World firsts, new arrivals, national awards and a royal visit have all helped make 2016 a fantastic year for Bristol Zoological Society.

The year began with the birth of Afia, a female gorilla, by emergency caesarean. Despite her difficult start, Afia thrived under the tireless care of the keepers who hand-reared her until she was old enough to be introduced to our gorilla troop. Their remarkable efforts are evidenced by how well Afia has now been accepted into the gorilla family.

Afia’s birth mother, Kera, also made a miraculous recovery after suffering from pre-eclampsia and complications following her caesarean. Our dedicated team of vets and keepers achieved a great deal in treating her, and we are thrilled that Kera too has now made a full recovery.

We have had success with our new breeding programme for the Critically Endangered Lord Howe Island stick insects, and have high hopes for our new group of Desertas wolf spiders. Conservation breeding programmes such as these are vital in safeguarding less-well-known species on the brink of extinction.

Our efforts were recognised by the British zoo community this year, as we received five awards from the British and Irish Association of Zoos and Aquariums (BIAZA). These included: gold for a conservation project to help protect the UK’s native fen raft spider; silver for our fundraising comedy event, Giggle for Gorillas; and three bronze awards.

The year has also seen great development at Wild Place Project, including our new Gelada Rocks exhibit and the start of building work on our new giraffe house.

Finally, I would like to thank Richard Clarke as he steps down as chairman of trustees. He has made an enormous contribution over many years and we wish him all the best for the future.

Dr Bryan Carroll
C.E.O.
It gives me great pleasure to introduce the 2016 Annual Review and to reflect on some of our achievements during the year, which has seen so much happening.

Highlights have included new conservation projects, exciting animal births, awards, a busy calendar of events, continued sponsor support and the wonderful work by our dedicated staff and volunteers.

In the spring we were honoured with a visit from HRH The Earl of Wessex along with his family, at Wild Place Project. His Royal Highness has been Royal Patron of Bristol Zoological Society since 2013 and this visit, along with all the other events that have taken place across the Zoo and Wild Place Project this year, required a huge amount of work.

We are delighted with the continued success of Wild Place Project which this year enjoyed its highest visitor figures to date – a 42 per cent increase on 2015. Our new group of geladas is a fantastic addition and has proved a huge hit with visitors. We are now looking ahead to 2017, which will see the arrival of giraffes along with many other exciting plans.

At Bristol Zoo we have had significant success with some of our new conservation programmes. We have established new breeding groups for Desertas wolf spiders and UK native medicinal leeches. A host of exciting animal births have also taken place throughout the year, including a red panda, a pygmy hippo, twin crowned lemurs and of course, Afia the gorilla.

As well as being a successful and eventful year, 2016 has also marked Bristol Zoo’s 180th birthday – an incredible milestone and one we are extremely proud of. 2016 has also been my last as chairman of trustees after six years. My family’s history has been entwined with the Zoo since it was founded in 1836. I have been a shareholder since birth and on the board of trustees for 23 years. It has been a great privilege to have held the position of chairman of trustees - there is a weight of history on my shoulders and it is very exciting to have been a part of that.

I would like to add a personal note of thanks to the board of trustees for the many hours and the experience that they give to the Society, most of which goes unseen. Thanks also go to all the staff and volunteers, under the leadership of Dr Bryan Carroll and the senior management team, for yet another successful year. It is this hard work which ensures Bristol Zoological Society continues to be viewed in such high esteem both here in Bristol and around the globe – we should all feel very proud of that.

Richard Clarke
Chairman of Trustees
Lord Howe Island stick insect

credit: Rohan Cleave, Melbourne Zoo
Winter

January

Bristol Zoological Society celebrated its 180th birthday this year. To mark the occasion, members of the press were invited to see the Zoo’s treasure trove of archive material.

The first of our Lord Howe Island stick insect eggs hatched at the start of the year. The species is one of the rarest insects in the world and very difficult to look after, but six nymphs grew into adults and went on to breed, laying over 300 eggs so far – the first time the species has bred outside Australia. It is hoped that these individuals will form Europe’s first captive breeding population for this Critically Endangered species.

