

A Yale Postgraduate Fellowship Program for Recent Graduates with an F&ES Master's to Work in Tropical Forest Conservation.

The Sri Lanka Program for Forest Conservation (SLPFC) is devoted to research, education and extension of tropical forest conservation in Southwest Sri Lanka. It has several endowed programs that enable faculty, doctoral, masters and undergraduate students from the Universities of Sri Jayewardenepura, Peradeniya, Uva Wellassa and Yale (USA) to study tropical forest conservation at the SLPFC field station located in the village of Pitekele (Fig. 1a) and the adjacent Sinharaja MAB World Heritage Forest (Fig. 1b).

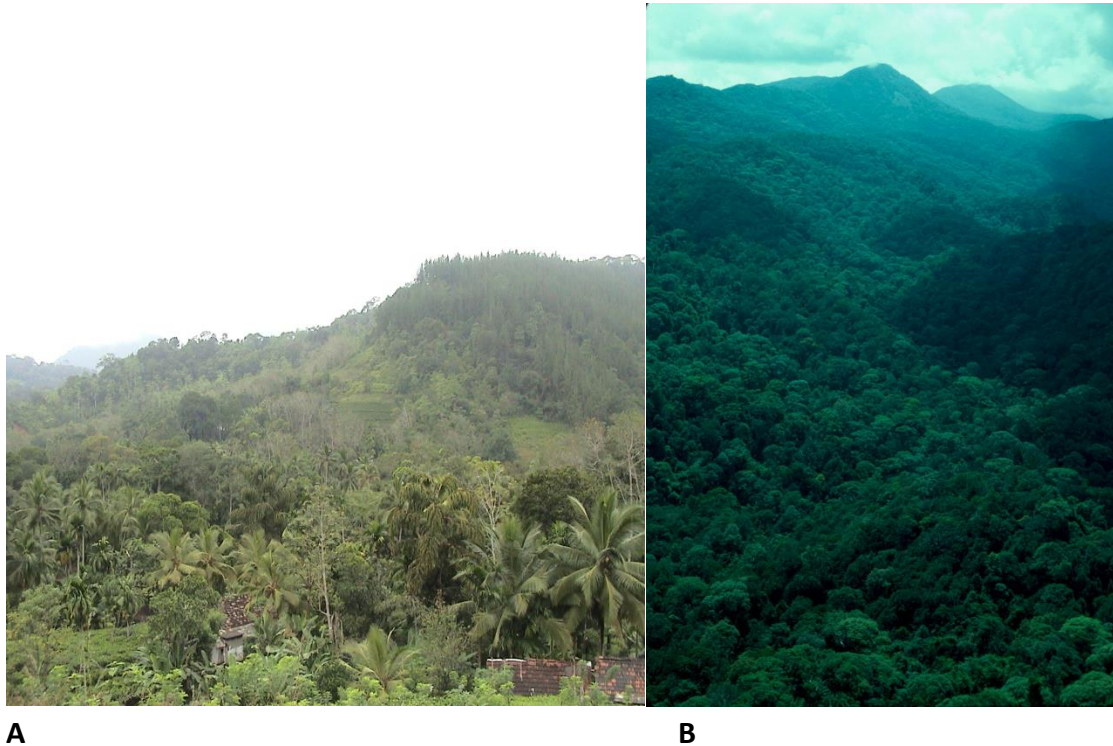


Figure 1 a. A view of the village of Pitekele and their tree gardens, tea and rice cultivation. The field station is located at the top of the valley adjacent to the rain forest (in the left background of this photo) with the village downstream following the river and valley. 1 b. A View of the adjacent Sinharaja Rain forest – a World Heritage Site and Man and the Biosphere Reserve

The postgraduate Fellowship:

The goal of the postgraduate fellowship at Yale for this year is to provide practical and professional development experience in tropical forest conservation. Candidates will gain experience working with villagers and collaborating with The Sri Lanka Program for Forest Conservation (SLPFC) and its research station; they will learn tropical taxonomy, nursery propagation and work in collaboration with the NGO to develop a traditional tree garden that provides foods, timbers, medicines and spices. The garden will be designed to serve as a living and electronic demonstration for university curricula and practitioner extension; with downloadable information from the NGO's website on the cultural, ecological and economic diversity of plants cultivated in traditional gardens in Sri Lanka.

