CLASSIFICATION OF ROCKS IN KANSAS

1968 (Revised March 2010)

KANSAS GEOLOGICAL SURVEY
The University of Kansas

Bulletin 189
Plate 1

Rock-Stratigraphic | Time-Stratigraphic

CENOZOIC ERA — QUATERNARY SYSTEM — PLEISTOCENE SERIES

- RECENT STAGE
- WISCONSINAN STAGE
  - Eolian and fluvial deposits
  - Loess
  - Fluvial deposits
  - Brady Soil
  - Loess
  - Fluvial deposits
- SANGAMONIAN STAGE
  - Sangamon Soil
  - Loess
- ILLINOISAN STAGE
  - Fluvial deposits
- YARMOUTHIAN STAGE
  - Yarmouth Soil
  - Pearlette ash bed
- KANSAN STAGE
  - Fluvial and eolian deposits
  - Till
- AFTONIAN STAGE
  - Afton Soil
- NEBRASKAN STAGE
  - Fluvial and eolian deposits
  - Till

NEOGENE SYSTEM — PLIOCENE SER. / MIOCENE SERIES

- Ogallala Formation

MESOZOIC ERA — UPPER CRETACEOUS SERIES — CRETACEOUS SYSTEM — Montana Group

- Beecher Island Sh. Mbr.
- Pierre Shale
- Salt Grass Shale Mbr.
- Lake Creek Shale Mbr.
- Weskan Shale Member
- Sharon Springs Sh. Mbr.
- Smoky Hill Chalk Mbr. — Niobrara Chalk — Colorado Group
- Fort Hays Ls. Mbr.

UPPER CRETACEOUS SERIES — Colorado Group

- Codell Sandstone Mbr.
- Blue Hill Shale Mbr. — Carlile Shale
- Fairport Chalk Member
- Fence-post ls. bed
- Pfeifer Shale Member
- Jetmore Chalk Member — Greenhorn Limestone
- Hartland Shale Member
- Lincoln Limestone Mbr.
- Graneros Shale

LOWER CRETACEOUS SERIES — Dakota Formation

- Janssen Clay Member
- Terra Cotta Clay Mbr.
- Kiowa Formation
- Cheyenne Sandstone

UPPER JURASSIC SERIES — JURASSIC SYSTEM — Morrison Formation

- Subsurface only

GUADALUPIAN SERIES — Nippewalla Group

- Big Basin Formation
- Day Creek Dolomite
- Kiger Shale Member — Whitehorse Formation
- Relay Creek (?) Dol. Mbr.
- Marlow Sandstone Mbr.
- Dog Creek Formation
- Haskew Gypsum Member
- Shimer Gypsum Member — Blaine Formation
- Nescatunga Gyp. Mbr.
- Medicine Lodge Gyp. Mbr.
- Flower-pot Shale
- Cedar Hills Sandstone
- Salt Plain Formation
- Crisfield ss. bed
- Kingman Sandstone Mbr. — Harper Sandstone
- Chikaskia Ss. Mbr.
- Stone Corral Formation
- Runnymede Ss. Mbr. — Sumner Group
- Ninnescah Shale

