

JAMES RENNIE BEQUEST

REPORT ON EXPEDITION/PROJECT/CONFERENCE

Expedition/Project/Conference Title: Jatun Sacha conservation station.....

Travel Dates: 12th July – 23rd August

Location: San Cristobal, Galapagos Islands, Ecuador

Group Member(s): Shane Mc Parland.....

Aims: Conservation of flora on transition zone of San Cristobal island

OUTCOME (not less than 300 words):-

In the month of July I travelled to the Galapagos islands, 1000km off the west coast of Ecuador, with the help of James Rennie bequest. The aim of the travel was to participate as a conservation volunteer on the island of San Cristobal, one of the few inhabited islands in the archipelago. The conservation organisation is Jatun Sacha which also runs three other sites in mainland Ecuador. In the Galapagos their primary aim was to eradicate the area from invasive plant species and in their stead plant and maintain original Galapagean floral species. This is a not-for-profit organisation which has been run in the Galapagos for five years.

Since the 1960's the Galapagos Islands have had increases in eco-tourism which reach new peaks every year, e.g. last year there were around 140,000 tourists, this has had an impact on Galapagos flora and

fauna. In addition to this the people on the islands cannot grow their own foods and food must arrive from the mainland. Planes and boats carrying passengers and other cargoes such as food bring in unwanted invasive flora and fauna unbeknown to the Galapagos national park service which monitor inbound cargoes (although in my experience better staff members need to be employed). Within increasing numbers of tourists the number of planes and boats also increase not to mention the passengers themselves. Microorganisms, plant seeds, insects and many more species arrive by this way.

The islands have five climactic zones, coastal, dry forest, transition, miconia and pampas which are characterised by their flora and fauna. Jatun Sacha is located in the transition zone and the base area consists of wooden cabins of three houses of accommodation and a kitchen. Each cabin could house around twenty volunteers. After work volunteers could either read in hammocks along the house or they sit in the kitchen playing cards which was more common. Home comforts were kept to a minimum such as cold showers, but since electricity was only introduced one year previously I wasn't complaining!! Needless to say there were also unwelcome residents in the room crawling over the walls.

The grounds of Jatun Sacha there are fields with endemic species of plants such as *Scalesia* or Guava. These are fields which are finished and only need general maintenance by volunteers, such as cutting down vines which may choke the trees. The main activity of the volunteers was the eradication of *Mora Comun*, or blackberry bushes which have overtaken this part of the island due to introduction around sixty years ago, by use of a machete. Seeds were cultivated in the nursery for maximal growth and saplings were brought down and placed into holes dug by the volunteers. This was the primary aim of the organisation.

Second to this was the maintenance of the production area where the station grew their own vegetables for use in the kitchen; surplus vegetables were sold to the local markets. The aim of this was to reduce the imports coming from the mainland and reduce invasive species. There were also orange and lemon trees among other novel fruits used by the kitchen which weren't cultivated because they grow readily in the environment. Some species aren't native to the islands but because they aren't invasive they don't need to be removed. Two volunteers are chosen for every meal shift to collect oranges from nearby groves to produce orange juice for the meal and also to help out in the kitchen. Meals were at 7:00, 12 noon and 18:00 and a wide range of nutritious meals from fresh ingredients were always prepared by kitchen staff.

In addition to these two main activities we also participated in others such improving the road which led up to the station for the aid of the taxis which drive up, making our own coffee from scratch and also attending the nursery. In the nursery different methods were used to improve the germination and cultivation of seedlings, such as fizzy drinks being added as they thought the acids would improve germination number and reduce germination times.

