



Biannual Report 2017-2018

Last edited 4 April, 2019



Dear Friends of the ASA,

We created the Alliance for a Sustainable Amazon only a few years ago to do what we could to better understand and protect the greatest rainforest on earth. We are incredibly proud of the progress that we've made in such a short amount of time, none of which would be possible without your support and the hard work of our amazing team of conservation allies. Here are just a few ways we've made a difference during 2017-2018:

- Documented hundreds of species of insects, birds, mammals, herpetofauna, and plants at Finca Las Piedras and throughout the Madre de Dios and Cusco regions
- Monitored populations of key species to study the impacts of climate change
- Planted thousands of trees and other native species as part of our reforestation efforts
- Delivered environmental education experiences to thousands of children and adults from Madre de Dios and other regions both within Peru and internationally

We've done a lot, yet there is still so much left to do. We'll keep on working hard to protect the Amazon rainforest, conserve Amazonian biodiversity and other natural resources, and work with our communities to find long-term solutions. We hope you'll remain a part of our journey.

Sincerely,

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Geoff Gallice, Ph.D. President, ASA

Johana Reyes, M.A. Director, ASA Peru

About Us

The Alliance for a Sustainable Amazon (ASA) is a U.S.-based 501(c)3 non-profit organization that is active in the southeastern Peruvian Amazon; we work closely with our partner organization, Alianza para una Amazonia Sostenible Peru (ASA Peru), to implement our projects in the field. The Amazon is the largest and most biodiverse rainforest on earth, yet if faces serious challenges. Please read on to learn more about what we've been doing to protect the Amazon during 2017-2018, as well as where we'd like to go next.

Our mission is to conserve Amazonian biodiversity and promote the sustainable use of natural resources for the benefit of all who live in and depend upon the rainforest.

The ASA's three focal areas are:

- Biological research & monitoring
- Sustainable tropical agriculture & agroforestry
- Education & community engagement



Biological Research & Monitoring

Butterfly Diversity & Biology

The southeastern Peruvian Amazon—including the rainforests of Peru's Madre de Dios and Cusco regions—contain more butterfly species than anywhere else on earth. However, research on this important group is lacking and we know almost nothing about the biology of most species. We're working to create butterfly inventories for a number of sites throughout Cusco and Madre de Dios, a regional species checklist and distributional database, a database of butterfly host-plant associations, and a world-class butterfly collection right here in the heart of the rainforest—all of these are firsts for the region. These tools will form the basis for generating yet further knowledge of and interest in this important and fascinating group of insects, and it will allow us to create science-based plans to manage and conserve our region's unmatched biodiversity.

2017-18 at a glance...

2,315 adult butterfly specimens added to the ASA collection

171 butterfly species catalogued at Finca Las Piedras, the study's main site in Madre de Dios

31 butterfly hostplant records, all new to science

2 peer-reviewed articles published or in the works



Biological Inventories & Monitoring

We're conducting inventories of key plant and animal groups and monitoring populations over time at Finca Las Piedras and other sites throughout the Madre de Dios and Cusco regions. These data form the basis for further ecological study and allow us to assess changes in populations with climate change and other human disturbances, which will eventually help us to develop strategies for conserving biodiversity.





>564 **Species** registered at Finca Las Piedras during 2017-2018, including:

- **Mammals** (29 species, including jaguar, puma, giant anteater, and tapir, among many others)
- Birds (223 species)
- Insects (202 species)
- Herpetofauna (reptiles & amphibians) (51 species)

Expeditions

To fill in the major gaps in our knowledge of the distribution of biodiversity in Madre de Dios and Cusco we have to go to remote sites well off the beaten path. In 2017 we explored the upper Las Piedras river searching for butterfly species, in an area never before visited by scientists that is also home to indigenous peoples living in voluntary isolation. In 2018 we went to Gallito de las Rocas in the Andean foothills of the Cusco region, where we studied not only butterflies but also birds, mammals, and herpetofauna (reptiles and amphibians). We plan to return annually to Gallito de las Rocas to expand the site's biological inventory and also to monitor plant and animal populations over time.



Gallito de las Rocas 2018 survey results

145 species of butterflies and moths identified

111 bird species

29 reptiles & amphibians

Plant Phenology

One way that plants might respond to climate change is by altering when they flower and fruit. Known as phenology, the timing of these events has important implications for rainforest ecology and also for local livelihoods when species of economic importance are affected. We have been monitoring at total of 24 Brazil nut (*Bertholletia excelsa*) trees and 20 aguaje (*Mauritia flexuosa*) palms—both of which are sustainably harvested in our region at Finca Las Piedras since 2017.