LEONARDIAN SERIES — PERMIAN SYSTEM

MESOZOIC ERA — UPPER CRETACEOUS SERIES — CRETACEOUS SYSTEM

- Milan Limestone Member
- Hutchinson Salt Mbr. — Wellington Formation — Sumner Group
- Carlton Limestone Mbr.
- Hollenberg Ls. Mbr.
- Herington Ls. Mbr.
- Paddock Shale Member — Nolans Limestone
- Krider Limestone Mbr.
- Odell Shale
- Cresswell Ls. Mbr.
- Grant Shale Member — Winfield Limestone
- Stovall Limestone Mbr.
- Gage Shale Member
- Towanda Limestone Mbr. — Doyle Shale
- Holmesville Sh. Mbr.
- Fort Riley Ls. Mbr.
- Oketo Shale Member — Barneston Limestone — Chase Group
- Florence Ls. Mbr.
- Blue Springs Sh. Mbr.
- Kinney Limestone Mbr. — Matfield Shale
- Wymore Shale Member
- Schroyer Ls. Mbr.
- Havensville Shale Mbr. — Wreford Limestone
- Threemile Ls. Mbr.
- Speiser Shale
- Funston Limestone
- Blue Rapids Shale
- Crouse Limestone
- Easly Creek Shale
- Middleburg Ls. Mbr.
- Hooser Shale Member — Bader Limestone
- Eiss Limestone Member
- Stearns Shale
- Morrill Limestone Mbr.
- Florena Shale Member — Beattie Limestone
- Cottonwood Ls. Mbr.
- Eskridge Shale
- Neva Limestone Mbr.
- Salem Point Shale Mbr.
- Burr Limestone Mbr. — Grenola Limestone — Council Grove Group
- Legion Shale Member
- Sallyards Ls. Mbr.
- Roca Shale
- Howe Limestone Member — Red Eagle Limestone
- Bennett Shale Member
- Glenrock Ls. Mbr. — Red Eagle Limestone
- Johnson Shale
- Long Creek Ls. Mbr.
- Hughes Creek Sh. Mbr. — Foraker Limestone — Council Grove Gp.
- Americus Ls. Mbr.
- Houchen Cr. ls. bed
- Hamlin Shale Member
- Five Point Ls. Mbr. — Janesville Shale — Admire Group
- West Branch Shale Mbr.
- Falls City Limestone
- Hawxby Shale Member
- Aspinwall Ls. Mbr. — Onaga Shale
- Towle Shale Member
- Brownville Ls. Mbr.
- Pony Creek Shale Mbr. — Wood Siding Formation — Richardson Subgroup
- Grayhorse Ls. Mbr.
- Plumb Shale Member
- Nebraska City Ls. Mbr.
- French Creek Sh. Mbr.
- Jim Creek Ls. Mbr. — Root Shale
- Friedrich Shale Mbr.
- Grandhaven Ls. Mbr.
- Dry Shale Member — Stotler Limestone
- Dover Limestone Mbr.
- Pillsbury Shale
- Stormont ls. bed
- Maple Hill Ls. Mbr.
- Wamego Shale Member — Zeandale Limestone
- Tarkio Limestone Mbr.
- Willard Shale
- Elmont Limestone Mbr.
- Harveyville Shale Mbr. — Emporia Limestone — Wabaunsee Group
- Reading Limestone Mbr.
- Auburn Shale
- Wakarusa Ls. Mbr.
- Soldier Creek Sh. Mbr. — Bern Limestone — Nemaha Subgroup
- Burlingame Ls. Mbr.
- Silver Lake Shale Mbr.
- Rulo Limestone Member
- Elmo coal bed
- Cedar Vale Shale Mbr. — Scranton Shale
- Happy Hollow Ls. Mbr.
- White Cloud Shale Mbr.
- Utopia Limestone Mbr.
- Winzeler Shale Member — Howard Limestone — Sacfox Subgroup
- Church Limestone Mbr.
- Nodaway coal bed
- Aarde Shale Member
- Bachelor Cr. Ls. Mbr.
- Severy Shale
- Coal Creek Ls. Mbr.
- Holt Shale Member
- Du Bois Limestone Mbr.
- Turner Creek Sh. Mbr. — Topeka Limestone
- Sheldon Limestone Mbr.
- Jones Point Shale Mbr.
- Curzon Limestone Mbr.
- Iowa Point Shale Mbr.
- Hartford Ls. Mbr.
- Calhoun Shale
- Ervine Creek Ls. Mbr.
- Larsh & Burroak Sh. Mbrs. — Deer Creek Limestone — Shawnee Group
- Rock Bluff Ls. Mbr.
- Oskaloosa Shale Mbr.
- Ozawkie Limestone Mbr.
- Tecumseh Shale
- Avoca Limestone Mbr.
- King Hill Shale Mbr.
- Beil Limestone Member
- Queen Hill Shale Mbr. — Lecompton Limestone
- Big Springs Ls. Mbr.
- Doniphan Shale Member
- Spring Branch Ls. Mbr.
- Stull Shale Member — Kanwaka Shale
- Clay Creek Ls. Mbr.
- Jackson Park Sh. Mbr.
- Kereford Ls. Mbr.
- Heumader Shale Member
- Plattsmouth Ls. Mbr.
- Heebner Shale Member — Oread Limestone
- Leavenworth Ls. Mbr.
- Snyderville Shale Mbr.
- Toronto Limestone Mbr.
- Williamsburg coal bed
- Amazonia Ls. Mbr.
- Ireland Sandstone Mbr. — Lawrence Formation — Douglas Group
- Robbins Shale Member
- Haskell Limestone Mbr.
- Vinland Shale Member
- Westphalia Ls. Mbr.
- Upper Sibley coal bed
- Tonganoxie Ss. Mbr. — Stranger Formation
- Iatan Limestone Mbr.
- Weston Shale Member
- South Bend Ls. Mbr.
- Rock Lake Shale Mbr.
- Stoner Limestone Mbr. — Stanton Limestone — Lansing Group
- Eudora Shale Member
- Captain Creek Ls. Mbr.
- Vilas Shale
- Spring Hill Ls. Mbr.
- Hickory Creek Sh. Mbr. — Plattsburg Limestone
- Merriam Limestone Mbr.
- Bonner Springs Sh.
- Farley Limestone Mbr.
- Island Creek Sh. Mbr. — Wyandotte Limestone — Zarah Subgroup
- Argentine Ls. Mbr.
- Quindaro Shale Member
- Frisbie Limestone Mbr.
- Lane Shale

