



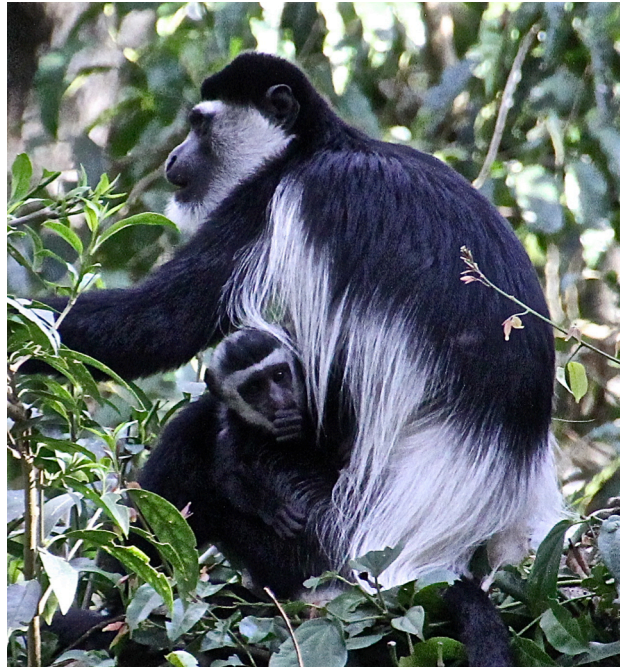
New Nature Foundation

2014 Report

Sustainable Innovations with Wildlife-Neighboring Communities in Uganda:

The New Nature Foundation's Kibale Fuel Wood Project and Kibale Eco-Char Initiative

2014 Report



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The New Nature Foundation strives to conserve wild animals and wild places through education, empowerment, and an emphasis on creative solutions that promote people living in harmony with nature.

Kibale National Park is home to countless quintessential African animals: chimpanzees, elephants, golden cats, monkeys, cobras, antelopes, cranes, hornbills, butterflies and more. A recognized center of biodiversity, the park and her wildlife are acutely threatened by small-scale fuel wood collection by one of the world's fastest growing human populations.

In 2014, the New Nature Foundation continued its work of protecting Kibale from human encroachment and improving people-park relations by facilitating energy stability and promoting environmental sensitivity and sustainability. The projects accomplish these goals by facilitating use of energy saving technologies, encouraging home-grown wood and providing comprehensive environmental education to community members.

Summary of Accomplishments, January – December 2014:

- 18,041 men, women and children attended the project's four Science Centers
- 19 nature films were shown to audiences averaging 343 people
- 6 workshops were conducted focusing on fuel efficiency and family planning
- Over 230,000 eco-briquettes were manufactured
- 18,520 kgs (40,744 lbs.) of waste was traded for briquettes
- 62.5% of people in NNF's target areas are now using fuel efficient stoves
- People with efficient stoves use 25.5% less wood than those with traditional stoves
- 72.5% of people now grow firewood at home

Overall, NNF programs engaged more than 26,000 citizens around Kibale and saved more than 3.5 million pounds of wood in 2014!

We hope you enjoy reading this report. If you have any questions or comments, please feel free to contact us at any time. **Thank you very much** for the vital role you are playing in achieving these accomplishments!

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ECO-BRIQUETTES

Achievements:

- In 2014, **231,079 eco-briquettes were produced** (158,137 at the Kaburala village production center and 72,942 at the Kiko tea estate's production center). This is an increase of 70% over 2013's results.
- **69 families** are now trading their agricultural waste for briquettes.
- **18,520 kilograms (40,744 pounds) of waste was traded** by village partners for briquettes.
 - The top family of the year traded 2,334 Kilograms of waste for 9,336 briquettes, **enough to cook on briquettes nearly 2/3 of the time.**
- 16 bags of briquettes were sold at the village factory, raising 160,000/= (\$67) for the project.
- A Memorandum of Understanding was signed with McLeod Russel Tea Uganda, which will secure income for the briquette project through December 2017. There is an option of renewal at that time if all parties are pleased with the results. The financial agreement states:
 - Each sack of 250 briquettes will be purchased for 15,000/= (~\$6.25).
 - McLeod Russel will buy at least 3,500 briquettes each month, for a total cost of 210,000/= (~\$87.50).
- Capacity at the village production center was bolstered with the construction of a third large drying tent that more than doubles the space for drying finished briquettes and the addition of a garbage disposal, hammer mill and industrial blender for waste processing.

Challenges:

- With some success increasing the number of briquettes being made, marketing and selling them is now proving to be the biggest challenge. The cost of the briquettes themselves is accepted, but transport (getting to the bricks and bringing them home) is prohibitive for the average Ugandan.
- Non-carbonized briquettes create more smoke than charcoal, making them less marketable when sold as a replacement for charcoal to people in urban areas. Carbonized briquettes burn more similarly to charcoal (with much less smoke), but a lot of the energy contained in the biomass is consumed during the carbonization process.
- The current income from the McLeod Russel partnership will not be enough to bring the project to full sustainability, so more partnerships are needed.



To address the primary challenges, marketing briquettes and having them compare more favorably with charcoal, NNF has experimented with building a carbonizing kiln and creating two different types of briquettes: those for sale and those for trade to people in the village. This seems to be an acceptable solution, since people in the village who trade waste for briquettes were previously cooking with wood. Accustomed to the smoke produced by wood, these families have outdoor kitchens and are not adversely affected by the briquette's smoke. Sales of carbonized briquettes to those cooking on charcoal (in the nearby town of Fort Portal) is planned to begin in 2015. NNF had considered purchasing a dedicated vehicle to help with transporting the briquettes but decided against this since the ultimate goal is long-term sustainability. Instead, we will continue to use the regular project vehicle to assist with briquette transport. Hopefully, as the carbonized briquettes attract more attention in town, transport will become more attractive to those wanting to sell or use them.

