

# Painted Dog Research Trust

## *2019 End of Year Report*



Compiled by

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## Message from the Director

First and foremost, a sincere thank you to our donors, stakeholders, partners and friends for their important roles in helping make 2019 a year of remarkable progress and accomplishment at Painted Dog Research Trust. While riding Zimbabwe's economic rollercoaster and facing the most severe drought conditions, we steadily continue with construction projects, our education outreach programme, training seminars, workshops, as well as collaring, monitoring and aiding our Painted Dog packs.



## Executive Summary

2019 began sadly with again more painted dogs being killed on the 70 km long highway through National Parks wildlife estate between Victoria Falls and the Botswana border post at Kazungula. This caused all affected packs to disband and regroup. Painted dogs have been killed on this road before and caused the same pack disruption, and so it was 'Enough is Enough!'... This event signaled that 2019 was going to hallmark the beginning of what is to be a "Never Give Up" Road Traffic Mitigation campaign. With some vehicles doing double the speed limit, and an estimated 4-8,000 vertebrates killed on this road annually, its a tough nut to crack, but not tougher than some of the conservation challenges Greg has dealt with over the last 32 years. By the end of the year, due to road signage and increased awareness, the average speed was significantly down by 6%; still a long way to go, but a start.



PDRT research team measuring speed on the Victoria Falls to Kazungula highway



Anne of the Musketeer Pack with her pups

Happily a new pack of three emerged from the wreckage, and they were named the Musketeers. Two others from fragmented packs joined them, and though they had missed the usual denning season (May-July), they bred very late in early November. This was exciting since over the past 4 years, due to road mortalities, NO packs using the highway had managed to breed successfully. They denned far from the main road, but when a satellite collar was fitted it was clear the alpha female Anne was in very poor body condition. She was at risk of death, as were her pups, due to lactation stress. Rather than taking the often unwarranted "save the pups approach" by digging them out of the den, we intervened with supplementary feeding approved by National Parks, and not only did Anne's condition improve, but all 5 pups survived and thrived to being nomadic.

Education being core to the PDRT mission we were delighted to be leading and hosting training workshops for aspiring conservation biologists. With a mix of Zimbabwean and international students, a month long field based course had students learning how to rigorously design research questions and then take that through to data collection and analysis. The other major course which brought participants from five African countries, focused on establishing appropriate social science questionnaires. This field is a critical component of conservation as successful conservation will only ever be accomplished if the human dimension is well understood and catered for.



Zulu teaching with his new posters

2019 also saw our education program go from strength to strength. The year started with Zulu, our Conservation Educator, being sponsored to attend the Association of Zoos and Aquariums workshop, "Conservation Education: Effective Program Design" in Wheeling, West Virginia.



PDRT's Children's live in Bush camp under

Zulu came back brimming with ideas, critically needed posters, and connections. Not only did this set him up to increase his impact, but we are delighted to share that we have started building a live in children's bush-camp which will be completed in 2020. This will significantly both increase impact and widen our conservation outreach.

With continuing education in mind, two of Greg's students Tafadzwa Shumba and Tatenda Muchopa have just successfully completed their Masters degrees and we will be proud to be a part of their continued journey hopefully to PhD level.

In the same vein Loswitha Murugani's success story continues. She has completed her second year at Chinoyi University with flying colours, and in 2020 she will be back with us on university attachment. Those who have been following her progress will recall she finished her 'O' Level studies showing strong interest in Biology but lacked funds to continue schooling. After spending one year at PDRT where she continued to show great potential, sponsors were found to send her on to her 'A' Levels and then onto University. We are so proud of her as she grows in strength and maturity, being the first woman in the local community to go to university.



Loswitha in her second year at Chinoyi University



## Research Report

### Synopsis

Our research determines the status, distribution, and the threats to painted dogs; and of particular importance is to understand dispersal corridors and preferred routes. Although the main threats to painted dogs such as snaring, loss of habitat, and cars are widely known, our research also incorporates some of the less predictable threats such as parasites, genetic viability, stress and den disturbance. In 2019 two satellite collars were fitted to understand ranging behaviour inside and outside protected areas, habitat use, distribution, transboundary movements and dispersal.