LEONARDIAN SERIES — WOLFCAMPIAN SERIES — PERMIAN SYSTEM

PALEOZOIC ERA — PENNSYLVANIAN SUBSYSTEM — MISSOURIAN STAGE

- Raytown Limestone Mbr.
- Muncie Creek Sh. Mbr. — Iola Limestone
- Paola Limestone Mbr.
- Cottage Grove Ss. Mbr.
- Thayer coal bed
- Chanute Shale
- Noxie Sandstone Mbr.
- Corbin City Ls. Mbr. — Drum Limestone
- Dewey Limestone Mbr.
- Quivira Shale Member
- Westerville Ls. Mbr.
- Wea Shale Member — Cherryvale Shale
- Block Limestone Mbr.
- Fontana Shale Member
- Winterset Ls. Mbr. — Dennis Limestone
- Stark Shale Member
- Canville Ls. Mbr.
- Galesburg Shale
- Dodds Creek Ss. Mbr.
- Bethany Falls Ls. Mbr.
- Hushpuckney Shale Mbr. — Swope Limestone
- Middle Creek Ls. Mbr.
- Coffeyville Formation
- Ladore Shale
- Sniabar Limestone Mbr.
- Mound City Shale Mbr. — Hertha Limestone
- Critzer Limestone Mbr.
- Tacket Formation
- Checkerboard Limestone
- South Mound Shale Mbr. — Seminole Formation
- Hepler Sandstone Mbr.
- Holdenville Shale
- Idenbro Limestone Mbr.
- Perry Farm Shale Mbr. — Lenapah Limestone
- Norfleet Ls. Mbr.
- Walter Johnson Ss. Mbr. — Nowata Shale
- Worland Limestone Mbr.
- Lake Neosho Sh. Mbr. — Altamont Limestone
- Amoret Limestone Mbr.
- Mulberry coal bed
- Bandera Quarry Ss. Mbr. — Bandera Shale
- Laberdie Ls. Mbr.
- Mine Creek Shale Mbr. — Pawnee Limestone
- Myrick Station Ls. Mbr.
- Anna Shale Member
- Englevale Ss. Mbr. — Labette Shale
- Higginsville Ls. Mbr.
- Little Osage Sh. Mbr. — Fort Scott Limestone
- Summit coal bed
- Blackjack Cr. Ls. Mbr.
- Mulky coal bed
- Breezy Hill Ls. Mbr.
- Bevier coal bed
- Verdigris Ls. Mbr. — Cabaniss Formation
- Croweburg coal bed
- Fleming coal bed
- Mineral coal bed
- Scammon coal bed
- Chelsea Sandstone Mbr.
- Tiawah limestone bed
- Tebo coal bed
- Weir-Pittsburg coal bed
- Seville (?) Ls. Mbr.
- Bluejacket Ss. Mbr. — Krebs Formation
- Dry Wood coal bed
- Rowe coal bed
- Neutral coal bed
- Warner Sandstone Mbr.
- Riverton coal bed
- Kearny Formation
- Ste. Genevieve Limestone
- St. Louis Limestone

