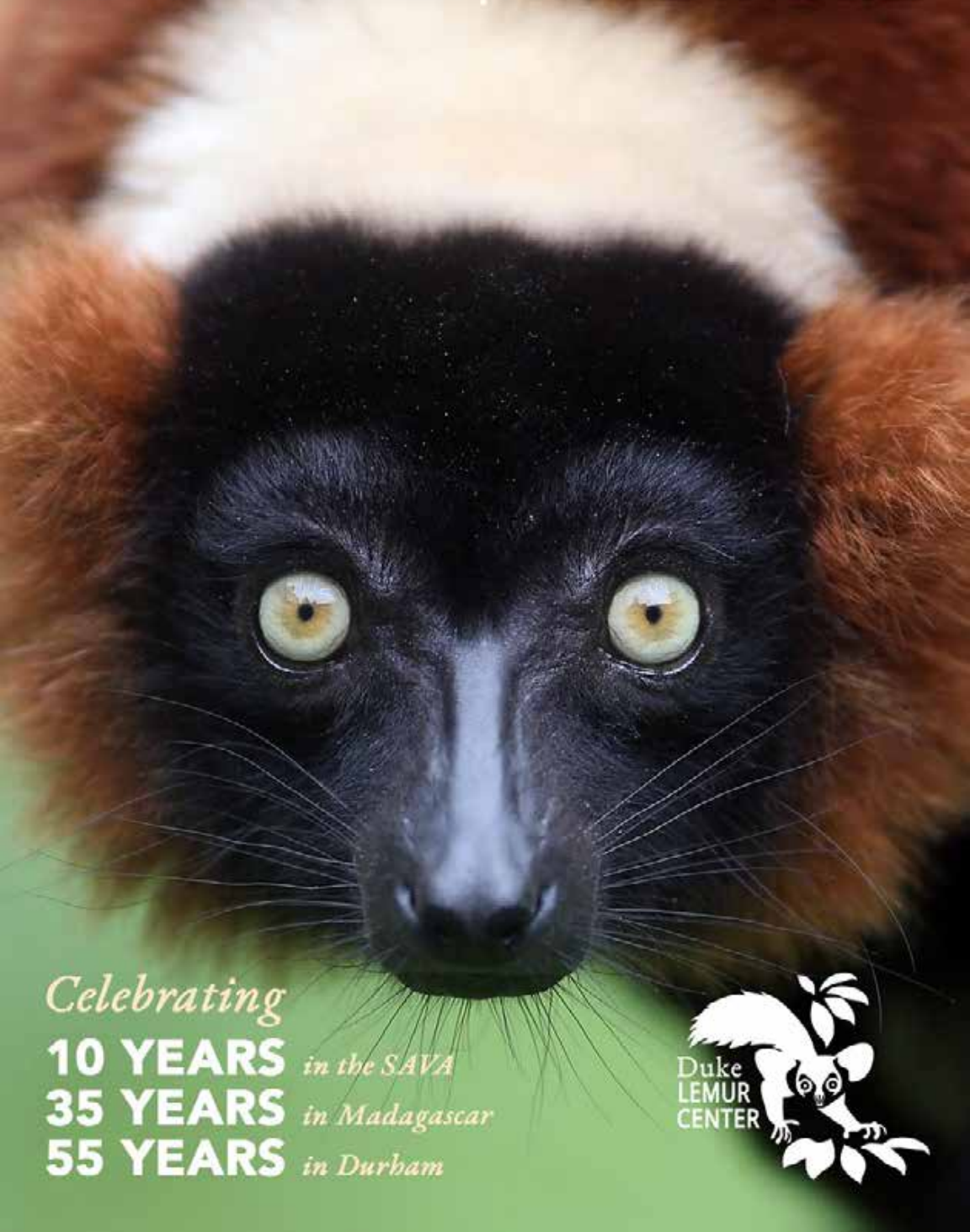


OUR IMPACT

2021 ANNUAL REPORT | PUBLISHED APRIL 2022



Celebrating

10 YEARS

in the SAVA

35 YEARS

in Madagascar

55 YEARS

in Durham



RESEARCH » EDUCATION » CONSERVATION 55 YEARS IN THE MAKING

LETTER FROM THE DIRECTOR



In 2021, the Duke Lemur Center celebrated its 55th anniversary. Although founded with a singular research-focused mission under the direction of Drs. Peter Klopfer and John Buettner-Janich, today the DLC is a global hub of lemur conservation, lemur management and care, and education and outreach as well as a center of scientific discovery.

