The Wildlife Society
Manitoba Chapter

The Wildlife Society – Manitoba Chapter – Conservation Affairs Committee

Pertinent Term Paper Topics for University students studying Wildlife Management in Manitoba

September 2019

1. Urban Deer effects on Vegetation

Contact: Stephen Petersen (SPetersen@assiniboinepark.ca)

One of the impacts of urban deer populations (especially high ones) is that they have a significant ability to modify vegetation and prevent understory growth and regeneration. At Assiniboine Park we have had elevated deer populations for a number of years due to the presence of available habitat and due to supplemental feeding by visitors. We would like to know what impact this has had on forest regeneration and structure. The Zoo grounds provides an ungulate exclusion area and students can compare stand structure between Park and Zoo sites. Specific ideas:

1. Estimate pop size of deer in the Park (surveys, track counts)
2. Estimate movement in /out of the park using track counts in snow
3. Compare browsed vs non-browsed (Park vs Zoo) forest community structure
4. Compare urban to rural forest structure
5. Compare native vs invasive plant spp with intense browse (E buckthorn may do better than native spp)
6. Use google earth maps (historic photo function) to quantify regeneration

2. Urban Deer and Prevalence of Brainworm (*P.tenuis*)

Contact: Vince Crichton (doc.moose@shaw.ca)

Brainworm is neurotropic nematode parasite common to white-tailed deer, but often fatal for moose. Diagnosis in deer can be conducted by analyzing fecal pellets for larval *P. tenuis*, or postmortem necropsy to detect presence of adult *P. tenuis* in the brain cavity or second and third stage worms along the spinal cord. The prevalence of *P. tenuis* in deer is thought to density dependent. Snail and slugs play a role as an intermediate host. By understanding disease and snail/slug prevalence in high density deer areas like Winnipeg, wildlife managers may be better equipped to manage this disease in other areas of Manitoba.

3. Feral and Free Ranging Cats in the City of Winnipeg

Feral cats are known to have a negative effect on wildlife, especially birds and small mammals across North America. The population and distribution of feral cats in the City of Winnipeg, including implications to local wildlife are not well known. Such information would be helpful as the City moves forward with new feral cat management policies.

4. Determining the Importance of Large Master Angler Fish (Walleye and Lake Whitefish) to Overall Population

Contact: Derek Kroeker (Derek.kroeker@gov.mb.ca) and Caleb Hasler (c.hasler@uwinnipeg.ca)

There is debate among fish biologists concerning the ecological role of large (Master Angler) fish, primarily in those that species that are popular in both the recreational and commercial fishery. Do large/older fish no longer have viable eggs and hence contribute less to the population or do they actually represent larger component of spawning population?

This work could involve use of an existing database at the University of Winnipeg, as well as a literature review.

5. Studying Riverine Movements of Two Species at Risk (Bigmouth Buffalo and Lake Sturgeon) in the Assiniboine River Using Acoustic Telemetry Data

Contact: Jeff Long (jeff.long@gov.mb.ca)

There is some evidence that Bigmouth Buffalo may be using the Assiniboine River to travel between Manitoba and Saskatchewan, however it was previously thought the populations were isolated. This could involve possible field work in the western part of the province as well as studying a small (2015-2018) existing telemetry data set.

6. Avian Plasma Metabolite Analysis: Review of Applications

Contact: Lauren Bortolotti – Ducks Unlimited Canada (l_bortolotti@ducks.ca)

- Literature review and synthesis of avian plasma metabolite studies
- Plasma metabolite concentrations (triglycerides, glycerol, beta-hydroxy-butyrate) are used as indicators of lipid metabolism (i.e., is fat being added or burned?) and mass change in birds
- These analyses have various applications in physiology/dietary studies, but also for assessing habitat quality, especially for migrating birds
- Depending on length/timing/scope of the project, student could visit Delta Marsh to observe sample collection for plasma metabolite analysis that's being undertaken as part of the carp exclusion study

7. Spatial/Geographic Variation in Clutch Sizes of Prairie Pothole Region Dabbling Ducks

Contact: Jim Devries – Ducks Unlimited Canada (j_devries@ducks.ca)

