



wheelchair-Bound Rebecca Tripp explores Amazon canopies.

TREE Foundation Annual Report

October 31 2015

The Hermitage, Venice FL

President Gerri Aaron

Director Meg Lowman



TREE FOUNDATION

Dr. Thomas E. Lovejoy, President, The H. John Heinz III Center for Science, Economics, and the Environment
Honorary Board Chairman

Dear TREE Foundation Supporters,

1 November 2015

Thank you for your support of local and global forest conservation, as TREE Foundation celebrates 15 years of operation as one of Florida's premier conservation foundations dedicated to forests, and one of the world's few non-profits dedicated to grass-roots, local-but-global education and conservation of trees. And all of this success is due to your enthusiasm, generosity, and dedication to our mission: "Tree Research, Education and Exploration." Thank you on behalf of our board, research associates, and indirectly from the next generation whose lives are enhanced by your stewardship of forests. As the acceleration of global change is increasingly well documented, our mission is more important than ever, because healthy forests represent a critical inheritance for the next generation.

TREE Foundation continues to attract thousands of visitors to southwest Florida with two outdoor educational destinations: the nationally-acclaimed canopy walkway in Myakka River State Park of Southwest Florida, and the TREE Treehouse at Spanish Point historical site in Osprey, Florida. Visitors to Florida can now explore the treetops in Myakka, and then enjoy a lovely waterfront picnic at Spanish Point in our thatched chickee hut on stilts along the gorgeous edge of Sarasota Bay!

In addition to these two tree-friendly programs in southwest Florida, our global reach continues to expand: our website received almost 2 million hits over the past year, with outreach featured in 3 languages! Our church forest conservation in Ethiopia expanded from 4 forests to 12 nearly-completed, walled conservation forests in perpetuity under the stewardship of the Christian Orthodox church. We continue to expand our global outreach to women and children with sustainability programs in developing countries, including engagement of women in science in Africa through local outreach plus a scholarship program, distribution of conservation

books to children, and ongoing efforts in the Amazon and India. We will co-sponsored the 7th international Canopy Conference in London in 2016, and continue to offer limited scholarships to students and teachers in the Amazon rain forest citizen science expedition held every July. We now have a distance learning activity for middle school kids because one of our TREE children's books (**The Most Beautiful Roof in the World**) is part of the national science standards for approximately a dozen states. It is amazing that children around the country are learning about sloths, photosynthesis, and rain forest canopies; and they use the TREE Foundation as their primary source of information! Our distance learning has gone global as well, with thousands of students in India tapping into our TREE online programs.

Thank you to all our TREE donors, as well as our tireless board of directors and volunteers who create enthusiasm for our programs to educate, explore and study forests of the world. A summary of this year's ambitious activities is listed below:

Local Canopy Programs

1. **Myakka River State Park canopy walkway** – The treetop walk continues to represent a major tourist and educational destination for hundreds of thousands of visitors to Florida. Our annual inspection of the timber and joints has passed with flying colors, and the park continues its careful oversight to the maintenance of this incredible architectural wonder. National Geographic's new television program, "How To..." with comedian David Rees, featured "How to Climb a Tree" with our own Meg Lowman, and made mention of the Myakka canopy walkway destination as still one of the only such sites throughout the country.
2. **Virtual nature** – Our website has been expanded to offer educational opportunities about forests and forest canopies to diverse audiences with continued Amharic, Spanish and most recently, some segments of Chinese language. The section on Ethiopian church forests has detailed information on different forest sites, trees, status of the landscape, and expanded information about the conservation efforts. Watch for this to expand in 2016, with the input from ten undergraduate students who will be studying these forests *in situ* this summer with federal funding from National Science Foundation. We have exceeded 3 million hits per year with both of our canopy

websites. An increasing number of students continue to blog and write emails to TREE seeking information about forests and conservation! Our mobility-limited student canopy scientists also continue to feature on our website, including star wheelchair-bound student Rebecca Tripp who will blog this summer from her lifelong dream of research in the Amazon jungles. TREE is partnering with new forest conservation programs around the world, including EO Wilson's Gorongosa programs, a new initiative to save 1 million acres in the Congo River basin, and expanded studies of India's forest canopies. CanopyMeg has been approached to advise the King's Challenge in Bhutan, for a new and expansive canopy walkway and field station construction!

3. **Education outreach** – A children's book was published by our research associate, Dr. Worku Mulat, along with director Meg Lowman. Called "Beza – Saving the Forests of Ethiopia, One Church at a Time," this colorful volume tells the story of a young Ethiopian girl who starts a forest conservation program in her village. For every copy sold in English on amazon.com, a free copy in Amharic language is distributed to an Ethiopian child. We have shipped hundreds of books to Ethiopian schools and will continue to do this, as a means of both educating children about the values of the forests, but also empowering girls in science. Please purchase these books, and you will be educating Ethiopian children as well as buying a great gift!
4. **Training the next generation** - TREE continues to sponsor several student scholarships and educational programs throughout the past 8 months. High school minority science teacher and TREE Research Associate, DC Randle, continues to teach the local Peruvians at our Amazon canopy walkway site about American science education and wildlife management, and TREE donated useful science books to Amazon teachers and river schoolhouses. DC will also take on the role of engaging school groups to fund-raise and take field trips to the Amazon rain forest. We will christen a third water purification plant in an Amazon village this summer, thanks to TREE donors who have participated in our research expeditions. Students in developing countries, including India, Taiwan, and Ethiopia, continue to receive forest science books, thanks to the Spurlino Foundation's generosity. Several donors have contributed to the sponsorship of an Ethiopian

girl to train in forest conservation at the University of Maine. Under the mentorship of our Executive Director, she will be the first woman from northern Ethiopia to gain formal training in conservation, and return to educate rural Ethiopian women about the value of trees.

5. **Environmental Lecture series** – TREE Foundation’s Fedder lecture series continued in partnership with University of South Florida at Bradenton last fall. A standing-room only crowd enjoyed a talk about the newest biodiversity exploration: microbes living in your body! CEO James Burgess of the new start-up non-profit called Open Biome in Boston, Massachusetts spoke about the incredible importance of microbes for human health, and some of the new medical advances for treating digestive ailments with a simple process of “poop transplants!” We were delighted that our benefactor, Joel Fedder, was able to attend this event; and lament his passing just a few months later. He was a true believer in the importance of forests, and will be greatly missed. The memorial Fedder lecture will be a nature reading on the beach at the Hermitage, featuring several nature writers and TREE’s own CanopyMeg.

National and International Activities

1. **National Environmental Education** – TREE has expanded its national reach, with our Executive Director taking on the position of Chief of Science & Sustainability at the California Academy of Sciences. This venerable institution, called the Smithsonian-of-the-West, is one of the world’s five largest museums and one of the first to embrace “sustainability” as part of its mission. TREE programs for girls in science, global conservation outreach, and forest policy now have an expanded mission on the Pacific Rim. Lowman chaired a Forest Sustainability Summit in San Francisco last January 22. TREE sponsored the participation of 2 minority forest scientists at the Summit. She also chaired 2 Academy Summits: Eye on the Environment – Drones for Conservation (Sep 17, 2015), and Women in Science (January 28 2016) which will continue to provide visibility for a shared mission between the Academy and TREE.

2. **International Canopy Conference** - TREE Foundation will co-host the 7th International Canopy Conference at Roehampton University campus, outside London, next August 2016 (postponed from 2015). TREE Executive Director, Meg Lowman, is part of the steering committee for this event, and TREE will co-sponsor a session on Forest Sustainability as part of the program, working with our partners in Ethiopia and India.
3. **K-12 Education Outreach** – Dr. Lowman has participated in distance learning modules for hundreds of middle school students through the USA, because a children's book (The Most Beautiful Roof by Katherine Lasky, written about Lowman's canopy exploration) is now part of the required NGSS (Next Generation Science Standards) for approximately a dozen states. The students write to Lowman, asking questions, and then classes engage in live Skype sessions where they have conversations about rain forests, scientists, and biodiversity. In addition, thousands of students in India have done similar virtual classes, expanding TREE's global reach of aspiring new canopy scientists!
4. **Scholarships** – Thanks to individual TREE donors, we now have 2 women-in-science scholars from developing countries. Tizezew Sisay from Ethiopia is studying for her Masters degree in Women and Environmental Studies at University of Maine as a TREE Scholar; and Sky Lan from Taiwan is working toward her masters in Canopy Science at Oregon State University. Congratulations to these young pioneers who will return to their countries and become role models for many other young women.
5. **Citizen Science Expedition to the Amazon Canopy** – TREE co-hosted our 25th annual citizen science expedition to the Amazon forest canopy, taking 29 enthusiastic volunteers this summer of 2015 to conduct research and assimilate the culture of this amazing region. In addition, our group generated local revenues for villagers who find employment supporting ecotourism (instead of logging). Everyone was blessed by a shaman, and will contribute to research on tropical rain forest health by measuring insect damage to the canopies. This summer, our team includes additional new research projects from California Academy of Sciences researchers: mapping the canopy with drones; studies of insect disease vectors in the canopy; and a

special research project on Inga (one of the most important timber species in Peru). Of note, TREE helped to sponsor our first mobility-limited student to participate in this life-changing expedition. Rebecca Tripp, who works on water bears, was part of the team and made her own canopy collections of these extremophile organisms. Check out her blog in this annual report.

