UNIVERSITY of GUELPH

ONTARIO AGRICULTURAL COLLEGE

DEPARTMENT OF ANIMAL BIOSCIENCES

PhD Defence

"WILDLFE REHABILTATION IN CANADA: LEAD TOXICOSIS IN TRUMPETER SWANS (CYGNUS BUCCINATOR)"

Sherri Cox

Date: April 26th, 2021 at 9:00am

The PhD Defence for Sherri Cox has been scheduled for Monday April 26th, 2021 at 9:00am. The defence will be held online via Teams: https://teams.microsoft.com/l/meetup-join/19%3ameeting_NDQzZjc1Y2UtYWE4MS00ZDU0LWE2MWUtNjA1NDQxZWRhODUy%40thread.v2/0?context=%7b%22Tid%22%3a%22be62a12b-2cad-49a1-a5fa-85f4f3156a7d%22%2c%22Oid%22%3a%22fbd28915-dda5-478f-8ecb-a3682dcf0c3a%22%7d

The exam committee will consist of:

Examining Chair: Katie Wood

Advisor: Andy Robinson

Adv. Committee Member: Jim Atkinson

Additional Member: Vern Osborne

External Examiner: Mark Pokras

Abstract:

Reasons that wildlife are brought to wildlife rehabilitation centres across Canada has not been documented from coast to coast. However, it is well-known that humans have a direct or indirect impact on wildlife. But just how pervasive are human impacts on wildlife across Canada? How have hunting and fishing activities affected wild birds in Ontario, specifically Trumpeter Swans (Cygnus buccinator)? And how can we diagnose some health issues in wild birds, specifically lead toxicity, given constraints of laboratory testing parameters? Understanding human impacts on wildlife can give wildlife biologists, rehabilitators, or government the information that could help develop potential mitigation strategies to help ensure wildlife health. This research considers such issues related to wildlife in three areas: (1) understanding the reasons why wild animals are admitted to wildlife rehabilitation centres across Canada, specifically as it relates to anthropogenic impacts; (2) looking at the level of lead in the blood of free-ranging, wild Trumpeter Swans in Ontario; and (3) determining the reliability of a point-of-care blood lead analyzer for blood samples that have been sitting for more than six days after the manufacturer's recommended blood analysis test has been run. In the first research area, analysis of more than 21,000 patient records from three wildlife rehabilitation centres across Canada demonstrated that up to 97% of wild animals brought into wildlife rehabilitation centres are thought to be directly or indirectly linked to anthropogenic causes. In the second research area, blood samples from 95 Trumpeter Swans in Ontario, Canada revealed blood lead levels above 3.2 µg/dL in 90% of the birds, with 30% of the swans having blood lead levels exceeding 15 µg/dL. These data show that lead toxicosis, even at low blood lead levels, remains a concern for the health and welfare of Trumpeter Swans in Ontario. The third research area results indicated that whole blood from Trumpeter and Mute Swans can be stored in ethylenediaminetetraacetic acid blood collection tubes for up to seven days at 4º Celsius while maintaining accuracy in blood lead level results analyzed from a point of care blood lead level system.