**Mortalities and Breeding:** In the Victoria Falls / Matetsi area, breeding was recorded in one pack, unknown breeding in another, and no breeding from two packs. This year in one of the non-breeding packs, the alpha female was heavily pregnant and close to whelping when a car on the Kazangula highway killed her and another adult. In total 4 painted dogs representing 25% of the population that have territories encompassing the highway that runs through National Parks wildlife area were killed by cars. In the only known breeding pack, close monitoring highlighted that the pack was struggling to feed the alpha female and in consultation with National Parks research department, supplementary feeding was enacted.

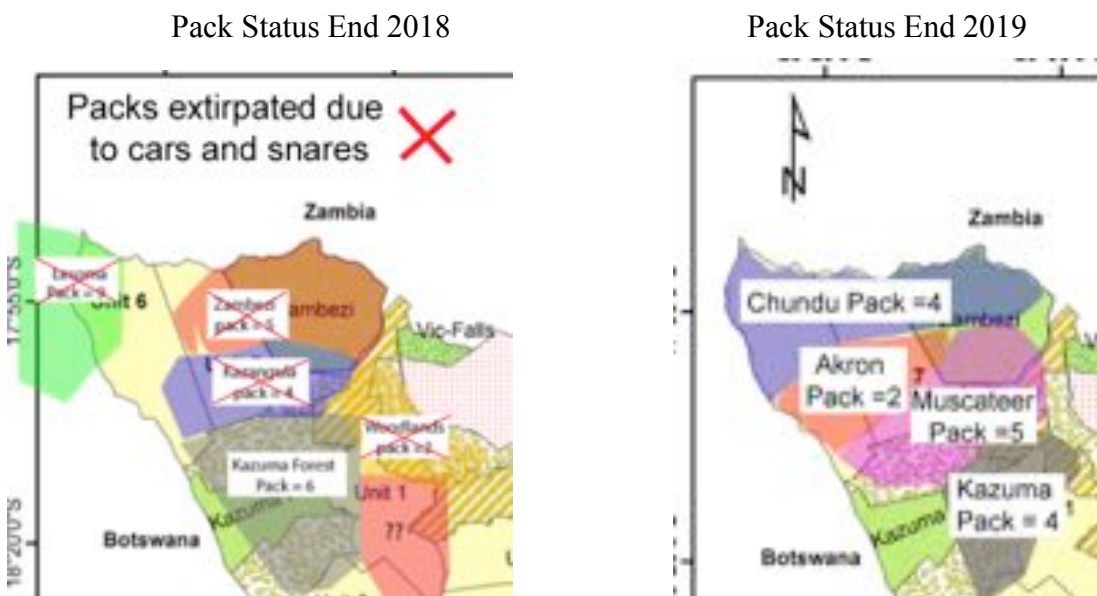


Fig.1 PDRT focal research packs showing their fates, numbers and territories for 2018/2019

In keeping with the trend for the period from Dec 2015- Dec 2018, in the instances packs have a tarred road running anywhere through their territory, every year functional packs have been extirpated and replaced with new founder packs (as seen in Fig. 1). In 2019 again new packs replaced old, thus reinforcing the unwelcome trend. Based on Hwange data when the population was functional between 1988-1999 and the pack lifespan was  $\pm 36$  months, there is cause for concern for this corridor population, which has a mean pack life of  $\pm 15$  months that is further reduced from 19 months in 2017. Vehicle mortality and snares almost exclusively cause these pack collapses.

Whilst snaring and road kills are the major factors hindering increase in the population, elephant damage and subsequent loss of habitat and associated prey populations is of concern for all species. For example, currently in Panda-Masue, and Kazuma Forestry areas, it appears that these are core remaining habitats for Painted dogs to breed; however the habitat is being degraded, and the impact of the elephant population needs to be ameliorated by reducing the artificial water provisioning which would ensure they keep moving rather than stay in one place.

**Musketeer Pack “Operation Anne”:** The combined effect of pack disruption by cars and snares and habitat constraints significantly contributed to the poor body condition of the Alpha female, Anne, whom the pack was struggling to support in her post-whelping condition. This was evidenced by her sustained and relentless begging for food from the pack members that could be heard from 250 metres away. This led to the supplementary feeding intervention of the Musketeer pack. Concern was, that Anne either would not be able to nurse the 3 day old pups, or that she would succumb to lactation stress and possibly die of eclampsia, a condition in lactating dogs caused by low levels of calcium in the blood.



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“Anne”, alpha female of the Musketeer pack skin and bone 7 days after whelping.

