

Costa Rica Climate Change Project

Carry out groundbreaking survey work in Costa Rica's remote habitats and help combat the effects of climate change as you track and conserve some of the country's most mysterious creatures.

Set between its tropical Caribbean and Pacific coasts, Costa Rica is one of the most breath-taking countries in the world. Even though it covers just 0.03% of the world's landmass, it is home to an incredible 500,000 species including jaguars, pumas, four species of monkeys and five species of turtle. This is the highest density of species of any country in the world.

Frontier volunteers are carrying out groundbreaking survey work, exploring Costa Rica's remote habitats and helping to combat the effects of global warming by establishing a baseline against which future protected area management can be assessed. On this project you will live in a wilderness camp set in dense tropical forest on the shores of the Pacific Ocean next to pristine turtle beaches.

You'll live and work with other enthusiastic and energetic volunteers at a basic research camp near some of Costa Rica's most impressive protected areas. You'll carry out crucial surveys that are being used to find out how climate change is affecting endangered species and threatened habitats. Jaguars, sloths, pumas and turtles are just a fraction of the species here that are under threat; it is your job to help find out how to best protect these species and preserve their environment.

Join this incredible project to discover a world of fragile beauty and help safeguard Costa Rica's precious wildlife and exceptional habitats for future generations.

PROJECT HIGHLIGHTS

- Develop lifelong friendships
- Visit this tropical paradise
- Work with some of the world's most endangered species

PROJECT REQUIREMENTS

- High level of fitness and stamina needed: conditions can be arduous and trekking strenuous. Practice uphill walking before you arrive.
- Vocational qualification available

Please note: the peak turtle season begins in June and ends in October / November; sightings outside of this period are expected to be less frequent

FAST FACTS

Location	Costa Rica
Activities	Primate observation-based studies Turtle monitoring Tracking big cats

	<p>Understanding the social and ecological constructs of predator conservation</p> <p>Otter studies on the rivers</p> <p>Bird surveys</p> <p>Butterfly surveys (Dry season only)</p> <p>BTEC personal research projects (Various surveys subject to candidates' interests)</p> <p>Additional forest trails, river walks and beach walks</p> <p>Recreational sports</p> <p>Reforestation programme</p> <p>Trail creation and maintenance</p> <p>Swamp visits by day and night, plus forest night walks</p> <p>Community involvement activities e.g. education, recreation</p> <p>Optional excursions (not included in the price and subject to availability)</p>
Transport	<p>Pick-up from the airport weekly on a Monday</p> <p>Escorted on the local bus. Fare not included (USD6)</p>
Accommodation	<p>Communal forest camp and local hostel on night of your arrival (USD7)</p>

WHAT WILL I BE DOING?

You will be working in the Pacific rainforests and beaches near Corcovado, one of the most remote National Parks in the country which has been described by National Geographic as “one of the most biologically intense places on the planet.” Home to one of the largest tropical primary lowland rainforests in the world, the Corcovado National Park is also the habitat of a large range of endangered plant and animal species. Dense rainforest creates a dramatic habitat for hundreds of bird and mammal species, along with a high population of marine turtles nesting on the beaches each year (please note that the peak season for turtle monitoring begins in June and ends in October/November. Markedly fewer surveys are typically conducted outside of this period.)

On our Costa Rica Forest Research Programme you will be carrying out extensive and broad biodiversity surveys. Work will include walking primate transects to collect valuable data on the white-faced capuchin monkeys, squirrel monkeys, Geoffroy’s spider monkey and mantled howler monkey which thrive in these biologically rich forests. You will also be patrolling the beaches of nesting endangered marine turtles to assess nesting preferences, hatchling success and population health, undertaking a big cat research project which aims to address one of the biggest threats to wild cats globally, human-wildlife conflict, undertaking groundbreaking work on the Data Deficient neotropical otter whilst walking the course of the rivers, and surveying populations of exotic birds, invertebrates and other animal groups in this exciting, relevant and comprehensive research programme.

