

A One Health Approach to Chimpanzee Conservation In Uganda

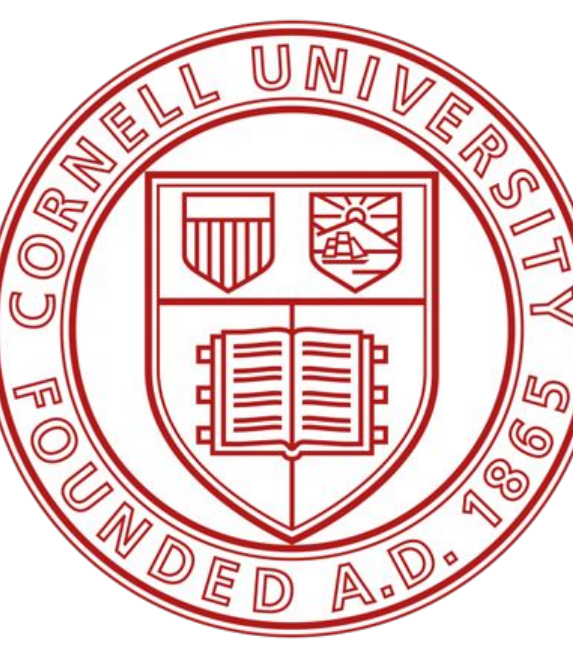
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Jane Goodall Institute, Uganda

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Engaged
Cornell

the Jane Goodall Institute



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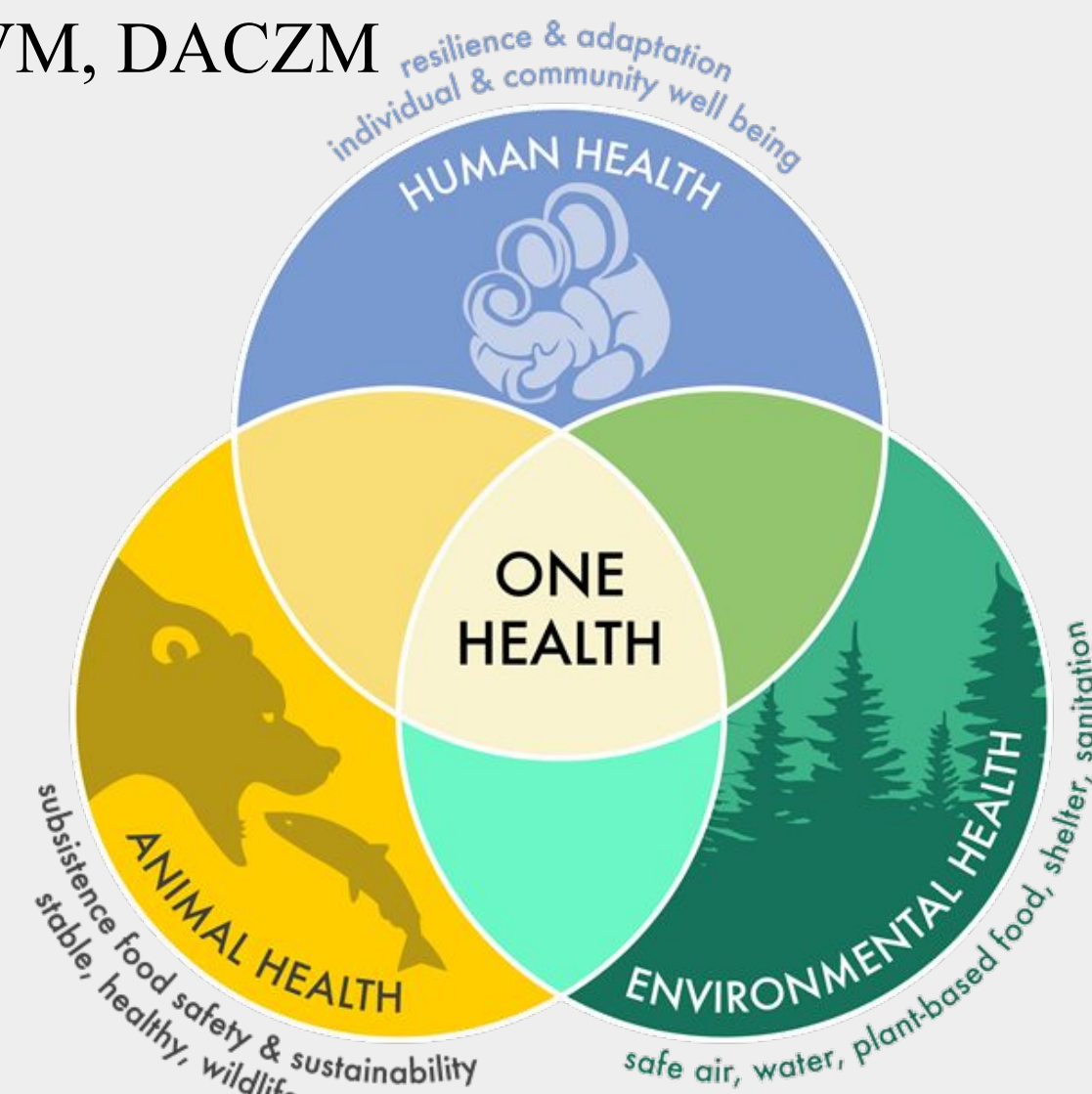


