

Brief Communication:

Pan African Sanctuary Alliance: Primate Welfare, Conservation, and Research

Rachel Stokes¹, Gregg Tully¹, and Alexandra Rosati²

¹*Pan African Sanctuary Alliance, Portland, Oregon, USA;*

²*Department of Psychology, University of Michigan, Ann Arbor, Michigan, USA*

PASA'S WORK

The Pan African Sanctuary Alliance (PASA), the largest association of wildlife centers in Africa, includes 22 organizations that collectively house more than 3,000 rescued primates (Table 1; Figure 1). Prior to PASA's formation, these organizations had similar goals and were facing similar challenges, but typically did not communicate with one another. In 2000, conservationists and primatologists arranged a meeting in Uganda to bring these groups together for the first time. The directors of the organizations agreed there was a need for improved ongoing communication and, as a result, PASA was formed. Although PASA's headquarters is now in Portland, Oregon and it is a registered nonprofit in the United States, it was created by the African wildlife centers.

Despite working in extraordinarily challenging conditions, members of the Alliance are making significant strides in primate welfare and conservation. They collaborate with law enforcement agencies to reduce wildlife crime by rescuing confiscated animals, give lifelong care to primates orphaned by the bushmeat trade and the illicit pet trade, work to stop the hunting and trafficking of endangered species, defend critical habitat from exploitation, and conduct community development and education programs reaching more than 500,000 people each year across Africa. Additionally, PASA member wildlife centers provide employment for nearly 700 Africans and inject millions of dollars into local economies.

PASA's unique accreditation process brings credibility to wildlife centers, and PASA membership gives them access to a global network

of advisors and other specialists. Additionally, PASA helps its members succeed by advocating for them internationally, providing funding and technical support during emergencies, and building their capacity through training in topics such as strategic planning, public education and community engagement, veterinary treatment, and animal care.

In addition to advocating for and supporting its member organizations, PASA collaborates with them on large-scale conservation initiatives. Some of PASA's newest projects include:

Cameroon Conservation Education Program:

In 2015, PASA and its member organizations in Cameroon launched the Cameroon Conservation Education Program with the goals of: (1) determining the most effective approach to inspiring Cameroonian children to protect their country's wildlife and other natural resources, and (2) integrating it into school curricula, so that children in Cameroon will learn the value of protecting animals and their habitats. This is expected to engender a long-term nationwide shift in the population's attitudes and behavior regarding conservation, resulting in an increase in the number and size of protected areas, stronger legal protections for natural habitat, and an increase in the abundance of endangered species in Cameroon. After a very successful pilot, PASA, Sanaga-Yong Chimpanzee Rescue, and Ape Action Africa are expanding this program to reach 4,500 youth in 2017.

Edutainment Films Program: The Edutainment Films Program is a pioneering initiative in Africa

