



Pan African Sanctuary Alliance



Primates in Peril: The Impact of Climate Change on African Primates

2021 CENSUS REPORT

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Covid, lost income, and climate emergencies have taken a toll on primates.

EXECUTIVE SUMMARY

2021 has been a turbulent year for Africa's primates and the organizations that protect them, as they were battered by the twin forces of COVID-19 and climate change. Drought, wildfires, rising temperatures and flooding combined with emerging COVID variants, uneven vaccination rollouts, and on-again, off-again lockdowns. The compound effect of these events made this year one of the most challenging ever for primate welfare and conservation in Africa.

For the 23 primate sanctuaries and wildlife centers that make up the Pan African Sanctuary Alliance (PASA), 2021 required resourcefulness, resilience, and fortitude. As one sanctuary director put it, "This has been the worst year ever and I have been doing this for more than 40 years."

What made it so difficult? First, two years of a global pandemic have devastated the financial underpinnings of the sanctuaries. With continued restrictions on international travel, PASA members have lost crucial income streams: international volunteers and eco-tourists. The combined loss has been catastrophic for PASA members, many of which are rapidly depleting their contingency funds. To ensure continuity of care for the more than 3000 great apes and monkeys in their care, and to safeguard the long-standing role of sanctuaries in their local communities, PASA has given more in emergency grant

money in the last year than in the five years previous combined.

Second, climate-related emergencies took their toll on primate habitat and PASA member sanctuaries felt the impact. From rising waters in Uganda's Lake Victoria to rising temperatures in southern Africa, great apes and monkeys faced extreme conditions.

Despite these challenges – or perhaps because of them – the need for sanctuary services has only increased. This is a good news/bad news scenario. The good news is that many governments and law enforcement agencies in Africa are committing to anti-poaching programs. As they do so, they apprehend wildlife traffickers and confiscate poached animals. PASA members are integral partners in this fight against wildlife crime, as without them, law enforcement would have no place to take animals, and therefore be less likely to pursue these cases. In 2021, PASA members rescued 400 animals who were victims of the illegal wildlife, pet and bushmeat trades.

The bad news is that climate change, exacerbated by human activities like logging and mining, is advancing on the continent. Studies predict that great apes could lose as much as 95% of their habitat in the next thirty years. This increases the likelihood of human-wildlife conflict, including the illegal wildlife trade and bushmeat hunting.



For many PASA members, the biggest achievement was simply surviving.

Yet throughout the year, PASA members celebrated many victories, including:

- Collectively, members released 413 animals into the wild.
- Tacugama Chimpanzee Sanctuary, in Sierra Leone, now co-manages Loma Mountain National Park, home to about 20% of the country's chimp population.
- Tchimpounga Chimpanzee Rehabilitation Center, in the Republic of Congo, expanded its law-enforcement activities and Canine Detection Unit into two additional national protected forests and a riverport.
- Chimfunshi Wildlife Orphanage, in Zambia, started construction on a much-

needed veterinary clinic.

- J.A.C.K. Primate Rehabilitation Centre, in the Democratic Republic of Congo, rescued and is rehabilitating 20 Congolese primates confiscated from traffickers by authorities in Zimbabwe.
- In Gabon, two zoo-bred gorillas which were released by Projet Protection des Gorilles – Gabon, gave birth to a healthy baby, the first such birth in the wild.

For many Alliance members, however, the biggest achievement was simply persevering. Said one director, “The sanctuary is still here, we kept all the animals safe and healthy, and we took in more.” The work continues.



ABOUT PASA

PASA brings together a network of 23 independent, accredited primate sanctuaries and wildlife centers across Africa, as well as a diverse community of veterinary professionals, local leaders, researchers, scientists, animal welfare advocates, wildlife conservationists, volunteers, governmental and non-governmental bodies, and supporters from around the world.

As an alliance, PASA balances welfare and conservation priorities, delivering critical care to imperiled primates, while addressing broader threats to their long-term survival.

