



WELFARE OF WILD ANIMALS USED IN RESEARCH, TRAINING AND INDUSTRY

RESEARCH OVERSIGHT AND COMPLIANCE

PRESENTATION MADE DURING

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WILD ANIMAL WELFARE

Definition - Animal welfare in general (domestic and wild) refers to -

- The *well-being of animals living in their natural habitats or*
- How an animal is coping with conditions in which it lives (WOA, 2011)
- Accordingly, an animal in a good state of welfare is one which is
 - Healthy
 - Comfortable
 - Well nourished
 - Safe
 - Able to freely express its innate behavior, and is
 - Not suffering from unpleasant states such as
 - Pain, fear, and distress.

Animal Welfare Issues

Use, Occupation and Natural Processes

Animal welfare issues arise from their use, occupation and nature while used to enhance human well-being, as

- Companions - pets
- Food - livestock, poultry, wildlife
- Law enforcement and intelligence - K9s, Doves, rodents
- Teaching and training - rodents, livestock, wildlife
- Transportation - dromedaries, horses, wildlife
- Agricultural workforce - oxen
- Recreation and entertainment - **wildlife**, **circus animals (still on but restricted or banned)**
- Research - rodents, none-human primates, bats, invertebrates
 - Biomedical research, to gain scientific insight, knowledge and understanding of living systems, with focus on human behavior, human biology and disorders
 - Drug and Vaccine development studies
 - Infectious disease studies
 - *Animals are studied instead of humans in many situations where manipulating humans is not possible or acceptable*

GUIDELINES FOR USE OF WILDLIFE IN RESEARCH AND TEACHING

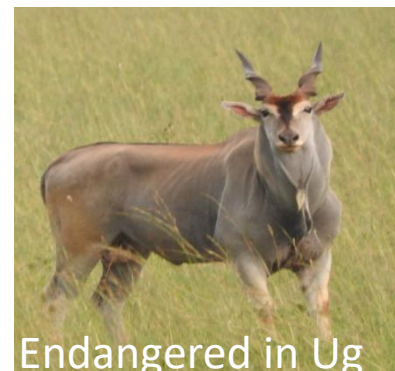
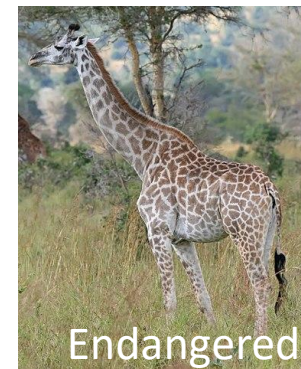
Regulatory framework guides actions -

- International Conventions and Treaties to which Uganda is a signatory
 - IUCN - International Union for Nature Conservation, enacted in 1948, Geneva, Switzerland
 - CITES - Convention on International Trade in Endangered Species of Wild Fauna and Flora, enacted in 1963, Geneva, ratified by Uganda in July 1991
 - CBD - Convention on Biological Diversity, 1992, Montreal, Quebec, ratified in Uganda, 1993
 - Bonn Convention (1979), Convention on Conservation of Migratory Species of Wild Animals
 - RAMSAR - Convention on Wetlands of International Importance for water fowl conservation, 1971, ratified by Uganda in 1988
 - World Heritage Convention for protection of world cultural and Natural Heritage sites, enacted in 1971, ratified in Uganda in 2017
- National laws:
 - Constitution of Uganda (1995)
 - Uganda Wildlife Act 2019
 - Prevention of Cruelty to Animals Act (1957) - UNCST Act
 - National Drug Policy and Authority Act (2000), 30, 32

IUCN CATEGORIZATION OF WILDLIFE SPECIES

Protection levels regulate use & species survival

1. EXTINCT (EX)
2. EXTINCT IN THE WILD (EW)
3. CRITICALLY ENDANGERED
4. ENDANGERED (EN)
5. VULNERABLE (VU)
6. NEAR THREATENED (NT)
7. LEAST CONCERN (LC)
8. DATA DEFICIENT (DD)
9. NOT ASSESSED



