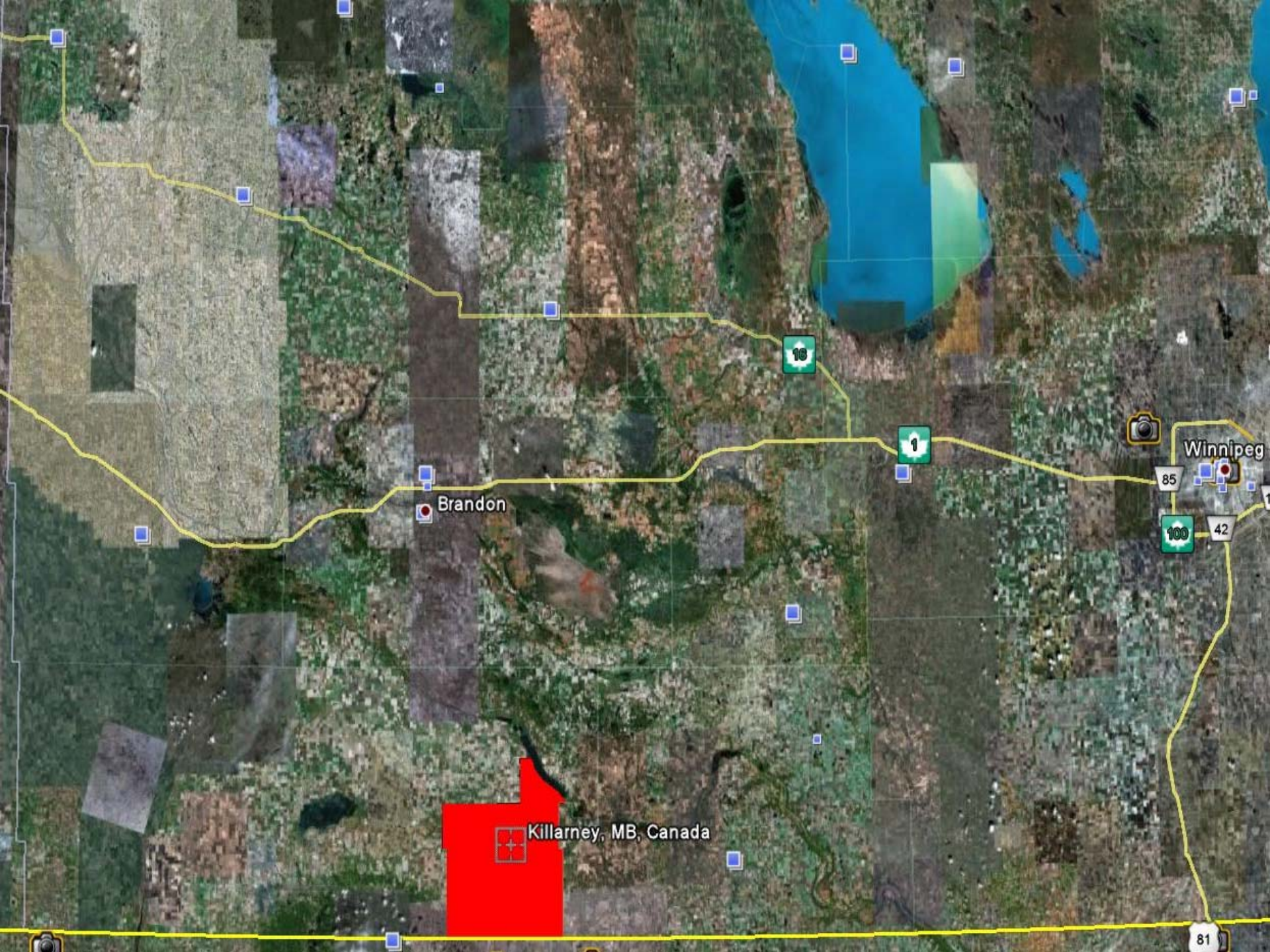


Soil Management in the RM of Killarney –Turtle Mountain

Ronggui Wu, S. Meyer and Y. Zhang

Agri-Environment Knowledge Center
Manitoba Agriculture, Food and Rural Initiatives





