



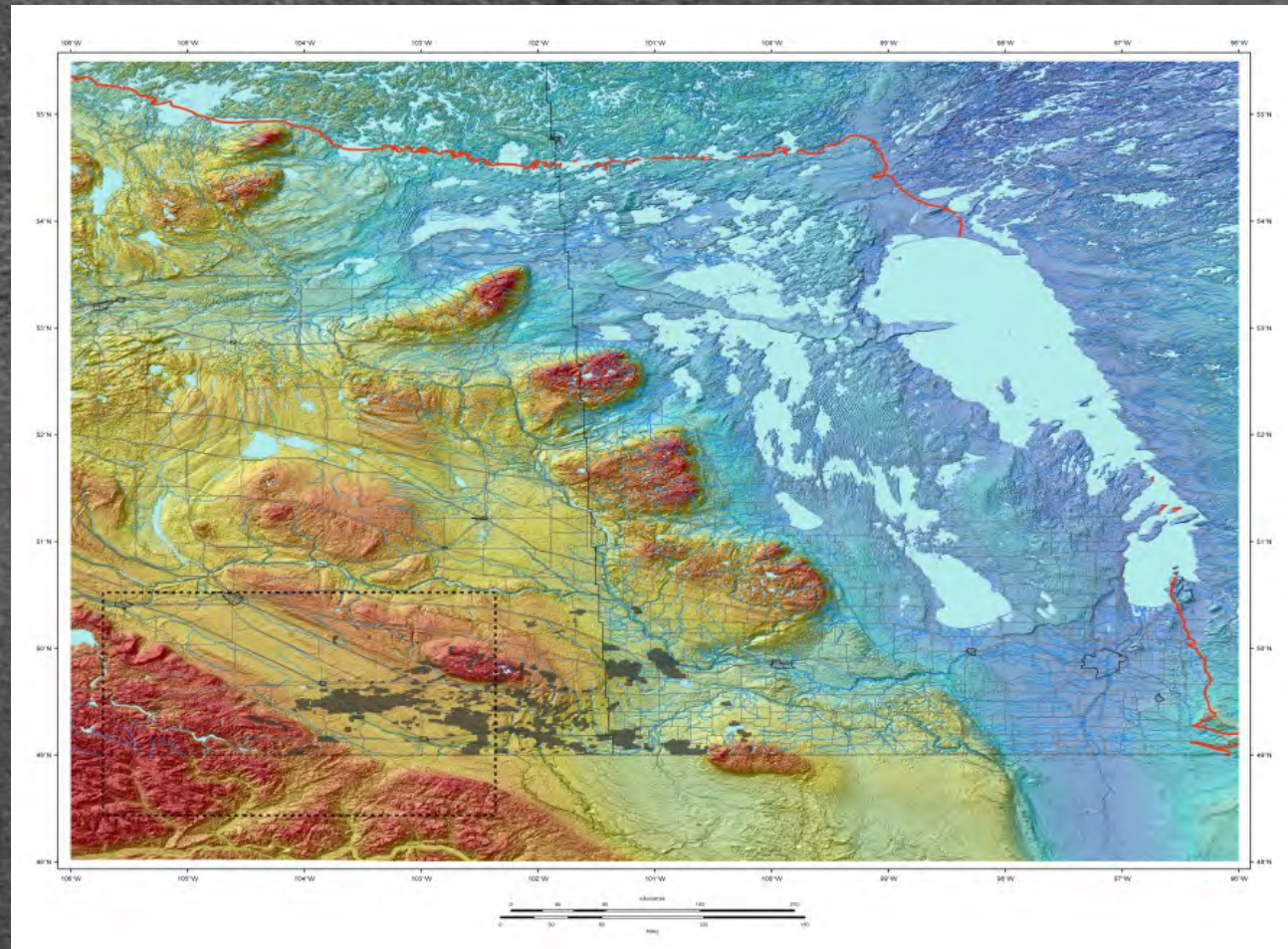
STRUCTURAL COMPILATION PROJECT – MANITOBA UPDATE

