UNIVERSITY OF MINNESOTA
MINNESOTA GEOLOGICAL SURVEY
Harvey Thorleifson, Director

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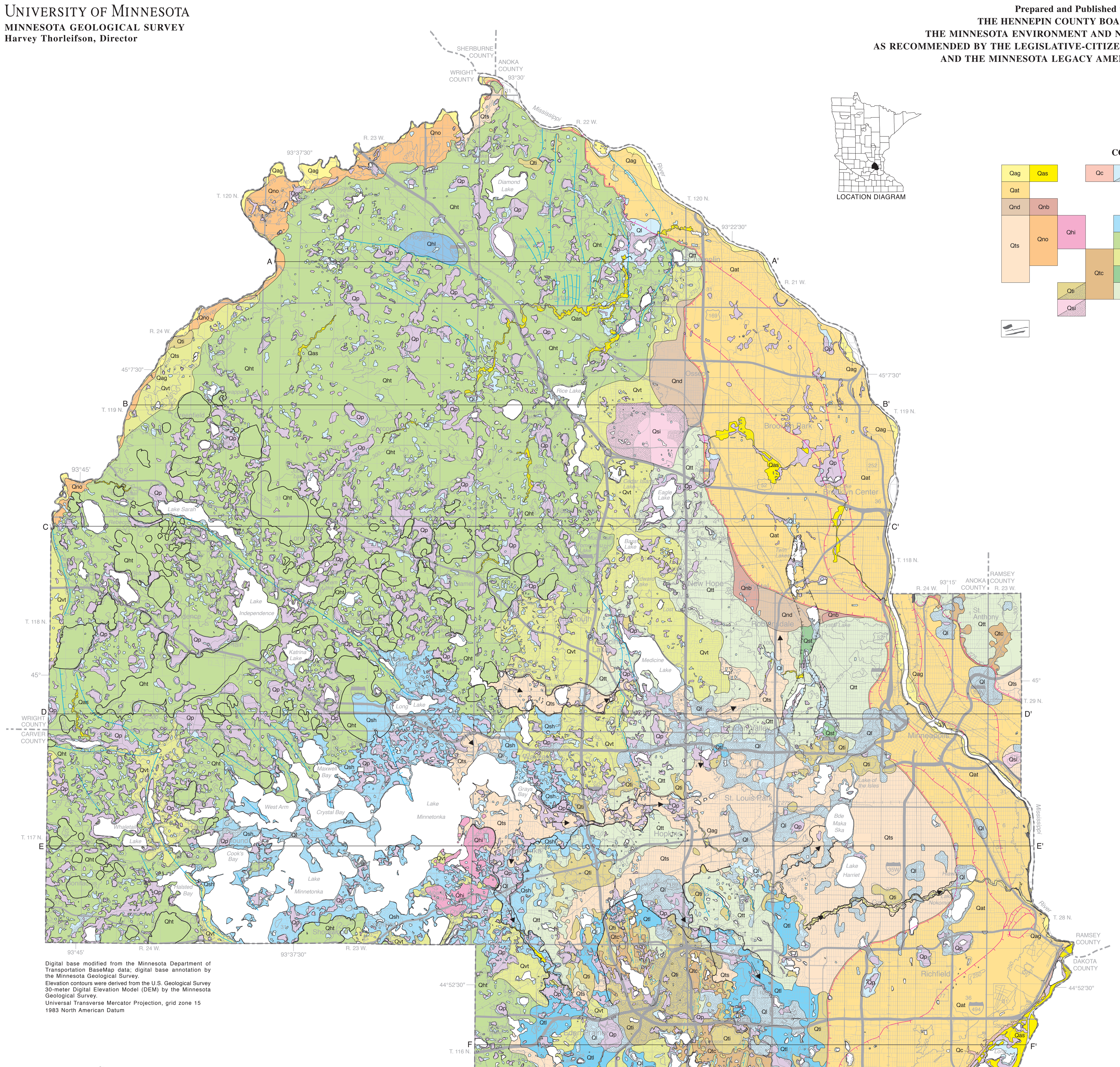
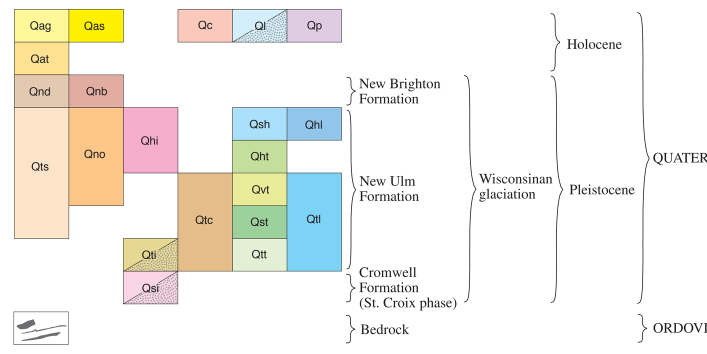