6. **Ethiopian forest conservation** – TREE continues to be a global force in the conservation of the last remaining forests of Ethiopia. Thanks to Board members Cy and JoAnne Spurlino, TREE now has one new environmental education (or demonstration) forest plus 12 forests with locally-constructed stone walls, and several more on the way. This means that cattle are excluded from eating the seedlings and farmers' plows will not ring-bark and stress the edge trees, leading to their demise and ultimate shrinkage of the church forests. These small plots house the last remaining biodiversity library for Ethiopia, fresh water springs, medicinal plants, honey, pollinators, shade, tree roots that conserve soil, and an important spiritual site. Colby College and Colgate University are both partnering with TREE, to collect information on both the ecology of the forest patches, and also the social science aspects of forest conservation in rural Ethiopia.
7. **NSF GRANT for Ethiopian forest conservation** – In partnership with Colby College, Dr. Lowman has received a grant from the National Science Foundation for the next 3 summers of field research in Ethiopia. Eight undergraduate students accompanied Dr. Travis Reynolds from Colby College this past summer to study pollinators and other ecosystem services in the church forests of Ethiopia. The unique project not only gathers new information about forest canopies, but trains undergraduates as the next generation of scientists.
8. **Mobility-limited students** – A federal grant from National Science Foundation is also funding the next 3 summers to train wheelchair-bound students to climb trees and conduct research on micro-arthropods including water bears. Eight students trained in 2013, finding over 3000 water bears of which 4 were new species! Eight additional new species were discovered in 2014 and more to come for 2015! Students presented at several national conferences, and

generously donated the naming opportunity of three of the water bears as fund-raisers for Ethiopian forest conservation. Another eight students will be selected for summer 2016. It is an inspiration for all of us to see the photographs on our TREE website of these students, vaulting from their wheelchairs onto the ropes and harnesses! Go team!

These are some of our highlights for TREE Foundation 2015. Thank you for your support of trees and forests! We look forward to making the world a better place for the next generation. Pictures follow that illustrate some of our 2015 programs.

Woman-in-Science Scholar, SKY Lan from Taiwan

Short report for TREE FOUNDATION

Yung-Hsiang "Sky" Lan

The scholarship from TREE FOUNDATION helped me a lot to survive in US for the first year studying, especially I did not have any funding in the first term. The scholarship allowed me focus on my study designs and coursework instead of finding money.

I had taken many classes during my first year: "Posing Research Questions", basically Statistics "Data Analysis", "Global Forest Ecology and Climatology", "Tree-climbing Methods", "Forest Insects and Disease", "Physiology of Plants", and "Advanced Forest Soils". I also attended the poster section of Western Forestry Graduate Student Research Symposium in April 2015, and won the first award of Department of Forest Ecosystems and Society.

Besides, I had been the TA of "Forest photogrammetry and Introduction into Remote Sensing" in Winter Term 2015, assisted in leading the labs and helping students figure out the problems about photography programs. In Spring Term, I work with SNCC (Swiss Needle Cast Cooperative) for SNC (Swiss Needle Cast) sample collection and lab measurements. It was a good way to involve the relationship between disease patterns, foliage nitrogen and soil nitrogen, as well as vertical canopy. And I can use these data for part of my dissertation after SNCC releasing it.

In addition, I have already organized the outline of my dissertation. I would study the relationship between canopy structure, microclimate, and SNC severity among different ages of Douglas-fir forests in Oregon. (I attached my study plan in the end) I have started to work with SNCC and EPA (Environmental Protection Agency), to collect the data for my researches.

I am really LOVE old-growth forests because of my home country Taiwan and my past experiences. It is also amazing studying in Oregon while climbing giant tall Douglas-fir trees. I hope I can climb more and study more about the old-growth forest canopy, then try to deliver how amazing they are to general people!

Thesis plan

Swiss needle cast (SNC) is an endemic disease of Douglas-fir caused by *Phaeocryptopus gaeumannii*. The fungus infects newly emerged needles between April and August via stomata. As the fungus develops, the fruiting bodies (pseudothecia) block the stomata and affect gas exchange, dramatically reducing the photosynthesis rate in infected trees.

Based on observations, SNC is more severe in young trees than in mature trees. Since leaf wetness may be a crucial factor for fungus reproduction, we hypothesize that the complexity in mature forests may cause several different microclimates, which is the key for needle infection susceptibility. We expect that there is more diversity of structure and micro-environments in mature forests than in young forests. Our question is, what is the relationship between canopy structure, microclimate, and SNC severity (% of stomates occluded by pseudothecia) among

different ages of Douglas-fir forests?

To answer this question, we will climb three trees at 4 paired young and mature forest sites (each about 120 years old) to measure the tree, crown, and branch characteristics of Douglas-fir, as well as set up meteorological sensors to record the temperature and humidity on low-, mid- and top-canopy position. Also, we will sample 1-year and 2-year needles near the sensors and analyze the severity of SNC by counting the percent stomata occluded by pseudothecia.

We only know about the ecology of *P. gaeumannii* in young forests so far. This study will provide increased knowledge on SNC disease in mature forests. In addition, we can use canopy station data to learn more about the relationship between disease and climate, and ultimately make inferences on climate change issues.





TREE virtual field trips via SKYPE
to classrooms in India

BLOG by Mobility-Limited TREE Scholar to Amazon

REBECCA'S AMAZON ADVENTURE

As our plane began its descent toward Iquitos, Peru, I knew I was in for the adventure of a lifetime. I had been anxiously awaiting this trip – my very first international flight – for the past several months, but nothing could prepare me for what I saw outside the airplane window that first day. Witnessing the vast power and beauty of the rain forest as it stretched out before me, extending as far as the eye could see in every direction and disrupted only by the mighty Amazon River snaking its way through the dense foliage, I was so overcome with emotion that I found myself choking back tears. Even recounting it now, simultaneously seeing that view again in my mind's eye while contemplating the region's vital importance and vulnerability, I can see the ripples of goosebumps making their way up my arms, and feel the telltale lump rising in my throat. It is quite possibly the most extraordinary thing I have ever seen in my life.

I was immediately engulfed by a wave of hot air as I exited the plane shortly thereafter, and was carried carefully to the ground in my wheelchair by a group of strong, young men. I collected my bags inside the airport, along with the thirty scientists, students, teachers and nature enthusiasts who would be my travel companions for the next week. It was here that I first met Roldan, one of the incredible local guides whose knowledge and kindness would prove indispensable over the next several days. He accompanied me by taxi as we traveled past the slums and litter that lined the congested, hectic streets of Iquitos, cars, trucks, motorcycles and tuk-tuks (three-wheeled rickshaws) weaving in and out without directional signals or designated lanes to maintain any sort of readily apparent order. We met up with the rest of the group, who traveled by bus, at the headquarters of Explorama, whose four lodges we would be staying in at various points along the river. I had communicated via email with Pam Bucur, Explorama's General Manager, prior to my departure from Maine, and was grateful to finally be able to thank her in person for all of the hard work she put into making everything as accessible as possible, including the installation of ramps and elevated floor coverings at the different lodges, as well as making sure there were plenty of staff members on site to assist me as needed.

We would spend the next week traveling by boat, as roads in this part of the rain forest are nonexistent, and in fact Iquitos itself has no roads connecting it to the rest of Peru. That very first boat ride to our first destination was one and a half hours of pure wonderment. My head was on a swivel as I attempted in vain to take everything in: the stilted, thatched-roof huts with cattle, sheep and chickens roaming the yards, and children's dark-skinned faces peering through the glassless windows; local fishermen out hoping to catch dinner for themselves and their families, smiling and waving as we passed by; the sounds of many mysterious, unseen birds getting ready to call it a day; the sun lowering in the sky behind large, majestic trees with serpentine roots reaching down over the river banks toward the water's edge; the inevitable signs of "progress": logs floating down the river and the heavily-laden barges from which they tumbled, drifting among plastic Coca-Cola bottles; and a million more things invisible to the naked eye and not easily expressed in words.

I had been told beforehand that the lodges we'd be staying in were pretty rustic, so I was surprised to find that most of them had running (although not drinkable) water,

generators, and even Wi-Fi. Not expecting any of these amenities, I left all electronic devices at home, and am so glad I did. Being unplugged from the outside world allowed me to reconnect with nature in a way I couldn't have done otherwise, heightening my senses and giving me a renewed sense of awareness and appreciation for my immediate surroundings. I fell asleep to the sounds of exotic birds every night, with background noises that were reminiscent of Maine in the springtime, when everything is reawakening and expressing the sheer joy of being alive. Despite the unexpected modern conveniences at the lodges, the showers were cold, a single kerosene lantern kept the bedrooms dark and inviting to bats, since the walls were open at the top, our beds were tented with mosquito netting, and bottled water was necessary for drinking and brushing our teeth. My headlamp became my new best friend, and I made a habit of taking my camera with me every time I made a trip to the outhouse, where others had seen bats flying out of the toilets and tarantulas creeping along the walls. Dr. Meg Lowman, without whom I never would have been on this incredible journey, has been leading this citizen science project in the Amazon for many years, and recalled a sloth crawling out of a toilet during a previous expedition. The most exotic creature I encountered on my way to the loo, however, was a stunning, iridescent blue morpho butterfly, who moved far more quickly than I, and although the photo opportunity was lost, the magic of the moment was not.