James D. Bamburak

May 18, 2006

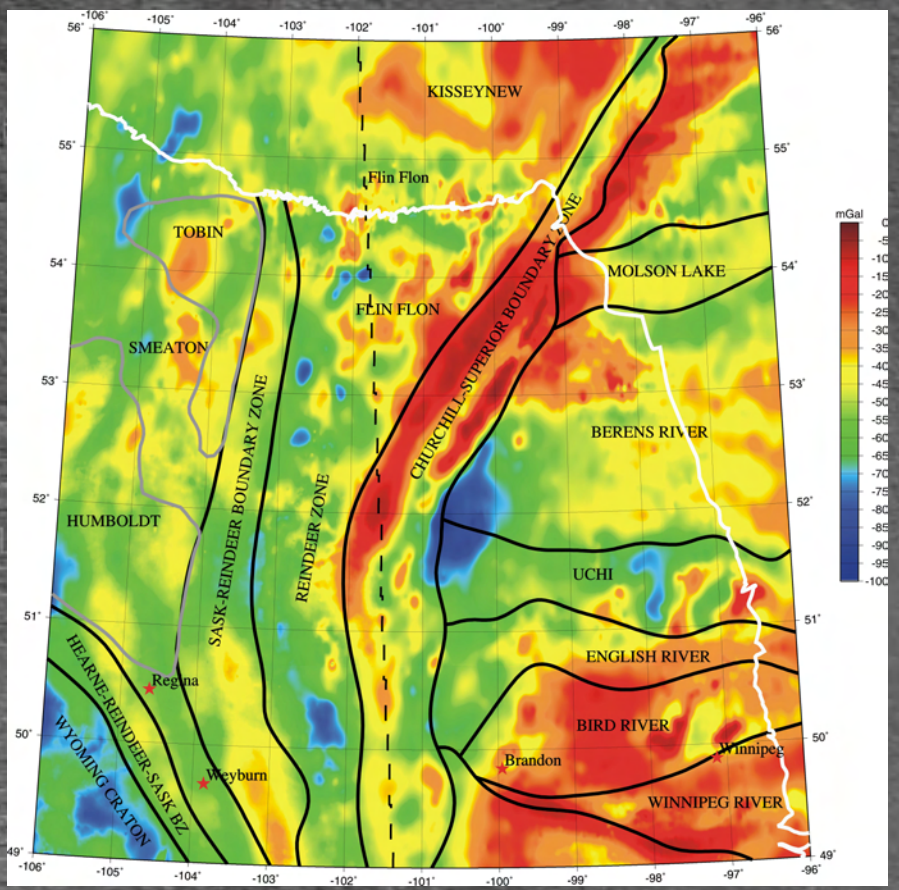
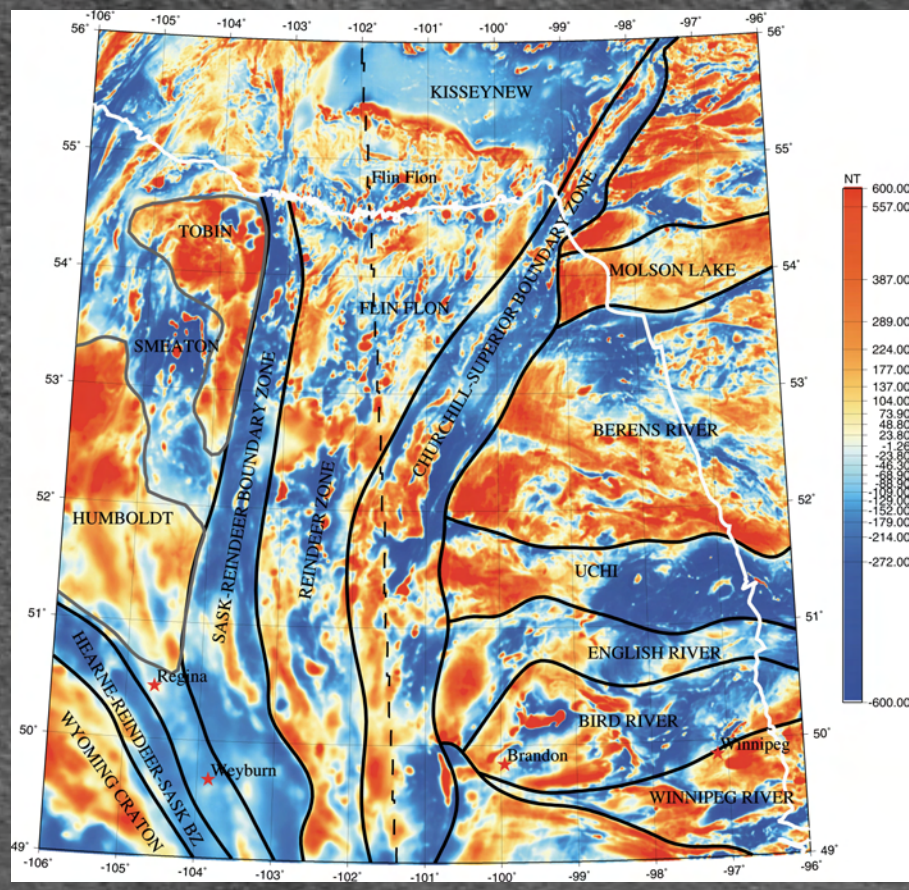


Topography





Geophysics



Aeromag

Gravity

Morozov (pers. comm., Jan. 13, 2006)



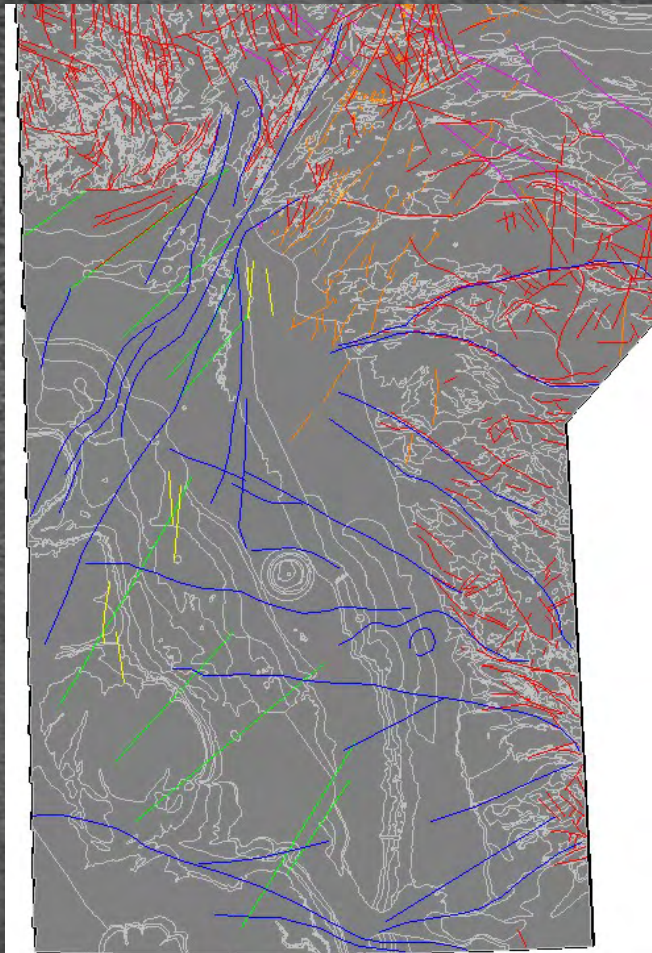
Manitoba's Integrated Anomaly Map – Paul Lenton