LOCATION DIAGRAM

CORRELATION OF MAP UNITS



SURFICIAL GEOLOGY

By

Angela J. Berthold

2018

INTRODUCTION

GLACIAL HISTORY

ACKNOWLEDGEMENTS

DESCRIPTION OF MAP UNITS

Holocene

Late Pleistocene

REFERENCES

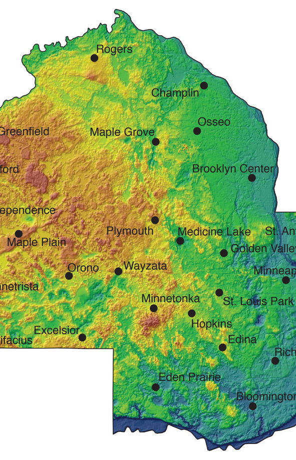


Figure 1. Hillshade relief map of the land surface in Hennepin County; 30-meter DEM, resampled from 1-meter lidar data with a false sun angle of 30°; azimuth 315°. Elevation ranges from 601.5 to 1,204.69 feet (183.3 to 367.2 meters). Vertical exaggeration = 5x.

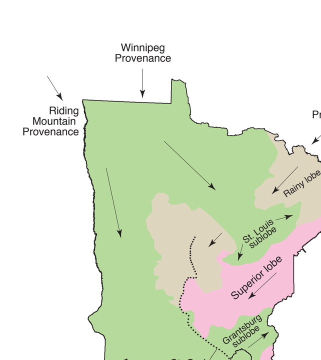


Figure 2. Location of major provenances and the distribution of ice-lobe materials at the land surface in Minnesota. Distinct assemblages of glacial sediments are derived from the unique suite of bedrock and sediment found in each of the source regions (provenances) shown. Sediments derived from Riding Mountain provenance are shown in green. The surface extent of Rainy- and Superior-provenance sediments is shown in brown and pink, respectively. The St. Croix moraine is shown by the dotted line. Arrows indicate primary ice-flow direction.