Sustainable Tropical Agriculture & Agroforestry

Organic Farming & Agroforestry



Sustainable agriculture at Finca Las Piedras >10,000 m² in production

Crops grown organically include banana, plantain, cassava, citrus, avocado, pineapple, coffee, peppers, herbs, & a variety of native & non-native fruit species

Expanding agriculture following the completion of the Interoceanic Highway has emerged in recent years as a leading driver of deforestation, habitat degradation, and environmental pollution in Madre de Dios. We're experimenting at Finca Las Piedras with methods for improving agricultural practices and boosting productivity of degraded and abandoned agricultural land, in the hope of halting the ongoing cycle of habitat loss. To do this we're testing the effectiveness of biochar and organic compost and other fertilizers, as well as integrated pest management, crop rotation, and no-till planting. Our organic agricultural plots are also helping us to increase our selfsufficiency; our long-term goal is to produce all of the food we consume at Finca Las Piedras onsite, organically, and in a way that takes advantage of already degraded land.

Native Food Forest

The Native Food Forest is an abandoned agricultural field that we've converted into a diverse forest of species with value to people, wildlife, or the wider rainforest ecosystem. There are timber species, trees that provide fruit ranging from avocados to cacao to other exotic, native species you've probably never heard of, Brazil nuts, and palms that are wildlife favorites, among many others. The area also serves as a living seed bank, providing the raw material needed for the ASA's reforestation work in Peru.



The Native Food Forest in numbers

8,400 m² reforested with native species

>800 individual plants

26 species

Cacao—Theobroma cacao (fruit, chocolate) Anona—Anona muricate (fruit) Casharana—Spondias dulcis (fruit) Shihuahuaco—Dipteryx odorata (timber) Cedro (cedar)—Cordia alliadora (timber) Guava—Inga edulis (fruit, shade) Shimbillo peludo—Inga sp. (fruit, shade) Palta (avocado)—Persea sp. (fruit) Azucarhuayo—Hymenaea oblongata (timber) Pashaco—Fabaceae (timber) Huito— Genipa americana (fruit) Castana (Brazil nut)—Bertholletia excelsa Ungurahui—Oenocarpus batahua (palm fruit) Copoazu—Theobroma grandiflora (fruit) Macambo—Theobroma bicolor (edible seeds) Camu camu—Myrciaria dubia (fruit) Sapote—Matisia cordata (fruit) Aguaje—Mauritia flexuosa (palm fruit) Shimbillo—Inga sp. (fruit, shade) Tornillo—Cedralinga caeteformis (timber) Mashonaste—Clarissia racemose (timber) Huayruro—Ormosia sp. (timber, artesania) Caimito—Pouteria sp. (fruit) Huasai—Euterpe precatoria (palm fruit, wood) Lupuna (Kapok)—Ceiba sp. (wildlife, timber) Araza— Eugenia stipitata (fruit)

Education & Community Engagement

Environmental Education

Our 2018 Environmental Education project had two goals: to teach kids about the ecological importance of insects in the rainforest, and to share with them the wonder of biodiversity and nature in Madre de Dios. The experience was centered around 20 large and stunning photographs of Amazonian insects on white background, each telling a visual story spanning insect morphology, behavior, or biology. Elementary and high school students, ranging from 10-17 years old, were guided through the exhibit by ASA staff, and their learning was reinforced with three follow-up activities. The kids, as well as their teachers, had the opportunity to evaluate the experience at the end, providing us with a valuable assessment of the experience and helping us to strengthen our methods for future projects.

In addition to Finca Las Piedras and our main exhibit hall in Puerto Maldonado, the exposition was shown at an educational fair hosted by the Peruvian Ministry of Education, as well as at the Mariposario de Tambopata (butterfly house), reaching many more children and adults from throughout the region.



2018 Insect Biodiversity Photographic Exhibition at a glance

>1,000 children attended the workshops

20 schools in Puerto Maldonado & Las Piedras district (Madre de Dios)

>10,000 visitors per year to the exhibition at the Mariposario de Tambopata in Puerto Maldonado

Internship Program

Our internship program is designed to educate and prepare the next generation of biologists, conservationists, and responsible global citizens to solve the world's diverse environmental challenges. During 2017-18 interns contributed to the ASA's research projects, and most also developed independent research projects of their own. We're very proud of the work that our interns have done so far, and we look forward to training many more in the coming years.