NNF is hopeful that McLeod Russel Tea will continue to increase their monthly purchases. Other markets are also being sought out, with initial focus on local eco-lodges and the charcoal markets in Fort Portal. With financial self-sufficiency hoped for by the end of 2016, there is time to reach this goal.

Based on the average amount of fuel used by a family on any given day, **the briquettes produced in 2014 account for a savings of more than 56,614 kilograms (124,551 pounds) of wood.** While much of this wood would have come from unsustainable sources, the briquettes are 100% carbon neutral, so in addition to protecting wildlife habitat the Eco-Char Initiative is helping us all by mitigating carbon emissions and climate change.

SCIENCE CENTERS

The New Nature Foundation maintains four Science Centers in villages close to Kibale National Park. The Science Centers are natural history museums, demonstration areas, libraries and gathering places. They continue to be the most popular of NNF's programs, attracting large audiences with animal artifacts, scientific experiments and tactile experiences, and utilize this opportunity to teach about NNF's main goal of wildlife conservation through energy efficiency. By providing opportunities to create personal connections, the Science Centers help forge positive relationships between Ugandans and their remarkable wildlife.

- **Total attendance at all four Science Centers was 18,041 in 2014;** 54% children and 46% adults.



- The Science Center libraries now contain nearly 1,500 books and magazines.
- Attendance has more than tripled since the first Science Center opened in 2006 (see Appendix I).

Some poetry from Science Center visitors:

*Oh, Kibale! Kibale Science Center is the leader in Environmental Education.
Environmental protection in education program – Kibale shall rise and shine again!
Energy stove working, utilizing firewood – Kibale shall rise and shine again!
Supporting education for a bright future encouraged – Kibale shall rise and shine again!
Wild animal protection and project advisors, with trees for forest conservation –
Kibale shall rise and shine again!
-Kyamazima Conservation Club Member*

*Brethren, let's have an eagle eye to the deforestation -
For the eradication of disasters from deforestation.
We hold hands together to keep our world green -
Practice reforestation across the globe!
For the good days of all earthly creatures –
Let's change our world into a heavenly paradise for my beautiful nature.
-B. K. Mirembe John Abwooli*

EFFICIENT STOVES

- **The latest surveys reveal that 62.5% of families in the target areas are now using efficient stoves, marking the highest percentage of efficient stove users to date.**
- Overall average wood use remains **under 1 heap (~10 kg) per day**; families with efficient stoves use considerably less (see Appendix II)
- **In 2014, community members built 145 stoves with assistance from KFWP staff.** This is more than twice the number built last year, a reflection of the community liaisons spending more time working door-to-door this year, in an effort to reinvigorate this portion of the project.

In total, NNF has personally assisted in building 1,529 efficient stoves since inception. Calculating with wood usage numbers from 2014's surveys and the 96% functional figure gleaned from the last full census, this accounts for a **savings of 4,257 kilograms (9,365 pounds) of wood daily, or 1,553,805 kilograms (3,418,371 pounds) of wood each year**, much of which would have been cut within Kibale National Park. The stoves, which have been one of the more popular programs since 2006, reinforce the people-park relationship through tangible benefits clearly linked to KNP. Thus, everyone wins – people, wildlife, and the forest we are working so hard to protect. See Appendixes II & III for additional data on stoves, trees and wood use.



The total number of stoves reported above does not reflect those built without assistance. This year, we started a study to determine how many stoves are built without help. Data collection has been completed in just one area so far, but even this small data set is interesting: Of 395 households surveyed (all of the households within the pilot year target area), 155 (39%) have efficient stoves. 104 were built with help from NNF staff, 4 with help from another organization, and 47 were built without outside help. More data will be collected in all target areas, to be reported next year, but extrapolating from the available data shows that the total number of stoves built thanks to NNF's influence may be closer to 2,200. These data seem to support our methodology of spacing target areas apart, encouraging more independent replication of the work.

TREES

- Across all target areas, **72.5% of people now grow trees at home, 49% of whom grow *Sesbania*.** (See Appendix III for comparisons to previous years)

Collecting enough firewood continues to be a struggle in all of the target areas. Though there has been a slight improvement overall in the number of people who report that it is difficult to find enough firewood (85%, down from 89% at inception), people are still trying to find better ways to meet their needs. Planting trees is not as desirable of a solution as it was in the past, likely due to the continued unpredictability of the rainy seasons (which were quite regular up until a few years ago). While the tree planting campaign is not as popular as it once was, we continue to promote fast-growing native species at the Science Centers and through one-on-one interactions, with training and seeds available to any interested people. The change has, however, led to the phasing out of one of the target areas: being farther away, difficult to reach and with no Science Center, our focus in the Kahangi area on the northern tip of Kibale had been mainly on trees and stoves. With decreased interest from the community in tree planting, it was decided prudent to concentrate attention and finances on the four remaining target areas.

At the end of 2014, an agreement was made to continue the wood extraction research that was begun in Kibale in 2013 by our partners in the Uganda Wildlife Authority. The former Research and Conservation Warden of Kibale continues to work within the Kibale Conservation Area and will re-start the wood extraction study begun for his Masters thesis research. Comparing areas where we work with those where we don't, with the added distinction of comparing the area where the eco-briquette work is being undertaken with areas where we promote only trees and stoves, this data will be very useful in detailing the long-term changes in human encroachment into Kibale.