- **Critical care**—Primate rescue, life-long care, rehabilitation and release, emergency support (natural disaster, human conflict, disease).
- **Addressing threats**—Habitat loss, poaching and illegal trafficking, human behaviors (hunting, pets, entertainment), climate change.



An in-depth look at how climate change impacts Africa's primates.

THE IMPACT OF CLIMATE CHANGE

In PASA's 2020 census report, we looked in depth at the threats facing Africa's primates, including human population growth, habitat loss, wildlife trafficking, and disease. These challenges continue, representing the day to day working conditions for sanctuaries. But they are not happening in a vacuum. They occur within the context of global climate change – and in fact are integrally related. So in this year's report, we will investigate what is known about the impact of climate change on Africa and on African primates. These findings inform PASA's approach to both ensuring the welfare of as many great apes and monkeys as possible, and addressing the systemic threats to their continued survival as species crucial to the biodiversity of the continent.

CLIMATE CHANGE IN AFRICA: AN OVERVIEW

The Intergovernmental Panel on Climate Change (IPCC) defines climate change as “a change in the state of the climate that can be identified (e.g. by using statistical tests) by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer.”¹ Typical markers of climate change include rising temperatures, changing precipitation patterns, and more extreme weather. Samples of these phenomena include loss of glaciers, prolonged periods of drought, wildfire conflagrations, severe tropical storms, and rising ocean temperatures and sea levels. Climate change can be the result of both natural and human factors. However, the use of greenhouse gases, fossil fuels, and the destruction of forest and jungle canopy due to logging, mining, agriculture and human population growth have accelerated the process, creating our current crisis.

In Africa, as elsewhere, climate change is not a future event. It is already happening, as these data points underscore.

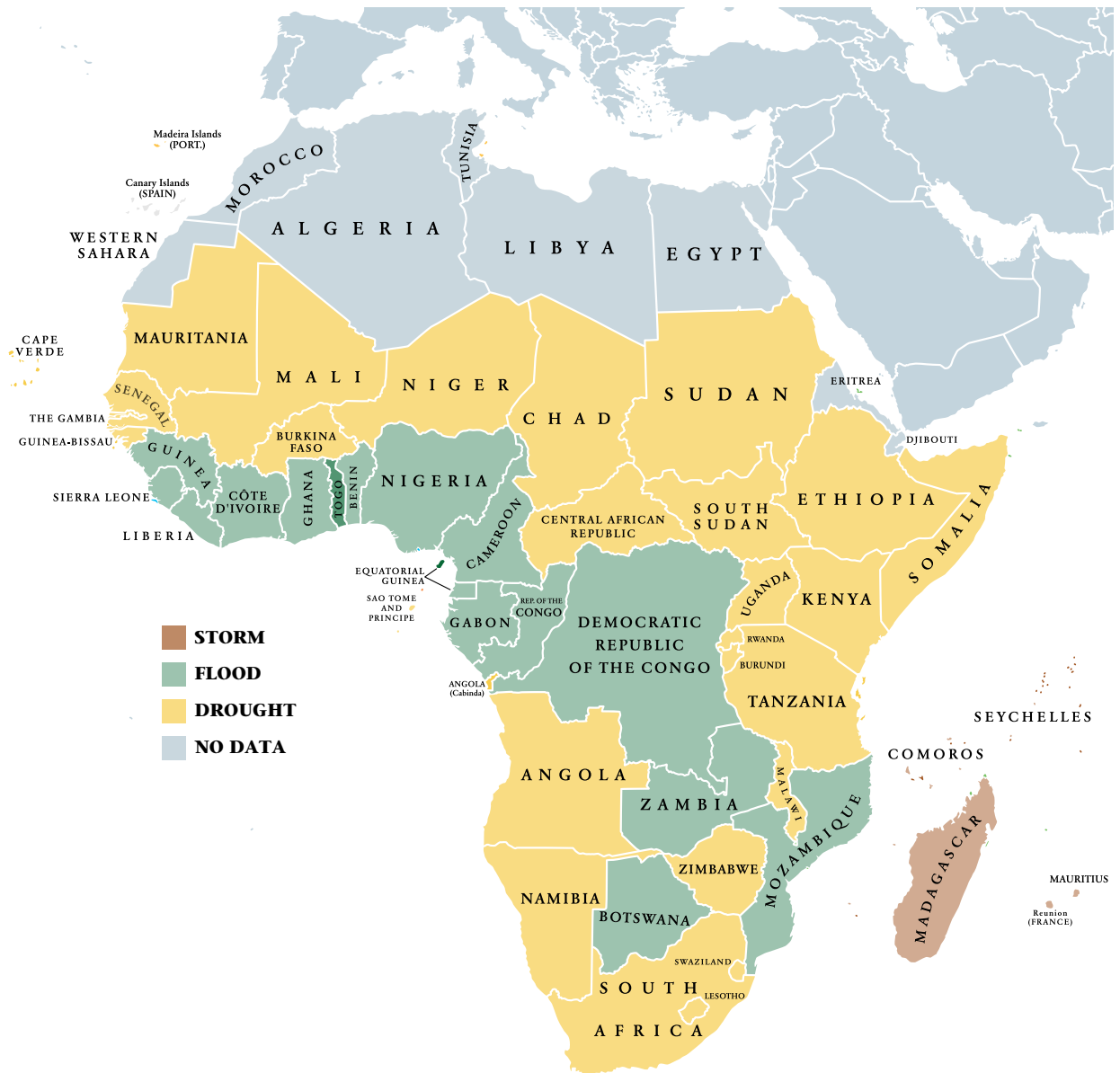
- In the sub-tropics and central tropical Africa – home to significant primate populations – temperatures are rising at more than twice the global rate of increase (3.2° vs. 1.12°).²




