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*Pamphlet accompanies map*

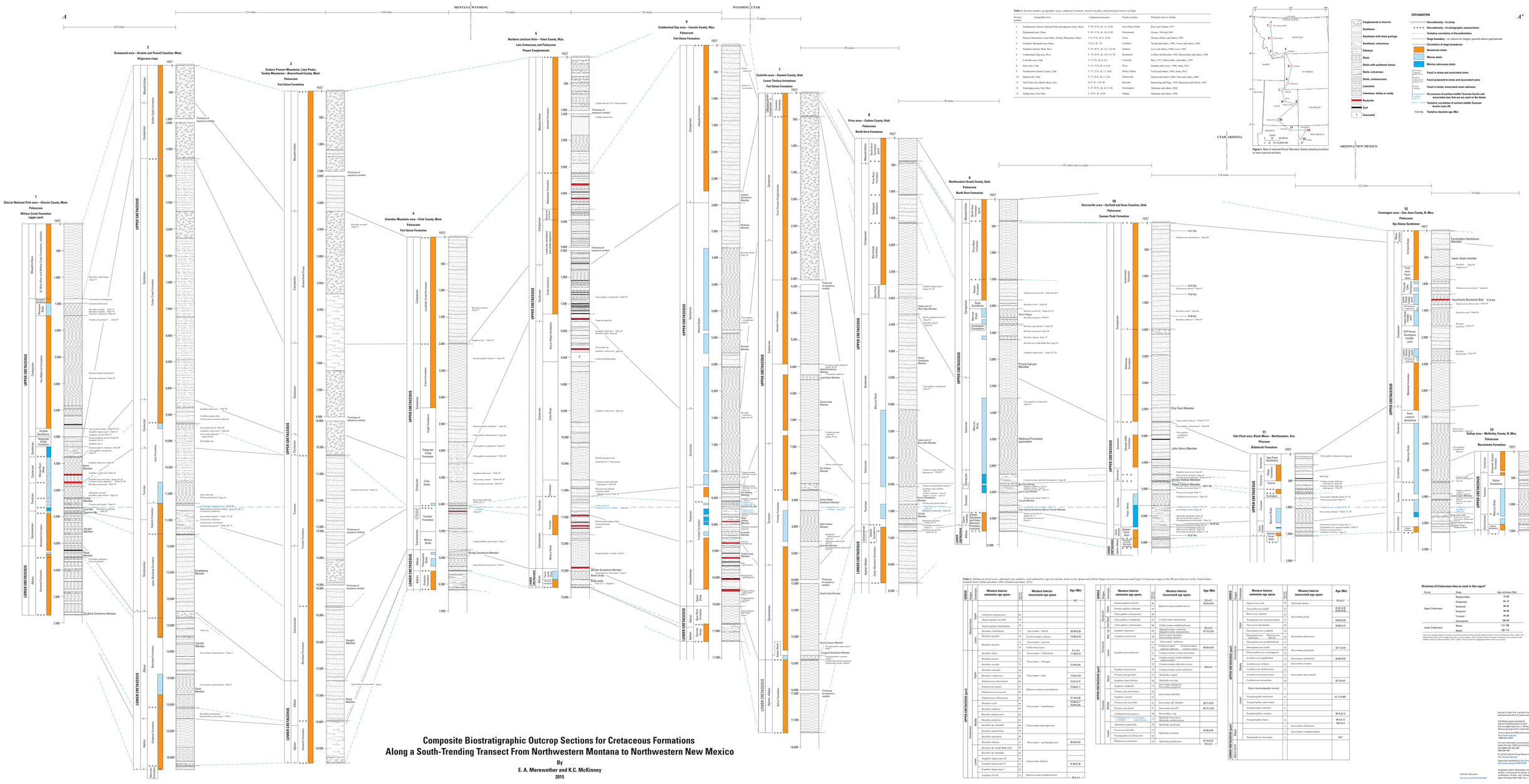


**Table 1.** *Section number, geographic area, cadastral locations, nearby locality, and principal sources of data.*

| Section number | Geographic area | Cadastral location(s) | Nearby locality | Principal sources of data |
|---|---|---|---|---|
| 1 | Southeastern Glacier National Park and adjacent areas, Mont. | T. 29–32 N., R. 11–13 W. | East Glacier Park | Rice and Cobban, 1977 |
| 2 | Drummond area, Mont. | T. 10–11 N., R. 10–13 W. | Drummond | Gwinn, 1964and 1965 |
| 3 | Pioneer Mountains, Lima Peaks, Tendoy Mountains, Mont. | T. 4–15 S., R. 6–14 W. | Lima | Dyman, Porter, and others, 1985 |
| 4 | Cimarron Mountain area, Mont. | T. 5 S., R. 7 E. | Gardiner | Tysdal and others, 1996; Fraser and others, 1969 |
| 5 | Northern Jackson Hole, Wyo. | T. 42–45 N., R. 112–114 W. | Jackson | Love and others, 1948; Love, 1956 |
| 6 | Cumberland Gap area, Wyo. | T. 19–20 N., R. 116–117 W. | Kemmerer | Cobban and Reeside, 1952; Merewether and others, 1984 |
| 7 | Coalville area, Utah | T. 2–3 N., R. 4–6 E. | Coalville | Ryer, 1977; Merewether, and others, 1987 |
| 8 | Price area, Utah | T. 13–15 S., R. 8–10 E. | Price | Gardner and Crews, 1994; Anna, 2012 |
| 9 | Northeastern Grand County, Utah | T. 17–21 S., R. 17–24 E. | Harley Dome | Franch and others, 1983; Anna, 2012 |
| 10 | Henrieville, Utah | T. 35–36 S., R. 1–2 W. | Henrieville | Dyman and others, 2002; Titus and others, 2003 |
| 11 | Yale Point area, Black Mesa, Ariz. | 36.5° N., 110° W. | Kayenta | Repenning and Page, 1956; Brenner and Dixon, 1963 |
| 12 | Farmington area, New Mexi. | T. 25 N., R. 13–15 W. | Farmington | Molenaar and others, 2002 |
| 13 | Gallup area, New Mex. | T. 16 N., R. 18 W. | Gallup | Molenaar and others, 1996 |




