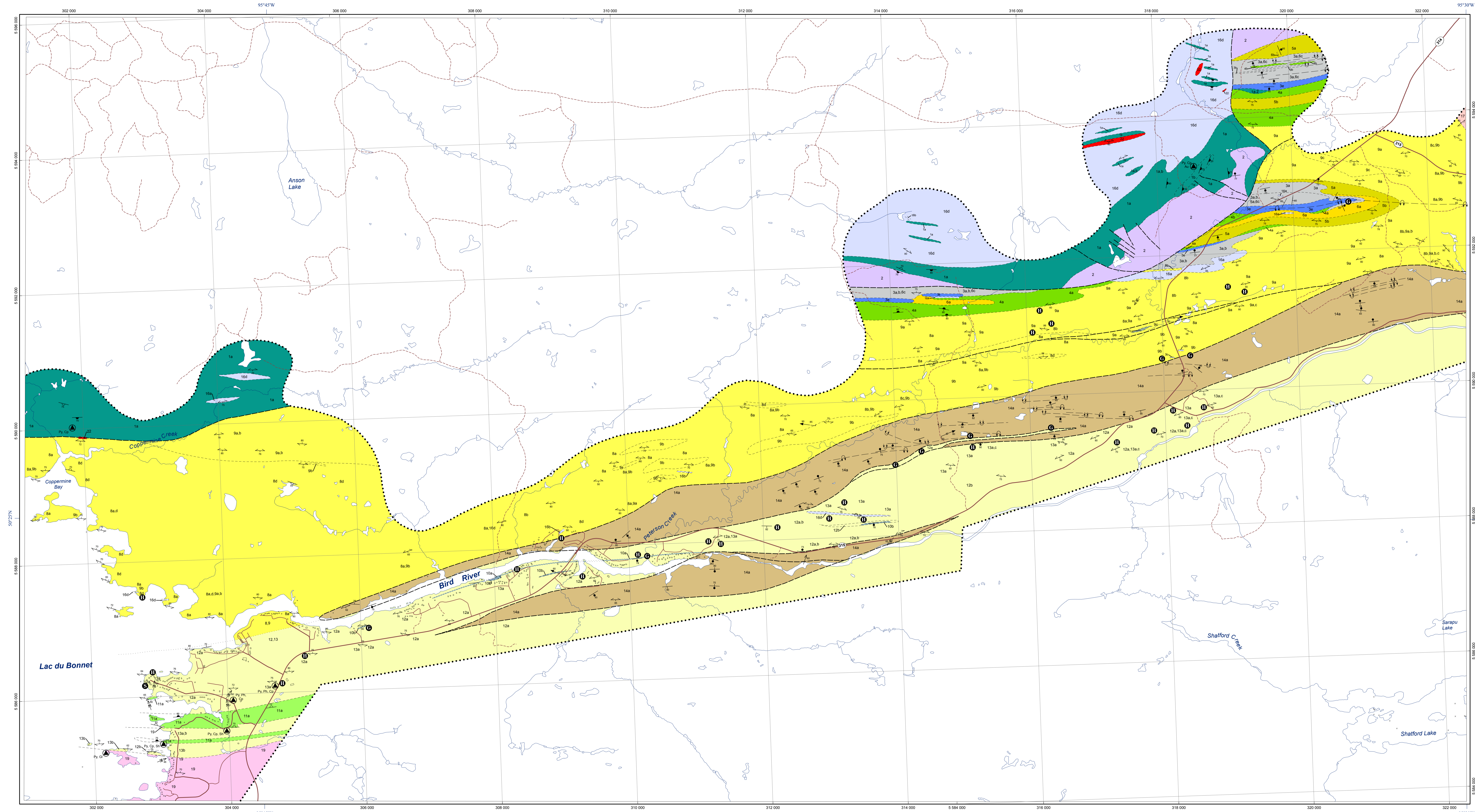
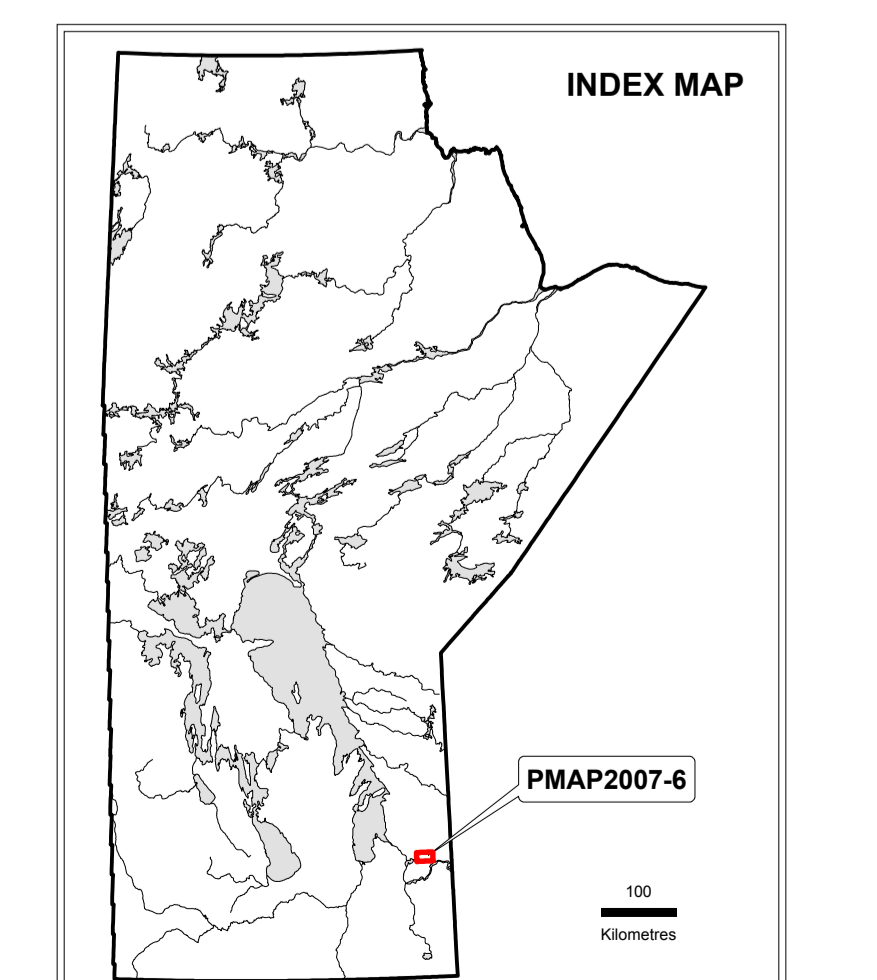


