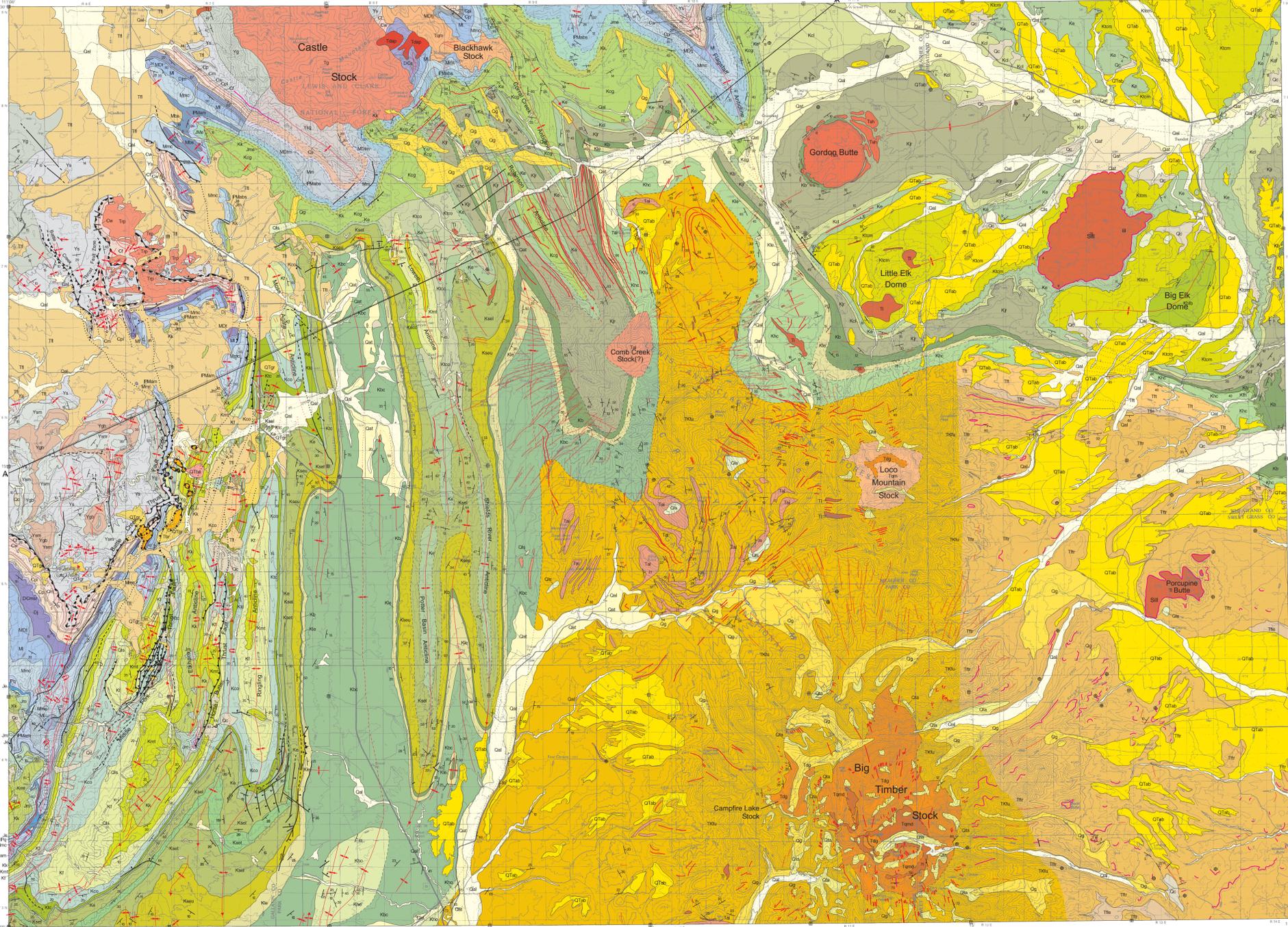


RINGLING, MONTANA



MAP UNITS

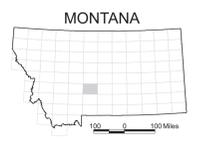
- Qal Alluvium of modern channels and flood plains
- Qta Talus deposit
- Qdp Rock glacier deposit
- Qc Colluvium
- Qk Landslide deposit
- Qal Alluvium of alluvial terraces
- Qg Glacial deposit, undivided
- Qtr Gravel
- Qtrb Alluvium of broad plains
- Qtab Basaltic
- Qtr Breccia
- Trp Rhyolite of Black Butte Mountain
- Tm Quartz monzonite
- Tmg Quartz monzonite
- Tg Granite
- Ti Intrusive rocks, undivided
- Tl Fort Logan Formation
- Tlu Labo Member of Fort Union Formation
- Tlr Talook Member of Fort Union Formation
- Ttr Tongue River Member of Fort Union Formation
- Tku Fort Union Formation, undivided
- Kco Hoppers Formation
- Kbc Billman Creek Formation
- Kc Hill Creek Formation
- Ks Lenape Sandstone
- Kf Fox Hills Formation
- Kd Bearpaw Shale
- Ksu Sedar Formation, upper member, informal
- Ksl Sedar Formation, welded tuff member, informal
- Kal Sedar Formation, lower member, informal
- KJ Judith River Formation
- Kcl Chagget Shale
- Ka Eagle Formation
- Kt Telegraph Creek Formation
- Kel Eagle and Telegraph Creek Formations, undivided
- Kco Cody Shale
- Kbc Telegraph Cr. Fin and Cody Shale, undivided
- Ksu Eagle Fin, Telegraph Cr. Fin, and Cody Shale, undivided
- Kf Frontier Formation
- Ksu Telegraph Creek and Maras River Formations, undivided
- Kbc Big Elk Sandstone Member of Belle Fourche Shale
- Ksu Mowry Shale and Thermopsis Formation, undivided
- Kg Colorado Group, undivided
- Ks Kootenai Formation
- Jm Morrison Formation
- Jk Elk Group, undivided
- Jbc Morrison Formation and Elk Group, undivided
- Fq Quadant Formation
- Fkm Ansdan Group, undivided
- Fkms Ansdan and Big Snowy Formations, undivided
- Fks Big Snowy Group, undivided or Big Snowy Formation
- Fm Mission Canyon Limestone
- M Lodgepole Limestone
- Mn Medicine Group, undivided
- MD Three Forks Formation
- D Jefferson Formation
- MDJ Three Forks and Jefferson Formations, undivided
- JM Jefferson and Maywood Formations, undivided
- MDM Three Forks Formation, Jefferson Dolomite and Maywood Formation
- DM Maywood and Snowy Range Fms, undivided
- DCS Sedimentary rocks, undivided
- CL Pilgrim Limestone
- CP Park Shale
- CS Meagher Limestone
- CSr Wolsey Shale
- CF Flathead Formation
- CS Sedimentary rocks, undivided
