



# Manitoba Small Mammal Surveys 2019

Presented to:  
Nature Conservancy of Canada  
Tallgrass Prairie Preserve, MB.

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## Background

- Community interactions in response to change
  - Competition
  - Gene flow (Hybridization)
  - Spread of parasites and pathogens
- Continental turnover across major habitat transitions (Ecotones)
  - Intra-specific lineage turnover (western to eastern forests)
  - Inter-specific transitions (native prairies to woodlands)
- Connectivity among mammals and their associated biodiversity

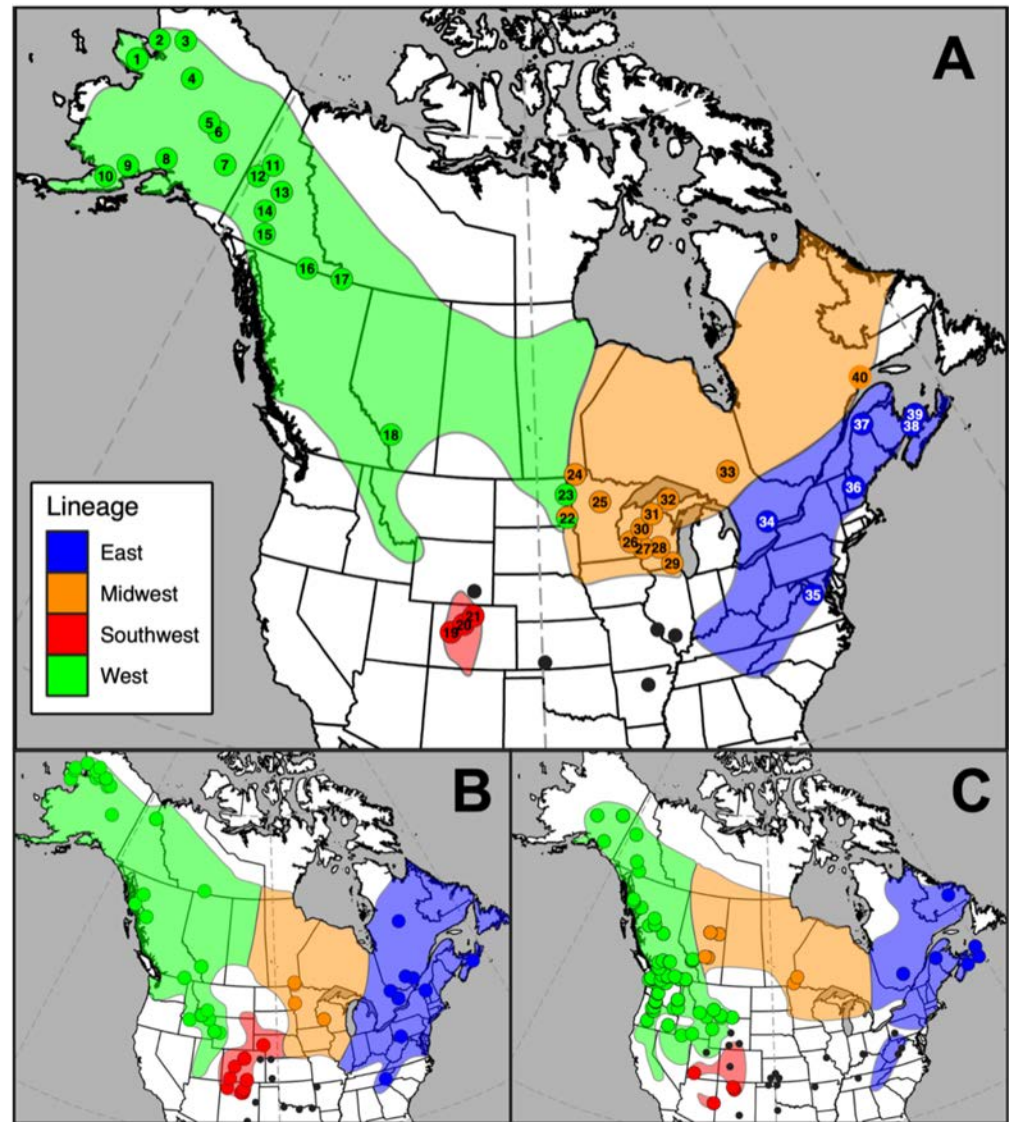
Adapted from  
source: DNR,  
Canada

### Ecosystems of North America



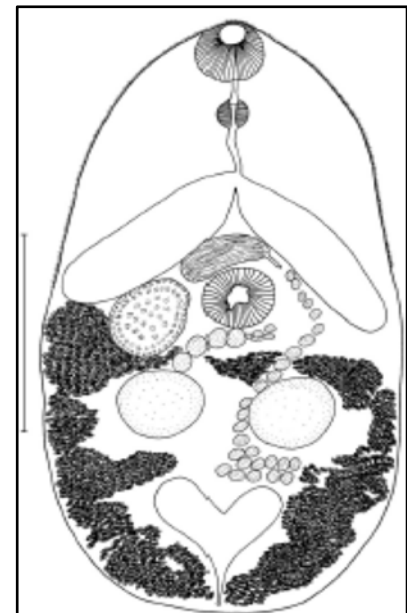
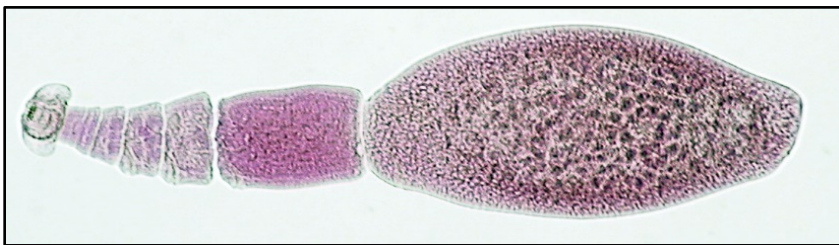
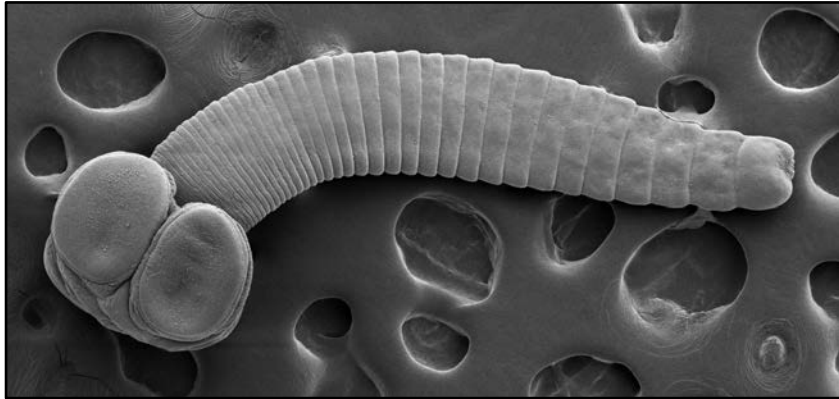


