



Manitoba



# Manitoba Grassland Inventory Sampling Protocol

by:

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Project Manager & Founder

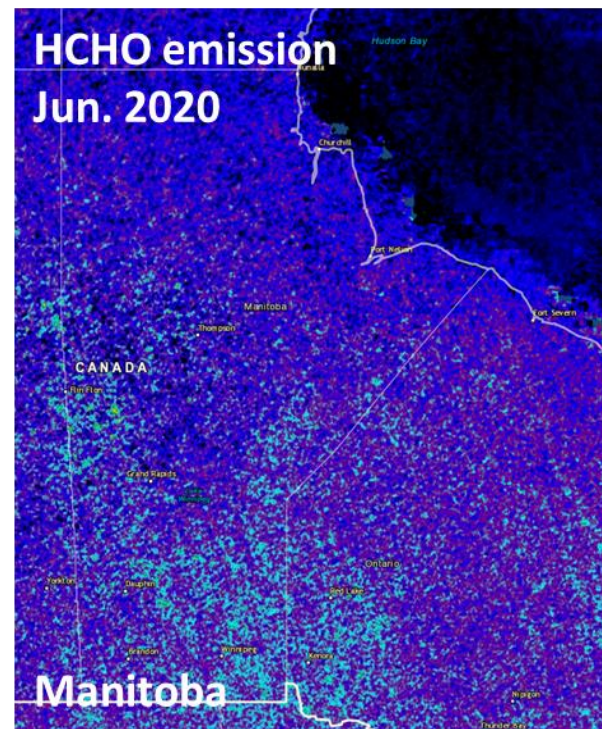
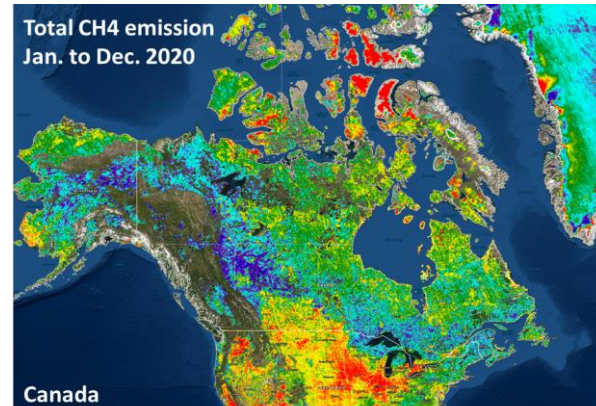
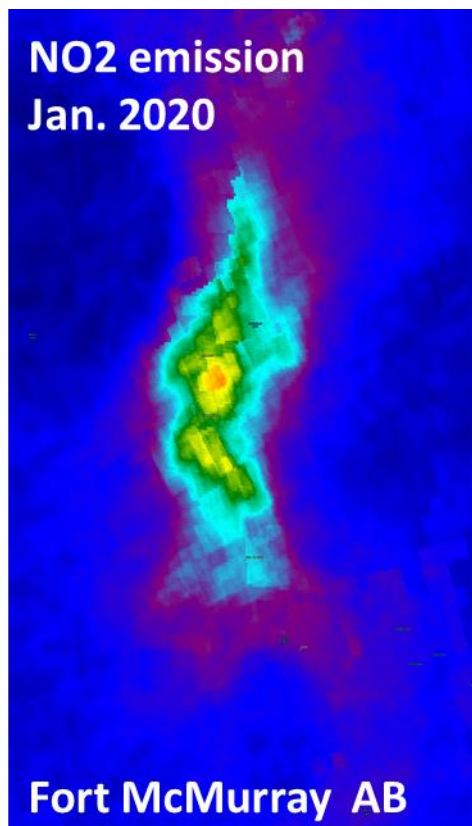
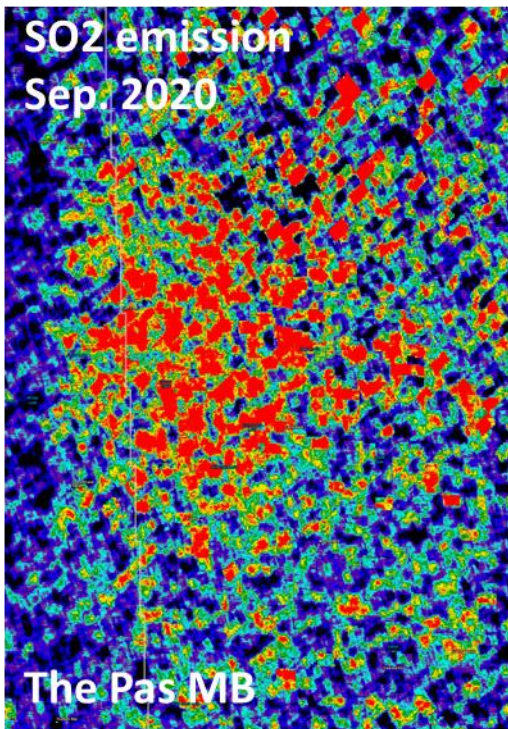
Grassland Analytica