Never in its history has our mission been more urgent or amplified. Throughout 2021, despite the challenges of a lingering global pandemic and significant financial strains, the DLC—through innovation, sacrifice, and sheer determination—maintained the programs critical to our mission: studying and protecting the lemurs of Madagascar.

As you will see in the pages that follow, our team did a remarkable job. I could not be more proud or grateful for their enduring passion and resilience.

In 2021, we initiated multiple new endeavors to better secure the DLC's future, with equal accessibility being a top priority. A task force was formed to address the barriers that prevent or discourage participation in our programs from underrepresented members of our community. The committee identified several new initiatives, the first of which, paid internships, begins in this spring.

Continuing the theme of looking to the future, I'm excited about the completed construction of the Anna Borruel Codina Center for Lemur Medicine and Research. Generously donated by a Duke alumnus, the Borruel Center enhances veterinary care at the DLC and provides a state-of-the-art teaching facility for vet students in the US and around the world. Its advanced research facilities support complex projects such as hibernation, microbiome, and genomic studies, and allow us to pioneer innovative, non-harmful research with the potential to benefit both lemurs and humans.

Beyond our operations in Durham, the DLC-SAVA Conservation Project celebrated its tenth year in Madagascar. Despite being unable to travel to Madagascar, DLC conservationists Charlie Welch and Dr. James Herrera worked virtually with on-the-ground Project Coordinator Lanto Andrianandrasana to keep our conservation programs running at full throttle. Their collaborations with CURSA, the local university of the SAVA, extended the DLC's reach and provided opportunities to partner with and teach the next generation of Malagasy leaders in science and conservation.

We're excited by what we've accomplished in 2021, and we look forward to the opportunities that 2022 will bring to better share our mission and message with the world. Of course, none of this would have been possible without the generosity, loyalty, and dedication of our staff, volunteers, and donors.

On behalf of all us at the Duke Lemur Center, thank you for your continued support!

A handwritten signature in black ink, appearing to read 'Greg Dye', written in a cursive style.

GREG DYE
Executive Director
Duke Lemur Center

ANIMAL CARE & WELFARE



BUILDING A BIGGER ARK

Sifakas arrive in the UK and Germany

With 25 individuals housed onsite and 37 others on loan to zoological partners, DLC cares for the largest colony of critically endangered Coquerel's sifakas in the world, outside their native Madagascar.

These animals are a genetic safety net for their species: an “ark” to protect them from being lost forever should their wild counterparts become extinct.

That's why in 2021, after nearly five years of planning, eight beloved sifakas were flown from the DLC to three zoos throughout the UK and Germany. These eight individuals will play a key role in expanding the genetic safety net for their species from a US-led initiative to a new global collaboration.

TRAINING HUSBANDRY BEHAVIORS FOR STRESS-FREE CARE

The animal care team conducted 4,059 training sessions with the lemurs to condition a variety of behaviors, including voluntary kenneling, ovulation cycle checking, Frontline® application, ultrasounds, scale training, blood draws, mouth exams, collaring, tail shaves, and urine collection. Not only does training reduce handling and stress, it is also an excellent form of enrichment. The animals' participation is 100% voluntary.

SUPPORTING POSITIVE ANIMAL WELFARE

A new enrichment data collection system, which supports a holistic view of positive welfare, was developed and is currently being tested and transitioned into use by our animal care team.

NOCTURNALS

A BOOM YEAR

for Fat-tailed Dwarf Lemur Births

Six bouncing babies were born in 2021, following seven infants in 2020—a record number of births in the last two decades.



FIRST BUSH BABY BIRTH at the DLC in Two Decades

Bush babies aren't lemurs, but they are prosimians—the same group of primates that includes lemurs. The DLC houses a small number of bush babies to allow for better comparative research. In 2021, we welcomed our first bush baby infant in over 20 years.

