GUANDERA
BIOLOGICAL STATION AND RESERVE

“...the last remaining relic of pristine inter-Andean cloud forest and paramo... to be enjoyed by birdwatchers, biologists, and nature lovers in general ...”
INTRODUCTION

The Guandera Biological Station and Reserve is located in the high Andes of northern Ecuador in the Carchi Province. Guandera is in the midst of the only remaining expanse of ancient high altitude forest that once covered the Ecuadorian Andes. Now the forest is found in an area in which less than 4% of the original forests are left intact. This forest is found only on the inter-Andean slopes, in the valley between the eastern and western cordilleras.

The station lies on a transitional ridge where the forest abruptly ends and turns to páramo grassland. At 3,100 to 3,600 meters above sea level, the forest is unique on a global scale because it possesses a surprisingly diverse flora and fauna for such a high altitude site. Norman Myers classified the Andean Mountain forests as the world’s first “conservation hotspot”.

The Guandera Reserve and Biological Station is a centre for field research, education, and ecotourism. The reserve includes over 1000 hectares and is available for use by researchers, universities and tourists interested in exploring the fascinating flora, fauna and culture of the Ecuadorian highlands.

THE FOREST

The Biological Station is set in the midst of the spectacularly unique Guandera forest. Giant ancient trees, twisted and gnarled, are coated with mosses, bromeliads and orchids. The
thick green forest canopy often hangs in the mist.

Some trees exceed 30 meters (100 feet) in height—quite remarkable at an altitude of over 3500 meters (11,500 feet). A single tree, with its numerous air roots and secondary trunks, can occupy a huge area and provide refuge to a whole community of birds and animals. Plant diversity is high, especially given the altitude of the forest.

A preliminary inventory of flora in the reserve includes 250 herbaceous plants and more than 60 trees. Orchids and the distinctive Melastomataceae exhibit an impressive variety of species.

Visitors seeking a true “primary” cloud forest are not disappointed. The misty canopy, immense trees and high diversity of this pristine cloud forest are not to be encountered anywhere else in the country.

**THE PARAMO**

Above the forest, an abrupt transition leads to yet another unusual and spectacular ecosystem: the expansive and open alpine paramo with its gardens of soft-leafed “Frailejón” plants. The distinctive straw-like grasses are dotted with a colorful diversity of endemic flowering meadow plants, and the spiny “Achupalla,” the favorite food of the Andean Spectacled Bear. Clear days afford stunning views of the snow-capped volcanoes that rise across the Andean Central Valley. These are some of the last unpopulated and unexploited paramos in Ecuador and they extend for many kilometers, inviting the visitor to trek above and beyond 4000 meters (13,000 feet).

**BIRDS AND WILDLIFE**

Wildlife at Guandera is also extremely diverse and abundant. Over 160 bird species have been identified by confirmed multiple sightings—following the same theme of a world record for altitudes over 3000 meters. Over 75% of the birds are Andean endemics with at least eight species that exhibit very restricted ranges in the northern Andes of Ecuador. Over 25 species are rare or endangered, mostly due to their restricted range or habitat in high altitude cloud forest or grassland. The recently discovered chestnut-bellied cotinga is known to inhabit and nearby type-site Cerro Mongus (Robbins et al., 1996). The extremely threatened grey-breasted
mountain toucan is abundant, along with a number of other important and endangered Andean endemics such as the black-thighed puffleg hummingbird, crescent-faced antpitta and masked mountain tanager.

A number of large mammals reside in the Reserve, among them the threatened Andean spectacled bear and the Northern Pudu deer. Mountain foxes and puma are common and the animals themselves are occasionally seen near the guesthouse. Amphibians and reptiles, although not particularly diverse, are abundant and quite important for conservation. A previously unknown *Eleutherodactylus* frog has been studied within the Reserve and warns that forest fragmentation threatens even small frog species.

