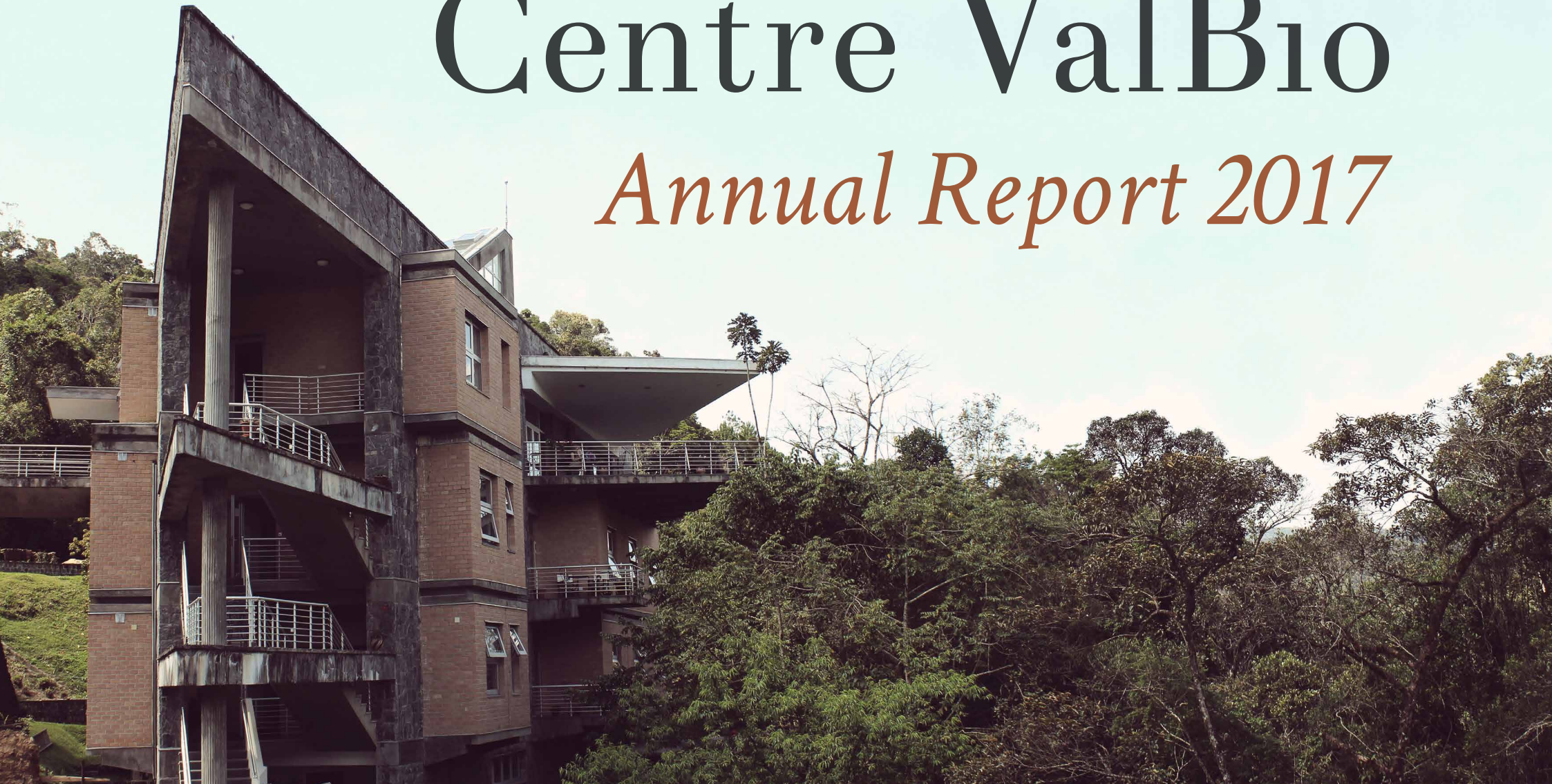




# Centre ValBio

## *Annual Report 2017*





## History

Centre ValBio (CVB) was created by Professor Patricia Wright in 2003 under the Institute for the Conservation of Tropical Environments' agreement with the Government of Madagascar. The richness of the critically endangered plants and animals, contrasted with the poverty of the people, inspired her to help both survive in harmony.





CVB's mission is:

- To promote world-class research and biodiversity training opportunities in one of the world's most biologically diverse and unique ecosystems;
- To promote environmental stewardship by providing conservation education and developing ecologically sustainable economic development opportunities within local communities;
- To provide the local villagers with the knowledge and tools to improve their quality of life through projects focused on health and well-being.

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## Letter from the Executive Director

*Dear CVB friends and supporters,*

2017 has been an incredible year on many levels. Not only have we been expanding physically, on the CVB campus and to other sites throughout Madagascar, but we have also amplified our programs, thanks to both old and new donors alike!

Construction on the lower campus is underway, as well as plans for developing the upper campus. The foundation for the IUCN Save our Species (SOS) Biodiversity Center has been excavated and construction of the two-story building begins in early 2018. To make way for this new center, we relocated our outdoor classroom to the riverside of the lower campus. We thank Susan Cummings-Findel, CVB Board member and President of the Sunshine Comes First (SCF) Foundation, for her generous contribution towards a new education building, and the International Union for the Conservation of Nature (IUCN) and their SOS Fund for the Biodiversity Center.

Thanks to support from the Holtzman Wildlife Foundation, architect Ali Yapigluco visited CVB to draw final plans for the upper campus, which will soon house the Holtzman Wildlife Center. In 2018, we will install

a driveway for access, and extend electricity and water to the site. We also hope to raise funds for bungalows for long term researchers, sabbatical and emeritus professors.

This past year, we also expanded our community outreach programs. In addition to our education and health work, we added an engineering component. With funding from Jeff and Mickey Nagel and thanks to Jesse McKinney's hard work and dedication, we launched the BeLocal Program. These innovative programs mobilize and create beneficial collaborations for the Stony Brook University (SBU) campus community. Students from SBU have been working with local villagers to develop simple but efficient solutions to improving daily lives.

Thanks to an anonymous donor, we doubled our mobile health team by hiring a medical doctor and two nurses, which allows us to visit our 20 target villages twice as often. We also worked with PIVOT to send each of our respective health teams on exchange field visits.

On the education front, we doubled the number of remote schools participating in the "My Rainforest, My World" education pro-



gram thanks to the Three Graces Foundation, and were thrilled to host its founders Bruce and Charlene Bainum in May.

Important progress was made with SBU's Global Health Institute (GHI) and their DrOTs Project to send medical drones to remote villages for door-to-door delivery of medicine and follow-up of tuberculosis treatment. Led by Dr. Peter Small, GHI started staffing up in Madagascar by first welcoming two postdocs, Dr. Simon Grandjean Lapierre and Dr. Astrid Knoblauch, in August.

One of the most exciting developments was the deepening of our partnership with Rainforest Trust. In conjunction with MICET, we are now in the process of developing two new protected areas, one in eastern rainforest and the second in an "unexpected" rainforest in southcentral Madagascar. This will help achieve the Madagascar Ministry of Environment, Ecology and Forests' vision of creating CVB-like research stations throughout Madagascar. Dr. Benjamin Andriamihaja became our In-Country Director, a crucial role that arose due to this expansion to new sites.

CVB also strengthened our relationship with the University of Fianarantsoa. A CVB Information Center was recently inaugurated on their campus' new green space. In 2018, Dr. Jean Claude, CVB's current Head of Research, will move to the university as

Professor of Ecology and Conservation and oversee the new center. Congratulations Dr. Jean Claude!

Despite the positive growth, operating in a developing country, especially in the current funding climate, presents definite challenges. One of the biggest trials in 2017 was a severe outbreak of the plague (both pneumonic and bubonic). Many of our visitors postponed their research due to cases reported in our region, which impacted CVB financially. Luckily, many have re-scheduled their visits for 2018.

Another challenge has been the discontinuation of external funding for several conservation and research programs. After six years, support for Conservation International's Tropical Ecological Assessment and Monitoring project (TEAM) came to a close. This was the only program of its kind in Madagascar; just one of 21 sites worldwide. Despite the lack of financial support, our team continued to collect data, since long-term climate monitoring is an important mandate of research stations.

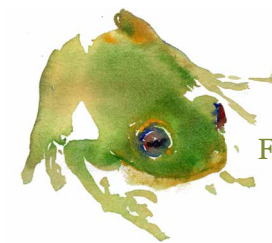
Catholic Relief Services' (CRS) funding for one year to work with conservation clubs to grow and plant native trees, as well as to develop markets for spices such as wild pepper,

also concluded. On a positive note, we are reviewing the options for future funding of this project. SCF has continued to be a valuable partner by gifting flexible funds to further support education and reforestation.

One of the most important aspects of my job is to raise awareness about conservation issues in Madagascar and generate financial support for the important work that we are doing. This year, I have been traveling, from a tour of seven U.S. universities as a Phi Beta Kappa Visiting Scholar to speaking at the Earth's Optimism Summit in Washington, D.C. I also gave Keynote Addresses at two creative think tanks, one in Squaw Valley and the other in Sea Island, Georgia.

As we look ahead to 2018, we are confident that it will be fruitful, having laid much of the groundwork for new projects this past year. We are also looking ahead to the future by drafting a 10-year strategic plan so that CVB may continue to support valuable research and provide community support for many years to come.

