Jump to Navigation

Quaternary Fault and Fold Database of the United States

As of January 12, 2017, the USGS maintains a limited number of metadata fields that characterize the Quaternary faults and folds of the United States. For the most up-to-date information, please refer to the interactive fault map.

Elk Mountain fault (Class A) No. 736

Last Review Date: 1994-06-03

citation for this record: **McCalpin, J.P., compiler, 1994, Fault number 736, Elk Mountain fault, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, https://earthquakes.usgs.gov/hazards/qfaults, accessed 12/14/2020 02:00 PM.**

Synopsis	One of many west-dipping normal faults that parallel east-directed thrust faults in Mesozoic sedimentary rocks in this part of the Overthrust Belt. Little is known about the two west-dipping normal faults that may be a southern continuation of the Rock Creek fault [729].
Name comments	Fault unnamed in compilation by Gibbons and Dickey (1983). The informal name Elk Mountain fault has been applied by J.P. McCalpin to this structure after the nearby geographic feature (Elk Mountain). The fault extends from about 0.5 km north of the headwaters of Bullpen Creek southwest to near the headwaters of North Bridger Creek, which forms the northern boundary of the Bear River Divide.
County(s) and State(s)	LINCOLN COUNTY, WYOMING
Physiographic	

Physiographic province(s)	MIDDLE ROCKY MOUNTAINS
Reliability of location	Good Compiled at 1:250,000 scale. *Comments:* Mapped in reconnaissance mapping (1:100,000 scale) by Gibbons and Dickey (1983 #821); northern branch of fault appears to be from 1:62,500-scale map of Rubey and others (1975 #816). Fault traces recompiled at 1:250,000-scale on map with topographic base.
Geologic setting	One of many west-dipping normal faults that parallel east-directed thrust faults in Mesozoic sedimentary rocks in this part of the Overthrust Belt. The fault is along western flank of Fossil Ridge and Elk Mountain.
Length (km)	8 km.
Average strike	N20°E
Sense of movement	Normal *Comments:* Shown as normal by Gibbons and Dickey (1983 #821).
Dip Direction	W
Paleoseismology studies	
Geomorphic expression	No fault scarps are known to exist, but the fault lies at the base of a somewhat linear west-facing escarpment on rocks of the Tertiary Wasatch Formation.
Age of faulted surficial deposits	Northern half of fault is in Tertiary bedrock (Rubey and others, 1975 #816).
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* Gibbons and Dickey (1983 #821) suggested Quaternary movement, but no specific justification was given.

Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* Low slip-rate category rate is inferred based on absence of scarps and data to indicate otherwise.
Date and Compiler(s)	1994 James P. McCalpin, GEO-HAZ Consulting, Inc.
References	#821 Gibbons, A.B., and Dickey, D.D., 1983, Quaternary faults in Lincoln and Uinta Counties, Wyoming, and Rich County, Utah: U.S. Geological Survey Open-File Report 83-288, 1 sheet, scale 1:100,000. #816 Rubey, W.W., Oriel, S.S., and Tracey, J.I., Jr., 1975, Geology of the Sage and Kemmerer 15-minute quadrangles, Lincoln County, Wyoming: U.S. Geological Survey Professional Paper 855, 18 p., 2 pls.