Rather than taking the often unwarranted “Save the pups approach” by digging them out of the den, we asked National Parks if we could intervene by supplementary feeding. The response of National Parks was that it would be good to try as a research exercise. Timing of feeds was based on camera trap data highlighting whether the pups were being fed. As play is an honest signal of “well-being,” how much play behavior the pups were exhibiting was also monitored. The satellite



Full Musketeer pups with an adult shortly after a “meals on wheels” food delivery by PDRT

collar data revealed whether Anne was staying at the den and guarding the pups or going hunting and leaving them unprotected, and when it seemed she was staying away from the den out of necessity we intervened with food. By using short-range low volume playback calls to bring the dogs to the feed, we succeeded in providing 125 kg food over the course of the denning period. This amount seemed to tip the balance; and not only did Anne’s condition improve, but all 5 pups survived and thrived to being nomadic at 12 weeks old. The timing at which they went nomadic was of great significance as it signaled that the pups’ leg lengths had grown out sufficiently for this to happen. Had they not gone nomadic at 12 weeks, but at 16 weeks (as is common in small packs), it would have signified that the pups had not received sufficient food, and thus not grown out properly and would have shorter legs

that persist into adulthood. Becoming nomadic at 16 weeks is common in larger packs where den disturbance by tourists, film crews, and in some cases researchers, has happened.

### Impacts of disturbance at painted dog dens.

**Den disturbance by humans:** Data from a total of 10381 camera trap images in Mana Pools Zimbabwe collected from May to July in 2014 - 2016 now clarifies the effect of disturbance by tourists, film crews, and researchers who visit painted dog dens. Here the data show the following statistically significant impacts: Apart from pups having shorter legs, at disturbed dens (documented in the 2018 research report), data now also show that play and general activity by the pups and pup guarding by the adults are all reduced. All of these factors influence hunting and survival success into adulthood.

### Analysed behavioural results from 2010-2017 on den disturbance in Mana Pools.

Results show that humans were the major sources of disturbance at dens in Mana Pools. Diel activity levels of *Painted dog* were observed to be significantly different at disturbed and undisturbed dens, in ManaPools. Activity patterns showed that the species was active throughout all the 24 hour diel phases at undisturbed dens in Mana Pools (Figure 2.1). On the contrary, at disturbed dens, painted dog activity levels were observed to be high at dawn, morning, afternoon and dusk (Figure 2.2), with low activity level was observed at night between 1900hrs and 0400hrs at disturbed dens of painted dog in ManaPools (Fig.2.2).

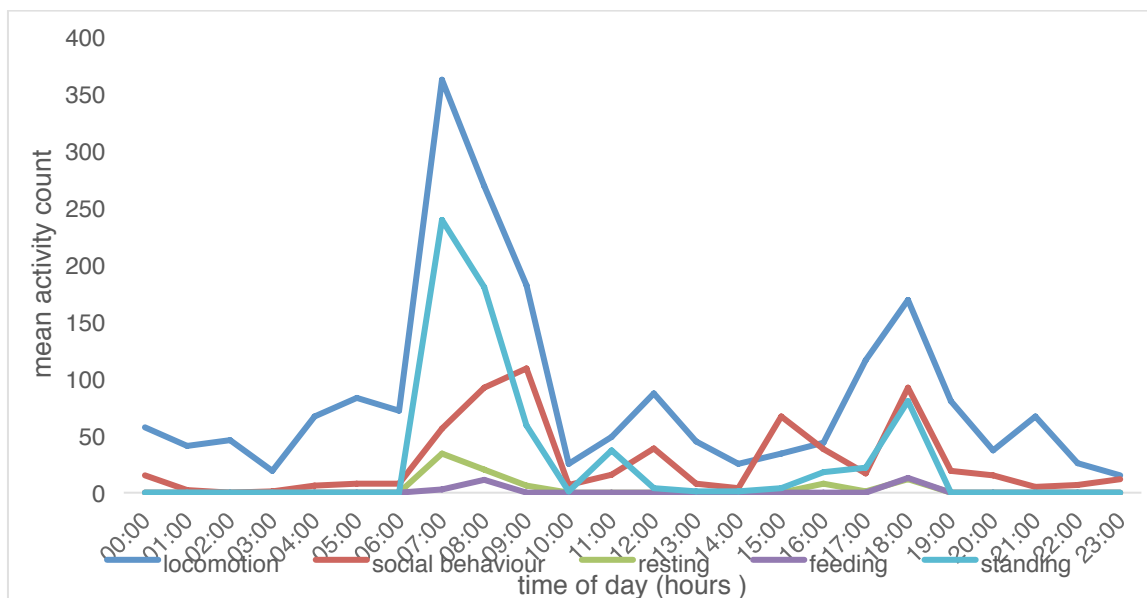


Fig 2.1: Activity pattern of adult and pup behaviour in *the painted Dog Lycaon pictus* at **undisturbed** dens in Mana Pools.