ASA Internship Program highlights 2017-2018

24 interns hosted at Finca Las Piedras Selected independent research projects

- A case study of arboreal termite tree selection at Finca las Piedras, Madre de Dios, Peru *Declan Cronin*, September 2018
- Wild cacao (*Theobroma cacao*) survey and mapping at Finca Las Piedras, Madre de Dios, Peru *Zephyr Dang*, September 2017
- Herpetofaunal diversity and abundances across different land uses in Madre de Dios, Peru

 Tobias Süess, September 2017
- An Estimation of Carbon in the Living Above Ground Biomass of Finca las Piedras *Laura Coomber*, September 2017
- Assessing the sustainability of local farming practices in the vicinity of Finca Las Piedras, Madre de Dios, Peru *Joao Vilca*, October 2017
- Discerning diurnal roost preferences of cavity roosting Neotropical bats for the purpose of designing successful artificial bat roosts *Angela Brierly*, August 2017

Field Courses & Service Learning

Field courses & service learning projects get students into the field where they can learn first-hand about the challenges facing the Amazon rainforest and the work being done to solve those challenges. During 2017-2018 we hosted a number of groups at Finca Las Piedras that studied and contributed to projects spanning entomology, conservation, tropical ecology, and natural resource management.

Groups hosted at Finca Las Piedras 2017-2018

DePaul University—Conservation, Forestry & Mining in Peru, November 2018

Wildlands Studies—Ecology & Conservation, Oct-Nov 2018

Pontifical Catholic University of Peru (**PUCP**)—Conservation in the Peruvian Amazon, August 2018

Field Projects International—Field Entomology, July 2018

Wildlands Studies—Ecology & Conservation, Oct-Nov 2017

Field Projects International—Field Entomology, July 2017



Research & Scholarships



Facilitating research by others in the scientific community is one of the best ways we can help to advance our understanding of the rainforest. The ASA is committed to making the forest accessible to those who wish to study it, both by hosting researchers at Finca Las Piedras and by providing aspiring scientists with scholarships so that they can conduct their research. To date we have hosted multiple independent researchers and provided scholarships to students and recent graduates from Peru and the USA to join biological expeditions in Madre de Dios, study primates, and conduct research on Lepidoptera and other groups at Finca Las Piedras.

Sharing our Work

Our work can only make a difference if it is published and accessible to interested parties. One important goal of all of our projects, therefore, is to make results available publicly, and we do this a number of different ways. Some of our publications are in scientific journals and others are published on our website, depending on the intended audience.

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Presenting at meetings and conferences is another great way to get the word out about what we do. During 2017-2018 we presented results from our projects at multiple scientific meetings and local conservation gatherings, through posters and oral presentations.

Publications & presentations 2017-18

3 scientific articles published in peer-reviewed journals

16 intern independent research reports published on the ASA website

3 rapid color field guides published on the ASA & Chicago Field Museum websites

2 oral presentations at conferences in Peru

4 poster presentations in Peru & the USA



Poster presented by Dave Klinges at the 2018 International Society of Tropical Foresters Conference at Yale University in New Haven, Connecticut.

Finca Las Piedras



Finca Las Piedras is the Alliance for a Sustainable Amazon's main field site in the Peruvian Amazon. Construction began in early 2017 and today provides researchers, students, educators, conservation professionals, and others access to a variety of Amazonian ecosystems. The site is rustic yet comfortable and designed to blend harmoniously with the surrounding rainforest.

The site is mostly upland or 'terra firme' rainforest dominated by Brazil nut (*Bertholletia excelsa*) and other hardwoods; *Mauritia* palm swamps, regenerating secondary forest, and agricultural fields are also within easy reach. The property is bordered to the east by concessions for Brazil nuts and rainforest that continues unbroken for hundreds of kilometers into neighboring Bolivia.

New infrastructure in 2017-2018

Dormitories & private rooms for up to 24 visitors Screened dining hall Shared, composting toilets Shared cold showers Staff housing Butterfly flight cage & shadehouses

Where do we go from here?

We've accomplished a lot in our first two years in Peru, but there is still so much more to do. In 2019 and beyond we will be continuing our long-term inventories and monitoring studies, developing further environmental education experiences for kids in Madre de Dios, and expanding upon our most important and strategic projects. Here's a quick look into a few of our top priorities in 2019 and beyond.