**OBJECTIVES OF THE RESERVE**

The primary mission of Guandera is the conservation of some of the last remaining inter-Andean cloud forests. Native species are propagated at the biological station’s greenhouse and tree nursery. An active scientific research program involves detailing the unusual high altitude diversity of flora and fauna. Botanical gardens around the station introduce visitors to some of the important plants found in the reserve.

A strong emphasis on collaboration with the local community of Mariscal Sucre includes a hands-on environmental education course with local high school students and an agro-forestry program that promotes organic fruit and vegetable growing with the agricultural cooperative.
The biological station can sleep up to 20 visitors in four dormitory-style rooms. The house features a full kitchen and indoor bathrooms with electricity and hot-water showers, but no phone. Staff includes the reserve administrator, one cook/housekeeper and auxiliary personnel who work in the tree nursery, botanical gardens, community extension, and educational outreach. In addition, between two and eight volunteers/interns are normally on site.

The climate at Guandera is relatively cold and humid. It often drops to 4°C at night and rises to 22°C during the day. The average temperature is 12°C. The living situation is basic, but comfortable. There is electricity, warm water, and a cozy chimney for cold nights.

**VOLUNTEER ACTIVITIES**

- **Center for the Conservation of Andean Plants:**
  - Volunteers participate in experimental silviculture of Andean trees, assist in seed and data collection, maintaining the nursery, transplanting seedlings, and in reforestation, including opening reforestation lines. There is also an orchid garden that requires maintenance and enhancement.

- **Sustainable Organic Agriculture:**
  - The purpose of our organic farm is to practice organic agriculture techniques and share the experience with the local communities. Volunteers help with preparing the soil, planting seeds, weeding,
harvesting, composting, and with general maintenance. Also, once a week volunteers visit nearby community farms to help enhance these methods in order to produce alternative food sources as well as alternative sources of income. Currently we are growing native fungus, different types of fruit, 20 different types of Andean tubers, and more.

- Alternative animal production: We have a colony of guinea pigs (cuyes). Volunteers will participate in planting the crops for the guinea pigs, and feeding them. We also have creole hens that the volunteers can help to care for.

- **Research in the cloud forest and paramo:**
  We strongly encourage volunteers to come with their own ideas for research projects in mind. Alternatively, our Site Coordinator can help you come up with a research project.

  - Biological inventories: As part of the treks on the trails of the Reserve, volunteers develop biological inventories (especially plant and birdlife). They collect scientific information about the flora and fauna observed during the hikes.

  - Herbarium collection: Volunteers can also make plant collections to add to a herbarium we have at the station. The information will be used to make a booklet about the flora in Guandera.

  - Research assistants: If we have any research projects going on at the reserve, volunteers may participate as research assistants.

  - Meteorological station: Volunteers have to collect data on temperature, precipitation, wind and radiation.

  - Personal investigation: Volunteers can feel free to propose their own personal investigation if they like. The coordinator at the station will arrange the agenda to give the volunteers some time to
develop their personal project.

- **Reserve maintenance:**
  - We all work together to maintain and develop the station. Volunteers help with trail design in the forest and making signs for the areas in the station. Sometimes we have visitors at the station, so once volunteers know the station very well, they can help guide visitors. Finally, once a month we have a “minga,” in which everybody helps out in organizing the station and removing things we do not use that could be useful to other people in the community.
  - Volunteers can help with our upcoming projects to construct a cabin on the paramo in order to view the spectacled bears or the paramo wolf, and to construct a lunch shelter in the paramo.

- **Community development**
  - *Environmental education:* As part of our community development objective, we offer environmental education to people in the community of Mariscal Sucre when there are enough volunteers at the station. Volunteers develop and instruct classes on conservation, biology, and human issues for local school children and adults. The program is taught in local schools.
  - *English teaching:* Volunteers interested in teaching English to children around the community have the opportunity to do it twice a week – from Tuesday to Thursday. If you want to bring your own materials to give to the children, we would very much appreciate it.