<http://www.gov.mb.ca/iedm/mrd/geo/gis/geoscimaps.html>



Manitoba's Integrated Anomaly Map – Paul Lenton

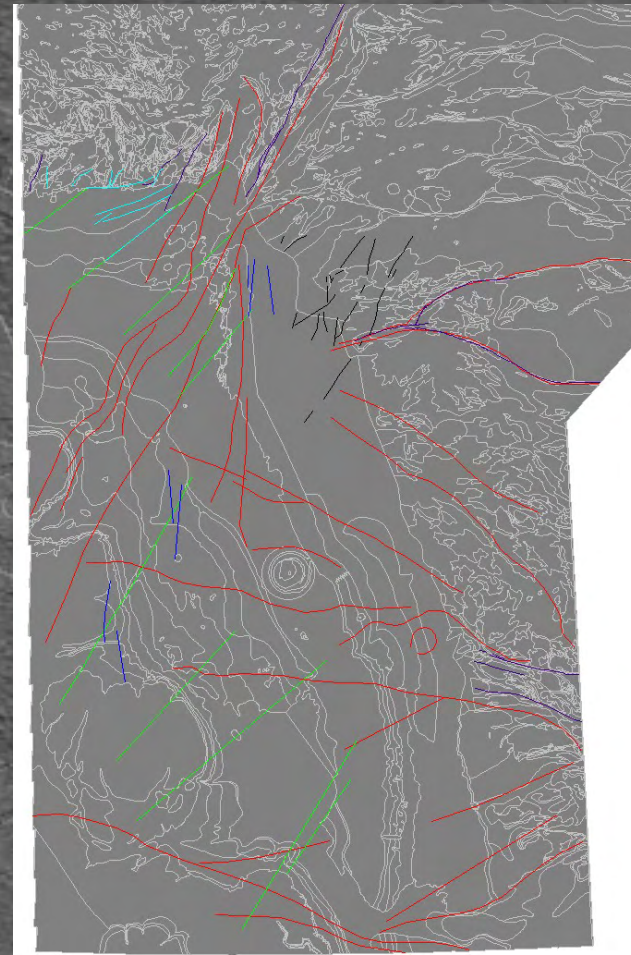
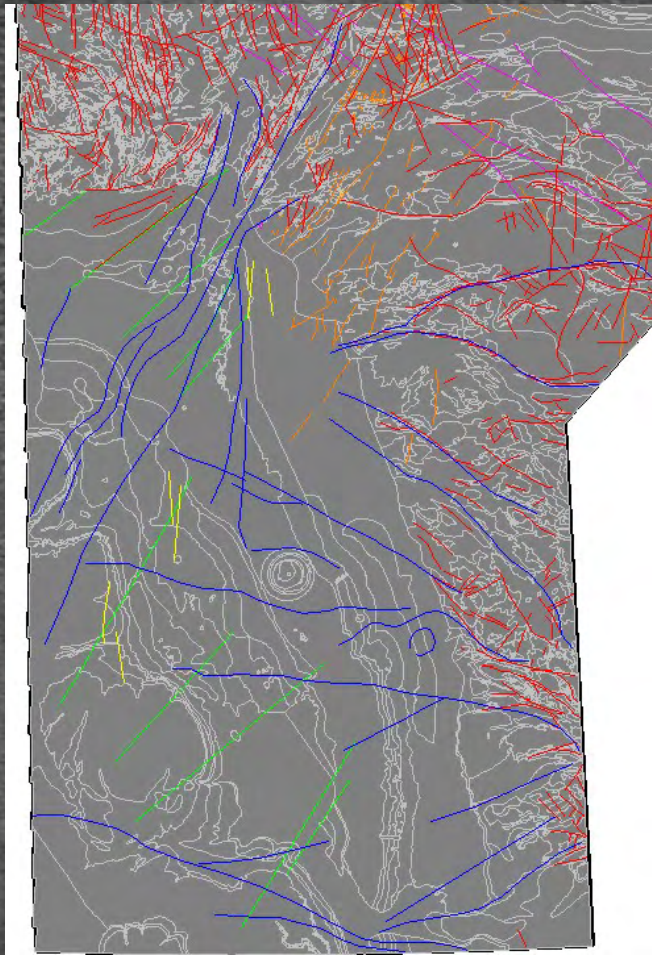


- Linears transferred from website into computer
- Area of Province reduced to focus on Manitoba's portion of WCSB
- Major Precambrian lineaments and sub-Phanerozoic lineaments retained

<http://www.gov.mb.ca/iedm/mrd/geo/gis/geoscimaps.html>



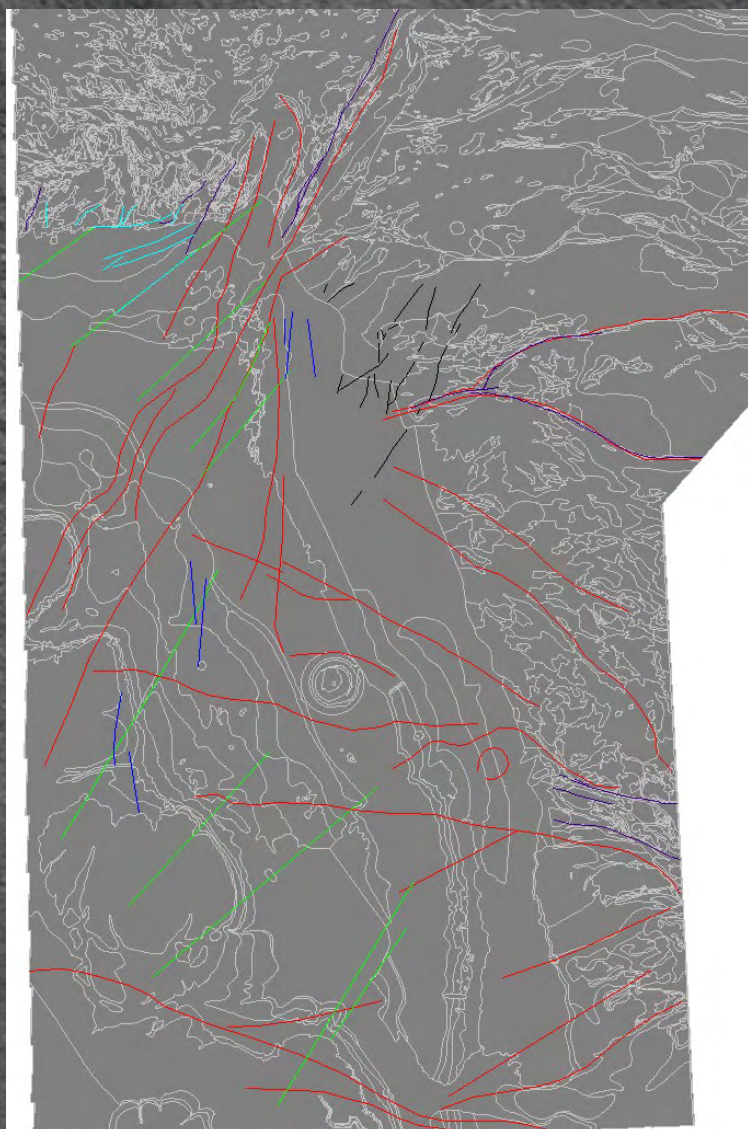
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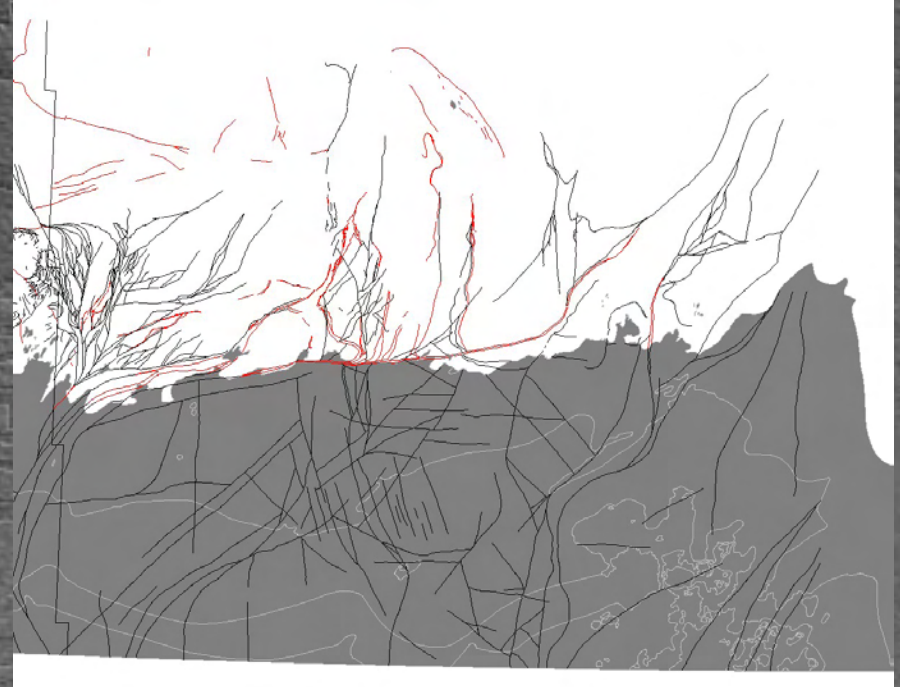
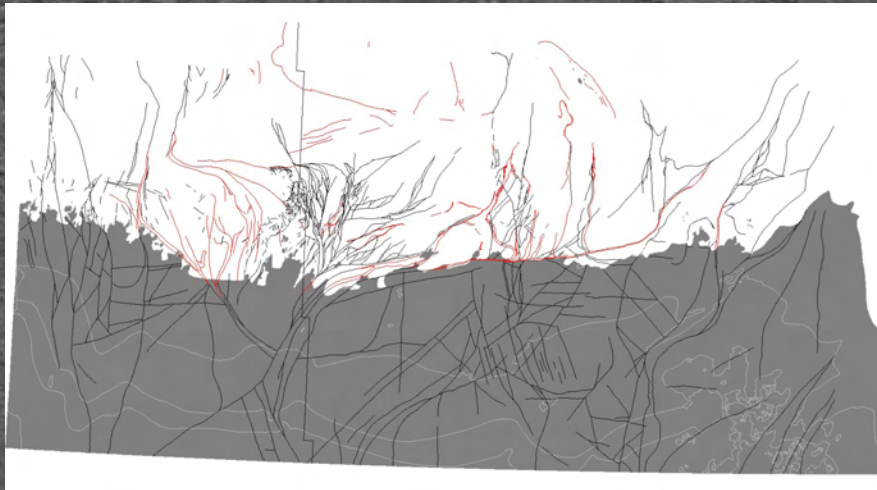
Manitoba's Integrated Anomaly Map – Paul Lenton