# Geology of the west part of the Bird River area, southeastern Manitoba (part of NTS 52L5)



NEOARCHEAN INTRUSIVE ROCKS	
22	Quartz-plagioclase porphyry
21	Pegmatite, pegmatitic granite
20	Granite, granodiorite (Marjane Lake pluton, 2645.6 ± 1.3 Ma <sup>1</sup> )
19	Granite, granodiorite (Lac du Bonnet Batholith, 2660 ± 3 Ma <sup>1</sup> )
18	Tonalite, granodiorite (Bird Lake pluton, 2723.2 ± 0.7 Ma <sup>1</sup> )
17	Quartz diorite, granodiorite, granite (Maskwa Lake Batholith: 2725.46 Ma <sup>2</sup> ; 2539 ± 1 Ma <sup>3</sup> ; 2544 ± 1.2 Ma <sup>3</sup> )
Mafic rocks (<2731 Ma except unit 16d, which includes synvolcanic intrusions)	
16a	Diabase, plagioclase-hornblende-phyric, quartz-amygdaloidal
16b	Diabase, aphyric
16c	Gabbro, mesocratic (sgarnet)
16d	Gabbro, mesocratic to melanocratic (synvolcanic and intrusions of unknown age)
SEDIMENTARY ROCKS	
Flanders Lake Formation ( <2697 ± 18 Ma <sup>4</sup> )	
15a	Polymictic conglomerate
15b	Arenite, feldspathic wacke
Booster Lake Formation ( <2712 ± 17 Ma <sup>4</sup> )	
14a	Greywacke, siltstone, felsic wacke; minor argillite and cherty siltstone
14b	Intermediate to felsic paragneiss
14c	Volcanic-derived conglomerate
ARC-TYPE VOLCANIC AND SEDIMENTARY ROCKS	
Bernic Lake Formation ( 2724.6 ± 1.1 Ma <sup>4</sup> )	
FELSIC VOLCANIC ROCKS AND DERIVED ONEISS AND SCHIST	
13a	Dacite and rhyolite, aphyric to porphyritic; related breccia
13b	Felsic gneiss
13c	Altered felsic volcanic rocks (aslitification hornblende sgarnet)
INTERMEDIATE TO FELSIC VOLCANIC FRAGMENTAL ROCKS	
12a	Heterolithic volcanic breccia, lapilli tuff
12b	Intermediate to felsic tuff, locally reworked
MAFIC TO INTERMEDIATE VOLCANIC ROCKS	
11a	Basalt and andesite, aphyric to sparsely plagioclase-phyric, locally pillowed; related amphibolite and gneiss (sgarnet)
11b	Altered basalt, derived gneiss (aslitification epidote hornblende sgarnet)
SEDIMENTARY ROCKS	
10a	Carbonate-chert iron formation
10b	Chert, siltstone, argillite siltstone (sgarnet), every fine grained amphibolite
PETERSON CREEK FORMATION ( 2731.1 ± 1 Ma <sup>4</sup> )	
FELSIC VOLCANIC FLOWS AND RELATED INTRUSIVE ROCKS	
9a	Rhyolite, dacite, aphyric to sparsely plagioclase-phyric, massive to fragmental; related intrusive rock
9b	Rhyolite, dacite, quartz-plagioclase-phyric, massive to fragmental; related intrusive rocks
9c	Rhyolite with spheroidal domains of uncertain origin
INTERMEDIATE TO FELSIC VOLCANIC FRAGMENTAL ROCKS	
8a	Heterolithic felsic lapilli crystal-tuff and volcanic breccia
8b	Monolithic felsic lapilli tuff and volcanic breccia
8c	Intermediate to felsic tuff, crystal tuff
8d	Andesite-dacite, aphyric to sparsely plagioclase-phyric, locally pillowed; related breccia
8e	Altered felsic volcanic rocks, silicified or with sedimentary detritus (hornblende sgarnet scoriolite)
SEDIMENTARY ROCKS	
7a	Oxide-facies iron formation
7b	Sulphide-facies iron formation
7c	Siltstone, cherty siltstone conglomeration
DIVERSE ARC ASSEMBLAGE	
FELSIC VOLCANIC AND RELATED FRAGMENTAL ROCKS	
6a	Rhyolite, sparsely plagioclase-phyric; related fragmental rocks
6b	Rhyolite, spherulitic
6c	Felsic tuff and crystal tuff, locally reworked
INTERMEDIATE TO FELSIC VOLCANIC FRAGMENTAL ROCKS	
5a	Heterolithic intermediate volcanic breccia, matrix-supported, locally reworked
5b	Heterolithic felsic volcanic breccia, clast-supported, locally reworked
5c	Heterolithic intermediate volcanic breccia, clast-supported, locally reworked
MAFIC TO INTERMEDIATE VOLCANIC ROCKS	
4a	Andesite, aphyric, quartz-amygdaloidal, locally pillowed
4b	Basalt, aphyric, locally pillowed; related gneiss
SEDIMENTARY ROCKS	
4c	Basalt and andesite, aphyric to porphyritic, locally amygdaloidal and/or pillowed; locally altered (silicified/carbonatized/porphyroblastic sgarnet hornblende schist)
SEDIMENTARY ROCKS	
3a	Greywacke, siltstone; minor felsic wacke and argillite siltstone
3b	Chert, siliceous siltstone
3c	Oxide-facies iron formation
3d	Ankeritic siltstone with chloritic schist laminae
3e	Polymictic conglomerate (derived from units 1 to 6)
INTRUSIVE ROCKS	
Bird River Sill ( 2745 ± 5 Ma <sup>4</sup> )	
2	Dunite, peridotite, picrite, anorthositic and gabbro
MORB-TYPE MAFIC VOLCANIC ROCKS	
Lamprey Falls Formation	
1a	Basalt, locally pillowed
1b	Basalt, pillowed and plagioclase-megacrystic