STAFF TRAINING

NNF's annual training workshop sends staff and interns on an educational safari to one of Uganda's national parks. This year they spent a full day with Kibale's chimps before heading west to Semliki National Park, part of the Kibale Conservation Area that lies in the Albertine Rift, on the border with



the Democratic Republic of the Congo and home to an almost completely different set of flora and fauna from Kibale itself, as well as unique geographical features including hot springs and waterfalls. Below is some feedback we received about the experience.

“Well the trip was part of happiest days of my life! I was so delighted to look at the chimpanzees in their normal way of style. I’ve proved beyond doubts: chimpanzees have feelings, i.e.: love, fear, anger. After looking at one chimpanzee named Magezi groom another fellow the whole day, picking ticks, lice from here and there, and the other fellow, enjoying sunbathing. Finally at Kibale, I had to see a blue duiker, red tailed monkeys and black and white colobus.

Then to Semliki, I was impressed looking at the male and female hot springs. I loved Semliki since I am fond of birds. I found it the richest national park when it comes to birds. I also got another chance to see the see Mahogany trees, the tree type that is at the greatest risk to extinction.”

-Mugarura Ronald (pictured above)

“I learnt that it is so much our responsibility to conserve nature, trees and animals for not only today but also tomorrow, nature is for both me and you so I call up every one who will be able to read this, do make sure you at least teach your fellows the usefulness of conservation. "TOGETHER WE CAN KEEP THE WORLD A BETTER PLACE FOR BOTH YOU AND ME!" Thanks To All Science Center Donors Thank You So Much!!!”

-Musabe Bashil

CONSERVATION COMPETITIONS

- Four daylong competitions were held, one in each of the current target areas.

Stepping away from the traditional song and dance program, this year’s competitions focused more on the individual, much like a science fair at summer camp! Infusing new activities helps facilitate new skills among our constituents and reinvigorates the communities. Many of the winners had never won anything before in their lives and were shocked and even confused when receiving their prizes.

Activities included:

- The Forest “Feel”: Guessing items from Kibale while blindfolded.
- Savannah “Sniff”: Guessing various substances while blindfolded simply by smelling.
- Art Contest: Drawing 4 species (of the artist’s choice) that can be found in Kibale.
- Recycled Sculpture Challenge: Creating animals from plastic bags, newspapers, twine, leaves and twigs.
- Wildlife IDs: One-on-one competitions between staff members and regular visitors of the Science Centers.
- Efficient Stove Build-off (pictured): Racing from one end of the field to another, carrying the twenty bricks needed for a stove, then building one.
- Cheetah Run: Distance run around the neighborhood.



- Flamingo Balance: Balancing on one leg – some competitors did this for nearly 30 minutes!
- Leopard Leap: For the little ones, seeing who can jump the farthest.

Of course, the competitions also included the ever-popular Efficient Bean Cook-off. Between 10-15 cooks in each location showed off their culinary expertise by using as little fuel as possible (wood or briquettes) to cook one kilo of the most delicious beans. Winners averaged just 1.8 kilos of wood, and the beans this year were better than ever. The competition welcomed its first male cooks this year, who expanded the horizons of those watching, even if they didn't win. Michael is continuing to develop his palate, tasting 46 different dishes this year! The 46 kilos of beans prepared by the contestants were thoroughly enjoyed by the more than 1,150 people who attended this year's competitions. Attendance was not quite as high as last year, but we think the inclusiveness of this new style of competition will draw many more to next year's events.

VIETNAM

Based on NNF's successes in Uganda, the Directors were invited to Ha Giang Province in Northern Vietnam as efficient stove consultants for the Denver Zoo's Tonkin Snub-Nose Monkey Conservation Program. One of the most critically endangered primates in the world, only ~250 Tonkin Snub Nose Monkeys remain. Local Conservation Guards were trained in efficient stove construction, with 7 stoves built over the course of two weeks in three villages bordering the Khu Ca Species and Habitat Conservation Area. Denver Zoo staff checked back in January 2015 and found the families were using both the traditional and efficient stoves within their homes. This was expected during the cold winters, as the traditional stove is the family's only source of heat. (One of the most appreciated aspects during the stoves' debut in hot, humid summer was that they don't heat the room around them nearly as much.) Some stoves were built on planks, to be portable, and this was noted to be the preferred model. Families using the stoves cited benefits such as less smoke, a cleaner cooking area and using less wood, with specific reference to using much smaller pieces, which before would not have been considered suitable fuel. One family that has enthusiastically embraced the new stove cooked rice with as few as three small sticks. Their excitement has spread, and two neighbors are interested in building new stoves. Two local schools are also interested in building a number of stoves. Expenses for the work in Vietnam were separate from other NNF activities and were funded by the Denver Zoo and one private donor through cash and in-kind donations. Total cash expenditures were \$3,604. NNF continues to partner with the Denver Zoo on the program and plans to return to Vietnam in 2015.

