£8.4bn
FRS 102 total funding level	89%	88%

As noted above, it is not possible to split out the assets and liabilities of the USS Scheme, hence ZSL has recognised in these accounts the deficit obligations liability with other creditors, and long-term creditors and movements in this liability have been shown below:

	<b>£000</b>
USS creditor at 1 May 2018	417
Unwinding of discount factor	16
Deficit contributions payable	(37)
Additional funding charge	730
Movement in the year	709
USS creditor at 30 April 2019	<u>1,126</u>

Payable by instalments:

	<b>2019</b>	<b>2018</b>
	<b>£000</b>	<b>£000</b>
Within one year	(38)	35
Between one and two years	53	35
Between two and five years	182	101
After five years	929	246
	<u>1,126</u>	<u>417</u>

## 18. Leasing commitments

	<b>2019</b>	<b>2018</b>
	<b>£000</b>	<b>£000</b>
Payments due:		
Within one year	675	682
Between two and five years	1,096	1,769
	<u>1,771</u>	<u>2,451</u>

## 19. Capital commitments

Outstanding capital commitments at 30 April 2019 amounted to £354,000 (2018: nil).

## 20. Net cash from operating activities

	2018/19 £000	Group 2017/18 £000
Net income before other gains/(losses)	(3,715)	1,648
Defined benefit pension scheme costs less contributions	95	(2,223)
Defined contribution USS pension scheme movement	709	190
Gain on investments	(275)	(261)
Interest and investment income	(263)	(107)
Amortisation of intangible assets	220	338
Depreciation of tangible fixed assets	3,726	3,757
Disposal of tangible fixed assets	–	310
Decrease/(increase) in stock	(121)	123
Increase in debtors	(370)	(501)
Increase in creditors	1,303	1,008
<b>Net cash inflow from operating activities</b>	<b>1,309</b>	<b>4,282</b>

Analysis of consolidated net cash resources

	At 1 May 2018 £000	Cash flow £000	At 30 April 2019 £000
Cash at bank and in hand	17,461	326	17,787

## 21. Contingent liabilities

The Charity is jointly and severally liable for all Value Added Tax (VAT) debts of the VAT group registration of which it is a part, relating to the year that it has been a member of the VAT group. The total VAT creditor for the VAT group at 30 April 2019 was £400,359 (30 April 2018: £391,351).

## 22. Related parties

There were no related party transactions in the year (2018: none), except for the transactions with subsidiary companies. Per SORP and FRS 102 the related party disclosure for the subsidiaries (refer to note 11 regarding their purposes) are:

	2018/19			2017/18		
	Intercompany debtor/(creditor) at 30 April 2019	Gift Aid distribution to ZSL	Support costs charged to subsidiary during the year	Intercompany debtor/(creditor) at 30 April 2018	Gift Aid distribution to ZSL	Support costs charged to subsidiary during the year
Zoo Enterprises Limited	£7,368,194	£1,307,732	£1,853,172	£6,142,023	£1,143,175	£1,382,565
Whipsnade Wild Animal Park Limited	(£356,567)	–	–	(£356,567)	–	–
Zoo Operations Limited	(£1,314,478)	–	–	(£1,314,478)	–	–

## 23. Heritage assets

ZSL Library holds a significant range of important heritage items including historic publications, illustrated books, artworks, sculptures and archives of ZSL's own records.

Heritage items are acquired through donations and legacies. Annual funds are specifically allocated to the preservation of these items, and copies are made of priority items through a system of digitisation. Most heritage items are stored in secure areas on ZSL premises with controlled access. These items are recorded in an online catalogue. Viewing of heritage items is strictly controlled and invigilated at all times.

The Trustees of ZSL consider from time to time the maintenance or disposal of heritage assets; there have been no acquisitions or disposals in the past five years.

## 24. Financial instruments

The carrying amount of the Society's financial instruments at the year end were:

	Group		Charity	
	2019 £000	2018 £000	2019 £000	2018 £000
<b>Financial assets</b>				
Debt instruments measured at amortised cost	5,777	5,622	12,216	10,985
Financial assets at fair value through profit and loss	5,971	5,696	5,971	5,696
	<u>11,748</u>	<u>11,318</u>	<u>18,187</u>	<u>16,681</u>
<b>Financial liabilities</b>				
Financial liabilities measured at amortised cost	5,999	4,932	6,535	6,007
	<u>5,999</u>	<u>4,932</u>	<u>6,535</u>	<u>6,007</u>

## 25. Charity Statement of Financial Activities

A summary Statement of Financial Activities for the Charity itself is presented below, with the turnover and expenditure for Zoo Enterprises Limited in the Consolidated Statement of Financial Activities replaced in the Charity's Consolidated Statement of Financial Activities by the amount of Gift Aid payable to the Charity by the company.