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# Grassland Analytica

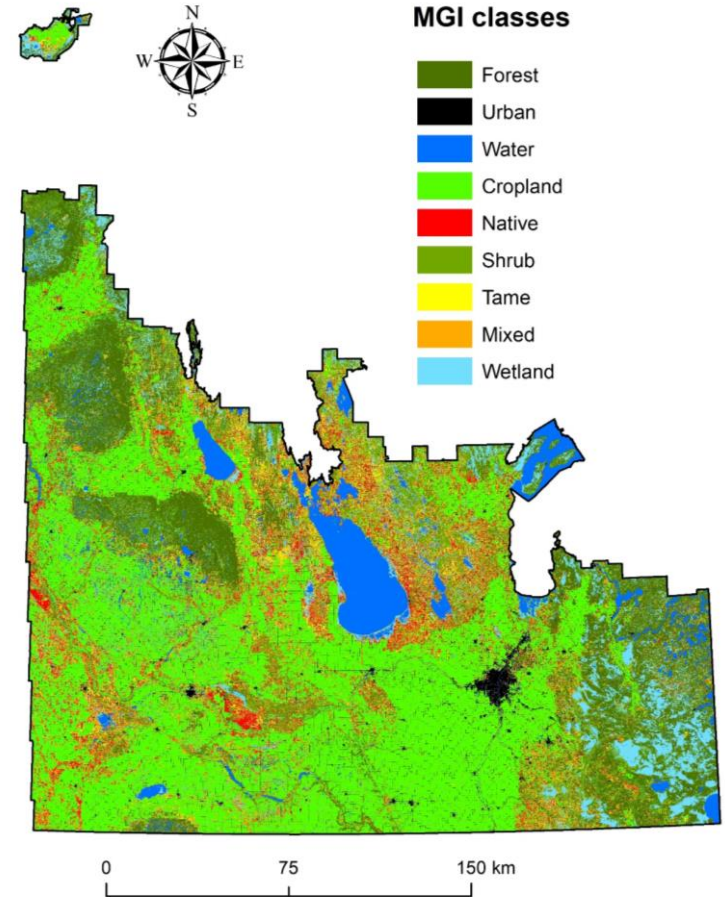
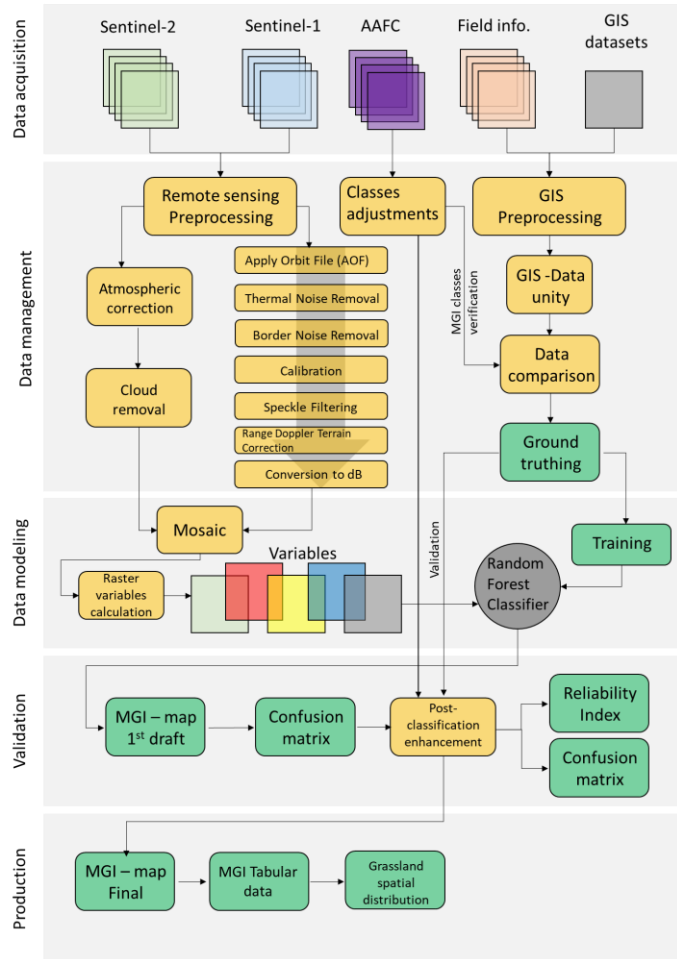