NATIONAL LIST OF THREATENDED AND ENDANGERED WILDLIFE SPECIES

	TAXONOMIC GROUP							
	MAMMALS	BIRDS	REPTILES	AMPHIBIANS	BUTTERFLIES	DRAGONFLIES	PLANTS	TOTAL
Threatened species – <i>species most in need of conservation efforts</i>								
Critically endangered	14	9	5	1	44	16	20	109
Endangered	25	24	9	11	69	4	28	170
Vulnerable	38	50	17	7	71	24	40	247
Other categories								
Data deficient	48	32	70	25	235	19	3	432
Regionally extinct	2	2						4
Near threatened	12	20	16	8	71	34	2	163
Least concern	187	19	54	33			3	296
Not applicable	3		3	5				11
Total spp	329	156	174	90	490	97	96	1,432

CITES APPENDICES AND IUCN CATEGORIZATION FOR THREATENED WILDLIFE SPECIES

	Definition for species category	IUCN CATEGORY	Conditions
Appendix I	- Species threatened with extinction, most endangered wild animals and plants. - Most restrictive schedule - Trade in whole, specimens or clinical trial research in species highly restricted, only permitted in exceptional circumstances, when the purpose of import is not commercial e.g. research uses derivatives	<i>Endangered, Critically endangered</i> - Mountain gorillas - Chimpanzees - African elephants - Rothschild's Giraffe - Hunting dog - Nile Crocodile	<i>Import permit</i> issued by the Management Authority of the State of import required <i>Export permit</i> or re-export certificate issued by the Management Authority of the State of export or re-export required
Appendix II	Lists species that are not necessarily threatened with extinction now but may become so without strict trade control	<i>Vulnerable</i> - Lions (CR Uganda) - Hippos - African Golden Cat	- Export permit or re-export certificate issued by the Management Authority of the State of export or re-export - No import permit
Appendix III	Contains species protected in at least one country, which has asked other CITES Parties for assistance in controlling trade	Can be of any IUCN category, from Vulnerable to critically endangered	an export permit issued by the Management Authority of that State

Animal Welfare Principles - research subjects

Responsibilities of Researchers

S/N	PRINCIPLE	PI	REGULATORS (Government, UWA, UNCST, CITES)	VETERINARIAN	IACUC
1	Rationale: Procedures involving animals must - Relevance of research to human or animal health, & - Advances knowledge, for the good of society	Justify need for animal involvement in your research	- Formulate guidelines, regulate research - Monitor compliance for animal welfare - Review proposals & research protocols for justification for use of animals in research - Ensure it has relevance for human & animal health, and is for good of society	- Implements guidelines - Ensures animal welfare enforced	- Issues IACUC clearance, welfare guidelines - Review study protocols
2	Justification: animals selected - Be relevant, quality species - Minimum No. required to obtain valid results - Consider alternative study methods (computer simulation, invitro biological systems)	Design sound appropriate Research method, to achieve valid results with minimum sample size	- Verifies conservation status of selected wildlife species and guides appropriately - Issue administrative clearance & permits according to institutional guidelines - Use of Non-Human Primates (NHP) like chimpanzees in experimental studies is restricted or banned	- Responsible for capture of animals - Takes care of welfare during capture, transport	-do-
3	Minimize Pain and Distress - Proper use of animals - Avoid, or minimize pain, distress, and discomfort - Sound scientific practices	-do-	- Monitor compliance for animal welfare - Ensures research techniques are those that minimize or eliminate pain, distress and discomfort	Use pain relieving medicaments	-do-