# Mammal examples





# Endoparasites





# Sampling Sites 2019

Duck Mtn. Provincial Park

NCC Ft. Ellice Property

Lake Manitoba

Winnipeg

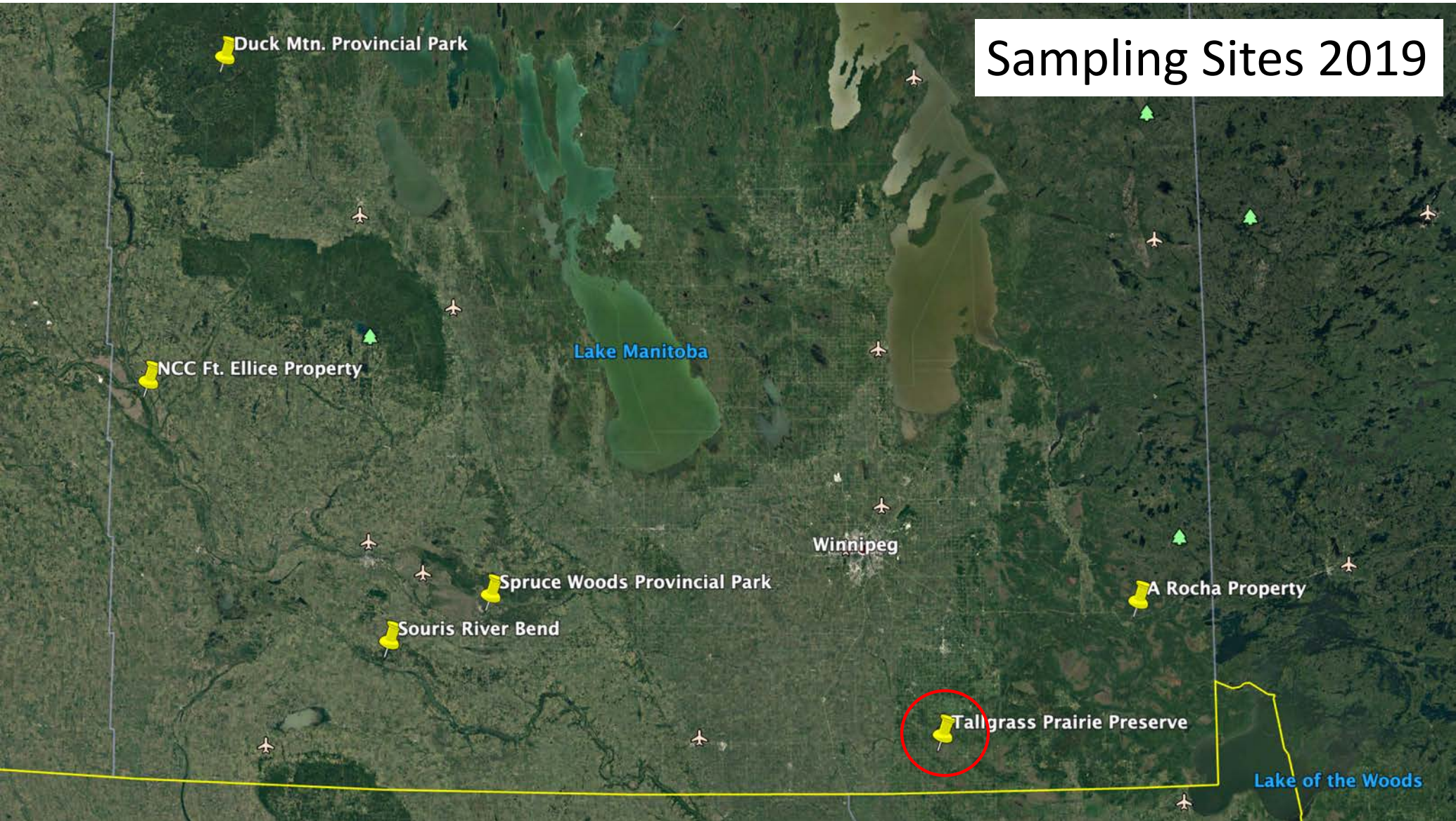
Spruce Woods Provincial Park

Souris River Bend

A Rocha Property

Tallgrass Prairie Preserve

Lake of the Woods





## Field Crew 2019







Trapping: Shermans, snap traps, pitfall cups, gopher traps, cage traps



Specimen Processing

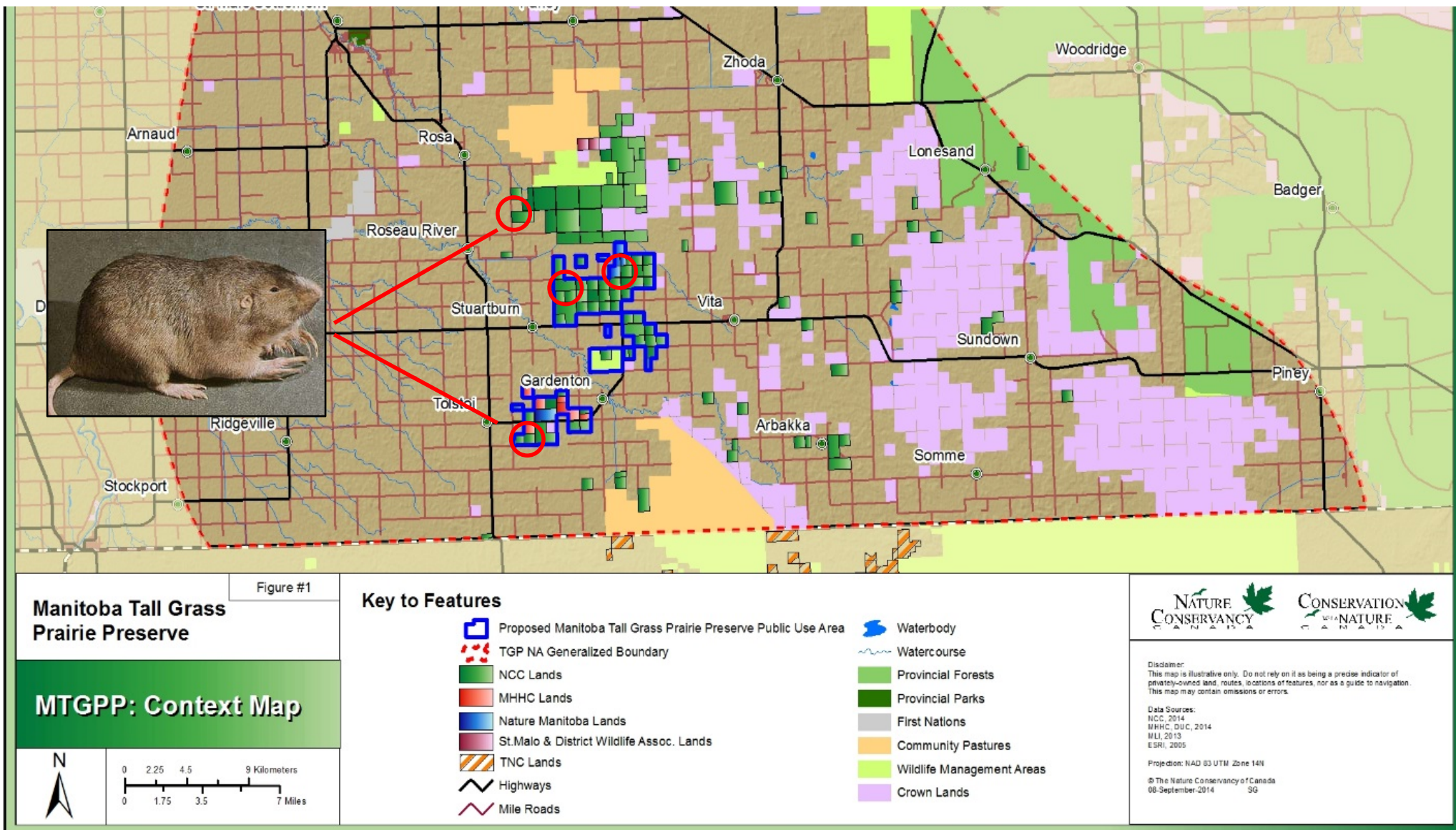




Museum Voucher Specimens









# MTGPP – Small mammals detected in 2019

- Arctic shrew – *Sorex arcticus* – common; wet areas, rushes
- Masked shrew – *Sorex cinereus* – abundant; all habitats, woody areas