Sincerely,

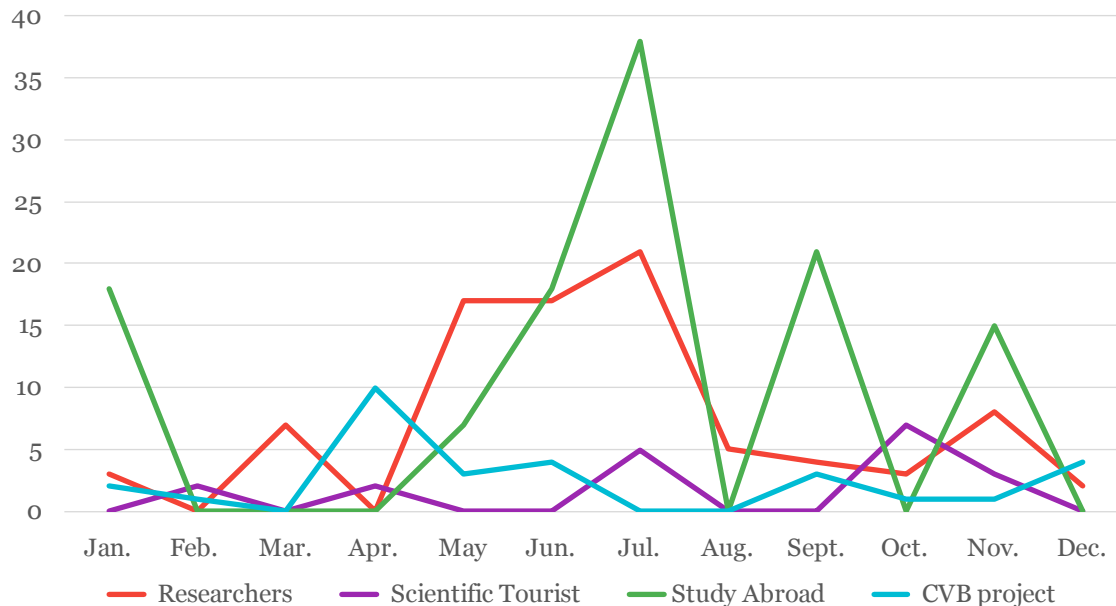


Dr. Patricia C. Wright  
Founder and Executive Director  
Centre ValBio

## Research Station Use

In 2017, the Centre ValBio (CVB) Research Station hosted **253** individuals from **16** different countries to conduct research in Ranomafana National Park or its surrounding communities, to use our laboratory, to participate in a training, workshop or Study Abroad program, or to take a tour of our facilities and attend a lecture. While numbers were down from last year (2016, with 526 individuals, was a remarkable year!) this number decreased only slightly from 2015 (with 280 individuals), due to 60 cancellations during the plague outbreak.

### Visitors per Month 2017



As in previous years, both researchers and training programs led CVB's station usage. Researchers made up **34%** of those staying at CVB in 2017, while **46%** of visitors were part of courses and workshops.

### Researchers

**87** individual researchers stayed at CVB in 2017. The average length of stay was **30** days. The majority of researchers were American (**65%**) and Malagasy (**20%**).

### Scientific Tourists and Tour Groups

**1622** Malagasy students and **624** scientific tourists toured CVB in 2017.

### Station Days

The total number of station days in 2017 was **1316** (researchers) and **3840** (all visitors). Station days decreased by 43% and 41% from the last two years. This decrease in station days was not only due to the plague outbreak, but also because many researchers are spending more days in the field versus at the research station.

### Laboratory Use

**16** researchers used CVB labs in 2017, for a total number of **141** days of lab use. This is down from last year, with **69** researchers using the lab for **231** days.



## Spreading the Word

Centre ValBio, with Dr. Patricia Wright at its helm, continues to draw international attention and acclaim for its dedication to conservation and community, as well as innovation.

### Media Coverage

- Two segments, one on medical drones (with Dr. Peter Small) and the other on Ranomafana National Park and lemur conservation (with Dr. Patricia Wright), created by Alex Marquardt and his team, were aired on ABC Nightline.
- Forbes Africa featured Dr. Wright and the accomplishments of CVB in the article, “The Professor Who Saved an African Rainforest” (October 3, 2017).
- RNP was featured in the Mongabay News site as part of their, “How effective is conservation in Madagascar?” series.

### Speaking Engagements

- This year, Dr. Wright was chosen as a Phi Beta Kappa Visiting Scholar and toured **seven** universities and colleges explaining the mission and accomplishments of CVB. These schools included: Luther College (Iowa), Creighton University (Nebraska), The University of Puget Sound (Washington State), Miami University (Florida), The College of New Jersey, The



- University of North Carolina, Greensboro, and Colorado College. Through this exposure, several students from these schools participated in our 2017 Study Abroad programs and we expect more in 2018.
- Dr. Wright was the Keynote Address Speaker at “Creating Equilibrium” think tank held at Squaw Valley in California. The meeting focused on the future of technology and wildlife.

- Dr. Wright was a Featured Speaker at the Earth’s Optimism Summit in Washington, D.C. hosted by the Smithsonian Institution and National Geographic Society, as well as at the “Creativity Symposium” on Sea Island, Georgia, about combining arts and sciences to make a better future.
- Dr. Wright, and CVB board members Dr. Tom Gillespie and Dr. Mark Krasnow spoke at the one-day “Crucible” event

Patricia Chapple Wright

**T**HE INCESSANT RAIN WAS becoming too much to bear especially given the steep and slippery terrain, so I asked my naturalist guide Theo to find a place where we could rest.

I was in a pristine rainforest known as Ranomafana in the central highlands of Madagascar on a three-week trip in April to observe and photograph the natural history and geology of south central Madagascar. We sat protected by rain, beneath the eaves of a primitive cabin once used by a scientist who the local villagers considered “the mother of Ranomafana”.

That lady was none other than Dr. Patricia Chapple Wright, the world’s leading lemur expert, who had spent time in these cabins in the mid 1980s while searching for extinct lemurs and in the process discovered two new species.

I had no knowledge of Wright, or the amazing work she had done for the conservation of this 145 square mile rainforest, which along with a 500 square mile buffer zone is home to many endangered species. Those include several species of lemur that she almost certainly saved from extinction. As a result of Wright’s determined efforts, Ranomafana National Park was created by her in 1986 and became a World Heritage Site known for its unique biodiversity in 1992.

Lemurs are our primate cousins that never evolved into Homo sapiens but possess 90% of our DNA. They had been the least studied primates, since they are only found in Madagascar where they evolved for over 80 million years in relative isolation.

While in Madagascar, I had made up my mind to reach out to Wright and thank her

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about Madagascar health of nature and communities held at Stanford University in February. Dr. Matt Bonds, co-CEO of partner organization, PIVOT, also spoke on how to integrate health and environment.

- CVB staff and scientists gave several presentations and posters during the Inaugural Malagasy Primatological Congress held in Tamatave in December.

### Awards

- On behalf of CVB, Dr. Wright was invited to the Savoy Hotel in London to the British Guild of Travel Writers to receive an award for its contributions to ecological traveling. Thanks to Sarah Tucker for the nomination.
- In December, Dr. Wright was named a “Natural World Hero”, a prestigious award from the Australian Traveler’s Guild.

In addition, Dr. Pat Wright and CVB scientists marched in Washington, D.C. during this year’s “March for Science”.

We also produced several VaoVao ValBio newsletters this year, and aired the IUCN Save our Species Lemur Podcasts on local radio stations.





## Research

CVB continues to be Madagascar's premier center for biodiversity, technology, and human health-related research. This year we published **27 papers** in scientific journals and, one of our researchers, Ryan Rothman, won the favorite student presentation award during the first Malagasy Primatological Congress (Lemur Congress 2017) held in Tamatave, Madagascar.

### *Long-term surveys in Ranomafana National Park (RNP)*

CVB continued its long term research on the demography, diet, and social behavior of three lemur species Greater Bamboo Lemur (*Prolemur simus*), Golden Bamboo Lemur (*Hapalemur aureus*) and Milne-Edwards' Sifaka (*Propithecus edwardsii*).

The CVB research team continued taking data on growth, fruiting, and flowering patterns in rainforest trees. The importance of monitoring is highlighted by the identification, for the first time ever, of a rare tree fungus, known to be present in nearby Mauritius. This fungus killed 65% of the *Chrysophyllum paniculata* trees, an important food for six species of lemurs, in the southern half of RNP. CVB is currently working with researchers at the University of Fianarantsoa to find ways to stop the disease.

### Ivohibory “Unexpected Forest”

In 2016, CVB conducted inventories in the northern part of the forest. In 2017, we surveyed the southern half during a ten-day expedition headed by Dr. Patricia Wright and Pascal Rabeson. The multi-disciplinary team carried out an inventory of plants, birds, bats, insects, amphibians and reptiles, lemurs, and small mammal communities. Marta and Andrezej Kepel, scientists from Poland, captured three species of bats, two of them 600 km out of their geographic range. CVB's botany team and one local guide collected fertile plants, and established botanical plots.

Seed dispersal studies of *Lemur catta* were conducted by Ryan Rothman, Imperial College, London (in April), and studies of





*L. catta* diet and infant development were conducted from September to December by Gabrielle Bueno, University of Rochester.

Preliminary results show that *L. catta* eat more than twice the number of plant species in the rainforest than in the dry forest. Bueno found that infant *L. catta* in the rainforest show developmental landmarks at least two weeks later than *L. catta* in the dry forest.

### *Tropical Ecology Assessment and Monitoring (TEAM)*

Despite Conservation International funding ending, Claude Ralazampirenena continued to lead TEAM and take long-term data collection on climate and changes in biodiversity using the same methodology.