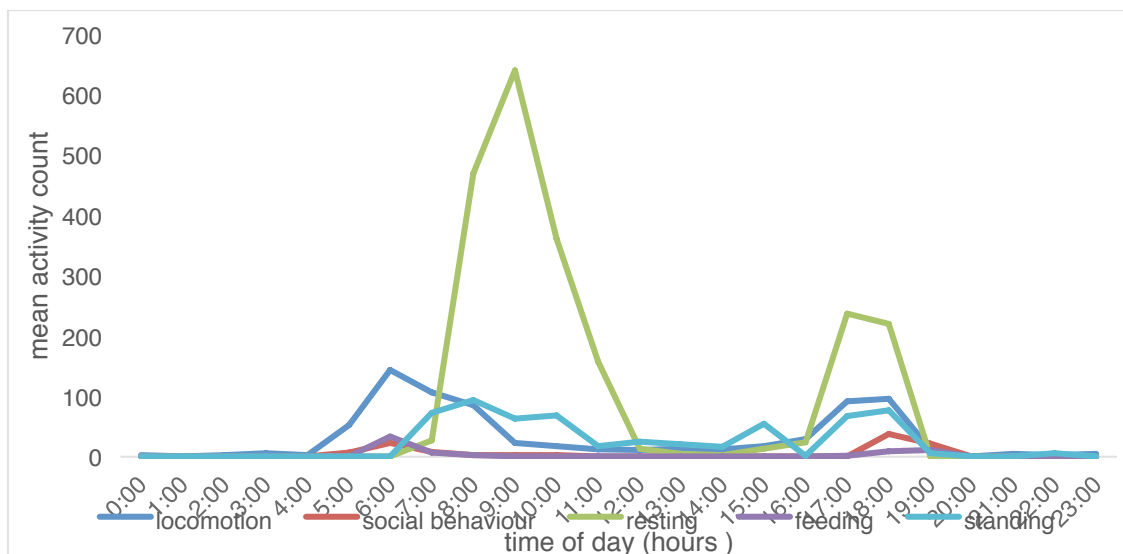


Fig 2.2: Activity pattern of adult and pup behaviour in *the painted Dog Lycaon pictus* at **disturbed** dens in Mana Pools.



## Monitoring and Mitigating the Impact of traffic on the Victoria Falls Kazungula Road

**Road traffic Data:** Using marker points 700 metres apart and a stopwatch, data from the Falls Kazungula Road highlights that, with the exception of trucks, 80% of the traffic is exceeding the 80 km/h speed limit, with some vehicles doing double that.

**Data statistics showed:**

**67.2% of all traffic was over the speed limit**

**25% of traffic  $\geq 100$  km/h**

**4% of traffic  $\geq 130$  km/h**

**The maximum speed was 167 km/h**

Perhaps even more disturbing is that these figures were biased downwards by vehicles slowing down when they saw the PDRT team action.

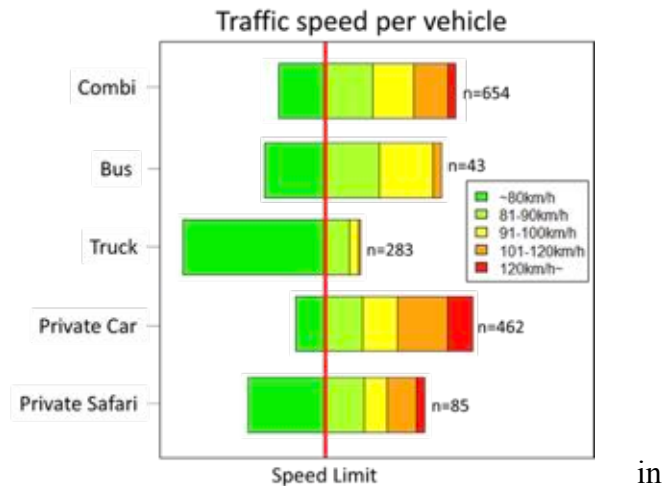
The data show that the major offenders were private vehicles, and most Safari operators in combi/minibuses. From a road kill perspective from elephant, buffalo, and giraffe to birds and reptiles, across vertebrate species, averaged data highlight that  $\pm 16$  animals a day are killed. This amounts to 4-8000 animals annually. Importantly, this singular problem is ensuring that the painted dog population in the region is a severe “ecological sink” and is thus detrimental to the integrity of the regional population. Consequently, Painted Dog Research Trust has taken this issue on as a high priority project, and are working closely with key stakeholders to include police, Ministry of Roads, and National Parks, all of whom agree that ultimate mitigation by reduced speed limits, increased fines, and enforcement are essential to produce significant change.