Map projection is Universal Transverse Mercator, zone 15, NAD83



### Symbols

Primary Layering	Lineations	Alteration	Geological contacts	Roads
Bedding, tops known	L-fabric, generation unknown	Chi-Hb alteration	contact, approximate	Road, two lane
Bedding, tops overturned	Clast elongation	Gossan	contact, assumed	Road, gravel
Bedding, tops unknown	Mineral lineation	Silicic alteration	Fault	Track
Pillows, tops known	Shear	Mineralization	overturned anticline	
Pillows, tops overturned	Shear, generation unknown, sense unknown	Au gold	overturned syncline	
Pillows, tops unknown	Minor Fold	Cu chalcocopyrite		
Main foliation	Fold axis, generation unknown, symmetric	Cl galena		
	Fold axis, generation unknown, asymmetry unknown	Py pyrrhote		
	Fold axial plane, generation unknown	Py pyrite		
		Sh sphalerite		

### NOTES

- Contacts of the Bird River Sill are based on Mealin (2006) and Černý et al. (1981).
- The Eagles' Lake Formation does not occur within the mapped area and is not included in this legend.

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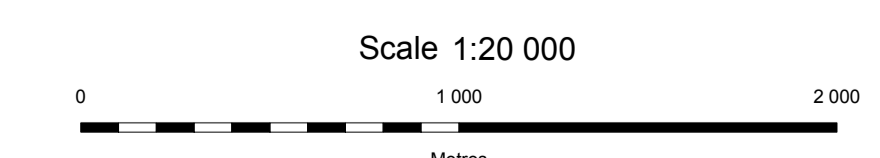
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H.P. Gilbert (2007)

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This map is a provisional summary of work carried out during the summer field season and is produced directly from the geologist's manuscript. It is not to be regarded as a final interpretation of the geology of the area.

SUGGESTED REFERENCE  
Gilbert, H.P. 2007. Geology of the west part of the Bird River area, southeastern Manitoba (part of NTS 52L5), Manitoba Science, Technology, Energy and Mines, Manitoba Geological Survey, Preliminary Map PMAP2007-6, scale 1:20 000.



<sup>1</sup> M. Duguet and D.W. Davis, pers. comm., 2006.  
<sup>2</sup> Wang, 1993.  
<sup>3</sup> P. Kröner and D.W. Davis, pers. comm., 2006.  
<sup>4</sup> Gilbert, 2006.