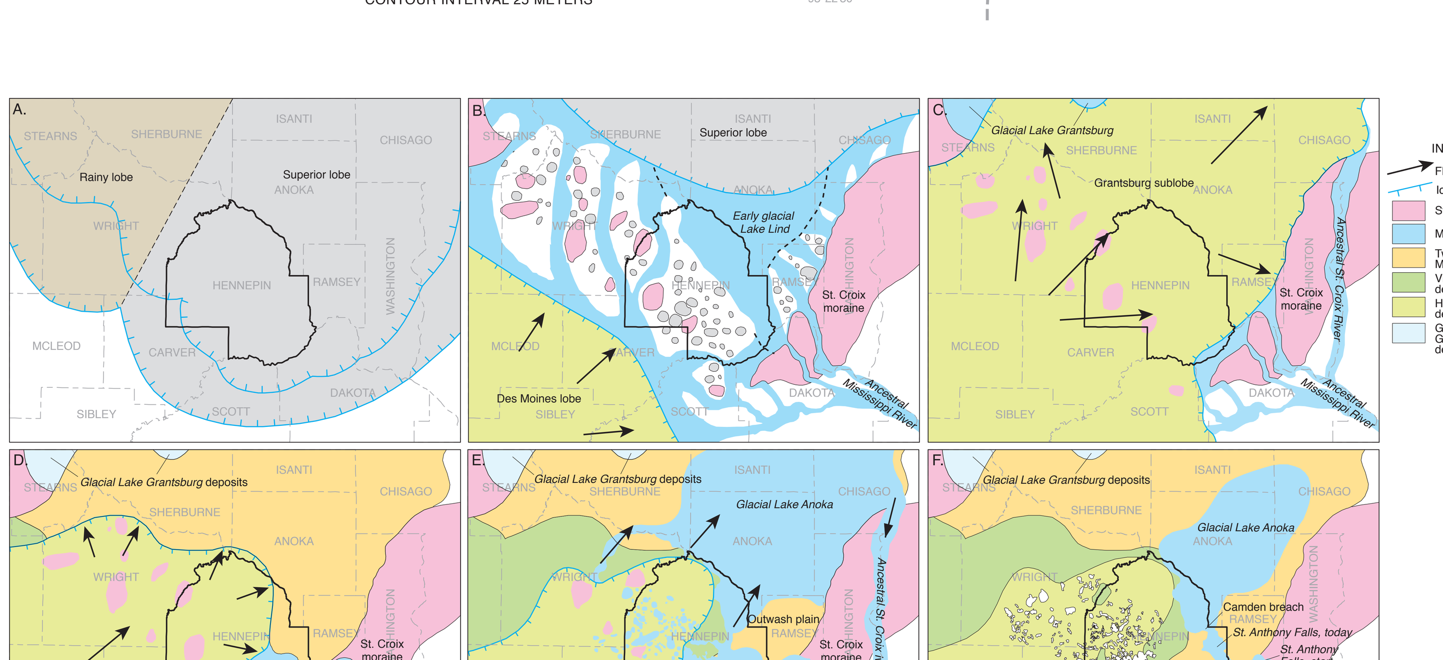


Figure 3. A schematic depiction of the late Wisconsinan glacial history of Hennepin County and surrounding areas.