Two recent graduates, Blair Rynearson and Logan Sander were selected from the Yale School of Forestry and Environmental Studies along with Logan's wife Laura Luttrell. They started work on the project in October 2016. Blair Rynearson grew up in western Washington. He has a BS in ecology from Beloit College and a 2015 Masters in Forestry from Yale, six years of experience with the U.S. Forest Service as a hotshot fire fighter and as a forest technician, and over five years in tropical community and plantation forestry in Ecuador, Panama and Mexico. Logan Sander was born and grew up in Homer Alaska. He also graduated with a Masters of Forestry from Yale in 2015. He has a BS (magna cum laude) in Botany from Oregon State University. He has over five years of experience working for the U.S. Natural Resource Conservation Service classifying and assessing natural vegetation communities and two years working on a sustainable community forestry program as a Peace Corp volunteer in the Atlas Mountains, Morocco. It was in Morocco that he met his wife Laura Luttrell, another Peace Corp volunteer in business development. Laura hales from Virginia and has a BA in fine arts from Virginia Commonwealth University and a Masters in Public Service from Marquette University. Laura has over five years in program development and management of land trusts, food banks, and sustainable farming in the U.S.

What follows is an ongoing edited blog of their adventures in first learning about and then developing a traditional Sri Lankan village tree garden for demonstration and education.

Blog 1. Our First Week in Tropical Paradise - Oct 24, 2016

By Laura Luttrell

We were treated to a spectacularly easy and comfortable arrival both into the country and to our home site! Professor Singhakumara, the Director of the NGO and a professor at the University of Sri Jayewardenapura picked us up at the airport at an unreasonable 1:00 am and transported us to a comfortable bed and breakfast. The next day, he brought us around Colombo, helping us get set up for our time in Sri Lanka, then drove us the 4-hour journey to our now home in a comfortable air conditioned van. We had the royal treatment and are so thankful for the easy transition.

Our home (the field station) is very comfortable with everything we need. It is tucked up on a hill at the end of an intermittently paved dirt road (also known as Pitakele village) amongst the ferns and orchids. We have a fantastic cook/caretaker who looks after the house and makes us three Sri Lankan meals everyday, usually including at least rice, vegetables, coconut and curry. We also had the good fortune of sharing the house for a few days with a Sri Lankan researcher who toured us around the Sinharaja Forest Reserve and helped us understand the culture a little better. He speaks English and also helped us get started learning Sinhala (the local language). I've now memorized the alphabet and am reading like a first grader (although I still don't know what the words mean). I'm probably up to about 50 words so far. Really though, the natural world is the main attraction here...

While swinging in a hammock on our sizeable veranda, I daily witness many tropical birds, monkeys, wild jungle fowl, lizards, and of course a gorgeous panorama of tropical trees and plants. While we have had surprisingly less rain than we expected, this is also an excellent place to enjoy the sound and smell of clean water falling from the sky.

The weather and environment is much more comfortable than we expected as well. While it is of course humid, it seems less humid than DC in the summer... and the temperature mostly stays comfortable. The evening temperature is perfect for sleeping and the mosquitos are shockingly absent... In many tropical places, we would sweat without moving around or doing anything. Here, we are lucky that this is not the case; we get sweaty only when we are active.

Although we have a shower at home, we usually choose to indulge in a cool swim at the head of our exceptionally clean river to rinse away the day's heat (Fig. 2). When the current is right, we stand under the waterfall for a massage as well!



Figure 2. A panoramic view of the swimming hole adjacent the field station.

This week, Logan and Blair's former professor, Mark Ashton, and his colleagues Professors Singhakumara, Sisira Ediriweera, and Nimal and Savi Gunatilleke, all members of the steering committee for the Sri Lankan NGO hosting us, will arrive to spend a week better acquainting us with what our next 6-8 months will look like and the projects we'll be working on.