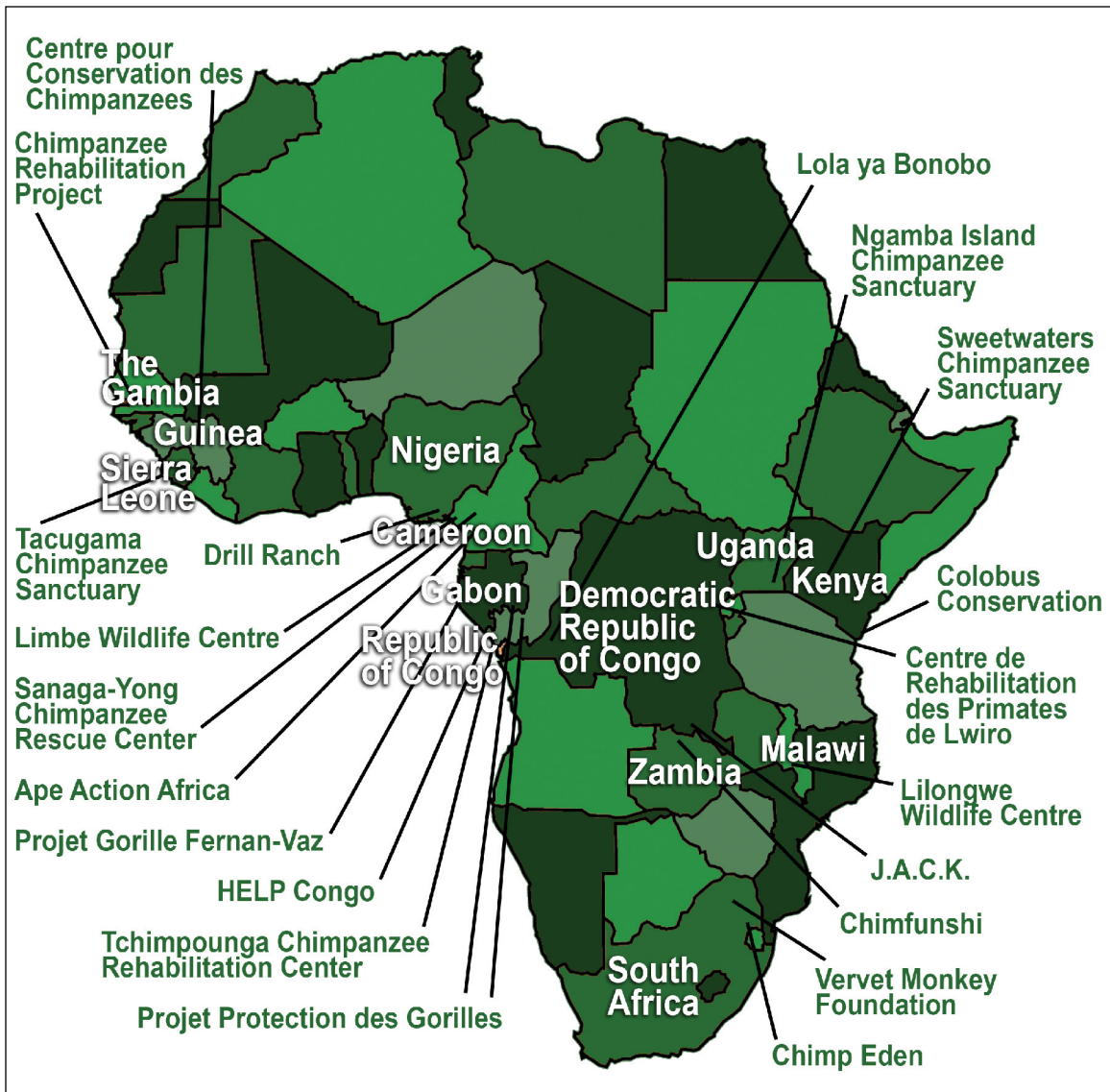


Figure 1. Map of members of the Pan African Sanctuary Alliance.

to distribute high-quality, engaging films that were primarily created for African audiences. The flagship movies of the program were produced by the nonprofit Nature for Kids, which creates entertaining films with messages about environmental conservation. In a pilot program, hundreds of thousands of people in Cameroon saw the films on national television and on the national train system (Figure 2). Following this tremendous success, PASA is expanding this program to include ten African countries.

Reintroduction Data Synthesis Project: Currently, PASA is developing a Reintroduction Data Synthesis Project, which will be the first known comprehensive synthesis of successes

and failures of African primate release efforts. Although reintroductions can be highly valuable for conservation in that they increase the population sizes of endangered species in the wild and bring stronger protection to their habitats, many reintroductions of African primates have been conducted by trial-and-error, and some are unsuccessful. In order to increase the success rate, it is valuable to outline the best practices for primate reintroductions based on a comprehensive review of the methods and results of releases that have been conducted across Africa. PASA will work closely with the staff of wildlife centers to analyze their data and quantify aspects of individual survival, reproduction, and integration into wild groups.



Figure 2. Staff from Chimfunshi Wildlife Orphanage showing an Edutainment film to students.

Table 1. PASA Member Wildlife Centers.

| Center | Country |
|---|----------------|
| Ape Action Africa | Cameroon |
| Centre pour Conservation des Chimpanzees (CCC) | Guinea |
| Chimfunshi Wildlife Orphanage | Zambia |
| Chimpanzee Eden | South Africa |
| Chimpanzee Rehabilitation Project | The Gambia |
| Colobus Conservation | Kenya |
| Lwiro Primate Rehabilitation Centre (CPRL) | D.R. Congo |
| Drill Ranch | Nigeria |
| Fernan-Vaz Gorilla Project | Gabon |
| HELP-Congo | Congo |
| Jeunes Animaux Confisques au Katanga (J.A.C.K.) | D.R. Congo |
| Lilongwe Wildlife Centre | Malawi |
| Limbe Wildlife Centre | Cameroon |
| Lola Ya Bonobo | D.R. Congo |
| Ngamba Island | Uganda |
| Project Protection des Gorilles-Congo | Congo |
| Project Protection des Gorilles-Gabon | Gabon |
| Sanaga-Yong Chimpanzee Rescue | Cameroon |
| Sweetwaters Chimpanzee Sanctuary | Kenya |
| Tacugama Chimpanzee Sanctuary | Sierra Leone |
| Tchimpounga Chimpanzee Rehabilitation Centre | Congo |
| Vervet Monkey Foundation | South Africa |



Figure 3. Nyango, a Cross River gorilla at Limbe Wildlife Centre in Cameroon, relaxing in the shade.