February

Our annual appeal for volunteers to help save amphibians from being killed on the roads took place again with great success. Every year toads, frogs and newts migrate from their winter hibernation sites to ponds and streams to breed, with toads often crossing busy roads. We support 19 local toad patrols in and around the Bristol region and this year we rescued 5,200 toads.

March

Our luxury on-site accommodation, The Lodge, continued to be a huge success, with guests including internet stars the Saccone-Joly family, whose vlogs about their stay received more than 1.2 million views. The Lodge also scooped a gold ‘Tourism Experience of the Year’ award at the Bristol, Bath and Somerset Tourism Awards, attended by around 300 leisure and tourism representatives from around the region.
Volunteers at Wild Place Project painted over 1,000 faces this year. 143 dedicated individuals joined our volunteer team throughout the year, supporting staff across six departments including learning, education, keepers, maintenance, horticulture and landscapes.
Wild Place Project

Volunteers at Wild Place Project painted over 1,000 faces this year.

Wild Place Project received a royal seal of approval this spring as their Royal Highnesses The Earl and Countess of Wessex, along with their children, visited to officially open the Mahali Pori exhibit. The Earl, who has been Royal Patron of Bristol Zoological Society since 2013, described the attraction as terrific and unveiled a plaque at the exhibit which houses cheetahs, zebras, guinea fowl and eland. He also received a personal tour of the site with his family, accompanied by Dr Bryan Carroll, C.E.O. and Richard Clarke, chairman of trustees.

Another highlight this year was the arrival of six male gelada baboons to live in a new, purpose-built enclosure called Gelada Rocks. Geladas are an exciting and impressive addition and a challenging species to look after. A lot of hard work went into the planning, design and build of the new enclosure, which includes the opportunity for guests to visit a mock field scientists’ tent, play on the ‘abandoned’ ranger vehicle, take part in a fossil dig and clamber on the climbing rocks.

Other new arrivals this year included two okapi calves, a species that still is rare in captivity. The first, Ruby, was born in May to mum Kibibi and the second, Kimosi, in November, to mum Lodja. There are just 15 okapis in the UK, so these births are a huge boost to the breeding programme for this Endangered species.

The year also saw a baby boom in the Discover Madagascar exhibit, with the birth of five ring-tailed lemurs, including two sets of twins. The first youngster was born in March, followed by twins in March and June. The new arrivals take the total number of ring-tailed lemurs in Discover Madagascar to 18. The walk-through exhibit is also home to three other lemur species - mongoose lemurs, white-belted ruffed lemurs and red-bellied lemurs – as well as African pygmy goats.
The walled garden area received some new inhabitants as we opened a new bird exhibit featuring species such as Socorro doves, which are Extinct in the Wild, Endangered Visayan tarictic hornbills and Critically Endangered blue-crowned laughing thrushes and Edwards’s pheasants.

It is little surprise that such a growing and flourishing attraction, now in its third year, experienced its highest annual visitor figures to date - 148,181, a 42 per cent increase on 2015. In total 174 schools visited and 5,400 children were taught in learning workshops during this year compared to 2,500 in 2015.

We also launched new guest experience sessions offering visitors the chance to get up-close with cheetahs and meerkats in a behind-the-scenes encounter. Our new Junior Keeper for the Day activity proved incredibly popular, with 123 bookings since launching in July.

Further successes included receiving a 2016 Certificate of Excellence from TripAdvisor for consistently delivering superior service. This prestigious, global accolade celebrates businesses that have earned quality traveller reviews for service, guest experience and overall hospitality over the past year.

Support from the local community continues to play a vital role and we were incredibly grateful for the 4,410 hours of corporate
This community effort continued with the completion of the Welsh Three Peaks Challenge in July by 50 staff and supporters. The fundraising mission involved scaling Snowdon, Cadair Idris and Pen y Fan – a combined height of 2,896m. This, combined with our 5km Wild Run event later in the year, completed by 300 runners, helped us raise £128,404 for our Giraffe House appeal.