Each day of this surreal adventure was filled with a number of activities, which varied as we moved along the river between lodges. Most mornings began with an optional 6 AM boat ride with our native bilingual guides, who were quick to notice and identify various species of trees, plants, birds, fish, butterflies and the occasional sloth. They could spot the tiniest bird in the farthest tree amidst a tangle of leaves and branches from a speeding boat with their naked eye and immediately tell you what it was. I would spend the next ten minutes trying to find it with my binoculars and failing miserably. It saddens me that this incredible skill is being lost, along with many aspects of the traditional culture, as the area's youth strike out for the city in search of something "more." Nighttime adventures included surveying insects on forest trails alongside one of our group's entomologists, as well as boating on the Amazon River to explore the expansive night sky, which flashed with lightning and brimmed with planets and stars and shooting meteors. Meals consisted of amazing local foods: mangoes, pineapple, fried plantains, sweet potatoes, rice, beans, lentils, salads, tomatoes, the largest cucumber and carrot slices I've ever seen in my life, all dressed with fresh, delicious lime juice dressings, and so much more. Being vegan, I wondered how limited my options would be, but I had more than enough incredible dishes to choose from, and even the simplest of foods had the most intense flavors.

One of the most memorable events of the trip took place at our first destination, Explorama Lodge, where we were welcomed by squirrel monkeys and saddle-back tamarins, who were often spotted racing through the trees just outside the dining area. This is also where I met Denis, my Peruvian knight in shorts in tee shirts, who was so instrumental in getting me everywhere I wanted and needed to be. He didn't speak much English, and I didn't speak much Spanish, but we somehow understood one another perfectly, and I couldn't have been in better hands. Our group spent its first full day interacting with and learning about the indigenous Yagua people, who engaged us in dance, played beautiful music with handmade drums, flutes and maracas, taught us how to repair fishing nets, weave baskets,

bags and roofs, make clay pottery and natural dyes from local plants, and even how to use a blowgun. Some wore cargo pants, shorts and tee shirts, while others wore their traditional garb of dried grass skirts and tops. That afternoon we trekked a short distance through the forest to their village, where we danced and enjoyed music in the large, circular, thatched-roof hut that all of the village members called home. Outside, we had the opportunity to purchase their handmade crafts, or engage in trade with clothing that we had brought. It was here that I got to hold a little three-toed sloth, helping to make this an experience I will not soon forget.

Farther up the river at ExplorNapó Lodge, we met trumpeters (birds) named Kevin and Raoul, and a resident capybara named Charlie. We visited a local school, where students clad in skirts, trousers, button-down shirts, ties and berets greeted us with drums, horns, tambourines, cymbals, waving hands and smiling faces. The teachers and school kids alike clearly went out of their way to prepare for our arrival, singing, dancing, introducing us to local foods like coconut and yucca root, and bestowing us with handmade gifts of necklaces, woven fans and baskets. Since I couldn't access the facilities there, I left early to start my work on leaf herbivory (specifically, measuring the consumption of leaf material by insects), while the rest of the group stayed to play volleyball and soccer with the kids.

The following day we visited an ethnobotanical garden, located a short distance through the woods from ExplorNapó, where we learned about local medicinal plants from a shaman, who also blessed each of us in turn during a ritual that involved chanting, shaking clusters of leaves over and across our bodies and exhaling smoke onto the crowns of our heads. Those of us who wanted one were also gifted with a temporary tattoo drawn by the shaman, mine being a scorpion surrounded by beautifully detailed tribal symbols. The afternoon was spent piranha fishing to catch the evening meal, and although I didn't fish, I used the opportunity to enjoy another boat ride and observe life on the river.

Much of our remaining time was devoted to scientific work, collecting leaf and insect samples from the forest canopy at the Amazon Conservatory for Tropical Studies (ACTS). Although I could not physically join the others on the quarter mile long canopy walkway, I was able spend the day with them at ACTS, where I helped process leaves that had been collected from various tree species. We spent our final night at Ceiba Tops, an entirely new world with a swimming pool and rooms with large beds, air conditioning, flush toilets and hot showers. There I saw a tapir and a gorgeous masked crimson tanager, but the highlight of the night was the after dinner entertainment. Young members from the local Indiana village performed various dances for close to an hour, showcasing significant aspects of their culture through movement and some of the most extraordinarily beautiful music I have ever heard, which was comprised of strings, drums, maracas and a wooden flute played so melodiously it could make you cry.

Saying goodbye to the Amazon and its people was not an easy thing to do. It took a very large team of individuals, both in the States and in Peru, to make this amazing experience a reality for me, and I will be forever grateful to each and every one of them. Our Peruvian guides – Roldan, Ricardo and Willy – as well as the other staff members, and most especially Denis, will always share a special place in my heart. They truly went above and

beyond to make this dream of mine come true, physically lifting and carrying me from place to place, up and down numerous stairs and steep, slippery riverbanks several times a day, so that I could participate in as many activities as possible. No matter how difficult or strenuous, no matter how seemingly impossible, they would find a way to make it happen. Always with a smile, always with a kind word and a hug.

I honestly had no expectations going into this adventure, but even if I had, my experiences would have far exceeded them. The brief time I spent in the Amazon had a profound, and undoubtedly lasting, impact on me, reinforcing my commitment to living simply, being present, and being fully aware of the rippling effect my words and actions have on the world around me. More than anything, it reminded me how very fortunate I am, filling me up with pure, unadulterated gratitude for being alive and having the opportunity to experience life on this extraordinary planet, something I have vowed never to take for granted. BIG THANKS to TREE Foundation, to Explorama director Pam Becur, to Christa at Eco-teach, to California Academy of Sciences, and to my mentor, Meg Lowman who first proposed this audacious idea!



Rebecca in The Shaman's Hut !



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Hanoi, May 25th, 2015

To:
Margaret (Meg) Lowman, PhD
Chief of Science and Sustainability
Institute for Biodiversity Science and Sustainability
California Academy of Science

LETTER OF THANKS

Dear Dr. Meg Lowman,

On behalf of the Vietnam National Museum of Nature, Vietnam Academy of Science and Technology delegation, I would like to express my sincere thanks to you and your museum staff for warmth reception and thoughtful guide for the VAST delegation. I am very impressive with the the exhibition and the facilities in your museum, especially, the living roof, the section of explore the planet that make all of us impressive from the beginning to the end, the visit would be beneficial to our construction of the new natural museum.

I believe that in the near future, our two museums will expand the collaboration relationship in terms of scientific research, exhibition, museology.

I appreciate your help.
Thank you again for your time and support.

I look forward to our collaboration.

Sincerely,



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The Viet Nam Museum exchange with California Academy had its genesis with the partnership of Kha Le Huu and Selby Botanical Gardens, Florida.

1. PROJECT TITLE

'Saving Ethiopian Church Forests and Their Biodiversity One Forest at a Time'

2. PROJECT PURPOSE AND OBJECTIVE

The main purpose of the project is raising the awareness of the local community and excluding Livestock intervention which have been seriously hampering tree regeneration and then ultimately threaten the survival of church forests of Ethiopia (Fig1).

The main objective is to build fences around the church forests and there by improve tree regeneration and ensure the survival of the forests and their biodiversity.



Fig 1. Typical Ethiopian Church Forests threatened by livestock grazing

3. PROJECT ACTIVITY AND ACCOMPLISHMENT

The main activity of the project was fencing the selected church forests and launching briefing and sensitizing seminar for important stakeholders for each forests.

3.1 Fencing

The main objective is to build fences around the church forests and there by

- block livestock entrance in to the forest
- stop further encroachment by farm land expansion
- clearly show the boarder for legal land use right

The fence are made of stones (stone walls as seen in the Fig 5) with three gates made of iron bars for each forest. The dimension of the walls are/will be:

- The height of the wall will be 150 cm above ground with 20 cm buried in the ground
- The width of the wall will be 70 cm
- The Gate size will 3m width by 3m height (framed with Angle Iron doors)



Fig 5. Typical Stone wall

3.2 Awareness Creation

So far four workshops and seminars were held (Table 2). The purpose of the seminar was to discuss on the challenges and opportunities of church forests for ecological restoration and biodiversity conservation their by create awareness for the sustainability of church forests.

The participants were major stakeholders of church forests at Zonal and Woreda/District level, mainly:

- Ethiopian Orthodox Church officials including the Arch Bishop
- Rural development and Agriculture offices' head and experts
- Culture and Heritage affairs offices' head and experts; and
- Representatives of the local residents

Moreover to increase the awareness of the local children about church forest and biodiversity particularly insects :

- 120 printed t-shirt were distributed for school children around Zhara and Debresena
- School stationary were donated for 65 students

The overall outcome of the seminar and children teaching was creating consensus and synergy among government officials, church officials and local community to conserve and restore church forests. **As a result, currently the church forests have got more attention and respect more than ever before.**

3.3 Capacity Building

3.3.1 In order to strengthen the capacity of managing and following up of church forests training cost support amounting 2000 USD was granted for the Diocese of South Gondar in 2013 and 1000 USD for Farta District Church Administration office in 2014. This money was used to cover the cost of training for district and parish church leaders.