Winnipeg

Brandon

Killarney, MB, Canada

16

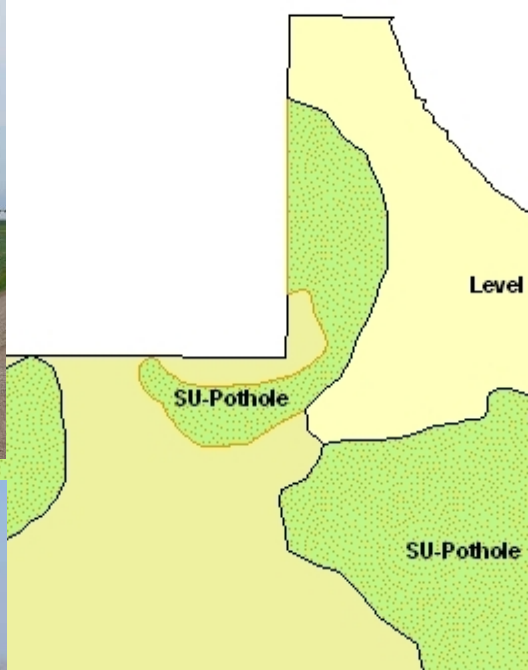
1

85

100

42

81





A photograph of a geological cross-section of a cliff face. The top layer is a light brown, unconsolidated material labeled 'Glacial till'. Below it is a darker, layered rock formation labeled 'Shale'. The shale shows distinct horizontal bedding and is fractured into blocks. At the base of the cliff, there is a layer of reddish-brown soil or weathered rock. Some sparse vegetation is visible at the top edge of the cliff.