Finally, building work got under way for our exciting new £1.1 million giraffe house and paddock on the Edge of Africa exhibit. Work included demolition of the old giraffe house – home to our zebras and eland - and the construction of their new accommodation. The new exhibit is due to open in summer 2017.

volunteering completed by 757 volunteers this year. Similarly, our growing team of regular Wild Place Project volunteers continues to play a vital role across the site. This year 143 dedicated individuals joined our volunteer programme. Volunteers support staff across six departments - learning, education, keepers, maintenance, horticulture and landscapes. We are very grateful for their commitment.

Our programme of events proved popular again this year, including a sell-out audience for Peter Pan, summer evening openings and our popular seasonal added-value activities.
Twin aye-ayes, a species of lemur, were born at Bristol Zoo in a world first. Once thought to be almost extinct, the aye-aye is classified as Endangered by conservationists.
Spring

April

A major rebuild of the second half of the Aquarium took place, which saw the arrival of four epaulette sharks, also known as walking sharks. They are the first sharks at the Zoo for 20 years. They now live in the new 25,000 litre tropical marine display, which mimics the waves and habitat of the Great Barrier Reef, their natural home.

A new, 25,000 litre mangrove exhibit was also constructed, featuring archer fish, with an Indian dwarf mudskipper display next door. The unusual-looking mudskippers can spend up to 90 per cent of their time out of water as they have the ability to breathe through their skin.

May

Our red panda pair had their first baby this summer. The youngster, named Mali, remained well-hidden inside a nest box for the first few months, completely dependent on her mother for food.

June

One of the world’s rarest spiders, the Desertas wolf spider, was brought into captivity for breeding at Bristol Zoo in an attempt to save it from extinction. It is the first time the species has been held in captivity. These Critically Endangered spiders are only found on the Desertas Islands, near Madeira, but are not protected by any specific legislation.

Pupils from Chester Park Junior School’s gardening club won the chance to plant an edible garden at the Zoo. The green-fingered youngsters created a garden featuring a host of fruit, vegetables, herbs and flowers, all food for the Zoo’s animals.
Afia’s story

Weighing little more than a bag of sugar and needing emergency intensive care at birth, little Afia’s start in life was a difficult one. Born by caesarean after her mother, Kera, developed life-threatening pre-eclampsia, Afia needed resuscitating by Zoo vets immediately after delivery.

The first part of Afia’s story took place over a 10-month period, during which keepers worked round-the-clock to care for her. In her first few days it was vital that she was kept warm and began taking formula milk from a bottle. A small team of experienced keepers shared the care of the baby and she quickly grew stronger and more alert.

In the following months, Afia more than doubled her birth weight, started teething and even giggled for the first time. She regularly made national and international news - the total value of press coverage about her was over £94 million and her story was viewed in the media almost 718 million times. A public poll was held to choose her name, voted on by more than 9,000 people. Afia was chosen, meaning ‘Friday-born child’ in Ghanaian.

Constant care and attention was still needed from keepers, while being mindful to ensure human imprinting was kept to a minimum. Afia spent all day inside the gorilla house, alongside the other gorillas, so that she could see them and become accustomed to their sounds and smells. It was vital she knew she was a gorilla.

At four months old, keepers began weaning her onto steamed vegetables and she grew stronger still. At eight months old, she was ready to begin gradually meeting the other gorillas. Romina was identified as the best surrogate mother as she displayed good, protective behaviours. Using a gorilla toy, training took place before the introduction so that Romina...
Afia will still need milk feeds from her keepers until she is around four years old.

would allow keepers to bottle-feed Afia several times a day.

The integration process was a delicate one, but much better than we ever dared hope, with staggered introductions over a period of weeks. It was a tense time for keepers, but what has taken years in other zoos was achieved smoothly and safely in a few months. Afia can now be seen alongside all six other members of the gorilla family, playing and relaxing together exactly as a parent-reared gorilla infant would.

