

JAMES DYER EXPEDITIONS

Into the depths of the Amazon 2018 A 'Citizen Science' Research Expedition

Expedition Proposal

BACKGROUND

Manu National Park in Southern Peru is one of the most biodiverse wild places in the world. Just to give you an idea of how diverse, it is home to at least 1,000 bird species and 220 mammal species. The National Park is the core of an even larger Biosphere Reserve, which covers an area of forest bigger than Wales. This forest is home to many endangered species. Not only are that, but the vast majority of species in this area unknown to science. The reserve is also home to a number of uncontacted indigenous groups, who continue to live in the area with a level of protection afforded by the National Park.

Although this is an amazing and diverse ecosystem, the edges of the Biosphere Reserve and the National Park are under enormous pressure from expanding populations, resource extraction, tourism and the encroachment of roads and communication networks.

In the past ten years a unique research station, the Manu Learning Centre (MLC), run by the Crees Foundation (www.crees-manu.org), has been studying this vulnerable area on the edge of the forest, sometimes called the Cultural Zone. The MLC is based in secondary rain forest on the banks of the Madre de Dios River and has been studying key species living in both the secondary and primary forest surrounding the centre with some amazing discoveries that are improving our understanding of the importance of secondary forest.



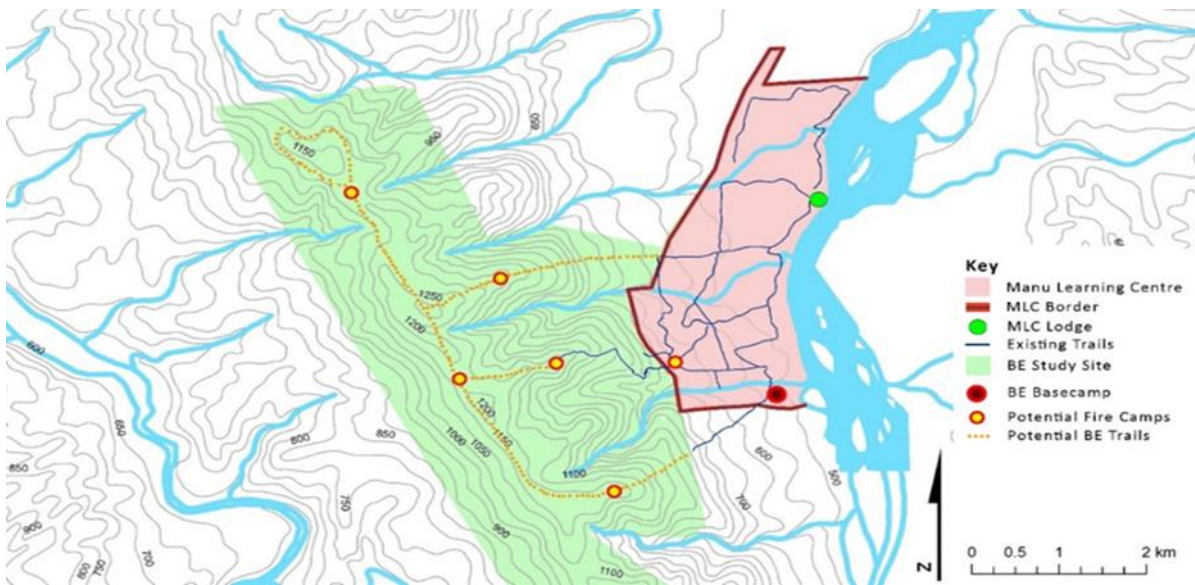
Expedition destination

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PROPOSAL

We plan to conduct an expedition to this area, deep in the southern Peruvian Amazon, with the aim of involving participants in field research.

Expedition leaders James Dyer and Dr Ross Piper, in partnership with the Crees Foundation, will take up to 20 participants to a remote part of the Crees Reserve and immerse them in the experience of living and working in the research centre and field research. The participants will undertake key species surveys in conjunction with Crees Peruvian scientists and students, feeding this research into the vital work that Crees are involved. Participants can also develop their own scientific projects in their areas of interest and expertise. In addition to these projects there will also be the opportunity to get involved in a unique project to study the forest canopy.



Manu Learning Centre (MLC) reserve map and survey area

It is believed that 90% of all forest fauna and 50% of all flora can be found in the canopy, and because of the difficulty in accessing and studying this habitat it is a true frontier of biological research.

Since early 2016 James Dyer has initiated and trialled a new system allowing more people to access the canopy. The system also gives users more time in the canopy to observe, carry out studies and interact with this unique ecosystem.