# Outlines

- Manitoba Grassland Inventory (MGI)
- Land cover identification
- Grassland land cover assessment
  - Grassland classes
  - Other land cover classes
- Biomass assessment
- Areas of interest (AOI)
- Survey 123 app

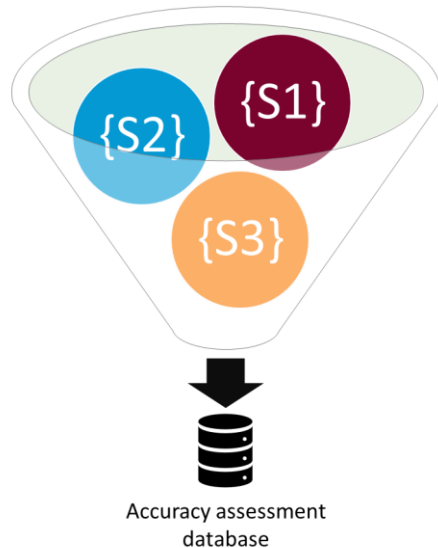


# Manitoba Grassland Inventory (MGI)

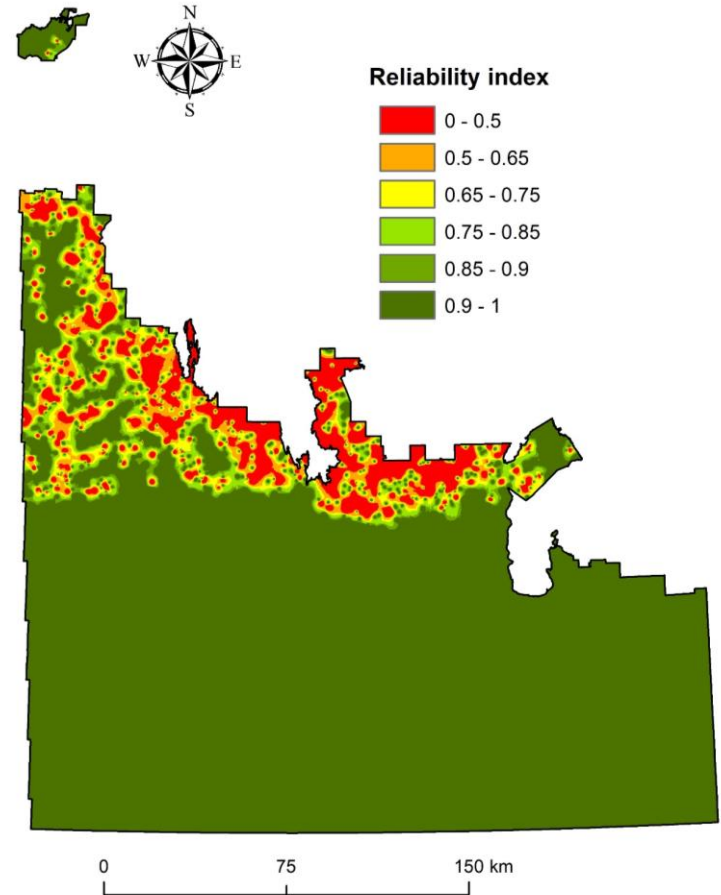
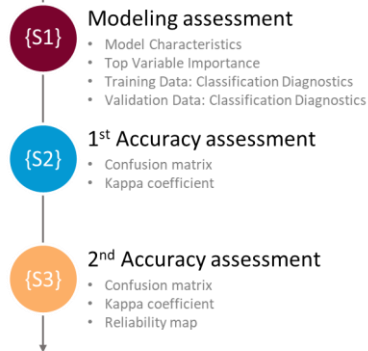




