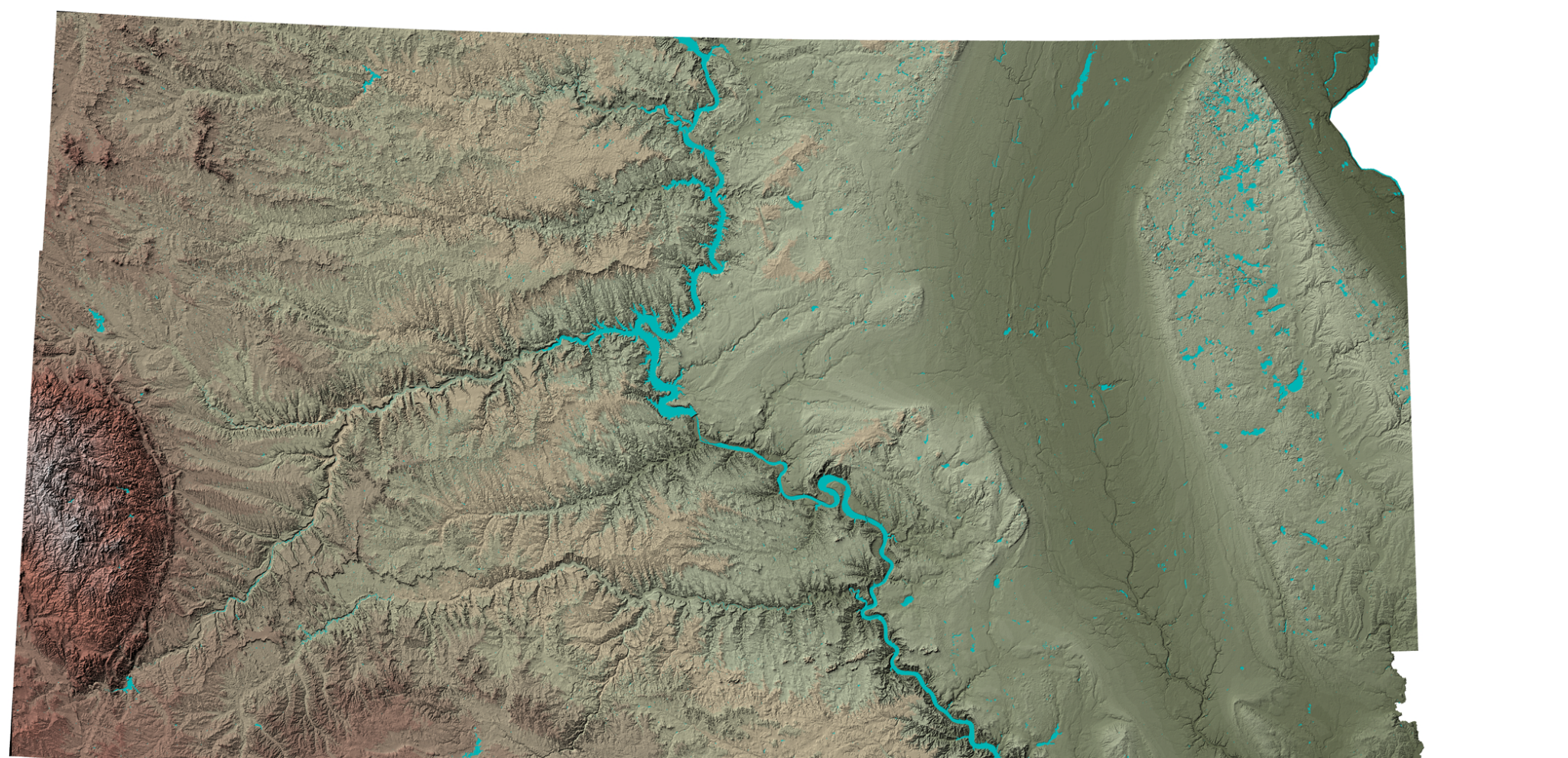


GEOLOGIC MAP OF SOUTH DAKOTA

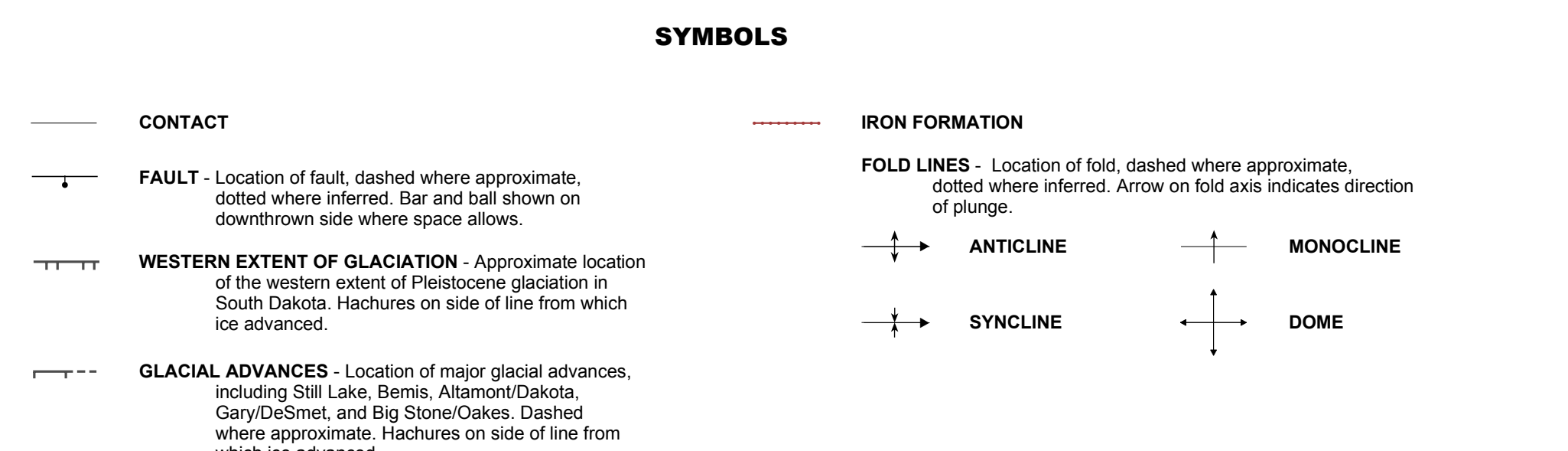
2004



SHADED RELIEF MAP OF SOUTH DAKOTA



This map was prepared in cooperation with the
U.S. Geological Survey



CORRELATION OF MAP UNITS

The Geologic Map of South Dakota has been a continuing project for many years through the auspices of the South Dakota Geological Survey. The project has been supported by the investment of resources, expertise, and time are tremendous. The last geologic maps of the state were published over 50 years ago by Dorton (1951) and Dorton and Dorton (1952). The new map, along with the new map, illustrates the enormous amount of geologic data that has become available during the past 50 years. The new map is a compilation of published maps, unpublished maps, and original mapping by the authors where resolution of previous information was required or where areas were not previously mapped. The new map represents works in progress, and every geologic problem in the state could not be addressed. The new map is a compilation of information upon which increasing knowledge of the geology of South Dakota may be based. Revisions of the map are planned for the future. The new map is in order to produce the map, the geology of the entire state was compiled at a scale of 1:250,000 and then reduced to the final scale of 1:500,000. Geologic data for the entire state were compiled. The River has been published by the SDGS in various geologic and hydrologic reports. Geologic data for