- Analyze data from > 35,000 waterfowl nests from across the Canadian PPR (more if DU Inc. data is included)
- Examine patterns in clutch size with spatial covariates at multiple scales
- Will require a student with some quantitative skills

8. Pollinators

Contact: Melanie Dubois (AAFC - Melanie.Dubois2@Canada.ca)

- A clear way to combat pollinator declines is to conserve habitat that provides adequate resources for provisioning and nesting materials, protection from tillage and pesticides. It would be challenging to promote a conservation program that highlighted only one positive outcome, the most effective way to conserve habitat would be to link pollinators to other conservation plans/programs as well as existing or emerging efforts to build climate change resiliency to achieve multiple benefits and create synergies. What are the

opportunities on the prairies, which programs would be most compatible and how would the complimentary objectives be merged and presented?

- A recent national survey by Friends of the Earth found that 68% of all Canadians surveyed said that they were concerned or very concerned about the health of honey bees and the conservation of wild, native bees. The survey found that they felt that the highest threat was from pesticides (89%) followed by loss of suitable floral resources (79%), habitat loss (68%), disease (67%), climate change (66%), and modern intensive agriculture (65%). When asked about responsibility for action more than half (51%) believed that senior levels of provincial and federal governments are responsible, with pesticide manufacturers the next most identified (23%). What are the current policies, programs and regulations in place at the provincial and federal levels to protect/support pollinators from the identified threats, and who are currently responsible for or are providing this protection? What are the gaps in protection and how do Canadian jurisdictions compare to UK or other European protections and policy responses?

9. Developing a Public Awareness Campaign for the Use of Non-lead Hunting and Fishing Equipment in Manitoba

Contact: Brian Kiss - The Wildlife Society, Manitoba Chapter/Sustainable Development (brian.kiss@gov.mb.ca)

• The use of lead in fishing and hunting equipment is increasingly being linked to human and wildlife health effects. The development of a public and wildlife health campaign could help inform consumers about the risk to using lead shot, bullets and sinkers.

• Review literature pertaining to the effects of lead in the environment to wildlife, and continent-wide government regulations on the use of lead in hunting and fishing.

• Review The Wildlife Society's position statement on Lead in Ammunition and Fishing Tackle, and programs that other Chapter/Sections have developed to educate the public and wildlife professionals on the impacts of lead.

• Develop a public awareness strategy for the Manitoba Chapter to potentially engage in

  o This may include reaching out to partnering organizations with mutual interests in wildlife, but also human health impacts (ingestion of lead through consumption of wild meat)

10. Urban Sprawl and Loss of Habitat in the Greater Winnipeg Area

Contact: Vince Crichton (doc.moose@shaw.ca)

This will investigate historic, current and future habitat loss (including loss of agricultural lands) in the Greater Winnipeg Area, caused by suburb and industrial development.

11. Policy for baiting wildlife for photos

Contact: James Duncan (owlfamily@mts.net)!

There is a concern amongst biologists and naturalists that it has become common place to bait animals for the purposes of wildlife photography. This has been observed with several species in Manitoba, including owls. An assessment of the risk/prevalence in Manitoba and a TWS position statement or draft law/amendment to The Wildlife Act would be helpful.

12. Unsolicited COSEWIC Status Report for Eastern Migratory Caribou in Manitoba
Contact: Stephen Petersen (SPetersen@assiniboinepark.ca)

Recently the Terrestrial Mammal Species Specialist Committee completed assessing all caribou DUs in Canada. Eastern Migratory Caribou in Manitoba and Quebec were assessed together on the basis of a previous DU report although there is probably a good argument (James Bay) that they should be treated separately. Dramatic declines in the QU herds have resulted in listing of the MB EM caribou at a higher level (potentially) than they would be alone. Preparing and "unsolicited" COSEWIC status report may assist in resolving some of this debate.

