COLORADO GEOLOGICAL SURVEY
COLORADO SCHOOL OF MINES
GOLDEN, COLORADO

CENOZOIC STRATIGRAPHY of COLORADO

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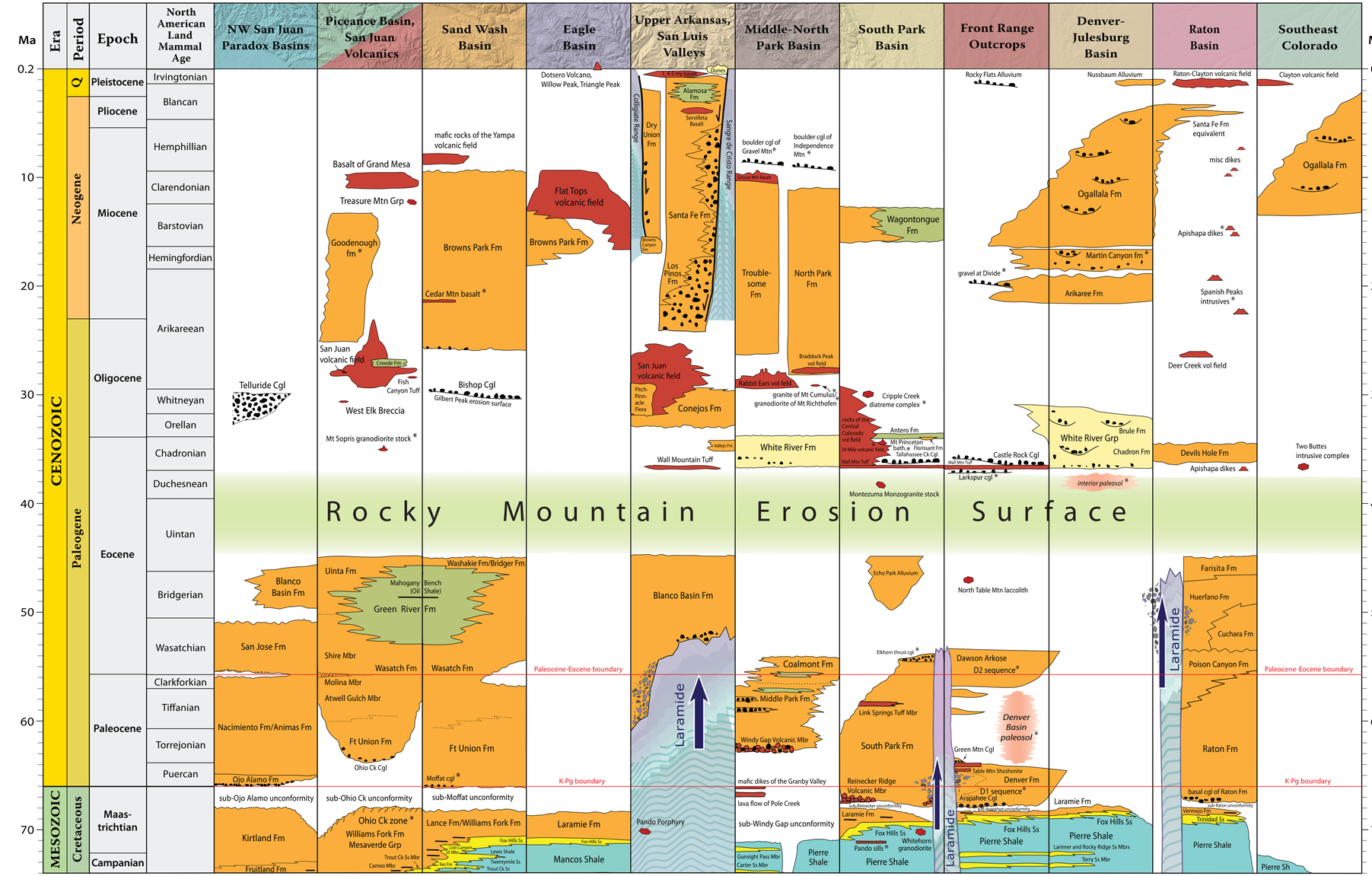
2025

MAP SERIES 55
COLORADO CENOZOIC STRATIGRAPHY CHART
DOI: https://doi.org/10.58783/cgs.ms55.tagp9188



NALMA ages from Barnosky et al., 2014

Drafting by Larry Scott, CGS

Acknowledgments: Donna Anderson, Andres Aslan, Peter Barkmann, Richard Bottjer, Rex Cole, Steve Cumella, Emmett Evanoff, James Hagadorn, Mark Kirshbaum, Vince Matthews, Matthew Morgan, Holger Peterman, Nathan Rogers, Theresa Schwartz, Ned Sterne, Patrick Sullivan, Jonathan White, Jeremiah Workman, and Kristi Zellman.