### Terrestrial Vertebrates

Sixty digital camera trap sampling points (one camera every 2 km<sup>2</sup>) monitor terrestrial vertebrate species in the Ranomafana TEAM sites. Sampling is conducted during the dry season for 30 days. A total of **12,068 images** have been recorded of **27 vertebrate species** belonging to **25 genera**. Widespread species, such as Red Forest Rat (*Nesomys rufus*), Fossa (*Cryptoprocta ferox*), Striped Civet (*Fossa fossana*), and Red River Hog (*Potamochoerus larvatus*) were recorded within most of the three arrays. The most interesting images from the camera traps were the detection of some rare species such as the Aye-aye (*Daubentonia madagascariensis*), Broad-striped Malagasy Mongoose (*Galidictis fasciata*) and the Greater Bamboo Lemur (*Prolemur simus*).



CVB Board Member, **Dr. Steig Johnson**, is interested in community-wide patterns of primate diversity. Specifically, he aims to understand how natural and human-induced environmental changes might structure lemur communities – what lemurs are present in local areas, as well as the composition of their ecological traits (for example, body size and diet). The variation in functional diversity (the distribution of ecological niches) of lemur communities may have important feedbacks with their environments, as lemurs play many important roles in ecosystem function. Since 2004, Dr. Johnson has been working with Dr. Wright to survey lemur populations and their habitats across sites within RNP. In 2015, Dr. Johnson and his graduate students began to resurvey these sites to investigate changes over time. This research involves a number of collaborators, including Dr. Kerry Brown (Kingston University), Dr. Onja Razafindratsima (College of Charleston) and Dr. Amy Dunham (Rice University).

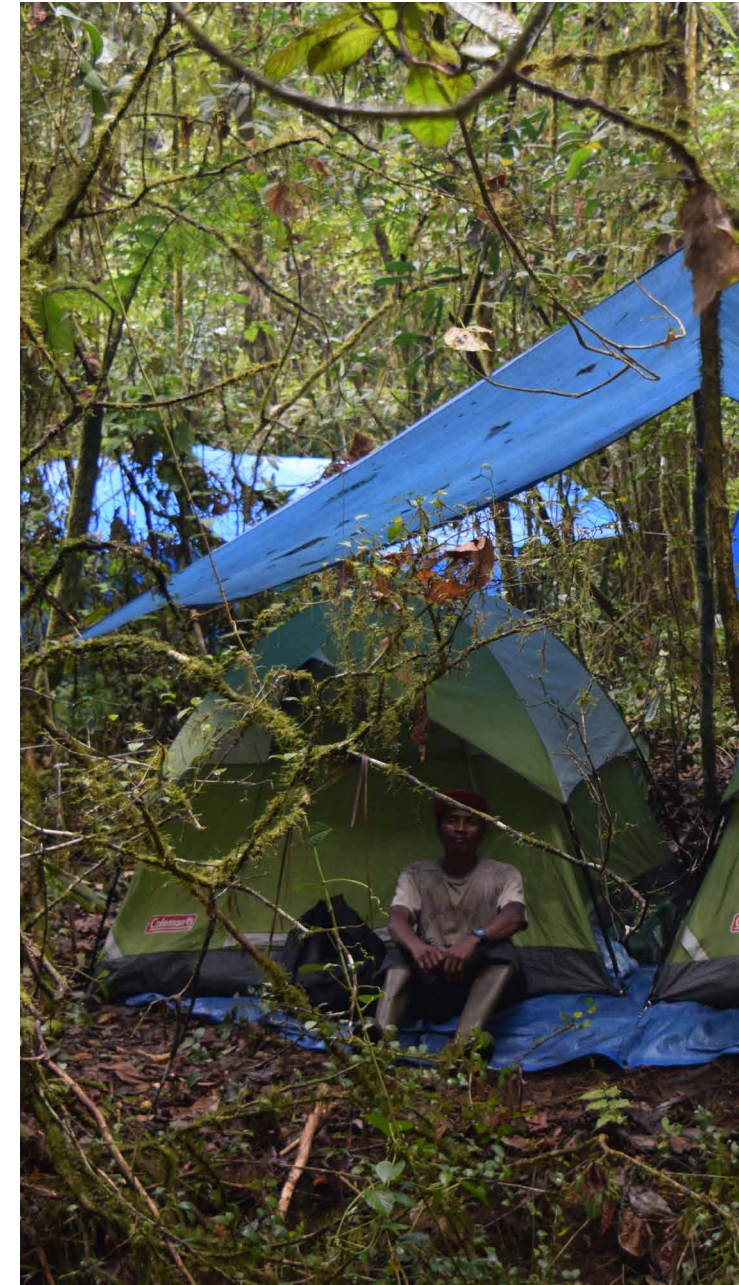
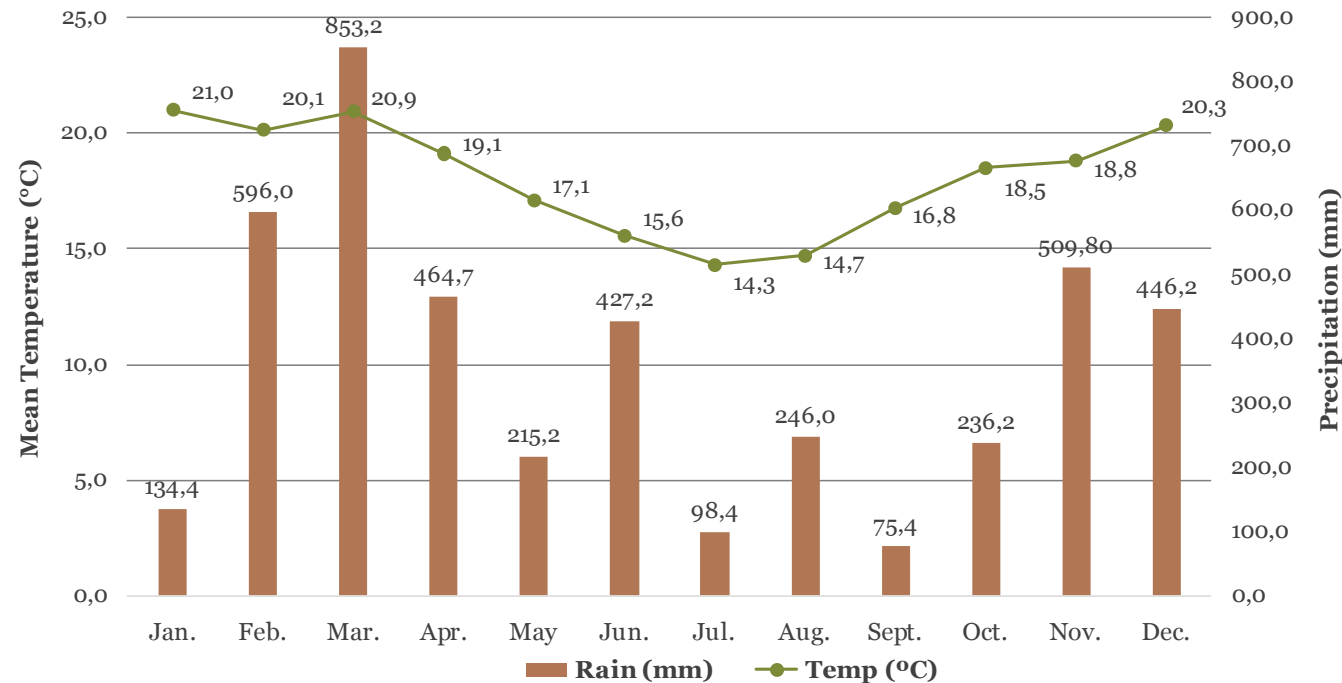
## Climate

During this La Niña year, the TEAM meteorological station recorded higher than average temperatures and an extended period of drought which started in 2016 and extended into 2017. In January 2017, Ranomafana received eight days of rain with a total rainfall of **108.58 mm** for the month (compared to January 2016 when **432.8 mm** were recorded). The total amount of precipitation in 2017 was **4302.8 mm** compared to 3172.7 mm in 2016. The monthly average temperature increased by **1.2 °C** from 2016.

## Participatory Ecological Monitoring

This year, we continued working with local community members to collect data on **13** forest fragments surrounding RNP. The data shows that the extent and type of pressure in the different fragments are different. Logging and slash and burn agriculture continue to be the most common activities. However, we did note a decrease in the number of infractions in the forest fragments, showing the positive outcome of integrating long-term monitoring and engagement of local communities in conservation efforts.

### 2017 Climograph of Ranomafana





## Researchers in 2017

### Biodiversity Research

**Megan Aylward**, PhD student from the University of Calgary working with Dr. Steig Johnson, searched for aye-ayes unsuccessfully in Analamary forest (the southern half of the “Unexpected Rainforest”).

**Dr. Andrea Baden** (Hunter College) and Randy Junge, DVM (Columbus Zoo) darted Black and White Ruffed Lemur (*Varecia variegata*) in the Mangevo area in August 2017. They collared these lemurs in order to monitor their reproductive physiology and infant care strategy and have been monitoring them since.

**Gabrielle Bueno**, University of Rochester, is assessing the effects of different habitats types on the development of *Lemur catta* infants in the Ivohibory “Unexpected Rainforest”.

**Santiago Cassalet**, City University of NY Graduate School, looked at lemur nutrition (*Eulemur rufifrons*; *Eulemur rubriventer*; *Propithecus edwardsi* and *Varecia variegata*) as a mechanism for niche separation.

**Caitlyn Cooper**, Duke University, studied long-term change in lemur biodiversity and forest edge effects in RNP.



**Jonathan Clayton**, University of Minnesota, is conducting a comparative study of lemur microbiomes as part of the Primate Microbiome Project.

**Mariah Donahue**, University of Kentucky, is examining whether *Varecia variegata* modify their behavior in response to human disturbances in RNP and Manombo Reserve.

**Dr. Amy Dunham**, Rice University, continued studying the impact of frugivore movements (*Varecia variegata*, *Eulemur rufifrons*, *Eulemur rubriventer*, *Eidolon dupreanum* and *Pteropus rufus*) on seed dispersal, plant community structure and biodiversity.