In addition to these wildlife research projects you will also be involved in other activities which play a key part in conservation. For example, typically twice per week all project participants assist with projects led by partner and land owner Osa Conservation, a non-governmental organisation whose mission it is to protect and support habitats, people and wildlife of the Osa Peninsula. Programme participants may be involved in the creation and maintenance of trails which facilitate the majority of the surveys we conduct, assisting on their Agro-Ecological farm in order to secure a more

sustainable food source for camp and Osa Conservation or on Reforestation programmes

This programme has also secured opportunities to assist with additional surveys in the local area led by a Carate-based turtle conservation programme, and operate out of a satellite camp situated a few kilometres away where participants may be given the opportunity to milk cows and make cheese on the farm as well as conduct wildlife surveys in the surrounding forest previously largely unstudied.

Though there is enough downtime to get yourself stuck into a good book, swim in the rivers and take part in horse riding, canopy tours and a trip to Corcovado National Park (not included in the price) among others, the project boasts a busy schedule focusing on its broad range of high conservation impact science for which participants will receive full training in the field.

Sea turtle monitoring

Volunteers patrol two beaches close to camp. The patrols not only help to gather valuable population data of the endangered marine turtles, but also serve to discourage poachers and predators trying to raid nests and collect eggs. The two species of turtle most frequently observed are the Olive Ridley and the Pacific Green Turtle. During peak nesting season (July-November), turtles found nesting on the beach at night are tagged and given a health check. In the mornings we also conduct nest excavations which involve checking the hatched nests to assess reproductive success after the hatchlings have emerged. Total clutch size, number of successfully hatched eggs and the number and stage of development of un-hatched eggs are recorded. Any hatchlings that might have remained trapped in the nest chamber are freed and placed on the beach to allow them to reach the sea.

Primate surveys

Many mammals are social animals which frequently travel in pairs or groups. The most abundant mammal species found in the area are the four species of monkey: squirrel monkey, mantled howler monkey, Geoffroy's spider monkey and white-faced capuchin monkey. Primate surveys are typically conducted three to four times each week recording every troop encountered whilst walking slowly through the forest with a pair of binoculars. The primary aim of this project is to estimate density of all four primate species in Costa Rica and so it is important to firstly take an accurate count of the number of individuals within the troop (a good pair of binoculars will certainly prove beneficial) as well as calculating the size of the area surveyed by taking measurements of the distance between the trail and the troop of monkeys.

Big cats and people

Costa Rica is home to six species of wild cat and five are found on the comparatively tiny Osa Peninsula; the large jaguar and puma, the small jaguarundi and margay and the intermediate spotted cat, the ocelot. These species are elusive and sightings are rare and even if you don't see them whilst out on the trail or on camp (an ocelot was seen at the time of an early morning toilet visit in early 2013!) you will likely find evidence that they are around, leaving tracks and faeces and being caught on camera traps. Seeing a big cat is mostly down to luck, being in the right time at the right place, and to increase your chances further, we also offer night walks into the forest to search for some of the world's most incredible wildlife as your torchlight is reflected in the eyes of a wild cat.

Our big cat research is a multi-phase project which combines an ecological study of the abundance and distribution of predators and other wildlife and a sociological study in which interviews are conducted with local people to understand perspectives of conservation and the interactions between people and wildlife with regard to livestock and crop losses. This conflict between landowners and wildlife is one of the most significant issues in wildlife conservation and the jaguar is one of the most heavily threatened species as a result of retaliatory killing and persecution as a

preventative measure against livestock predation. The ultimate objective is to find solutions to any problems identified that benefit the livelihoods of local people and allow for the sustainable maintenance of predators and prey in this critical biological corridor neighbouring Corcovado National Park.