- **Free time:**
  - *Fireside talks:* At night we light the chimney and we have long talks about our country, our history, our culture, our people, our nature... This is a time to share mutual experiences with our volunteers. We also have the opportunity to play 40 (an Ecuadorian card game), UNO, and chess.
- **Visit to spas**: On weekends or free days, volunteers can visit hot springs near the station. The volunteers cover their own expenses for transportation, recreation and food.

**Sustainable Tourism in Carchi**

Every week we have treks on the trails of the Reserve in which the staff will present biodiversity themes. On clear days it is possible to observe the snow-capped volcanos such as the Chiles, Imbabura and Cotacachi. To the south of the reserve you can also find the “Devil’s Nose”, and the Labrateña and Mirador waterfalls. During the weekends and days off, staff members can take the volunteers to visit interesting places nearby. For these activities, the volunteers have to cover their own transportation and personal expenses.

- At San Gabriel, 20Km South from the Station there is the spectacular 60m high Paluz waterfall.
- 30 Km South from Guandera you can find La Paz, from which a steep but good cobbled road descends for 5Km to the Gruta de la Paz. Views along the road are breathtaking, including two spectacular waterfalls. The entire area is a religious shrine, receiving large number of pilgrims during Holy Week, Christmas and in July.
- Tulcan, the capital of the province of Carchi, is located 15km north of the Station. A place of interest in Tulcan is the cemetery where the art of topiary is taken to beautiful extremes. Cypress brushes are trimmed into archways, fantastic figures and geometric shapes in bas relief.
- There are also some hot springs near Tulcan arising from the nearby Chiles volcano.
- You can also visit the ecological reserve El Angel, which protects 15.715 hectares of paramo ranging in altitude from 3.400 to 4.150m.
WHAT WE ASK OF YOU

These have been written in order to better prepare you as a volunteer, not only for the work that you will be involved in but also for the environment you will be living in.

We understand that each individual situation will vary somewhat, so we cannot guarantee that everything will be the same as described for every individual, although this is a good general outline of what you should expect when volunteering in Ecuador.

It is important to emphasize that you are dealing with another culture when you are volunteering internationally. The way you would approach a particular situation in your own country is not necessarily the appropriate way to handle it in Ecuador.

Your time and commitment to the program is valued, but please remember that you are a guest of the country and will no doubt be viewed as a representative of your homeland.

If you have any queries you would like to discuss about the information provided here, please direct them to your volunteer coordinator.

FEES & LOGISTICS

Financing: Volunteers must pay their own expenses, including airfare to Ecuador and living costs while in the country.

Costs for Volunteering:
- Application fee: There is a USD $47 application fee to apply for the Jatun Sacha Foundation Volunteer Program (continental stations). Volunteers pay the application fee only once (per year).

- Volunteer fee: The cost is determined by the number of weeks. The fee includes: 3 meals a day, lodging in cabins that are shared with other volunteers and researchers, and coordination of the volunteers in Quito and at the reserves. The fee does not include transportation to the reserve, or extra activities during free time such as tours and visits.

Payment
Fees must be paid in advance or at the orientation meeting. Volunteer fees must be paid in advance and are non-refundable. Volunteers may pay the volunteer fees with traveller’s checks (only with $100 dollar denominations or less), in cash, or via bank transfer.
**Duration of Volunteer Work:**
The minimum time limit for volunteers/internships is 2 weeks. Volunteers will need a visa if staying in Ecuador more than 90 days.

**Health Insurance:**
Volunteers must have their own international health insurance and need to sign a waiver to release Jatun Sacha from responsibility from any illness or injury incurred in Ecuador. There exists a small risk of malaria at our biological stations located in the Esmeraldas provinces on the Ecuadorian coast specifically at Bilsa and Congal Reserves). Therefore volunteers must supply their own malaria prevention medication while volunteering at any of these three sites.

**Work Schedules:**
Volunteers are expected to work 8 hours a day, 22 days per month, therefore having 8 vacation days per month to be used upon approval of the project coordinator.

