Reproductive Health Surveillance Program 2023 Report

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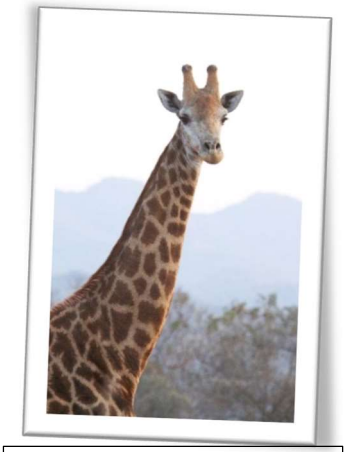
Okapi (*Okapia jonstonii*) Photo A. Moresco

IMPROVED SUSTAINABILITY THROUGH PATHOLOGY

ARCHIVE EST. 1992

Ungulate Reproductive Pathology

In 2023 the Reproductive Health Surveillance Program (RHSP) focused on ungulates. The first project looked at reproductive pathology in giraffe and okapi. In contrast to many of our previous publications, this project included findings in males. The second project evaluated the reproductive lesions in the *Tragelaphus* genus. There are numerous reports of leiomyomas in bongo, the project compared prevalence of reproductive lesions in bongo with other species, to assess if the large number of reports in bongo indeed reflected a higher prevalence in this species compared to others. Both projects also contributed knowledge about reproductive maturity and ageing, supporting sustainable populations in zoos, a key goal of the RHSP.



Reticulated giraffe (*Giraffa camelopardalis*). Photo A Moresco

Sexual maturation data inform decisions such as at what age to contracept animals, what are the best contraception methods and what is the maximal breeding potential age or when is it best to collect and cryopreserve gametes.

We are thankful for continued financial support from AZA, RMC, MSU, and grants from.

Bongos at a higher risk for leiomyomas?

Published case reports of bongos with leiomyomas suggest that bongos are more prone to developing leiomyomas than other ungulates. A high prevalence in one species may suggest a genetic predisposition, the RHSP used archived cases to investigate the reproductive pathology in species within the *Tragelaphus* genus Bongo (*Tragelaphus eurycerus*), Lesser Kudu (*T. imberbis*) and greater Kudu (*T. strepsiceros*), Sitatunga (*T. spekii*), and Nyala (*T. angasii*). Approximately 20% of bongos and greater kudu had uterine leiomyomas compared to 2% of other bovids in the RHSP archive. We also documented amyloidosis in the ovary for the first time.

IN THIS ISSUE

- Giraffe and Okapi Reproductive Pathology
- Bongo and Kudu have a High prevalence of Leiomyomas
- Hylobatidae reproductive pathology
- Servals

Top Eastern bongo (*Tragelaphus euryceros*). Photo: A. Moresco. Bottom Amyloid around blood vessel in the ovary, Congo red stain. Photo: D Agnew

Comparative Reproduction: Cancer in apes

Did you know that lemurs rarely get endometriosis, whereas it is relatively common in macaques and chimpanzees? As we continue our collaboration with the **Arizona Cancer Evolution (ACE) Center** we are preparing to do a comprehensive literature review of the occurrence of endometriosis. Endometriosis affects a large proportion of women and comparative research into the species in which it naturally occurs can shed some light into the risk factors and potential treatments.

In utero growth charts for colobus monkeys

More and more zoos are working on training their animals for voluntary cooperation in medical procedures. One example is weekly ultrasounds during pregnancy. This opens the door for gathering data which can be used in predicting birth windows so that staff can be prepared for the new arrival. This was a student led project in collaboration with Binder Park Zoo, and summarized the growth curves for three gestations in black and white colobus. C. Kosiba presented this at the National Veterinary Scholars Symposium.

Black and White Colobus (*Colobus guereza*)
Photo: Binder Park Zoo

Training the Next Generation

The summer 2023 lineup included some veterans and some new trainees: Kylee Lindsey, Miguel Catala, Carrie Kosiba, Kellie Kokenakes, and Tess Rooney

Clockwise from top left: Chelsea Yob, Carrie Kosiba, Kellie Kokankes and Tess Rooney

Selected 2023 publications

Catala M, et al. 2023. Contraception use and its effects on the reproductive health of captive lesser apes under human care (*Hylobatidae* spp.). Proc AAZV.

Kokenakes K, et al. 2023. Retrospective Analysis of Risk Factors Influencing Bongo (*Tragelaphus eurycerus*), Kudu (*T. imberbis and T. strepsiceros*), Sitatunga (*T. spekii*), and Nyala (*T. angasii*) Reproductive Health. In: Proc. National Veterinary Scholars Symposium.

Kosiba C, et al. 2023. Retrospective study of reproductive tract pathology in Family Giraffidae (giraffe (*Giraffa camelopardalis*) and okapi (*Okapia johnstoni*)). Proc. National Veterinary Scholars Symposium.

Lindsey K, et al. 2023. Risk factors for reproductive lesions in servals (Felis serval). In: Proc. Am. Assoc. Zoo Vet.; p. 126.

McFarland A, et al. 2023. Binturong (*Arctictis binturong*) morbidity and mortality under managed care within US institutions. https://doi.org/10.1638/2021-0089.

Rooney T, et al. 2023. Serial ultrasonographic measurements of fetal parameters over two successive pregnancies in a captive Eastern black-and-white colobus monkey (*Colobus guereza* https://doi.org/10.1002/zoo.21795

The remaining RHSP 2023 publications can be found here

Collaborations with AZA's Species Survival Plans

Are you part of an SSP? Does your species have sustainability issues and there is not enough baseline data for them? Contact us. We worked with the Small Carnivore TAG and the Binturong to gather data on morbidity and mortality issues (see publication list).

Comparative research

Do you have a reproductive comparative question, but you don't have the tissues across all the species you would like? Contact us, we are always looking for ways we can maximize our "library"!

RHSP STATS IN A FLASH

- **30** YEARS OF DATA
- **> 3,550** ARCHIVED REPRO TRACTS
- **> 350** SPECIES
- **190** ZOO & AQUARIUM PARTNERS
- **16** UNIVERSITY COLLABORATORS
- **> 113** PUBLICATIONS
- **INCLUDING 50** STUDENT PUBLICATIONS
- IDEAL FOR **COMPARATIVE** RESEARCH
- ARCHIVE IS **AVAILABLE** TO COLLEAGUES FOR COLLABORATIVE PROJECTS