### Road traffic Mitigation

With Ministry of Roads permission, we erected multiple road signs and engaged in a PR campaign through the national and social media. The effectiveness of this was again monitored and showed a 6% speed reduction. PDRT continues to monitor the speed, and in 2020 will follow through with a social science study to assess what mitigation measures are likely to be the most impactful.

With the assistance of Columbus Zoo, we are working to get more signage and awareness bumper stickers designed and printed. At a deeper level however, in the longer term, we are hoping to get very significant and meaningful changes to the law regarding speeding in wildlife areas and new speed limits in wildlife areas.

Succeeding with this seemingly mammoth task will have a huge and beneficial impact to wildlife across the country.



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## Environmental education outreach program

Sponsored by Oklahoma City Zoo, our Conservation Educator attended the AZA Conservation Education: Effective Program Design course in Wheeling, West Virginia. After this Zulu was welcomed by Niabi, Blank Park, and Oklahoma City Zoos where he shared with, and learned from, their conservation education programs. He returned with much needed teaching aids including posters, binoculars, books, magnifying lenses, example conservation lesson plans, etc. In short Zulu was able to expand teaching horizons at the schools.



Elephant dung interactive project

Upon returning in March, new initiatives were incorporated into the PDRT curriculum to include permaculture, tree planting, and gully reclamation in local schools. The three pilot schools now have a thriving permaculture gardening program, and through the tree seedling-growing program, the three schools participated in the 2019 National Tree Planting event. A total of two hundred and eighteen (218) school visits were made, and eleven thousand-one hundred and eighty-nine (11,189) pupils benefited from these conservation lessons.

Pupils from these schools had the opportunity to visit PDRT as part of reinforcing what they learned about nature conservation. Seventeen (17) groups averaging 25 to 35 children visited in 2019, resulting in a total of five hundred and sixty-five (565) children for interactive field based experiences. Identification of animals through skulls was introduced. A challenge to the field research team is to return from the bush with bones and dung.

Word of the conservation program is spreading outside our immediate catchment area; Forty-five girl and boy scout members from Victoria Falls town visited to experience the interactive nature programs. PDRT conservation clubs voluntarily meet on weekends and school breaks, and have gained popularity; in 2018 an average of twelve members would attend, attendance in 2019 increased to forty-five.



## Workshops and training at PDRT

Fundamental to the objective of PDRT is the academic and practical training of students and graduates with the explicit intent of securing a future generation of Zimbabwean conservation leaders and scientists, whilst at the same time opening our doors for international exchanges. This being the case PDRT strives every year to upgrade facilities so that quality training workshops and courses can be delivered.

Over the years Dr. Greg has mentored a number of students, and it was blatantly apparent that students were neither able to get the necessary field experience nor the mentoring to go with it. Realizing this need, and Dr. Greg's commitment to the importance of good field science, one of Dr. Greg's former Oxford students Jack Randall, under the umbrella of his organization Made-in-the-Wild, promoted a 4 week course that Dr. Greg wanted to run entitled "How to be a field biologist". With Zimbabwean and International students from England, Ireland, Italy, and the United States, the course was a great hands on learning success with students getting in the field, doing transects, and being wised up to the rigours and pitfalls when collecting, managing, and analyzing data.

We also hosted a Workshop in conjunction with The Living Desert Zoo and Gardens, Palm Springs, CA., entitled "Building Community Conservation Success: Answering Perception and Evaluation Research Questions". As we are all aware, the human footprint is a major factor in wildlife conservation; unless we understand what these factors are, and what might contribute to behavioural change, a lot of our efforts will be wasted. The workshop was facilitated and presented by Dr. James Danoff-Berg and Kathayoon Khalil with participants arriving from Angola, Namibia, Uganda, Zambia and Zimbabwe where all are facing human-wildlife conflict situations. We sincerely hope Dr. James will make this an annual programme as the content and delivery were amazing.