Glacial till

Shale

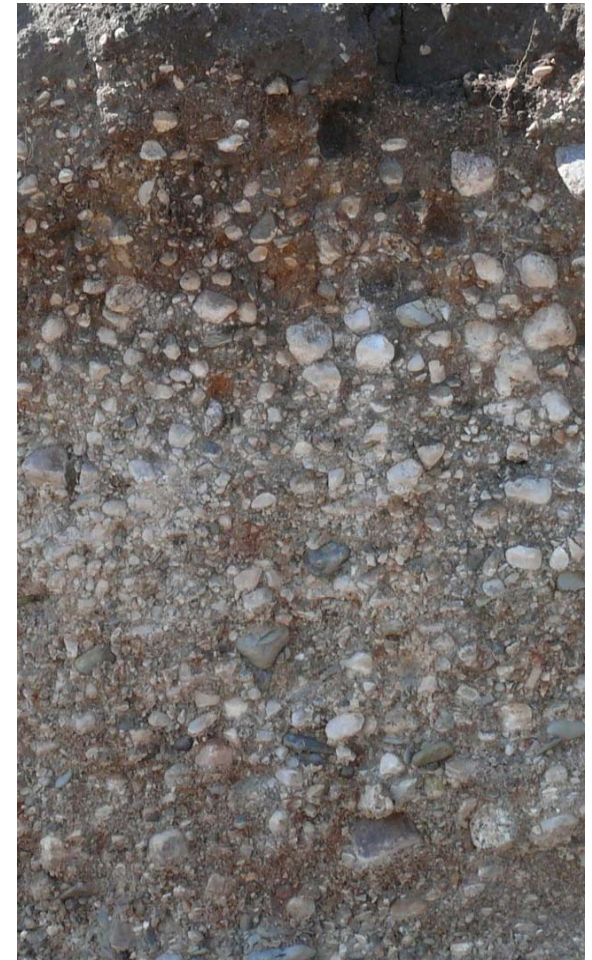
Glacial till



Lacustrine



Fluvial



Ryerson Association, developed on glacial till

Well or moderately well drained

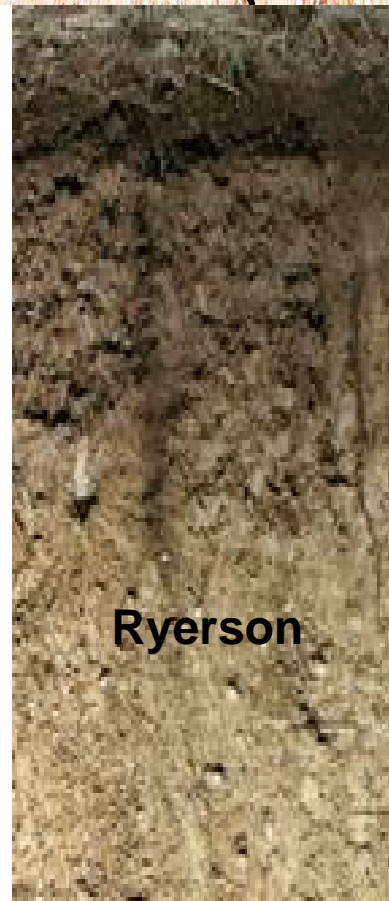
Imperfectly or poorly drained



Hathaway



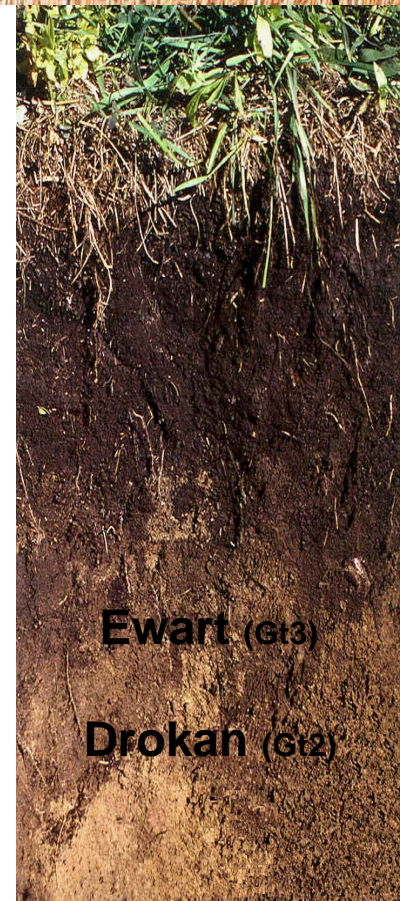
Medora



Ryerson



Coatstone



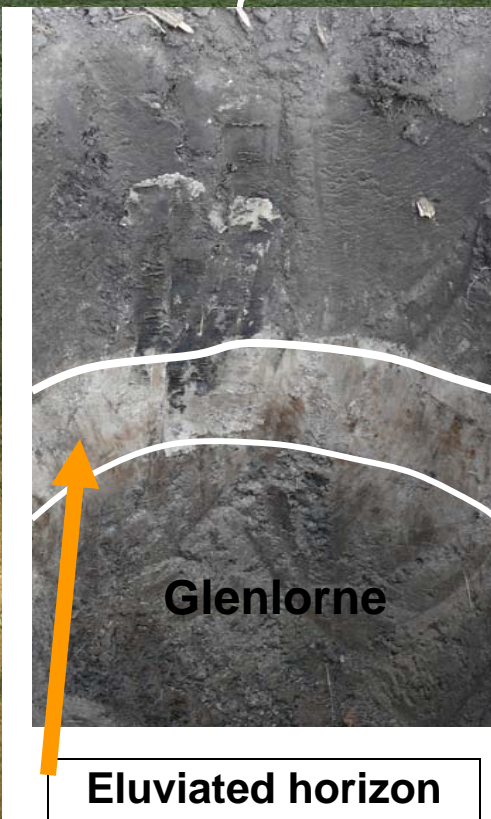
Ewart (Gt3)

Drokan (Gt2)