After such a challenging yet successful year, we are now looking forward to the next chapter of Afia’s story, as she grows and flourishes as a young gorilla among her family where she belongs.

Kera’s story

As extraordinary as Afia’s story is, equally remarkable is that of her birth mother, Kera. Her successful recovery from the brink of death is a result of the hard work, skill and dedication of Zoo vets and keepers.

After Kera’s emergency caesarean it quickly became clear that she was still very unwell. In the following weeks she was treated intensively for severe anaemia and a chest infection on top of recovering from pre-eclampsia and the caesarean.

Vets gave her a slim chance of survival but did everything they could to treat her, including a blood transfusion from one of the other gorillas – one of only a few times this has ever been carried out on a gorilla. Keepers stayed by Kera’s side constantly, giving her oxygen, fluids and medication, and encouraging her to eat small amounts of her favourite foods.

Gradually, after two months of intensive care, Kera’s strength began to return. It was a further six months before she finally completed all her treatment. Kera has now fully recovered and can be seen alongside Afia in the Sanlam Gorilla House.
A busy programme of summer entertainment included four sell-out Sunset Special events, a gig by the Bootleg Beatles, productions of Shakespeare's A Midsummer Night's Dream and David Walliams' book Mr Stink, and our adults only Big Night Out. We also received a BIG Lottery 'Awards For All' grant of £7,200 to host the first ever Lesbian Gay Bisexual Transsexual family friendly event at a UK zoo.

Two sets of golden-headed lion tamarin twins were born in the Zona Brazil exhibit this year - a huge boost for the captive breeding programme for the species, which is one of the world's most endangered primates.

Tiako the crowned lemur and her young at Bristol Zoo
**Summer**

**July**

Our female crowned lemur, called Tiako (the Malagasy word for ‘to love’) gave birth to twins this summer. It is the second time she has bred with male Loko since they arrived in 2014. Crowned lemurs are native to Madagascar and are an Endangered species.

Salome the gorilla celebrated her 40th birthday with presents, roses and a tasty vegetable birthday cake. Salome has lived at Bristol Zoo since 1998 and is described by her keepers as one of the most intelligent of the troop.

**August**

Two hugely popular Pokemon Go events were held after hours within the Zoo grounds. Queues formed round the block for the events, which attracted thousands of players and raised over £7,500.

The third annual ‘Giggle’ stand-up comedy night featured performances from Joel Dommett, Nish Kumar, George Rigden and Sally-Anne Hayward, along with local stand-up comedian and TV warm-up artist, Mark Olver.

**September**

A baby pygmy hippo made a splash at Bristol Zoo this month. The baby boy was named Hugo following a public vote. The species is Endangered and it is thought that less than 2,000 survive in the wild.

Keepers also celebrated the birth of a baby drill. Drills are one of the rarest primates in Africa and Bristol Zoo is one of only four collections in the UK to house this Endangered species.

Bristol Zoological Society celebrated the fifth year of its award-winning Bristol Community Plant Project by hosting a garden party for 150 guests. The project involves groups and schools around the city growing different varieties and species of the endangered plant, Calendula, with the objective of establishing a dispersed collection to achieve ‘National Plant Collection’ status.
Field conservation and science

Global conservation

The latest report on the World’s 25 Most Endangered Primates (published every two years by the IUCN SSC Primate Specialist Group, the International Primatological Society, Conservation International and Bristol Zoological Society) has once again highlighted the plight of species such as the Hainan gibbon and ring-tailed lemur. In April, we led the IUCN SSC Primate Specialist Group’s Red List assessment workshop for African Primates. We evaluated 179 taxa, of which the number threatened with extinction increased substantially since the previous evaluation eight years ago.

South Africa

We continued our work on the African penguin Chick Bolstering Project. In 2016, over 900 chicks were rescued, of which 350 have already been released back into their colonies. The others will follow when they are big enough for release. We continued monitoring wild chick growth and survival in the Robben Island colony. One of our Masters students completed her thesis on the impact of temporary fishing closures on chick survival. The results indicate that closing the waters around colonies to fishing can have a positive effect on the chicks’ physical condition.