Blog. 2 Distinguished visitors, and the beginnings of a nursery! - November 10, 2016

By Laura Luttrell

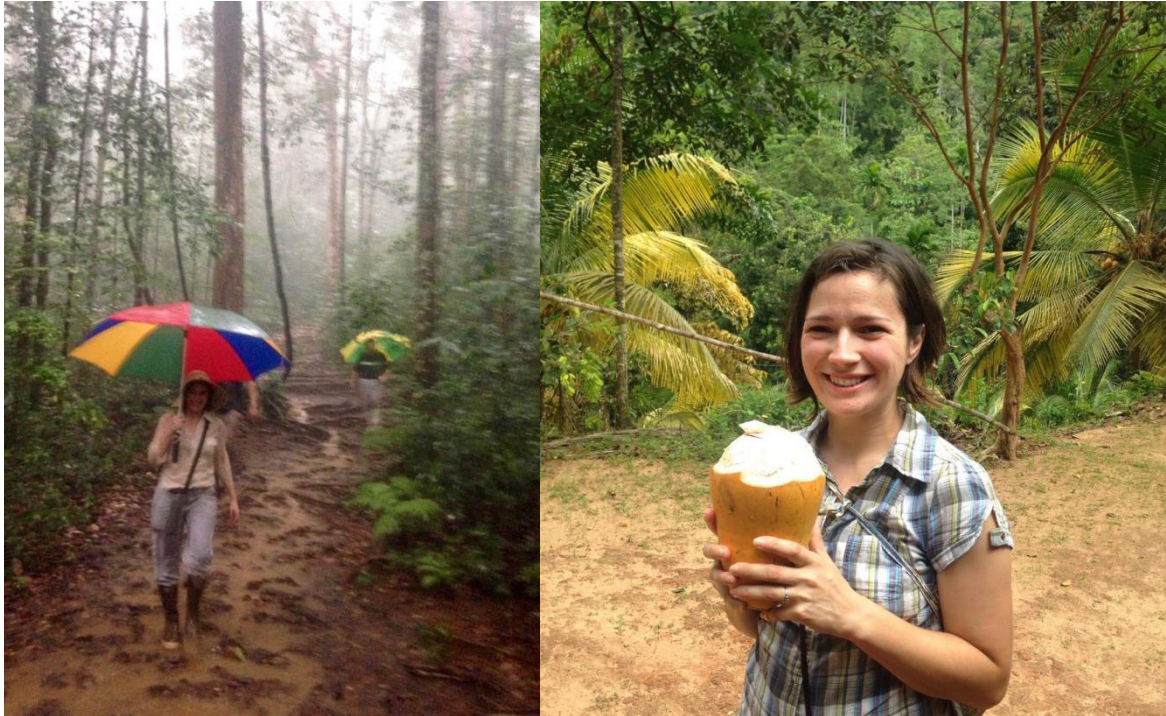
About two weeks ago Logan and Blair's former professor, Dr. Mark Ashton, came for a visit. With him, he brought four prominent Sri Lankan professors of ecology and several students, as well as several local villagers who have been involved in their conservation projects and research over the years (Fig. 3a). Our new home bustled with activity and we set out into the forest to learn and get acquainted. We were given a crash course by Sri Lanka's preeminent forest ecologists covering a huge variety of plants, local ecosystems and culture. We toured home gardens, climbed a few small mountains (Fig. 3b), and made a rapid descent down an overgrown forest path in a monsoon-like downpour (Fig. 3c).



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Figure 3 a A soaked trio of Professors Ashton, Edirweera and Nimal Gunatilleke after taking the “fellows” on a long hike in the forest. 3 b Laura and Logan on top of Moulawela, a mountain in the Sinharaja with a great view of the rainforest below. 3 c Coming back in the afternoon always means a soaking for a forest that receives more than 6,000 mm of rain per year. 3 d Laura looking refreshed after drinking a king coconut!

Professor Ashton also gave us a clearer idea of the project he would like us to work on while we are here... we will collect and document information about the cultivation of home garden plant species, build and maintain a plant nursery, and design and install a home garden for the field station complete with labels and ethnobotanical information, so the site can be used for education about home garden techniques and implementation. Our garden will likely include many of the common fruit trees here like coconut, papaya, guava, avocado, and jack. We'll also plant bananas, pineapples, herbs, peppers, and lots of pretty flowers, but that's just mentioning a very few of the hundreds of plants that the villagers here cultivate.

