DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

Most complete sequences

PRECAMBRIAN

W — 2500 my and older

W metasedimentary rocks
Includes some other units. In Black Hills, parts: Boxelder Creek Fm, Bear Mountain Fm, Bear Ranch Fm, Pactola Fm, Deadwood Fm, Flume Creek Fm, Mount Rushmore Metamorphic Complex, Nemo Fm, Ordovician Fm, Pennsylvanian Fm, Pleasant Valley Fm, Precambrian X rocks, Sioux Fm, Spearfish Fm, Strawberry Fm, Tertiary intrusive rocks, Unkpapa Fm, Unnamed Cambrian rocks, Unnamed Ordovician rocks, Unnamed Pennsylvanian rocks, Unnamed Permian rocks, Unnamed Silurian rocks, Unnamed Tertiary rocks, Yellowstone Fm.
In Wyoming: Cherry Creek Fm, Flathead Sandstone, Gros Ventre Fm, Harebell Fm, Harlem Fm, Hoback Fm, Kootenai Fm, Lander Fm, Lennox Fm, Madison Fm, Mesaverde Fm, Mowry Fm, Pahasapa Fm, Phosphoria Fm, Pinyon Conglomerate, Pryor Fm, Quadrant Fm, Sawtooth Fm, Shedhorn Sandstone, Tensleep Sandstone, Thermopolis Shale, Thermopolis Sandstone, Tongue River Sandstone, Wind River Fm.
In Montana: Cherry Creek Fm, Flathead Sandstone, Kootenai Fm, Madison Fm, Mesaverde Fm, Mowry Fm, Pahasapa Fm, Phosphoria Fm, Quadrant Fm, Sawtooth Fm, Shedhorn Sandstone, Thermopolis Shale, Thermopolis Sandstone, Tongue River Sandstone, Wind River Fm.
In South Dakota: Cherry Creek Fm, Flathead Sandstone, Kootenai Fm, Madison Fm, Mesaverde Fm, Mowry Fm, Pahasapa Fm, Phosphoria Fm, Quadrant Fm, Sawtooth Fm, Shedhorn Sandstone, Thermopolis Shale, Thermopolis Sandstone, Tongue River Sandstone, Wind River Fm.

X — 2500 to 1600 my

X metasedimentary rocks
Includes some other units. In Black Hills, parts: Bear Mountain Fm, Bear Ranch Fm, Deadwood Fm, Flume Creek Fm, Mount Rushmore Metamorphic Complex, Nemo Fm, Pactola Fm, Precambrian W rocks, Sioux Fm, Strawberry Fm, Unkpapa Fm, Unnamed Cambrian rocks, Unnamed Ordovician rocks, Unnamed Pennsylvanian rocks, Unnamed Permian rocks, Unnamed Silurian rocks, Unnamed Tertiary rocks, Yellowstone Fm.
In Wyoming: Cherry Creek Fm, Flathead Sandstone, Gros Ventre Fm, Harebell Fm, Harlem Fm, Hoback Fm, Kootenai Fm, Lander Fm, Lennox Fm, Madison Fm, Mesaverde Fm, Mowry Fm, Pahasapa Fm, Phosphoria Fm, Pinyon Conglomerate, Pryor Fm, Quadrant Fm, Sawtooth Fm, Shedhorn Sandstone, Tensleep Sandstone, Thermopolis Shale, Thermopolis Sandstone, Tongue River Sandstone, Wind River Fm.
In Montana: Cherry Creek Fm, Flathead Sandstone, Kootenai Fm, Madison Fm, Mesaverde Fm, Mowry Fm, Pahasapa Fm, Phosphoria Fm, Quadrant Fm, Sawtooth Fm, Shedhorn Sandstone, Thermopolis Shale, Thermopolis Sandstone, Tongue River Sandstone, Wind River Fm.
In South Dakota: Cherry Creek Fm, Flathead Sandstone, Kootenai Fm, Madison Fm, Mesaverde Fm, Mowry Fm, Pahasapa Fm, Phosphoria Fm, Quadrant Fm, Sawtooth Fm, Shedhorn Sandstone, Thermopolis Shale, Thermopolis Sandstone, Tongue River Sandstone, Wind River Fm.

Y — 1600 to 800 my

BELT SUPERGROUP

- Ytc — Missoula Group
- Yt — Missoula Group
- Ya — Missoula Group
- Yb — Missoula Group
- Yc — Missoula Group
- Ybh — Missoula Group
- Ybr — Missoula Group
- Ybs — Missoula Group
- Ybt — Missoula Group
- Ybw — Missoula Group
- Ybz — Missoula Group
- Yd — Missoula Group
- Ye — Missoula Group
- Yf — Missoula Group
- Yg — Missoula Group
- Yh — Missoula Group
- Yi — Missoula Group
- Yj — Missoula Group
- Yk — Missoula Group
- Yl — Missoula Group
- Ym — Missoula Group
- Yn — Missoula Group
- Yo — Missoula Group
- Yp — Missoula Group
- Yq — Missoula Group
- Yr — Missoula Group
- Ys — Missoula Group
- Yt — Missoula Group
- Yu — Missoula Group
- Yv — Missoula Group
- Yw — Missoula Group
- Yx — Missoula Group
- Yy — Missoula Group
- Yz — Missoula Group