Cameroon

We began a project to save one of the few remaining populations of Kordofan giraffe in the wild. Our conservation scientists travelled to Benoué National Park to begin mapping the distribution and population viability of the giraffes using drones. Kordofans are among the most threatened subspecies of giraffes, with less than 2,000 estimated to be remaining. This project will link to a new giraffe exhibit planned for 2017 at Wild Place Project. We also continued our support for orphaned primates at Mefou, in southern Cameroon.

The Philippines

One of the main threats to forest species on the island of Negros is ‘kaigan’ farming (‘slash and burn’ agriculture). This year we helped create a local association of farmers: ‘the Naubo Community Forest Association’. The aim is to sustainably manage natural resources together and lead discussion on alternatives to deforestation. We have employed a team of wardens to monitor the forest, report illegal activities, and monitor camera traps for evidence of wildlife.

Zoo-based research

We used motion-activated remote cameras to investigate the behaviour of our yellow-footed rock wallabies. Findings included greater levels of activity in juveniles
and their preference for being nocturnal compared with the more diurnally-active adult male. Such findings will inform husbandry and identify abnormal behaviours in breeding programmes of this Near Threatened species.

**Guest conservation action**

This year’s behaviour-change campaign, Knot Your Net, encouraged guests to tie knots in discarded netting before binning it and to maintain regularly used netting. Hedgehogs were the mascot species and guests could take part in activities including visiting the Hedgehog Hub, completing a litter-themed maze and playing ‘spikes and ladders’ in the Activity Centre.

**Native species**

We continued our annual monitoring of the silky wave moth – the Avon Gorge is the only English site where this UK native species is found. We surveyed 12 locations this year, with moths present at all of them. The maximum moth count during survey season was 181, a decrease on last year’s count.

Invasive weeds were removed from over 25km of riverbanks in the Greater Bristol area this year, thanks to a series of community action projects run by the Avon Invasive Weeds Forum. As a lead partner, we managed six community action groups protecting local waterways from pernicious weeds, such as Himalayan balsam.

**Avon Gorge and Downs Wildlife Project**

Co-founded by Bristol Zoo, this project works to protect and manage the Bristol side of the Avon Gorge, Clifton and Durdham Downs and to raise awareness of this unique location. It was a successful year for the Zoo-managed education programme of the project; 9,557 people took part in events, activities or educational visits.
A male blue-eyed black lemur

credit: Nora Schwitzer
Lemurs of Madagascar

Madagascar is the only place in the world where lemurs can be found, but given the extreme level of poverty, local people are being forced to turn to unsustainable livelihoods to make a living, which is threatening the lemurs’ habitats.

We are working to help safeguard three species on the Sahamalaza Peninsula in the northwest of the country - the Critically Endangered blue-eyed black lemur and Sahamalaza sportive lemur, and the Endangered Sambirano mouse lemur - by working with local people and monitoring the status of the lemur populations.

Now the future of lemurs could be safeguarded, and the IUCN Red List status of a number of species down-listed, thanks to a significant donation to the IUCN’s ‘Save our Species’ (SOS) Fund from a private Geneva-based foundation. The generous financial support has been secured with the help of our director of conservation, Dr Christoph Schwitzer, and will enable the implementation of projects across the country aimed at protecting some of the most threatened lemur species.

In January 2017, a six-year plan will be launched, working with a broad range of Malagasy and international civil society organisations, to advance current lemur conservation projects in Madagascar and implement new ones. Without the funding, this would not have been possible.

Dr Schwitzer was lead author of the IUCN Lemur Conservation Strategy 2013–2016, which positions lemurs as one of the most threatened groups of mammals on earth. The strategy includes some 30 individual lemur action plans to help communities across Madagascar protect their own natural resources. It includes plans to offer training on how food cultivation methods can be adapted and to prevent poaching of lemurs for subsistence.