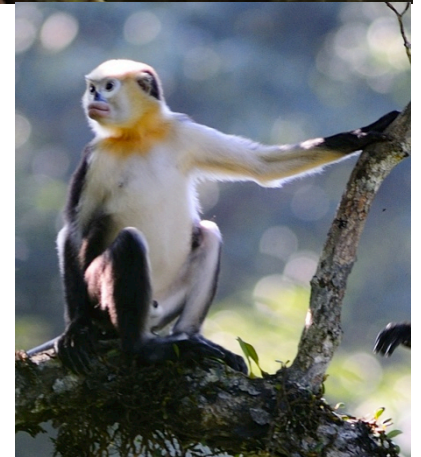


Photo from Wikipedia: Groves, C. P. (2005). Wilson, D. E.; Reeder, D. M, Eds. *Mammal Species of the World* (3rd ed.). Baltimore: Johns Hopkins University Press. p. 173.

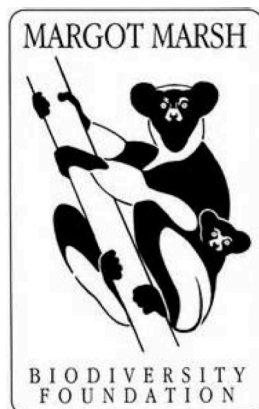
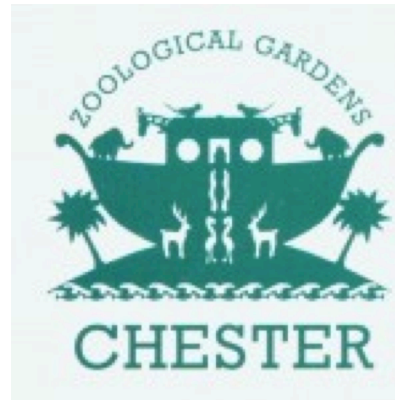
PUBLICITY & PARTNERSHIPS

In 2014, NNF's Directors presented at the XXV Congress of the International Primatological Society in Hanoi Vietnam, lectured to Environmental Science students at the Community College of Denver, were featured in the Jack M Barrack Hebrew Academy Chronicle, and returned as Associates to the Wildlife Conservation Network Expo in San Francisco. The work was nominated for the Charles Bronfman prize, with results pending. The Denver Zoo continues to publicize and fundraise for NNF's work through one of its "Change the World" walls, which accepts donations from visitors. Thank you to all these amazing organizations for welcoming us into your conservation families! The staff was also honored to host two board members in Uganda this year, Dr. Elana Levites-Agababa and Janson Wu, Esq.

2014 brought a new partnership with the Kasiisi Project and UNITE for the Environment, two fellow members of the Kibale Consortium for Conservation Education. Our three organizations joined together in an application to the Great Apes Film Initiative, and will be time-sharing a "pedal powered cinema". NNF's relationship with the International School of Uganda, where board member Dr. Kim Duffy is a biology teacher, also continues to evolve. For the past three years, Dr. Duffy (who conducted her PhD research in Kibale) has led field trips for her students, during which they spend a day volunteering with NNF briquette staff. Research has recently highlighted the environmental literacy of urban students in primate-range countries as one of the most important aspects of long-term primate conservation, as it gives these students who's lives are so removed from wildlife a better understanding of our linkage to the natural world. We are thrilled to continue supporting unexpected partnerships to fulfill our mission of empowering people to live in greater harmony with nature.



Thank you all!





**TARONGA
FOUNDATION™**



Institutional Donors:

Arcus Foundation
Chester Zoo
Columbus Zoo
Denver Zoo
Denver Zoo Chapter, AAZK
Disney Worldwide Conservation Fund
Fresno Chaffee Zoo
Great Apes Film Initiative
International School of Uganda
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Margot Marsh Biodiversity Foundation
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Natural Encounters Inc.
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Roger Williams Park Zoo
Shumaker Family Foundation
Sacramento Zoo
SeaWorld Busch Gardens Conservation Fund
Taronga Zoo
The International Foundation
Wild 4 Ever
Zoo Miami
Zoo New England

Individual Donors:

Bob Berghaier
Dr. Kim Duffy
Ann Marie Gage
Toni Katz
Dr. Elana Levites- Agababa
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Stephanie Valdez
Mark Vibbert
Sarah J. Welton
Gary Woodward and Jan Robbins
Janson Wu
Victoria Zavosky

Thank you all!

Appendix I: Science Center Attendance

Annual Science Center Attendance Comparison, 2007-14

Dates	Number of Science Centers	Attendance
May 2006- May 2007	1	5,752
June 2007- May 2008	2	6,970
June 2008- May 2009	4	10,322
* June 2009- December 2010	4	20,735
January – December 2011	4	13,468
January – December 2012	4	16,000
January – December 2013	4	17,172
January – December 2014	4	18,041

**The 2010 report counted 19 months of attendance*

Appendix II: Survey Charts

	Baseline Data All Areas (2006, Pilot areas; 2007, EPI areas; 2008, EPII areas)	Most Recent Data All Areas (2014)
Is it a struggle to obtain firewood?	89% YES	85% YES
How do you propose to lessen the struggle?	58% plant trees 7% efficient stove 7% cut wood in KNP	70% plant trees 13.5% efficient stove 2% cut wood in KNP
Do you grow trees at home?	51.5% YES (10.5% of whom grew <i>S. sesban</i>)	72.5% YES (49% of whom grow <i>S. sesban</i>)
Traditional or efficient stove?	4.5% used efficient stoves	62.5% use efficient stoves
Average Wood Use	1.34 heaps per day	0.98 heaps per day Efficient stove uses 25.5% less than traditional 0.85 eff. 1.14 trad.
Firewood collected in the park?	30.5% YES	14% YES