# Manitoba Grassland Inventory (MGI)



## Stages of accuracy assessment



# Land cover identification

- **Native grassland**

- Needle grasses (needle and thread, porcupine grass, and green needlegrass);
- Wheat grasses (slender, western, northern and awned);
- June grass, blue grama grass, side oats grama.
- Little & big bluestem, switchgrass.
- Sedge species.
- Pasture sage; and
- Non-vascular species ( selaginella or lichens)



# Land cover identification

- **Mixed grassland**

- A higher heterogenic grassland terrain with a mix of less than 75% native or/and less than 75% tame.
- Native or/and tame grassland affected by high abiotic stresses such as soil salinity and drought.
- Native or/and tame grassland affected by soil erosion such as water and wind erosions.
- A high disturbed area by livestock and human activities; and
- A bare terrain with low vegetation covers < 50% coverage in a 100 sq.m area.



# Land cover identification

- **Tamed grassland**

- Crested wheatgrass, meadow & smooth brome; Orchard.
- Kentucky bluegrass, Russian wildrye, tall & meadow fescue; and
- Alfalfa, red/white/alsike clover and sweet clover.

- **Cropland**

- **Shrub**

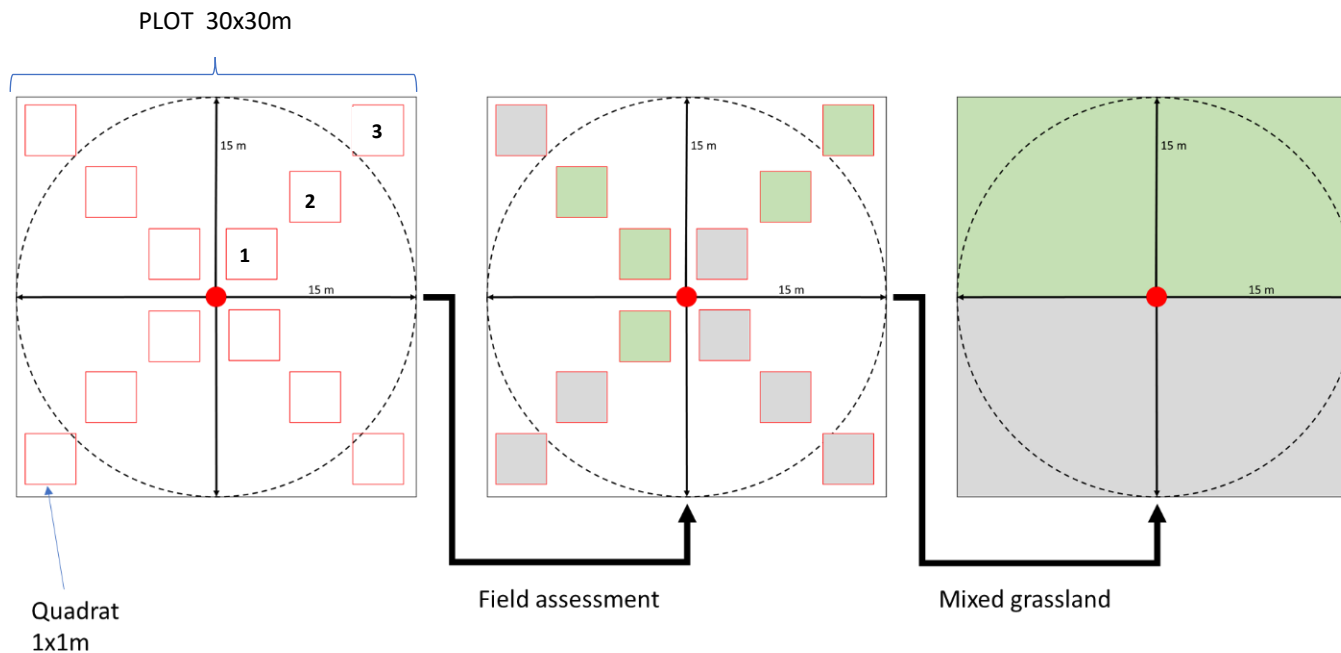
- **Forest**

- **Water**





# Grassland land cover assessment



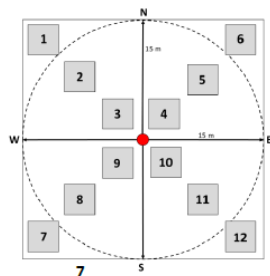
Long: \_\_\_\_\_

Wet above-ground biomass: \_\_\_\_\_ g/m<sup>2</sup>



Dry above-ground biomass: \_\_\_\_\_ g/m<sup>2</sup>

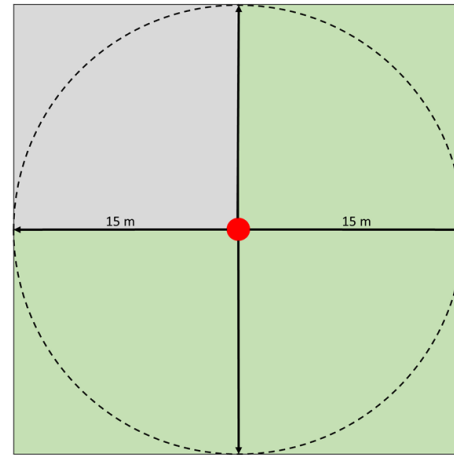
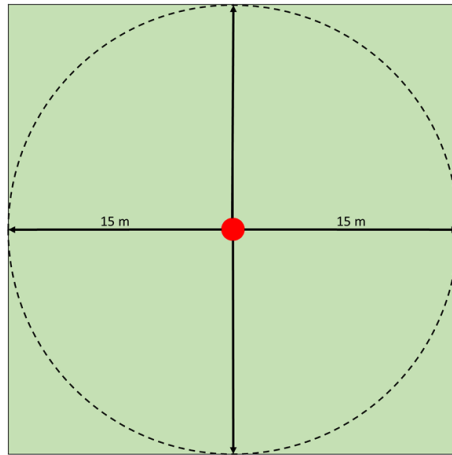
Quadrat #	% Native Grasses	% Native Forbs	% Tame Grasses	% Tame Forbs	% Bare Ground	% Shrubs	Land cover type
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							