The new system also enables people with disabilities and limited upper body strength or fitness to access the canopy in relative ease and to sit comfortably and safely for extended periods.

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The 2016 British Exploring Society Peruvian Amazon Expedition was the test bed for the canopy-access system, demonstrating applications in scientific studies and film making. The system also enables 70 expedition participants and leaders to climb into the canopy and experience the forest from a new and rarely visited perspective.

During the preparations for, and the 2018 expedition itself, participants will be trained in the use of the canopy-access system and be able to develop projects and applications for the use of the system in furthering knowledge and research of the canopy.

Another key element of this expedition is to help develop the capacity of the Peruvian scientists and field researchers employed and volunteering at the MLC. Participants will use their knowledge and experience to work with and help develop the skills of these scientists and volunteers. These scientists are the future of ecological research and conservation in Peru, so enhancing their skills and helping them to understand the importance of their work to global conservation will bring long-term benefits.

PROJECT STRANDS

There are five main strands to the projects on this expedition:

1. Crees research - base line surveys supporting existing research.
2. Science projects and participant's personal research projects.
3. Canopy access research project.
4. Adventurous exploration of the forest.
5. Building and enhancing the skills of Peruvian field workers.

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Views of the Crees Reserve.



OUTLINE PLAN

The expedition will spend nearly three weeks in Peru during May 2018, with time at the beginning and end of the expedition in the Incan city of Cusco, either finalising kit and equipment or exploring the city and the local Incan ruins and history.

The expedition will then travel overland across the Andes and down through the cloud forest into the heat of the Amazon Basin, before loading up boats and travelling down the Madre de Dios River to our remote base camp. The first few days will be a mixture of base camp building, initial acclimatisation and familiarisation. Once this is over the team will be able to explore the surrounding area and begin research projects. Participants will then return to Cusco to explore and celebrate their achievements and experiences before heading home or taking the opportunity to explore further on their own.

PROPOSED SCIENCE PLAN

Working with expert scientists and with the support of the Crees Foundation Science team, including local Peruvian scientists, the team will assist with a range of scientific studies and develop their own projects, based on expertise and interests.

People tend to forget that we've barely scratched the surface of understanding life on Earth, from the species we share the planet with to how they all live and interact. The lowland forests of Peru are some of the most diverse habitats anywhere on the planet and there's still so much to understand about these forests and their inhabitants that you're spoiled for choice of what to study. With that said there are a number of projects you could contribute too or which may inspire you to come up with your own ideas. Some of the core team projects include:

Documenting insect diversity

There are still millions of species out there to describe, most of which are insects. Collecting some of the more difficult to find groups using a variety of techniques will help to fill in some of the blanks. The specimens will be deposited in international museums and eventually described using morphology and DNA. It is also important that we record and observe what we can on where and how these animals live - these ecological observations are gold-dust. Assessing insect diversity can also be very useful in examining the differences between secondary forest and more pristine areas.

Canopy diversity

Using the new canopy access system mentioned above we will be able to explore the life of the canopy, which is where the majority of the animal diversity is to be found. Sampling this environment and examining epiphytic plants will give us access to animal species that are never seen on the ground.

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Miniature water-body communities (phytotelmata)

Anywhere water accumulates in the forest, such as an open Brazil nut pod or the unfurling leaf of an understory plant is home to a microcosm of animals that are found nowhere else. These communities have barely been studied.

Fruit and frugivores

When trees in the forest, such as fig trees, come into fruit they are visited by a huge variety of mammals and birds, which eat the fruit and end up dispersing the tree's seeds. Understanding what animal species use these fruiting trees helps us to understand the interactions that are crucial for a healthy forest.

Reptile and amphibian surveys

These animals are very easy to overlook and working with experts you'll be able to contribute to what is known of the species that live in this area with the potential to find undescribed species.

PROPOSED ITINERARY

Day	Date	Location			Activity	Accommodation
	08/05/2018	Depart UK			Travel	
1	09/05/2018	Participants Arrive in Cusco, Meet at Hotel.			Travel	Hotel
2	10/05/2018	Cusco - Build Up day			Kit / equipment preparation	Hotel
3	11/05/2018	Travel into Manu National Park by vehicle. Start expedition in cloud forest.			Travel Set up camp	Camp: Tents Hammocks
4	12/05/2018				Set up-science Acclimatise/ orientation	Base camp: Tents Hammocks
5-13	13/05/2018 to 21/05/2018	Crees Survey Projects	Canopy Project	Personal Projects		Base camp: Tents Hammocks
		5 - 13				
		6 - 14				
		7 - 15				
		8 - 16				
		9 - 17				
		10 - 18				
		11 - 19				
		12 - 20				
	13 - 21					
14	22/05/2018	Travel to Cusco			Travel	Hotel
15	23/05/2018	Cusco			Sight Seeing	Hotel
16	24/05/2018	Participants Depart to UK				

LEGACY

The expedition is based on exploring and researching science-based subjects to expand the knowledge and understanding of secondary rainforest and the species of flora and fauna that live there, particularly new species. The expedition will add to the body of biological knowledge and contribute to the long-term conservation of this ecosystem and the surrounding area.