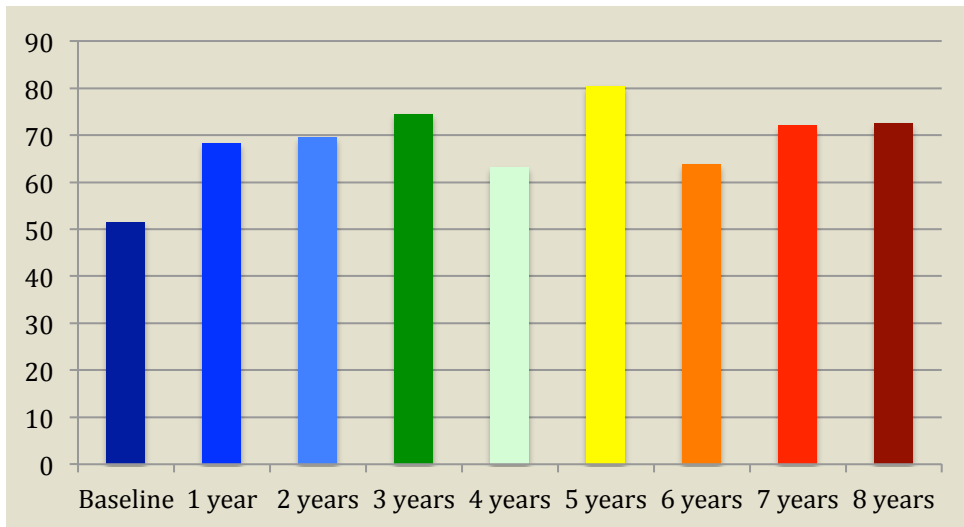
	Baseline Data Pilot Year Areas (2006)	Most Recent Data Pilot Year Areas (2014)
Is it a struggle to obtain firewood?	93.5% YES	88.5% YES
How do you propose to lessen the struggle?	75% plant trees 0.5% efficient stove 12% cut wood in KNP	66.5% plant trees 9% efficient stove 1% cut wood in KNP 4% use briquettes
Do you grow trees at home?	55% YES (8.5% of whom grew <i>S. sesban</i>)	74% YES (57.5% of whom grow <i>S. sesban</i>)
Traditional or efficient stove?	3.5% used efficient stoves	63.5% use efficient stoves
Average Wood Use	1.11 heaps per day	0.91 heaps per day Efficient uses 30% less wood than traditional 0.78 eff. 1.11 trad.
Firewood collected in the park?	37% YES	18% YES

	Baseline Data Expansion I Areas (2007)	Most Recent Data Expansion I Areas* (2014)
Is it a struggle to obtain firewood?	92% YES	63% YES
How do you propose to lessen the struggle?	49% plant trees 7.5% efficient stove 8% cut wood in KNP	67% plant trees 23% efficient stove 0% cut wood in KNP 2% use electricity
Do you grow trees at home?	56% yes (20% of whom grew <i>S. sesban</i>)	53% yes (43% of whom grow <i>S. sesban</i>)
Traditional or efficient stove?	2.5% used efficient stoves	72% use efficient stoves
Average Wood Use	1.43 heaps per day	0.8 heaps per day Efficient uses 9% less wood than traditional 0.75 eff. 0.82 trad.
Firewood collected in the park?	23% YES	11% YES

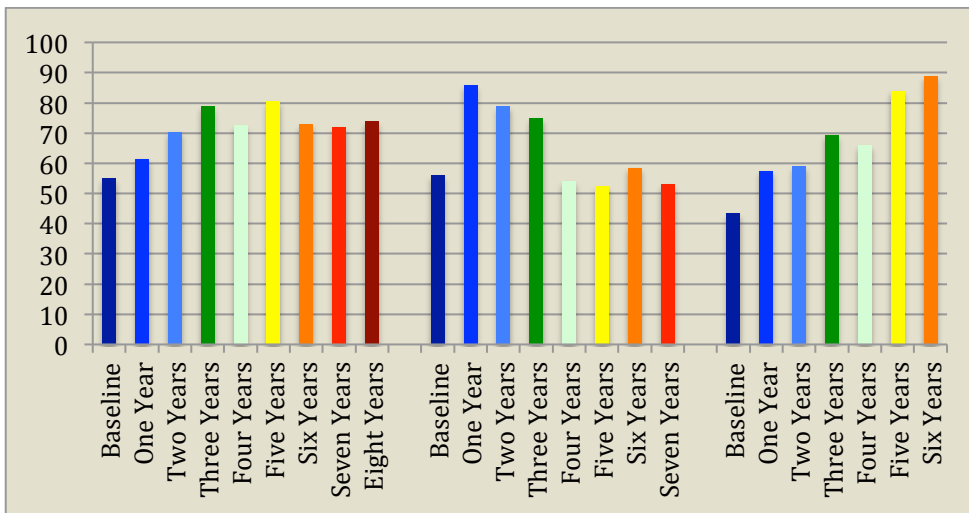
	Baseline Data Expansion II Areas (2008)	Most Recent Data Expansion II Areas* (2014)
Is it a struggle to obtain firewood?	81.5% YES	99% YES
How do you propose to lessen the struggle?	49% plant trees 14% efficient stove 1.5% cut wood in KNP	79% plant trees 13% efficient stove 5% cut wood in KNP
Do you grow trees at home?	43.5% YES (3% of whom grew <i>S. sesban</i>)	89% YES (37% of whom grow <i>S. sesban</i>)
Traditional or efficient stove?	8% used efficient stoves	51% use efficient stoves
Average Wood Use	1.48 heaps per day	1.29 heaps per day Efficient uses 29% less wood than traditional 1.08 eff. 1.51 trad.
Firewood collected in the park?	31.5% YES	10% YES

*One of the Expansion Phase I areas was phased out in 2014; one of the Expansion Phase II areas was phased out in 2013. These numbers reflect only target areas where NNF is still active. The phased out areas will be surveyed periodically in the future to determine how project activities remain ongoing after cessation of active work, but are not included in the current analysis.

