It may have seemed that Fresno Chaffee Zoo did not debut any major improvements in 2019, but that was far from the case. While the main visible project was the new warthog exhibit, we also completed a substantial improvement to underground utilities feeding many future projects, including Kingdoms of Asia. In addition to Kingdoms of Asia, we are working on the design of several future projects including African river (bringing back hippos!), a new facility for our education (or ambassador) animals and a renovated parking area. Typically it takes one to two years to design a zoo project, and one to two years for the construction, depending on the scope and complexity.

Kingdoms of Asia will begin construction in 2020, and will include beautiful areas for tigers, sloth bears, a major renovation of the orangutan habitat, a large crocodilian (called a Tomistoma), rhinoceros hornbills and more.

We also worked on the design for our new Animal Nutrition Center, which includes a commercial kitchen for our animal diets, as well as walk in freezer and cooler space (our animals eat a lot of meat, fish, and produce), and dry storage areas. This facility will also include a staff break area and offices.

All of this is possible through the generous support of our community through Measure Z, which is creating one of the best zoos in the country. We appreciate that support very much.
Animal Collection

While 2019 saw a lot of exciting changes for the animals at the Zoo, it was definitely a year for the birds! One of the biggest changes for our feathered residents was the transition of our Winged Wonders Bird Show.

Ross Laird, the previous owner of the show decided to retire at the end of 2018 after decades. His presentations starring his amazing birds had long been a favorite of many Zoo guests. This was a huge change for the Zoo, but also presented some opportunities.

Although we had many trainers that were already working at the Zoo, we had very few with the type of specialized training required to continue the work that Ross developed over the years. Luckily, several of his staff, some of which had been with him for many years, applied for the positions which were now managed by the Zoo. We were also able to secure a manager for this area from Memphis Zoo. Rebecca came to Fresno Chaffee Zoo with a history of working with other bird show presentations and we were very excited for her to join this evolving bird team.

While the staff was going through an adjustment, so were the birds. All of them had new trainers that they had to get to know. This came quite easily as their original trainers helped to introduce the new staff and the birds, which helped to ease this transition.

Fresno Chaffee Zoo also upgraded many of the bird enclosures and rearranged the layout of the area to give the staff and the birds more opportunity for growth and expansion into our future.

2019 also involved collection planning for our new Asia expansion. Jennifer, our Curator of Birds, spent many hours planning for the bird collection that will live in our new Asian songbird exhibit.

Planning for a new exhibit of mixed species involves many considerations including species selection, availability and compatibility. Many of the species selected are flagship species that represent populations that are affected by the Asian songbird crisis in the wild. Developing a successful breeding program with these selected species will help ensure their future. In addition, this exhibit will provide a dynamic and highly vocal songbird exhibit that welcomes our guests through the entrance portal of Kingdoms of Asia.

This past year was a busy but incredibly fun year for planning the renovation of many areas of our Zoo. The Tropical Bird house renovation was a smaller project, but made a world of difference with fresh paint, new mesh and beautiful plantings.

The animal staff, along with many members of our Zoo team, have additionally spent countless hours planning and designing several new projects. Kingdoms of Asia, Zooplex, the ambassador animal building and a conservation building are just a few of the projects that will change the face of Fresno Chaffee Zoo now and into our future.

Animal Acquisitions

Birds
- 1.0 Roseate spoonbill
- 1.10 Scarlet ibis
- 1.0 White-rumped shama
- 1.0 Wompoo fruit dove
- 1.0 Crested wood partridge

Mammals
- 1.0 Giant anteater
- 0.1 Greater kudu
- 1.0 Southern white rhinoceros
- 0.1 Siamang
- 0.0.1 Tammar wallaby

Reptiles & Amphibians
- 1.0 Boer goat
- 3.0 Squirrel monkey
- 1.0 domestic goat-mix breed
- 1.0 domestic sheep-mixed breed
- 1.0 Greater kudu
- 1.0 Hill wallaroo
- 1.0 Masai giraffe
- 0.2 Red Kangaroo
- 1.1 Red ruffed lemur
- 1.1 Wolf’s guenon
- 0.1 Ferret

Invertebrates
- 0.0.2 Asian forest scorpion
- 0.0.1 African giant millipede
- 0.0.2 African plated lizard
- 1.0.3 African plated lizard
- 0.0.2 Chuckwalla
- 0.1 King cobra
- 0.0.10 Spotted toad