- Prairie shrew – *Sorex haydeni* – uncommon; open prairie
- Pygmy shrew – *Sorex hoyi* – uncommon; all habitats
- Meadow vole – *Microtus pennsylvanicus* – abundant; wet meadow
- Southern red-backed vole – *Myodes gapperi* – common; most habitats, woody
- Deer mouse – *Peromyscus maniculatus* – uncommon; most habitats
- Meadow jumping mouse – *Zapus hudsonius* – common; wet meadow
- **Plains pocket gopher** – *Geomys bursarius*\* – locally common; drier meadow
- 13-lined ground squirrel – *Ictodomys tridecemlineatus* – common; drier meadow
- Ermine (short-tailed weasel) – *Mustela erminea* – uncommon; woody edge



## MTGPP (S6)

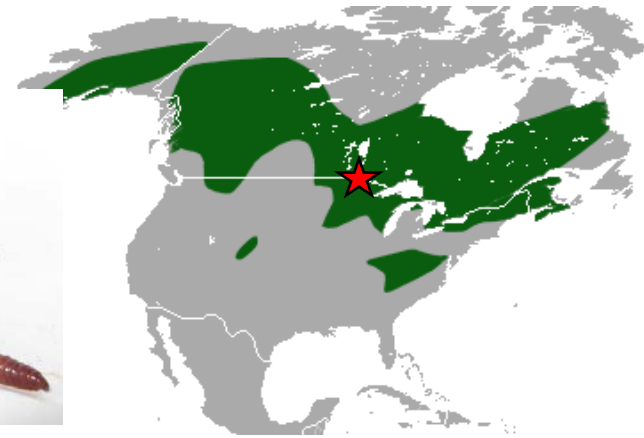
MB Total =  
27 species  
(out of 40)  
730 specimens