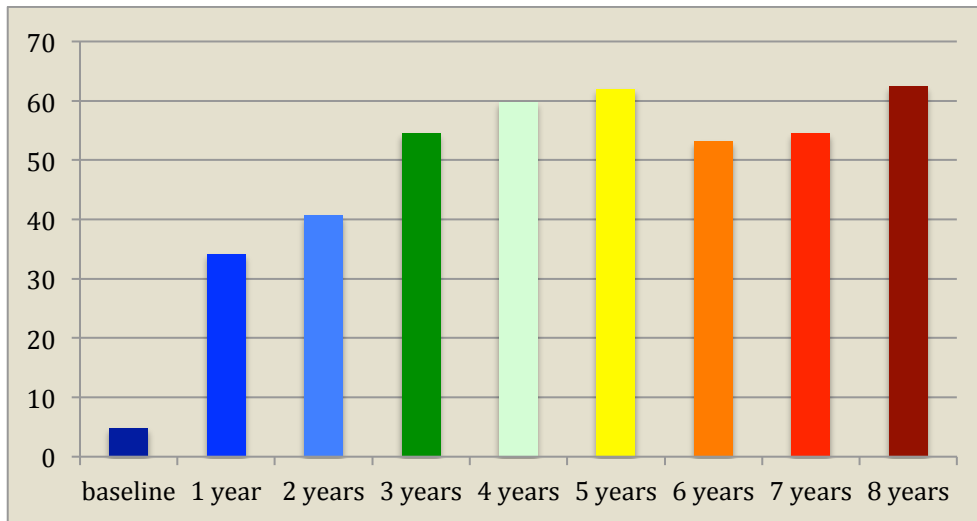
Appendix III: Survey Graphs



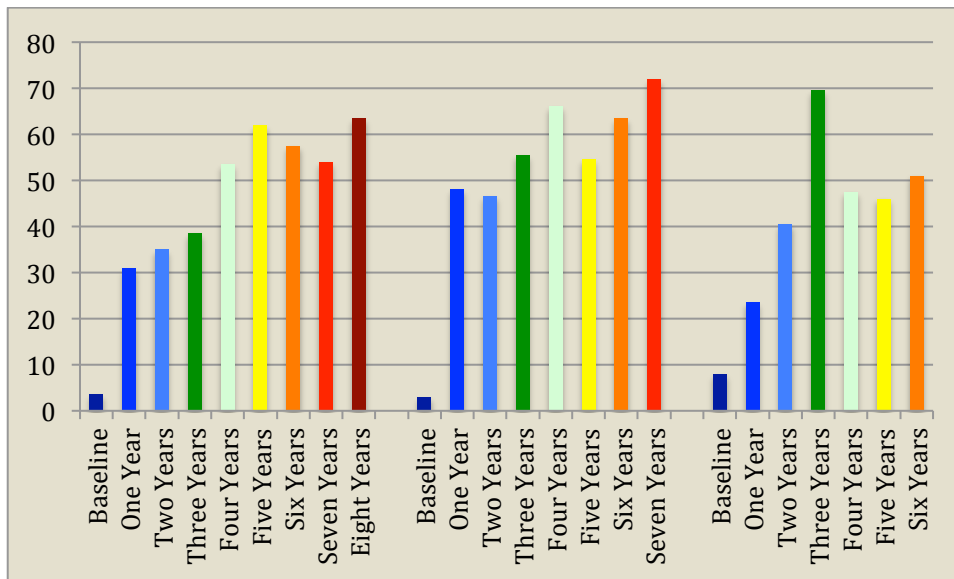
Percentage of Families Planting Trees, Combined Average



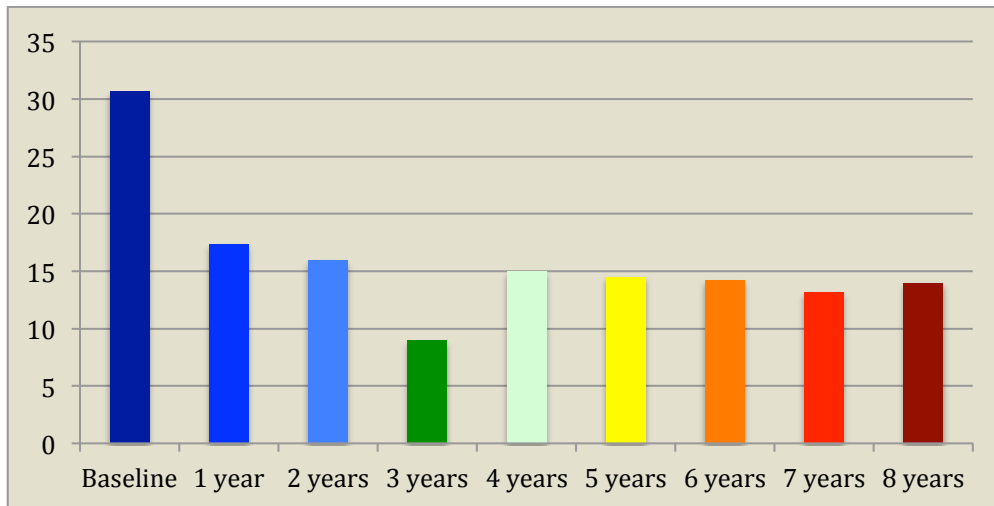
Percentage of Families Planting Trees, Split by Start Date