Waskada Association, developed on lacustrine over glacial till

Well drained

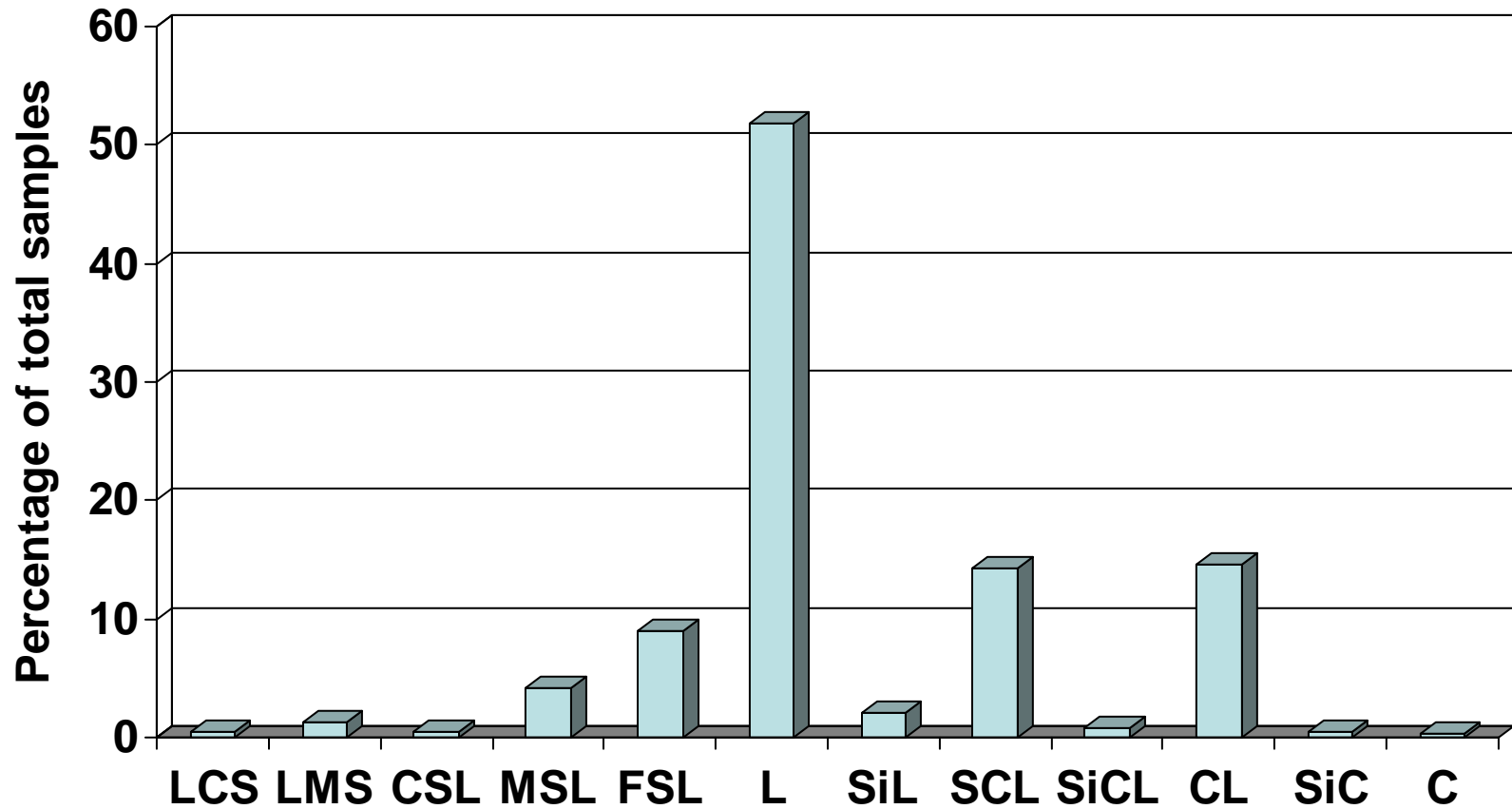
Imperfectly drained



Orthic Black Chernozems on fluvial materials