Animal Welfare Principles to Adhere

S/N	PRINCIPLE	PI	REGULATORS (Govt, UWA, UNCST, CITES)	VETERINARIAN	IACUC
4	Training: Investigators, personnel - Qualified and experienced to conduct procedures on animals - In-service training, in proper and humane care and use of laboratory animals	- Be, or form technically qualified teams - Undertake training	- Formulate guidelines, regulate research - Review and ensure teams have requisite training to manage welfare of animals	- Point of care professional - Get IACUC training	Ethical review for teams and PIs
5	Ethical Review Review decisions should not rest with the investigators directly concerned	Seek ethical clearance	- Formulate guidelines, regulate research - Review proposals and protocols - Issue relevant ethical approvals	- Point of care professional - Ensures protocols implemented	Undertakes ethical review for proposals and protocols
6	Humane Endpoints: Animals that suffer severe/chronic pain or distress that cannot be relieved should be Euthanized during procedure	Provides endpoint procedures in clinical trial protocols	- For clinical trials, obtain field trial certificate from NDA - Review protocols for clinical trials to ensure humane endpoint procedures circumstances are provided for and	Implements procedures where necessary	-do-

Five Freedoms for Animal - welfare

S/N	Freedom	Interpretation
1.	Freedom from hunger & thirst	Ready access to food, and fresh water, to maintain health and vigor, considering species, age, and sex
2.	Freedom from discomfort	Provide shelter, <i>access to natural light, ambient temperature, quite env</i>
3.	Freedom from pain, injury, disease	- Prevention of disease or rapid diagnosis and treatment, vaccinations, surveillance, mitigation - Superior genes for free ranging WL
4.	Freedom to express normal behavior	- Provide sufficient space: to stretch, jump, run and play - Proper housing, facilities - captive - In company of animal's own kind
5.	Freedom from fear & distress	Ensure conditions which avoid mental suffering

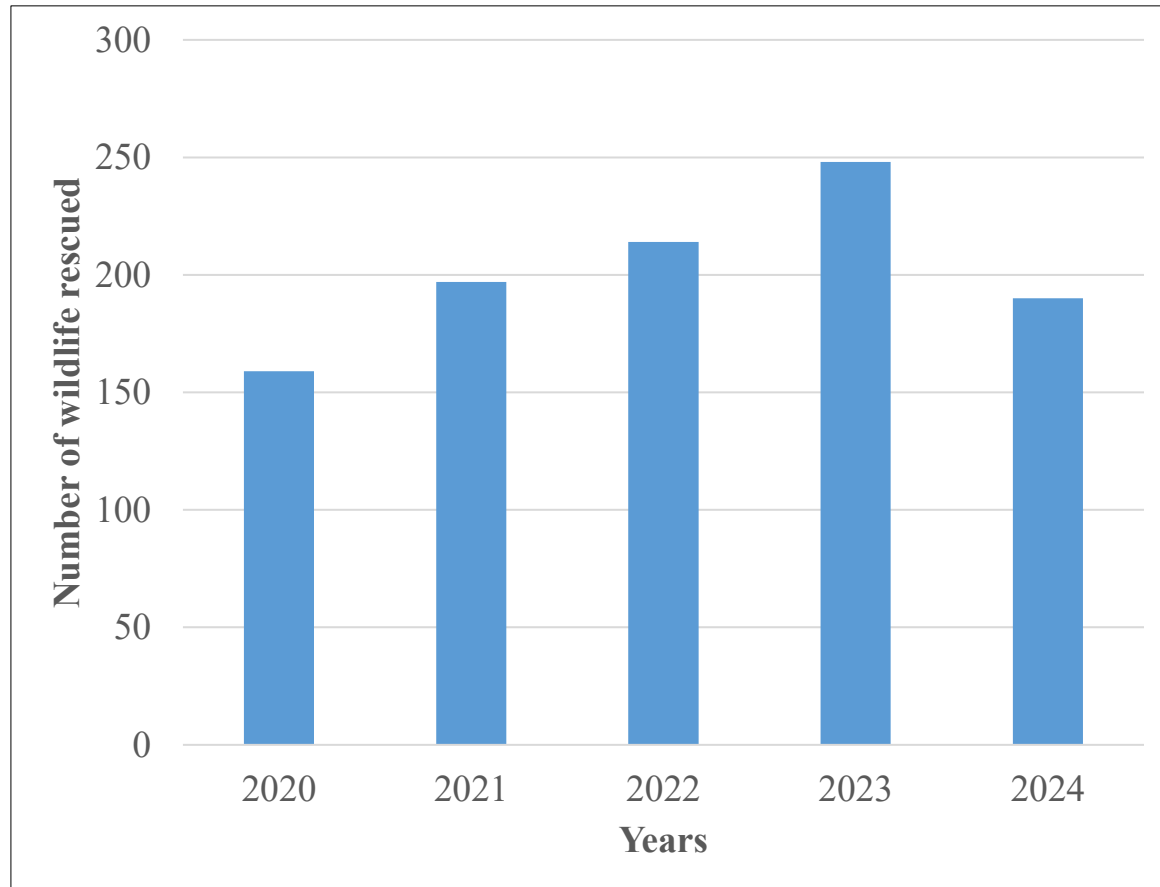
Rescue of wildlife injured in poachers snares
Enforcing Freedom from pain, injury and disease