**Figure 1.** Map of selected Rocky Mountain States showing locations of main outcrop sections.

**Table 2.** *Mollusc-or fossil zones, informal zone number, and radiometric ages for marine strata in the Aptian and Albian Stages (Lower Cretaceous) and Upper Cretaceous stages in the Western Interior of the United States (modified from Cobban and others, 2006; Gradstein and Ogg, 2012).*

| SERIES | Stage | Zone | Western Interior ammonite age spans | Zone | Western Interior inoceramid age spans | Age (Ma) |
|---|---|---|---|---|---|---|
| UPPER CRETACEOUS (part) | Maastrichtian | | | 50 | | 66.0 |
| | Campanian | Upper | | 49 | | |
| | | | *Jelskitesia nebrascensis* | 48 | | |
| | | | *Hoploscaphites nicoletti* | 47 | | |
| | | | *Hoploscaphites birkelundae* | 46 | | |
| | | Middle | *Baculites cliveldianus* | 45 | *?Inoceramus*[1] *balchi* | 68.0to68.38 |
| | | | *Baculites grandis* | 44 | *Inoceramus radiosus* | 70.00to71.00 |
| | | | *Baculites baculus* | 43 | *?Inoceramus*[2] *incurvus* | |
| | | | *Baculites baculus* | 42 | *Endocostea typica* | 72.1-to72.3 |
| | | | *Baculites clavi* | 41 | *?Inoceramus*[3] *radfordensis* | 73.00-73.5 |
| | | | *Baculites jenseni* | 40 | *?Inoceramus*[4] *ellisiana* | 73.00-73.45 |
| | | | *Baculites reesidei* | 39 | | |
| | | | *Baculites cuneatus* | 38 | | |
| | | | *Baculites compressus* | 37 | *?Inoceramus*[5] *ellisi* | 73.52-73.59 |
| | | | *Delawarecia chesuncense* | 36 | | 74.0-74.15 |
| | | | *Exiteloceras jenneyi* | 35 | *Sphenoceramus pertenuilineatus* | 75.00-75.15 |
| | | | *Delawarecia stevensoni* | 34 | | |
| | | | *Delawarecia milbournense* | 33 | | 75.15-75.28 |
| | | | *Baculites scotsbluffensis* | 32 | | 75.28-75.37 |
| | | | *Baculites perplexus* | 31 | | |
| | | | *Baculites sp. (smooth)* | 30 | *Cataceramus subcompressus* | |
| | | | *Baculites aquilaensis* | 29 | | |
| | | | *Baculites maclearni* | 28 | | |
| | | | *Baculites obtusus* | 27 | *?Inoceramus*[6] *azerbaydjanensis* | 80.50-81.55 |
| | | | *Baculites sp. (weak flank ribs)* | 26 | | |
| | | | *Baculites sp. (smooth)* | 25 | | |
| | | | *Scaphites hippocrepis* II | 24 | *Cataceramus balticus* | |
| | | | *Scaphites hippocrepis* I | 23 | | 81.80-82.38 |
| | | | *Scaphites hippocrepis* | 22 | | |
| | | | *Scaphites leei* III | 21 | *Sphenoceramus lundbreckensis* | 83.0-83.2 |