Birds and Hatchings

- 1.3 Sun conure
- 1.3 Yellow-rumped cacique

Mammals
- 1.0 Crested wood partridge

Reptiles
- 0.0.1 Haitian green anole
- 0.0.2 Prehensile-tailed skink

Tammawallaby and Joey

Animal Collection 2018 Totals

<table>
<thead>
<tr>
<th>Category</th>
<th>Species</th>
<th>Individuals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invertebrates</td>
<td>260</td>
<td>202</td>
</tr>
<tr>
<td>Cartilaginous Fish</td>
<td>40</td>
<td>173</td>
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<tr>
<td>Bony Fish</td>
<td>21</td>
<td>92</td>
</tr>
<tr>
<td>Amphibians</td>
<td>17</td>
<td>165</td>
</tr>
<tr>
<td>Reptiles</td>
<td>60</td>
<td>173</td>
</tr>
<tr>
<td>Birds</td>
<td>68</td>
<td>225</td>
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<tr>
<td>Mammals</td>
<td>53</td>
<td>165</td>
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<tr>
<td>Totals</td>
<td>237</td>
<td>1,176</td>
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<table>
<thead>
<tr>
<th>Species</th>
<th>Male</th>
<th>Female</th>
<th>Unknown sex</th>
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<tr>
<td>1.0</td>
<td>0.3</td>
<td>0.1</td>
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General Curator

Lyn Myers

2019 Annual Report
**Program Highlight**

**Interactive Virtual Learning**

In 2019, Fresno Chaffee Zoo introduced a new way of connecting schools to incredible wildlife through its Interactive Virtual Learning program. Our interactive virtual learning program broadcasts right to the classroom and allows students to interact with a Zoo educator in real time. All programs include our live animal ambassadors, animal artifacts, and engaging activities to help captivate students in their learning. All a class needs is a computer, projector and internet connection to connect to this wild experience.

After an initial pilot with Westside Elementary School in the spring of 2019, this program launched to the public in the fall and has brought a new and innovative way to connect learners throughout Central California to the Fresno Chaffee Zoo.

**Volunteer Overview**

Fresno Chaffee Zoo volunteers are a vital part of the Zoo team. Their service, skill, enthusiasm, and expertise help move the Zoo’s mission forward and expand the reach of our community.

**Volunteers Hours**

43,078

**Individual Volunteers**

1,071
## Financial Report

### Memberships

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</thead>
<tbody>
<tr>
<td></td>
<td>17,154</td>
<td>14,415</td>
<td>13,493</td>
<td>12,089</td>
<td>10,035</td>
<td>9,535</td>
<td>8,834</td>
<td>8,834</td>
<td>8,834</td>
<td>8,834</td>
<td>17,960</td>
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### Attendance

|------------|------|------|------|------|------|------|------|------|------|------|------|

### Income

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<tr>
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<tbody>
<tr>
<td><strong>Admissions</strong></td>
<td>5,447,893</td>
<td>5,447,893</td>
<td>5,447,893</td>
<td>5,447,893</td>
<td>5,447,893</td>
<td>5,447,893</td>
<td>5,447,893</td>
<td>5,447,893</td>
<td>5,447,893</td>
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<tr>
<td><strong>Membership</strong></td>
<td>1,782,001</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
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<tr>
<td><strong>Merchandise, food, and beverage</strong></td>
<td>1,875,885</td>
<td>8%</td>
<td>8%</td>
<td>8%</td>
<td>8%</td>
<td>8%</td>
<td>8%</td>
<td>8%</td>
<td>8%</td>
<td>8%</td>
<td>8%</td>
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<tr>
<td><strong>Special events</strong></td>
<td>717,595</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
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<td>3%</td>
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<tr>
<td><strong>Education</strong></td>
<td>488,423</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
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<tr>
<td><strong>Sponsorships</strong></td>
<td>166,500</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
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<tr>
<td><strong>Total Revenue</strong></td>
<td>10,478,297</td>
<td>47%</td>
<td>47%</td>
<td>47%</td>
<td>47%</td>
<td>47%</td>
<td>47%</td>
<td>47%</td>
<td>47%</td>
<td>47%</td>
<td>47%</td>
</tr>
</tbody>
</table>