Dr Greg mentoring PDRT home team attachment students Alice George and Tanaka.



"Building Community Conservation Success" participants from 5 countries, admirably lead by Dr James





Sated pup “Digger” guarding his trench

With training in mind, we thoroughly enjoyed hosting Oklahoma Zoo staff, Sabrina Heise (Social Media Coordinator) and Jennifer D'Agostino (Director of Veterinarian Services). In the same vein we were also delighted to host Beth Foster (Africa Keeper) and Roger Williams from Oregon Zoo. Both teams assisted with “Operation Anne” and assisted with the camera trapping, supplementary feeding and documentation. These now annual exchanges always transpire to be such a learning curve on both sides and are most welcome.



Sabrina explaining “hashtags” to Dr Greg

### Development & Construction of PDRT site

We are continually busy not only building, but at the same time using the construction work as a means to train community members in useful skillsets, notably plastering, welding and bricklaying. This has already facilitated some of the team to spread their wings and employ these skills elsewhere.

Completed building projects included a dining area, multi-purpose open-air structure, staff housing, and a rainwater catchment tank for the vegetable garden.

Thanks to the Walt Disney Company and Oklahoma City Zoo, 2019 also hallmarked the commencement of building the live in children's bush camp. We have made a lot of progress and 15 of the 20 rondavels are thatched and nearly complete.

Each unit will have two beds and a desk, thus enabling us to house 30 children, educators and chaperones, for hands on immersion conservation experiences.



Jennifer from OKC assisting MK with construction of dining area



Rondavels under construction for the childrens’s bush camp to host 4 day conservation camps

## Targets and Dreams for 2020



Targets for 2020:

Complete the Children's bush camp and get ready for the first intakes; Construction of a Student Dining/Recreation/lecture center where workshops can be better facilitated is also a priority. Establishing an indigenous tree nursery. With funding we also wish to take the conservation ecology center to the first floor level.

So to conclude.... Special thanks to the PDRT team for their teamwork and commitment, and from the PDRT team, the community they serve, and of course ... the Painted Dogs!

*PDRT continues to be grateful to the individuals and organizations who choose to advance our infrastructure, education and research programmes through generous contributions.*

### *Special appreciation:*

Blank Park Zoo, Brandon Davis, Cathryn Gabor and Rob Fuller, Chicago Zoological Society, Christine Flynn, Cincinnati Zoo & Botanical Garden, Colin Ma and Laurie Christensen, Columbus Zoo, Cynthia Cussick, Dara Kelly, Debs High, Department of National Parks and Wildlife Management Zimbabwe, Disney Animal Kingdom, Ed Buns & Michael Kreger, Eileen Flynn, El Paso Zoological Society, Elizabeth Cosgrove and Cameron Smith, Endangered Wolf Centre, Forestry Commission Zimbabwe, Guy Oliver & Patricia Morris, Harry Ulmer, Hollie Wells, James Danoff-Burg, Janet Campbell and Nikky Vivian-Robinson, Jill Broyles, John and Audrey Ruggieri, John and Mary Ciardullo, Judy Baker, Julia Maltzan and Henning Weisner Academy for Zoo and Wildlife, Kathayoon Khalil, Kathy Gervais, KAZA Zimbabwe office, Kristin Wagner, Linda Evasuik, Linda Straubinger, Linda Tabor-Beck, Lizzie Hide, Los Angeles Zoo, Lowry Park Zoological Society of Tampa, Made In The Wild, Maggie Sperkowski, Mark and Becci Crowe, Michael Swartout Household, Niabi Zoo, Nicole Hill, Oklahoma City Zoo, Oregon Zoo, Potawatomi Zoo, Rebecca and Gary Condra, Rich Eber, Rob and Barbara Dicely, Rolling Hills Zoo, Sacramento Zoo, Safari West, Sandra Miles Taylor, Sedgewick County Zoo, Sheryl Owyang, Sister Ruth Hall, Stephan Meyer-Ewald & Andrea Ewald, Steve and Molly Attell, Steve Flaherty, Steve Gold, Stuff and Peewee Marshall, Sundance Solutions, Susan Janin, Tammy Cloutier, The Wilds, Ulrike Beckmann and Family, Walli Finch, Walt Disney Corporation, Weston Popichak, William Ebling, Yorkshire Wildlife Park, Zoos and Aquaria Committed to Conservation ZACC, Zoo Knoxville, Zoo Tampa

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