Laboratory & Entomology Collection

Our Butterfly Diversity & Biology project is one of our most important, and we believe that this work will provide a wide variety of long-term benefits to science, conservation, and people in our region. So that the project can continue to grow, we are thrilled to begin construction of an air-conditioned laboratory space that will double as the home of the ASA's entomology collection. This will allow us not only to take our biological research and conservation-focused work on the Lepidoptera to the next level, it will be an incredible teaching tool as well.

Environmental Education

We're also very excited about this year's upcoming environmental education project focusing on kids in Madre de Dios. In keeping with last year's theme and given our overall focus on insects, the 2019 project will be all about ants. These insects are ubiquitous and fascinating biologically, and we think they will be an exciting group to help us connect kids with nature.

Support Our Work

Our work isn't possible without your help, so please consider supporting our work today! Checks can be made out to Alliance for a Sustainable Amazon and sent to our U.S. office: 7224 Boscastle Ln, Hanover MD 21076. We also accept donations via Paypal or by major credit cards. Please visit <u>www.sustainableamazon.org/donate</u> to make a tax-deductible donation.

Financials

	2017	2018
Revenue		
Service Fees	\$51,970.05	\$51,828.99
Donations	\$1,244.63	\$1,368.98
Miscellaneous	\$0.00	\$225.00
Balance from previous year		\$473.10
Total Revenue	\$53,214.68	\$53,896.07
Expenses		
Management & General expenses	\$2,103.55	\$1,236.61
Program services	\$50,638.03	\$50,285.98
Total Expenses	\$52,741.58	\$51,522.59
Balance for 2019	\$473.10	\$2,373.48

Donors 2017-18

Renee Albrecht Keith Becker Angela Brierly Levin Chamberlain Eric Heisey Delores Homisak Maite Ilundain Erik Iverson Gabrielle Magnante Maya Normandi Segen Peru Keith Roberts Joao Vilca Joseph Villa Regina Villa



Our Board & Community



Geoff Gallice, Ph.D. President of the Board, ASA

"The Amazon is the greatest and most biodiverse ecosystem that has ever existed on our planet, and we are determined to keep it that way."



Johana Reyes Director, ASA Peru

"All of humanity depends either directly or indirectly on the Amazon rainforest, as will all generations yet to come—it is our moral duty to protect it."



Timothy Perez Secretary, ASA

"I'm proud to contribute to solutions that protect biodiversity by educating community leaders and promoting sustainable development."

Staff & Scholarship Recipients 2017-18

Academic Programs Coordinator Erik Iverson (2017) – Barbara Hendus (2018)

Resident Naturalist David Klinges (2017) – Joseph See (2017) – Zephyr Dang (2018) – Ryan Smith (2018) – Sally Donovan (2018) – Levin Chamberlain (2018-19)

Lepidoptera Research Assistant Quin Baine (2018) – Gabriela Polo (2018)

Expedition Leaders Anton Sorokin (2018) – Micah Scholer (2018) – Gloria Jilahuanco (2018)

Scholarship Recipients Allison Collins (2017) – Paola Ancajima (2017) – Karl Huaypar (2017)

Bhavik Pathak Treasurer, ASA "We do this work so that our kids car

"We do this work so that our kids can enjoy the benefits of the rainforest, just as we have."

Interns & Expedition Participants 2017-18

Interns

Max Tanner – Maddie Stauder – Angela Brierly – Laura Coomber – Alyssa Terrell – Tobias Süess – Zephyr Dang – Santiago Flores – Ali Raza – Diana Hernandez – Jennifer Eden – Joao Vilca – Kendra Kellogg – Megan Nugent – Stephanie Wilker – Judith Rosenberg – Allison Stoiser – Omair Habib – Lucy Howell – Jagoda Wrobel – Jemima Walker – Lona Lalić – Declan Cronin – Amanda Reyes

2017 Expedition Participants

Bill Berthet – Deborah Paschall – Paige Handley – Dina Tsouluhas

2018 Expedition Participants

Maria Canahua – Phillip Bowles – Ciaran Nagle – Evan Papst – Samantha Anderson – Andy Zhu – Jianyong Zhu – Angela Brierly – Anthony Scholer – Renee Albrecht – Tim Treuer

Staff – Alianza para una Amazonia Sostenible Peru (ASA Peru)

Kitchen Jose Cueva (Head Chef) Eva Tapullima Maribel Meza Facilities Maintenance & Housekeeping Gualberto Guerra Camila Mozombite Agroforestry Richard Omonte *Accounting* Ricardo Flores