- 28 Magnetic linears (red)
- 10 Phanerozoic faults (green)
- 7 Magnetic low linears (blue)
- 24 Documented faults (purple)
- 10 Topographic lineaments (turquoise)
- 22 Dike swarms (black)



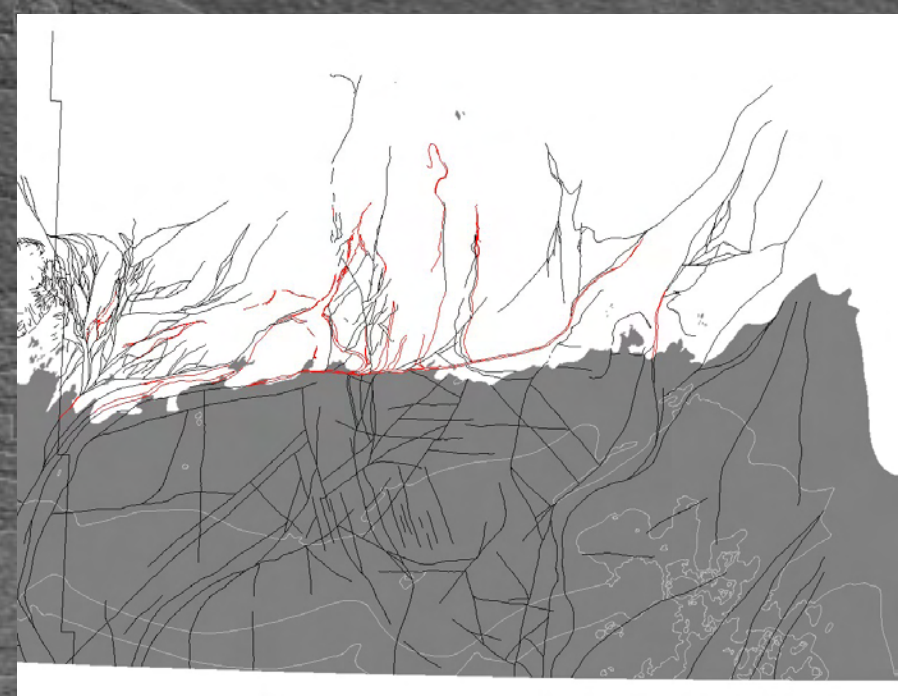
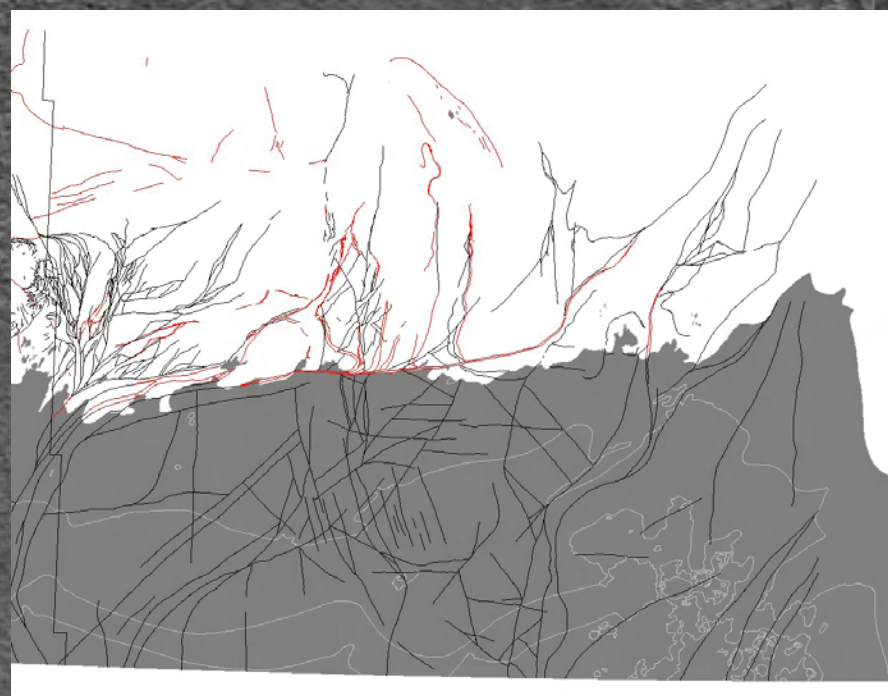
NATMAP Shears and Faults