Linn Subgroup / Bronson Subgroup / Pleasanton Group / Marmaton Group / Cherokee Group — Kansas City Group

MISSOURIAN STAGE — DESMOINESIAN STAGE — ATOKAN STAGE — MORROWAN STAGE — CHESTERAN STAGE

UPPER PENNSYLVANIAN SERIES — MIDDLE PENNSYLVANIAN SERIES — LOWER PENNSYLVANIAN SERIES — UPPER MISS. SER. — MIDDLE MISSISSIPPIAN SERIES

PENNSYLVANIAN SUBSYSTEM — MISSISSIPPIAN SUBSYSTEM

CARBONIFEROUS SYSTEM

PALEOZOIC ERA

- Salem Limestone
- Warsaw Limestone
- Keokuk Limestone
- Burlington Limestone
- Reeds Spring Ls. Mbr. — Fern Glen Limestone
- St. Joe Limestone Mbr.
- Gilmore City Limestone
- Sedalia Dolomite (Northview Shale)
- Chouteau Limestone (Compton Limestone)
- Boice Shale
- Misener Sandstone Mbr. — Chattanooga Shale
- "Hunton Group"
- Chimneyhill Dolomite
- Maquoketa (Sylvan) Shale
- Viola (Kimmswick) Limestone
- Subsurface only
- Platteville Formation
- St. Peter Sandstone — Simpson Group
- Cotter Dolomite and Jefferson City Dolomite
- Roubidoux Formation
- Gasconade Dolomite — Arbuckle Group
- Gunter Sandstone Mbr.
- Eminence Dolomite
- Bonneterre Dolomite
- Lamotte (Reagan) Sandstone
- Rice Formation

MERAMECIAN STAGE — OSAGIAN STAGE — KINDERHOOKIAN STAGE

LOWER MISSISSIPPIAN SERIES — MIDDLE MISSISSIPPIAN SERIES

MISSISSIPPIAN SUBSYSTEM

CARBONIFEROUS SYSTEM

LOWER ORDOVICIAN SERIES — MIDDLE ORDOVICIAN SERIES — U. ORD.

ORDOVICIAN SYSTEM

SILURIAN SYSTEM — DEVONIAN SYSTEM

UPPER CAMBRIAN SERIES — CAMBRIAN SYSTEM

PRECAMBRIAN ROCKS

PALEOZOIC ERA

Approximate vertical scale, 1 inch = 75 feet

For more complete description of units see text of Bulletin 189

EXPLANATION

- Reddish color (used as overlay on other symbols)
- Soil
- Unconsolidated silt and clay
- Sand and gravel, conglomerate, or "mortar beds"
- Sandstone or sand
- Undifferentiated sandstone or siltstone
- Siltstone
- Crossbedded sandstone or siltstone
- Shale or claystone
- Black shale
- Calcareous shale
- Chalk
- Shale with concretions
- Glauconite
- Underclay
- Coal or lignite
- Volcanic ash
- Unconformity
- Bentonite
- Opaline sandstone
- Limestone
- Crossbedded limestone
- Oolitic limestone
- Cherty limestone
- Shaly limestone
- Sandy limestone
- Dolomitic limestone
- Dolomite
- Cherty dolomite
- Shaly dolomite
- Sandy dolomite
- Gypsum or anhydrite
- Salt
- Igneous and metamorphic rocks

For the most current version of this chart, please visit
http://www.kgs.ku.edu/General/Strat/index.html

Recommended reference: Zeller, D.E., ed., [1968] 2008, Classification of rocks in Kansas, revised by Kansas Geological Survey Stratigraphic Nomenclature Committee; *in*, The Stratigraphic Succession in Kansas: Kansas Geological Survey, Bulletin 189, 81 p., chart.