- < 1 %
- 1 – 5 %
- 5 – 25 %
- 25 – 50 %
- 50 – 75 %
- 75 – 100 %






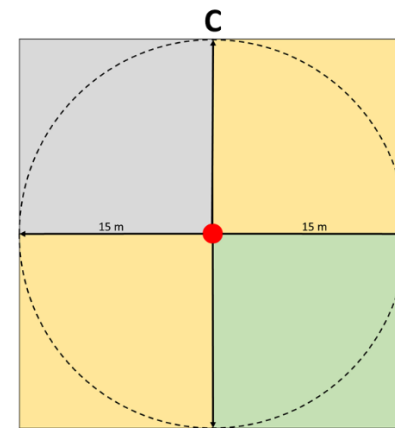
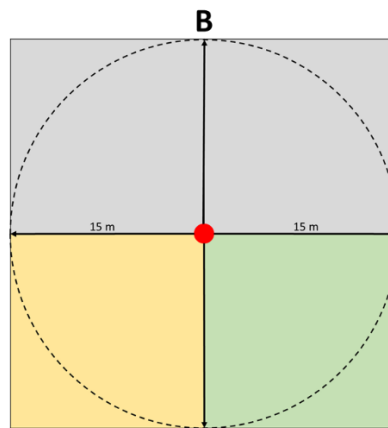
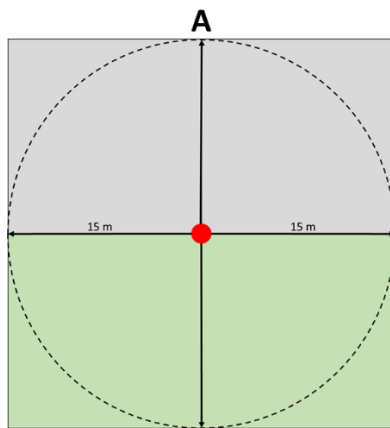
# Grassland land cover assessment

-  Native or Tame
-  Another land cover class

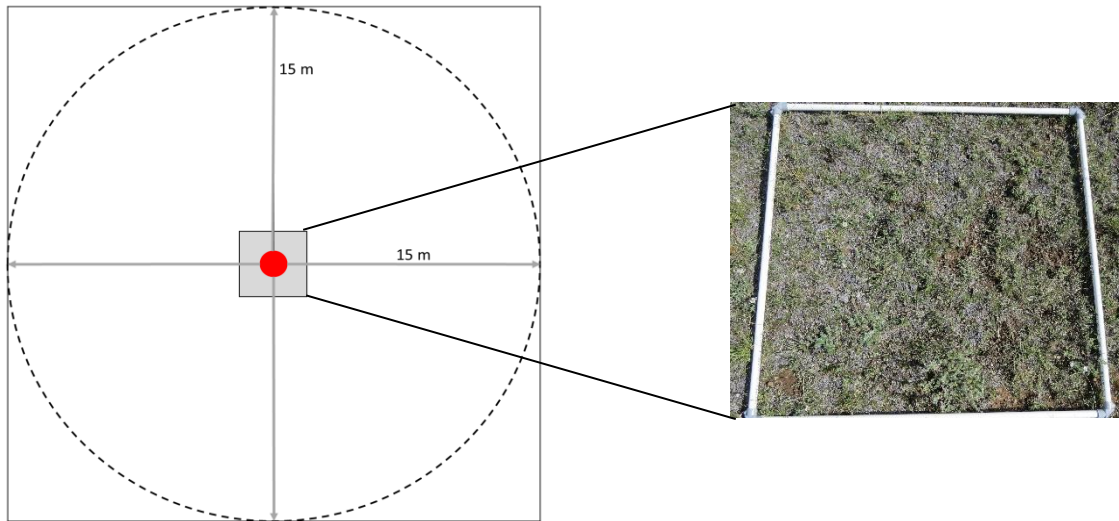


# Grassland land cover assessment

-  Native or Tame
-  Another land cover class
-  Additional land cover class



# Biomass assessment



- Place your 1m x 1m quadrat at the center of the grassland assessment plot.
- Harvest all plant (grass) material inside the boundaries of the used quadrat.
- Measure all plant biomass above the soil, even if it is plant litter.
- Cut as close as possible to the soil surface.
- Never harvest plant parts outside the quadrats, even if these plants are rooted within the quadrat.