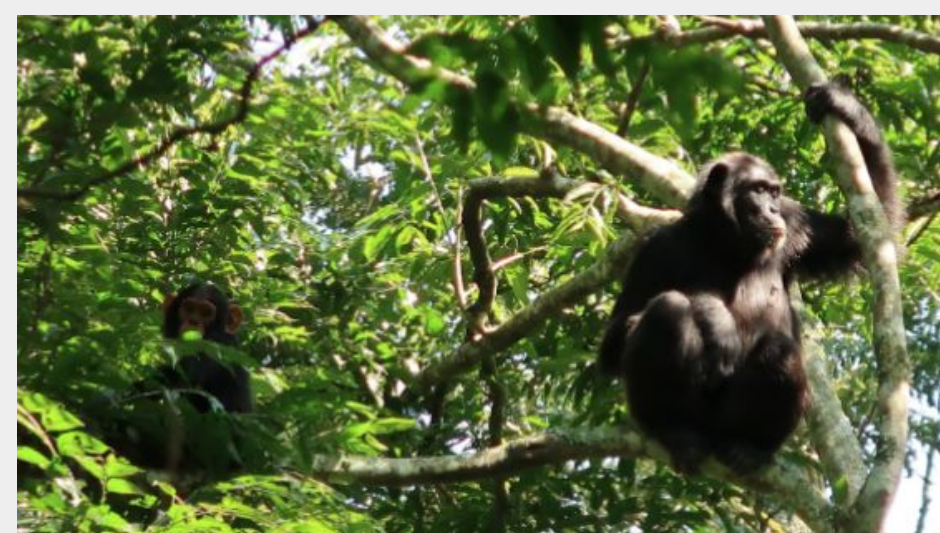
Figure 1:
The One Health Initiative recognizes the interdisciplinary interactions between human, animal, and environmental health.

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 chimpanzee.

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 Budongo 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.



Picture 1: Wild Eastern chimpanzees in Kibale National Park. Photo taken by Stephanie Xue '20.

One Health Internship with the Jane Goodall Institute Uganda

Hoima District

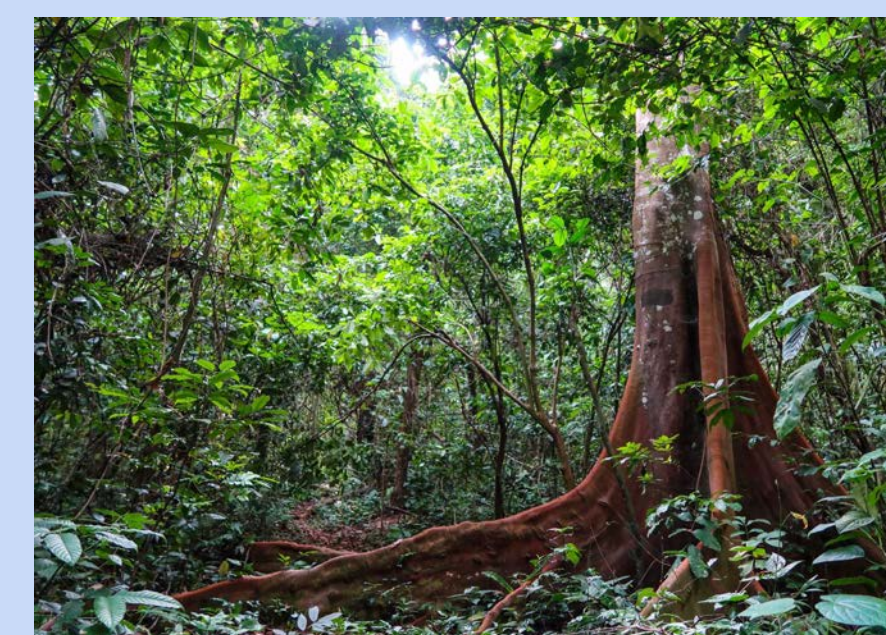
June 8-24, 2019

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



Picture 2: Conducting a One Health household survey with a rural farmer with a Chimpanzee Trust ambassador.

