

Suggested 4 week itineraries for terrestrial biology expeditions



Many of the Operation Wallacea sites are based in fully terrestrial systems and as such a student can gain a lot of experiences of working in such habitats and learning about their ecology and conservation. These expeditions include working in the forests of **Indonesia** and **Honduras**, as well as the Amazon rain forest **Peru**. Students can also help research the ecology of a range of animals in the Bush in **South Africa** as well as the herpetofauna of the Bay Islands in Honduras.

Honduras - Cusuco National Park

Itinerary

Week 1 - HM001 Jungle Training

Weeks 2,3,4 - HM101-104 Jungle research options

This expedition allows the student to work in the cloud forests of the Cusuco National Park in Northern Honduras. The course offers a range of studies on terrestrial biology and ecology including distributions, behaviour, interactions and feeding of animals, plant distribution and ecology and the interaction of the animals and plants to form the ecosystem. While studying these species and habitats the student will also be learning many of the skills and techniques used in their research and how the data they are helping collect will be used towards conservation.

The first week of the expedition is spent on the jungle training course where students are taught general forest ecology, including some of the main species in the area and their ecology. The course also highlights the specific requirements for working in the forest environment including safety considerations and conservation needs of the area.

There are then 4 week long options, detailed below, from which the student can build their own itinerary for the remaining three weeks.

Option 1 - HM101 Monitoring biodiversity change in Cusuco

This option allows the student to join on one of a range of projects studying the fauna and flora of the Cusuco National Park. Projects are based on general animal groups so the student may choose to study bats, small mammals, birds or invertebrates or the distribution of many different plant species. The week will be spent surveying the populations of these organisms, through a range of methods including traps, nets, observational studies and listening to vocalisations. The student will learn how to collect and process data and then see how it is used towards the conservation of the park.

Option 2 - HM102 Large mammal monitoring

There are several large mammal species found within Cusuco, although their numbers have been dramatically lowered through previous hunting or logging activity. These species include the Baird's Tapir which is listed as endangered by the IUCN. There are three primates species in the park and while the howler monkey populations are relatively healthy those of the white faced capuchin and spider monkeys are very low. Other large mammals are also listed as present in the park including the jaguar, deer and small cats. As sightings are rare most of the work is based on observations of tracks, faecal material and vocalisations. The student will learn how to extract population data from such readings and use this information towards conservation.

Option 3 - Howler monkey behaviour and ecology

The primate research group is based in the community of Cofradia and works in the surrounding forests. The student will help with observational studies of the behaviour of several groups of howler monkeys. These monkeys are relatively sedentary which allows extensive observation and familiarisation of individuals and groups so specific behaviours can be monitored that are impossible with more mobile species. The student will use a variety of different methods to record behaviour and be involved in the analysis of the data.

Option 4 - River amphibians and invertebrates

Students joining this group will visit remote parts of the park to study the amphibians and invertebrates found in the many different stream and river systems within the area. Amphibian work is highly important as already 5 species have been identified as endemic to the park, and these and many others are under huge pressure from development and the chytrid fungus which is decimating many amphibian populations throughout the Americas. At the same time the student will help collect aquatic invertebrates from the streams, the presence and abundance of such invertebrates is being used to construct a biotic water quality index to monitor the health of the streams. Students will experience a range of different skills required to sample these animals and analyse the data gathered.

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Honduras - Cusuco National Park and Cayos Cochinos Marine Protected Area

Itinerary

Week 1 - HM001 Jungle Training

Week 2 - HM101-104 Jungle research options

Weeks 3,4 - HC109 Boa and Ctenosaur population research

This expedition starts in the Cusuco forests and the first two weeks are spent on the same options as the previous expedition, however after two weeks the student transfers to the Cayos Cochinos Islands off the northern coast of Honduras in the Caribbean Sea where they will join the herpetofauna research group.

The first two weeks are described in the previous expedition with the student taking the forest ecology course and then choosing from 4 different options for their second week.

For the second half of their expedition students will transfer to the Cayos Cochinos Islands where they will join research projects studying the populations and ecology of the endemic, small pink Hog Island Boa Constrictor, many different species of Anoles and the rare Ctenosaur (similar to a large iguana). Students will help capture and measure the animals as well as perform observational studies on their behaviour, ecology and prey items. During this time they will learn about the techniques used and the analysis and use of the data towards the animals conservation and the benefit of the islands ecosystem.

Indonesian - Lambusango Reserve

Itinerary

Week 1 - IN001 Jungle Training and Tropical forest Ecology

Weeks 2,3,4 - IN101 and IL102 Animal research projects in the Lambusango Reserve

This expedition will put the student into the Lambusango forest in Indonesia. The forest is an area of very high biodiversity with many endemic species not found anywhere else in the world. The student will join a forest training course for a week to equip them to work in the forest before joining a variety of research groups studying the animals in the forest. The research here covers a range of subjects such as animal behaviour, population density, ecology, feeding activity and position within the forest ecosystem and also assesses the plant structure and distribution within the forest.

The first week of the course is the jungle training course where students are taught general forest ecology, including some of the main species in the area and their ecology. The course also highlights the specific requirements for working in the forest environment including safety considerations and conservation needs of the area.

The student can then chose from a variety of research projects covered in two options.