Neotropical river otters

The neotropical river otter (*Lontra longicaudis*) is classified on the IUCN Red List as Data Deficient as there is insufficient data on species distribution, abundance and habitat use for the population status to be assessed against the criteria used to decide whether the species is Critically Endangered, Vulnerable etc. Our study in Costa Rica seeks to provide one of the first year-round studies of a local population of otters with regard to the spatial distribution throughout the year. It is critical to study these animals all year round as it is expected that the otters will expand, contract or shift their core areas of use as the river changes in depth, width and course within and between seasons. This information has conservation significance as it ensures that any strategies to protect this species that are recommended as a result of this work consider the habitat requirements throughout the year and not just within a specific shorter period.

To determine the areas being used by otters we record indirect signs such as faeces ('scat') as evidence that an otter has been there. These locations are recorded onto a GPS unit in the field and are analysed within a Geographic Information System (GIS) to assess the spatial distribution through computer analyses.

Bird point count surveys

Bring your binoculars and set your alarm early and you can join in our bird surveys which take place throughout the forests and along the course of the Rio Piro. Many of Costa Rica's beautiful birds can be found here, as well as several migratory species. Frequently sighted are trogons, antbirds, hummingbirds and tanagers, and if you are lucky maybe a Baird's Trogon or Great Curassow.

Bird counts are a commonly used method of identifying avian species composition in an area and we aim to study the diversity of the bird community in primary and secondary forest as well as within the river course. Not only will you be identifying birds by sight, but you will start to learn to identify birds by the calls they make.

Butterfly diversity in the forest understorey (Dry season only)

Butterflies are a well recognised indicator of habitat quality, ecosystem function and health and can be used as an early warning system for environmental change. As a key part of the food chain a diversity and abundance of butterflies will promote greater diversity and abundance of animals at the top trophic level (e.g., wild cats) and any changes in the environment and forest health that results in detriment to butterfly populations will have significant negative impacts on other wildlife.

This project involves live trapping butterflies by the use of canopy traps suspended from trees within the forest at different heights. The traps are baited and checked daily and butterflies are handled for identification. This work is conducted only in the dry season due to damage caused by rainfall and typically therefore runs between October/November and May/June.

Leaf litter frog diversity and abundance

Costa Rican amphibians are a diverse group and are amongst one of the most sensitive to climate change due to their use of small microhabitats and the porous nature of their skin. Declines have already been seen amongst amphibian groups due to reductions in pool sizes, shortened rain fall seasons and increased temperatures increasing bacterial growth and disease transmission. The

sensitive nature of amphibians to altered climatic variables makes them an excellent indicator group for studying the effects of changing climates. The focus of the study here is leaf litter frogs and as they lay their eggs in leaf litter, increasing decomposition rates due to increasing temperature can eliminate their breeding habitat to the point that reproduction of an entire population can be threatened.

Our study uses hand capture techniques to capture leaf litter frogs within the primary forest and collect scientific photographs of each specimen for ex situ identification to confirm identification based on small characteristic differences between species. Environmental data such as temperature and humidity is also recorded to monitor the effects of climate change on populations between years. By the nature of this project, it creates an inventory of all leaf litter frogs in the area, is able to estimate the number of species likely in the area and can be used to monitor not only the diversity but also the abundance of leaf litter frogs.

Overview of project objectives

The long term goal of this project is to investigate the effects of climate change on biodiversity and the subsequent implications of climate change upon Costa Rica's network of protected areas. The project addresses four important questions in order to safeguard the future of Costa Rica's economically and biologically important natural heritage:

1. What effect is global warming having on the biodiversity within Costa Rica's system of protected areas?
2. What future effect is global warming likely to have on the biodiversity within Costa Rica's system of protected areas?
3. Is there adequate existing connectivity between habitat blocks within Costa Rica, and within the Mesoamerican hotspot as a whole, to allow ecosystem migration?
4. What conservation efforts can and need to be put in place to ensure the continued existence, where possible, of the ecosystems which typify the natural habitats of Costa Rica?

WHAT HAPPENS WHEN I ARRIVE?

If you arrive on a Monday before 12:00pm, you will be greeted at Puerto Jimenez airport or bus station by a Frontier staff member and escorted by local bus to the project camp. If arriving after 12:00pm on a Monday or at any time on any other day, a pick-up can be arranged for an additional \$40.