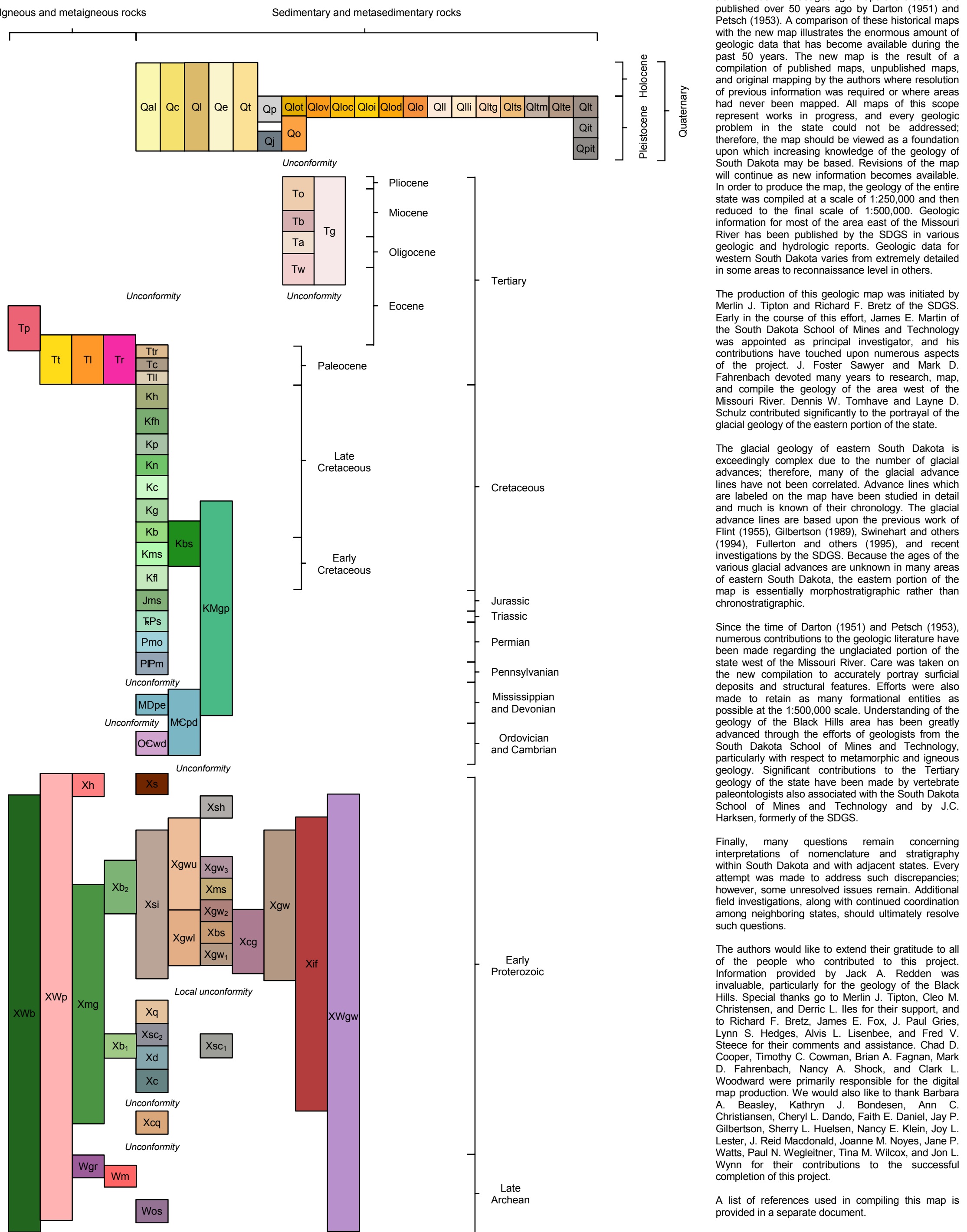
The production of this geologic map was initiated by Merlin J. Tipton and Richard F. Bretz of the SDGS. Early in the course of this effort, James E. Martin of the South Dakota School of Mines and Technology was appointed as principal investigator, and his contributions have touched upon numerous aspects of the project. J. Foster Sawyer and Mark D. Fahrenbach devoted many years to research, map, and compile the geology of the area west of the Missouri River. Dennis W. Tomhave and Layne D. Schulz contributed significantly to the portrayal of the glacial geology of the eastern portion of the state.

exceedingly close to due the number of glacial advances; therefore, many of the glacial advances in the study area are poorly documented. The glacial advances that are labeled on the map have been studied in detail and much is known of their chronology. The glacial advances of the Wisconsinan Stage (see Fig. 1) (Fries, 1925; Cushman 1927; Swenson and others 1932; Swenson 1933; Swenson and others 1934; investigations by the SDGS. Because the ages of the various glacial advances are unknown in many areas, the map is not a true chronologic map. The map is essentially morphostratigraphic; rather than chronologic.