The work undertaken will feed directly into research that the Crees Foundation have been working on for the last 10 years, and into the research undertaken by the wider science community in Peru.

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This is only part of the legacy of this expedition. The Peruvian scientists and students who will hopefully join the expedition are learning to appreciate and study their own natural heritage. During the expedition, they will work with the participants to learn how to live and work in remote field bases, learn leadership and expedition skills and to pass on first-hand knowledge and information to the expedition participants. The skills and experiences they take away from this expedition will help them with their studies and careers ultimately contributing to the long-term protection of Peru's globally important ecosystems.

James and Ross are interested in using this style of expedition to seed the development of 'citizen science' expeditions to remote and inaccessible places to help advance scientific research and increase global appreciation of threatened areas. In doing so, we aim to push the boundaries of research and devise new techniques and adventurous methods of reaching and studying these places.

BIOGRAPHIES

James Dyer

James has had a 20 year career in outdoor learning, adventure sports coaching and expedition leadership. He is been involved in over 30 expeditions, leading on more than 20, to all environments involving adventure tourism, mountaineering, canoeing, scientific research, community projects and exploration, with participants ranging from young people to adventurous retirees!

From 2011 to 2016 he was the Operations Manager at the British Exploring Society, over the 5 years here he was involved in restructuring all operation functions of the organisation, improving the quality of leader recruitment and training, initiating and directing the Trainee Leader programme and heading up the expedition planning team, planning and delivering over 20 educational expeditions for young people.

James has also set up and led a series of expeditions for RAF Air Cadets from a range of units in Kent, including the 2014 "In the Footsteps of Lawrence" Expedition which won the 2014 Ulysses Trust Best Cadet Forces Expedition and the RAF Air Cadets Shackleton Trophy for best Expedition.

In 2016 & 2017 he was the Chief Leader of the British Exploring Society Peruvian Amazon Expedition to Manu National Park. He works as a Remote Environment Safety, Leadership and Training Consultant, Expedition Leader and continues to operate as an Advisor to the British Exploring Society on aspects of Training and Leadership.

He is a Leading Practitioner in the Institute for Outdoor Learning, a Fellow of the Royal Geographical Society and holds a Commission in the RAF Reserve (Training) Branch.

Dr Ross Piper

Ross is a zoologist, entomologist, explorer, writer, presenter/on-screen expert and Fellow of the Royal Geographical Society. Ross has a 1st class degree in zoology from Bangor University and a PhD in insect ecology from the University of Leeds.

He has been involved with expeditions to Europe, the Americas, Africa and Southeast Asia, primarily looking for insects. He has discovered a new genus and several new species of insect. Ross was part of a BBC/Smithsonian Expedition to Burma, the product of which was broadcast as the three-part series – Wild Burma: Nature's Lost Kingdom – on BBC 2.

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His latest book, *Animal Earth*, is a cutting-edge exploration of animal diversity. Ross is also a very keen macro-photographer, which is an important tool for documenting expedition finds.

Ross' current projects include exploring insects as a source of novel pharmaceuticals and biomaterials, devising new techniques for sampling terrestrial arthropods and planning further expeditions. His work in southern Peru includes instructing on undergraduate student expeditions and understanding more about the colossal insect diversity of this part of the world. You can read more about Ross' work on his website: <http://www.rosspiper.net>

COSTS

The contribution to participate in this expedition is **£2,200.00**, plus flights to Cusco (approximately £700.00-£900.00), which participants are required to source themselves, so some good deals may be found. We only ask that participants arrive at the expedition starting hotel, in time for an evening meal on the first night of the expedition.

This covers:

- All accommodation in hotels in Cusco (4 Nights, 3* style Bed & Breakfast)
- All transport to and from Cusco to the forest base camp
- All expedition food at base camp
- Guides costs
- Most expedition and science equipment (not personal, a full kit list will be supplied)
- Expedition insurance (not Personal Travel)

Please note that it does not cover the following:

- Flights
- Meals in Cusco (lunches & dinners)
- Alcoholic drinks
- Personal travel insurance (to cover activities and evacuations)
- Personal equipment