| SERIES | Stage | Zone | Western Interior ammonite age spans | Zone | Western Interior inoceramid age spans | Age (Ma) |
|---|---|---|---|---|---|---|
| UPPER CRETACEOUS (part) | Campanian | Upper | *Desmoscaphites bassleri* | 20 | | 83.0-83.2 |
| | | | *Desmoscaphites erdmani* | 19 | *Sphenoceramus lundbreckensis* | |
| | | | *Clososcaphites chamanensis* | 18 | | |
| | | | *Clososcaphites corvusgrandis* | 17 | *Coeloceramus bachmeiri* | |
| | | | *Clososcaphites saskatoonensis* | 16 | *Cladoceramus undulatoplicatus* | 84.3-85.5 |
| | | Middle | *Scaphites depressus* | 15 | *Magadiceramus subquadratus* *Magadiceramus rotundus* | 87.14-88.38 |
| | | | *Scaphites wasatchensis* | 14 | *Tenuipteria posnanskii* *Tenuipteria flexuosa* | |
| | | | | 13 | *?Inoceramus*[7] *gilbertsoni* | |
| | | | *Scaphites perversicostae* | 12 | *Cremnoceramus crassus crassus* *Cremnoceramus deformis erectus* | 88.50-89.99 |
| | | | | 11 | *Cremnoceramus crassus inconstans* | |
| | | | | 10 | *Cremnoceramus waterhousei* | |
| | | | | 9 | *Cremnoceramus deformis erectus* | |
| | | | | 8 | *Cremnoceramus deformis erectus* | |
| | | | *Scaphites marianensis* | 7 | *Cremnoceramus waterhousei* | 89.0-92.5 |
| | | Upper | *Protexanites grossvenori* | 6 | *Menabites agatae* | |
| | | | *Scaphites agnichitai* | 5 | *Menabites inexcitus* | |
| | | | *Scaphites whitfieldi* | 4 | *Inoceramus dakotensis* *Inoceramus perplexus* | |
| | | | *Protexanites fortunianus* | 3 | *Inoceramus* | |
| | | | *Scaphites navicula* | 2 | *Inoceramus dimidus* | |
| | | | *Protexanites macombi* | 1 | *Inoceramus* aff. *dimidus* | 92.15-92.54 |
| | | | *Protexanites bourbii* | 0 | *Inoceramus bowelli* | 92.75-92.89 |
| | | | *Coilopoceras praecox* | 16 | *Inoceramus* n. sp. | |
| | | | *Coilopoceras* n. sp. *Coilopoceras colleti* | 15 | *Inoceramus* n. sp. *Inoceramus* aff. *pennsylvanicus* | |
| | | | *Menabites nodosidens* | 14 | *Menabites nodosidens* | |
| | | | *Gaucomar birchby* | 13 | *Menabites kosmat* | 93.40-93.58 |
| | | | *Pseudoplacenticeras flexuosum* | 12 | | |
| | | | *Walnoceras dixonense* | 11 | *Menabites pachlicense* | 93.70-93.82 |
| | | | | 10 | | 93.9-94.0 |

