

# Disease Risk and Veterinary Perspective in Chimpanzee Reintroduction

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## OBJECTIVES

The objectives of this Engaged Cornell experience was to learn about disease risk and a veterinary approach to reintroduction of chimpanzees. This investigation also focused on disease prevalence of a filarial parasite in the wildlife-domestic animal-human community.

## INTRODUCTION

For six weeks in the summer of 2018, we worked at the Jane Goodall Institute's Tchimpounga Chimpanzee Sanctuary in the Republic of Congo. Our original project goal was to assist the local veterinary staff in pinpointing the cause of a recent outbreak of filaria among the sanctuary's chimpanzees. While we were successful in locating and documenting the parasite, suspected to be *M. perstans*, in many of the animals, our focus soon shifted to gathering information on various zoonotic diseases, performing routine health procedures, relocating and introducing individuals into new social groups, and implementing contraceptive measures to ensure the sanctuary would not exceed its capacity.

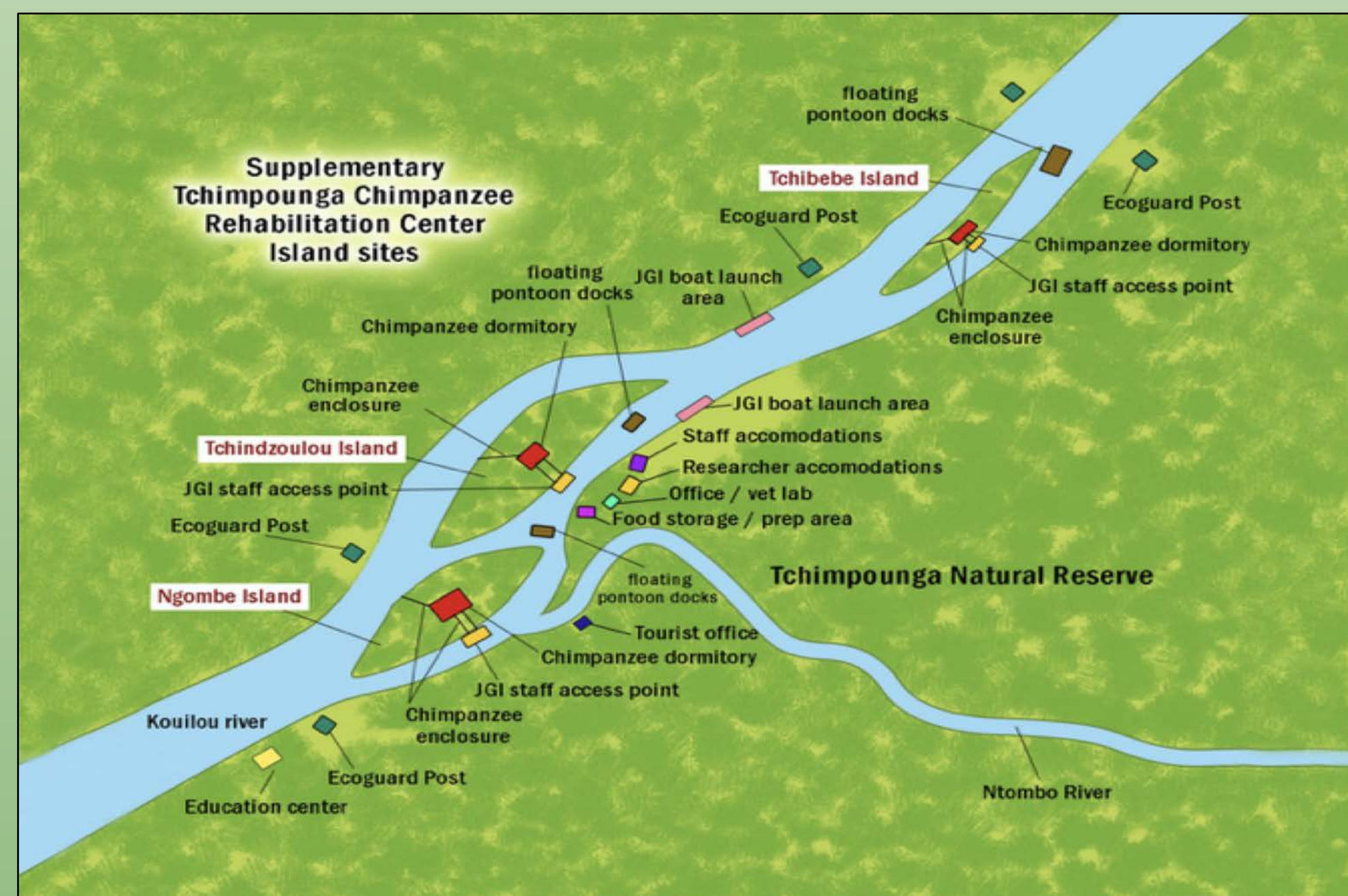


Fig 1. Tchimpounga Chimpanzee Rehabilitation Center Island Sites



Fig 2. Cornell students assisting Dr. Atencia in routine health checks and diagnostic procedures at Tchimpounga Chimpanzee Rehabilitation Center

## METHODS

### Disease Risk Research

We gathered information about approximately 50 critical diseases for which chimpanzees should be routinely screened. We then helped to create a document that summarized the health concerns associated with these diseases such as the etiology, clinical signs, diagnosis, and treatment of each.

### Health Check Procedures

Our project also provided us with an invaluable opportunity to assist in routine health checks of the chimpanzees with Dr. Rebeca Atencia. These checks included daily microscopic examination of fecal samples to check for parasites, regular monitoring of temperature in several locations of the body as an indicator of disease, running over a dozen blood tests per chimpanzee to get an overall view of an individual's health status, and providing birth control implants to reproductively active females.

### Blood Tests

- On-Field Test: Blood Glucose, Hematocrit, Hemoglobin, and Triglycerides
- Routine Complete Blood Count & Biochemistry Panel
- C-Reactive Protein (CRP)
- Blood Typing
- Serology: Hepatitis & Helicobacter pylori
- Microscopic Evaluation: Filarial parasites

## PROJECT IMPACT

- Highlighted the intricacies and potential negative effects that zoonotic diseases have on chimpanzee reintroduction and the ecological health of domestic animals and local communities.
- Provided additional context through a multi-disciplinary approach on measures that should be taken to improve chimpanzee conservation.
- Emphasized the role that chimpanzee conservation has in maintaining ecosystem services that are closely linked to the biodiversity and livelihoods of local communities.
- Together with the local caretakers we took measures to learn and improve wildlife management, animal husbandry, and water quality of the region in relation to the health of chimpanzees and caretakers alike.

## CONCLUSION

By actively screening and researching for disease risk in a chimpanzee population we highlighted the importance of surveillance prior to reintroduction. Given the abundant evidence that infectious diseases negatively impact chimpanzee reintroduction, we need to be vigilant of all variables to further improve conservation efforts. We also need to better appreciate the role of pathogens in maintaining or disrupting ecosystem services, and the links between biodiversity and health risk to local communities, the environment, and animals. Together with the Jane Goodall Institute, we hope to publish on chimpanzee health and assessment prior to reintroduction using the data we collected in the Republic of Congo.