Additional Resources: Colorado Stratigraphy Chart of Colorado, 2016, Map Series 53, by Robert G. Raynolds and James W. Hagadorn
Cretaceous Stratigraphy of Colorado, 2021, Map Series 54, by Robert G. Raynolds

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Additional information about formal units can be found at Geolex https://ngmdb.usgs.gov/Geolex
Informal nomenclature is indicated by asteriks (*) and is listed below. These terms are in local usage.

39 Mile volcanic field
Apishapa dikes
basal conglomerate of Raton Fm
boulder conglomerate of Gravel Mtn
boulder conglomerate of Independence Mtn
Cedar Mountain basalt
Cripple Creek diatreme complex
D1 sequence
D2 sequence
Denver Basin paleosol
Elkhorn thrust cgl
Goodenough fm
gravel at Divide
granite of Mt Cumulus
granite of Mt Princeton batholith
granodiorite of Mt Richthofen
interior paleosol
lava flow of Pole Creek
Larkspur conglomerate
mafic dikes of the Granby Valley
Martin Canyon fm
Moffat conglomerate
Montezuma Monzogranite stock
Mount Sopris granodiorite stock
Ohio Creek zone
Pando sills
Spanish Peak intrusives

Colorado's stratigraphy is dominated by gaps. The distribution of strata reflects the tectonic and climatic evolution of each of the region's basin areas. To foster comparison of these patterns, we have organized the stratigraphy using a linear timescale and illustrated where orogenic uplift has led to removal of strata or nondeposition. Some orogenic features are not illustrated on the chart. In the past ~10 Ma, regional uplift has raised Colorado and ensuing erosion has influenced modern landscape formation. The color scheme for stratigraphic units gives a sense of dominant lithologies and depositional environments across basins.

Updates to this chart, as well as additional resources, such as stratigraphic and structural cross-sections, can be found at ***https://coloradostratigraphy.org***. To learn more about the unit names on this chart, resources are available at the U.S. Geological Survey's Geolex site: ***https://ngmdb.usgs.gov/Geolex***.

This chart scaffolds on the work of Richard H. Pearl's 1977 compilation (Rocky Mountain Association of Geologists, Special Publication 2). This data has been recast against the International Commission on Stratigraphy's chrono-stratigraphic chart v. 2015/01, updated at: ***https://stratigraphy.org***.

The Cenozoic stratigraphy of Colorado builds on the waning stages of the Cretaceous Interior Seaway coastal plains.

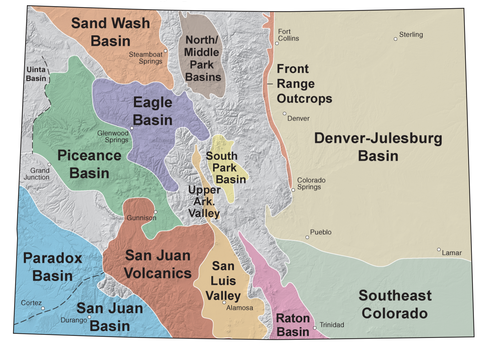
In latest Cretaceous and early Paleogene time, the advent of the Laramide Orogeny set the stage for the accumulation of synorogenic sediments in a series of down-dropped basins bounded by basement uplifts.

The synorogenic packages often start with widespread basal conglomerates that herald the exhumation of peripheral uplifts during a time of low accommodation. Increased subsidence rates promote the accumulation of fluvial strata and, in closed basins, lacustrine beds.

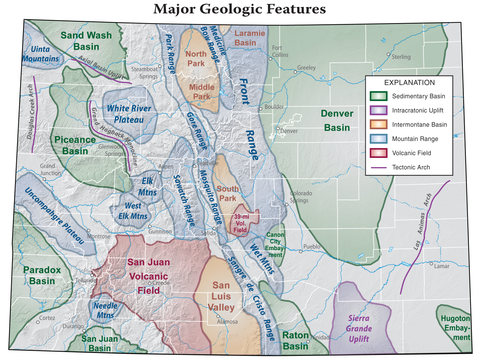
As the Laramide Orogeny faded in the Eocene, a period of stability promoted the development of the Rocky Mountain erosion surface as the uplands were peneplained and the basins filled.

During the Oligocene, igneous activity to the west and in Colorado covered the region in volcanic debris and airfall materials. In early Miocene the development of the Rio Grande Rift in the San Luis and Upper Arkansas valleys was accompanied by flank uplift of the Sangre de Cristo and Collegiate ranges. These uplifts, coupled with regional epirogenic uplift in the Miocene, led to the eastward dispersal of clastic aprons including the Ogallala Formation and to headward erosion and incision of the river systems spawned from the Colorado Rocky Mountains. Our present landscape thus reflects the interplay between the forces of erosion and the resistance of the rocks shown on this chart.

Stratigraphic Chart Basin Boundaries



Major Geologic Features



Legend