3.3.2 In order to raise the role of women in forest conservation and decision making capacity, one young Ethiopian woman who basically was a trained forester and worked for rural women development projects has been funded by Tree Foundation for post graduate studies at University of Maine, USA.

Ser No	Name of The Church	Area of Forest	Species	Family	Dead Stumps/ Ha	Cattle trails /plot	% Wall Completed	GPS Location	
1	Abegeldi	14	19	17	91	4.1	0	N12° 09' & E38° 07'	
2	Alembor	14.5	37	27	141	2.3	0	N11° 54' & E37° 53'	
3	Amstya	22.8	41	30	53	1.3	0	N12° 01' & E38° 04'	
4	Ascha	1.6	22	18	128	3.2	0	N11° 43' & E38° 28'	
5	Asolit	7.7	36	24	14	1.3	0	N11° 41' & E38° 35'	
6	Debresena	11.5	34	27	119	1.3	100	N11° 51' & E37° 59'	1
7	Deder	14.4	22	19	88	3.4	0	N11° 32' & E38° 14'	
8	Dedim	36.6	22	19	125	4.3	0	N11° 47' & E38° 12'	
9	Dengolt	25	36	28	41	3.3	0	N11° 36' & E38° 04'	
10	Emashenkor	3.4	38	25	12.5	0	100	N11° 42' & E37° 37'	2
11	Enshet Kuskum	6.3	26	19	52	1.2	0	N11° 37' & E38° 32'	
12	Gedamselase	15	74	41	74	2.4	0	N11° 21' & E38° 10'	
13	Gelawdios	100	42	29	32	2.4	0	N11° 38' & E37° 48'	
14	Gibstawit	8.7	35	24	130	2.3	0	N12° 07' & E38° 05'	
15	Gunaguna	6.9	34	24	138	1.1	0	N12° 03' & E38° 06'	
16	Hiruy	4	31	26	29	0.2	100	N11° 51' & E38° 03'	3
17	Mantogera	5	44	29	149	4.4	0	N12° 09' & E37° 47'	
18	Mekedesemariam	4.7	33	21	33	0.9	0	N11° 19' & E38° 12'	
19	Mosha	7	43	32	42	0	80	N11° 26' & E37° 56'	4
20	Qorata	48	60	32	52	1.3	0	N11° 45' & E37° 26'	
21	Quar	3	34	25	69	3.3	0	N11° 51' & E37° 40'	
22	Shamo	10	58	37	129	3.7	0	N12° 07' & E37° 53'	
23	Woji	22.5	39	24	144	4.2	80	N11° 55' & E37° 48'	5
24	Wonberoch	35	15	12	117	3.2	0	N12° 11' & E38° 00'	
25	Wonkesht	50	78	44	61	2.2	0	N11° 30' & E37° 37'	
26	Wuahir	8.4	30	26	86	2.4	0	N11° 51' & E38° 05'	
27	Zagua	6.8	33	29	94	1.1	0	N11° 42' & E38° 02'	
28	Zhara	8	29	22	41	2.2	100	N11° 48' & E37° 34'	6
29	Geregera	5	30	24			100	N11° 44' & E37° 37'	7
30	Wonchet	7	27	24			70	N11° 45' & E37° 32'	8
31	Zegura Medhanialem	12	36	32			50	N11° 37' & E37° 57'	9
32	Goha Mariam	5	30	25			60	N11° 38' & E37° 37'	10
33	Bata Mariam	7					90	In Bahir Dar	11



TREE Scholar Tizezew Sisay
works with local Ethiopian women
about environmental stewardship.

Letter to TREE from Tizezew Sisay:

በጣም አመሰግናለሁ! Thank you so much!

Your support has made me a stronger person and I will forever be grateful.

For ten years I worked in different programs that focused on the environment, women, and children. Almost all of my work focused on rural peoples' lives, especially women and the environment. Those experiences drove me to study environmental degradation and women. Empowering women will change all the family, continuing to improve lives throughout the community and improve the environment.

Working in different government and non-governmental programs gave me the chance to witness and experience the social, cultural, and economic challenges faced by people living in rural areas, especially women. I started out by serving as a national forest and agro-forestry officer, producing and providing seedlings for rural subsistence farmers. After that I joined a different government program that worked to increase access to water, and create awareness about sanitation, hygiene and minimizing women's workload. These two opportunities were created as a result of my forestry diploma. Knowing this I dreamt of doing more, my belief in the power of education made me start to pursue a degree in economics, working by day and studying at night. Working and at the same time taking classes, it was a tough time, but I did it because that was the decision I made. I believed this schooling was the first key to empower me to do things that have to be done, to increase the opportunity and the number of people I would serve. After getting my BA, I had the opportunity to join a non-governmental program that works with people who have HIV/AIDS and were orphaned because of HIV. After that I continued my work with rural people with another program that works to eradicate harmful traditional practices and opens girls' dreams, especially by stopping child marriage.

Additionally, I began working with my former college professor Dr. Alemayehu Wassie on his lifelong mission to study and preserve the last fragmented natural forests of Ethiopia. Much of the remaining forest in my home region of Amhara has only survived because of the Ethiopia Orthodox Church, which has protected church forests for centuries (even though at this time many church forests are endangered). It was Dr. Alemayehu, my first mentor, who introduced me to his U.S. colleagues, Professor Meg Lowman and Professor Travis Reynolds, who to my amazement have crossed oceans to help save the church forests. I saw again how much education opens up the possibilities for people who want to help to connect with those who need it the most. Dr. Meg and Dr. Travis can do their work because they have higher levels of education. This strengthened my dream to make a difference in Ethiopia, and my first step would be education. I continued working and kept dreaming to one day have the chance to reach the next education level. At first it was only dreaming because there was not any chance I could do it by myself. It was beyond my economic level, and also my dream is to learn in the place that has the best quality education, real education that makes a difference.

The miracle was started when I met Dr. Alemayehu, Dr. Meg and Dr. Travis, and told them my dream and brought them to different meetings, discussions, and visits to my work

village. After all this they promised me to try to do anything that they could do and they helped make it happen. In 2013 they invited me to the U.S. to share my experiences with their university communities. The first was at Colby College in Maine and the second at North Carolina State University. It was amazing. I learned a lot from different professors, students and people. In this time I started looking for a university where I could study, and a professor who would be my own adviser. It was hard because I am interested in two seemingly different fields: forests and women. I tried in several different universities but the first professor who believed in my proposal and said she would work on it and accepted me to be her student was Professor Jessica Leahy of the University of Maine.

Today here I am living the third education level that was far, impossible – for such a long time I was considering myself as crazy dreamer but it became real because of people believing in me. To everyone who has helped me along the way, በጥምሕመስግናለሁ! (“Thank you so much”). My first semester at the University of Maine I was took English classes from the Intensive English Institute (IEI) to be ready for higher education course work taught in English language. It was one of my best life experiences; these courses gave me a chance to meet different international people. In all the IEI classes there are students from different parts the world. Even though the only goal is to get lessons that will make us to be ready with English language for academic classes, I got so much more than this. These courses changed my view of other countries and I hope I changed also different people’s views of my country.

This year, besides taking classes, I had the opportunity to share different experiences in different places across the U.S. During the first school break I went to Florida for the annual meeting of the Tree Foundation, who have generously sponsored my tuition at the University of Maine. And in the second break I traveled to meet different scientists and students at the California Academies in San Francisco, where I will work next year on the ecological services (such as pollination) that church forests provide to rural Ethiopian villagers.

Now I am a full University of Maine graduate student. Next fall I will take classes in my major (General Ecology, Forest Economics, and Research Methods). Oh my Lord, amazing! Sometimes I feel still that I am in my dreams. Working in the library, attending class and walking on campus, looking around I say to myself: Yes! It is real and the dream is coming true. Oh thank you very much! All this is because of your help. With my chosen thesis topic I will start working directly on the dream that I hope to achieve. The title of my thesis is: “Overcoming the Effects of Environmental Degradation on Women in Northern Ethiopia”. My goal is to both preserve and expand the existing forest cover in northern Ethiopia and change the lives of disadvantaged women. I am doing my MSc thesis to understand how environmental degradation affects women life. My plan is to interview women in severely degraded areas and others in relatively better-managed environments and to compare and contrast their interactions with the forest, water, and land around them.

This summer I will also be teaching classes in Amharic language and Ethiopian culture for students participating in a National Science Foundation Research Experience for Undergraduates (REU) grant program to California Academy of Sciences and to Colby College. For part of this program, I will travel back to Ethiopia with the REU students to collect social and ecological data in churchforest communities.

I am also continuing to dream about future work on my doctorate on the possible alternative solutions to environmental degradation, particularly as relates to women, based on the results of my MSc thesis work.

It is not easy in my heart to say simply "Thank you so much" because people who live in the US are very polite, humble and say "Thank you" all the time. It is not easy for me to say thank you because it cannot express enough. Can you imagine a woman like me, growing up with other women who thought that getting higher education was impossible, unthinkable. And then this one woman got her Forestry diploma, as the only girl from her entire state, and from the only Forest College in the country at that particular time. I am her. How can I thank those who helped make my dream come true?

በጣም አመሰግናለሁ! እግዛብ ሄር ይባርክችሁ!