CVB Board Member **Dr. Thomas Gillespie** of Emory University continues to lead the “EcoHealth Madagascar Project”. This project examines how and why anthropogenic influences within the tropical forests of Madagascar alter disease dynamics and place lemurs, people, and other animals at increased risk of pathogen exchange. Through this research and associated conservation activities, the team strives to promote wildlife and human health, while ensuring the sustainability of the ecosystems within which they live. Dr. Gillespie introduced a number of new collaborators to CVB in 2017 including: Dr. Joel Hartter (Associate Professor of Environmental Sciences at UC Boulder) and Dr. Ria Ghai (Post-Doctoral Researcher, Emory) in March; and Leo Ragazzo (Research Specialist, Emory), Sarah Durry (Masters of Development Practice Student, Emory), Lydia Rautman (Scholars Program, Emory), and Kathleen Noble (Ecology Student, Princeton University) in May to August.

**Mai Fahmy**, Fordham University, studied preferred hosts of leeches as a rapid technique of monitoring biodiversity.

**Dr. Caitlyn Karenewsky** and **Joseph Pendleton**, Stanford University, **Hajanirina Razafindrakoto** and **Andriamahery Razafindrakoto**, University of Antananarivo, continued **Dr. Mark Krasnow**’s long-term “Mouse Lemur Genome Project”.

**Andrzej Kepel** and **Marta Kepel**, Polish Society for Nature Conservation, studied bryophytes, lichens and bats in Analamary Forest.

**Alicia Lamb**, Stony Brook University and **Eliette Noromalala**, University of Antananarivo, conducted a study of the *Lepilemur* population at Ifaty on the southwest coast of Madagascar.

**Amanda Mancini**, City University of NY Graduate School, spent nearly one year studying the impact of anthropogenic fragmentation and loss of habitats on the diversity and genetic structure of *Varecia variegata*.

**Elise Morton** visited as part of a recognition phase for an eventual project on restoration .

**Katherine Kling**, Stony Brook University, is examining biodiversity persistence in various size forest fragments adjacent to RNP.

**Dr. Onja Razafindratsima**, College of Charleston, **Camille Desisto** and **Abigail Burrus**, Harvard University, and **Vero Narindra**, University of Antananarivo, looked at mechanisms and consequences of the invasion of *Psidium cattleianum* in the rainforest.

**Ryan Rothman**, Imperial College (UK), examined the role of seed dispersers in RNP and Ivohibory Forests and how ecological niches are shared by diurnal lemurs.

**Diary Razafimandimby** returned to CVB to work on **Dr. Omer Nevo**’s project (German Primate Center) on the chemical ecology of seed dispersal by lemurs.

**Julie Reniers**, Université de Liège (Belgium), looked at daily path length, home range size, and group spread of *Eulemur rubriventer* and *Eulemur rufifrons* in RNP.

**Amanda Rowe**, Stony Brook University, examined diet and nutrition of *Propithecus edwardsi* infants. Her dissertation will study insect eating by *Microcebus sp.*

**Juliette Rubin**, Boise State University, examined the effects of moonlight on predator-prey interactions (bats) over rice fields.

**Elizabeth Tapanes**, George Washington University, conducted lab work at CVB on molecular biology of lemur hair samples.

Jadelys Tonos and Ella Matsuda, Rice University, are studying ecological interactions. Jade is also working on bat conservation education.

Dr. Sarah Zohdy, Auburn University and Nina Finley, Watson Fellow, are studying why loss of habitat connectivity leads to zoonotic disease emergence in human communities. By using mouse lemurs and mosquitoes as a model for this system, they aim to better understand the mechanisms behind why vector borne pathogens evolve and move through ecological systems.

### Health Research

Dr. Peter Small of the Global Health Institute (GHI) at Stony Brook University (SBU) continued overseeing medical student research missions in collaboration with Dr. Luis Marcos, SBU Medical school, and Dr. Ines Vigan-Womas, Institute Pasteur – Madagascar.

#### *Drone Observed Therapy System (DrOTS)*

Dr. Simon Grandjean Lapierre is a trained infectious diseases specialist and medical microbiologist. He is the coordinator of the DrOTS project and acts as research coordinator for SBU-GHI Institute in Madagascar.

Dr. Astrid Knoblauch, based at Institute Pasteur Madagascar in Tana, is in charge of Monitoring and Evaluation of DrOTS.

Jesse McKinney, CVB Chief Technology Advisor, oversees the technology-related aspects.

Ian Alexander Passe, SBU student, focused on understanding the perception of health technologies, specifically drones, among individuals living in remote Malagasy villages. The study methods involved in-depth interviews, surveys and participatory observation.

Lulua Bahrainwala, University of California, San Francisco, under the supervision of Dr. Peter Small, carried an economic evaluation of DrOTS compared to Directly Observed Treatment Short Course (DOTS) for treatment of drug sensitive tuberculosis.

### Social & Engineering-Solutions Research

Rebecca Dellicarpini conducted anthropological research on the enrollment of local people in the conservation apparatus at Centre ValBio research station.

Leila Esmailzada, 2016 SBU Study Abroad Student, returned along with Acacia Leakey, SBU, to work on the BeLocal Project to identify engineering solutions to everyday challenges in Madagascar. They were joined by Mickie Nagel, one of the founders of BeLocal.

The team from the non-profit ‘Health in

Harmony’, accompanied by Maya Moore, CVB Chief Technical Advisor, spent a week conducting participatory appraisals using their “Radical Listening” technique with communities around Manombo Reserve in southeastern Madagascar.

In July 2017, Daniella Rabino completed her fieldwork for her PhD dissertation from Center of International Education, Sussex University, UK entitled “Rethinking sustainable identities: listening to children around Madagascar’s forest”.



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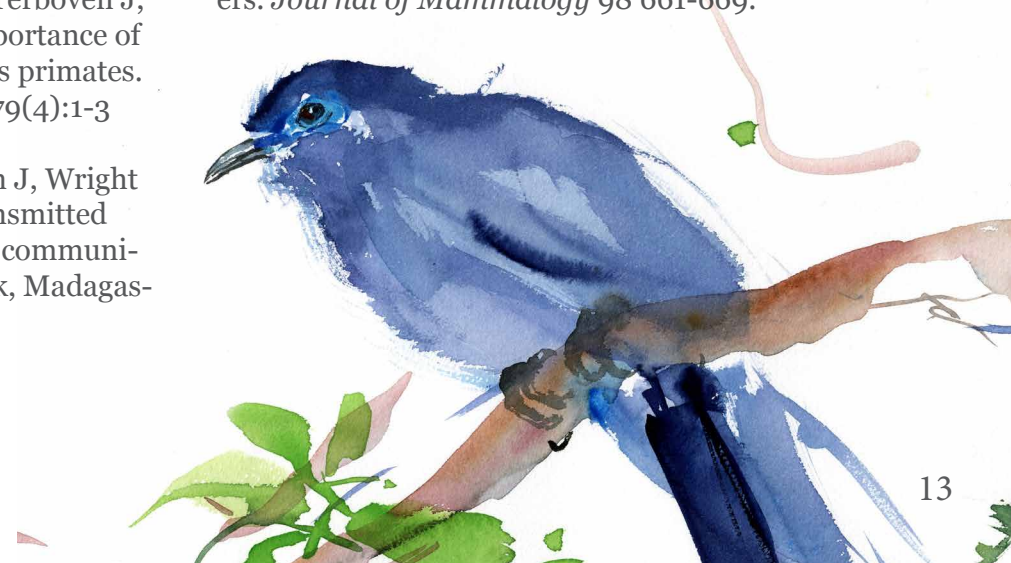
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## Conservation

### *Creation of New Community Protected Areas*

As part of the CVB expansion encouraged by the Madagascar Ministry of Environment, Ecology and Forests, CVB and MICET are now in the process of developing two new community protected areas (PAs), one in the eastern rainforests at Evato, Karianga, and the second in south central Madagascar. These PAs are made possible with funding from Rainforest Trust.

The “Unexpected Rainforest” of Ivohibory is located in the Ivohibe District of Ihorombe Region, approximately 60 kilometers southeast of Ihosy. It has approximately 1400 hectares of pristine primary forest surrounded by human-caused savannah. Leona Rasolonirina is the On-site Manager of this new PA, and Benjamin Andriamihaja and Elia Rabenandrasana are overseeing the project from Antananarivo.

Starting in September 2016, Patricia Wright, Pascal Rabeson, the CVB team and hosts of international researchers have carried out several biodiversity expeditions to inventory the unique fauna and flora found in this forest island, isolated for many years. New species of trees, frogs and even lemurs make this forest a high priority.

Two workshops to train local residents to study biodiversity, make firebreaks, and use camera traps have been very successful. Nicolas Rasolonjatovo and Paul Rakotonirina also led a reforestation training in Ihosy.

Two researchers are studying the behavior and ecology of *Lemur catta* living in the Ivohibory rainforest. In April 2017, Ryan Rothman from Imperial College took a CVB team to study lemur seed dispersal. Starting from September, Gabrielle Bueno began studying infant development and feeding behavior. Early results indicate that rainforest *L. catta* eat and disperse nearly ten times as many seeds as their dry forest counterparts. Bueno’s study on eight infants suggests that infant independence is reached two weeks later in the rainforest than in the dry forest.

In May 2017, the first expedition to the southern Analamary forest was undertaken. Joining the CVB team were Patricia Wright, Noel Rowe, James Lewis (Rainforest Trust’s Director of Conservation Programs), Andrej and Marta Kepel, Steig Johnson and Meghan Alyward. As we negotiated with zebu herders and village leaders for access to the forest, the mountain views were stunning.

Through meetings with the regional and local authorities in Ihorombe and Ihosy, we have forged important relationships, and are on our way to making this a legal PA.