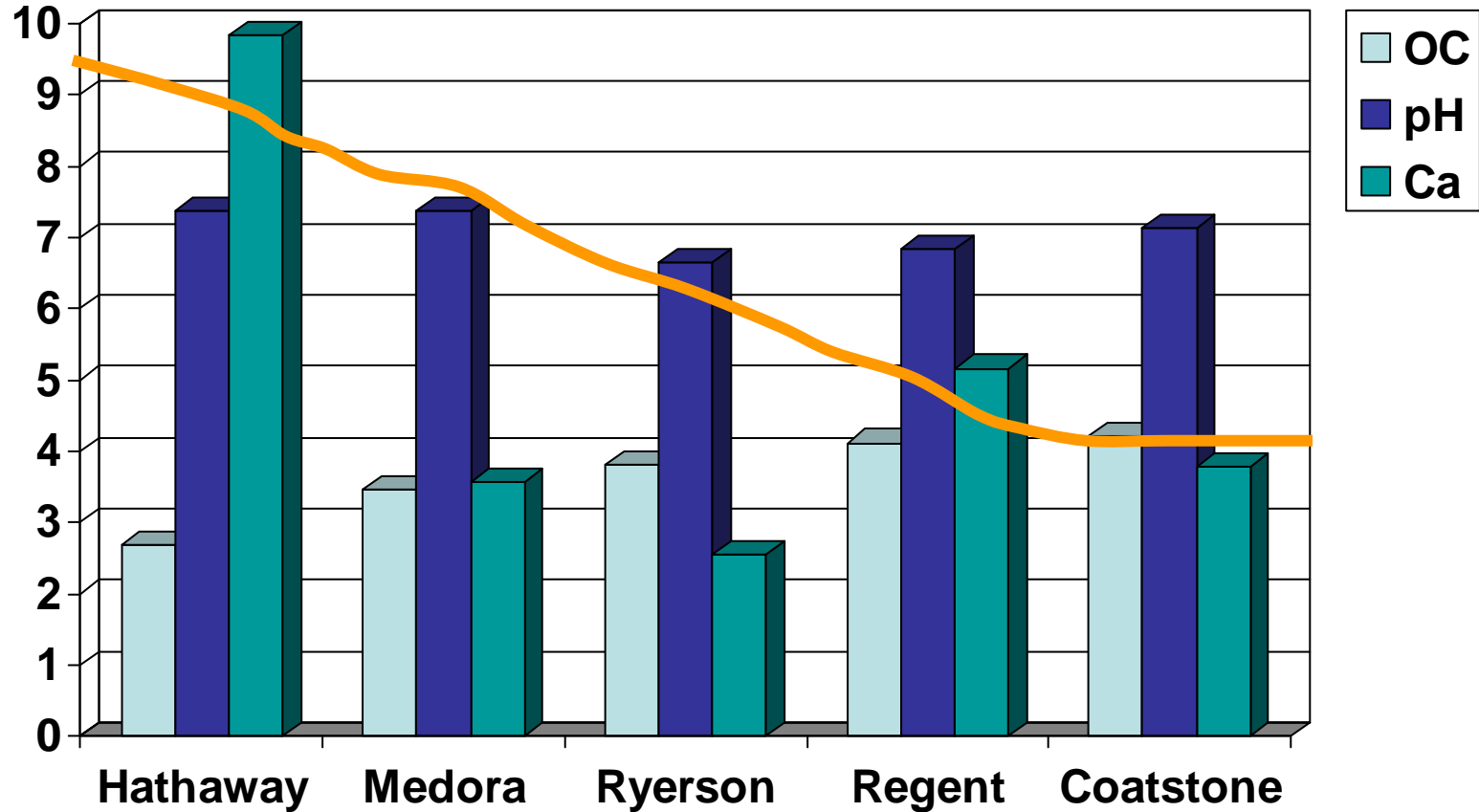


Soil texture in A horizon



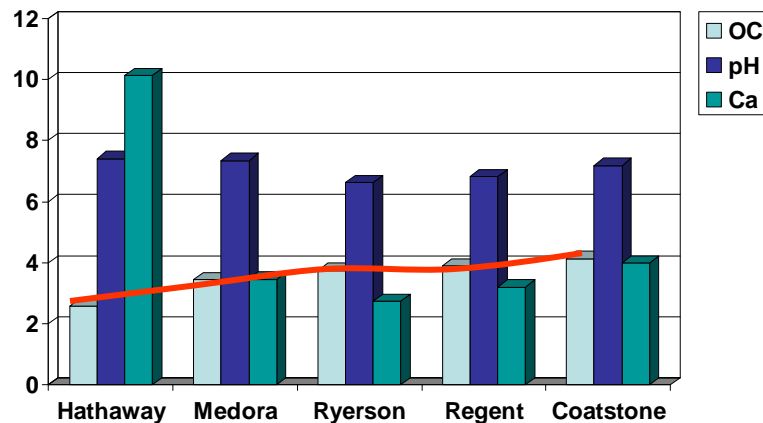
Chemical properties in A horizon

(Ryerson association, glacial till)