Thank you so much! God Bless you!

TizezewShimekachSisay

MSc Student, University of Maine School of Forest Resources

REU Site: Undergraduate Research into the Cultural, Economic and Ecological Roles of Church Forests in South Gondar, Ethiopia

National Science Foundation Grant No. SMA-1359367

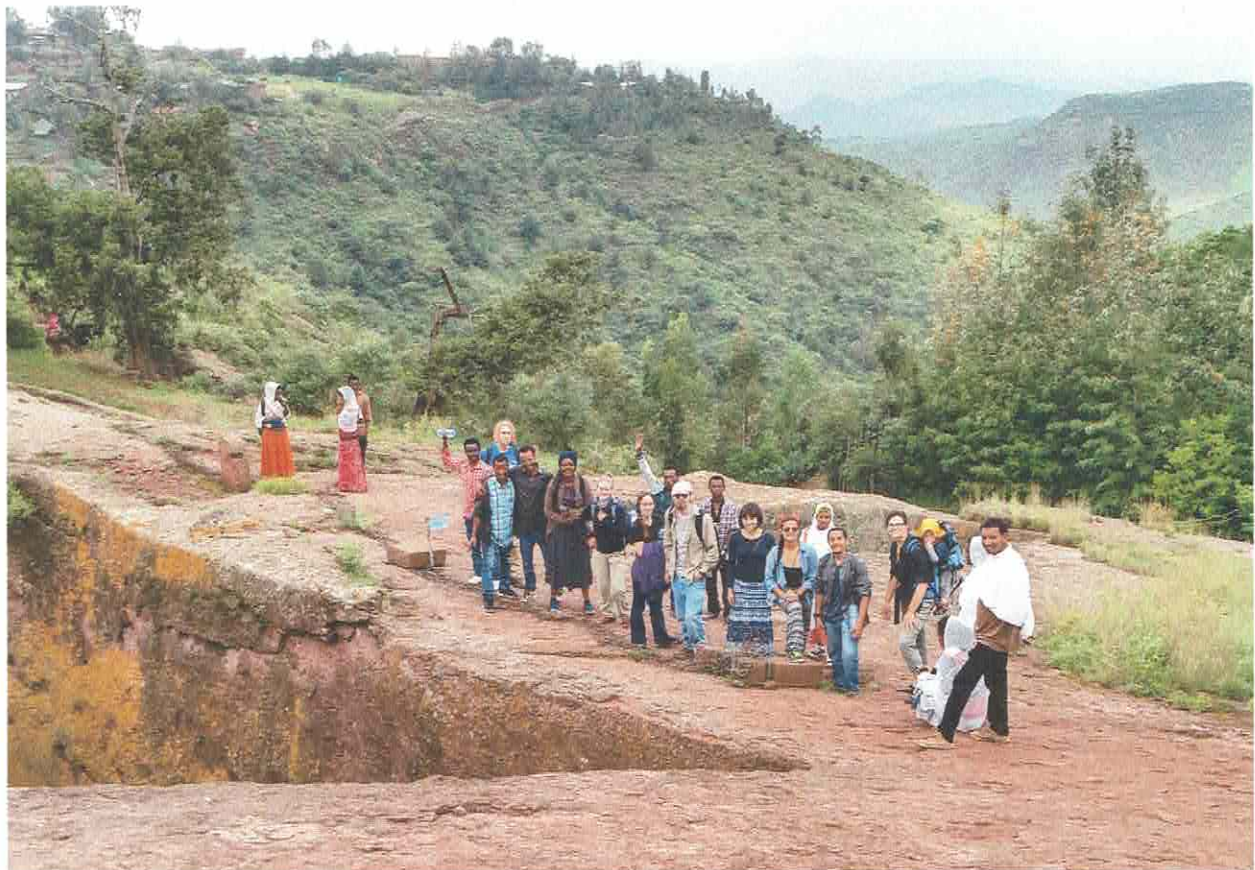
A collaborative effort by the Colby College Environmental Studies Program, the Colby College Biology Department, the TREE Foundation, and Ethiopia's Debre Tabor University, the Research Experiences for Undergraduates (REU) Site program *Undergraduate Research into the Cultural, Economic and Ecological Roles of Church Forests in South Gondar, Ethiopia* provides American undergraduate students from diverse academic backgrounds an opportunity to conduct pathbreaking interdisciplinary research in Ethiopian Orthodox church forests.

Under the eight-week summer REU program eight students from across the U.S. come to Colby College in Waterville, Maine to receive training in social survey research, spatial analysis using Geographic Information Systems (GIS), ecological field methods, and written and oral communication. They then travel to South Gondar, Ethiopia where they work with local collaborators and mentors from Colby College, the California Academy of Sciences and Ethiopian academic and government institutions to study church forests' many cultural, economic and ecological values.

The 2015 REU Site team benefited greatly from working closely with our Ethiopian partners including Endale Adamu of Debre Tabor University, Tizezew Shimekach Sisay of the University of Maine, and the TREE Foundation's own Dr. Alemayehu Wassie. And our work in church forests would not be possible without Canopy Meg's longstanding relationship and Memorandum of Understanding with the Ethiopian Orthodox Tewahedo Church. Thank you!



Caption: Summer 2015 REU in Ethiopia team with faculty and student partners from Debre Tabor University.



Caption: Summer 2015 REU team visiting the Lalibela cave churches, a UNESCO World Heritage Site.



Caption: Summer 2015 REU students and Ethiopian research partners in front of Saint George's church in Lalibela.

Pygmy borer *n. sp.*

Beetle name
auctioned
for
forest
conserva-
tion



The most exciting feature of this newly discovered species is that it lives in the USA. In fact, it is fairly common in twigs of trees from Florida to Texas. How could have taxonomists overlooked it? Because it is so tiny! It belongs to the group of the smallest bark beetles called Pygmy Borers, this one specifically to the genus *Hypothenemus*. The curl in the picture is a human hair, so you can see how incredibly small the beetle is.

Discovered by a student Andrew J. Johnson, University of Florida.

New Water Bear discovered by our students!



Acc.V Spot Magn Det WD 100 μ m
5.00 kV 3.0 280x SE 10.0 last.tif

TRÉE adds Spanish (and Amharic)
translations.

Deja que tus hijos se llenen de barro de vez en cuando

Escrito por Meg Lowman
Traducción María Mayorga



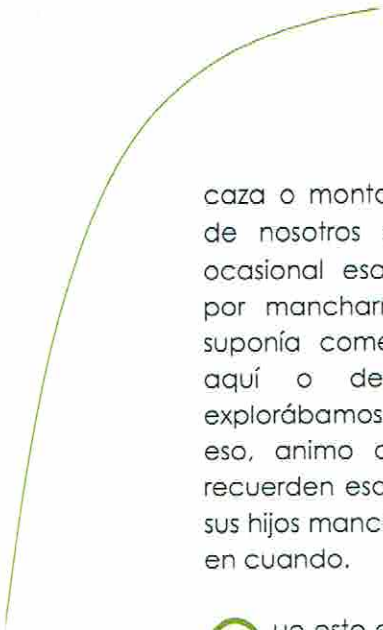
*"Agradezco más una frondosa alfombra de hierba o de hojas de pino
que la más lujosa alfombra persa"*

Helen Keller

Como cualquier niño, me encanta la naturaleza. Tal vez tenga algo que ver el hecho de que creciera en una pequeña ciudad al norte de Nueva York donde las distracciones de la gran ciudad no existían. Quizás fuese el hecho de que la naturaleza contiene muchos secretos y me encantaba ser la detective que iba descubriendo cada uno de ellos. Mi vecina Betsy y yo construimos un fuerte en un árbol y creamos incluso habitaciones cuyas paredes hicimos con follaje de árboles. Recolectábamos flores silvestres en lugar de jugar con muñecas Barbie;

vendábamos lombrices que de forma fortuita nuestros padres habían herido mientras cortaban el césped; con mucho cuidado, rescatábamos pajarillos que habían caído de sus nidos... Llamábamos a nuestro fuerte el "Hullabaloo" – el alboroto –, aludiendo a este tipo de acciones que sucedían en nuestro mundo paralelo.

Estoy convencida de que muchas personas de mi generación, si mirasen hacia atrás dirían que en su infancia hicieron casas en los árboles, que fueron de camping con los Scouts o con la familia o que un día fueron a pescar, de



caza o montar a caballo. Muchos de nosotros sentíamos de forma ocasional esa necesidad y gusto por mancharnos – incluso si eso suponía comerte algún bicho de aquí o de allá – mientras explorábamos lugares vacíos. Por eso, animo a los padres a que recuerden esa época y permitan a sus hijos mancharse de barro de vez en cuando.

