

**Bwindi Ape Conservation Education Partnership
Bwindi Impenetrable National Park
Annual Report of Conservation Education Activities
2019**

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Bwindi Apes Conservation Education Partnership (BACEP)

The Bwindi Ape Conservation Education Partnership (BACEP) is a collaborative project with Cleveland Metroparks Zoo, North Carolina Zoo, UNITE for the Environment, and Max Planck Institute for Evolutionary Anthropology. BACEP's mission is to conserve endangered great ape species in Bwindi Impenetrable National Park through community conservation awareness programs. BACEP is currently working with four primary schools, all within a radius of five kilometers from the park boundary. These schools are: Ruhija Primary School, Bitanwa Primary School, Mburameizi Primary School and Kanyashogi Primary School. This partnership began in 2014 and builds on previous conservation education activities that were organized since 2008 by Bwindi Gorilla Research Project. BACEP expands previous activities by adding two components: teacher training developed by the UNITE for the Environment programme (based near Kibale National Park) and evaluations the effectiveness of the work being done by BACEP through student and teacher surveys. The program employs student-centered teaching, a method of teaching that emphasizes critical thinking and the exchange of ideas between students.

Overview (2008-2019)

Local community members living on the edge of Bwindi Impenetrable National Park typically know very little about the environment, conservation issues, or the endangered mountain gorillas living nearby. Furthermore, there is a great need to improve the educational standards, as well as the infrastructure of the schools; they have no electricity or running water, and basic supplies such as papers, pens, chalk and portable chalkboards are always in short supply. One way to address the concern of lack of awareness is to provide lessons and other activities in conservation education to primary school children. In 2008, the Bwindi Gorilla Research Project of the Max Planck Institute of Evolutionary Anthropology began working with the two primary schools nearest to the project base in Ruhija, Uganda. Those primary schools were Ruhija Primary School and Bitanwa Primary School. Both of these schools have only six teachers with about 350 pupils studying in grades primary 1- 7. In 2012 the project expanded to include an additional six schools (Mburameizi, Ruhija Model and Nursery, Kamuko, Kanyashogi, Buremba and Karambi) through a collaborative project entitled the Great Ape Education Program (GAEP). The previous work done in this area has now evolved to create BACEP. We are extremely grateful to all organizations and individuals who have contributed funding for this project.

Program Goals:

- Provide conservation education lessons on a monthly basis to grades P6, and 7 at the Ruhija, Mburameizi, Kanyashogi, and Bitanwa primary schools.
- Hold teacher trainings each term (three per year) to develop the knowledge of the teachers in areas of conservation and methods of student-centered teaching.
- Conduct additional activities to provide the students and teachers with more 'hands-on' experience for learning and conservation education, such as forest walks, litter pick-up days, and tree nurseries.
- Develop links among the schools by conducting competitions every term, in which schools demonstrate their learning of conservation issues in different formats, such as debate, music, dance and drama.
- Show conservation films to primary schools and community members to provide education on issues concerning wildlife habitat loss, as well as the negative impacts of snares and hunting of bush meat

Activities – 2019:

It has been fruitful year for the Bwindi Apes Conservation Education Partnership. Due to the tireless efforts of BACEP staff, donors, local communities and schools, the project has made incredible progress during the course of 2019. To date, this project has been very well received

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by both the pupils and teachers. They are keen to learn and very interested in how conservation issues interact with their everyday lives. We are optimistic that the program will increase the knowledge of pupils in the area about the value of mountain gorillas, Bwindi Impenetrable National Park and conservation issues in general. We are confident that BACEP will be a success and that it will provide an example of how effective conservation education can be performed.