Work days were on Monday and Wednesday, on Tuesday and Thursday we could carry out personal projects. These varied from group to group such as bird-watching or helping out around the station such as painting. A fellow volunteer and I came up with a personal project of our own. This consisted of

evaluating the extent of invasion done by five selected invasive species as compared with five endemic species, as selected by the project leader, on three of the different zones: dry forest, transition and miconia. These were long distances and in order to get stratified results we could only take a limited set of results; tracks through mud and bushes which had to be cut with the machete also slowed us down. Nevertheless we took enough measurements to come up with our conclusion. On the lower two zones there were higher levels of invasive species, whereas in the miconia level, native species were dominant. This was either due to species in this zone being less susceptible to invasion i.e. species are competitive or the soil was poor, alternatively and most likely, invasive species were being introduced by volunteers as these were the most human populated areas.

Fridays consisted of a hike around different parts of the islands in order to learn about the islands ecology. A highlighted hike was a trek to the Galapaguera, a semi-natural habitat of a species of a giant tortoise. The trek took three hours through the forest learning about flora and fauna along the way. At the Galapaguera a naturalist guide told us about the work they were doing. Since it's establishment thousands of 'teenage' tortoises were released into the completely natural Galapaguera at the north of the islands, not nearly enough to restore the depleted hundreds of thousands of tortoises eradicated by humans directly or indirectly by the introduction of rats and dogs which prey on the eggs and young tortoises. After the Galapaguera we also had a chance to dip our toes in the nearby beach which is everybit as paradisaical as could be imagined. After the beach we arrived at 'El Junco', an extinct volcano with a freshwater lagoon in it's crater. This is the only freshwater source on the Galapagos and in it can be seen flocks of great and magnificent frigate birds washing their wings. The reason for this is that when they emigrated to the islands, they did not evolved oil glands to remove the salt from sea-water like other sea-birds and have to come here to bathe themselves.

Saturdays and Sundays were our days off, we would take a taxi down to port for the two days. At the station we always had 100% cloud coverage (not to mention the rainstorms) but in the port town there would always be sun beaming down. The town itself was a little run-down: there is high unemployment as cruise-liners attract tourists and normally money form tourism doesn't actually reach the inhabitants; saying that there are tourist agencies and more souveneir shops than I care to mention. At port there were also nature walks and the beach where it was possible to swim with sea lions that seemed to line the coast of all the islands.



Marine iguanas and a finch

We took advantage of touring agencies to do numerous things to see and explore the landscape and wildlife which the islands are famous for. In these tours it was possible to see effects that evolution has had on species which had emigrated to the islands. While trekking over a lava field from a volcano which erupted in 1995, with its twisted sculptures of rock shining with fool's gold, the guide showed us the first organism, a fungus, to inhabit the islands which arose from out of the ocean. When its spores land on the rock it makes use of the rock's minerals to proliferate and create a layer of topsoil. Then the toughest of plants arrive by seeds travelling over the water or carried by birds, the cactus. When these organisms are at sufficient numbers, when they decompose they create a layer of soil deep enough for new plants to arrive. Sea-birds have always been resident on the island due to the rich marine-life around the islands. As a result of this, there has been limited predation of one species over another (an exception is the frigate bird which attacks birds in mid-air so they drop their catch) and birds have evolved down the sexual selection pathway examples of this are the dance of the albatross, the neon blue feet of blue footed boobie and of course the great red pouch on the breast of the magnificent frigate bird. These islands are a pilgrimage for bird-lovers everywhere, in addition to these birds there are also Darwin's finches, flamingoes, penguins and a much more diverse spectra of avian fauna. In the seas, we had a chance to swim with whales, sharks, turtles and multi-coloured fishes which blend into the background of coral reefs with as many colours and more.



A blue footed booby

Of course due to this rich marine life it is endangered by overfishing by inhabitants, a theme all too common on the islands as well as other endangered parts of the world. These sights with the animals of the islands as well as the necessary conservation taking place all over the islands by the efforts of the

national park service make it all too obvious the necessity of caution when humans discover such a delicate natural system.

My deepest thanks to James Rennie Bequest for helping this all possible. It was a fantastic experience that has had a huge impact upon my life and will be immensely helpful in the future.