**Measure Z - Operations**

- 5,085,421 | 23%
- 3,790,238 | 17%
- 325,779 |
- 323,176 |

**Total Support**

- 9,524,614 | 43%
- 2,105,981 | 10%

**Total Revenue, Support, & Gains**

- 22,108,892 | 100%

### Expenses

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td><strong>Program services</strong></td>
<td>16,989,675</td>
<td>85%</td>
<td>85%</td>
<td>85%</td>
<td>85%</td>
<td>85%</td>
<td>85%</td>
<td>85%</td>
<td>85%</td>
<td>85%</td>
<td>85%</td>
</tr>
<tr>
<td><strong>Management and general</strong></td>
<td>2,560,938</td>
<td>13%</td>
<td>13%</td>
<td>13%</td>
<td>13%</td>
<td>13%</td>
<td>13%</td>
<td>13%</td>
<td>13%</td>
<td>13%</td>
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<tr>
<td><strong>Fundraising</strong></td>
<td>438,944</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
</tr>
</tbody>
</table>

**Total Expenses**

- 19,989,557 | 100%

**Change in Net Assets**

- 2,119,335

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8 | 2019 Annual Report

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Conservation

Fresno Chaffee Zoo continues to support its conservation mission by supporting field conservation work throughout the world. 2019 saw major advancements in this program, including a new, more-focused approach to conservation through long-term conservation partners. By focusing more funding on certain key projects, Fresno Chaffee Zoo provides stability for these critical conservation partners.

Also in 2019, Fresno Chaffee Zoo introduced its Staff Conservation Grants program. This program introduces a new way for the Zoo to support field conservation while also recognizing the talents of FCZ staff and the unique ways they can contribute to global conservation efforts. These grants are designed to provide opportunities for full-time staff to participate in meaningful conservation action in the field and bring back lessons learned, authentic stories, and first-hand insights gained to benefit our work at the Zoo.

Long-Term Partners

- Action for Cheetahs in Kenya (Kenya)
- Bay Area Puma Project (USA)
- California Condor Nest Guarding Programs (USA)
- Friends of the Island Fox (USA)
- Giant Armadillo Conservation Program (Brazil)
- Grevy’s Zebra Trust (Kenya)
- Lowland Tapir Conservation Initiative (Brazil)
- Malayan Tiger Anti-Poaching Efforts (Malaysia)
- New Nature Foundation (Uganda)
- Reticulated Giraffe (Kenya)
- Ruaha Carnivore Project (Tanzania)
- Tarangire Elephant Project (Tanzania)
- Western Pond Turtle (USA)
- Wildlife SOS (India)

The Fresno Chaffee Zoo Wildlife Conservation Fund supports conservation efforts around the globe.

FRESNO CHAFFEE ZOO CONSERVATION FUND

AFRICA
- Benin
- Botswana
- Cote d’Ivoire
- Democratic Republic of the Congo
- Ghana
- Guinea
- Kenya
- Tanzania
- Uganda
- Zambia

ASIA
- India
- Malaysia
- Sumatra

NORTH AMERICA
- United States (4 in California)
- Brazil
- Guatemala

SOUTH AMERICA
- Argentina

2019
$166,750 donated.

These funds supported 30 conservation projects in 17 countries with increased funding levels for long-term partners. 15 were awarded through grants.
Events

Special Events

Fresno Chaffee Zoo special events entertain a wide range of guests, beginning with our Frogs and Fairytales Event in March and ending with ZooLights in December. Creating these fun events that appeal to many different groups of people allows us to reach guests that may not otherwise visit the Zoo.

2019 Special Events Attendance

- Frogs and Fairytales: 969
- Roar and Pour: 591
- BWA: 2,228
- Producers ICZ: 2,322
- Valley PBS Kids Nite: 2,276
- Safari Night: 682
- Zoo Boo: 11,548
- Zoo Lights: 28,945
- Breakfast with Santa: 300
Private Events
Fresno Chaffee Zoo offers the most unique event venues in the Valley, especially for our beautiful weddings. Wedding couples can take advantage of photos throughout the zoo with our curious residents and on our lush grounds. Our corporate clients are wonderful supporters and book their events a year in advance. We had a record number of 82 events in 2019.