Climate change isn't a future event; the evidence shows it's happening now.

- Droughts have nearly tripled in frequency in sub-Saharan Africa since 1979, and floods have increased more than ten-fold.³
- The sea level around Africa has risen at a higher rate than the global mean for the last 30 years, which compounds the likelihood of coastal flooding and erosion.⁴

Source: World Bank Group, Africa's Pulse, October 2021





Africa's great apes and monkeys are especially vulnerable to change.

For people, these forces create conditions of increased food insecurity, poverty, water scarcity, and climate-related displacement. ReliefWeb estimates that 12% of all new population displacements worldwide occurred in the East and Horn of Africa region, including over 1.2 million disaster-related migrations, with floods, storms, and droughts being the primary drivers.⁵ With a population that is expected to nearly double by 2050, projections indicate that Africa will experience more population displacement, and more need for economic and agricultural expansion, with the associated loss of wild land, in order to provide food and resources for people. We can also anticipate higher rates of human-wildlife conflict and bushmeat hunting.

HOW A CHANGING CLIMATE IMPACTS PRIMATES

The very things that make Africa's great apes and monkeys such compelling and charismatic animals make them especially vulnerable to climate change. Their diet, social structures, and range – nearly every facet of their lives is put at risk. When combined with changes in their habitat, primates in Africa will be increasingly driven from their traditional rangelands.

There is a growing research base evaluating the impact of climate change on primates. Below is an overview of the key topics. For a deeper exploration, see the citations for source materials.

HABITAT

Scientists estimate that African great apes will lose between 84%-95% of their current habitat by 2050 due to climate change, land use and human population growth.⁶ This includes fragmentation of wild land due to development, and loss of habitable range from climate impacts. There is some possibility of gaining new territory as conditions shift. For example, primates in a lowland forest could move uprange as the climate of higher elevations becomes more habitable. However, the rate of climate change is outpacing the adaptive capacity of most species. In the estimated 30 years it will take for the loss of habitat, it is unlikely that a majority of primates can move and adapt to new environments in that same time.



The pressures on primates are many, from food to reproduction to range.