Objective: Learn about responsible private forest management and agricultural development through forest walks and community engagement.



Picture 3: Itoya forest, a properly managed private forest outside of a vocational school. Approximately 60 chimpanzees live here and are protected by forest manager, Ssezi.

Objective: Learn about different ways to engaged primary-school students in conservation education. Additionally, learn about how representation at political/cultural events make an important impact on conservation efforts.



Picture 4: Attending the Empango, celebration honoring the King's 25th Coronation, in Ugandan traditional wear.

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

Objective: Experience the job of the Kibale NP Snare Removal Team and learn about their efforts to reduce human-induced chimpanzee injuries.



Picture 6: Victoria, Stephanie, and the Kibale NP Snare Removal Team after a 3-day exhibition, collecting snares and tracking animals throughout the forest.

Objective: Participate in educational outreach programs regarding human sanitation and hygiene through the Kibale Forest Schools Program. Learn more about the intersection between human and wildlife health, and solutions to disease transmission between the two populations.



Picture 7: Kibale Forest Schools Program Hygiene Outreach Program

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.



Pictures 8/9: Chimpanzee examinations and biological sample collection.

Objective: Learn how to evaluate collected biological samples.



Picture 10: Stephanie evaluating fecal flotation sample.

Objective: Assist local veterinarians' health evaluations and surgical procedures on resident domestic animals at Ngamba Island.



Picture 11: Two postoperative domestic shorthair (DSH) cats recovering from elective ovariohysterectomy.

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.)
- Human reliance on forest resources (water, food, timber, medicinal plants, etc.)
- Abundant population growth due to societal and economic pressures
- Loss of cultural norms/ traditions that promote wildlife conservation

Multi-faceted Solutions

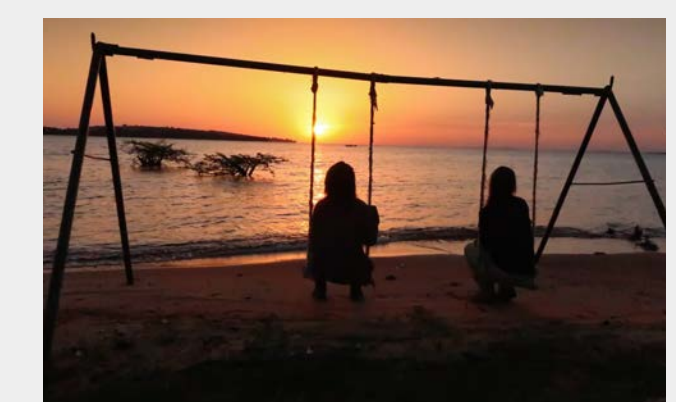
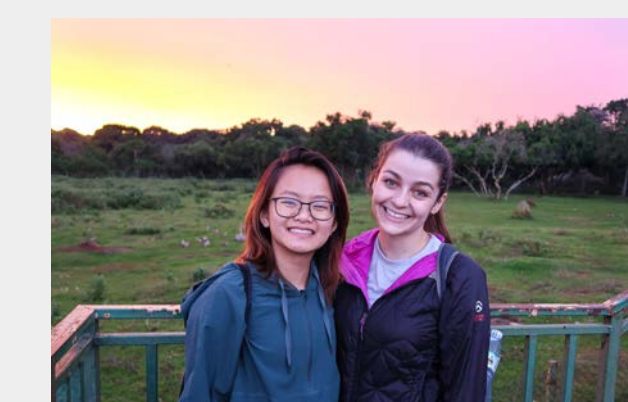
- Improve efficiency of land-use management (i.e. harvest non-palatable crops along perimeter of gardens)
- Securing market and financial stability for non-palatable crops (hot pepper, vanilla, mushrooms)
- Alternative livelihoods (beekeeping, craft making, etc.)
- Conservation and family planning education for primary school students
- Opportunity for adults to continue education specifically in business management

Kibale National Park: 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, correlative 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.

Ngamba Island Chimpanzee Sanctuary: Determining and enacting health and management protocols is essential to ensuring the proper care of great apes in captivity. Medical evaluation of this species requires ample communication between the veterinary team, animal care keepers, and staff.

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 healing 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.



Pictures 12/13: (Left) Victoria and Stephanie outside exhibit at Entebbe Wildlife Education Center. (Right) Sunset at Ngamba Island.

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