**Supplemental References Cited**

Belt, E.S., Hartman, J.H., Diemer, J.A., Kroeger, T.J., Tibert, N.E., and Curran, H.A., 2004, Unconformities and age relationships, Tongue River and older members of the Fort Union Formation (Paleocene), western Williston Basin, U.S.A: Rocky Mountain Geology, v. 39, p. 113–140, <https://doi.org/10.2113/39.2.113>.

Epis, R.C., and Chapin, C.E., 1974, Stratigraphic nomenclature of the Thirtynine Mile volcanic field, central Colorado: U.S. Geological Survey Bulletin 1395-C, 23 p.

Farnham, T.M., and Kraus, M.J., 2002, The stratigraphic and climatic significance of Paleogene alluvial paleosols in synorogenic strata of the Denver Basin, Colorado: Rocky Mountain Geology, v. 37, no. 2, p. 201–213, <https://doi.org/10.2113/8>.

Galbreath, E.C., 1953, A contribution to the Tertiary geology and paleontology of northeastern Colorado: University of Kansas Paleontological Contributions, Vertebrata, art. 4, p. 1–120.

Harrell, F.E., Jr., 2021, Hmisc: Harrell miscellaneous: R package version 4.5–0, <https://cran.r-project.org/web/packages/Hmisc/>.

Kassambara, A., 2020, ggpubr: ‘ggplot2’ based publication ready plots: R package version 0.4.0, https://cran.r-project.org/web/packages/ggpubr/.

Koch, A.J., Coleman, D.S., and Sutter, A.M., 2018, Provenance of the upper Eocene Castle Rock Conglomerate, south Denver Basin, Colorado, U.S.A: Rocky Mountain Geology, v. 53, p. 29–43, <https://doi.org/10.24872/rmgjournal.53.1.29>.

Long, J.A., 2020, jtools: Analysis and presentation of social scientific data: R package version 2.1.0, [https://cran.r-project.org/package=jtools](https://cran.r-project.org/package%3Djtools).

Morse, D.G., 1985, Oligocene paleogeography in the southern Denver Basin, *in* Flores, R.M., and Kaplan, S.S., eds., Cenozoic Paleogeography of the West-Central United States: Rocky Mountain Paleogeography, Symposium 3: Cenozoic Paleogeography of the West-Central United States: Denver, Colorado, Rocky Mountain Section, Society of Economic Paleontologists and Mineralogists, p. 277–293.

Murphy, E.C., Nordeng, S.H., Junker, B.J., and Hoganson, J.W., 2009, North Dakota stratigraphic column: North Dakota Geological Survey Miscellaneous Series 91, 1 p.

Neuwirth, E., 2014, RColorBrewer: ColorBrewer palette: R package version 1.1–2, https://cran.r-project.org/web/packages/RColorBrewer/.

Nichols, D.J., and Fleming, R.F., 2002, Palynology and palynostratigraphy of Maastrichtian, Paleocene, and Eocene strata in the Denver Basin, Colorado: Rocky Mountain Geology, v. 37, p. 135–163, <https://doi.org/10.2113/4>.

Peppe, D.J., Evans, D.A.D., and Smirnov, A.V., 2009, Magnetostratigraphy of the Ludlow Member of the Fort Union formation (lower Paleocene) in the Williston Basin, North Dakota: Geological Society of America Bulletin, v. 121, p. 65–79.

Robnik-Sikonja, M., 2019, Generator of semiartificial data: R package version 2.3.1, <http://lkm.fri.uni-lj.si/rmarko/software/>.

Schloerke, B., Cook, D., Larmarange, J., Briatte, F., Marbach, M., Thoen, E., Elberg, A., Toomet, O., Crowley, J., Hofmann, H., and Wickham, H., 2021, GGally: Extension to ‘ggplot2’: R package version 2.1.2, https://cran.r-project.org/web/packages/GGally/.

Scott, G.R., 1978, Map showing geology, structure, and oil and gas fields in the Sterling 1 × 2 Quadrangle, Colorado, Nebraska, and Kansas: U.S. Geological Survey, Miscellaneous Investigations Series Map I-1092, scale 1:250,000.

Scott, G.R., and Wobus, R.A., 1973, Reconnaissance geologic map of Colorado Springs and vicinity, Colorado: U.S. Geological Survey Miscellaneous Field Studies Map MF-482, scale 1:62,500.

Soister, P.E., and Tschudy, R.H., 1978, Eocene rocks in the Denver Basin, *in* Pruit, J.D., and Coffin, P.E., eds., Energy Resources of the Denver Basin: Denver, Colorado: Rocky Mountain Association of Geologists, 29th Annual Field Symposium Guidebook, p. 231–235.

Tedford, R.H., 1999, Rocks and faunas, Ogallala Group, Pawnee Buttes area, Weld County, Colorado, *in* Evanoff, E., Graham, R.W., and Tedford, R.H., eds., The Tertiary record of Weld County, northeastern Colorado: Denver Museum of Natural History and Science Field Guide, p. 31–47.

Tedford, R.H., 2004, Miocene mammalian faunas, Ogallala Group, Pawnee Buttes area, Weld County, Colorado: Bulletin of the Carnegie Museum of Natural History, v. 36, p. 277–290, [https://doi.org/10.2992/0145-9058(2004)36[277:MMFOGP]2.0.CO;2](https://doi.org/10.2992/0145-9058%282004%2936%5B277%3AMMFOGP%5D2.0.CO;2).

Thorson, J.P., 2004, Geologic map of the Cherry Valley School quadrangle, Douglas and Elbert Counties, Colorado: Colorado Geological Survey Open-File Report 04-06, scale 1:24,000.

Thorson, J.P., 2011, Geology of upper Cretaceous, Paleocene, and Eocene strata in the southwestern Denver Basin, Colorado: Denver, Colorado: Colorado Geological Survey Open-File Report 11-02, 53 p.

Wickham, H., 2016, ggplot2: Elegant graphics for data analysis: New York, Springer Verlag, 213 p., <https://doi.org/10.1007/978-0-387-98141-3>.