PRIMATE DIETS

What primates eat and who they cooperate or compete with to get the food will come under pressure from climate change. Primates with specialized diets, especially those tied to a location, will be more vulnerable than those that show greater flexibility. Also, the leaf-dominant diet of many primates can put some species at risk because higher temperatures and lower rainfall will impact the amount and quality of browse. Finally, disruptions to habitat could make some food sources scarce or increase competition for limited resources from other primates and other species struggling to adapt to the same conditions.

LIFE HISTORY TRAITS, SOCIAL SYSTEM, AND PHENOLOGY

Primates have slow life cycles, low reproductive rates, and give birth to small litters, often only one or two babies. These factors make them slower to adapt or move, traits needed for resiliency in the rapidly changing world in which they live. Disruption to traditional food sources, especially those which align to reproduction, may result in higher rates of infant mortality. Animals who depend on tight social bonds for protection or body heat may find that conditions will no longer support large social groups.

RANGE AND DISPERSAL VELOCITY

Animals with a tight range and greater population density, like primate social groups, are limited in how quickly they can move to new range areas – their so-called dispersal velocity. This is especially significant for primates as they are considered to be “dispersal limited” due to slow life histories, their size, their range restrictions and the increasingly fragmented nature of their habitat.⁷

FLOODING THREATENS ISLAND CHIMPS

Rising waters threaten chimps on Ngamba Island.

Ngamba Island Chimpanzee Sanctuary, a PASA member in Uganda, cares for 52 chimpanzees and monitors an additional 250. The sanctuary is located on an island in Lake Victoria, where for the last two years, the waters have been rising. Uganda has a mostly tropical climate and historically had stable patterns for rainfall. But with climate change, the rains are less predictable – and often more devastating.

Severe months-long rains caused unprecedented flooding in Lake Victoria. Waters broke through Ngamba Island's retaining walls and submerged the island's only pier. Chimps that could previously access different parts on the island now risked drowning if they attempted to go to their favorite areas.

“We were forced to check the banks for stuck chimpanzees,” said Dr. Joshua Rukundo, senior veterinarian for the sanctuary and director of its programs. “We would do this check four times a day, sometimes, after young one chimp got stuck in mangroves along the shores.”

Pools of stagnant water formed from the floods as well, giving mosquitos the



Photo by Ngamba Island Chimpanzee Sanctuary

perfect environment to breed. This led to an outbreak of malaria that hit staff and worried the team that the chimps might succumb as well.

Thanks to the generosity of PASA supporters and other concerned organizations, the team at Ngamba Island was able to raise their landing pier, repair the existing retaining wall and even add to the infrastructure. Along the eastern shore, they are building a new retaining wall using gabions. This technique lets fish continue breeding while protecting the shores from dangerous storm waves. These also protect areas where the chimpanzees like to wade.

“This project will help us ensure the survival of the sanctuary,” said Dr. Rukundo, “and provide a home for the long term care of the chimpanzees.”



PASA members join with local communities to drive change.