Shears (red) and Faults (black)

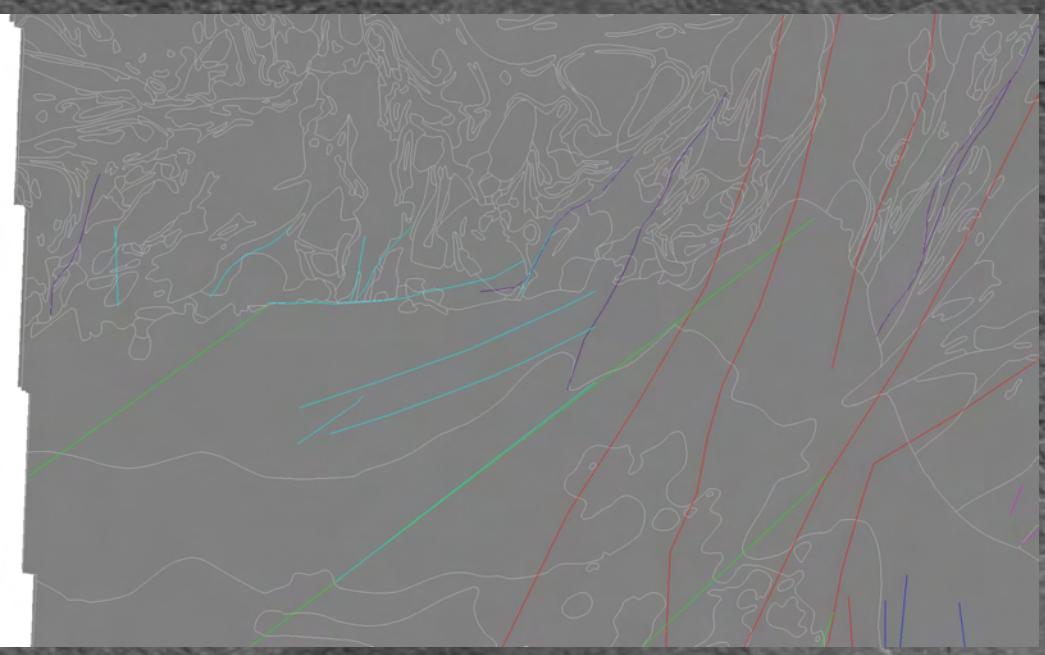


NATMAP Shears and Faults

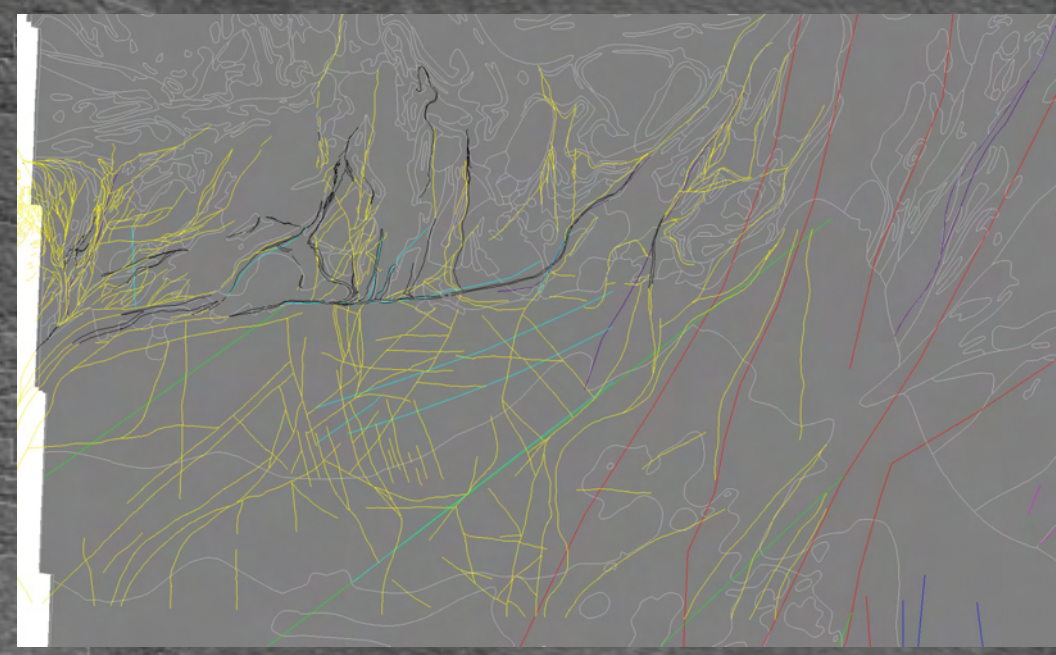




Anomaly map vs NATMAP



Anomaly map only



Anomaly map and NATMAP



Future Work

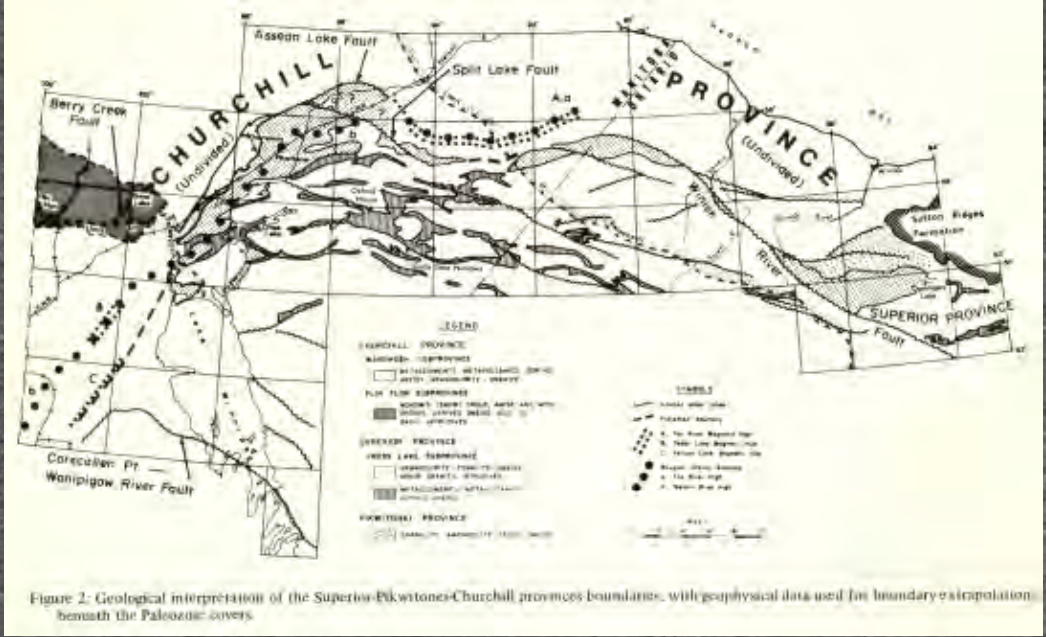


Figure 2: Geological interpretation of the Superior-Precambrian-Churchill provinces boundaries, with geophysical data used for boundary extrapolation beneath the Paleozoic covers.

