North American Soil Geochemical Landscapes Project: *Saskatchewan Component*

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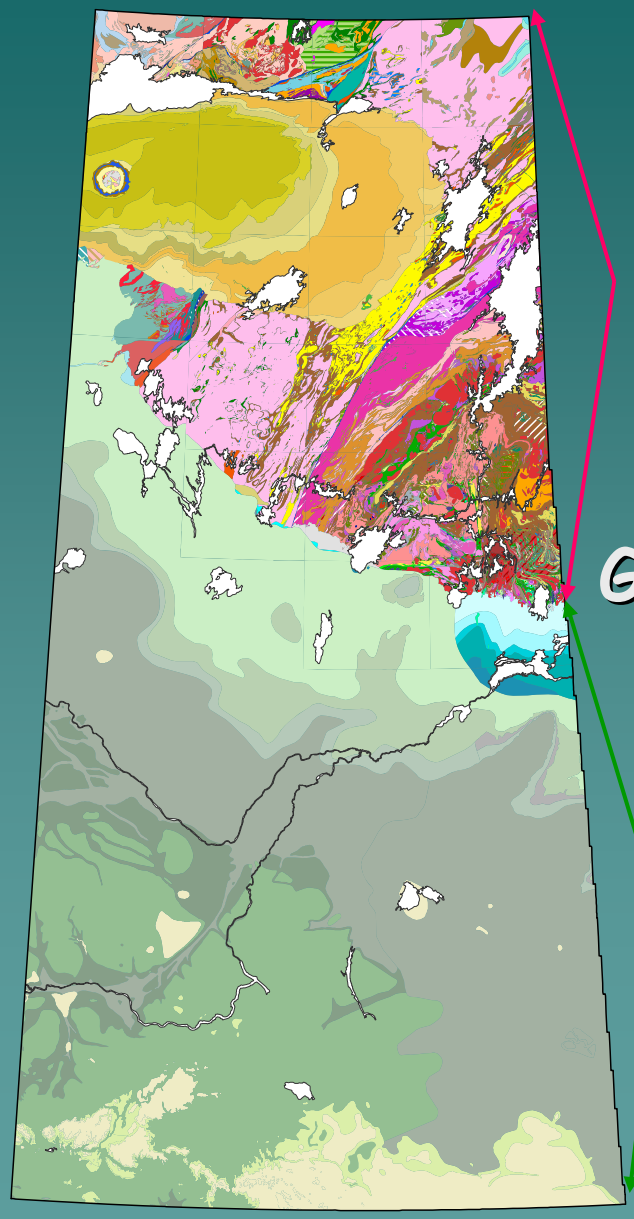
Saskatchewan Geological Survey
Ministry of Energy and Resources

