



Peter Marsh Travel Award Ecology and Conservation

Billy Dyall Post-Expedition Report, 22nd June – 5th August, 2018



INVESTIGATING AND ANALYSING THE ECTOPARASITIC LOAD OF THREE SPECIES OF CAIMAN IN THE PACAYA-SAMIRIA NATIONAL RESERVE, PERU.





Profile

Hi, I'm Billy. I'm a 21 year old undergraduate student of Biology at Royal Holloway, University of London. I spent my summer in the Pacaya-Samiria National Reserve in the Peruvian Amazon collecting data for my third-year research project.

Project Brief

Black Caiman, *Melanosuchus niger*, experienced massive population loss in the 1960's. They are now a conservation dependant species. Species recovery has been monitored alongside several components diet, habitat preference, competition etc. One factor which has not been measured, and has been scarcely researched in crocodylians worldwide, is parasitic load. Operation Wallacea afforded me the opportunity to

set up a project alongside Fund Amazonia's long-term monitoring of the caiman in Pacaya-Samiria National Reserve, Peru.

Location

The project was based at PV2, Tacshacochoa, along the Pacaya River in the Pacaya-Samiria National Reserve, north eastern Peru. This is the second largest reserve in Peru and home to a huge abundance of species, three of which are caiman: Black Caiman, *Melanosuchus niger*, Spectacled Caiman, *Caiman crocodylus*, and Smooth-Fronted Caiman, *Paleosuchus trigonatus*.





Data Collection

Data was collected along nightly transects at specific sections of the river, channel (smaller tributary) and lake. An auxiliary boat was used to patrol banks, and a high-powered spotlight was used to identify caiman via their eye reflection. Individuals were approached slowly and brought aboard where they were subject to morphometric analysis (length, sex, weight etc.) and a discrete 15-minute parasite search, starting with the inside of the mouth, the tip of the tail.



Parasite Analysis

Ecto-parasites were searched for over the entire surface of specimen (including the mouth, pictured above). The majority of these were leeches and filarial eye nematode (pictured left). Leeches were removed and preserved in alcohol. They were later photographed, with a scale for size, and categorised using a morphological key. For example, 'Species A' had a pronounced dorsal flattening and brown banding along its entire length. Specimens were taken to IIAP (The Institute of Investigations of the Peruvian Amazon) for more detailed species identification. Eye nematode were found in the sub-ocular region and counted, though they could not be removed.



Our Findings

Of all parasites found, 32 samples of leech were identified, removed and preserved. We believe a total of 10 distinct species have been found. This is more than has been found in other studies and published in the literature, within the reserve. Not only does this highlight the negligence of studies within the tropics, but also the need for diversification in methods. The associations of 10 species with the caiman imply generalist host relations, which might have broad implications upon population dynamics and subsequent conservation efforts. Furthermore, parasite abundance was found to be significantly different between species of caiman, as well as habitat preferences (river, lake and channel). Therefore, the role of ectoparasites upon caiman within the Pacaya-Samiria is complex and difficult to model. However, with a distinctly higher diversity and abundance than previously found, this study suggest ectoparasites may have a significant impact upon the conservation of Black Caiman and subsequent species relations within the Pacaya-Samiria Reserve.