**Educational Requirements:**
University study is not a prerequisite to be accepted into the program. Prospective volunteers should have interest in conservation and related human issues.

**Extra costs:**
While at the reserves, volunteers need approximately $30 USD per week for additional costs (beverages, community visits, postcards, etc). However, please take along small bills to the reserves, as it may not be possible to get change for larger bills (US $5 and $1).

**APPLICATION PROCEDURE**

The Application Procedure consists in sending us:
1) Application letter: Indicating experience in conservation activities, future interests, reasons for applying, preferred station and participation dates (participation dates are needed to guarantee space availability).
2) Doctor's note stating you are fit to participate in all activities required of you OR Proof of international travel insurance.
3) 2 passport size photographs
4) If you intend to carry out an original project, please include work plan (2-5 pages)
5) US $47 for the application fee (write check in USD currency to Fundación Jatun Sacha)
PREPARING FOR YOUR TRIP

Passport / Visa Requirements

Please note that you need a full valid passport. Some countries do not require a visa for Ecuador; please confirm this with the embassy. Volunteers from certain countries will be issued a 3 month permit upon entry (at no cost). Visit extensions of an additional 90 days can be obtained through the local immigration authorities. Make sure the correct date and length of stay in the country is entered onto your visa when at immigration. Longer-term visitors need to obtain a volunteer visa. We can send you all the documents you require.

Arrival / Departure Information

You need to fly to Quito Mariscal Sucre International Airport, and make your way to a hotel. Taxis from the airport to the center of Quito cost approximately US$25-$30. If you would like us to provide a transfer service, please contact us. After arrival you must attend an introduction meeting at the Jatun Sacha Foundation main offices in Quito. Introductory meetings are at 11:30am on Tuesdays, Wednesdays and Thursdays. If you need to schedule a different time, please contact us. During these meetings you will receive all the information you need to volunteer in the project. You will need to bring two passport photos to this meeting.

The entrance days to Guandera Biological Station are Wednesdays and Saturdays. Please note that you will be responsible for your own travel costs to the project site. In the offices you will receive all the information you need for the next stages.

Finance

The Ecuadorian currency is the US Dollar. We recommend that you bring traveller's checks or internationally recognized credit cards. Please be aware that you may have a maximum limit on cash withdrawal for your bank card in a single day, so it is advisable to come with most of the cash you'll need right away to avoid complications or delays. Ecuador is a cheap country in which to live. A normal person's daily expenses (excluding room, laundry and board) range between US $10 to US$15. Urban public transport is US $0.25 one-way regardless of distance. There are many interesting points to visit on your own, within the country, especially volcanoes and the jungle. Make sure you bring enough money to explore any other areas you wish to visit.

Medical Information

Quito is located at an altitude of 2800 meters above sea level. High altitude can affect some people's health. You should check with your doctor if you have any doubts before you travel. When visiting Quito, you are advised to take it easy for the first couple of days.
**Health and Safety**

**Field Base safety**
All members will be informed of the risks, health and safety procedures for the field base on arrival. It is imperative that everyone both understands and respects them.

**Volunteer safety**
Look after your passport and take a separate photocopy with you. Do not wear flashy jewelry or walk around areas outside with valuable items on display such as cameras. Do not carry large amounts of cash. In the unlikely event that you are targeted for your belongings, hand them over without resistance.

**RECOMMENDED EQUIPMENT LIST**

- **Clothing & Footwear**
  - Well-fitting rubber boots (knee high) are indispensable! Best to buy them here in Ecuador, brand name Venus, without the white lining ($5.00 to $10.00). However you can only find up to size 44 (European; US size 10) in Ecuador.
  - Shoes to walk and/or play sports in.
  - Sandals/flip flops.
  - Fast drying clothes are recommended, however any old shirts and trousers/pants will be good to work in. Just make sure you bring some extra clothes.
    - At least 2 pairs of trousers to work in and 1 pair for the evenings.
    - Shorts.
    - Many t-shirts (short and long sleeved) and many pairs of socks (short and long).
    - A fleece or anything else that’s warm for the evenings.
  - Swimming costume (appropriate).
  - Poncho or rain jacket.