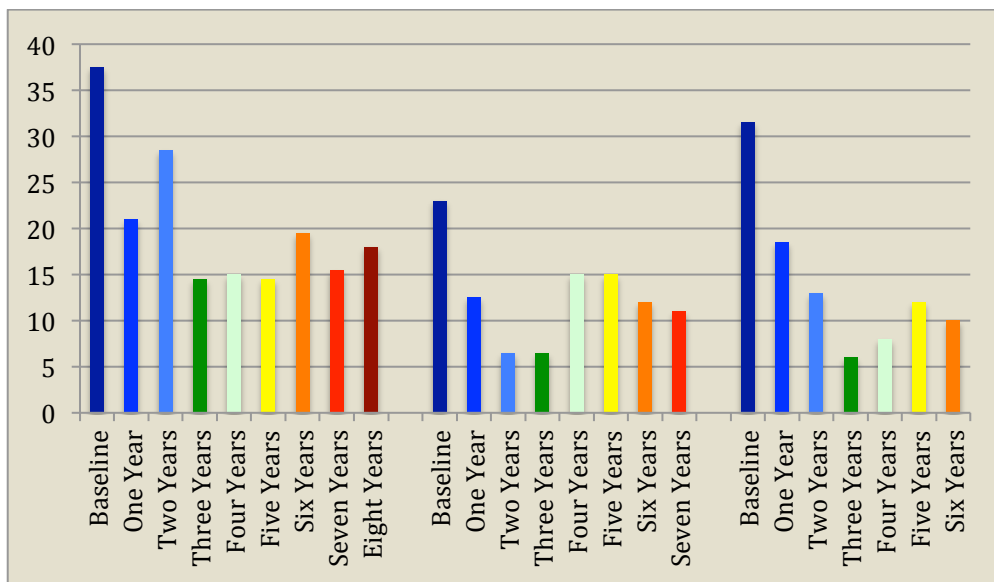
Percentage of Families Using Efficient Stoves, Combined Average



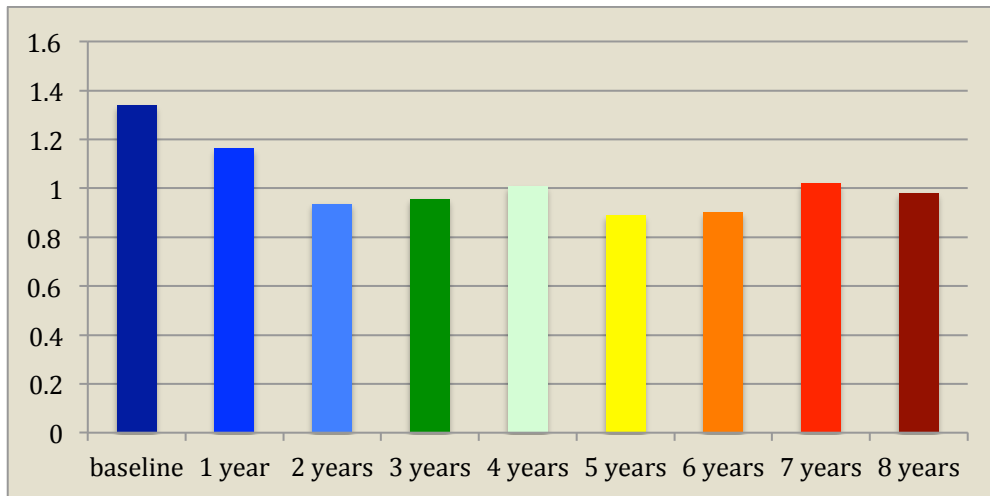
Percentage of Families Using Efficient Stoves, Split by Start Date



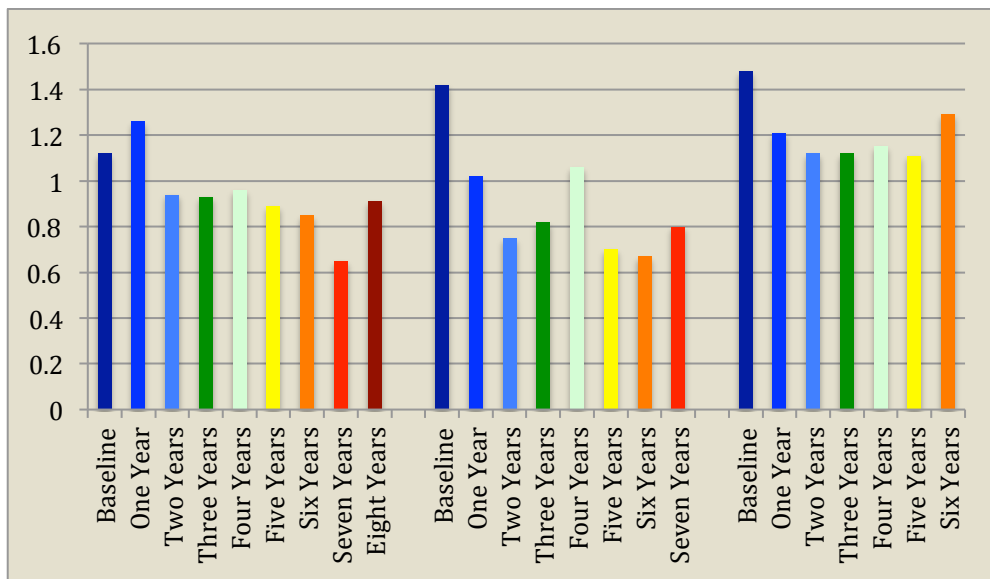
Percentage of Families Collecting Wood from Kibale, Combined Average