	Unrestricted £000	Restricted £000	Endowment £000	2018/19 total £000	2017/18 total £000
<b>Income and endowments from</b>					
Donations and legacies	1,420	2,313	–	<b>3,733</b>	<b>4,445</b>
Charitable activities	39,377	11,477	–	<b>50,854</b>	<b>49,994</b>
Gift Aid from profits from trading subsidiaries	1,307	–	–	<b>1,307</b>	<b>1,143</b>
Investment income	181	64	–	<b>245</b>	<b>107</b>
Other income	1,404	–	–	<b>1,404</b>	–
<b>Total income</b>	<u>43,689</u>	<u>13,854</u>	<u>–</u>	<u><b>57,543</b></u>	<u><b>55,689</b></u>
<b>Expenditure on</b>					
Raising funds:					
Cost of generating voluntary income	1,453	662	–	<b>2,115</b>	<b>1,532</b>
Charitable activities:					
Animal collections	37,915	14	–	<b>37,929</b>	<b>33,897</b>
Science and research	3,443	2,779	–	<b>6,222</b>	<b>5,472</b>
Conservation programmes	3,842	11,425	–	<b>15,267</b>	<b>13,401</b>
<b>Total expenditure</b>	<u>46,653</u>	<u>14,880</u>	<u>–</u>	<u><b>61,533</b></u>	<u><b>54,302</b></u>
Net gains on investments	172	117	(14)	<b>275</b>	<b>261</b>
<b>Net (expenditure)/income</b>	<u>(2,792)</u>	<u>(909)</u>	<u>(14)</u>	<u><b>(3,715)</b></u>	<u><b>1,648</b></u>
Other recognised gains/(losses):					
Remeasurement of defined benefit obligation	(1,360)	–	–	<b>(1,360)</b>	<b>4,591</b>
Transfers between funds	13	(13)	–	–	–
<b>Net movement in funds</b>	<u>(4,139)</u>	<u>(922)</u>	<u>(14)</u>	<u><b>(5,075)</b></u>	<u><b>6,239</b></u>
<b>Reconciliation of funds:</b>					
Total funds brought forward	61,430	9,571	941	<b>71,942</b>	<b>65,703</b>
<b>Total funds carried forward</b>	<u>57,291</u>	<u>8,649</u>	<u>967</u>	<u><b>66,867</b></u>	<u><b>71,942</b></u>

**26. Consolidated Statement of Financial Activities for the period ended 30 April 2018**

	Unrestricted £000	Restricted £000	Endowment £000	2017/18 £000
<b>Income and endowments from:</b>				
Donations and legacies	1,715	2,730	–	4,445
Charitable activities:				
Zoo animal collection and conservation	34,077	126	–	34,203
Science and research	2,589	3,048	–	5,637
Conservation field programmes	101	10,053	–	10,154
Trading activities	11,051	–	–	11,051
Investment income	45	62	–	107
<b>Total income</b>	49,578	16,019	–	65,597
<b>Expenditure on</b>				
Raising funds:				
Costs of generating voluntary income	1,094	438	–	1,532
Fundraising trading: cost of goods sold and other costs	9,908	–	–	9,908
Charitable activities:				
Zoo animal collection and conservation	33,818	79	–	33,897
VAT reclaim on animal-related costs	–	–	–	–
Science and research	2,237	3,235	–	5,472
Conservation field programmes	3,261	10,140	–	13,401
<b>Total expenditure</b>	50,318	13,892	–	64,210
Net gains on investments	148	105	8	261
<b>Net income/(expenditure)</b>	(592)	2,232	8	1,648
Other recognised gains/(losses):				
Remeasurement of defined benefit obligation	4,591	–	–	4,591
Transfers between funds	(623)	623	–	–
<b>Net movement in funds</b>	3,376	2,855	8	6,239
<b>Reconciliation of funds:</b>				
Total funds brought forward	58,064	6,716	933	65,713
<b>Total funds carried forward</b>	61,440	9,571	941	71,952

ZSL Whipsnade Zoo's 10-year-old wolverine, Puff, became a father to two kits born in February 2019, rare additions to the species within the UK; numbers of wolverines are decreasing in the wild



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