2021 IN REVIEW

NON-INVASIVE RESEARCH

MICROBIOME RESEARCH

DLC scientists demonstrated that using innovative technology to sequence plant genes in lemur feces would provide a reliable method for diet reconstruction of wild lemurs via non-invasive sampling.

FUNDING FOR MALAGASY, STUDENT RESEARCHERS

The Aid for Articles program, developed by DLC scientists Marina Blanco and Lydia Greene, provided funding and mentoring to five early-career Malagasy researchers to assist in the completion of their research through publication.

The DLC awarded \$30,000+ in research support through the Director's Fund to six projects led by graduate students, and nearly \$2,500 through the Molly Glander Fund to five undergraduate student projects.



HIBERNATION RESEARCH

Fat-tailed dwarf lemur hibernation was a major research focus in 2021. The DLC found that dwarf lemurs show evidence of telomere elongation during hibernation, hinting at the protective mechanisms that slow down aging in this long-lived, small primate.



WELCOME CHRIS WALL, PH.D. New DLC Assistant Director of Research

"From an early age, I wanted to be a scientist. But I didn't take a straight path from college to getting a Ph.D., which gave me the chance to explore different jobs.

"In graduate school, I was captivated by the complexity of anatomy and by the power of the theory of evolution by natural selection. I decided to work on answering questions about how function connects anatomy and evolution.

"I have worked in the Department of Evolutionary Anthropology at Duke since 1994, first as a postdoctoral researcher, and later as a research professor. Many of my favorite research experiences developed in unexpected ways, and I encourage students to embrace opportunities even if they don't seem to fit perfectly with their career plans.

"Throughout my career, my research included work at the Duke Lemur Center; and I've been a Senior Research Scientist at the DLC since 2018 (after retiring from my faculty position in Evolutionary Anthropology). In 2021, I was appointed the DLC's Assistant Director of Research. This is my post-professor dream job because of its focus on STEM education and grant design and writing across all departments, which gives me an opportunity to contribute to the research, education, and outreach missions of the DLC."

2021 IN REVIEW

STUDENT PROJECTS



STUDENT AND VOLUNTEER PROGRAMS

A Season of Growth and Change

The DLC's student and volunteer programs have grown considerably over the past decade. Today we have more than 80 students and community members participating in our volunteer program on a weekly basis. We also host approximately 30 interns annually and have a record number of Duke work-study students on staff.

Although thrilled by this growth, we are concerned by the lack of diversity among the individuals we engage. This observation is consistent with low diversity across STEM fields in general.

One barrier to participation in the DLC's student programs is the lack of paid internships. Many students have to work when not in school in order to cover college expenses. Beginning in 2022, the DLC will offer several paid summer internships. This is the first of several initiatives that the DLC is implementing, with the goal of increasing participation from racial and ethnic groups historically underrepresented in science.

At the Lemur Center, we want all interested students to have the opportunity to participate in the life of the DLC and to gain valuable experience as they work toward careers in STEM.

RETURN OF ONSITE VOLUNTEERS

After pausing all volunteer and student programs in 2020 due to the pandemic, the DLC resumed onboarding of new Technician Assistants and Education Department volunteers in the summer of 2021. Duke work-study students returned to in-person work that fall.

ASSISTANCE WITH RESEARCH

Increased in-house research allowed many of our Technician Assistant volunteers to serve as research assistants on projects focused on topics such as the gut microbiome and lemur parental investment.

DID YOU KNOW...

The DLC's Students Projects program connects students with volunteer, work-study, research, and internship opportunities at the DLC. Students have gone on to study primates in the most remote parts of the world; to become veterinarians and zookeepers; to serve in the Peace Corps; to attend graduate school; to teach environmental education; and and so much more.



7,569

**HOURS OF SERVICE DONATED
BY DLC VOLUNTEERS IN 2021**

2021 IN REVIEW FOSSIL LAB

FROM COLLECTION TO MUSEUM

The Division of Fossil Primates Prepares to Relaunch as the DLC Museum of Natural History

In preparation to introduce the general public to the DLC's fossil collection, an exhibit space was designed and created to tell the story of lemurs and humans.