Bell (1971; GAC)

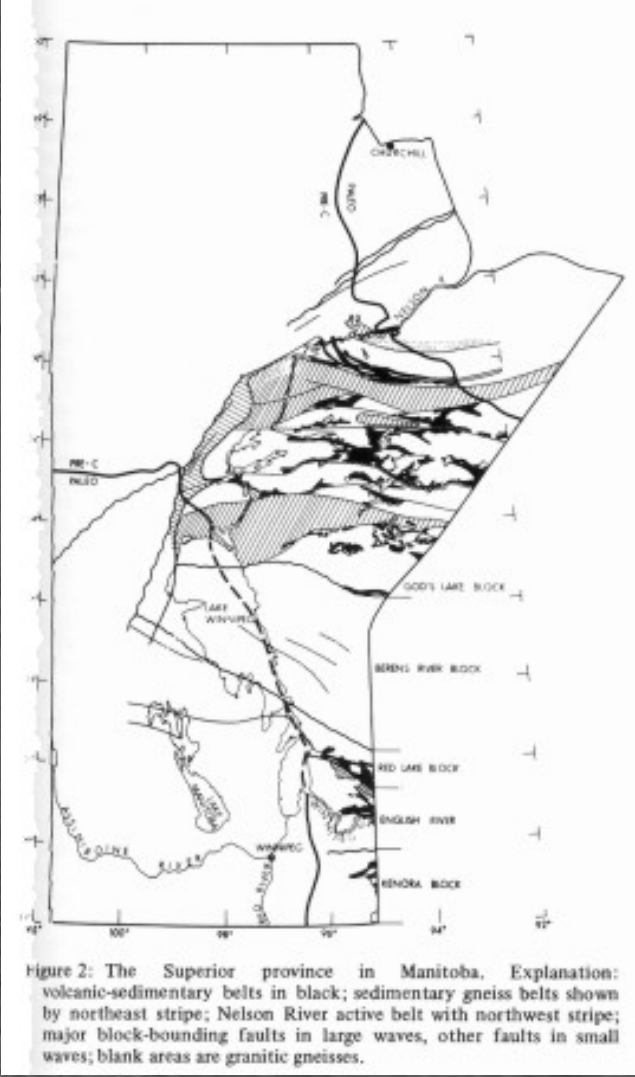
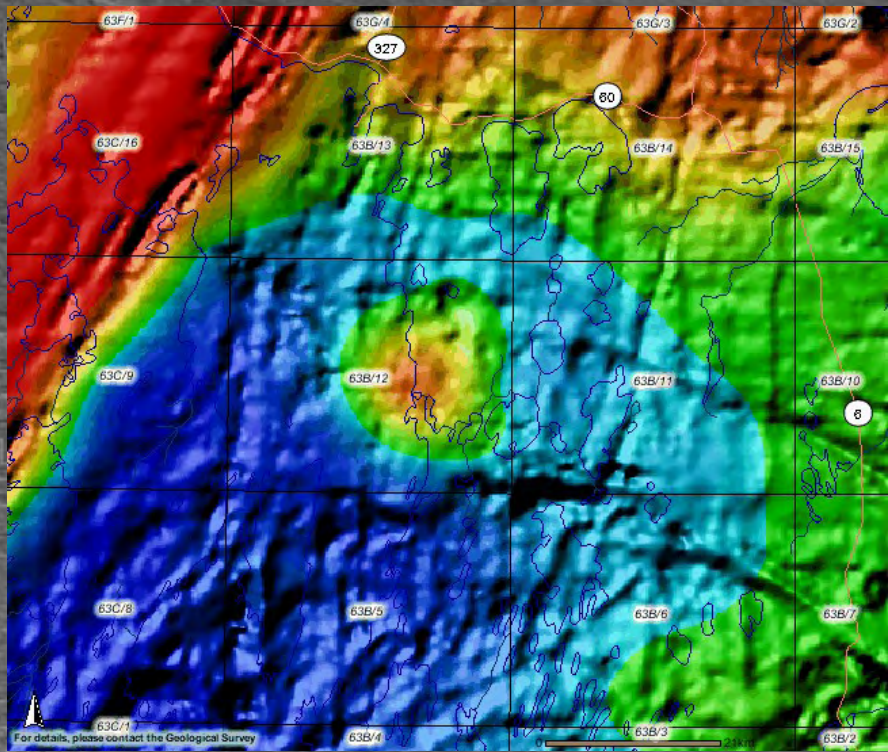
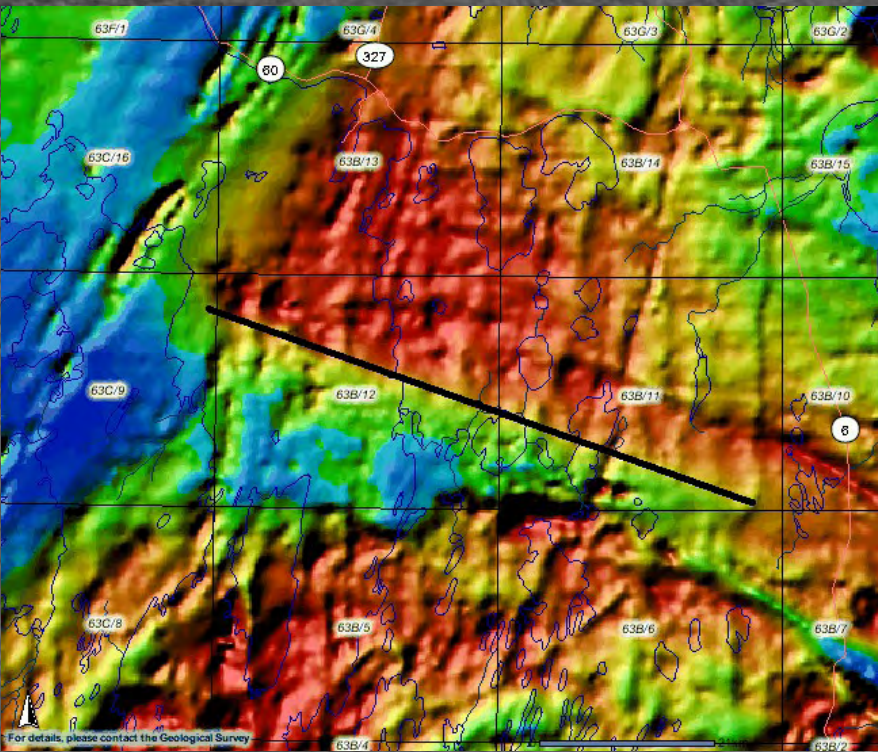


Figure 2: The Superior province in Manitoba. Explanation: volcanic-sedimentary belts in black; sedimentary gneiss belts shown by northeast stripe; Nelson River active belt with northwest stripe; major block-bounding faults in large waves, other faults in small waves; blank areas are granitic gneisses.