13. Public Policy and Chronic Wasting Disease in Manitoba/Canada
Contact: Vince Crichton (doc.moose@shaw.ca)

Chronic wasting disease (CWD) is a fatal nervous system disease known to infect white-tailed deer, mule deer, moose, elk and reindeer. It is found in Saskatchewan and Alberta but has not been detected in Manitoba. The natural and economic impact of CWD in Manitoba is significant and thus there is a need for updated policy and recommendations for farmers, hunters, and wildlife managers. This project would aim to create/update the provincial CWD management plan. It would also include a list of specific policy recommendations to prevent spread across provincial borders or to respond to cases within Manitoba.

14. Bird Strikes
Contact: Paulson Des Brisay (pauldesbrisay@gmail.com), Laura Burns (lburns@assiniboinepark.ca)

It is estimated that ~25 million bird mortalities from window strikes occur annually in Canada, and are the second largest direct mortality of birds after domestic cats. Because of the overall number of residential houses, over 90% of the birds are killed by houses. Risk factors include: located in a sub-urban area, expanse or continuity of glass – large unbroken expanses increased risk, highly reflective coatings on low-E and UV glass, tall and or complex vegetation in front yard or in front of windows, and bird feeders near the house. Mitigation is can be fabricated in-glass, or applied after production, but public awareness of the issue remains low, hindering conservation efforts.

- Review Winnipeg building codes and compare them to the policies put in place to address this issue in Toronto
- Look at the programs implemented at University of Manitoba, Assiniboine Park Conservancy, Toronto's Fatal Light Awareness Program, and UBC to address the issue, suggest how they can be expanded at U of M and brought to other facilities in Manitoba
- Review the Wildlife Society's standing positions with a focus on urban wildlife and the impacts of the activities of architects etc. on wildlife and how it can help guide and inform the Manitoba Chapters response to this issue
- Design a public awareness strategy and campaign for potential Manitoba Chapter engagement and partner recruitment

15. Community Pasture Program
Contact: Melanie Dubois (AAFC - Melanie.Dubois2@Canada.ca)

Canada's grasslands have been described by some as the most endangered and least protected ecosystems. In 2012 the conservative government decided to phase out the federal

Community Pastures Program, ending 80 years of federal management and protection for 31 species at risk and 2.3 million acres. This divestiture came as a result of the Harper government's change in policy with regards to the government's role in conserving these working landscapes. The process of converting the pastures to provincial ownership was handled differently in each province and has resulting in very different outcomes in protection and management of these lands. Some land was lost out right to private sale or reverting to municipal land and all land lost the consistent range health and SAR monitoring systems that were in place to protect ecological integrity and public good over private profit.

- Compare the policies in place to protect the species at risk under provincial rules vs. federal
- Assess if the expected loss in grassland connectedness and integrity has occurred
- Assess the net loss of protected area
- Look at implications on achieving federal or provincial biodiversity targets under the new systems
- Compare the Saskatchewan model vs the Manitoba model's ability to protect ecological integrity and public good over private profit

16. Livestock Predation [research questions developed with the Manitoba Livestock Predation Protection Working Group]

Contact : Melanie Dubois (AAFC - Melanie.Dubois2@Canada.ca)

- A review of the current knowledge and relationships between predation and agricultural systems in Manitoba/Prairies (while recognizing interdependence of species and identify threats and gaps) in terms of:
    - How have changing in agricultural practices (reduction in the use of 'shepherds', winter bale grazing/swath grazing) which have reduced labour inputs but may have increased the risk of predation
    - How have changes in government policies, and reduction in hunter numbers increased predator populations
    - How has expansion or intensification of agriculture into predator habitat increased risk of predation
- A review of current government and stakeholder wildlife objectives and how current acts, regulations and policies (e.g. land use, management areas, hunting and trapping rules and enforcement, institutional structures delivering, etc.) support these objectives (Big picture view and identify deficiencies and potential solutions from other jurisdictions).
- A review of approaches to quantifying the economic, social and environmental cost/benefit of government predator (and other wildlife?) programs in Manitoba and a quantitative assessment of the value of those programs (How do you assess value of programs/policies and what is the value of current programs).
- Currently identification of the predator responsible for the kill is done through MASC. Is the training program in place for the compensation officers adequate and in line with other jurisdictions and what are the management recommendation and provincial predator control policy implications of misidentification of the responsible predator.