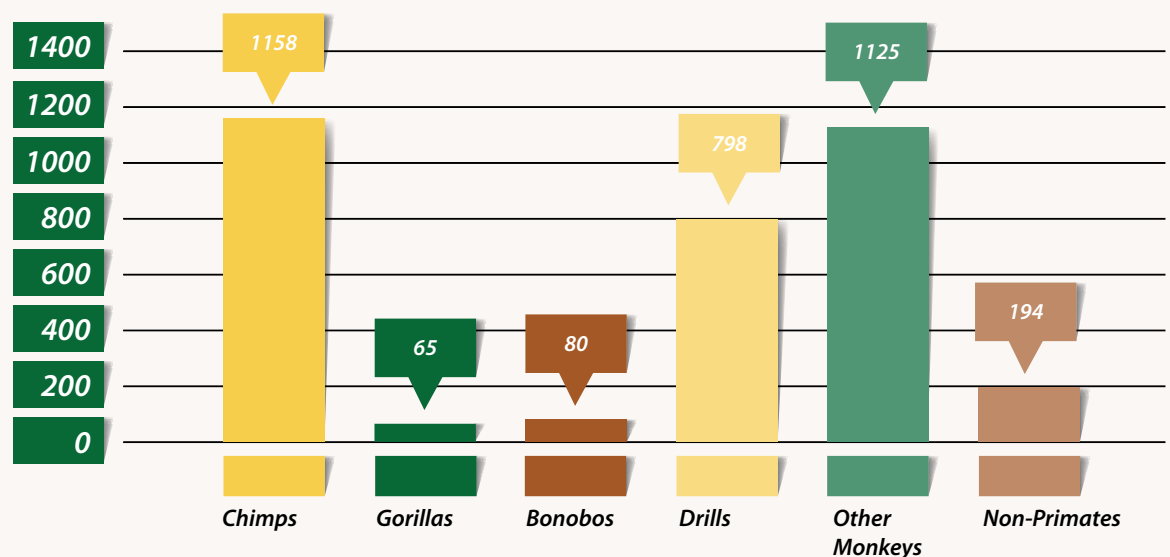
THE SANCTUARIES

Given the scale and speed of change hitting Africa – to climate, land, and population – sanctuaries and wildlife centers have never been more essential. To make sure that primates survive, PASA and Alliance members partner with their local communities and international organizations to fight on two fronts. First and foremost, PASA members provide high quality and tender care to each animal they take in. Equally important, their programs in alternative livelihoods, land reclamation, agroforestry, and environmental education put them in the forefront of wildlife conservation.

CRITICAL CARE FOR ANIMALS IN NEED

In 2021, PASA members cared for 3,226 primates and 194 other animals. This represents an increase of nearly 5% over 2020, despite the devastating financial impact of COVID-19. Many of these primates were rescued from wildlife traffickers and come to PASA members severely injured and traumatized by what they have experienced. Since 2015, PASA

ANIMALS CARED FOR BY PASA MEMBERS





In 2021, PASA members rescued 400 animals, including 182 primates.

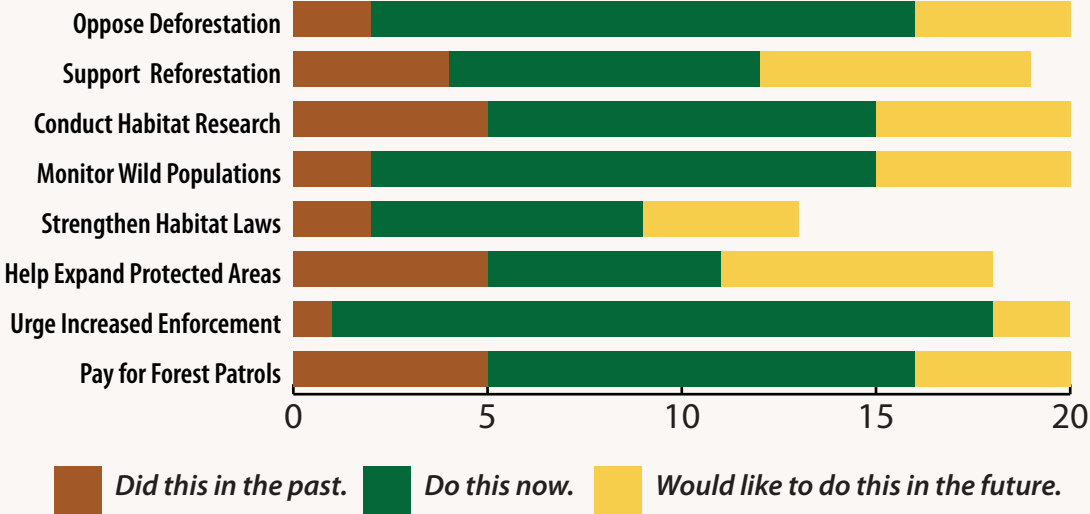
members have increased the number of primates in their care by 12.5%.

During 2021, PASA members rescued a total of 400 animals, of which 182 are primates. Animals come to sanctuaries in different ways. Some are confiscated as part of law enforcement efforts to combat wildlife crime. Others are brought to sanctuaries by compassionate citizens who witness animal cruelty. Some animals are injured in traffic accidents or trying to cross fragmented land that has been secured with electric fencing.

