

University of Prince Edward Island

Faculty of Veterinary Medicine
Summary of Dissertation

Submitted in Partial Fulfilment
of the Requirements for the

DEGREE OF MASTER OF SCIENCE

Giulianna de Carvalho Ibrahim Obeid
Department of Companion Animals

Supervisory Committee

Dr. Lara Cusack, Supervisor
Dr. Kathryn Proudfoot (Co-supervisor)
Dr. Katie Hoddinott
Dr. Megan Jones

Examination Committee

Dr. Patrick Burns, Chair
Dr. Lara Cusack
Dr. Megan Jones
Dr. Dave McRuer
Dr. Oriana Raab

Epidemiology of Toxins Affecting Birds of Prey in the Canadian Maritime Provinces

Pesticide use poses significant risks to non-target species, particularly birds of prey. Based on the local caseload at the Atlantic Veterinary College and the need for a better understanding of local threats, this thesis surveyed toxin exposure in the wild avian population. The main goal was to identify toxins in the region and assess their impact on wild birds to improve veterinary care of these birds, especially when resources are limited. A comprehensive literature review is presented in Chapter 1. In Chapter 2, the exposure of wild raptors to a range of toxins was investigated, aiming to enhance the understanding of these threats and inform effective conservation and rehabilitation strategies. Forty-four post-mortem samples (liver and stomach contents) were collected from wild birds of prey across three Canadian provinces—Prince Edward Island, New Brunswick, and Nova Scotia—between July 2021 and April 2024. These samples represented birds from 12 species, six orders, and 37 distinct geographic locations. The samples were tested for over 400 different toxins. Results revealed that 81.8% of birds tested positive for at least one toxin. Significant associations between toxin presence and factors such as bird order, sex, and geographic location were detected. Raptors often exhibit clinical signs of toxicosis, such as emaciation, traumatic injuries, and neurological signs (e.g., tremors and seizures). Chapter 3 provides a link between the detected clinical signs in the study species to the findings of Chapter 2. Though no statistical significance was found between specific toxins and clinical signs, trends were indicated. Chapter 4 provides a concise but thorough guide for managing the first 48 hours of care for injured birds affected by toxins, with a focus on birds of prey. The findings of this thesis stress the ongoing threat that environmental contaminants pose to raptors and other wildlife and highlight the challenges of appropriate diagnosis and treatments by veterinarians and rehabilitators.

Publications

Book Chapter

2021, Evaluation of Beef storage conditions in a public market at the city of Parnamirim, Rio Grande do Norte, 2021. (Ciências da Saúde: Políticas públicas, assistência e gestão. Chapter 18 p. 211-216 - ISBN 978-65-5983-762-5 DOI: <https://doi.org/10.22533/at.ed.625211012>)

Journal

2025, THE FEMORAL DIVERTICULUM IN BLUE-FRONTED AMAZON PARROT (*Amazona aestiva*): Clinical applications. Journal of Avian Medicine and Surgery -> Accepted, not yet published.

Presentations

Conference proceedings:

Poster:

2021

- (1) Multiparasitism infection in wild South-America Coati (*Nasua nasua*): Case report, III AMAZONVET Conference
- (2) Endoscopy for diagnosis of esophageal rupture in boa constrictor (*Boa constrictor*): Case report., XXIII ABRAVAS Conference
- (3) Magnetic resonance imaging diagnosis of spinal cord injury in Coati (*Nasua nasua*): Case report, XXIII ABRAVAS conference

2020

- (4) Case Report: *Pasteurella* sp. Intracavitary Abscess in domestic rabbit (*Oryctolagus cuniculus*), I Wildlife Clinic Congress.

2019

- (5) Case Report: Ovary Adenocarcinoma in a Budgie (*Melopsittacus undulatus*), XXII ABRAVAS Conference ISBN:9788566233070
- (6) Caparinia tripilis Ivermectin efficiency treatment in a domestic Hedgehog (*Atelerix albiventris*), XXII ABRAVAS Conference ISBN:978856623307

2018

- (7) Study of the Occurrence of Piroplasmid Infection in Wild Canids of the Federal District and Goiás regions. University of Brasilia, National Council for Student Scientific and Technological Development.

2017

- (8) Case report: Use of non-invasive cerclage on multiple fractures' repair of a terrapin (*Trachemys dorbignii*)", 2015. - XVIII ABRAVAS (Brazilian Association of Exotic Veterinarians) Conference.

Oral presentations:

2019

- (1) Case Report: Endocardiosis in an African Penguin, Case report. XXII ABRAVAS Conference

2017

- (2) Study of the Occurrence of Piroplasmid Infection in captive Wild Canids of the Federal District - XX ABRAVAS Conference

Presented Lectures and Webinars

2019

- "How is to be an Veterinarian in Wild Animal Medicine" (UnB - Brazil)
- "Exotic Small Mammals Medicine" (Brazil)
- " Wild VS Captive life for Exotic Animals " (Brazil)
- "Snake Medicine and Anatomy" (Brazil)

2020

- "Externships Abroad in Wild Animals Medicine"
- " Wild Animals Reproduction"
- "Reproductive Management of Reptiles"

2021

- " Veterinarian Practice in Natural Disasters - Forest Fire"
- " The Correct Use of Fluidotherapy in Exotic Medicine."
- "Nutritional Assistance for Hospitalized Animals"

2022

- Exotic Companions - Basic Veterinary Approach - Lecture and Wet lab (UPEI - WEAZL Student Club)

2024

"The ABCD of Wildlife: Emergency Wildlife Rehabilitation" (UPEI -
WEAZL Student
Club)

Exotic Companion - Medical Skills - Wet lab (UPEI - WEAZL Student
Club)

Avian - Medical Skills - Wet Lab (UPEI - WEAZL Student Club)

Biographical Data

Born in Brazil

Awards

FAPE Murray Fowler Awards (ABRAVAS), 2017