Percentage of Families Collecting Wood from Kibale, Split by Start Date

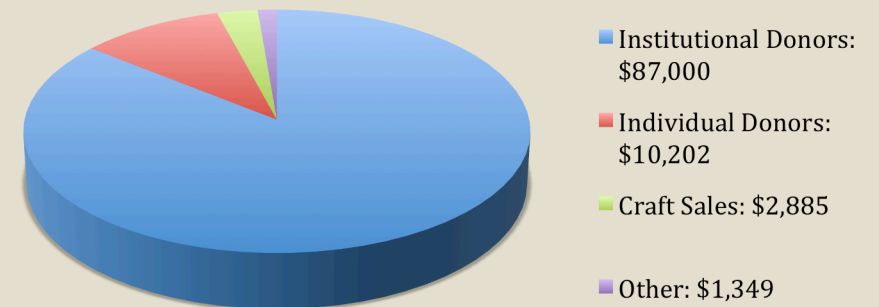
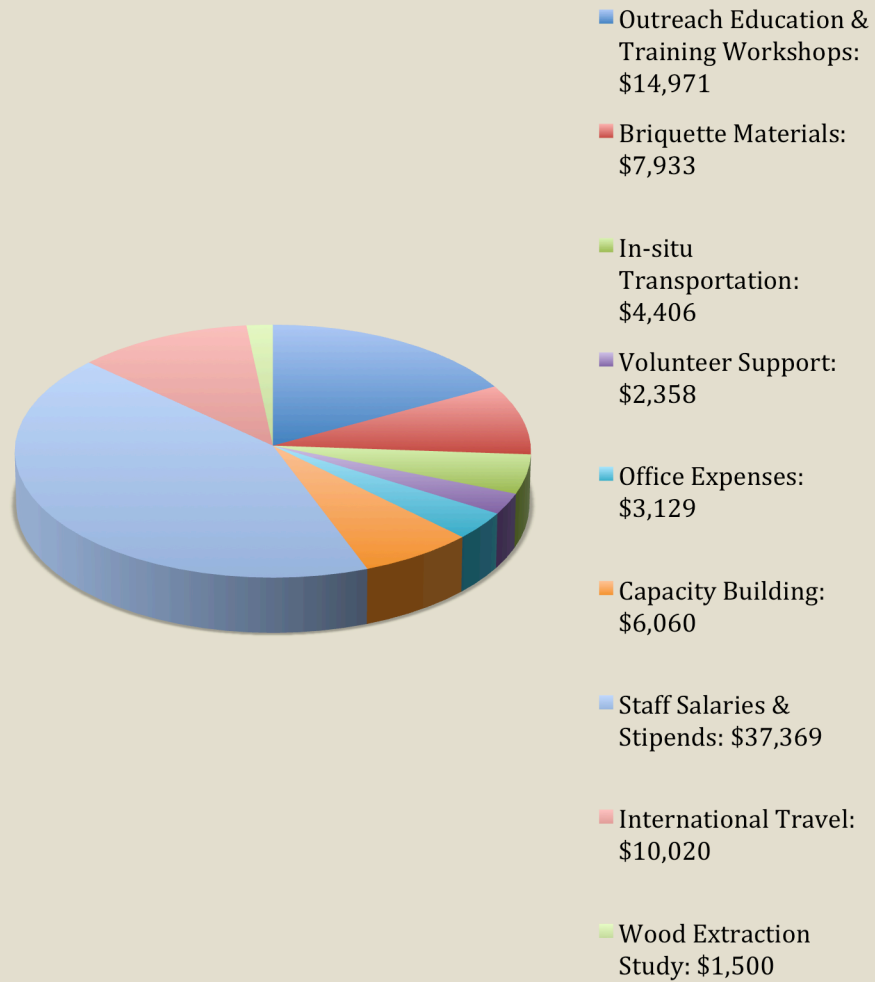


Amount of Wood Used Per Family Daily (in Heaps), Combined Average



Amount of Wood Used Daily Per Family Daily (in Heaps), Split by Start Date

Appendix IV: Expense & Income Graphs



Appendix V: Budget Detail

	Budgeted	Spent, 2014
Video Shows	\$640	\$478.76
Science Centers	\$11,100	\$11,942
Community Workshops	\$300	\$550
Briquette Manufacture Materials	\$3,680	\$ 7,933.03
Staff Training Workshop	\$1,600	\$2,000
Wood Extraction Survey	\$1,000	\$1,500
Eco-Briquette Staff Wages	\$15,430	\$13,602
Fuel Wood Staff Wages	\$600	\$600
NNF Ugandan Manager	\$4,000	\$4400
Foreign Volunteer Stipend	\$7,500	\$2,358.17
Capacity Building	\$6,750	\$6,060
Office	\$3,360	\$3,128.86
In-Situ Transportation	\$3,900	\$4,405.71
International Travel	\$12,200	\$10,020.07
Directors Stipend	\$20,000	\$18,767.39
TOTAL	\$92,060	\$87,745.99