Overview of Achievements in 2019

- Provided conservation lessons to primary 6 and 7 students of four primary schools; four lesson plans were presented to each school with topics focused on Forest Conservation, Tree Planting, Litter Collection, and Gorilla Behavior.
- Maintained tree nurseries at four primary schools, resulting in the distribution of 2570 tree seedlings to families of school children.
- Planted fruit trees at four primary schools in order to reduce malnutrition among school children. Fruit from these trees can also be sold in local communities. Revenue will be used to buy school materials, specifically chalk, notebooks and school registers.
- Held three interschool competitions among the four schools: A musical competition involved performances of poetry, traditional dance, and song with the theme '**Conservation Agriculture.**' A sports competition of netball and football was held for 144 pupils. The final competition of 2019 was a debate with the theme "**Conserving wildlife for economic benefits is more important than conserving wildlife for environmental benefits.**"
- Held two teacher trainings - one training focused on Gorilla Conservation Basics, and the other on Biodiversity Conservation. An additional teacher meeting was held at the end of the year with the aim of understanding how each primary school has benefited from teacher training.
- Conducted evaluations of 86 pupils among 6 local primary schools. The evaluations were conducted before and after conservation education lessons in order to assess the effectiveness of BACEP programs.



Classroom Lessons on Conservation

Pupils in grades P6 and P7 at Ruhija, Bitanwa, Mburameizi, and Kanyashogi primary schools were provided four conservation education lessons. The lessons given this year were: Forest walk, Tree Planting, Litter Collection (tragedy of the commons) and Gorilla Behavior. The curriculum emphasizes local biodiversity and conservation needs by focusing on the ecology of Bwindi, particular to the two great ape species, chimpanzees and mountain gorillas. We also have including lessons that give a more suitable foundation of knowledge to support the conservation activities being done. Specifically, a lesson on the necessity of tree nurseries and a 'Tragedy of the Commons' themed lesson were partnered with the litter collection activity. We endeavor to have an activity in each lesson and also aid the development of skills such as reading, writing, arithmetic and problem solving. The lessons are always taught to encourage student involvement and self-discovery.

Tree Nurseries



One of the largest pressures on Bwindi's local communities is their overwhelming need for wood, as both cooking fuel and building materials. The tree nurseries serve as an interactive classroom, enabling children to become active participants in the germination, gardening, and tree planting process. When the seedlings are ready to be permanently planted, each school keeps some trees, and the rest are distributed to children's families. The wood from these nurseries will eventually be harvested, reducing pressure to harvest trees in the surrounding areas of Bwindi. Furthermore, the trees grown and distributed through this project are agro-forestry trees, which restore nutrients to soil being used for agriculture and help provide better crop yields. Fig. 1 shows the number of tree seedlings that were distributed to families in 2019.

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BACEP is in the process of visiting each home that was given trees since 2012. We hope to better understand how the trees have been used within communities and continue encouraging each house to cultivate tree growth.

Conservation Education Project Trees Grown 2019		
School	Tree species	No. of trees
Mburameizi primary school	<i>Pinus patura</i>	85
	<i>Carriandra</i>	62
Ruhija primary school	<i>Greveria</i>	6
	<i>Pinus patura</i>	660
	<i>Carriandra.</i>	158
Bitanwa primary school	<i>Greveria</i>	100
	<i>Pinus patura</i>	860
	<i>Cariandra</i>	234
Kanyashogi primary school	<i>Pinus patura</i>	280
	<i>Carriandra</i>	270
Total		2570

Figure 1. This chart shows the breakdown of the number trees of each tree species distributed to families of local primary schools.



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Fruit trees have also been planted at these primary schools, specifically avocado, guava, passionfruit and jackfruit. Each school received 10 saplings of each type of tree, which totals 160 fruit tree saplings among all four schools. The goal of planting fruit trees is to provide nutritional variety to school children. Additionally, once the trees fully mature and offer an excess of fruits, the schools are able to sell the fruit to local communities. This revenue will be used to buy school supplies, such as notebooks, pens, school registers, and chalk.

Interschool Competitions

BACEP held three school competitions among the four schools in 2019. The first was Music, Dance and Drama under the theme '**Agriculture Conservation.**' The 140 participating pupils performed in four components of the competition: each school performed a poem, song, traditional dance and play. The song and the poem were presented in English, while the play and traditional dance were performed in the local language. This allowed parents and local guests to understand the message the pupils were delivering to the audience. The performances in the local language also allowed the pupils to engage with local culture and traditions while spreading the principles of environmental conservation. The winning school of the competition selected 35 students to appear on a local radio broadcast. The students were interviewed on air about the importance of environmental conservation, after which they sang a song and recited a poem specific to the theme of Agriculture Conservation.