Option 1 - IN101 Biodiversity change monitoring

There are many small projects studying the biodiversity and populations of animals and plants in the forest and the student can join any of these for a period of time. Research groups are based on specific animal and plant groups or by habitats and include macaque monkeys, anoa buffalos, small mammals, amphibians and frogs, birds, insects, rattan ecology and canopy ecology. Each of these requires unique sampling methods and the student will learn these in the field as they help to collect data that will be used as part of a yearly monitoring program.

Option 2 - IL102 Fundamental Ecology Research Projects

This option is focused on understanding the ecology of the forest and the species within it. In particular a lot of emphasis is placed on assessing the effects of disturbance on forest ecology and animal numbers and behaviour. Again many different animals are studied and the student can join several of these groups gaining a range of experiences. These animals include the civit, macaque monkeys, insects, bats and reptiles. As with option 1 the student will experience many of the techniques used to study each animal and be involved in the data collection and processing.

Suggested 4 week itineraries for terrestrial biology expeditions



South Africa - Kruger National Park and Intibane/Thanda Reserves

Itinerary

Week 1 - SK002 Bush training in the Kruger National Park

Weeks 2,3,4 - SK101 or SK 104 Animal research projects in the Intibane/Thanda Reserves

On this expedition the student will train in the Kruger National Park before transferring to work in the Intibane/Thanda reserves, all recognised areas of high biodiversity and populations of large mammals. The course introduces the student to the area and its ecology and allows them to collect field data as part of a large research team. The student will join research scientists working in the park that will place them in the unique situation of being allowed to walk around the park on foot, something that is only possible for research scientists and not tourists. The course covers a wide variety of animals in the park and looks at the effects of increasing elephant populations and the consequences of fire management practices on the overall biodiversity of the park. The student will gain a range of experiences in working with animals and the techniques used in their study. They will also be involved in the processing of the data they collect and see how this is used towards the conservation efforts in the park.

The student will join the expedition in the Kruger National Park and start on the bush craft training and savannah ecology course. This will teach them many of the skills needed to work in this environment including survival skills. The course covers savannah ecology and how the parks in South Africa are being managed to increase biodiversity and the populations of many of the larger mammals that were brought close to extinction by hunting.

After the training the student will transfer to the connected Intibane and Thanda Reserves where they will go into the field as part of the research group and work on one of the two projects running in the park. At all times during the expedition the student can expect to see many of the large mammals that characterise the habitat such as elephants and lions.

Option 1 - SK101 Bird and habitat surveying in the Intibane/Thanda Reserves

In joining this option the student will join a very large team of scientists charged with surveying the bird populations in the reserve. The basis of this groups research is that bird population represent a very good indicator species of overall habitat health and complexity and can therefore be used as a relatively simple and rapid tool for assessing the over health of an area. Students will join early morning bird surveys using visual and vocalisation methods to assess population numbers. Later in the day the student will help survey the habitat in the area, considering tree and grass species, structure and density. The combination of the habitat survey and bird populations will give a very powerful tool in assessing the health of the area. Students will use a range of techniques during this course and learn how the data is both processed and applied to conservation.

Option 2 - Biodiversity monitoring in the Intibane/Thanda Reserves

Similar to option 1 this option allows the student to visit many areas of the reserve and collect a range of data on the overall health of the area. However unlike option 1 which focuses on birds over a very large scale this option covers a smaller ground but looks at more species. This means the student will join in on surveys for invertebrates, amphibians, small mammals and reptiles, learning many different field techniques associated with each animal and developing an understanding of the ecology of each and how it integrates into the overall ecosystem of the reserve. They will also help process the data and see how such data is used towards managing the reserve.

Suggested 4 week itineraries for terrestrial biology expeditions



Peru - Pacaya Samiria National Reserve

Itinerary

PP001 - Introduction to Amazonian ecology

PP101 - Biodiversity monitoring in Pacaya Samiria

Students joining this project will travel down the Amazon river on specialised research boats into the Pacaya Samiria National Reserve, the largest such reserve in Peru and located within incredibly deep and diverse Amazonian rain forest. The boats are equipped with all accommodation and research facilities so the student will be based on the boat for the whole expedition with daily trips into the jungle and associated wetlands. The Peru expedition allows the student to join a wide variety of research teams gaining experience of studying many of the animal species found in the area. Students will also be given an introductory course covering Amazon biodiversity, research and conservation methods and highlighting the threats to the unique environment.

The course starts as the boat takes the 4-5 day voyage up the Amazon river from Iquitos into the Pacaya Samiria Reserve. During this time students join the Amazonian wildlife ecology and conservation training course. This will cover a lot of the ecology of the area, research methods and conservation efforts. The student will also learn survival techniques and the skills required to work in the jungle.

Once the training course is completed and the boat is in the Pacaya Samiria Reserve the student joins the biodiversity monitoring research teams for the next three weeks. These teams work in small groups on specific animals or groups of animals and the student can spend several days with each learning the ecology of each animal, its position with the Amazon ecosystem and also the methods used in its study. For terrestrial biology students nearly all these groups will be of interest, especially the primates, birds, large mammals, parrots, frogs and amphibians, however the caiman crocodiles, giant river otters and turtles will also be relevant.