Saskatchewan Ministry of Energy and Resources

Surficial Geology of Saskatchewan



Precambrian Shield

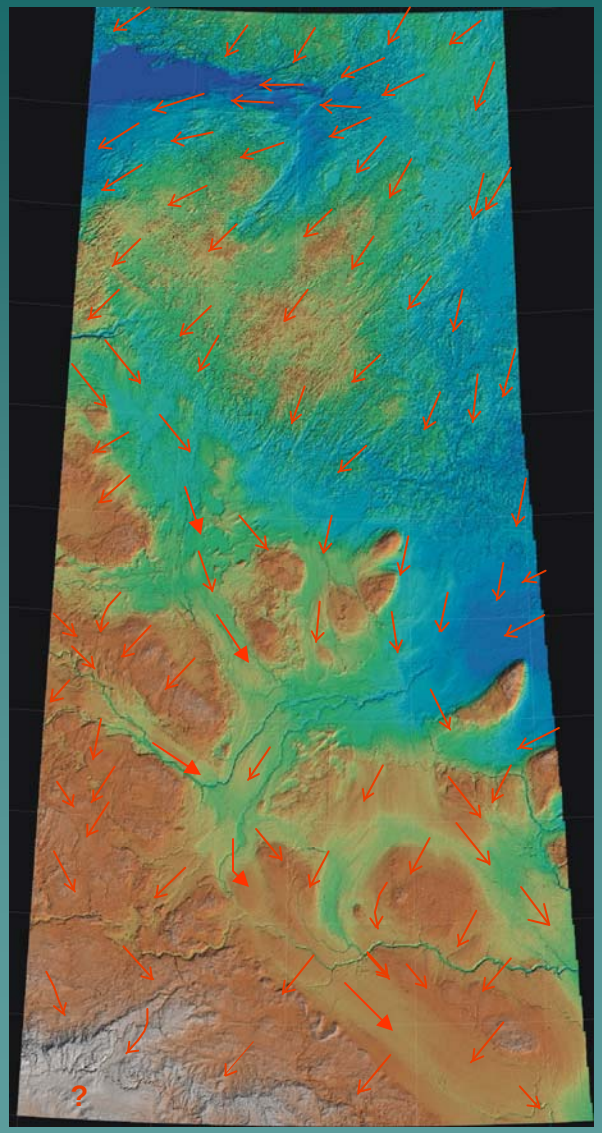
acidic

Contrasting Geological Terrains

Interior Plains

basic (carbonates)

Map sources: Simmons, 2008.
Red arrows indicate patterns of late glacial ice flow.