What other animals do PASA members rescue? Many different kinds!

For example, Lilongwe Wildlife Centre, in Malawi, rescues pangolins, owls, lions and elephants in addition to primates. Their Wildlife Emergency Response Unit (WERU) saves injured wildlife in Malawi’s national parks, protecting these endangered animals.

HOW PASA MEMBERS PROTECT WILD PRIMATES





PASA members employ many strategies and tactics to protect wild primates.

RETURNING TO THE WILD

Releasing an animal back to the wild is one of the most rewarding – and complex – parts of sanctuary life. Animals who have spent years living in cages, such as Captain, may be too traumatized and unable to learn the survival skills needed for life in the wild. So the first job is to conduct an analysis to determine if an animal is a good candidate for release.

Is the animal healthy? Is there a location that can support the animal or animals? Are there other primate groups already established that the animal could join – or who would be competing for the resources at the site? Once these questions are answered, planning for the release can begin.

In 2021, PASA members released 413 animals back into the wild. This included 73

CAPTAIN COMES HOME

When Captain, a young chimp, was an infant, a poacher slaughtered his mother in front of his eyes, then captured Captain and sold him as an illegal pet. Eventually, Captain grew too big, and his owners locked him up in a crate. There he was kept for the next 11 years. Chimpanzee infants in the wild would stay with their mothers for four or five years, so the social isolation on top of the trauma of losing his mother was crippling for this young chimp. A concerned traveler alerted PASA to Captain's plight, and Parc de la Lékédi, a PASA member in Gabon,



Photo by Parc de la Lékédi

was able to rescue Captain, giving him a fresh start.

When he saw other chimps for the first time in 11 years, he had no idea what to do. He

became stressed and scared whenever other chimps were nearby. However, staff at Parc de la Lékédi gradually introduced him to his new troop. Slowly, he learned to overcome his fears and approach them. He now spends his days in the forested enclosure at the sanctuary. He is groomed by his companions, climbs trees, and takes naps with his new family.



In 2021, members released 413 animals, including 73 primates, to the wild.

primates. Limbe Wildlife Centre, in Cameroon, released 171 endangered African grey parrots back into the forests. Limbe has pioneered new techniques for rescuing and rehabilitating these beautiful – but highly trafficked – birds, creating the National Rescue, Rehabilitation and Release program. Limbe rescues 150-200 birds at a time and rehabilitates them, a process which can take up to nine months. In 2021, the Limbe team implemented a soft release methodology for the birds using a special aviary and GPS monitoring to ensure the birds stay safe after release.

ADDRESSING LONG TERM THREATS TO SURVIVAL

PASA and Alliance members work to combat systemic threats and ensure that primates remain a vital – and beloved – part of African ecosystems for generations to come. As an alliance with members located in 13 countries, PASA leverages the deep, local expertise of our members and drives regional and international solutions to problems like poaching and hunting bushmeat, wildlife crime and the illegal pet trade, habitat loss, and climate change.

DEEP RELATIONSHIPS LEAD TO CONSERVATION SUCCESS

To address climate change and the loss of habitat, PASA members have a unique advantage. They have been part of their communities for decades. Working together, they have sought to understand the issues and develop innovative solutions.

In Cameroon, Sanaga-Yong Chimpanzee Rescue is working with their local community to use an innovating technique to increase crop yields and provide food security for the people who live there. Fast-growing Inga trees, planted in rows between traditional crops, provide multiple benefits. They prevent soil

erosion and add nutrients to the soil, while also increasing forest cover – a bonus for biodiversity. Local farmers are able to increase crop yields in a sustainable way, which gives them a higher income and steady supply of food, and reducing the need for slash-and-burn practices or hunting in the forest.

