**REPORT ON EXPEDITION / PROJECT / CONFERENCE**

|  |  |
| --- | --- |
| **Expedition/Project/ Conference Title:** | Operation Wallacea Honduras Expedition – Terrestrial and Marine |
| **Travel Dates:** | 10th June – 10th July |
| **Location:** | Cusuco National Park and Utila, Honduras |
| **Group member(s):** | Hoi Sze Sandra Leung |
| **Aims:** | To gain expertise in conducting ecological research in terrestrial and marine sites; To contribute to biodiversity research and conservation in the Neotropics. |
|  |  |
| **OUTCOME (not less than 300 words):-** | |

In the first two weeks, I stayed in Cusuco National Park, a small yet highly biodiverse area that holds many unique habitats. I spent the first three days engaging in a ‘jungle training’ programme. We hiked around the park and acquired jungle survival skills encompassing the four essential elements (water, food, shelter and fire). The continuous hike allowed me to acclimatise to the mountainous terrain and to have a glimpse of the diverse native fauna and flora. We also visited the dwarf forest, an extremely rare habitat characterised by miniature and dwarfed trees, that locates at 2000m elevation.

After completing jungle training, I partook in the Neotropics Ecology course which consists of alternating between survey training and ecology lectures. A wide spectrum of topics was covered, including carbon sink calculation, bird, mammal, invertebrate and herpetology. Having gone through the course, I gained knowledge and skills in conducting ecological research and biodiversity surveys. I was particularly impressed by the robust chytrid fungus and herpetology research, as a permanent laboratory, which was equipped with essential apparatus like PCR machines and pipettes, has been set up at the base camp.

A week later, I transferred to a western satellite camp El Danto and spent 6 days there. On our 9 hour-hike to El Danto, I witnessed the detriment driven by the first world's coffee addiction and beef frenzy: most areas, in spite of situating in the core zone of the National Park, were deforested. The forest was converted to either coffee bean plantation or pastures for cattle. The whole El Danto campsite was deforested in April, a statement made against OpWall's yearly research in Cusuco. Although the Honduran government claimed to have jailed the culprits, the pristineness of Cusuco remains highly threatened.

In El Danto, I went out on different transects according to the personal interest of the researches. I dug pitfall traps for capturing dung beetles; set up light traps for moths and jewel scarab beetles; conducted bird community surveys at 5 am; and monitored chytrid fungus infection rate in frogs by swabbing them to collect DNA samples. The habitat and carbon storage survey, albeit considered mundane, was arguably the most important surveys of all. The data, such as the number and diameter of trees, is calibrated into the carbon sink figures of Cusuco. Corporations can purchase carbon sinks to demonstrate their corporate responsibility and environmental awareness. In turn, the money is channelled into conservation and research.

In the second half of the excursion, I visited Utila, a touristy island famed for its coral reef. I participated in a reef ecology course. The lecture topics included reef species identification (reef fish, coral, macroinvertebrate and macroalgae species), coral reef ecology and conservation, and the ecological importance of mangrove and seagrass. The lectures intertwined with snorkelling sessions in which I practised tucking underwater transects and identifying reef species. At the end of the week, I took a reef species identification test, of which high passing grade (at least 80%) ensured accurate identification in reef surveys.

After being equipped with sufficient knowledge and skills, we set off to collect field data for various research topics. As I am not a qualified scuba diver, I facilitated projects that could be done with snorkelling. These include sea urchin abundance survey, monitoring coral health by colouration, which contributes to the CoralWatch global database; and carnivorous and herbivorous reef fish survey. The most memorable project was recording corallith abundance at different distances from the coast. ‘Corallith’ is a term coined for free-living corals that attach onto a mobile substrate, such as a pebble. According to the free-living stabilisation hypothesis, corallith increases in size and weight until it has become a stable substrate for the attachment of other coral larvae. The reef-building potential and the ability to recolonise inhospitable habitats make corallith the rising star of marine ecology research.

Learning is not confined to conducting surveys. According to field observation, large areas of hard coral reefs have been eaten away by soft corals or macroalgae. Such a phase shift, triggered by climate change, indicates the deterioration of reef health. Hard corals, the architects of coral reefs, are rendered less competitive than macroalgae in the hotter and more acidic ocean. In spite of being crowned as a ‘diving paradise’, most reefs in Utila only have 30% coral coverage, an undesirable figure.

Throughout the expedition, I realised the importance of local participation in conservation and research. Guides who led our navigation through the jungle are all local Hondurans. Planting coffee, rearing cattle and hunting for bushmeat hunting were once their major sources of income. Partnering with OpWall, many locals now work as guides, cooks or vendors at the camps. The financial security incentivises them to protect Cusuco. One of the truly inspiring guides even taught himself English to communicate with foreign researchers. Apart from promoting sustainable development, local involvement also assisted in ecological research. As the locals have rich indigenous knowledge of the forests, they are often the key to understanding the Honduran topography and ecology. For example, the local guides were particularly gifted at spotting well-camouflaged snakes and birds. Without them, the robustness of the research will suffer.

I was also amazed by the enthusiasm of the scientists I encountered. They were all incredibly generous in sharing their subject expertise. Although they specialise in different ecology topics, they share the same love and passion for nature. Many of the fellow researchers were previous student assistants who decided to return year after year to perpetuate the conservation effort in Cusuco and Utila. Their dedication has inspired me to continue pursuing a career in research and conservation.

This expedition with OpWall is a naturalist’s dream come true. Not only had I gained the first-hand experience on fieldwork, but I also collected data contributing to conservation in Honduras. The detriment unleashed by unsustainable economic activities compels me to reflect on my ecological footprint. From doing strenuous fieldwork to witnessing the sheer beauty of nature, this experience has been life-changing and thought-provoking.