

INTRODUCTION

Many workers have extensively studied the geology in and around the Powder River Basin and have published maps of the area (see "Sources of Geologic Data"). Differences in interpretation of stratigraphy from one state or area to another have caused confusion in regional studies. Ellis compiled maps to show a regional geological overview of the area and to show how available geologic maps fit together.

Where possible, we resolved inconsistencies in published geologic mapping along map boundaries by using data from unpublised mapping by personal communications with other researchers, and by geological interpretation of available data. In several areas of the map we could not resolve such inconsistencies in mapping because of differences in names of map units and differences in stratigraphic correlation and nomenclature from one state or area to another. We left unresovled areas of inconsistency to illustrate the need for further study in those areas.

In compiling the map Ellis maintained as much detail as possible. At the scale of 1:500,000 it was necessary to generalize some contacts and correlations made by other researchers. Map units were too small to show in the scale of the map were omitted or combined with adjacent units. Conventions for combining units and geologic nomenclature used on the map are consistent with U.S. Geological Survey standards. In general, the most recent published map contained the most detailed and accurate stratigraphic information.

Quaternary units are shown where they are present. Unpublished geological data, including alluvial deposits along small tributaries, were omitted, combined, or generalized. Much of the mapped Quaternary geology in Montana is from unpublished mapping by R.B. Colton and others (several map areas) and S.S. Agard (see "Sources of Geologic Data").

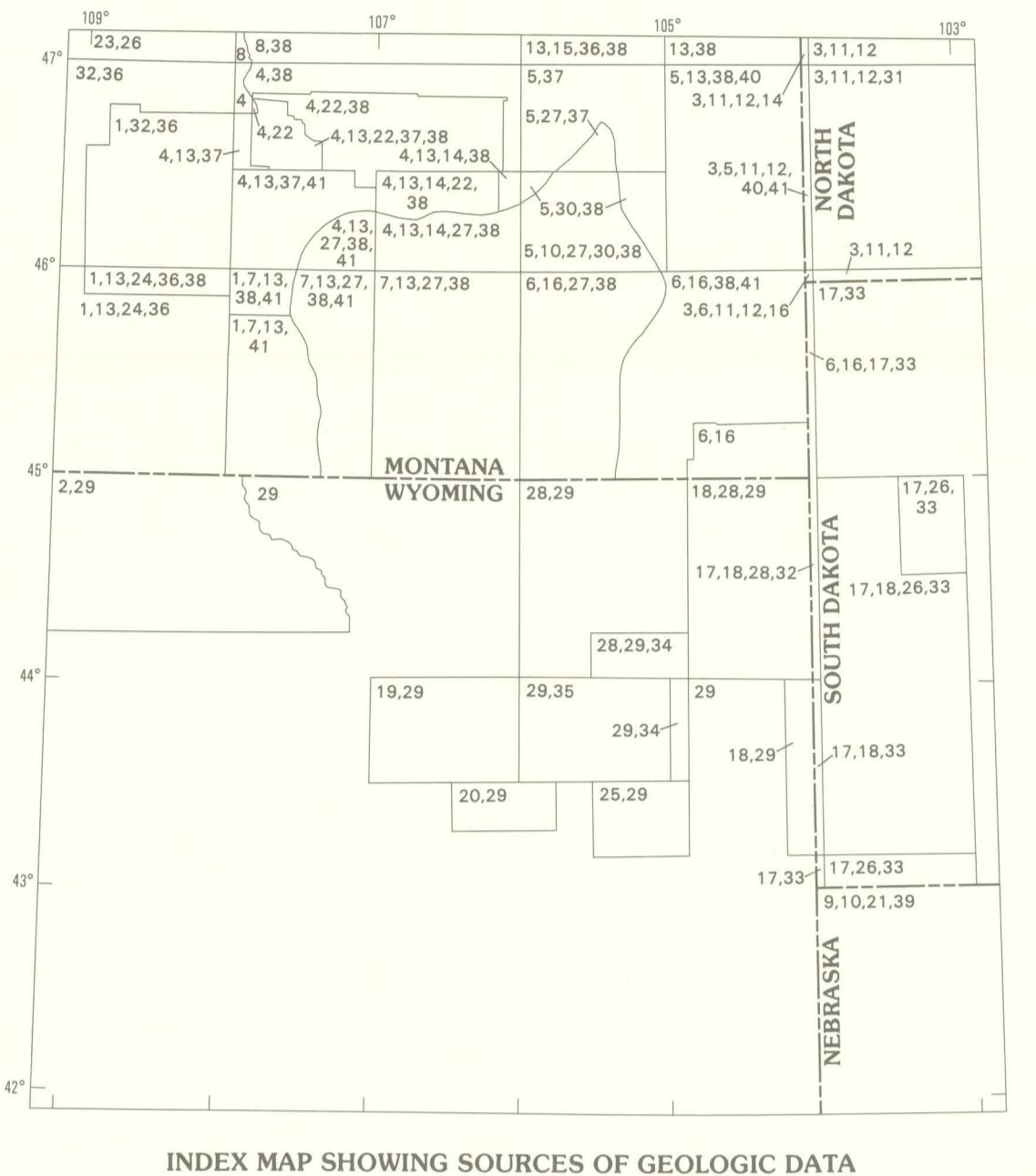
The "Correlation of Map Units" show generalized time correlations between the map units and are not to show detailed stratigraphic relationships. Detailed cross sections and correlation charts are included in publications by James Fox (1991a, b, c, d), and in several other publications listed in "Selected References."

The "Selected References" are publications that we found useful for understanding the geology of the study area. This list does not include all references for the Powder River Basin and surrounding areas.

In general, we did not use large scale geological maps for compilation or as reference materials for the map. However, in a few cases, large-scale, unpublished maps were used for information to resolve inconsistencies along map boundaries.

ACKNOWLEDGMENTS

We thank Jude Gassaway of the U.S. Geological Survey for preliminary resource materials; Susan Vukce-Foster of the Montana Bureau of Mines and Geology for access to preliminary maps; Craig Brunstein of the U.S. Geological Survey; and other editors and reviewers for their time and excellent suggestions.



INDEX MAP SHOWING SOURCES OF GEOLOGIC DATA

SOURCES OF GEOLOGIC DATA

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