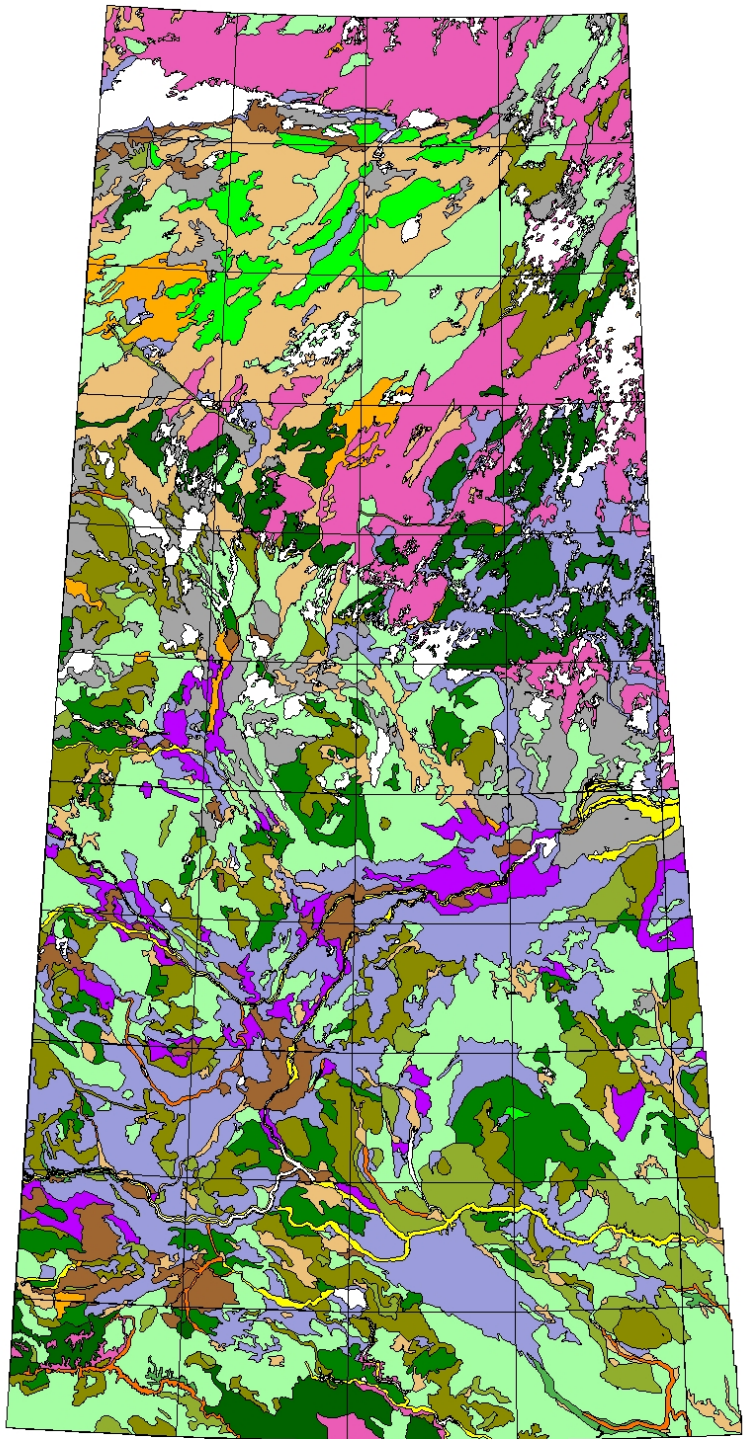
SRTM DEM

Surficial Geology of Saskatchewan

Contrasting

- Landscapes/landforms
- Soils and sediments: textural, lithological and geochemical properties

Map source: Simmon, 2008



Quaternary Stratigraphy of Southern Saskatchewan

Source: Saskatchewan Geological Survey, 2003

TIME UNITS				Stratigraphy			Lithology
Quaternary	Holocene			Saskatoon Group	surficial stratified deposits		Sand, silt clay
	Late Pleistocene	Wisconsinan	Late		Battleford Fm.		Till
			Middle		18,000 ± 450 BP 38,000 ± 500 BP		Weathered Zone
			Early		Floral Fm.	upper till	Till
		Sangamonian				Riddell Member	Stratified deposits
	Early & Middle Pleistocene	Illonian				lower till	Till
				Sutherland Group	Warman Fm.		Stratified deposits Till Stratified deposits
		Pre-Illonian (Kansan and Nebraskan?)			Dundurn Fm.		Till(s) Stratified deposits
					Mennon Fm.		Till(s)
Tertiary	Late Pliocene			Empress Group	Unnamed Unnamed		Stratified deposits
Cretaceous				Montana Group			Silts and clay

Stratigraphy, lithology and hydrostratigraphy, Saskatoon area, Saskatchewan (after Barendregt et al., 1998; Christiansen, 1992)

NASGLP: Proposed Saskatchewan Component

North- South Transect (SGS)

-33 to35 sites – soil geochemistry and soil radon studies

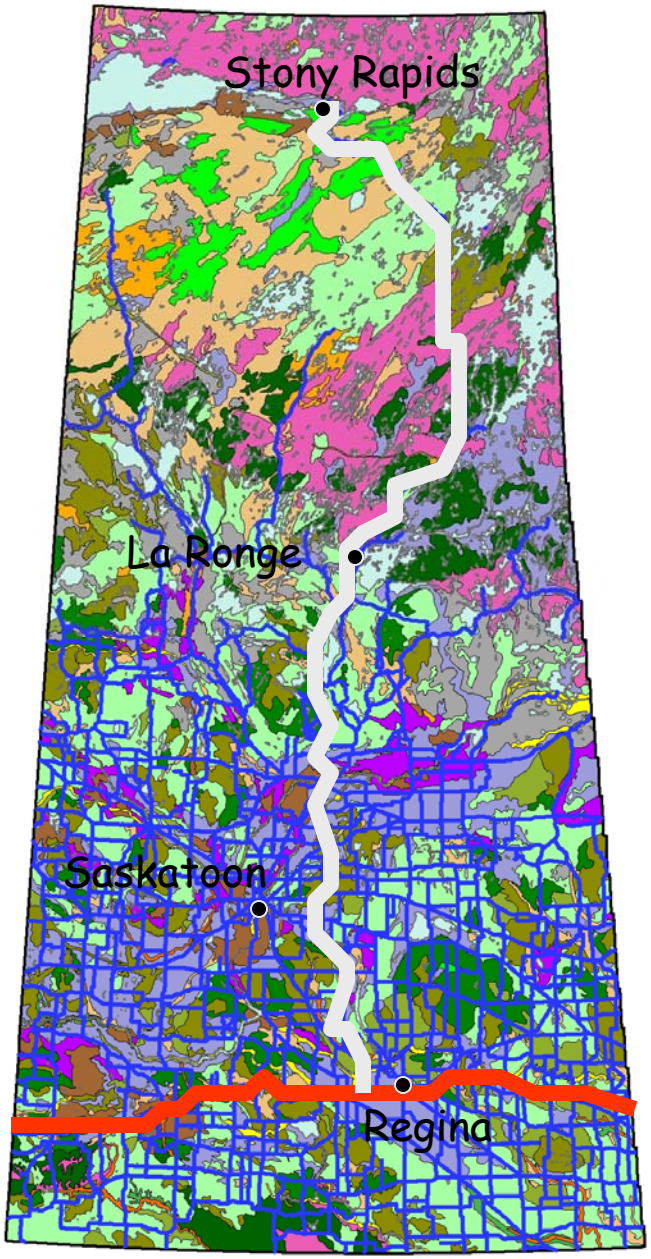
- Begin 2008 – multi-year project?