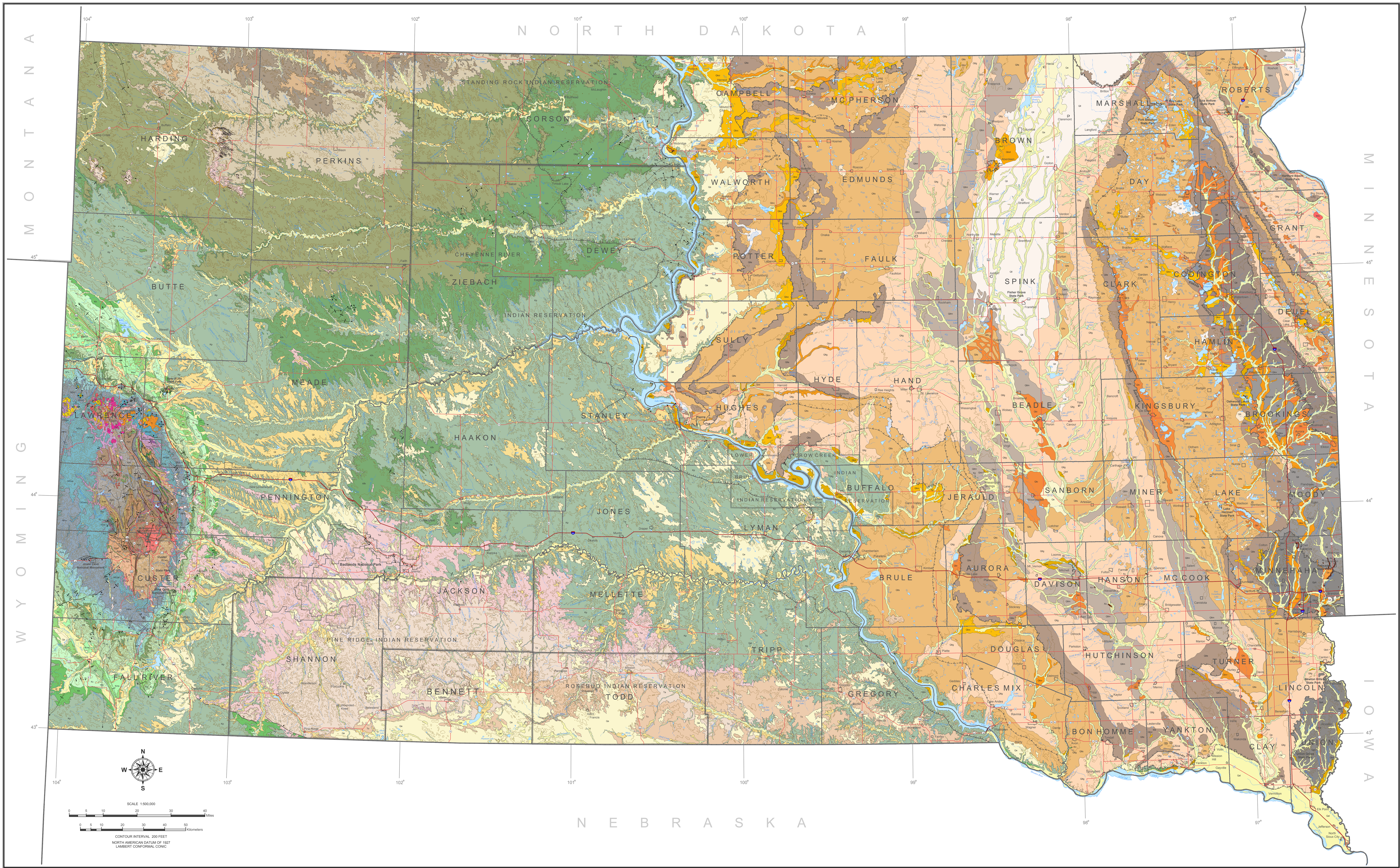
Since the time of Darn (1851) and Petzsch (1953), numerous contributions to the glacial geology of the study area have been made. The most significant is the unpublished portion of the state west of the Missouri River. Care was taken on the map to show the glacial features, such as moraine deposits and structural features. Efforts were also made to retain as many formalized terms as possible. The glacial geology of the Black Hills area has been greatly advanced through the efforts of geologists from the University of South Dakota. The geologists, particularly with respect to morainic and glacial geology. Significant contributions to the Tertiary geology of the study area have been made by the paleogeologists also associated with the South Dakota Geological Survey. The geologists of the SDGS and the University of South Dakota are Dr. J. H. Hanson, President of the SDGS.

The authors would like to extend their gratitude to all of the people who contributed to this project. Information provided by Jack A. Rodden was very helpful in understanding the history of the area. Bill Hils, Special thanks go to Merlin A. Tipton, Cleo M. Williams, and the staff of the National Archives and Records Service. Thanks also to Richard F. Biretz, James E. Fox, A. Taylor, Gene Lynn, S. Hedges, Alice L. Lisenbee, and Fred V. Williams, Jr. for their assistance. Thanks to George Corcoran, Timothy C. Cowman, Brian A. Fagnan, Mark D. Fahrenbach, Nancy A. Shock, and Clark L. Smith for their assistance. The authors are also indebted to the following people responsible for the digital map production: We would also like to thank Barbara A. Burrell, David L. Burrell, and John L. Burrell. Thanks to Cheryl L. Dalton, Faith E. Daniel, Jay P. Gilbertson, Sherry L. Huelten, Nancy E. Kneel, Joy L. Wynn, and the staff of the National Archives and Records Service. Thanks to Paul N. Wegstman, Tim A. Wilson, and Jon L. Wynn for their contributions to the successful completion of this project.

A list of references and a mapping map are provided in a separate document.



vey, Department of Environment and Natural Resources, data collection and interpretation section.



DESCRIPTION OF MAP UNITS

†Order of each description does not always indicate phylogenetic position; refers to correlation chart.

[illegible]

STATE OF SOUTH DAKOTA
M. Michael Rounds, Governor

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
Steven M. Pirner, Secretary

DIVISION OF FINANCIAL AND TECHNICAL ASSISTANCE
David Templeton, Director

GEOLOGICAL SURVEY
Derric L. Iles, State Geologist

Geologic Map of South Dakota

**James E. Martin, J. Foster Sawyer, Mark D. Fahrenbach,
Dennis W. Tomhave, Layne D. Schulz**

2004

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