### *Reforestation*

CVB also aims to increase the size of RNP by restoring degraded areas around the park, as well as to fulfill the vision of reforesting from the eastern forest corridor to the ocean as part of the “Forest to Sea” Project.

In 2017, with the support of Catholic Relief Services (CRS), the CVB reforestation team, led by Nicolas Rasolonjatovo, planted **23,000 seedlings** of 11 different endemic tree species from the forest. Six of these species are particularly good for large scale reforestation project as they are strong, fast-growing and useful for the soil, animals and humans.

Reforestation efforts extended to **13 village associations** which create and maintain their own endemic tree nurseries. **16,000 seedlings** were planted in February. During a follow-up in November, the survival rate of these seedlings was about 70% and some trees were already one to two meters in height.

Many groups assisted CVB with our reforestation activities, from village school children, to Study Abroad and Culture Connect students, to Madagascar National Parks. As the children in Ambatolahy have their own endemic tree nursery, they also planted around **1,300 seedlings**.

### *Income generating activities related to reforestation*

The reforestation team is helping villagers access new sources of income through the promotion of shade-grown cash crops.

Madagascar is famous for its high quality vanilla. Although the highest quality is grown in the north and managed by large companies, we hope to develop a market in our region and train local farmers to improve the quality. The CRS/CVB reforestation team is working closely with one vanilla farmer in Ranomafana. **Two kilograms** of cured vanilla were sold this year; we plan to sell larger quantities to international fair trade companies in the future.

The world demand for black and pink pepper is increasing exponentially. Pepper experts tested the wild pepper coming from RNP and scored it extremely high on flavor. Our local wild pepper (*tsiperifery*) is an endemic liana, so it needs a tree tutor to grow. Traditional harvesting techniques include cutting the pepper vine, cutting down both the vine and tutor together, which is obviously harmful for the tree, as well as the wild pepper itself. To prevent this, the reforestation team has been working with villagers to domesticate the wild pepper in nurseries. So far, this project is going well in Ambodivoangy and Ambo-dirafia.





## Capacity Building & Training

We are proud to announce three completed PhDs that were based on lemur research: Dr. Gena Sbeglia (Stony Brook University), Dr. Tuomas Aivelo (University of Helsinki) and Dr. Andry Herman Rafalimanana (University of Antananarivo). We also had three Masters defenses successfully completed: two from Stony Brook University (Mariah Donahue and Alicia Lamb) and one from University of Évora, Portugal (Mariana Matos).

### *Study Abroad at CVB*

Every year, groups of students come from around the world come to study at CVB. In 2017, **117 students** from high school and university levels participated in Study Abroad programs. The University of Florida returned for a second year in a row, and two high school programs organized by Culture Connect and National Geographic/Putney Student Travel came for the first time. All three groups hope to return in 2018.

### **Stony Brook University (SBU)**

This year, we successfully completed three SBU Study Abroad programs for a total of **45 students** participating in the Winter, Summer and Fall programs, our inaugural, eighth and 24th programs, respectively!

### *SBU Winter Internship Program - January 2017*

In January, **15 students** participated in the first ever Winter Internship. Under the guidance of Tharcisse Ukitinzambara and teaching assistants, Mariah Donahue and Franck Rabenahy, students dedicated themselves to three-week internships ranging from studying amphibian diversity in RNP, accompanying rural community health expeditions, assisting with an environmental education workshop and participating in innovative health and engineering activities. Ten of the 15 interns were SBU students, three were from other SUNY schools and two students joined us from SUSTEC University in Guangdong, China.



### *SBU Study Abroad Summer 2017 (Established 2008)*

This five-week program took place between late May and early July. During this session, students were exposed to a range of knowledge and experiences including Malagasy language, health, environmental education, ecosystem diversity, and research. The program included lectures, field exercises, and a cross-country trip. Students also designed independent research projects, covering a large spectrum of issues. One student group conducted a healthcare internship focusing on respiratory health of Malagasy children in rural Madagascar. Project results of these were presented at CVB in Ranomafana and at the American Embassy in Antananarivo.

### *SBU Fall 2017 (established 1993)*

Between September 4 and November 21, 19 students (17 from the United States and two from Madagascar) participated in the SBU Fall 2017 semester. U.S. students came from a wide-range of colleges and universities including SBU, SUNY College of Environmental Science and Forestry, Lawrence University, Luther College, and the University of California at Davis. The program focused on biodiversity, endemism, endangered and invasive species of plants and animals, Malagasy culture and language, and ecosystem diversity.

Four students worked with the health team. Ezz looked at the correlation between village infrastructure and the prevalence of parasites in children and adolescents near RNP using a 15-question survey and conducting a fecal sample analysis in CVB's lab. Amanda carried out an evaluation on local knowledge of emergency and critical care options available. Kylie and Cindy looked at reproductive health care access through surveys and interview, and Ian investigated what local perceptions of drone use for medical care. The results of these projects were presented at the University at Fianarantsoa in November to a crowd of over 100 students and professors.

### **University of Helsinki - RESPECT**

The RESPECT Course continued their Conservation Biology Study Abroad program after a one-year hiatus. The conservation-focused program, started in 2008, brings together students from Finland and Madagascar to experience conservation in the field for a period of four weeks. The students gathered ecological data comparing RNP and fragmented landscapes around the park, and got acquainted with social science methods to understand the complexities of conservation.

This year, students' focus was on vegetation, birds and pest control. They spent five days at the Vatoharanana camp site in the park, and five days at the village of Torotosy



### *Study Abroad Success Story*

Dr. Tanjona Ramiadantsoa said of his Stony Brook University Study Abroad experience at CVB in 2007, "This is where it all started for me". An applied mathematics major at the University of Antananarivo, Tanjona decided to join the program to learn more about biodiversity, a unique opportunity that he says he is glad that he took. His independent project involved creating a simple deforestation model specific to the village of Ambodiaviavy. After earning his Masters, he then moved to the University of Helsinki where he worked under Drs. Ilkka Hanski and Otso Ovaskainen. His doctoral research was on deforestation in the forest corridor, from Andringitra to Ranomafana, as well as on dung beetles. He was also a teaching assistant for the RESPECT program. Now on his second postdoctoral position at the University of Madison, Tanjona has returned to CVB for the second year in a row to teach an ecological modeling course.

to compare predation rates (by using play-dough caterpillars) in forest fragments and agricultural lands. They discovered that, although the forest fragments do not differ greatly in vegetation structure from plots in the park, the fact of being small and isolated translates into large impacts for biodiversity: bird species richness and abundance was particularly diminished in the fragments, and so was the pressure on caterpillars (i.e. reduced pest control). These findings were taken with interest by the villagers of Toroto-sy at a final seminar held in Malagasy language at CVB.

### *Volunteers and Interns*

Volunteers and interns continue to be an integral part of the work at CVB. This year, we were grateful to have the continued assistance of Linda Hansford, as well as from Beata Hranaiova of the Accounting for International Development non-profit, who both worked with our finance team. Julie Watts assisted families in house/latrine construction, community development and reforestation efforts. Julie Reniers and Nida Mirza were our lemur behavior interns. Chris Collins from SBU also helped teach statistical software use to CVB staff.

### **SBU Medical Interns**

For the second consecutive year, four first-year medical students engaged in 10 weeks of summer research. In conjunction with the Global Health Institute, the Institute Pasteur and CVB, Benjamin Schwartz, Liana Langdon-Embry, Emily Rosewood and Annabelle Jones researched the prevalence and cultural practices leading to neurocysticercosis by pig tapeworm in Ifanadiana District, along with assessing the efficacy of pro-type tuberculosis therapy. Jones and Redwood received funding from the prestigious David E. Rogers Student Fellowship by the New York Academy of Medicine.

### *Workshops, Meetings and Trainings*

CVB's facilities are utilized by partners and CVB itself to organize workshops, meetings and trainings. In 2017, the Rainforest Trust project funded two biodiversity training workshops for community members living around the Ivohibory Protected Area. Catholic Relief Services and Peace Corps organized a Youth Summit for 100 youth from the surrounding area. New CVB partner, Health in Harmony, held a training on how to use "Radical Listening" with communities.

CVB staff also has the opportunity to attend meetings and trainings off campus. Dr. Jean Claude Razafimahaimodison and Raivo Rakotonoele participated in the training on



“Dried Blood Spot” technique with Cassidy Rist, organized by PIVOT. Solo and his kitchen staff at CVB also received several trainings to add new dishes to their repertoire, one of which was with Guy Ralaizamary, one of Madagascar’s top chefs.

In July 2017, Dina Andrianoely traveled furthest of all to attend a prestigious international GIS training at the University of California – Davis and has returned with new map-making skills.

Staff presented CVB research during the Research Forum on Agrobiodiversity held in November at the University of Fianarantsoa, as well as at the first meeting of the Malagasy Primatological Society held in Tamatave. Dr. Jonah Ratsimbazafy, who received his doctorate from SBU, was the main organizer.

Dr. Wright gave a keynote address on the future of lemur conservation. Lovaso Razafindravony, coordinator of the “My Rainforest, My World” program, gave an excellent presentation on the development of radio podcasts for lemur education, and Ryan Rothman, CVB researcher, presented his work on seed dispersal by lemurs. Dr. Razafimaimodison, Dina Andrianoely and Paul Rakatonirina presented two posters, one on the diet of *Propithecus* in relation to reproduction, and the other on how the effects of climate change impact lemurs.



### *Malagasy Student Research*

Capacity building of Malagasy university students is an important component of CVB’s work. Dr. Jean Claude Razafimahaimodison, CVB Research Director, served on the advisory committees of **28 students** from the Universities of Fianarantsoa, Mahajanga, Diego, Toliara, and Antananarivo, resulting in 7 “**Licenses**” and **one Masters**.