Scheduled to open in 2022, the exhibit—including the educational signage pictured to the right—and tour are a collaboration between the fossil team and the education and outreach team, especially Fossil Preparator and Graphic Designer Karie Whitman and Tour Designer and Lead Educator Alanna Marron.

As part of this project, a mural was painted on the back of the Division of Fossil Primates (DFP) building that features the creatures in the collection that are too big to put on display in our current space. Future visitors can now size themselves up next to elephant birds, gorilla-sized lemurs, and ancient elephants.

NEW RESEARCH

Fossil Lab researchers used DLC fossils to document a massive extinction 33 million years ago that dramatically impacted primate evolution in Africa, worked on new fossil sites in Kenya, and documented the arrival of different groups of mammals in Africa.

GRANT FUNDING

The National Science Foundation and Institute for Museum and Library Services each awarded the DFP grants to support fossil preparation, scanning, storage, and record digitization to keep our important, delicate specimens safe for future research.



« COQUEREL'S SIFAKA SKULL

This sifaka was a member of the DLC colony and died of natural causes. This scan is part of an ongoing project to associate the DLC's osteology and cadaver collection with individual lemurs' life history data so we can explore impacts of development, diet, and social history on bones and tissues.

ARCHAEOLEMUR JAW »

Scanning this subfossil jaw allows us to digitally isolate baby teeth and developing adult teeth, so we can explore how these extinct monkey-like lemurs grew up.



2021 IN REVIEW CONSERVATION

CELEBRATING 10 YEARS IN THE SAVA

10 years ago, after considering numerous regions in Madagascar as an additional DLC conservation project site, the SAVA of northeastern Madagascar was identified as best suited for a variety of reasons. The SAVA's exceptionally high biodiversity, its remaining forests, its local openness to community-based conservation, and the lack of presence by other conservation organizations made it a logical choice.

Thanks to the DLC-SAVA team, the first 10 years of the project have seen extraordinary progress through an array of community-based activities:

- » **2,600+ teachers** have been trained in teaching environmental education
- » **Tens of thousands of trees** have been planted at sites throughout the region
- » **Fish-farming ponds** have been established in villages to reduce bushmeat hunting
- » **Workshops and trainings** have successfully promoted sustainable agricultural techniques
- » **1,000+ fuel-efficient stoves** have been distributed, reducing the use of wood and charcoal
- » **Multiple lemur survey missions** into the forests of the COMATSA, a very important corridor of forest between Marojejy National Park and Tsaratanana, have provided valuable information on lemur abundance in that important remote protected area
- » **Numerous collaborations** have been established with other NGOs and with CURSA, the regional university, to amplify the impact of the project's mission and to make the decade ahead even more impactful



COLLABORATION WITH CURSA

The DLC-SAVA Conservation project's collaboration with CURSA, the regional university of the SAVA, has been greatly expanded through 2021. By engaging students/faculty in various project activities, from lemur survey missions to sustainable agriculture, all involved benefit and conservation goals are supported.

REGENERATIVE AGRICULTURE

General Mills awarded the DLC-SAVA project a one-year grant to expand its regenerative agriculture project activities. A primary cause of deforestation/forest degradation in Madagascar is the traditional shifting agriculture technique (also known as slash and burn) used by Malagasy cultivators. With a steadily growing population, more natural forest is disappearing each year: In the SAVA region, approximately 20% of the natural forest cover has disappeared in the past 20 years.

Regenerative agriculture involves working with and caring for soil in a way that it can be used repeatedly, creating permanent areas of cultivation instead of continually cutting forest, growing a crop for a year or two, and moving on. Protecting and managing soil in a sustainable way is essential for slowing forest destruction.

2021 IN REVIEW

EDUCATION AND OUTREACH



TOUR PROGRAMS REOPEN

In June, after being closed to the public for 15 months, the DLC's onsite tour programs were reopened. Thanks to the help of more than 25 new docents—many of whom attended a special training the first week of June (above)—we educated 4,000 visitors in five months.

