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.

unnamed syncline northwest of Carbondale (Class B) No. 2334

Last Review Date: 1998-09-16

Compiled in cooperation with the Colorado Geological Survey

citation for this record: **Widmann, B.L., compiler, 1998, Fault number 2334, unnamed syncline northwest of Carbondale, 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 03:00 PM.**

Synopsis	This unnamed, northwest-trending synclinal sag lies within the Carbondale collapse center east of the Grand Hogback monocline. The sag is interpreted to result from flowage and dissolution of evaporite from beneath the area. Late Pleistocene "younger" and "intermediate" terrace alluvium are deformed by this structure (Kirkham and Widmann, 1997 #2711). There have not been any detailed studies conducted on this structure. In as much as the faulting may be aseismic (salt related), we considered this to be Class B structure.

Name comments	Named unnamed synclinal fold southwest of Carbondale by Widmann and others (1998 #3441), herein shorted to "unnamed syncline northwest of Carbondale. This unnamed structure is a northwest-trending synclinal sag northwest of Carbondale. The sag lies within the Carbondale collapse center (Kirkham, 1997 #2705; Kirkham and Widmann, 1997 #2711) and is related to flowage and dissolution of evaporite from beneath the area. **Fault ID:** Fold # Qf5 of Widmann and others (1998 #3441).
County(s) and State(s)	GARFIELD COUNTY, COLORADO
Physiographic province(s)	SOUTHERN ROCKY MOUNTAINS
Reliability of location	Good Compiled at 1:250,000 scale. *Comments:* This synclinal sag was mapped at a scale of 1:24,000 by Kirkham and Widmann (1997 #2711)
Geologic setting	This northwest-trending, synclinal sag lies within the Carbondale collapse center, which is reported to have experienced significant Neogene collapse due to flowage and dissolution of evaporite deposits from beneath the area (Kirkham and Widmann, 1997#2711). The area is underlain by at least 900 m of evaporite deposits (Mallory, 1966 #2720).
Length (km)	2 km.
Average strike	N24°W
Sense of movement	Syncline *Comments:* Syncline trends northwest; limbs dip to the southwest and northeast.
Dip Direction	SW; NE
Paleoseismology studies	
Geomorphic expression	This feature is a synclinal sag developed in late Pleistocene terrace alluvium (Kirkham and Widmann, 1997 #2711).
Age of faulted	Late Pleistocene "younger" and "intermediate" terrace alluvium

surficial deposits	are deformed by this structure (Kirkham and Widmann, 1997 #2711).
Historic earthquake	
Most recent prehistoric deformation	late Quaternary (<130 ka) *Comments:* Deformation of late Pleistocene terrace alluvium suggests late Quaternary movement on this synclinal sag (Kirkham and Widmann, 1997 #2711).
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* Widmann and others (1998 #3441) placed this anticline within the <0.2 mm/yr uplift-rate category.
Date and Compiler(s)	1998 Beth L. Widmann, Colorado Geological Survey
References	#2705 Kirkham, B., 1997, Late Tertiary and Quaternary collapse related to dissolution and flowage of Pennsylvanian evaporitic rocks in the Glenwood Springs area, Colorado, *in* McCalpin, J.P., ed., Active geologic environment of central Colorado, Aspen-Glenwood Springs-Silt, Colorado: Friends of the Pleistocene, Rocky Mountain Cell, September 12-14, 1997, Field guidebook. #2711 Kirkham, R.M., and Widmann, B.L., 1997, Geologic map of the Carbondale quadrangle, Garfield County, Colorado: Colorado Geological Survey Open-File Report 97-3. #2720 Mallory, W.W., 1966, Cattle Creek anticline, a salt diapir near Glenwood Springs, Colorado: U.S. Geological Survey Professional Paper 550-B, 12-15 p. #3441 Widmann, B.L., Kirkham, R.M., and Rogers, W.P., 1998, Preliminary Quaternary fault and fold map and database of Colorado: Colorado Geological Survey Open-File Report 98-8, 331 p., 1 pl., scale 1:500,000.