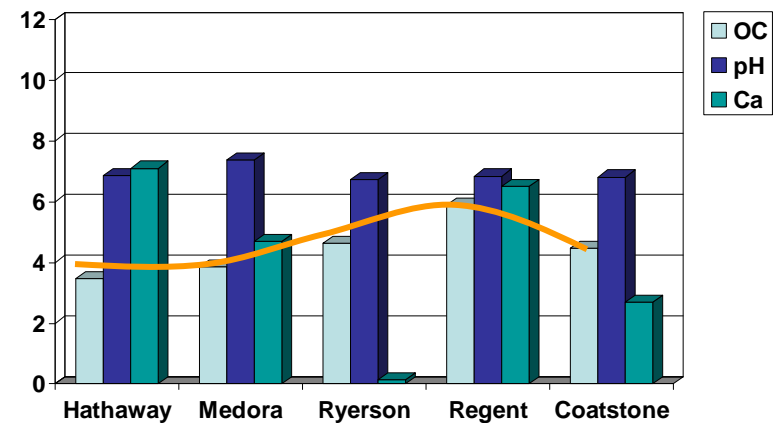


Soil properties in A horizon

(Ryerson association, glacial till)



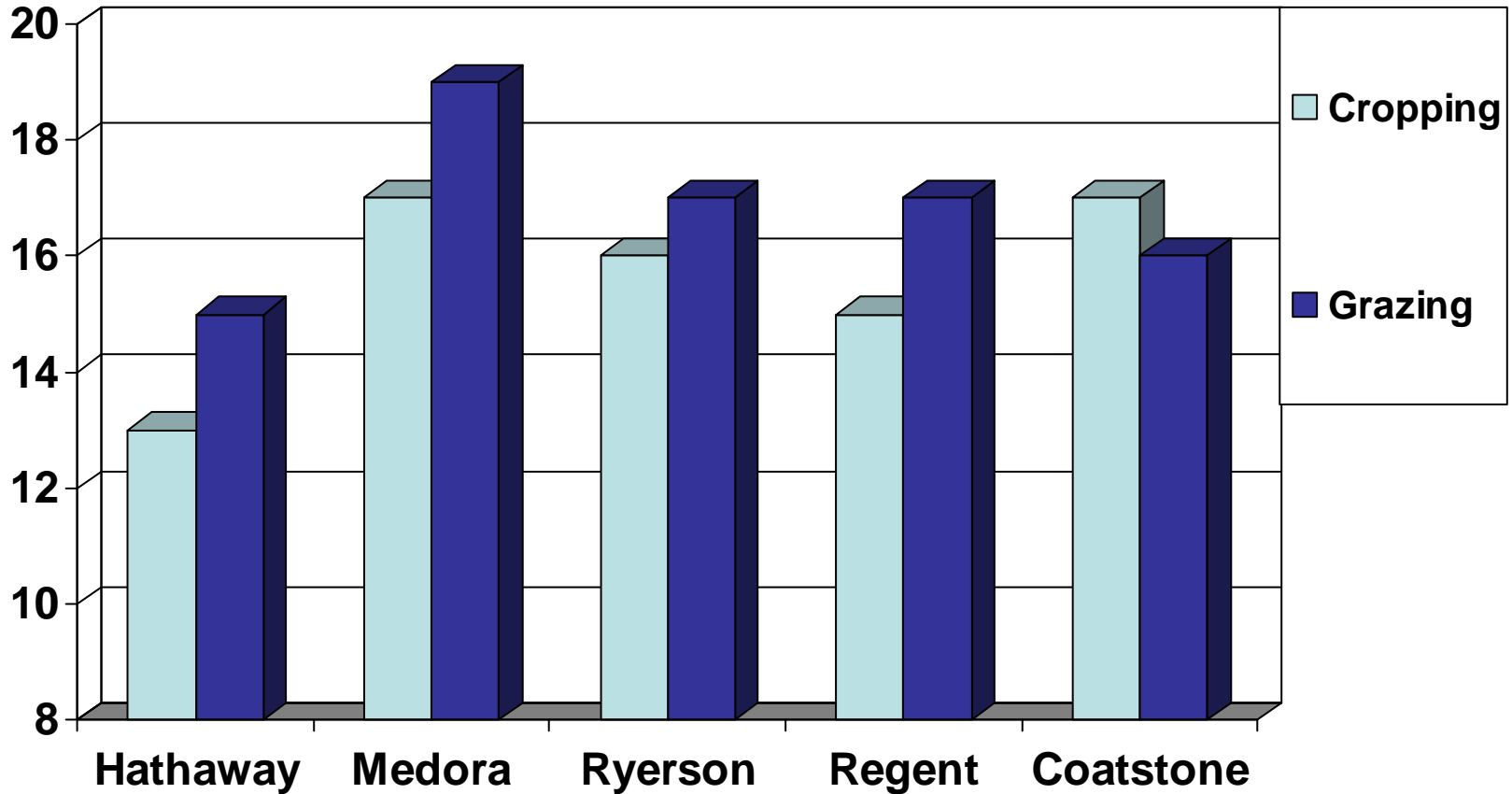
Cropping land



Grazing land

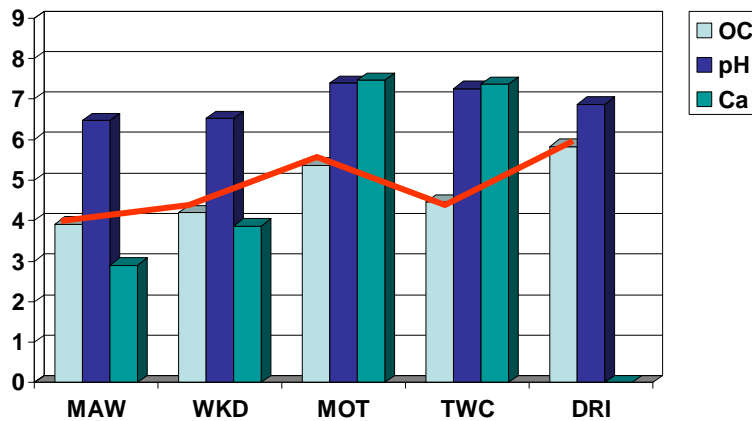
A horizon depth by land use

(Ryerson association, glacial till)

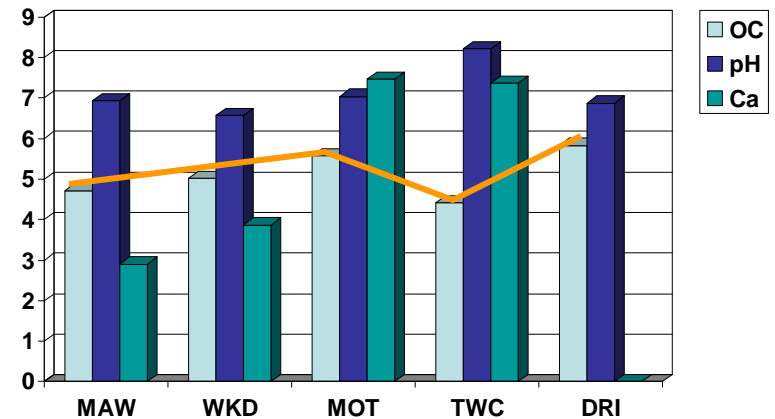


Chemical properties in A horizon

(Waskada association, lacustrine over till)