The second competition was a sports competition. Despite not having direct conservation education benefits, the BACEP team appreciates the involvement pupils in the competition. This year 144 Pupils participated in sports (net ball and football).



Lastly, the final competition of this year was a debate under a theme "**Conserving wildlife for economic benefits is more important than conserving Wildlife for Environmental benefits.**" One hundred pupils participated in the debate. In BACEP schools, debate has been a great device for engaging students and bringing life to the classroom. Using debates as one of BACEP activities has helped pupils understand essential critical thinking and presentation skills.

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Class debates give students the opportunity to test their thoughts and views against that of their peers. We had 100 pupils and over 60 guests, parents and teacher's representatives attend the debate competition. Pupils were very confident in their speeches which showed an improvement in English speaking.

The winning school of each competition was provided with schools supplies, including notebooks and pens, which are often in high demand among students.

Teacher Trainings



BACEP carried out two teacher trainings this year, one training focused on gorilla behavior and social structure, and the other on biodiversity conservation. The ultimate goal for teacher trainings is to have all primary school teachers easily integrate conservation education into their lessons and shift their teaching methods towards student-centered learning. The teacher trainings include lesson planning, discussion sessions, and activities which can be used in their classrooms to teach their pupils about each topic. A final meeting was held at the end of the year where teachers presented ways in which they were able to integrate training into regular school lessons, as well as the challenges they face. Many teachers were proud to report that they are continuing to integrate training from previous years, especially in regards to garden composting and use of fuel efficient stoves, into education of not only students, but other members of their community.

Forest Walks

In March of 2019, BACEP took 355 pupils from P6 and P7 on a forest walk. Pupils from Mburameizi, Ruhija, Bitanwa, Kanyashogi and Burimbi primary schools participated in the forest walk. This activity allows pupils to learn practically about Bwindi Impenetrable National Park, and also to give them the chance to travel into the national park, which most pupils have never done.

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The theme of forest walk was habitats of Bwindi. The children were challenged to identify and observe different habitats within the park, which helped develop critical thinking skills when examining similarities and differences of various habitats.

During this walk, Uganda Wildlife Authority guides and the Community Conservation Ranger explained to the pupils about the different parts of the forest and encouraged the children to think about the benefits of conserving the National Park and its ecosystem. Additionally, they learned about cultural and traditional values that early people used in Bwindi, including how taboos/totems, norms and myths have contributed to the conservation of the park.

Litter Collection Day

As we have done in previous years, we had a litter collection day in 2019. This year a total of 305 pupils from Mburameizi, Ruhija, Bitanwa, Kanyashogi primary schools participated in this activity. Pupils from each school walked along roadways of their community up to the park boundary. It is estimated that each school walked 5 kilometers, which totals 20 kilometers of cleaned roadways around Bwindi. Approximately 2,000 kilograms of trash was collected between all schools.

The act of litter collection helps develop a personal accountability for the environment, and build a sense of community responsibility for keeping the local area clean. Not only does this activity encourage pupils to take initiative with respect to maintaining the health of their local environment, but it also exposes them to local wildlife they might not otherwise encounter, such as monkeys, birds, snakes, and other small animals.



Pupil Evaluations

Pupil evaluations were used to determine the efficacy of our conservation education curriculum by evaluating students at the beginning of 2019, before lessons and activities were introduced to the pupils, and comparing their responses with evaluations carried out in November 2019. These evaluations allowed us to analyze how conservation lessons have changed pupils' perspectives on common practices within the community, as well as attitudes toward conservation. A total of 115 pupils were evaluated at the beginning of the year and 86 at the end

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of the year. BACEP's objective was to evaluate the same number of pupils at the beginning and end of the year, but unfortunately there was a challenge of student-dropout among the schools. Students who were not present during all lessons throughout the year were not evaluated at the end of the year. Additionally, two schools that are not involved with the BACEP conservation education program were evaluated to act as a control variable. The results from the evaluation will soon be shared.