2019 Private Event Breakdown

<table>
<thead>
<tr>
<th>Event Type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate Events</td>
<td>46</td>
</tr>
<tr>
<td>Weddings</td>
<td>5</td>
</tr>
<tr>
<td>School/Church Groups</td>
<td>10</td>
</tr>
<tr>
<td>Conferences</td>
<td>3</td>
</tr>
<tr>
<td>Zoo Employee Events</td>
<td>3</td>
</tr>
<tr>
<td>Baby Showers</td>
<td>2</td>
</tr>
<tr>
<td>Auction Item Events</td>
<td>7</td>
</tr>
<tr>
<td>Proms</td>
<td>1</td>
</tr>
<tr>
<td>Memorials</td>
<td>1</td>
</tr>
<tr>
<td>Appreciation Luncheons/Dinners</td>
<td>2</td>
</tr>
<tr>
<td>Retirement Parties</td>
<td>1</td>
</tr>
<tr>
<td>Painting Events</td>
<td>1</td>
</tr>
<tr>
<td>Photo Shoots</td>
<td>1</td>
</tr>
</tbody>
</table>

WILD Birthday Parties
Birthday Parties are more popular than ever!
In 2019, we opened up a second birthday party space, the Prehistoric Pavilion in Zoorassic Park. Revenue at this new venue exceeded $21,000 in a five month period. We were only two shy of 200 birthday parties for the year!
In today’s climate it seems everyone has become aware of just how important new and emerging diseases can be. Overtime landscapes change and animals evolve along with the organisms that can make us and the animals we care for ill. Despite all the best efforts and improvements made in animal care new and emerging diseases continue to occur and 2019 was unfortunately, a boom year for some of these newly adapted diseases.

One of these that affected our collection was elephant endotheliotropic herpesvirus (EEHV). While not a new disease to be discovered, this disease process underwent a massive shift in whom it affects. As with many herpesviruses, EEHV is often found in animals showing no symptoms at all and it waits for some trigger to cause it to start replicating and causing illness.

This disease can be particularly hard to diagnose and screen for as it can hide within the body’s cells and only shows up on testing when the virus is feeling active and replicating.

EEHV has been documented in both African and Asian elephant species, in captive and wild populations, and in multiple continents. Prior to 2019, the disease seemed to really only cause symptoms in and target young Asian elephant calves under 6 years of age, and is one of the leading causes of Asian elephant calf mortality. The reason this disease has been so lethai is that most elephants do not display symptoms until the virus has already reached terminal numbers and animals are frequently deceased within 24hrs of first noting something wrong. The virus attacks endothelial cells which line the blood vessels, causing uncontrollable internal bleeding.

In 2019 everything we thought we knew about African elephants and EEHV changed dramatically. In early February 11-year-old female African elephant Miss Betts displayed decreased appetite and abnormal behaviors believed to be related to colic. She was treated supportively and seemed improved later that day. The next day she was markedly worse and progressively declined. Despite intensive care efforts to treat her she passed away that evening.

Initial testing for EEHV was negative, and her necropsy (animal version of autopsy) pointed to clostridium bacterial toxin as the cause of her illness. Then further post mortem testing demonstrated that her initial EEHV results were a false negative and Miss Betts actually had a marked spike in EEHV numbers and virus replicating throughout her body and the diagnosis was made that EEHV was the major contributing agent to her sudden death.

Unfortunately, we were not alone in experiencing the sudden tragedy this virus can cause. Within a month of us losing Miss Betts, Indianapolis Zoo lost two young African elephants.

(Continued on next page)
D: Intravenous catheters placed in the ear veins for fluid analytic bloodwork every day.

C: The veterinary staff spent hours collecting and ingested all of her vital medications.

B: The tablets were washed down with juice to ensure she drank them.

A: The care team wrapped 120 oral tablets in non-flavored Chemotherapy capsules. Mrs. Kalina searched for enrichment on the African Adventure in Savannah.

Main: Amale \[Ah-mah-lee\], female African elephant about Amahle's dropping viral titers and counts. No sooner were we feeling better and monitoring of her behavior and viral counts. Luckily, after a week of supportive care her viral counts started to drop, and we were able to start resuming her normal care but with intensive and copious other supportive medications while daily monitoring bloodwork and viral counts. All the while the disheartening survival rate of only ~40% for elephants treated for EEHV, the recent loss of Betts, and Indianapolis's loss of elephants Nyah and Kalina weighed heavily over the zookeeper and veterinary team. Luckily, after a week of supportive care her viral counts started to drop and we were able to start resuming her normal care but with intensive monitoring of her behavior and viral counts.

No sooner were we feeling better and to the same disease. Then in April, Fresno Chaffee Zoo’s female elephant Amahle displayed some very subtle stiffness in the way she was moving. She continued to train, play, and behave completely normally but the suspicions were there and she was immediately started on supportive treatment against the virus. Within 24 hours of our first signs we got the results back that Amahle too was dealing with EEHV infection.