In order to be successful with this project, we have begun learning Sinhala (the local language), which if we become proficient, will give us the opportunity to directly get to know and talk to villagers about their lives and gardens. We will also be hiring a translator to help us gain more specific information, but after Peace Corps, Logan and I have realized that our own language acquisition is really key to integration and understanding the culture. Since my last post, we've learned many more words and have begun making sentences and asking basic questions. We are happy with our progress, but are also reminded of just how helpless and inept we can feel without common language. Even though we are waiting for our language to get better and for our translator to be available, we've managed to visit a couple of homes and tour their gardens. This got us started recognizing plants and learning their Sinhala names. Our neighbors in Pitakele have been wonderful hosts and patient teachers of both the Sinhala language and the uses of the plants they cultivate.

Meanwhile, we established a site for the nursery and have cleared the area. We had some lessons on how to use the local tools for clearing and chopping (a sort of hooked-machete and a hoe-like mattock) and went to work (Fig. 4). We also took a trip to the “local” hardware store (~2 hours walking/busing to our closest town) and bought some tools and supplies to get started. Next up, we'll help cut down a palm tree to make planks that will hold up our little seedlings and start meeting more villagers. Overall, we're in awe of the beauty of this spectacular place, have adapted well to the climate, culture, and delicious food and are very excited to about the work ahead on the home garden.



Figure 4. Creating a community nursery. A job well done. Logan and Somaratna starting the initial work clearing the brush. Laura hard at work with the mamatee (mattock). And the finished area ready for the creation of nursery propagation and germination beds.

Blog. 3. The beginnings of a homegarden: construction of the nursery - November 23, 2016

By Logan Sander

After a few weeks of getting oriented and familiarized with our Sri Lankan village life, we began work on our home garden plant nursery. For us, the nursery will be one of our primary work sites, a place where we can grow, multiply and nurture along the plants that will come to make up our homegarden, tea fields and any other forestry or agricultural project we undertake. Under the guidance of Professors Ashton, Gunatilleke, Singhakumara and our caretaker Somaratne, we selected a site for the nursery near the field station on a flat alluvial terrace next to the stream. In this location we have ready access to water and any construction materials we might need. In many ways the proper functioning of a nursery is as much a social consideration as an ecological one – we expect to visit the nursery several times a day to check on and water plants. It’s important that the nursery be conveniently located, otherwise it’s all too easy for the spontaneous nature of our day-to-day lives here to lead to neglecting the plants. Forgetting to water germinating seeds on a single rainless day could result in their demise (admittedly, rainless days seem rare here in the “rainforest”). After a rough delineation of the site, we set about clearing the area. Somaratne led the way, showing us how to use the local machete-equivalents (*pehiyas* and *katas*) to cut away small trees and ferns. We chopped and raked roots with the *idella*, a large hoe-like tool used locally for everything from mixing cement to maintaining rice paddies. While crashing around in the bushes we found a small mine, which pretty much consists of a vertical hole in the ground, about 2 meters square. This province (Sabaragumara) is renowned for the gems buried beneath the shallow soils. Several streets in the provincial capital of Ratnapura (“City of Gems” in Sanskrit) are filled with small-scale gem miners and merchants. We also came across a few polybags scattered amongst the leaf litter – apparently ours isn’t the first nursery to be located here! In terms of light management, we cut a few large branches of adjacent trees that blocked light to the ground where our plants will be located. Our closest neighbor, Tillekaratne, and his climbing skills came in handy for this (See Fig. 1). Within seconds of deciding what to cut he had sprung up the tree, cut the limb, and slid down the trunk like it was a fireman’s pole. At

ground level, we retained most of the seedlings of the late-successional trees (mostly Dipterocarps – a subject for a later posting). These seedlings won't interfere much with light reaching our nursery beds, but will become the future forest when the nursery is eventually abandoned (hopefully after many years of good use!). Ultimately, we ended up with a 15m x 20m clearing that permits at least half of the sunlight to reach our plants. If we need to, it will be easy to expand the nursery into the secondary forest.