The combination of PASA's global network and its member organizations' local expertise and connections uniquely positions the Alliance to produce lasting changes to protect Africa's great apes and monkeys (Figure 3).

PASA WILDLIFE CENTERS WELCOME RESEARCHERS

In addition to playing an essential role in securing a future for Africa's primates and their habitat, almost all PASA member wildlife centers are willing to host researchers. Their cooperation with academics has helped to shed light on numerous topics in primatology and evolutionary anthropology.

Scientific Findings from PASA Member Sanctuaries

Research in PASA member sanctuaries has helped to elucidate the evolutionary roots of human cognition through large-scale comparisons of how human children and apes solve different kinds of problems. Studies directly comparing the performance of chimpanzees, bonobos, and

children on many different cognitive tests have shown that apes and children solve problems involving physical reasoning—for example, distinguishing different quantities, using tools, and remembering the locations of objects—fairly similarly. However, children quickly surpass apes when faced with problems about social reasoning, such as imitating others' actions or inferring others' mental states. This has provided support for the “cultural intelligence hypothesis”—the idea that what is special about human cognition is not that we are generally smarter than other species, but that we specifically excel at skills needed for cultural learning and transmission (Herrmann *et al.* 2007; Wobber *et al.* 2014).

Additionally, over the past 10 years, research in PASA wildlife centers has reinvigorated the study of ape cooperation, sharing, and helping (Melis *et al.* 2006a, b; Warneken *et al.* 2007; Melis *et al.* 2009; Hare & Kwetuenda 2010; Bullinger *et al.* 2011; Melis *et al.* 2011; Rekers *et al.* 2011; Schneider *et al.* 2012; Tan & Hare 2013; Bullinger *et al.* 2014; Engelmann *et al.* 2015; Engelmann & Herrmann 2016). This work has shown that chimpanzees, in particular, are incredibly sophisticated at working

together to gain mutual benefits (Melis *et al.* 2006a, b; Melis *et al.* 2009). Moreover, they help others solve their own problems; for example, by providing conspecifics with access to out-of-reach objects or food (Warneken *et al.* 2007; Melis *et al.* 2011). This work has also revealed an important difference between how chimpanzees and humans cooperate. Whereas humans tend to want to solve problems together, chimpanzees often prefer to solve problems individually unless they absolutely need a partner (Melis *et al.* 2006a; Bullinger *et al.* 2011; Rekers *et al.* 2011).

Recent work in sanctuary populations has also been critical for our understanding of bonobos in comparison to chimpanzees. Bonobos and chimpanzees are both equally related to humans, and yet bonobos' relative rarity means that most models of human evolution focus exclusively on chimpanzees. Research in PASA wildlife centers has provided a major wave of evidence that chimpanzees and bonobos often differ in how they behave socially (Hare *et al.* 2007; Wobber, Wrangham *et al.* 2010; Woods & Hare 2011), make decisions (Rosati & Hare 2012a; Rosati & Hare 2013), remember spatial locations (Rosati & Hare 2012b; Rosati 2015), and even react hormonally to different situations (Wobber, Hare *et al.* 2010; Wobber *et al.* 2013). Furthermore, non-invasive biological samples collected from apes living at sanctuaries have allowed researchers to map the bonobo genome, reconstruct the evolutionary history of chimpanzees and bonobos, and identify genetic differences in these species (Prüfer *et al.* 2012).

Finally, research in sanctuaries has revealed new insights about the course of human evolution. Humans exhibit several special traits compared to other primates, such as a large brain and more frequent reproduction. A comparative study on energy expenditure showed that humans have a higher metabolic rate than other apes, helping to explain how humans evolved these energetically-costly traits (Pontzer *et al.* 2016). One proposal about this energetic shift in human history is Richard Wrangham's influential "cooking hypothesis," arguing that a early adoption of a high-energy cooked diet played a critical role in our species' ability to grow such large brains (Wrangham 2009). Research in PASA sanctuaries has revealed that chimpanzees possess some foundational cognitive and behavioral skills needed to engage in cooking behaviors, providing important behavioral tests of this hypothesis (Wobber *et al.* 2008; Warneken & Rosati 2015).

CONCLUSION

Although PASA and its member sanctuaries may be known primarily as animal welfare organizations, they also play a vital role in the conservation of, and research on, African primates. If you are interested in learning more about PASA's programs, how you can help, or opportunities to conduct research at a PASA-member sanctuary, please visit <https://www.pasaprimates.org>.

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