MAP SYMBOLS

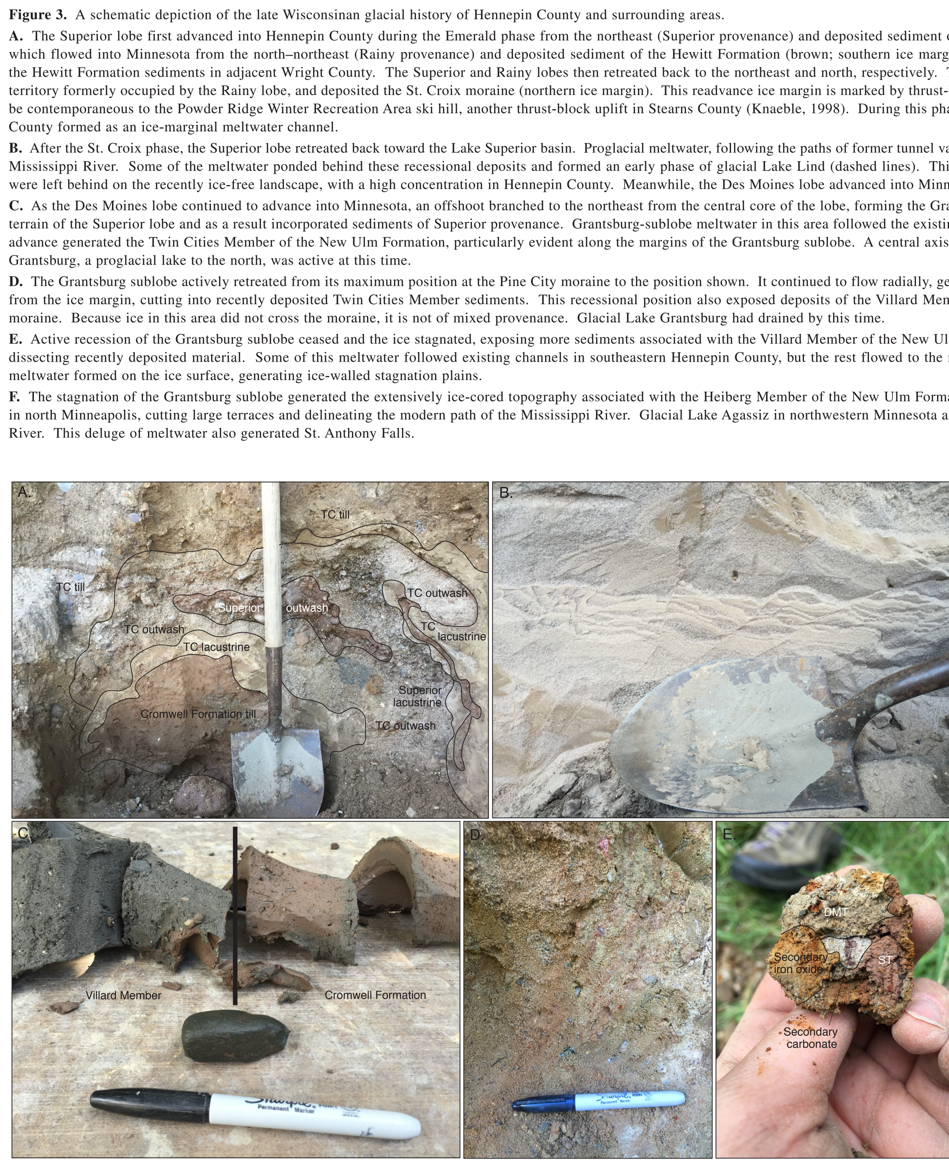
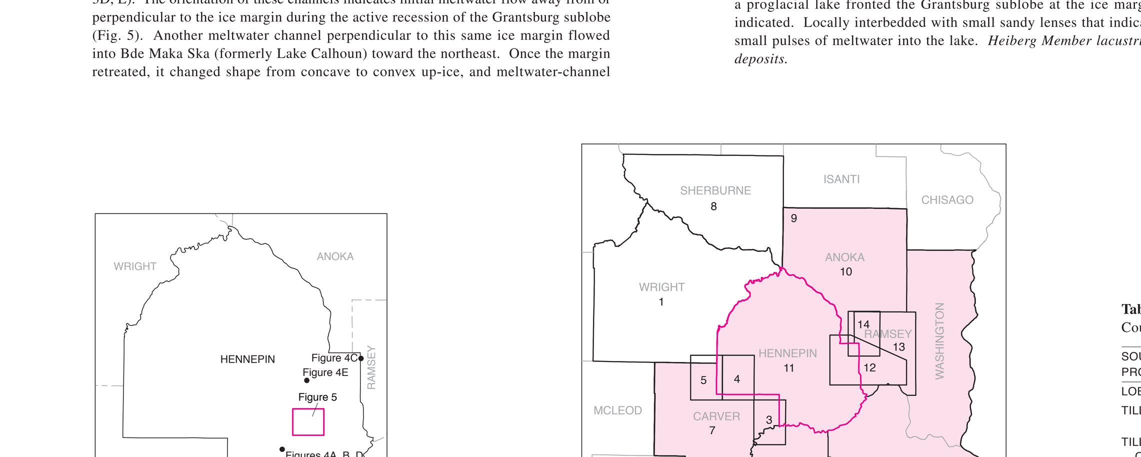


Figure 4. Photos of the nature of Twin Cities area deposits.



INDEX TO PREVIOUS MAPPING

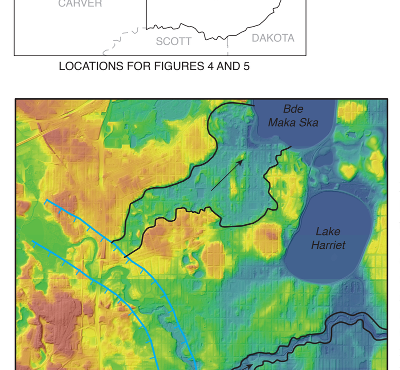


Figure 5. Meltwater-channel orientations (3-foot [1-meter] lidar base).

Table 1. Physical characteristics of glacial deposits in Hennepin County.

Table 2. Average values for the texture and composition of till, outwash, and lacustrine units of the New Ulm Formation recognized at the surface in Hennepin County.