A One Health Approach to Chimpanzee Conservation In Uganda
Victoria Albano and Stephanie Xue
Jane Goodall Institute, Uganda
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Jane Goodall Institute Uganda, Engaged Cornell, Dr. Robin Radcliffe, Dr. Peter Apell, Chimpanzee Trust, Ngamba Island, ... Mbabazi, Dr. Emily Otali, Dr. Patrick Tusiime, Makerere University, Kibale Forest Schools Program, Nebert Kasozi,

Goals of Uganda Engaged Cornell Program:

- Ensure the health of wild animals and people, as well as Uganda) develop broad community-based strategies that JGI partners (in partnership with the government of (1960-1973). During this time, she observed the behavior of wild chimpanzees in the Kibale forest, as well as the interactions between human, animal, and environmental health. She continued her research for over 60 years, and her work has been instrumental in the conservation of chimpanzees globally.

Introduction:
The Jane Goodall Institute is an international non-governmental organization dedicated to conserving the welfare of chimpanzees in the wild and those brought into captivity. The JGI Uganda One Health internship is designed to help students build their capacity in the area of Conservation Medicine and One Health. This unique cross-cultural and multidisciplinary knowledge sharing opportunity is intended to help both Cornell University and JGI partners (in partnership with the government of Uganda) develop broad community-based strategies that ensure the health of wild animals and people, as well as safeguard keystone species of the rainforest such as the chimpanzees.

Goals of Uganda Engaged Cornell Program:

- **Hoima District:** Understand the obstacles of in-situ conservation specifically regarding Eastern chimpanzees (Pan troglodytes schweinfurthii) in unprotected forests such as Bukonjo and Bugoma.
- **Kibale National Park:** Understand the correlation between public health research (i.e. zoonotic disease transmission) and the conservation of chimpanzees in a nationally protected forest.
- **Ngamba Island Chimpanzee Sanctuary:** Understand captive management protocols for Eastern chimpanzees and how captive populations contribute to conservation at large.

One Health Internship with the Jane Goodall Institute Uganda

**Hoima District**

- **June 8-24, 2019**

  Objective: Create a One Health survey to interview rural Ugandan community members affected by human-wildlife conflict with primates.

  Picture: Conducting a One Health household survey with a rural farmer with a Chimpanzee Trust ambassador.

**Kibale National Park**

- **July 3-12, 2019**

  Objective: Conduct a retrospective study comparing the correlation between incidences of human and chimpanzee respiratory tract infections from June 2016 through June 2019. Additionally, shadow Ugandan human physicians in their clinical study regarding viral respiratory prevalence in primary-school children around Kibale National Park.

  Picture: Dr. Patrick Tusiime collecting a nasal swab sample from a primary-school student in Kanyarwanda community.

**Ngamba Island**

- **Chimpanzee Sanctuary**

  - **July 16-24, 2019**

  Objective: Understand captive management protocols of a captive population of chimpanzees. Assisting local veterinarians with the annual health evaluations.

  Picture: Chimpanzee education and biological sample collection.

Lessons Learned

- **Hoima District:** Sources of Human-Wildlife Conflict in the Field
  - Habitat destruction and fragmentation
  - Industrialization due to discovery of oil
  - Expansion of harvesting palatable crops along forest and river borders (maize, sweet potato, beans, etc.)
- **Ngamba Island Chimpanzee Sanctuary:** Determining correlations of respiratory sign prevalence between human and chimpanzee populations based off of retrospective clinical data is controversial. Respiratory diseases are diverse, differing in incubation period, environmental longevity, and mode of transmission; therefore, determining correlation requires specific assumptions upon which the statistical significance depends. Although not ideal, cumulative work such as this retrospective study can lead researchers to conduct diagnosis-based research and prove increased prevalence or need for intervention before zoonotic transmission occurs between people and animals.

Internship Conclusions:

- Wildlife veterinarians are at the forefront of One Health initiatives in developing countries, and because of this, they fulfill diverse roles such as: conservation ambassadors, disease transmission epidemiologists, clinicians, and educators.
- Much conservation work is centered around working with people: addressing their concerns and helping their relationship with wildlife.
- Collaborating with a variety of professionals including: human practitioners, ecologists, educators, etc., is the key to successful, multi-disciplinary conservation efforts.
- Constant self-reflection and project evaluation is necessary as conservation issues are constantly evolving.

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Figure 1: The One Health Initiative recognizes the inter-disciplinary interactions between human, animal, and environmental health.