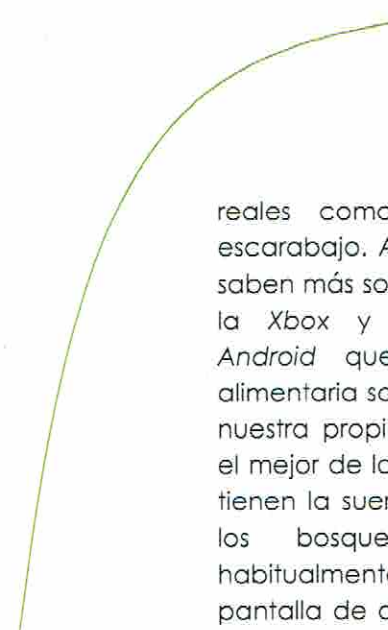
Que esto es algo bueno va más allá de mi propia experiencia: cada vez son más los estudios que indican que los niños crecen más felices y más sanos cuando tienen una experiencia directa con la naturaleza. Y yendo más allá, los jóvenes valoran mucho más el mundo natural cuando han desarrollado esa conexión en la infancia. Nunca ha sido tan necesario como hoy.

Nuestro mundo natural es extraordinario tanto por su diversidad como por su complejidad, pero se encuentra bajo una feroz amenaza. En la última década, innumerables bosques tropicales, arrecifes de coral, marismas y praderas se han extinguido por causas humanas, y muchas más se encuentran en una situación alarmante. Estas zonas no sólo son las casas para animales y plantas, sino que también proveen de importantes servicios que benefician la salud humana. Los ríos y arroyos purifican el agua fresca; los bosques reducen la erosión y las inundaciones; el follaje de los árboles nos nutre de medicinas, los manglares protegen del aumento

del nivel del mar ocasionado por las tormentas y los insectos polinizan las cosechas. El mundo natural representa la espina dorsal para la economía de muchas comunidades locales sustentadas en el turismo, los bienes raíces y para la subsistencia de las poblaciones locales.

El problema es que al mismo tiempo que nuestro precioso mundo natural plantea estas amenazas, nos encontramos también en una profunda crisis sobre educación en materia de científica. La financiación para la investigación científica ha sido totalmente recortada. A nivel nacional, la alfabetización científica hacia nuestros ciudadanos se está viendo terriblemente erosionada, produciendo una pérdida de talentos que en su día favorecieron que la tecnología fueran un filón. Las consecuencias derivadas de todo esto son de gran alcance y tal vez hoy represente el gran reto a nivel global – algo que ni América ni el mundo pueden permitirse.

¿Por dónde comenzar entonces? Algunas de las ideas se pueden encontrar en casa, en la educación a nuestros hijos. Si volvemos al año 2002, había evidencias de una creciente división entre la naturaleza "virtual" y la "real", especialmente entre nuestros niños. Una encuesta realizada por la revista *Science*, por ejemplo, mostraba que había más niños que reconocían los personajes del juego electrónico *Pokémon*, que aquellos que sabían identificar animales



reales como una nutria o un escarabajo. A día de hoy, los niños saben más sobre la complejidad de la Xbox y de plataformas de Android que sobre la cadena alimentaria sobre la que se sustenta nuestra propia alimentación. Si, en el mejor de los casos, nuestros hijos tienen la suerte de aprender sobre los bosques y las costas, habitualmente lo hacen en la pantalla de dos dimensiones de un ordenador en vez de chapotear en pozas o mirar a los árboles.

Los daños a los Sistemas de la Tierra están alcanzando cotas irreversibles y aunque ahora tenemos a nuestra disposición una gran cantidad de medios técnicos – tanto para entender las amenazas como para encontrar las soluciones – sigue sin existir un sustituto a la conexión con el mundo real en tanto en cuanto nos ayuda a entender la complejidad de los sistemas naturales. Aquí es donde realmente la alfabetización científica comienza.

Conectar al niño con la naturaleza es una de las mejores y más simples vías de impulsar a los jóvenes a tomar buenas decisiones sobre temas de salud personal, cambio climático y sostenibilidad. Es necesario que sepan cómo afectan los productos químicos al océano, por qué las selvas tropicales son cruciales para la vida en latitudes templadas, cómo se necesitan millones de años para crear petróleo procedente de plantas muertas y por qué el mercurio aumenta progresivamente

en el pescado (¡también es útil ser capaces de identificar hiedras venenosas!). Comprender esto se convierte en algo mucho más real y lleno de significado cuando una persona está conectada con el mundo natural.

Pese a que mi pasión por la naturaleza procede fundamentalmente de las exploraciones durante mi infancia, esta pasión realmente brotó al ser madre. Ser madre me hizo pensar más profundamente sobre el entorno de mi propia infancia. El aire puro, el agua fresca y limpia, el atardecer en la playa y el canto de los pájaros por la mañana son algunos de nuestros más preciados tesoros y tal vez la herencia más valiosa que podamos dejar a nuestros hijos. Considero que la alfabetización científica es una de las herramientas más importantes para garantizar la calidad de vida en el futuro y espero que este blog ofrezca información interesante y hechos científicos tan fascinantes que inspiren al lector y le hagan valorar y apreciar un poquito más la naturaleza – y salir al aire libre y disfrutar la naturaleza.

¿Y si con motivo del Día de la Tierra – 22 abril – nos comprometemos a compartir la naturaleza con algún joven – tu hijo, nieto o un niño del vecindario – durante el resto del año? Ayudemos a la próxima generación a crear un puente de unión entre la naturaleza virtual y la real y mostrémosles simplemente lo divertido que puede llegar a ser mancharse de barro.



CALIFORNIA ACADEMY OF SCIENCES

Forest Summit

Thursday, January 22, 2015 in African Hall

9:00 AM - 5:00 PM

HIGHLIGHTED SPEAKERS INCLUDE

Meg Lowman, California Academy of Sciences

Lisa Curran, Stanford University

Greg Asner, The Carnegie Institute

Dan Nepstad, Earth Innovation Institute

Emily Burns, Save the Redwoods

Cameron Williams, University of California, Berkeley

Joe Fragoso, Stanford University

Moderated by Rhett Butler, Mongabay



California Academy of Sciences | Golden Gate Park
55 Music Concourse Drive | San Francisco, CA 94118

Women-in-Science Event in Florida

One Enchanted Evening

Join us Thursday, April 30, 2015 for an evening with two of the world's top female explorers and conservationists, National Geographic Explorer in Residence and Mission Blue Founder, **Dr. Sylvia A. Earle**, and **Dr. Margaret 'Canopy Meg' Lowman**, 'The Real-Life Lorax', Director of Climate Science & Sustainability at the California Academy of Sciences, as they inspire and engage us with tales of their conservation work around the globe.



Sponsorship Opportunities

Sponsorship packages detailed inside offer a unique opportunity to align your brand with a premiere event featuring two of America's most beloved female explorers, scientist-educators who are dedicated to inspiring others to protect our oceans and forests. A portion of the proceeds from this event will benefit the global conservation work of Mission Blue | Sylvia Earle Alliance and Dr. Lowman's TREE Foundation. Customized sponsorships also are available. For more information, contact MKH Communications at 813.380.6067.

With special thanks to:

Thomas Ries and our Venue Sponsor for this evening, Tampa-based **Ecosphere Restoration Institute**. Learn more about Ecosphere's public-private partnerships to restore and preserve Florida's native habitats and wildlands at www.ecosphererestorationinstitute.org.

Produced by:

MKH Communications
Mary Kelley Hoppe
MKH@tampabay.rr.com
813.380-6067

Preview & Sponsorship Packet



2015

MKH COMMUNICATIONS PRESENTS:

Enchanted Earth

An evening with Sylvia Earle and
Margaret 'Canopy Meg' Lowman

April 30, 2015 at the historic Tampa Theatre, 7 PM

Dr. Sylvia A. Earle Ocean Ambassador

National Geographic Society Explorer in Residence

Dr. Sylvia A. Earle, called *Her Deepness* by the New Yorker and the New York Times, *Living Legend* by the Library of Congress, and first *Hero for the Planet* by Time Magazine, is an oceanographer, explorer, author and lecturer with experience as a field research scientist, government official, and director for corporate and non-profit organizations including the Aspen Institute, the Conservation Fund, Mote Marine Laboratory, Duke University Marine Laboratory, the Woods Hole Oceanographic Institution, National Marine Sanctuary Foundation, and Ocean Futures.

Formerly Chief Scientist of NOAA, Dr. Earle is the Founder of Deep Ocean Exploration and Research, Inc., Founder of Mission Blue and The Sylvia Earle Alliance, Chair of the Advisory Council of the Harte Research Institute, the Ocean in Google Earth, and leader of the NGS Sustainable Seas Expeditions. She has a B.S. degree from Florida State University, M.S. and Ph.D. from Duke University and has authored more than 180 scientific, technical and popular publications, lectured in more than 70 countries, and appeared in hundreds of radio and television productions.

She has led more than 100 expeditions and logged more than 7000 hours underwater including leading the first team of women aquanauts during the Tektite Project in 1970, participating in ten saturation dives, most recently in July, 2012, and setting a record for solo diving in 1000 meters depth. Her research concerns marine ecosystems with special reference to exploration, conservation and the development and use of new technologies for access and effective operations in the deep sea and other remote environments.