- **Toiletries & Medication.**
  - **BIODEGRADABLE soap & shampoo, tooth brush, tooth paste, etc.**
  - First aid kit: bandaids, gauze, bandages, iodine, antiseptic cream, ibuprofen or paracetamol, topical antibiotic cream, anti-hystamine tablets, any medications you already take.
  - Sunscreen.
  - Insect repellent.
  - Feminine hygiene products (if necessary).

- **Other necessary items.**
  - Sleeping bag
  - Towels.
  - Laundry detergent.
  - Sunhat or cap.
- Work gloves.
- Torch/flashlight/headlamp with enough spare batteries.
- Small backpack for hikes and work.
- Water bottle.
- Ziplock bags.
- Diary, writing pad, pencils & pens, etc.
- Enough money for traveling expenses, mules, community visits, beer or coke, etc., (about $150 for a month, please bring many small $5 and $1 notes!).

**Recommended, but not necessary, items:**
- Binoculars (preferably waterproof), camera, books, playing cards, pocket knife, chocolate and/or energy bars, biscuits, sweets, snacks, etc.

## HOW TO GET TO GUANDERA

The reserve is four hours north of Quito on the Pan-American Highway, another hour drive off the highway on a cobblestone road, followed by a 40 minute walk into the reserve. Allow a minimum of six hours for the total trip from Quito. Plan to arrive at the reserve before night fall.

The entrance days to Guandera are Wednesdays and Saturdays.

1. Take a taxi to the Bus Terminal Terrestre Carcelén in Quito. At the bus terminal, go to the bottom floor and look for the office Pullman Carchi, San Cristobal or other buses traveling to Tucán.
2. Buy a ticket to go from Quito to San Gabriel. Buses leave every hour from 6:00 am to 1:00 pm and also until 8:00 pm. Please take the bus at 8:00 am or 9:00 am at the latest. It’s approx. a 4 hour journey and the bus ticket costs $4-$5.
   a. DON’T EVER PUT YOUR HANDLUGGAGE (with camera, phone or any other valuables) ON THE RACK ABOVE YOUR HEAD OR BELOW YOUR SEAT!!!! Store your valuables in your big bag that goes in the storage compartment under the bus (you will get a ticket so you can retrieve it), and anything you need during the bus ride (like money, passport, etc.) in a bag on your lap or in a moneybelt.
3. Once you are in San Gabriel, take a taxi to go to the central park (Parque Central) of San Gabriel. Here look for a taxi or a blue jeep to take you to the Mariscal Sucre Community, approximately 30 minutes away. These cars are parked around the Central Park. A taxi costs US $7-$10 from San Gabriel to Mariscal Sucre. A blue jeep costs US $2 per person and will take a group of people from San Gabriel to Mariscal Sucre.
4. At Mariscal Sucre, go to the Jatun Sacha Community Extension Office. You can ask anyone in the community where it is so that the taxi or jeep will let you off there. At the office you will meet someone from the Guandera Station and together you will take another truck for a six kilometer trip to the entrance trail to Guandera.
5. Finally, you will walk for 40 minutes and arrive at the Reserve.
CONTACT INFORMATION

POSTAL ADDRESS: Fundación Jatun Sacha
Teresa de Cepeda N34-260 y República
Segundo Piso.
Urbanización Rumipamba
Quito, Ecuador
América del Sur

OFFICE TEL: (593 2) 243 2240 (Quito Office)

VOLUNTEER PROGRAM COORDINATOR: Rebecca Willey
EMAIL: volunteer1@jatunsacha.org
TEL: +593 99 237 1034
WHATSAPP: +1 719 205 3236