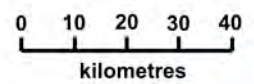
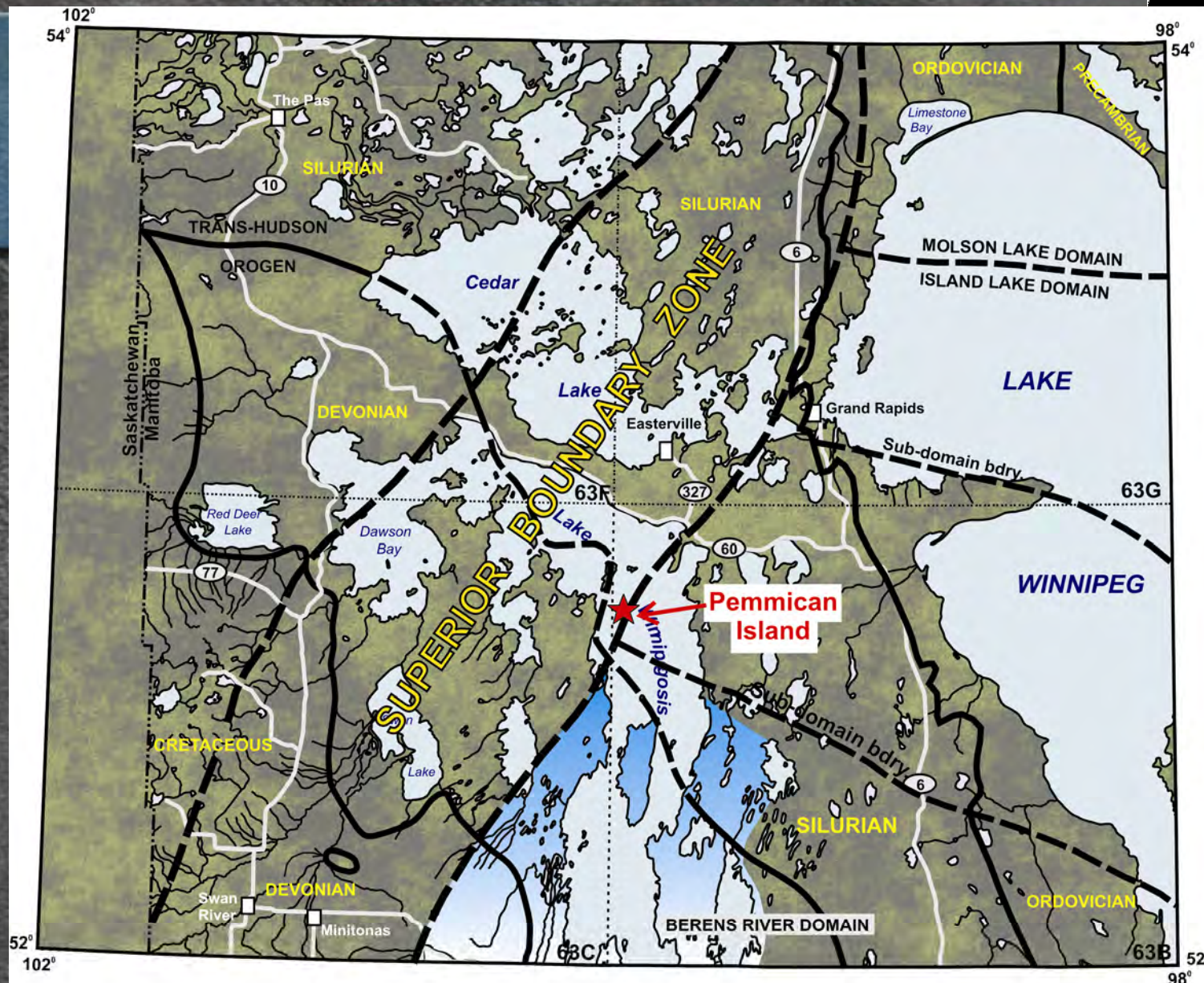
Wilson (1971; GAC)







Pemmican Island-Pickerel Lake



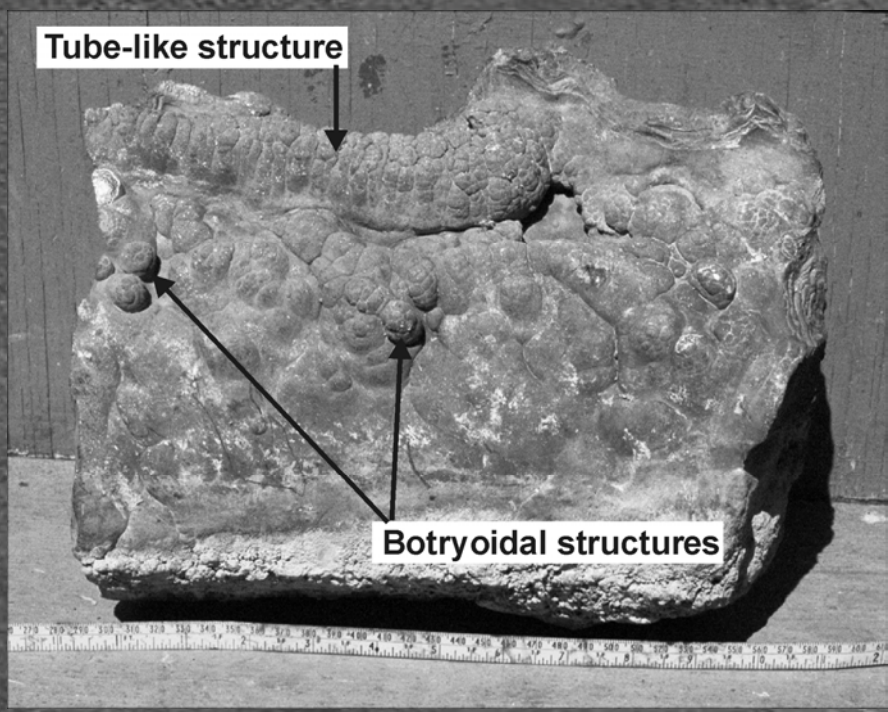
Structural Compilation Project – Manitoba Update May 2006