### **Lemur Research**

Hantanirina Paulette Rasoarimalala  
Njiva Alexandre Randriambololonaritoky

### **Environmental Education**

Michelle Hiarimisanirina  
Marie Felicite Voahanginirina  
Fenosa Herivola Rakotonirina  
Fatoumata Bathily  
Harimalala Ernestine Ramanantenaso  
Jean Jacques Randriamiandrisoa  
Mamitiana Tolojanahary

### **Plant Biology, Use and Pollination**

Eloi Rajaonasy  
Eugene Mangalaza  
Andry Tahina Raharilanto  
Njaratiana Jose Rajoma  
Demetrius Ella Delphine Harisoamalala  
Hortensia Raharisoa Andritiana  
Emie Cristy Andrinirina  
Herilanto Alain Andrianjafy  
Nasolotafika Mahary Andriamananjara

### **Freshwater Ecology**

Tsiory Mashiyyat Ndriambola

### **Sustainable Development and Human Dimensions of Conservation**

Fenosa Herivola Rakotonirina  
Mazoto Minosoa Ines Manamihanta  
Fidele Razafimamonjy  
Georges Razafindramavo

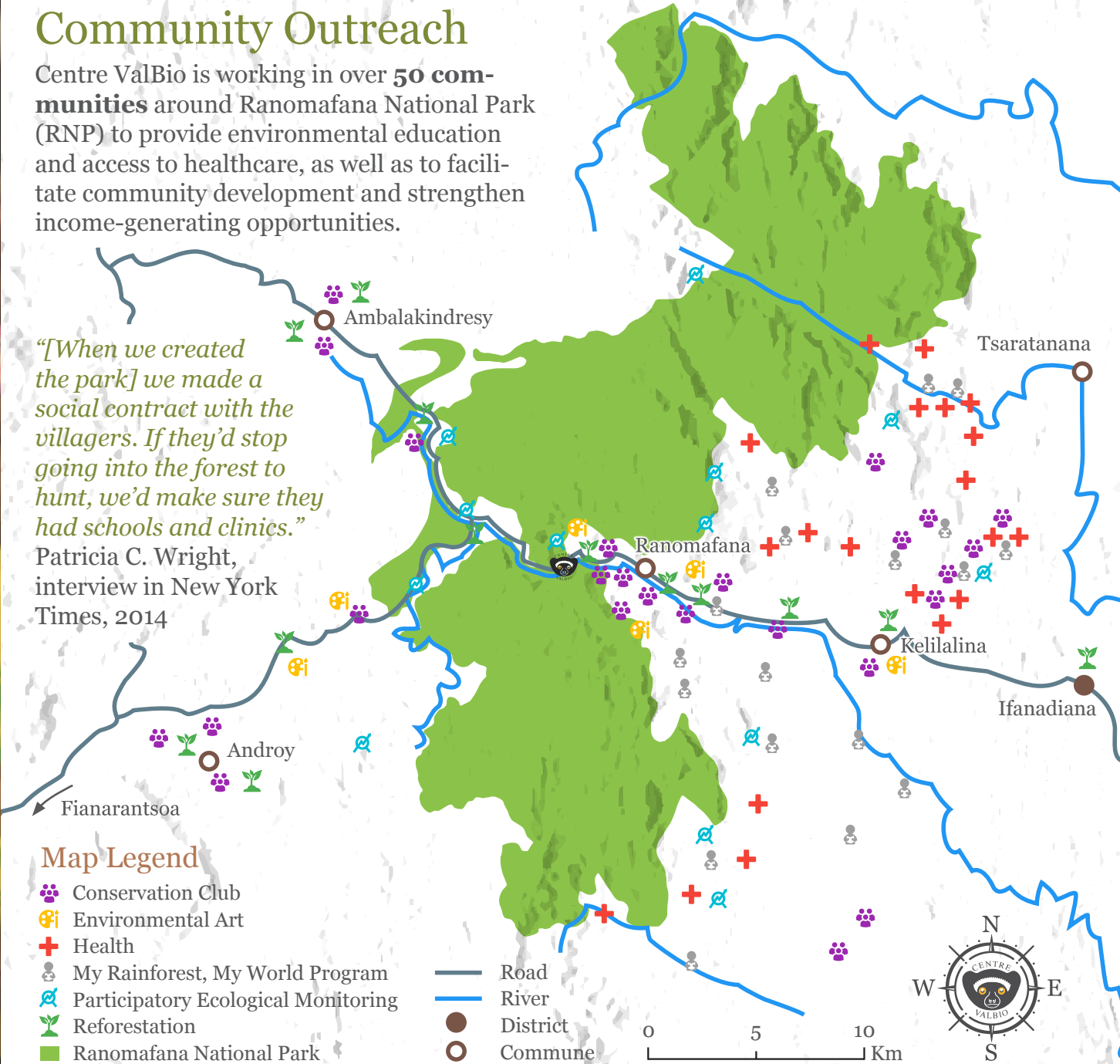


## Community Outreach

Centre ValBio is working in over **50 communities** around Ranomafana National Park (RNP) to provide environmental education and access to healthcare, as well as to facilitate community development and strengthen income-generating opportunities.

*"[When we created the park] we made a social contract with the villagers. If they'd stop going into the forest to hunt, we'd make sure they had schools and clinics."*

Patricia C. Wright,  
interview in New York Times, 2014



### Map Legend

- Conservation Club
- Environmental Art
- Health
- My Rainforest, My World Program
- Participatory Ecological Monitoring
- Reforestation
- Ranomafana National Park

- Road
- River
- District
- Commune

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## Environmental Education

### New Education Center

Thanks to Susan Cummings-Findel and the Sunshine Comes First (SCF) Foundation, CVB began construction on the new IUCN Save our Species (SOS)-SCF Education Center on the riverside of our lower campus. This center will have an amphitheater space for community members and school children to attend film showings, as well as musical and theatrical performances. It will also be used to highlight and share the research accomplishments by students, researchers and CVB staff to local people, authorities and partners.



### “This Lemur Life” Podcast Series

In 2017, CVB completed a 10-part podcast series and accompanying education pack about two Tanala children who learn about the different lemur species found in RNP. To thank everyone who contributed to the project, a celebration was organized at CVB in May. Actors, traditional storytellers from surrounding villages, schoolchildren, and local authorities were invited. Students from Menarano gave a wonderful performance based on the lesson featuring the bamboo lemur species. To spread the word about this new teaching tool, CVB and NGO Yes Tafita! held a two-day training in July with conservation partners from across the island.



### My Rainforest, My World

The My Rainforest, My World (MRMW) after-school program coordinated by Lovasoa Razafindravony, now in its third year, brings participatory science and critical thinking lessons to 3rd and 4th grade students in remote village schools surrounding RNP. Each lesson consists of classroom theory augmented with a mixture of games and other hands-on activities. This year, the program supported the creation of pedagogical materials contained in the “Herp Activity Pack” by CVB’s Artist-in-Residence, Rasolo. At the end of the second school year, CVB and the MRMW team were also very pleased to welcome Bruce and Charlene Bainum from the Three Graces Foundation, which has been supporting this successful program, and share with them the program in the Mandrivany school.

Remote village schools were chosen because these areas typically receive less support from the government compared with easier-to-access areas (e.g. villages along the road). For example, in the communities that we work in, only about one quarter of the teachers are paid by the government, while 75% are supported by the community.

For the first two years of the program, MRMW worked in **10** schools and had approximately **220 participants**. During the



2017-2018 school year, we are proud to have doubled the program to include **20 schools** and **453 students**.

Each MRMW class was able to visit RNP where they had the chance to see many of the lemur species found in the park firsthand. After the visit, wildlife artist Deborah Ross led a lemur painting workshop with the students in the park.

A main component of MRMW is the teacher training program. During the 2016-2017 school year, **three trainings** were organized. Before the start of the 2017-2018 school year, a two-week training was held with the 20 new intern teachers and 20 regular teachers, Madame Hanta Rasamimanana and her team from the *Ecole Normale Supérieure* in Tana, as well as Mr. Dave Naish from Bristol Zoo. Oakland Zoo has also been an important partner in MRMW training workshops, as well as generously donating school supplies.

Themes from the curriculum included “Grow your own Lunch” and “Echoes of the Forest”. Another element of the program is making upgrades to partnering elementary schools that are in a state of disrepair. This year, we focused on fixing up newly added schools. Community members contributed by gathering local materials like sand and clay.

In order to evaluate the students’ learning, at the end of each term, students present what they have learned to their parents and classmates. Presentations may take the form of poems, songs, skits or visual displays. At the end of the school year, all of the MRMW classes came to CVB to present on topics that they had learned during the year.

In Year II, we also initiated a school lunch program to provide a daily lunch of rice and topping (beans, peanuts, vegetables, fish or

meat) to all program participants. Providing healthy noontime meals is a great way to keep children in school for more hours of the day, while improving their focus in the classroom and significantly decreasing absence rates. Parents were happy to participate in the program, as it reduces financial pressure on families, by cooking, helping in the school garden (to deliver leafy greens and other vegetables for the lunch) and providing fuelwood, salt and oil.



*“This teaching program has been really beneficial for us. The teachers stay in the village. Students have school lunches and parents have less to worry about. Student learn about the animal in the forest and the environment. This teaching from CVB gives knowledge to our students”*

Ampanjaka (King) of Torotosy





## Rainforest Class

In addition to our work in remote schools, CVB works in **17 schools** near to National Route 25, including 12 primary schools, 4 secondary schools and 1 high school across two regions and three CISCO. In the 2016-2017 school year, **1624 students** directly benefited from this program.