Common Name	Scientific Name	Number Collected by Site						Total
		S1	S2	S3	S4	S5	S6	
Red squirrel	<i>Tamiasciurus hudsonicus</i>	3	1	1	1	1	0	7
Ermine	<i>Mustela erminea</i>	0	0	0	0	1	1	2
Snowshoe hare	<i>Lepus americanus</i>	0	0	0	1	0	0	1
Southern red-backed vole	<i>Myodes gapperi</i>	24	14	36	26	2	8	110
Meadow vole	<i>Microtus pennsylvanicus</i>	68	53	53	8	12	25	209
Prairie vole	<i>Microtus ochrogaster</i>	0	0	0	3	0	0	3
Northern bog lemming	<i>Synaptomys borealis</i>	2	0	0	0	0	0	2
Southern bog lemming	<i>Synaptomys cooperi</i>	0	0	0	0	4	0	4
Heather vole	<i>Phenacomys ungava</i>	0	0	0	0	2	0	2
Least chipmunk	<i>Tamias minimus</i>	2	10	0	2	0	0	14
Eastern chipmunk	<i>Tamias striatus</i>	0	0	0	0	7	0	7
Northern flying squirrel	<i>Glaucomys sabrinus</i>	0	0	0	1	1	0	2
Thirteen-lined ground squirrel	<i>Ictidomys tridecemlineatus</i>	0	17	2	13	0	1	32
Richardson's ground squirrel	<i>Urocitellus richardsonii</i>	0	1	0	0	0	0	1
Woodchuck	<i>Marmota monax</i>	0	0	1	0	0	0	1
Meadow jumping mouse	<i>Zapus hudsonius</i>	26	6	6	0	1	4	43
Western jumping mouse	<i>Zapus princeps</i>	0	0	0	8	2	0	10
Northern pocket gopher	<i>Thomomys talpoides</i>	2	4	1	0	0	0	7
Plains pocket gopher	<i>Geomys bursarius</i>	0	0	0	0	0	4	4
Deer mouse	<i>Peromyscus maniculatus</i>	0	19	6	64	11	4	104
Northern short-tailed shrew	<i>Blarina brevicauda</i>	2	11	0	0	1	0	13
Masked shrew	<i>Sorex cinereus</i>	12	12	38	3	17	12	94
Dusky shrew	<i>Sorex monticola</i>	8	1	0	0	0	0	9
Pygmy shrew	<i>Sorex hoyi</i>	1	6	2	0	4	1	13
Arctic shrew	<i>Sorex arcticus</i>	2	6	0	6	1	8	23
Water shrew	<i>Sorex palustris</i>	0	9	0	0	0	0	9
Prairie shrew	<i>Sorex haydeni</i>	0	1	1	0	0	1	2