WHERE WILL I BE STAYING?

Life on camp is a unique experience! You will be staying in simple, shared, mixed-sex eco-cabins amidst the jungles near to Carate. This is a jungle research camp, so you may sometimes find yourself sleeping in a tent or in a hammock – a mosquito net is an absolute must! We have tried to keep the camp in harmony with its pristine surroundings, so conditions are simple, but environmentally friendly and comfortable.

The camp is situated about 5 minutes walk from Playa Carate, a beach which stretches for over 20 miles all the way into Corcovado National Park. There are cool, refreshing showers and environmentally friendly, composting toilets on camp too. You'll be feeling one with the jungle before you know it!

Check out our camp tour video!

WHAT WILL I BE EATING?

We feel it is very important to support the local economy, so most of our supplies are sourced locally. This means we do not have access to everyone's preferred foods and much of what we eat is seasonal and fresh. Costa Rican food is delicious, with a focus on rice, beans and good quality fruit and vegetables.

Cooking and cleaning are carried out communally on a rotational basis, so everybody will be responsible for meal preparation. You will have the opportunity to learn how to cook the national staple food, gallo pinto, consisting of fried rice and black beans. Another dish that is simple to prepare with local ingredients and is often eaten on camp is light and crispy tortillas stuffed with refried beans and vegetables.

There are no refrigeration facilities for meat, fish and dairy, so the team takes the environmentally friendly option of vegetarianism during their time on project. If this sounds worrying to you, not to worry, as volunteers regularly make delicious comfort foods such as pizza, falafel-style burgers, curries with homemade chapattis and ginger and cinnamon cakes to name but a few. Get creative! There is also powdered milk to satisfy you avid tea-drinkers.

Much of the fresh water in the streams surrounding the camp and on the peninsula are safe to drink and it's important to remember to keep hydrated. Just be sure to check with staff first.

Costa Rica is also world famous for its coffee and it represents the country's biggest export, so coffee lovers will have plenty of opportunities to get their hands on some. Luxuries like chocolate and packet soup are available in the town nearby, but it is worth bringing some of your favourite treats out with you as well as any herbs or spices. It is recommended that you buy snacks when in town (cereal bars, biscuits etc) for mid-morning sugar dips or to give you energy on long treks.

COSTS

1 week	US\$ 945
2 weeks	US\$ 1,445
3 weeks	US\$ 1,995
4 weeks	US\$ 2,445
5 weeks	US\$ 2,845
6 weeks	US\$ 3,095
7 weeks	US\$ 3,395
8 weeks	US\$ 3,695
10 weeks	US\$ 4,245
20 weeks	US\$ 6,495
Extra week	US\$ 395
Christmas week	US\$ 295

DEPARTURE DATES

Every Monday

DURATION

You can join this project for a minimum of 1 week.

CHRISTMAS OFFER

This project is available for the special price of US\$255 per week over the Christmas period. Placements starting on the 24th or 31st of December 2018 are eligible for this price, subject to availability. Please apply using the orange button below and then tell your volunteer advisor that you wish to take part over Christmas.

WHAT'S INCLUDED

Before you go

- Pre-departure support & documentation
- Travel and medical advice and documentation
- Advice on visas and equipment
- Discounted medical kit
- Free Frontier T-shirt
- UK residential briefing weekend including food, accommodation and training (extra cost applies)

In-country

- Accommodation
- Food (on camp)
- Project orientation
- Project equipment
- Airport pick-up (for those arriving on a Monday)
- In-country emergency support
- 24-hour international HQ backup

AIRPORT INFORMATION

Nearest airport(s): San Jose Juan Santamaria Apt (SJO), Puerto Jimenez (PJM)

CONTACT INFORMATION

Call us on 020 7613 2422 (UK) / 1 949 336 8178 (US)

Mail us on info@frontier.ac.uk

Check out our social media here:

Project details were correct at the time this document was generated. Price, dates and other details are subject to change. Please see our website for current details for this project.