The aim of the “Rainforest Class” is to guide students to better understand the value of Madagascar’s biodiversity and also raise awareness on the importance of conserving the environment. To achieve these goals, seven topics, including climate change, water and sanitation, Ranomafana National Park’s biodiversity and having a clean school environment, were taught.



## World Lemur Day

Every year for the past three years, a celebration of World Lemur Day has been held in Ranomafana at the end of October. This year, we decided to take the celebration out into the remote communities around the park living close to the forest. A delegation from CVB, along with partners from MNP, traveled to the villages of Torotosy, Ambodivoangy, Ambendrana and Vohiparara to show films about Madagascar’s emblematic lemurs, including the IMAX film, and inspired community members to join in the celebration with song and dance.

## Holtzman Lemur Education Outreach

A new project, funded by the Holtzman Wildlife Foundation, has allowed CVB to extend its lemur education program to school children and communities across the island. Thanks to our partner organization, MICET, the IMAX film, “Island of Lemurs: Madagascar”, was translated from English into Malagasy by Teach for Madagascar. We are also in the process of purchasing portable projectors and speakers and distributing them to partner NGOs throughout the island to enable them to show the film in the sites that they work in.



## Conservation Clubs

The “Conservation Club” Program, overseen by Rojosoanotahina Josia Caroline and Anne Louisette Rasolomampionona Heritiana, promotes local stewardship of the environment. In addition to building tree nurseries and planting native trees, club members work together to accomplish projects that connect reforestation with watershed protection and human health. Club members also identify the income-generating activities that they are interested in pursuing, such as agriculture, animal husbandry and artisan crafts, so that CVB can provide support and training.

Starting with 17 groups, an additional 18 were created in the 13 villages in the Communes of Kelilalina and Ambiabe during the Reforestation, Education and Community Development (RECD) project funded by Catholic Relief Services (CRS) in 2016-2017. CVB now works with these **35 clubs** (and **1590 club members**) on both the eastern and western sides of RNP.

Six Conservation Club members participated in the Youth Summit organized by Peace Corps and CRS held at CVB. The gathering focused on leadership and volunteer action in communities, as well as learning more about hygiene and natural disaster risk reduction.

In September, a two-day exchange meeting was held in Ranomafana, with members from Conservation Clubs across the 35 clubs sharing and learning from each other. Two representatives from each club were invited for a total of 73 participants. The culmination was the election of officers to create a Conservation Club Federation to officially unify all of the clubs.

Some Conservation Clubs also received bean and peanut seeds, as well as fruit trees. They are encouraged to use improved agricultural techniques in their planting in order to reduce the use of the slash and burn method (or *tavy*) on the hillsides.



## Community Healthcare

### Population, Health and Environment (PHE)

CVB became more active in the Madagascar PHE Network. After attending a regional meeting in Fianarantsoa, CVB volunteered to host and help organize a three-day regional workshop. The August meeting participants included PIVOT, Ny Tanintsika, USAID Mikolo, Marie Stopes Madagascar, PSI Madagascar & Madaworks. An outing was organized to the village of Ambalafisina to visit both the CVB Conservation Club and the PIVOT community health center there.

### CVB Mobile Health Team

This year, thanks to a generous anonymous donation, CVB expanded our health team. We brought on three new members. Dr. Ando, Tambatra and Solange (nurses) joined our existing team of Fara (midwife), Lova and Violette (nurses) and Telo Albert (community liaison). In this way, we were able to double the number of teams going into the field.

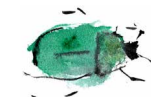
For several weeks each month, the CVB Community Health Team is on expedition to one of four “zones” to the east of RNP. Each zone currently contains five villages, for a total of

**20 target villages.** A total of **14 expeditions** were made by each group, and **three** joint expeditions (two teams together), for a total of **133 days** spent in the field over the course of the year.

During the expedition, a tent is used to create a mobile health clinic in which to see patients. In 2017, the Health Team saw **2,204 patients** of which 2,195 were treated and 9 were referred to the nearest health center.

The most common illnesses encountered were cough or cold (539 cases), malaria (244 cases), toothache (124 cases), high blood pressure (113 cases), bone and joint disease with signs of hypocalcemia or calcium deficiency (183 cases), digestive infections (113 cases) and skin infections (92 cases).

One of the goals of the Community Health Team is also to raise awareness about healthy behaviors. The method used to achieve this goal is the community meeting. This year, our team mainly focused our awareness raising on sanitation and hygiene. Over the course of the year, two community meetings were organized in each target village, for a total of **40 community meetings.** In addition to holding meetings, the team showed films about the causes of diarrheal disease, the importance of hand washing, how to build latrines, and the importance of having a separate kitchen from sleeping area.



In each of the target villages, we encouraged communities to construct one latrine and one separate or outdoor kitchen per household, and one garbage pit per every five households. We were most successful in convincing households in the Miaranony and Anka-zotsara zones to construct latrines, garbage pits and kitchens. In total, out of 1749 households in these two zones, **81 latrines, 81 garbage pits** and **67 kitchens** were built.

Through our continued partnership with the Ranomafana-based health NGO, PIVOT, CVB received **40 essential medicines** at no cost. In 2017, we also established a new partnership with the London-based NGO, Marie Stopes, which focuses on providing family planning and maternal health services in developing countries. In August, Marie Stopes provided a one-day training to the team covering both short and long-term family planning methods. Then in October, two Marie Stopes agents accompanied our team to the Mangevo Zone at the southern limit of RNP and provided **23 three-year implants**.

In addition to delivering medical care, the CVB Community Health Team were invaluable in their assistance facilitating health-related research for a large number of students and researchers.

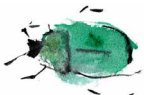
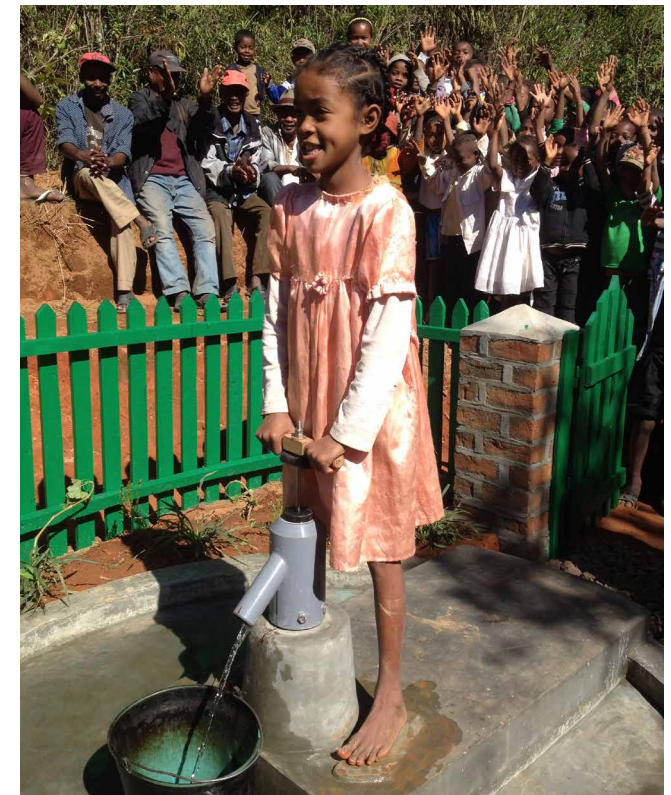
### **Stony Brook University Dental Mission**

For the 13th year in a row, Dr. Larry Wynn, along with Dr. Hamil Willoughby, led a group of dental students from Stony Brook University. Over the course of three weeks, they treated approximately **1,300 patients** at free dental clinics in Ranomafana and Kelilalina. In addition to the dental clinics, a ‘true needs’ assessment survey of **100 school children** was conducted in the village of Androy with the aim of using the baseline data collected to develop and introduce an oral health prevention program to the annual mission.

### *Community Development*

Through our partnerships with other NGOs, CVB is able to achieve an even wider impact into surrounding communities. The collaboration with Bergen Highlands Ramsey Rotary Club and NGO Ny Tanintsika resulted in the installation of a Canzee water pump in the village of Sahavondronina, with plans to install two more wells in 2018. Thanks to the famous spice guru, Mr. Recipe, we have received our second grant from this chapter of the International Rotary Club. Rotary Club also donated **1,000 shoes** to be distributed to local schoolchildren. **Three girls** from the middle school in Ambalakinresy were selected to receive a scholarship from Madaworks to help them attend high school.

Thanks to the fundraising of Dr. Stacey Tecot and many patient negotiations by Pascal Rabeson and Benjamin Andriamihaja, electricity was finally installed in Ambatolahy this past September. This is a major step in sustainable development of the region, and we hope that we can continue expanding access to electricity for villages around the park through the installation of solar panels. Together with PIVOT and the Commune of Ranomafana, we also worked to rebuild the central marketplace.



## Environmental Arts

CVB believes in the importance of supporting local artisans and musical groups. To this end, we provide a venue to display and sell their handicrafts, as well as a performance space and recording studio. We also support associations in receiving trainings and provide guidance on how to run small businesses (marketing, accounting, etc.).

**Four exhibitions** were organized featuring the artisan groups collaborating with CVB, including FAMIOVA scarf-weaving association, Association Soa Fianara embroidery project, Fidy's wood carving, tanala hat makers from Ambodiaviavy, and the Mae-va basket-weaving association. In addition, the EcoShop at CVB, which also sells rock paintings by Santatra, vetiver products from Tahiana Creation and iron sculptures from Nanie in Tana, as well as partners with Flamant Rose which works with artisans from across Madagascar, brought in over **\$2,000** during 2017.

Susan Cummings-Findel from SCF also visited twice this year and worked closely with these associations and many more, providing advice and funding when needed.