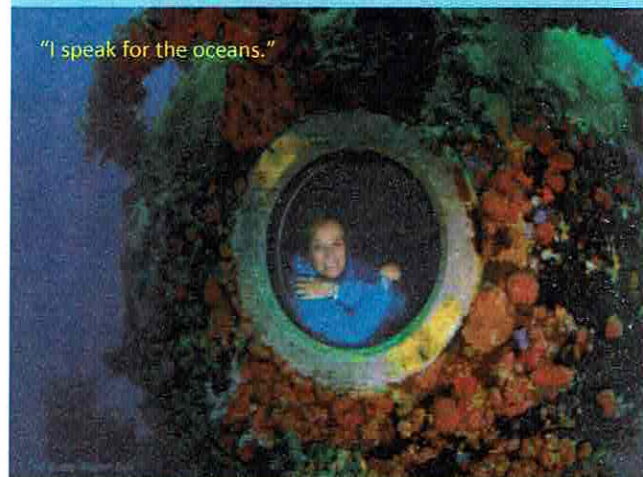
Her special focus is on developing a global network of areas on the land and in the ocean, "Hope Spots," to safeguard the living systems that provide the underpinnings of global processes, from maintaining biodiversity and yielding basic life support services to providing stability and resiliency in response to accelerating climate change.

Her more than 100 national and international honors include the 2011 Royal Geographical Society Gold Medal, 2011 Medal of Honor from the Dominican Republic, 2009 TED Prize, Netherlands Order of the Golden Ark, Australia's International Banksia Award, Italy's Artiglio Award, the International Seakeepers Award, the International Women's Forum, the National Women's Hall of Fame, Academy of Achievement, Los Angeles

Featured Guest

Times Woman of the Year, UN Global 500, and medals from the Explorers Club, the Philadelphia Academy of Sciences, Lindbergh Foundation, National Wildlife Federation, Sigma Xi, Barnard College, and the Society of Women Geographers.

"I speak for the oceans."



Mission Blue is a global initiative of the Sylvia Earle Alliance, a 501c3 organization, which was formed in response to Sylvia Earle's 2009 TED Prize wish. Dr. Earle urged people "to use all means at your disposal — films, expeditions, the web, new submarines — to create a campaign to ignite public support for a global network of marine protected areas; Hope Spots large enough to save and restore the blue heart of the planet." Currently, the Mission Blue community includes 100+ respected ocean conservation groups and like-minded organizations — from large multinational companies down to individual scientific teams doing important research. Visit www.mission-blue.org.

Dr. Margaret Lowman The Real-Life Lorax

Margaret "Canopy Meg" Lowman, PhD, is Chief of Science and Sustainability at the California Academy of Sciences.

Nicknamed the "real-life Lorax" by National Geographic and "Einstein of the treetops" by Wall Street Journal, Meg Lowman pioneered the science of canopy ecology. For over 30 years, she has designed hot-air balloons and walkways for treetop exploration to solve natural mysteries in the world's forests.

Meg is affectionately called the mother of canopy research as one of the first scientists to explore this 'eighth continent'. She relentlessly works to map the canopy for biodiversity and to champion forest conservation around the world. Her international network and passion for science have led her into leadership roles where she seeks best practices to solve environmental challenges and serves as a role model to women and minorities in science.

Formerly a Professor at North Carolina State University and the founding director of North Carolina's innovative Nature Research Center (NRC) at the Museum of Natural Sciences, Meg oversaw the creation and programming of this research wing in partnership with NCSU. She was subsequently hired by the California Academy of Sciences to lead their twenty-first century strategy that integrates research with sustainability initiatives both local and

Global. As the external voice for the Academy's collections and research, she promotes its mission to groups ranging from elementary classes to corporate executives to international conferences. Previously, she served as Director of Environmental Initiatives at New College of Florida, Climate Change Adviser to Alex Sink, former CFO of the Florida cabinet, and CEO of The Marie Selby Botanical Gardens.

Lowman is Founder of the Tree Foundation and serves on the Board of Directors for The Explorers Club and Earthwatch. Lowman's academic training includes Williams College (BA, Biology); Aberdeen University (MSc, Ecology); Sydney University (PhD, Botany); and Tuck School of Business (Executive Management). Her numerous awards include the Margaret Douglas Medal for Excellence in Conservation Education from the Garden Club of America, Girls Inc. Visionary Award, the Mendel Medal for achievements in science and spirit, the Lowell Thomas Medal for canopy exploration, Kilby Laureate and Aldo Leopold Leadership Fellow.

Her first book, "Life in the Treetops," received a cover review in the New York Times Sunday Book Review. Working tirelessly

Featured Guest

on sustainability initiatives at home and abroad, "CanopyMeg" was a Fulbright Senior Specialist Scholar in India and Ethiopia, and National Geographic funds her conservation work on Ethiopian church forests. She is the proud mother of sons Edward and James, both science majors from Princeton University.

"I climb trees for a living."



Photo:
Carlton Ward, Jr

Founded by Dr. Lowman, TREE Foundation pursues and promotes research, education, and conservation of our planet's botanical resources and ecosystems. Dedicated to inspiring young women and men to pursue careers in science, and dubbed 'Her Highness' by acclaimed American socio-biologist E.O. Wilson, Meg's work has been featured in such publications as National Geographic, Popular Science, Wall Street Journal and Smithsonian Magazine. Join Meg as she scales dizzying heights to explore a world that holds vital clues to many of nature's greatest mysteries at www.canopymeg.com and visit www.TREEFoundation.org and www.calacademy.org/scientists

TREE trains the next generation.

Lowman, Meg

Subject: FW: scoope of my life!

----- Forwarded message -----

From: **pamela montero alvarez** <pamelamonteroa@hotmail.com>

Date: Mon, Aug 18, 2014 at 2:41 PM

Subject: scoope of my life!

To: meg lowman <canopymeg@gmail.com>

Meg!!

I am currently working at a USAID Project with Chemonics International. I am the Natural Protected Area Specialist of the Project, I love my job and what I do. I have a two year old baby girl, her name is Isabella, she loves nature. We recently moved to Lima.

Because of my current job, I often travel to Iquitos, Pucallpa and Puerto Maldonado. Before this, I worked in Datem del Marañón, implementing a conservation project with natives communities.

Almost all of my life I have been working in the field, in natural protected areas :) But my first encounter with science and field work was with the Jason Project through YOU!! Such an amazing experience you gave me, so much enthusiam and love for science . It was a life changing experience for me, and ever since I have traveled to different parts of the world, and shared experiences from many different people. But, always keeping in my heart and mind my dearest friend: Meg Lowman :) Your love for learning (even from a teenager like I was!!) and teaching and keeping always investigating is remarkable and a everlasting example for young - and not so young - scientist from all over the world

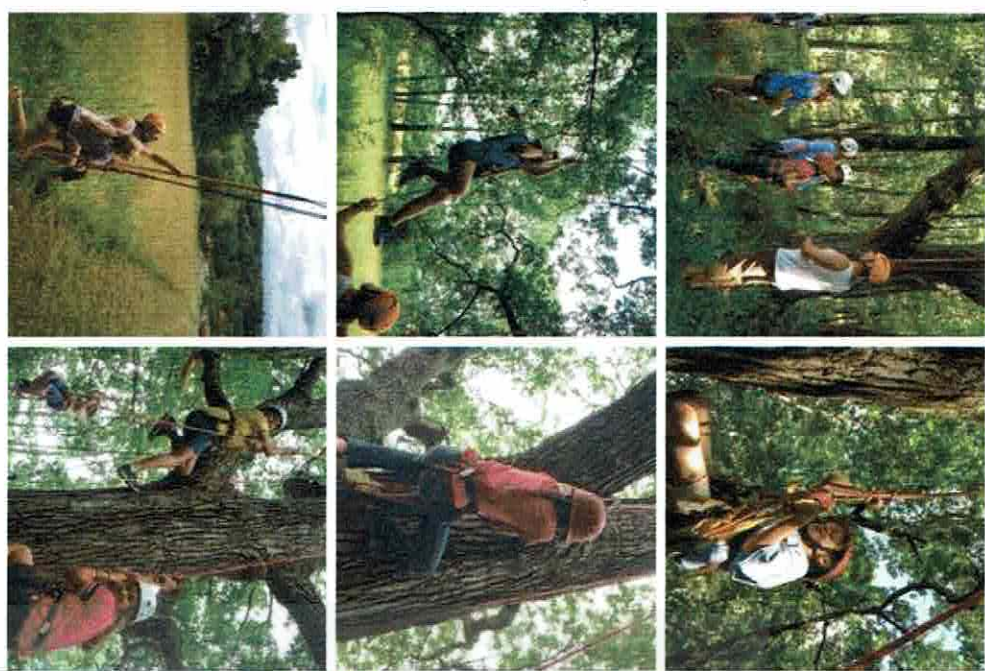
I hope to see you soon :)

love,

pam

Scholarship GHS at The Meg Lowman Treetops Camp, Elmira NY

tanglewood-ctci-august-2015



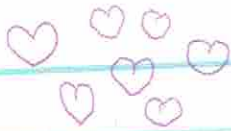
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4 • meg lowman



38

Letters to TREE



3/26/2015

Dear Meg Lowman,

Something I learned was that you have studied lot of animals and plants such as Sloths, Spider Monkeys and longshooting spider. I learned how you pickle and how you have a plant library. I learned what gear you use to help you study the rainforest such as jumars and ascenders.

Some questions I've been wanting to ask you were What is your favorite rainforest you have studied? Another is What's your favorite animal? Also what's your favorite plant?