Other developments with our Madagascar conservation project this year included the confirmation of a range extension for the blue-eyed black lemur, by one of our PhD students.

We also started two projects with Conservation International (Verde Ventures), examining the use of cacao plantations by lemurs and the biodiversity in vanilla plantations.

We supported a project to understand the efficacy of reforestation programmes in Madagascar and continued working with Malagasy NGO, Mikajy Natiora, to monitor populations of the Madagascar sacred ibis. We also published the latest edition of the IUCN SSC Primate Specialist Group’s journal Lemur News, a specialist publication on global lemur research and conservation.

Of the 107 lemur species, 24 are classified Critically Endangered, 49 are Endangered and 20 are Vulnerable on the IUCN Red List.
We provided a home for seven rare electric blue geckos confiscated by customs officials at Heathrow airport. The geckos, a Critically Endangered species, were being smuggled into the country from Tanzania, believed to be destined for the pet trade.

A young bearded pygmy chameleon
October

Bird keepers celebrated the arrival of a trio of Endangered Visayan tarictic hornbill chicks. Before laying her eggs, the mother sealed herself into the cavity of an artificial tree. For six weeks she and her chicks relied on the father to provide food through a small gap. Keepers monitored the family via a CCTV camera inside the tree.

Romina the gorilla had a visit from the dentist to remove three teeth that were causing her discomfort. She underwent a full dental examination including X-rays and treatment, under general anaesthesia, inside the Gorilla House.

Three sell-out ‘Fright Nights’ were held after dark this Halloween, offering brave guests the chance to watch a horror film at the Zoo followed by a terrifying night-time tour of the grounds, with some unexpected visitors.

November

Sixteen tiny bearded pygmy chameleons hatched in the Reptile House this year, little bigger than the size of a tic tac mint at birth.

Four Critically Endangered Bourret’s (Vietnamese) box turtles also hatched, taking our captive-bred total to eight over the past four years.

A breeding programme for our native medicinal leeches started this year, to boost wild populations. Over 150 have bred so far and a research project has begun to learn more about their behaviour and physiology.

December

Five Endangered Mauritius pink pigeon chicks were successfully raised by Barbary dove foster parents at the end of the year, as the female pink pigeon was proving to be unreliable at incubating her own eggs.

A team of staff from Bristol Zoo volunteered to take part in a BBC1 programme, Operation People Power, presented by Nicki Chapman, to help transform a Bristol community garden.
The year in figures

Money generated via Bristol Zoo’s website in £ 1,998,905
Visitors to the Bristol Zoo website 1,671,944
Money raised by our development team in £ 622,480
Total guests to Bristol Zoo 562,252
Visitors to the Wild Place Project website 245,901
Money generated via the Wild Place Project website in £ 210,032
Total guests to Wild Place Project 148,181
Number of guests who attended talks given by our rangers 98,948
Cakes, cookies and muffins eaten at Bristol Zoo 72,956
Income generated by Zoo volunteers in £ 54,678
Pupils and students taught by Bristol Zoo education staff 37,768
Hours donated to Wild Place Project by volunteers 16,208
Bottles of milk given to Afia the baby gorilla 1,573
Buckets of vegetables eaten by Jock the gorilla 1,460
Children who visited Santa at Wild Place Project 1,040
Animal X-rays taken by our vets 828
Animal adoptions sold at Bristol Zoo 560
Junior Keeper for the Day experiences carried out at Bristol Zoo 281
Lemur leaf frog tadpoles reared in the AmphiPod as part of a new studbook 50
Henkel’s leaf-tailed geckos hatched 15
This year 1,062 white-clawed crayfish hatched at the Zoo and we released 453 captive-born crayfish into safe ark sites to bolster wild populations.

We retained our ISO14001 environmental management accreditation and continued our efforts to reduce our environmental impacts from energy and water use, waste production and travel.
Bristol Zoological Society would like to thank its staff, volunteers, members, partners, sponsors, donors and other affiliates who have supported us throughout 2016.