In Sierra Leone, the Tacugama Community Outreach Program, part of Tacugama Chimpanzee Sanctuary, worked with local communities to form 27 farmer groups. These teams received agricultural training, seeds – including rice and groundnuts –

and a variety of agricultural tools. Community members planted 10,000 seedlings to connect two forests by a bio-corridor, to mitigate the human-wildlife conflict in the district and make it easier for wildlife to move freely. The team has since been back to attend community meetings, and were gratified to hear that people share that, thanks to this support, they feel less dependent on the forest. Tacugama currently works with over 70+ communities and is directly involved in driving 16 of United Nations' 17 sustainable development goals within Sierra Leone.

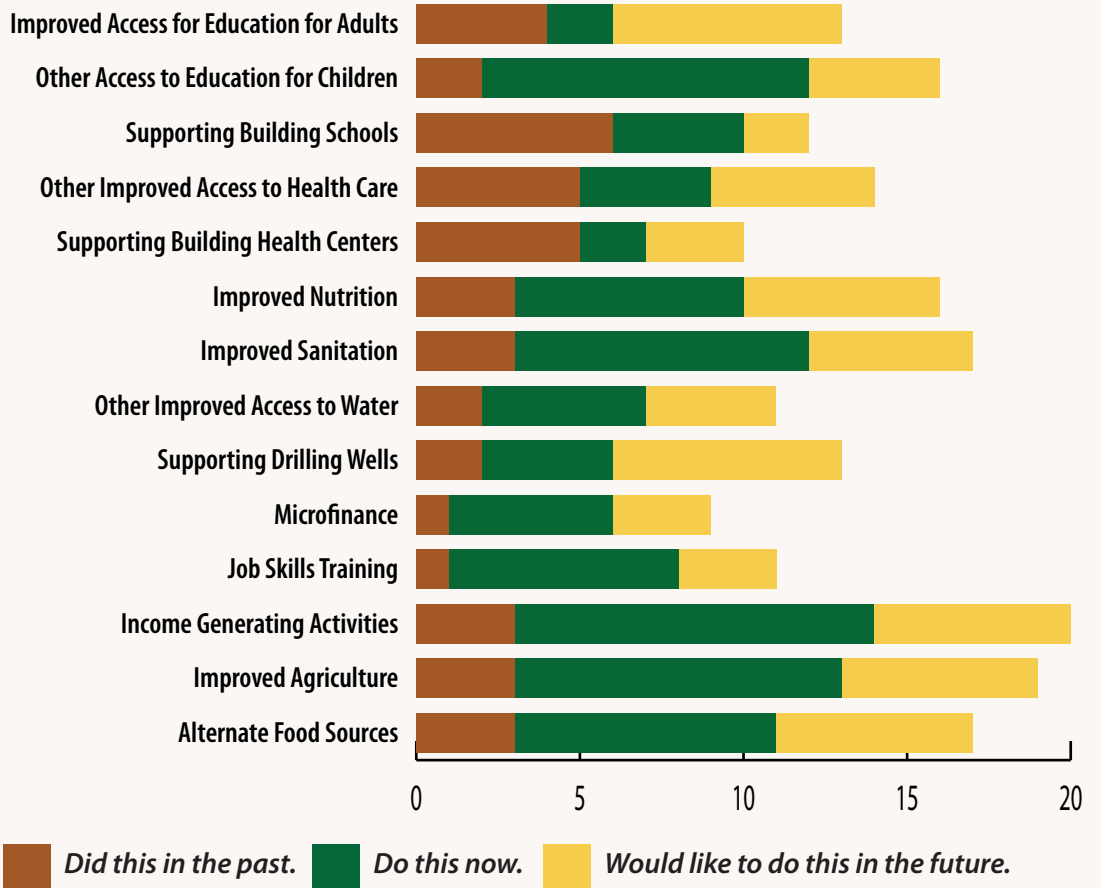


PASA members provide jobs for 738 African nationals in 23 communities.