- Yg Gabbro sill
- Ym Spokane Formation, metamorphosed
- Ys Spokane Formation
- Yg Greyson Formation
- Ysg Spokane and Greyson Formations, undivided

MAP SYMBOLS

- Contact: dashed where approximately located; dotted where concealed
- Fault: unknown sense of movement; dotted where concealed
- Reverse or thrust fault: teeth on upthrown block; dashed where approximately located; dotted where concealed
- Indian Creek décollement—A plane of sliding on which locally intensely folded post-Precambrian rocks were thrust eastward into the Crazy Mountains Basin off the southeast margin of the Big Belt Mountains in late Paleocene time (Skipp and Hepp, 1988)
- Anticline: showing trace of axial plane and plunge direction where known; dotted where concealed
- Asymmetric anticline: showing trace of axial plane; dotted where concealed; shorter arrow on more steeply dipping limb
- Strike and dip of inclined bed
- Strike and dip of overturned bed
- Horizontal bed
- Vertical bed
- Dike (T): shown in red on map
- Dikes/Sills (Ti): shown in red on map
- Sills (Ti): shown in magenta on map

100K Quad Index

COSTON	FOOT	BO
FOOT	FOOT	FOOT
FOOT	FOOT	FOOT
FOOT	FOOT	FOOT

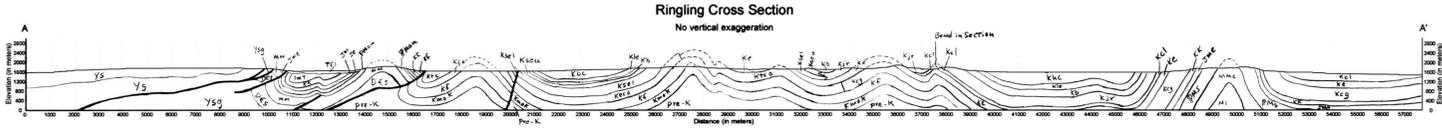


Base from U.S. Geological Survey
Ringling 30'x60' topographic quadrangle
Map date: 1993
Projection: UTM zone 12; 1927 NAD



STRATIGRAPHIC UNITS NOT ON MAP OR IN TEXT

- Kmk Mowry Shale through Kootenai Formation
- Pre-K Pre-Cretaceous sedimentary rocks, undivided
- PM S Pennsylvanian and Mississippian sedimentary rocks, undivided
- D C S Devonian through Cambrian sedimentary rocks, undivided
- Facies change
- Stratigraphic nomenclature change



Datum: Mean sea level
Quaternary deposits not shown
Dikes and sills not shown
Metamorphosed intervals of map units not shown

Partial support has been provided by the STATEMAP component of the National Cooperative Geologic Mapping Program of the U.S. Geological Survey under Contract Number 03HQPR1980.
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Maps may be obtained from
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Montana Bureau of Mines and Geology
Open File 511

Preliminary Geologic Map of the
Ringling 30' x 60' Quadrangle,
Central Montana

Compiled and mapped by Catherine McDonald,
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and Richard I. Gibson