Currently, there is no true cure or even preventative for herpesviruses infection in animals and our only treatment options are aimed at reducing the viral replication and supporting the rest of the body. From day one with Amahle's case we were in communication with elephant experts from around the world working to devise the best treatment strategies for her. Staff worked around the clock: administering antiviral medications, plasma transfusions, fluid support and copious other supportive medications while daily monitoring bloodwork and viral counts. All the while the disheartening survival rate of only ~40% for elephants treated for EEHV, the recent loss of Betts, and Indianapolis's loss of elephants Nyah and Kalina weighed heavily over the zookeeper and veterinary team. Luckily, after a week of supportive care her viral counts started to drop and we were able to start resuming her normal care but with intensive monitoring of her behavior and viral counts.

No sooner were we feeling better about Amahle's dropping viral titers than we got word that two more African elephants at Indianapolis Zoo had tested positive for EEHV and were undergoing treatment. Luckily, these two were also caught very early and following similar treatment plans these elephants were also able to overcome their infections.

Despite all of the emotion, stress, and exhaustion that is associated with treating these beloved animals it really brought home the sense of community and depths of human care that everyone was so willing to contribute to these creatures. The simple statement of saying 'blood was tested for viral counts' actually involved multiple trainers and veterinary staff to collect and process the blood twice daily, rushing it to be overnight shipped to Washington DC where the lab staff works around the clock to get the data back to you at all hours. Never wavering in their devotion to help us treat our animals they volunteered to have samples sent to their personal homes on weekends/holidays whenever the labs receiving hours were closed so that they could still go in and get the samples tested for us to help guide our treatment programs. Additionally, you can imagine the amount of medications involved in treating a single 3,000-lb elephant in critical care, let alone 6, all within weeks of each other, is enough to deplete any pharmacy. Zoos, animal and human pharmacies, and bloodbanks across the US worked together to source medications, equipment and supplies so that we all had what we needed on hand to treat our massive patients.

We thought these elephants were fairly safe from this disease as they were not the target species, and all were considerably older than the target age group but we were shown just how wrong we were. The truth is there is still so much we don't know about this relatively new disease but we are working on it! We don't know why this year these elephants that were routinely thought to be safe from disease were suddenly so susceptible. There is data showing that EEHV strains have been coevolving together with elephants and their ancestors for over 100 million years and potentially we are just seeing another evolution of the virus.

Rapid research is continuously being done to better understand this disease and to date Betts and Amahle have contributed priceless data to help facilitate that research which will go on to help protect other animals from his terrible disease. We recently presented at the first ever African Elephant EEHV conference in Indianapolis to share our experiences and what we learned with the elephant community. Research is progressing rapidly in development of a vaccine against EEHV and it is on the cusp of being approved for animal trials, hopefully within the year.

Infectious diseases, including EEHV, are only one of many threats to the survival of elephants, and we look forward to the years to come where future studies, and protection efforts can help us to ensure the continued survival and conservation of all elephants.
On behalf of the animals here at Fresno Chaffee Zoo, we gratefully thank those who donated $1,000 or more in 2019.

Thank You

220 Employees

44% MALE 66% FEMALE

PART TIME 60 FULL TIME 131

SEASONAL 17 TEMPORARY 12

40's 4 50's 7 60's 18 70's 26 80's 69 90's 3 2000's 3

Animal Care

Visitor Services

Conservation Interpretation

Special Events

Facilities

Education Programs

Security

Administration

Horticulture

Veternary

Human Resources

Membership

Marketing

Development
In 2020, Fresno Chaffee Zoo completed an important project to lay the groundwork for the big changes ahead. As we continue to grow and improve building new exhibits and facilities, we also have to consider improvements and updates to our infrastructure to meet the needs of these projects. The South Corridor Infrastructure Project brought new water, electric, sewer and data lines to the center of the Zoo.

While the goal of this project was to prepare for the new Kingdoms of Asia exhibits, starting construction in September of 2020, guests will see interactive additions added to the paved pathway running between Roo Walkabout and Stingray Bay. Kids and adults alike will enjoy amenities like water bottle fill stations and shaded seating along with features to encourage children and families to explore and utilize the Zoo in new ways. These elements include natural play structures and photo-ops.

The South Corridor Infrastructure Project represents the Fresno Chaffee Zoo's commitment to building a world class facility while planning for the future and looking for new and fun ways for guests to experience the Zoo.
To inspire wonder of our natural world, provide an engaging learning environment, and create a passion for conservation.