Trans-Canada Swath

(NRCan -GSC/SGS)

- Hwy 1 –east/west

- 30 sites – soil geochemistry and soil radon studies



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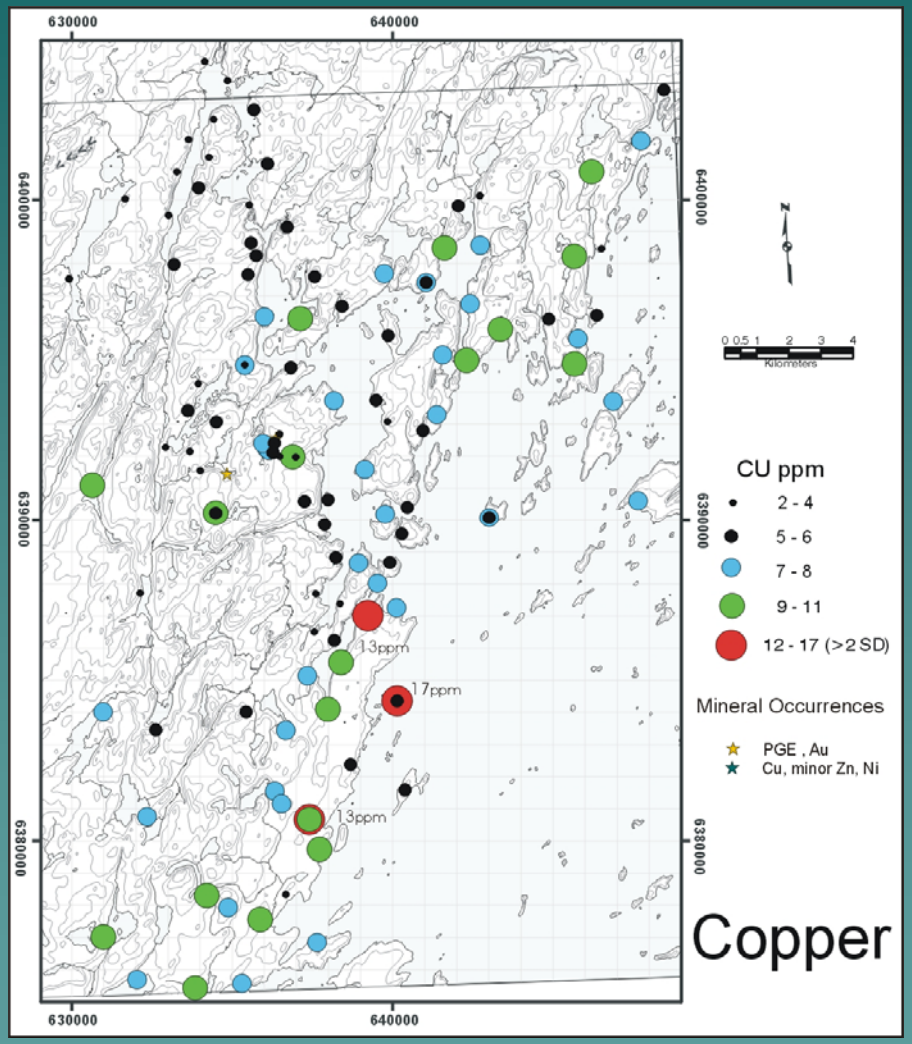
NASGLP: Proposed Saskatchewan Component