FIELD TRIP FUND

The DLC created a field trip fund to send students in Durham and in Madagascar on field trips with DLC educators. This initiative was inspired by DLC donors Ned and Sandy McClurg, who provided funds to sponsor field trips (including bussing costs) to the DLC for Durham Public School students.

LONG-TERM PARTNERSHIP WITH LOCAL SCHOOL

The education team began a collaboration with the science department at Lakewood Montessori Middle School, launching a pilot program for long-term partnerships with local classrooms. The success of this program led to a two-year grant from the North Carolina Museum of Natural Sciences to keep this program going.

PROGRAM EVALUATION AND COLLABORATION

The DLC joined the ImpactNC initiative, building a community of collective evaluation and collaboration with 53 other environmental education centers across North Carolina.

FREE ONLINE RESOURCES

During the downtime created by the pandemic, the education team enhanced the DLC's free resources available to educators.

See the full-length virtual tour, presentations, and more at:

[LEMUR.DUKE.EDU/VIRTUAL](https://lemur.duke.edu/virtual)

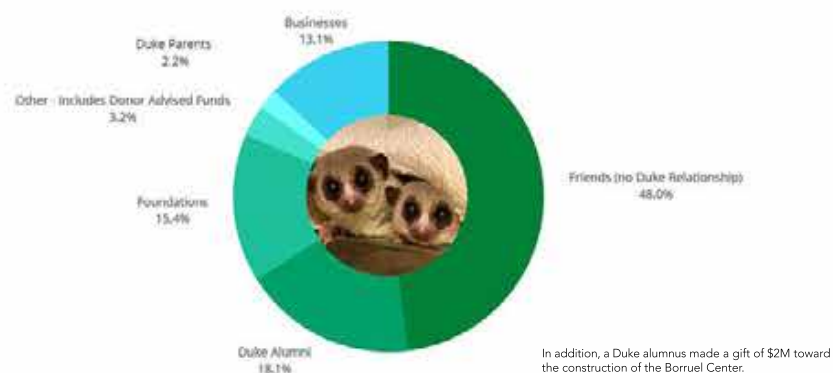


2021 IN REVIEW DEVELOPMENT

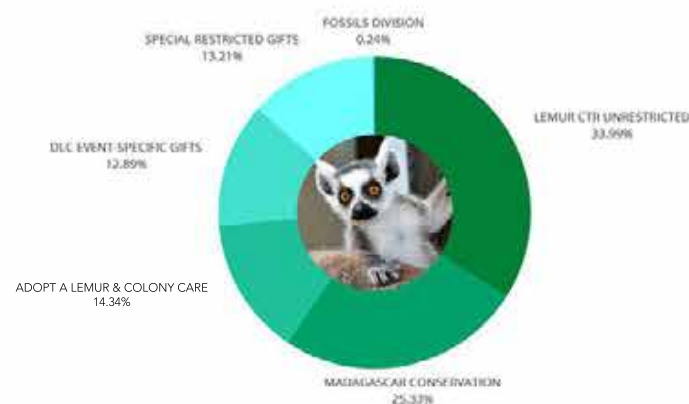
Between July 1, 2020 and June 30, 2021, the DLC received just over \$3 million in gifts. This included a \$2 million gift received from an anonymous Duke alumnus toward the construction of the Anna Borrueel Center for Lemur Medicine and Research.

Noteworthy gifts with significant impact on the expansion of the DLC's conservation work in Madagascar were generously made by Bob and Sue Knox, General Mills, and Darren and Julie Harkness Cooke '94.

WHO GAVE



GIFT DESIGNATIONS



This chart does not include a \$2M payment toward the Borrueel Center, or special one-time gifts and grants.

NEW IN 2021

» The DLC shared its first annual impact report and hosted its first Spring Director's Forum via Zoom as a new way to connect in a meaningful way annually with our donors and close friends around the world.

» Five new new legacy gift commitments were received from Ashley Wallace Adams '93 and John Kinnett Adams, Sr.; Lexi and Mike Gordon '76; Dr. Naomi Lynn Nelson '88; and two couples who wish to remain anonymous. We're honored to be formally included in their estate plans, and we welcome them to our Legacy for Lemurs Society.