Bonner Quartzite
Mount Shields Formation
Helena Formations
Wallace, Shields, and Snowslip Formations
Prichard Formation
Missoula Group

Northwestern Montana and northern Idaho

Z — 800 my to beginning of Cambrian

Z sedimentary rocks
Includes some other units. In Black Hills, parts: Bear Mountain Fm, Bear Ranch Fm, Deadwood Fm, Flume Creek Fm, Mount Rushmore Metamorphic Complex, Nemo Fm, Pactola Fm, Precambrian W rocks, Sioux Fm, Strawberry Fm, Unkpapa Fm, Unnamed Cambrian rocks, Unnamed Ordovician rocks, Unnamed Pennsylvanian rocks, Unnamed Permian rocks, Unnamed Silurian rocks, Unnamed Tertiary rocks, Yellowstone Fm.
In Wyoming: Cherry Creek Fm, Flathead Sandstone, Gros Ventre Fm, Harebell Fm, Harlem Fm, Hoback Fm, Kootenai Fm, Lander Fm, Lennox Fm, Madison Fm, Mesaverde Fm, Mowry Fm, Pahasapa Fm, Phosphoria Fm, Pinyon Conglomerate, Pryor Fm, Quadrant Fm, Sawtooth Fm, Shedhorn Sandstone, Tensleep Sandstone, Thermopolis Shale, Thermopolis Sandstone, Tongue River Sandstone, Wind River Fm.
In Montana: Cherry Creek Fm, Flathead Sandstone, Kootenai Fm, Madison Fm, Mesaverde Fm, Mowry Fm, Pahasapa Fm, Phosphoria Fm, Quadrant Fm, Sawtooth Fm, Shedhorn Sandstone, Thermopolis Shale, Thermopolis Sandstone, Tongue River Sandstone, Wind River Fm.
In South Dakota: Cherry Creek Fm, Flathead Sandstone, Kootenai Fm, Madison Fm, Mesaverde Fm, Mowry Fm, Pahasapa Fm, Phosphoria Fm, Quadrant Fm, Sawtooth Fm, Shedhorn Sandstone, Thermopolis Shale, Thermopolis Sandstone, Tongue River Sandstone, Wind River Fm.

PALEOZOIC

CAMBRIAN

- Ꞓu — Ꞓu Sand Lower Cambrian
- Ꞓl — Ꞓl Lower Cambrian Group and equivalents, *Includes Lower Cambrian parts of Apalachian section*
- Ꞓ — Ꞓ Cambrian

ORDOVICIAN

- Ꞓu — Ꞓu Sand Lower Cambrian
- Ꞓl — Ꞓl Lower Cambrian Group and equivalents, *Includes Lower Cambrian parts of Apalachian section*
- O — O Ordovician
- Ꞓu — Ꞓu Sand Lower Cambrian
- Ꞓl — Ꞓl Lower Cambrian Group and equivalents, *Includes Lower Cambrian parts of Apalachian section*
- Ꞓ — Ꞓ Cambrian
- Lower Ordovician
  In Ozark Plateau of Missouri, Includes Lower Ordovician in Arbuckle Mts.
- Ou — Ou Upper Ordovician
- Ol — Ol Lower Ordovician
- Upper Ordovician (Cincinnatian)
- Ou — Ou Upper Ordovician
- Middle Ordovician (Mohawkian)
  Includes Trenton in places
- Ol — Ol Lower Ordovician

Eastern United States

SILURIAN

- Ꞓ — Ꞓ Cambrian
- Upper Silurian (Cayugan)
- Ꞓ — Ꞓ Cambrian
- Ꞓ — Ꞓ Cambrian
- Middle Silurian (Niagaran)
- Ꞓ — Ꞓ Cambrian
- Lower Silurian (Alexandrian)
- Ꞓ — Ꞓ Cambrian
- Ꞓ — Ꞓ Cambrian
- Upper Silurian (Cayugan)
- Ꞓ — Ꞓ Cambrian
- Ꞓ — Ꞓ Cambrian
- Middle Silurian (Niagaran)
- Ꞓ — Ꞓ Cambrian
- Lower Silurian (Alexandrian)
- Ꞓ — Ꞓ Cambrian

Eastern United States

DEVONIAN

- Ꞓ — Ꞓ Cambrian
- Lower Devonian
- Ꞓ — Ꞓ Cambrian
- Ꞓ — Ꞓ Cambrian
- Upper Devonian
- Ꞓ — Ꞓ Cambrian
- Ꞓ — Ꞓ Cambrian
- Middle Devonian
- Ꞓ — Ꞓ Cambrian
- Ꞓ — Ꞓ Cambrian
- Lower Devonian
- Ꞓ — Ꞓ Cambrian

Eastern United States

CARBONIFEROUS SYSTEMS

MISSISSIPPIAN

LOWER

- Ꞓ — Ꞓ Cambrian
- Kinderhookian Series
- Ꞓ — Ꞓ Cambrian
- Ꞓ — Ꞓ Cambrian
- Ꞓ — Ꞓ Cambrian