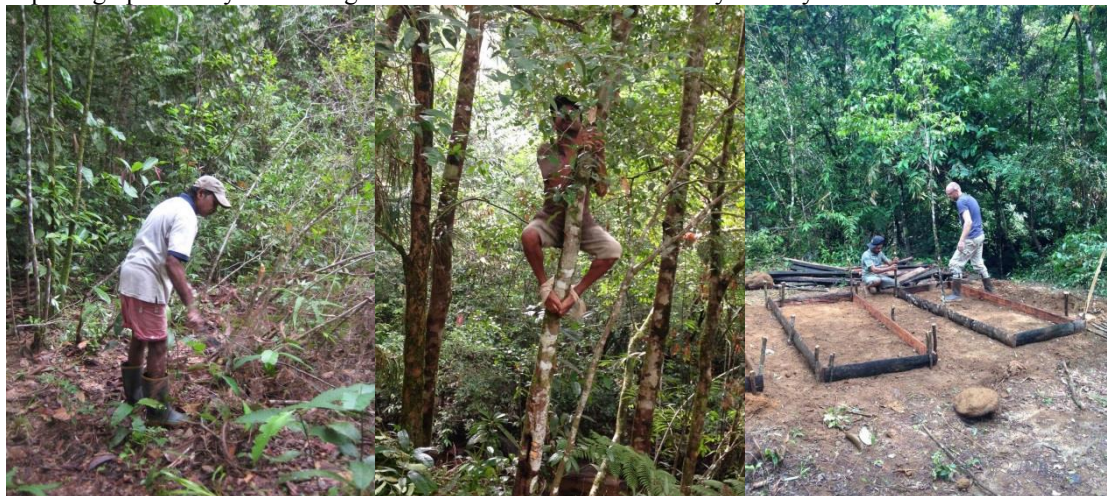
Next, to build the nursery beds, we needed some wooden boards. The plants in our nursery will be grown in polybags – 4-6" diameter, 8-10" long tubes of black plastic sealed at one end with a few drainage holes poked into the bottom. As a result, our nursery beds simply provide a structure to hold the polybags upright and make it a little easier to organize our inventory (Fig. 2). We decided on a rough size (8-10' long, 4' wide – for ease of watering/weeding) and set off into our forest to cut two large kitul palms to make into wooden boards (more on this in the next post: "Shopping' for lumber"). After moving the finished boards to the nursery we quickly built the beds: two short boards, two long boards, and 10-20 handcrafted wooden stakes to hold them in place. Within a few hours, and after some minor work modifying a nearby hose, we had 10 nursery beds complete with a central water spigot!

Constructing the nursery has been a highlight of our time here so far. This modest project represents one of the more tangible pieces of work at this stage in our experience, a welcome change from the endless ups and downs of learning Sinhala and adapting to a new culture. Each day was filled with lessons and laughter from our local teachers, the rise and fall of the sun, evening rain showers, the hooting of our neighborhood monkey troop, and the intermittent excitement of a snake, a gaggle of foraging birds, or the sighting of a wild orchid. We purchased very few materials, instead relying on the resourcefulness of our local friends and the vast storehouse of natural materials from the land. Most of the work was done with commonplace tools and was of simple, common sense design. Any anxiety we felt was self-imposed: the stresses of industrial society seemed distant and far away – no blaring horns or diesel exhaust in Pitikele! Evenings were spent practicing our language skills (or lack of skill) with our friends and reading under the spacious veranda.

While we are satisfied with the start we have made, our work is only beginning. Thinking ahead, I can imagine several larger efforts and hundreds of smaller tasks to accomplish before we have a functioning, educational home garden. To give an idea of how long all of this took, here's an approximate time summary (usually with at least 3-4 people working):

- Clearing the site: 1 day
- Cutting Kitul palms and processing them into boards: 1.5 days
- Building the nursery beds, bringing water to the site: 0.5 days
- Gathering, processing, mixing and hauling soil and sand: 2 days

A photographic essay of creating a small demonstration community nursery



A B C
Fig. 1. A Someratne clearing vegetation; B. Tillekaratne climbing a tree near the riverbank to cut branches; C. – Pounding stakes for planter bed construction.



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Figure 2. A. – Tillekaratne explaining the intricacies of soil; B – Hauling soil to the nursery; C. – After mixing the rich organic soil with river sand, we began planting seedlings we had collected from Pitikele’s homegardens; D. – Our soil gathering site, complete with a screen for sorting out rocks and bags to haul soil; E. – Blair and Tillekaratne after a long day’s work.