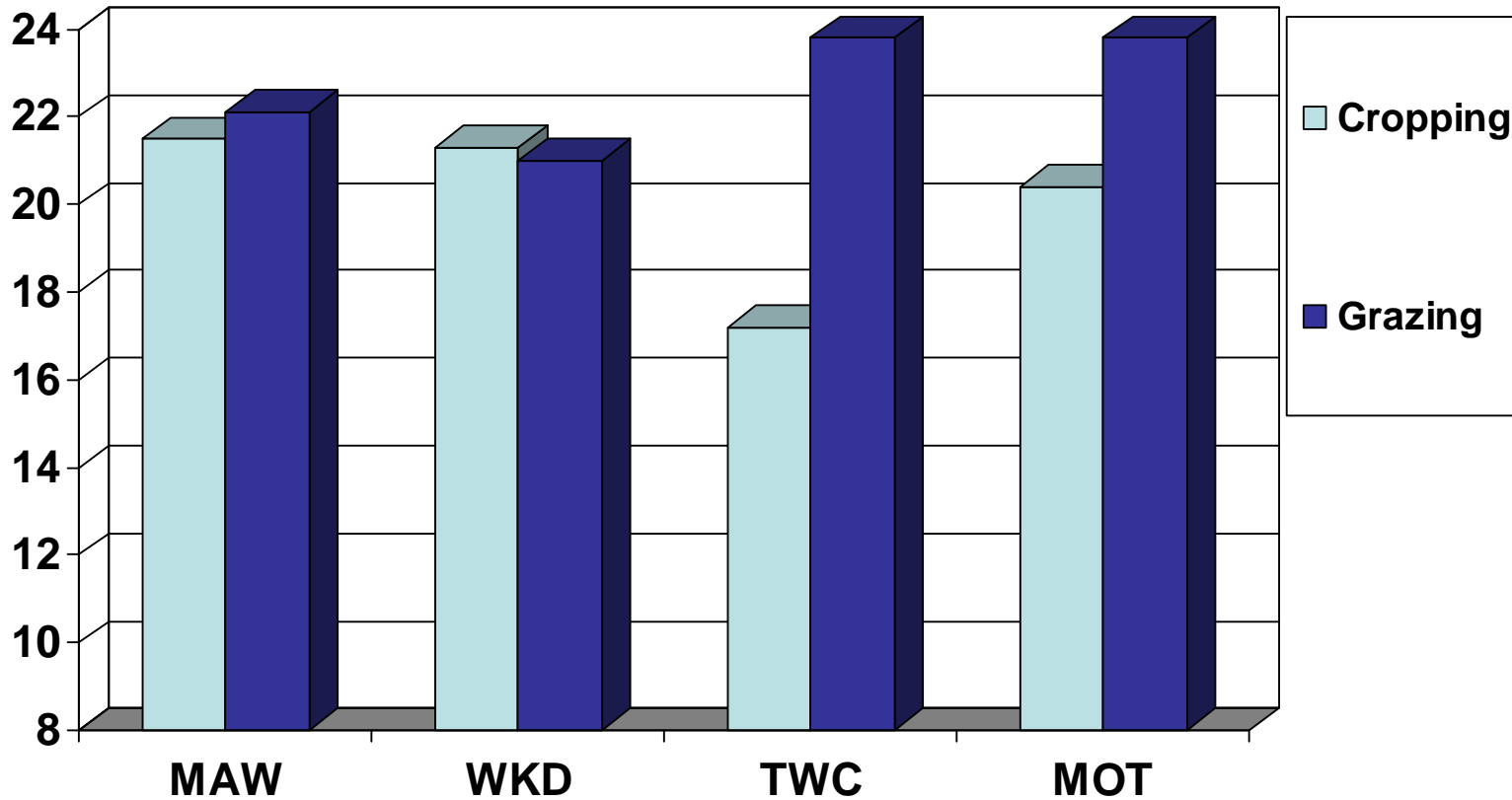
Cropping land



Grazing land

A horizon depth by land use

(Waskada association, lacustrine over till)



Considerations in soil management

- Rego Black Chernozems on well drained soils:
Hathaway or Maskawata
 - Reduced or zero-till





Considerations in soil management

- Rego Black Chernozems on well drained soils,
Hathaway or Maskawata
 - Reduced or zero-tillage
 - Crop rotation
 - Organic matter buildup



Considerations in soil management (cont.)

- Soils on imperfectly or poorly drained conditions: **Montgomery, Coatstone, Two Creeks, Deloraine and Ewart**
 - Surface and ground water protection
 - No manure application is allowed, if lands are closed to other water bodies.
 - Appropriate fertilizer rates
 - Improve drainage
 - Reduce salinity risks



Considerations in soil management (cont.)

- Soils on imperfectly or poorly drained landscape:
Montgomery, Coatstone, Two Creeks, Deloraine and Ewart
 - Reduce compaction on fine or heavy texture soils
 - Cultivate at the right moisture content
 - Plant deep-rooted crops, or crops suitable for late growing season



Considerations in soil management (cont.)

- Soils developed on fluvial materials
 - Nutrient management
 - Horizon arrangement
 - Horizon thickness
 - Soil texture
 - Water flow
 - Slope



Considerations in soil management (cont.)

- Soils with stones and cobbles
 - Perennial forage/grasses
 - Grazing



Acknowledgement

Soil Survey crew:

Yi, Sheila, Steve, Eric and Gerwin

Lab technicians:

Greg, Nancy and Nodas