# Plots *vs* road assessment



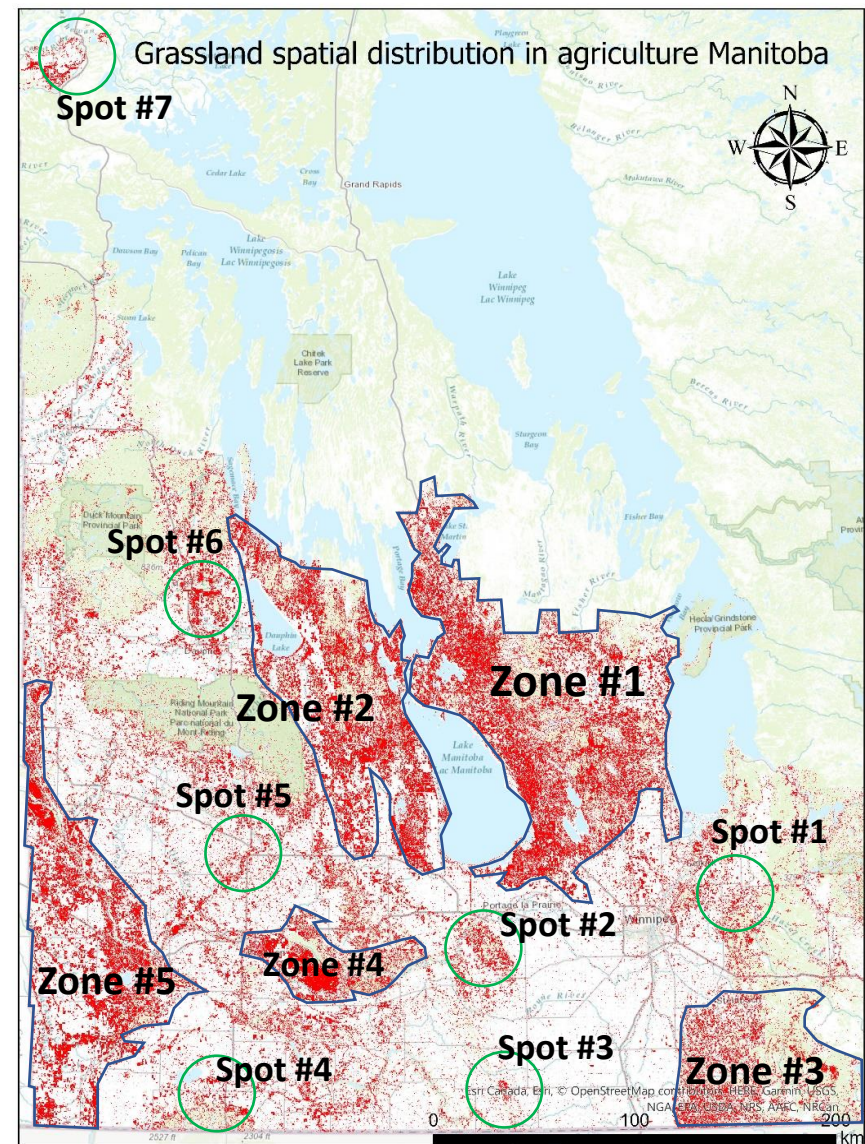


# Please, avoid!



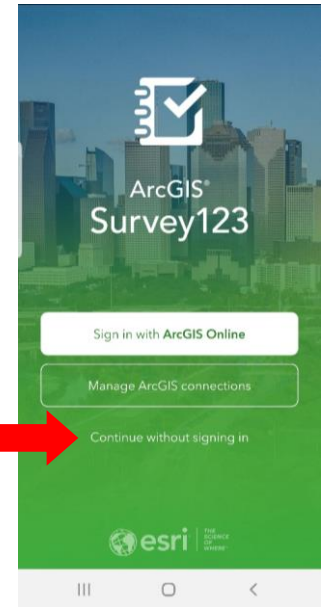
# Areas of interest (AOI)

- The total target is 3,000 points
- More than 50% must be grassland classes
- Five (5) zones and seven (7) spots must be visited
- Mid July – mid August
- Avoid wildfire locations



# Survey 123 app

- <https://www.gov.mb.ca/agriculture/land-management/land-id-tool.html>
- <https://youtu.be/QSiVwGpRhMs>





# Thank you! Merci!

# Questions?

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Landsat Timelapse of Spruce Woods Provincial Park MB

**For more information, please contact:**

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