- Piggyback our regional till sampling surveys and mapping programs
- Analyses of archived samples from remote areas (C-horizon only)



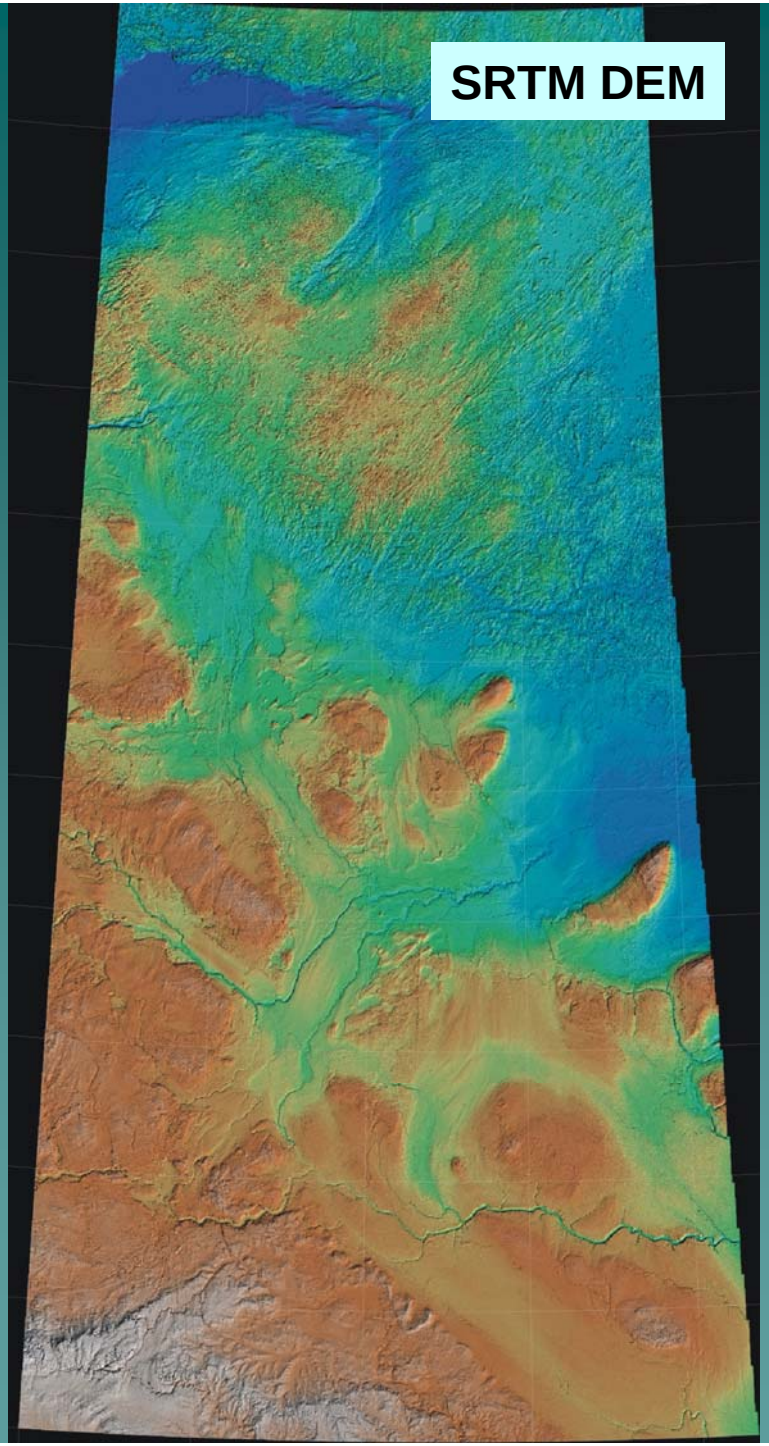
NASGLP: Proposed Saskatchewan Component

Questions:

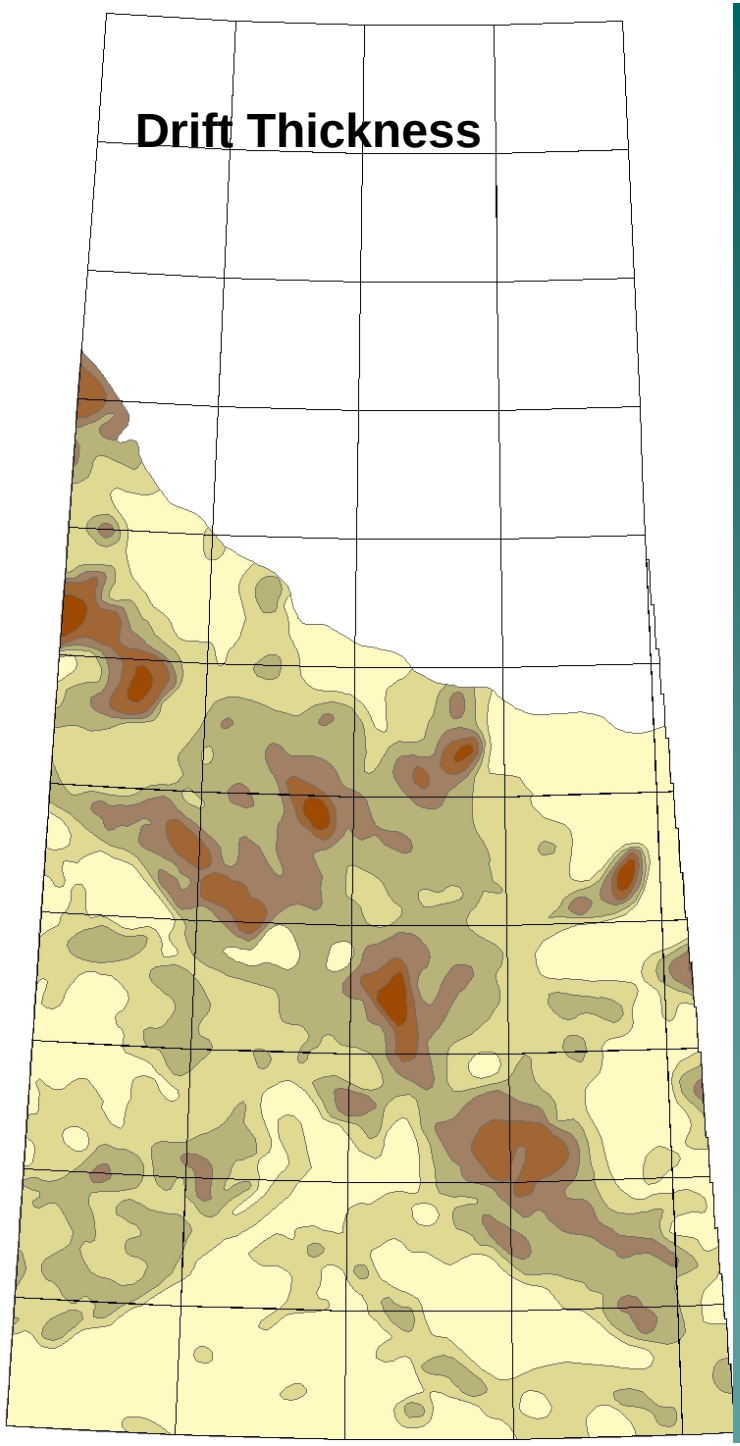
- What are the expectations of NRCan with respect to the participating provincial surveys?
- Data ownership – joint? Other uses by provinces
- Data accessibility in timely manner
- Archived samples – access to future analyses

Bottom line……

We are interested in participating as an equal partner



Maps source:
Simmon, 2008



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