» The Circle of Life, a new addition to the DLC's Giving Societies, was founded to recognize donors whose lifetime cumulative gifts and commitments, including bequests to the DLC, exceed \$10,000. These donor's names will be listed to the wall in the Lemur Landing gift shop.

» A plaque was installed on the summer tour path in recognition of a generous gift from Jane Harmeling McPherson '52 and her family, in memory of David McPherson and Dr. Harry T. McPherson, M.D. '46.

» Naming gift opportunities were established for the Borrueel Center, and new major and principal gift options were added for donors to consider as ways to make a significant investment in the DLC's future impact.

THANK YOU TO ALL OF OUR DONORS!

DLC giving traditions stayed strong as our friends and followers responded generously to our requests for support, including the Love and Lemurs video valentine, Stay Away 5K, Giving Tuesday, holiday appeals, and Mission: Madagascar event and online auction. Special thanks to our 2021 Mission: Madagascar sponsors!

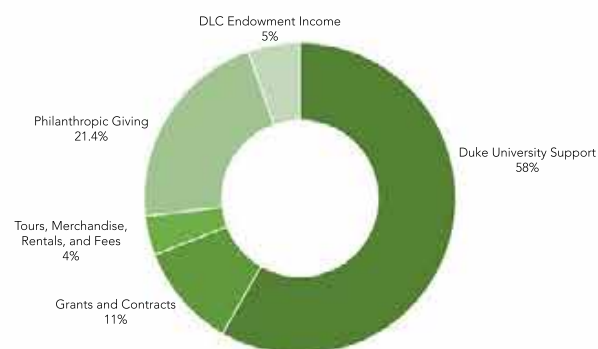
While the DLC does not provide a public list of Giving Society members in this impact report, our Director's Society members, Circle of Life members, and corporate donors of \$5,000+ are listed on the wall in the Lemur Landing gift shop. All giving society members are eligible for benefits as our way to thank them for their generosity.

2021 IN REVIEW

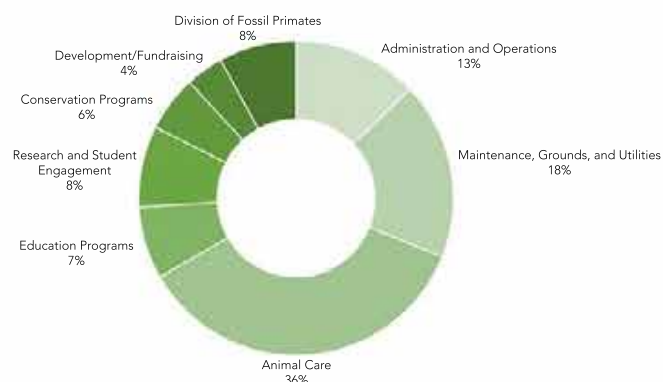
FINANCIAL OVERVIEW



FISCAL YEAR 2021 INCOME



FISCAL YEAR 2021 EXPENSES



FISCAL YEAR 2021 FINANCIAL SUMMARY

Income	
Duke University Support	\$ 2,325,726
DLC Endowment Spendable Income	\$ 215,084
Philanthropic Giving	\$ 854,937
Tours, Merchandise, Rentals, and Fees	\$ 162,809
Grants and Contracts	\$ 432,005
Total Income	\$ 3,990,561

Expenses	
Administration & Operations	\$ 520,764
Animal Care	\$ 1,436,412
Maintenance, Grounds & Utilities	\$ 734,341
Education Programs	\$ 300,606
Research & Student Engagement	\$ 337,022
Conservation Programs	\$ 323,135
Development/Fundraising	\$ 155,862
Division of Fossil Primates	\$ 321,683
Total Expenses	\$ 4,129,825

NET SURPLUS/DEFICIENCY FOR THE YEAR:
-\$139,264



THANK YOU

21

INFANTS WERE BORN IN 2021, REPRESENTING

08

DIFFERENT SPECIES. CURRENTLY, A TOTAL OF

13

DIFFERENT SPECIES AND

209

ANIMALS RESIDE AT THE DLC.