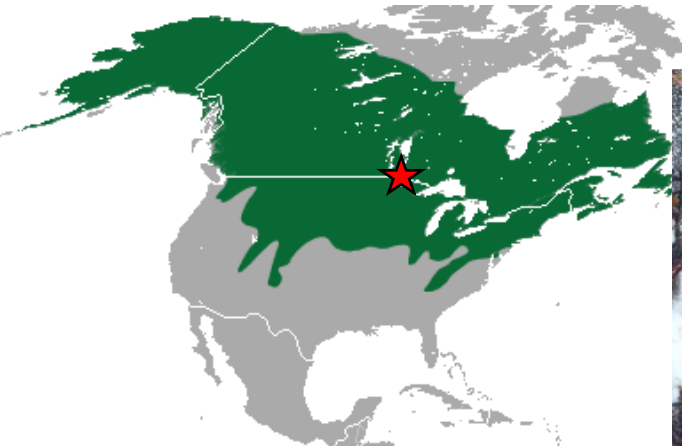




Arctic shrew



Pygmy shrew



Masked shrew

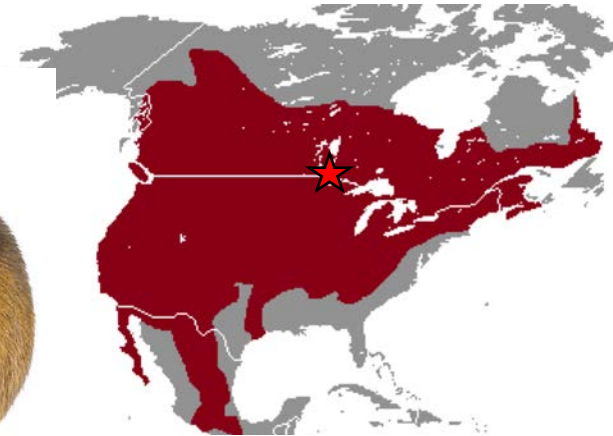


Prairie shrew





Meadow vole



Deer mouse

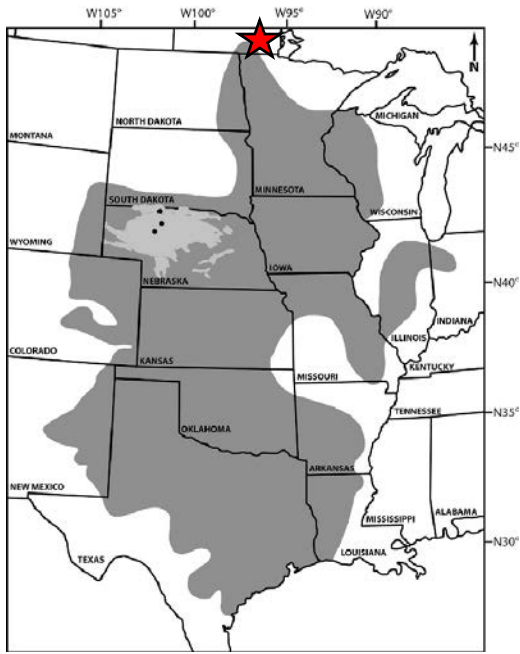


Southern red-backed vole

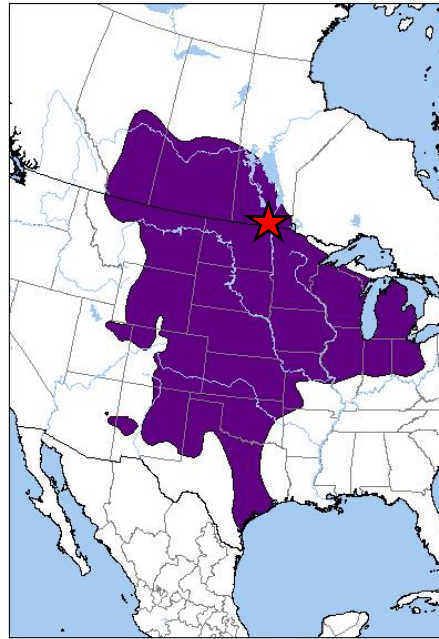


Meadow jumping mouse

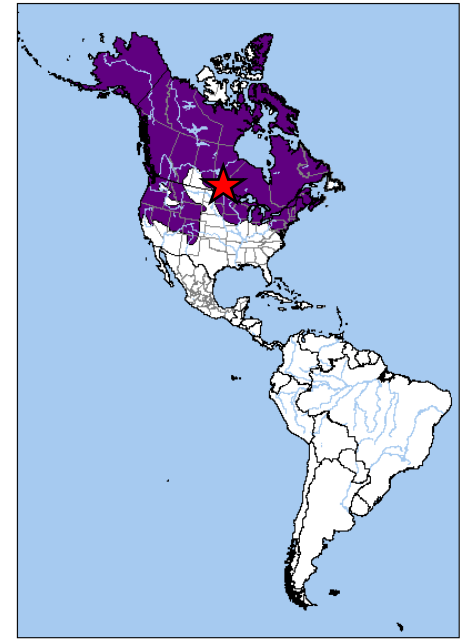




Plains pocket gopher



13-lined ground squirrel



Ermine





# Next steps

- Molecular Identification
  - Mammal species
  - Mammal lineages
  - Parasites
- Student Projects
- Museum Curation
- Publications
- More Field Sampling!





## Take-home Message

- Manitoba is a dynamic place for wildlife
- Supports a diverse mammal assemblage with disparate evolutionary histories
- Tall Grass Prairie Preserve is located on a continent-wide ecotone where distinct communities interact
- Collected samples constitute critical biodiversity baselines for resolving generalizable processes of change





# Thanks!!

- Dr. Robert Wrigley
- Nature Conservancy of Canada
  - Tall Grass Prairie Preserve
  - Ft. Ellice Property
- Manitoba Sustainable Development
- A Rocha Property – East Braintree
- Kansas State University



Manitoba's Tall Grass  
Prairie Preserve



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