Film Showings in Schools

During the month of November, BACEP showed great ape conservation films to local primary schools. The participating schools were Ruhija, Bitanwa, Mburameizi, Kanyashogi, Buremba and Kashenyi primary schools. In each school, except for Kanyashogi, all students from P1-P7 were shown conservation films. Small classroom sizes at Kanyashogi created a limitation for the number of students able to view the films at one time, and ultimately limited film viewing at this school to P5-P7 students. In total for all schools, there were 1,600 students in attendance for film showings.

The goal of this activity is to help educate people in the communities about great apes and inspire improved measures for gorilla conservation within Bwindi. Each school was shown the films 'Habitat Loss', 'Snaring' and 'Bush Meat.' The films were created by the Great Ape Education Program (GAEP) in order to address the major issues affecting great ape conservation, which include consumption of bush meat, use of snares, deforestation and habitat destruction. Additionally, films provide scientific information about gorilla behavior and ecology otherwise unavailable to members of local communities. All film showings were followed by a discussion with the audience about what they have learned and their opinions on how to conserve Bwindi Impenetrable National Park, as well as the environment in general.

School Conservation – Independent Activities.

BACEP schools have willingly participated in environmental conservation by forming conservation clubs independent of the BACEP program. Through these clubs, schools have carried out various conservation activities, such as installing waste bags around the school compound, enforcing litter pick-ups, and planting vegetable gardens

Vegetable gardens in Ruhija, Mburameizi, Kanyashogi, and Bitanwa Primary Schools have been possible due to partnerships among conservation clubs and local school leaders. The goal of these gardens is to provide students with an opportunity to learn skills for gardening and maintaining nursery beds. Produce grown in these gardens is either cooked for students as school lunches, or sold to local community members. Revenue from produce sales is used to buy school supplies, such as chalk and pens, which are always in short supply. The size and crop yield of gardens vary among these schools. Popular plants grown in the gardens are cabbage, potatoes, spinach, egg plants, and onions.

Goals for 2020

The program intends to continue all activities from 2019 in 2020. Pupils have shown great interest and engagement, especially in conservation lessons and participating in tree planting. Within the next year, we plan to investigate the survival rate of tree saplings provided to local families, which should help us understand the needs and uses of trees in local communities.

There are areas of BACEP that we wish to expand upon and improve, should funding allow. These areas include developing more films to share with local schools and communities. Local people have expressed interest in learning more about gorilla and chimpanzee behavior, as well as expanding on general conservation education. Since we are able to share films with students and local people, further development for films would provide a great opportunity to reach a more diverse audience and spread conservation education.

Staff and Partners

The BACEP project is administered by Ms. Emily Turinawe and Ms. Rebecca Junod under the direction of Dr. Martha Robbins.

Ms. Turinawe has a background in environmental science and community involvement. She is from the area and able to speak the local language, Rukiga. Her administration allows BACEP to communicate effectively with pupils and people from the community

The project also benefits from a close working relationship with the Ugandan Wildlife Authority, and Institute of Tropical Forest Conservation. Other government officials who have assisted BACEP activities and events include the local chairperson (Local Council Three), Sub County Chief, and Councilor of Education.



Conclusions

BACEP is committed to providing the communities around Bwindi Impenetrable National Park with much needed education on environmental conservation. Through education, we empower the people of Uganda to protect their natural resources and environment.

We would like to thank all BACEP, MPI, ITFC, UNITE for the Environment, UWA staff and school teachers who helped with this project. We are also very grateful to the various donors for their longstanding support of our work, including Cleveland Metroparks Zoo, North Carolina Zoo, Mondberge, and Max Planck Institute for Evolutionary Anthropology. Lastly, we thank members of the local communities for their effort towards the success of BACEP activities and conservation of Bwindi impenetrable National Park.