IMPROVING LIVELIHOODS AND BUILDING COMMUNITY

PASA member sanctuaries provided employment to 738 African nationals in the 23 communities where they are located. This represents an 18% increase over 2020. In the same time frame, PASA members generated \$6.8M for local economies, up slightly from 2020. While these numbers are encouraging signs of stability or even growth, it is important to note that many PASA members report that their funds are nearly depleted. In fact, PASA gave out significantly more emergency grants in the last two years than

COMMUNITY DEVELOPMENT PROGRAM OVERVIEW

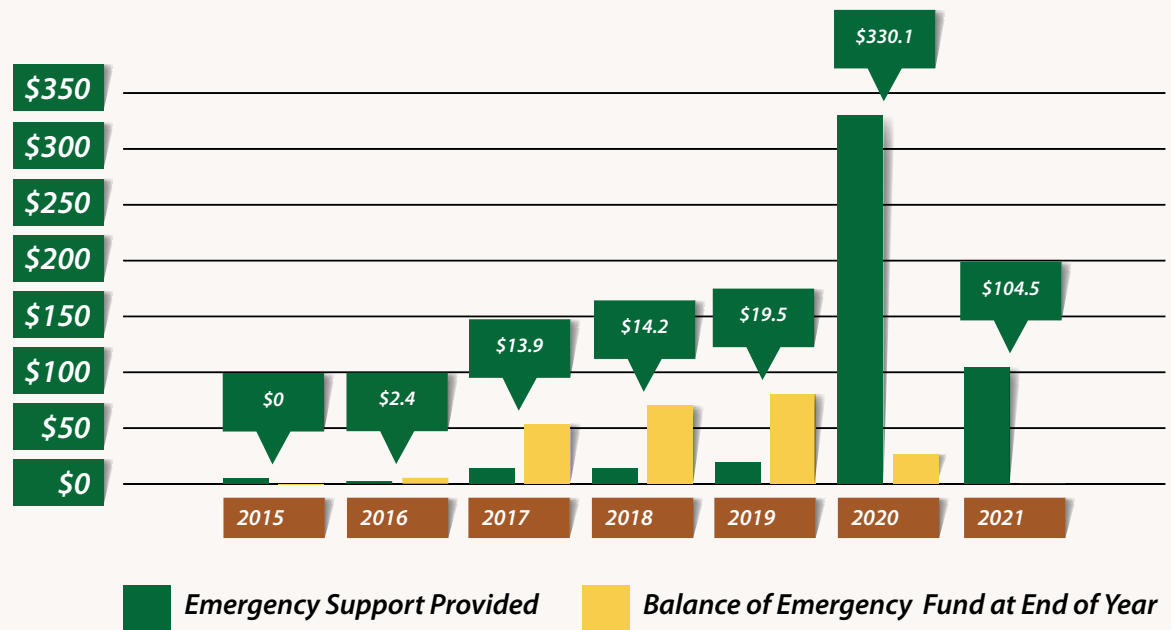




PASA members' education programs reach over 500,000 people a year.

at any time in history. Given the mutation of the COVID-19 virus and the low rates of vaccination due to distribution inequalities, it is safe to say that the situation remains shaky for PASA members and all whom their work touches – the animals and the people.

EMERGENCY SUPPORT (by year, in thousands)





An intersection of forces could overwhelm fragile primate populations.

CONCLUSION

Climate change, a global pandemic, extractive land use, and population growth work together in a vicious cycle that shreds the homeland of African primates, depleting the animals' resiliency, and setting them on a course for conflict with growing human communities. It is in this complex and fraught context that wildlife sanctuaries must operate. PASA members – and the people who run them – are at the intersection of forces that could overwhelm fragile ape and monkey populations in our lifetime. These tenacious organizations have gone through two years of shattering financial hardship. While they stand resolute, they cannot stand alone.

If we are to preserve a world in which primates can continue to live, we must join together to protect the land that supports them. We will need to work in new ways, with unexpected partners, and bring all communities to the table. PASA was founded as an alliance and we believe this is a powerful strength as the world grapples with the many threats that face us all.

When we save primates, we save ourselves. Please join us – there is no more important work. To learn how you can support PASA and our members, visit www.pasa.org.



To help Africa's primates, we must work in new ways, with new partners.

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