

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

Dr. Molly Mills
Department of Health Management

Supervisory Committee

Dr. Jennifer Burns, Chair
Dr. Kathleen MacMillan, Co-Supervisor
Dr. Kathryn Proudfoot, Co-Supervisor
Dr. Shawn McKenna
Dr. Tammy Muirhead
Dr. Ibrahim Elsohaby

Examination Committee

Dr. Emily John, Chair
Dr. Jennifer Burns
Dr. Kathleen MacMillan, Co-Supervisor
Dr. Tammy Muirhead
Dr. Ben Stoughton

**Improving Horse Welfare in Prince Edward Island Through
Welfare Assessment and Benchmarking**

There are challenges with assessing the welfare of equines due to their diverse uses, management practices, and geographical distribution. This thesis addresses the need for continued research to assess and describe equine welfare in different geographic locations, with a focus on Prince Edward Island, Canada.

Chapter 1 summarizes animal welfare concepts and current research on assessment in equines. Chapter 2 describes methods used to create animal welfare assessments, including an equine assessment created based on the Canadian National Farm Animal Care Council's Code of Practice for the Care and Handling of Equines. Chapter 3 describes an experiment conducted on Prince Edward Island to 1) describe the prevalence of animal welfare outcomes ("animal-based") and compliance with the Code of Practice on equine farms and 2) determine the effect of benchmarking on compliance with the Code of Practice, any changes in practices, and animal-based outcomes on these farms.

To reach these objectives, 60 farms were visited for an initial equine welfare assessment and benchmarking report. Of these, 50 farms were visited the following year for a second assessment. Of the 50 farms which participated in both visits, 54% of farms showed an improvement in their awareness of the Code of Practice between the first and second visit. Additionally, 48% of farms showed an improvement in at least one category of Code of Practice requirements and 8% also made improvements in at least one category of Code of Practice recommendations between the first and second visits. Of the animal-based measures, there was a significant change in the prevalence of unhealthy body condition score, integument lesions, and hoof abnormalities from the first to the second visit. This thesis contributes to the current knowledge about equine welfare by outlining a practical framework for the development of animal welfare assessments and the possible role of benchmarking in improving the welfare of horses on Prince Edward Island and abroad.

Publications

1. M. Ross, K. Proudfoot, K. Merkies, M. Mills, I. Elsohaby, J. Mitchell, K. MacMillan, S. McKenna, C. Ritter. 91 Horseowners' perspectives of horse weight management. *Journal of Equine Veterinary Science*. May 2023.
2. M. Ross, K. Proudfoot, K. Merkies, I. Elsohaby, M. Mills, K. MacMillan, S. McKenna, C. Ritter. Horse Housing on Prince Edward Island, Canada: Attitudes and Experiences Related to Keeping Horses Outdoors and in Groups. *Animals*. January 2023.
3. L.A. McDuffee, M.C. Mills, M.A. McNiven, W.J. Montelpare. Establishing Statistical Stability for Heart Rate Variability in Horses. *Journal of Veterinary Behavior*, Elsevier, 23 May 2019.

Presentations

1. M Mills, K Proudfoot, I Elsohaby, J Burns, M Ross, S McKenna, C Ritter, K MacMillan. The Effect of Benchmarking on Equine Management Practices and Horse Welfare on Prince Edward Island. Seminar presentation. AVC Research Seminar Series; 2024 April 16; Atlantic Veterinary College, Charlottetown, Prince Edward Island.
2. L.A. McDuffee, M.C. Mills, M.A. McNiven, W.J. Montelpare. Equine heart rate variability measures: are they stable from day to day and during different activities? Poster presentation. International Society for Applied Ethology Conference; 2018 July 30 - August 3; University of Prince Edward Island, Charlottetown, Prince Edward Island.
3. M.C. Mills, L.A. McDuffee, M.A. McNiven, W.J. Montelpare. Reliability of Equine Heart Rate Variability. Poster presentation. Boehringer Ingelheim Veterinary Scholars Symposium; 2017 August 3-6; National Institute of Health, Bethesda, Maryland.
4. M. Ross, K. Proudfoot, K. Merkies, M. Mills, I. Elsohaby, J. Mitchell, K. MacMillan, S. McKenna, C. Ritter. Horse owners' understanding of horse weight management in Prince Edward Island, Canada. *Equine Science Society Symposium*; 2023 June 6-9; Texas A&M University, Grapevine, Texas.

Biographical Data

Born in Concord, Massachusetts, USA

Awards

2019 Spirit of '90 Award
2018 Stephen W. Taylor Class of '99 Memorial Award
2016 AVMF Auxiliary to the AVMA Scholarship
2016 Merit Award in Parasitology