The traditional healers in the FIMARA association planted **500 ginger** and **1600 lemongrass** plants this year. After making



some minor repairs to their distiller, they are planning to start extracting essential oils in February of 2018. The paths in Mahatsarabe medicinal plant garden walk were repaired, and the “Green Pharmacy” in Ranomafana was also renovated.

Music creates connections, unites cultures and helps to spread ideas. In the CVB recording studio, we recorded **eight songs** with the Ahay an'Ala group, including the theme song for the MRMW program. We are planning to create the first album full of environmentally oriented songs by local musicians.

Finally, through our Artist-in-Residence Program, we welcomed Deborah Ross to the center twice, and welcomed back Alain Rasolo to create materials for our education programs.



## Looking Ahead

The next five years will be a transitional period of growth for CVB as we expand our programs in conservation, biodiversity, health, engineering and training, complete new buildings and develop the upper campus.

The new IUCN SOS Biodiversity Center will be completed. The first floor of this build-

ing will house collections of plants, insects, herps, and lemur fossils. The second floor will be offices for our long term research projects and as well as for the CVB research team. The NamanaBe Hall laboratory will also be restructured and expanded. The upper campus will have the Holtzman Wildlife Center, as well as a series of bungalows and a drone hangar.

## Research

Dr. Jean Claude Razahaimodison has been promoted to become a Professor at the University of Fianarantsoa and we will be hiring a Head of the Research Department as well as a Research Technical Advisor. As the demand for our biodiversity expertise continues to grow, we also plan to train and hire more research technicians, and have already hired a Research Liaison to facilitate between researchers and other departments at CVB.

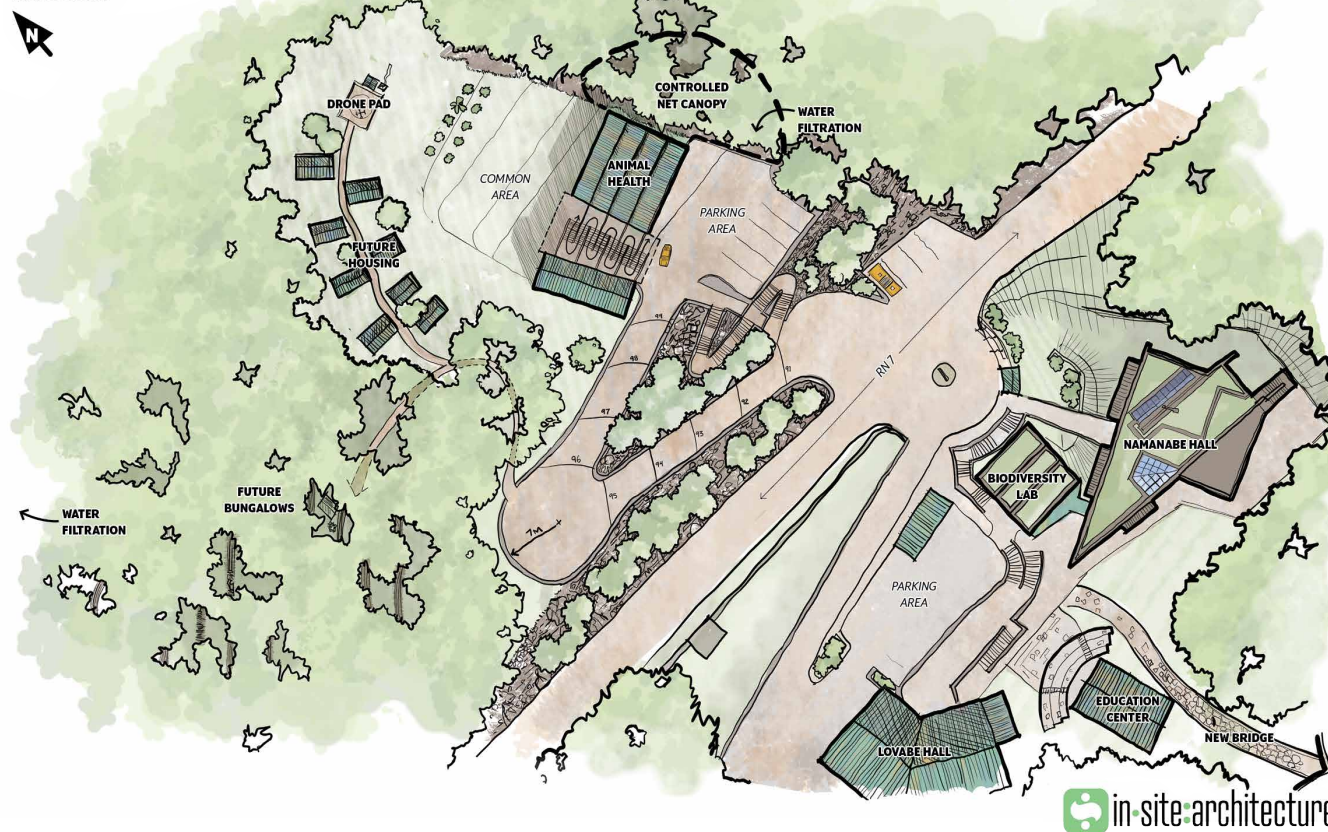
At the GHI-CVB interface, Dr. Roxanne Karimi will be teaming up with Dr. Luis Fernandez to investigate the use of mercury in gold mining, which presents a potential health hazard. We will also work further with Madagascar National Parks to seek solutions to the illegal gold mining affecting RNP.

We are working on permits to translocate more *Prolemur simus* into RNP next year using Holtzman funding, as well as to create a new breeding group of *Propithecus verreauxi* in Isalo National Park.

Our Global Health Institute drone program (DrOTS) will be expanded to include both health and conservation. We will also host a one-day Drone Summit in March. Our engineering programs, such as BeLocal, will be finding new solutions to village problems.

### SITE PLAN

Centre ValBio Master Plan  
Not to scale



## *Conservation*

We will continue to expand our research station model to many new areas in Madagascar.

In 2018, CVB will launch its “Forest to Sea” reforestation program. We will also continue to work closely with Rainforest Trust and MICET to develop two, if not three, new protected areas.

## *Capacity Building and Training*

In January, the E2M2 course led by Cara Brooke from UC Berkeley resumes. We will also host the African Lepidoptera Congress at CVB in 2018 and the 2nd Annual Ranomafana Planetary Health Summit.

CVB staff will attend conferences in Nairobi (International Primatological Society) and Malaysia (Association of Tropical Biology and Conservation) in preparation for the 2019 ATBC to be held in Antananarivo.

## *Community Outreach*

We plan to increase the number of community health team target villages around RNP. In addition, we will create a network of local health volunteers that can serve as “Health and Conservation Ambassadors”, continuing to spread health and education messages.

## *Partnerships*

As always, we are forging new relationships and strengthening existing ones. We will continue to work with the NGO Ny Tanintsika on installing wells for clean drinking water, and also hope to partner with them on cyclone relief and school repair. We also continue to forge new relationships, beginning with working with the University of Tamatave’s Institute for Environmental Science and Sustainable Development. Through our close connection to the University of Fianarantsoa, CVB scientists now have a venue to give guest lectures at the CVB Information Center.

We also continue our close relationship with the Seneca Park Zoo (SPZ) in New York, who recently funded one of our CVB researchers, Mahandry Andrianarisoa, to do studies on

DNA barcoding at the Smithsonian Institution, Washington, D.C. In 2018, Mahandry will be funded by SPZ to join CVB’s reforestation team. Oakland Zoo has been an important partner for “My Rainforest, My World” and we hope that this relationship will expand.

## *Sustainable Funding*

As part of our long-term goal to bridge conservation and development to create an economically stable future for the Malagasy people, we will seek new funding sources.

CVB will continue to be a model of innovation and inspiration for future generations. Thank you for being collaborators and helping to build, maintain and strengthen this incredible institution.



# 2017 Donor Acknowledgments

We are extremely grateful and wish to acknowledge everyone who supported Centre ValBio's work in 2017.

## *\$500,000 and above*

IUCN Save our Species Fund

## *\$100,000 - \$499,999*

Holtzman Wildlife Foundation  
Rainforest Trust  
Three Graces Foundation, Inc.

## *\$50,000 - \$99,999*

Susan Cummings-Findel  
The Herrnstein Family Foundation

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## *\$5,000 - \$9,999*

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## *\$1,000 - \$4,999*

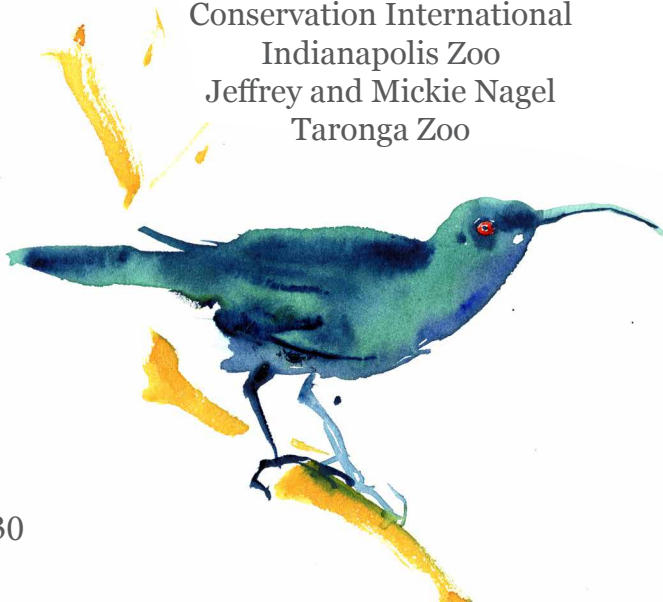
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Jeanne O'Neil, *Study Abroad Coordinator*  
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Fanny Cornejo, *Graduate Assistant*



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# Achieving Conservation Together





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