| SERIES | Stage | Zone | Western Interior ammonite age spans | Zone | Western Interior inoceramid age spans | Age (Ma) |
|---|---|---|---|---|---|---|
| UPPER CRETACEOUS (part) | Cenomanian | Upper | *Dunveganoceras pondense* | 9 | *Metonicoceras harkinsi* | |
| | | | *Neocardioceras juddii* | 8 | | 93.35-93.50 |
| | | | *Borissiakoceras ultimum* | 7 | | 93.85-93.95 |
| | | | *Sciponoceras gracile* | 6 | *Inoceramus pictus* | |
| | | | *Dunveganoceras albertense* | 5 | | 93.98-94.50 |
| | | | *Vascoceras diartianum* | 4 | | 93.95-94.15 |
| | | | *Dunveganoceras cimolense* | 3 | | |
| | | | *Dunveganoceras* cf. *D. pinnatum* *Pseudaspidoceras flexuosum* | 2 | *Inoceramus geinitzianus* | |
| | | | *Dunveganoceras pondense*[sp.] | 1 | | |
| | | Middle | *Dunveganoceras* sp. | 0 | | |
| | | | *Pseudaspidoceras* sp. | 15 | *Inoceramus perplexus* | 94.15-94.40 |
| | | | *Acanthoceras amphibolum* | 14 | *Inoceramus* (*subcircle*) | 94.90-95.50 |
| | | | *Acanthoceras bellense* | 13 | *Inoceramus arvinus* | |
| | | | *Acanthoceras muldoonense* | 12 | | |
| | | | *Acanthoceras granerosense* | 11 | *Inoceramus* (*mu.crimell*) | |
| | | | *Conlinoceras tarrantense* | 10 | | 95.75-96.01 |
| | | | *Calycoceras amicianum* | 9 | | |
| | | | *Calycoceras guerangeri* | 8 | | |
| | | | *Calycoceras leonense* | 7 | | |
| | | | *Calycoceras naviculare* | 6 | | |
| | | | *Calycoceras pentagonum* | 5 | | |
| | | | *Metoicoceras geslinianum* | 4 | | |
| | | | *Metoicoceras mosbyense* | 3 | | |
| | | | *Metoicoceras praecordatum* | 2 | | |
| | | | *Metoicoceras* cf. *M. praecordatum* | 1 | | |
| | | | *Metoicoceras* sp. | 0 | | |
| | | Lower | *Sharpeiceras schlueteri* | 5 | | |
| | | | *Sharpeiceras* sp. | 4 | | |
| | | | *Euomphaloceras septemseptatum* | 3 | | |
| | | | *Euomphaloceras ferconense* | 2 | | |
| | | | *Euomphaloceras* cf. *E. ferconense* | 1 | | |
| | | | *Euomphaloceras* sp. | 0 | | |
| | | | *Mantelliceras saxbyi* | 3 | | |
| | | | *Mantelliceras* cf. *M. saxbyi* | 2 | | |
| | | | *Mantelliceras* sp. | 1 | | |
| | | | *Mantelliceras* sp. | 0 | | |
| LOWER CRETACEOUS | Albian | | *Euopleurocerus maricopense* | 1 | | 108.1 |

**Divisions of Cretaceous time as used in this report**[1]

| Period | Stage | Age estimates (Ma) |
|---|---|---|
| Upper Cretaceous | Maastrichtian | 72–66 |
| | Campanian | 84–72 |
| | Santonian | 86–84 |
| | Coniacian | 89–86 |
| | Turonian | 94–89 |
| | Cenomanian | 100–94 |
| Lower Cretaceous | Albian | 113–100 |
| | Aptian | 126–113 |

[1]Ages were assigned mostly by interpolation between Turonian-Coniacian and the earliest Late Cretaceous (Albian) and Cenomanian and Albian (113.0) Stages of Gradstein and others (2004). Ages of Late Cretaceous (Campanian and Maastrichtian) are the middle Tertiary of Obradovich (1993, 1994) and are the stratigraphic dataset for the cross section.

# Composite Biostratigraphic Outcrop Sections for Cretaceous Formations Along a South-Trending Transect From Northwestern Montana to Northwestern New Mexico

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