-  Geological contact (approximate)
-  Precambrian domain boundaries
-  Camperville gravity low
-  Pemmican Island

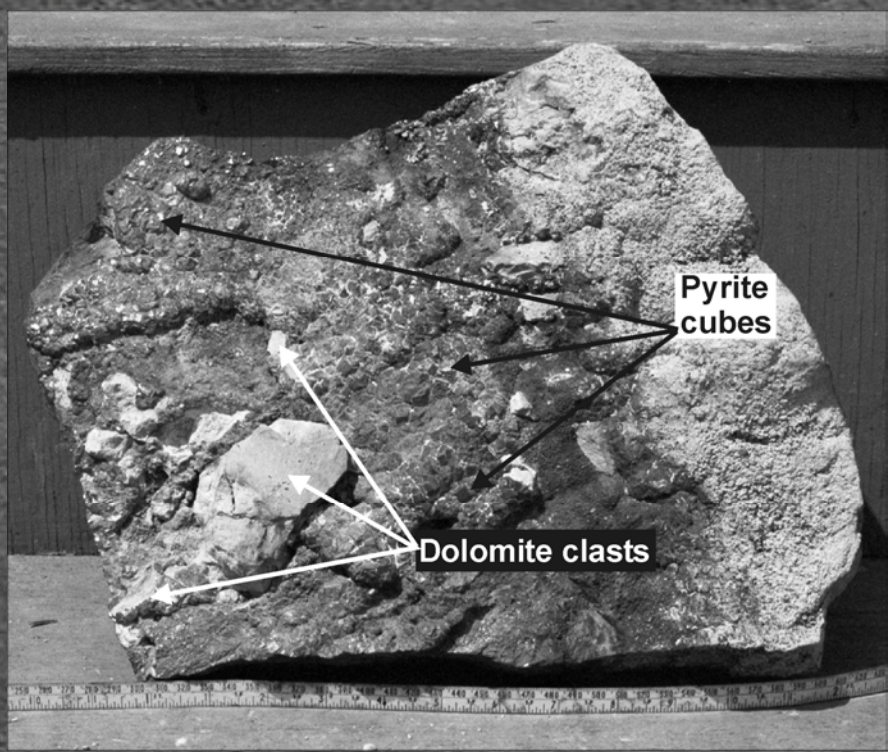


Pemmican Island Sulphide Occurrence





Pemmican Island Sulphide Occurrence





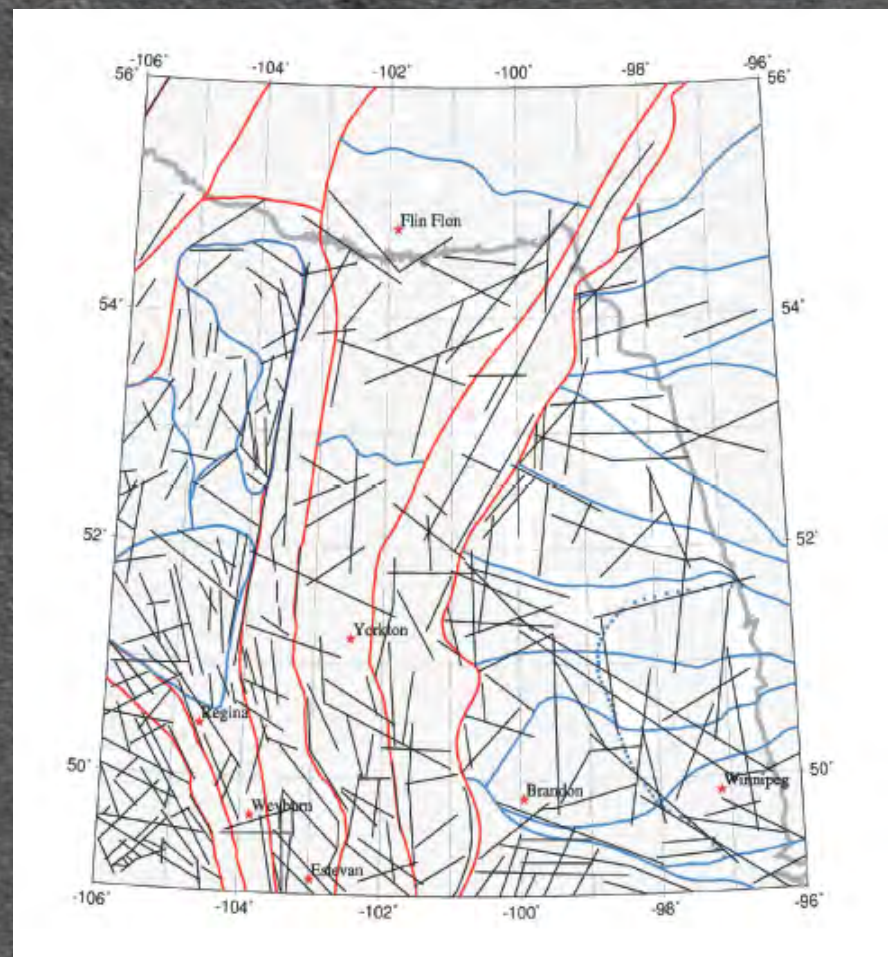
Pemmican Island Sulphide Occurrence

- 5.66% Zn, 1.04% Pb





Future Work



Li and Morozov (2006)



References

- Bell, C.K. 1971b: Boundary geology, upper Nelson River area, Manitoba; *in* Geoscience Studies in Manitoba; The Geological Association of Canada, Special Paper No. 9, p. 11-40.
- Li, J. and Morozov, I.B. 2006: Structural styles of the Precambrian basement underlying the Williston Basin and adjacent regions – an interpretation from geophysical mapping; *in* Summary of Investigations 2006, Volume 1, Saskatchewan Geological Survey, Sask. Industry Resources, Misc. Rep. 2006-4.1, CD-ROM, Paper A-2, 18 p.
- Mossap, G.D. and Shetsen, I. (Compilers) 1994: Geological atlas of the Western Canada Sedimentary Basin; Calgary, CSPG and ERCB/AGS, 510 p. http://www.ags.gov.ab.ca/publications/wcsb_atlas/atlas.html (2010-04-16).
- Wilson, H.D.B. 1971: The Superior Province in the Precambrian of Manitoba; *in* Geoscience Studies in Manitoba, ed(s). A.C. Turnock; Geological Association of Canada, Special Paper 9, p. 41-49.