Uganda Wildlife Authority Veterinary Unit

Wildlife Welfare Activities at Murchison Falls NP

Trends of Wildlife Rescues (2020 - 2024)



Animal Welfare: *Freedom from pain, injury and disease*



ETHICAL CONSIDERATIONS

Guiding Principles

1. *Legislation and Laws Governing Animal Welfare*
 - a. Prevention of cruelty to animals (1957); Uganda Wildlife Act (2019); Veterinary Surgeon's Act
 - b. IACUC Committees; Public Health Service (PHS) Policy: Humane Care & Use of Lab Animals
2. *Alternatives - the 3Rs. Always assess and use less painful and distressful alternative techniques*
 - **Replacement:** use of methods utilizing cells, tissues or organs of animals with minimal pain or distress, use of specimens from non-invasive methods like fecal, urine for hormonal studies, or tissue from dead animals to obtain intended outcome, instead of using invasive methods
 - **Reduction:** use most minimal but viable sample size to minimize the number of animals put through pain and suffering: National Centre for Replacement, Refinement, Reductions (NC3Rs)
 - **Refinement:** use high tech research protocol design and implementation methods to minimize the need for larger number of research animals
3. **Responsibility:** *researchers must exercise high ethical practice, Seek ethical & administrative clearance and approvals (UNCST, UWA, IACUC, etc)*

Welfare considerations for capturing and handling wild animals

Wildlife capture is risky and stressful. Capture techniques should: -

- Minimize injury and mortality, reduce welfare impacts
- ***Chemical capture***: species specific drugs
- ***Capture devices***: check device early to avoid malfunction, and non-target species
- Avoid animal capture in bad terrain
- ***Seasonality***: avoid breeding seasons, bad weather - hyper- or hypothermia
- ***Telemetry***: use self drop off devices or small size but good quality
- ***Capture-recapture***: avoid repeat capture

- Elephants on sternal recumbence succumb
- Giraffes on opioids excited
- Lions and primates on opioids succumb- respirn



Research in Wildlife Protected Areas

Special administrative clearance is required by researchers undertaking research in the under listed institutions before UNCST/IACUC

Procedure for UWA Research Approvals in wildlife

- Uganda Wildlife Authority (UWA): Administrative clearance for wildlife
- Submit research protocol to IACUC for scientific, ethical review/approval
- Submit approved protocol to UNCST for final clearance and research permit
- For research involving collection of wildlife specimens, application to
 - UWA for Material Transfer Agreement, and make payments per sample or specimen
 - UNCST for export permits
 - CITES for export of specimens of endangered wildlife species

THANK YOU