Your friend
Hannah RPL
Hopkins! ☺



Dear Dr. Lowman,

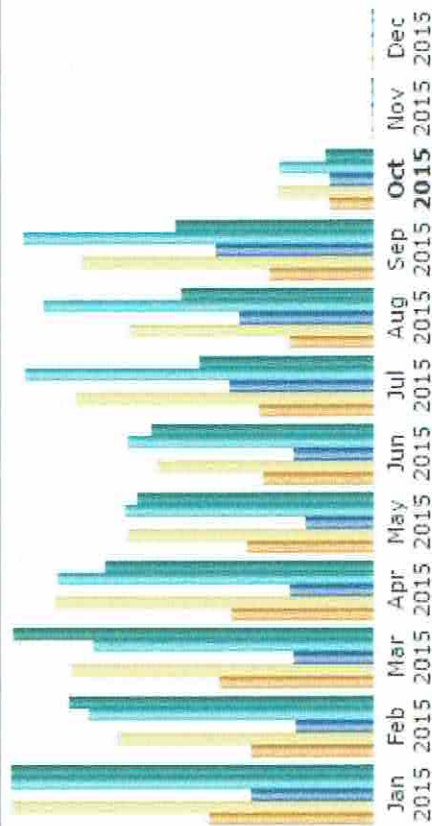
In our most recent unit of common core we have been close reading a book about you, The Most Beautiful Root in the World. We also have gone to your website and much more. I think it is so cool that you get to explore such an awesome biome and learn about the plants and animals in it. I love how you get to teach your sons about your unique career.

I have been wanting to ask you if you live in one place or travel everywhere. is the rainforest creepy at night? What do your sons do now? I would thoroughly appreciate it if you would write back.

Thanks,

Kate Barazek

Monthly history



Month	Unique visitors	Number of visits	Pages	Hits	Bandwidth
Jan 2015	2,433	5,385	46,935	140,280	6.93 GB
Feb 2015	1,796	3,825	30,345	110,013	5.83 GB
Mar 2015	2,276	4,500	30,942	108,463	6.92 GB
Apr 2015	2,123	4,744	32,447	122,655	5.15 GB
May 2015	1,869	3,659	26,412	96,534	4.53 GB
Jun 2015	1,641	3,205	30,910	95,464	4.25 GB
Jul 2015	1,682	4,449	55,500	135,270	3.32 GB
Aug 2015	1,245	3,631	51,755	128,324	3.69 GB
Sep 2015	1,554	4,358	60,833	135,874	3.78 GB
Oct 2015	638	1,415	16,879	36,340	931.68 MB
Nov 2015	0	0	0	0	0
Dec 2015	0	0	0	0	0
Total	17,257	39,171	382,958	1,109,217	45.31 GB

Monthly history



Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2015 2015 2015 2015 2015 2015 2015 2015 2015 2015 2015 2015

Month	Unique visitors	Number of visits	Pages	Hits	Bandwidth
Jan 2015	3,869	9,509	27,070	204,622	8.21 GB
Feb 2015	3,932	9,410	28,765	167,564	6.43 GB
Mar 2015	4,775	10,676	30,754	191,069	8.81 GB
Apr 2015	4,917	11,906	28,903	161,520	7.81 GB
May 2015	3,719	8,809	18,590	129,907	5.53 GB
Jun 2015	6,660	14,356	31,963	115,437	6.16 GB
Jul 2015	5,804	14,057	32,791	125,630	4.21 GB
Aug 2015	5,252	10,237	24,264	143,000	4.51 GB
Sep 2015	3,295	8,174	21,422	138,565	4.96 GB
Oct 2015	1,255	2,615	6,526	39,181	1.33 GB
Nov 2015	0	0	0	0	0
Dec 2015	0	0	0	0	0
Total	43,478	99,749	251,048	1,416,495	57.97 GB

National Science Foundation Grant No. 25442153367

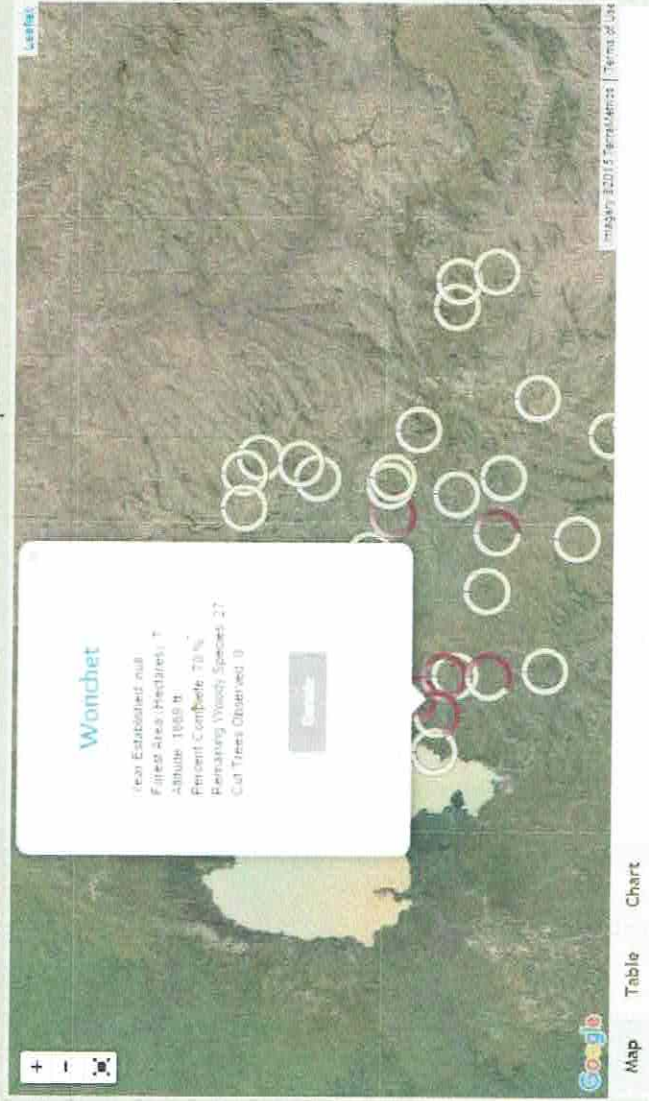
Under the eight-week summer REU program eight students from across the U.S. come to Colby College in Waterville, Maine to receive training in social survey research, spatial analysis using Geographic Information Systems (GIS), ecological field methods, and written and oral communication. They then travel to South Gondar, Ethiopia where they work with local collaborators and mentors from Colby College, the *California Academy of Sciences*, and Ethiopian academic and government institutions to study church forests' many cultural, economic and ecological values.

A group of approximately 20 students and one adult male are posed for a group photo outdoors. They are arranged in two rows, with some standing and some kneeling or sitting in the front. They are positioned in front of a building with a red brick wall and a dark roof. The ground is a light-colored, possibly paved or dirt area. The sky is clear and blue.

The Wise Man Built His
house Among the Trees Klaus
JeBoer, Sterling College,
Craftsbury Common, VT
Summer 2015 REU Site:
Undergraduate Research into
the Cultural Economic...

Below Travel Reynolds announces that applications are now being accepted for students to participate in an NSF, site-based REU program at Colby College.

Church Forests of Ethiopia



Data from Dr. Alemayehu Wazir Alemsegh (2007)

[Donate](#) Please support these church forest communities and help save the remaining biodiversity by donating today. Thank you.

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The Wise Man Built His House. Among the Trees Klaus DeBoer, Sterling College, Craftsbury Common, VT Summer 2015 REU Site: Undergraduate Research into the Cultural, Economic...

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Encyclical Letter and the importance of church forest conservation

Below is commentary written by Ezana Habte-Gabr regarding the use of Pope Francis' Encyclical letter, "Laudato Si: On Care for Our Common Home"...

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Skype Session with Rainforest Scientist, Meg Lowman

Home — EDUCATION — Skype Session with Rainforest Scientist, Meg Lowman

Blue Point 5th graders recently hosted a Skype Session right in their classroom! On Thursday, April 2nd, the 8th graders at Blue Point were eager to share their love of the rainforest by hosting a video conversation. They were so fascinated with just seeing themselves on the computer screen, that they could barely contain their excitement. They would soon have the opportunity to talk with the rainforest scientist they have been studying, [Meg Lowman](#)!

During ELA in Mrs. Loeffler and Mrs. Mandell's classes, the 5th graders have been closely reading *The Most Beautiful Roof in the World* by Kathryn Lasky. This informational text describes the work of scientists documenting the biodiversity of rainforests, specifically a case study of Meg Lowman, a researcher of rainforest canopies. Now, a live interview with Meg Lowman is just a video call away!

The students sat completely captivated while Meg Lowman, also known as "Canopy Meg," first started off the conversation asking them if we still had snow on the ground! It was surreal for the students to interact with a figure they have been reading about and to experience how down-to-earth she was during the interview. Canopy Meg shared with the students how she became fascinated with studying what is happening at the tops of trees and her experience on the treetop walkways.

It was a once in a lifetime experience to virtually connect with Canopy Meg and we appreciate her granting us this opportunity. The session ended with student Stephen Shultz, beaming with joy to share with Canopy Meg that she inspired him more than ever to become a scientist one day. The students hope to use Skype again in the near future to transform their learning experiences.

(Summary provided by elementary school teacher Mrs. Mandell)



On April 15, 2015 / EDUCATION, [Milestones](#)

