

# 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](#).

## Garland Prairie West faults (Class A) No. 969

Last Review Date: 1997-01-29

### Compiled in cooperation with the Arizona Geological Survey

*citation for this record:* Pearthree, P.A., compiler, 1997, Fault number 969, Garland Prairie West faults, 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 03:11 PM.

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|----------------------|--|
| <b>Synopsis</b>      | Two short, northwest- to north-trending normal faults form a shallow, narrow graben on uppermost Pliocene to middle Pleistocene volcanic rocks in the southwestern part of the Pliocene-Quaternary San Francisco volcanic field. Graben margins are formed primarily by Pliocene-Pleistocene basalt flows; a middle Pleistocene basalt flowed into the graben and is most likely displaced less than 2 m. The trough floor is covered with late Quaternary alluvium, which is evidently not faulted. |
| <b>Name comments</b> | Mapped and named the Garland Prairie faults by Menges and Pearthree (1983 #2073); remapped and renamed by Pearthree and others (1996 #2153) to differentiate them from the Garland Prairie   |

|                                  |   |
|----------------------------------|---|
|                                  | fault zone [968] in the middle of Garland Prairie. The geology of the area was mapped by Wolfe and others (1987 #2160).   |
| <b>County(s) and State(s)</b>    | COCONINO COUNTY, ARIZONA  |
| <b>Physiographic province(s)</b> | COLORADO PLATEAUS   |
| <b>Reliability of location</b>   | Good<br>Compiled at 1:250,000 scale.<br><br><i>Comments:</i> Trace mapped at 1:50,000 scale, transferred to 1:250,000-scale topographic base map.   |
| <b>Geologic setting</b>          | One of several fault zones located in the southwestern part of the Pliocene-Quaternary San Francisco volcanic field, on the erosion surface cut on Paleozoic rocks near the Mogollon Rim. The Garland Prairie West faults cut uppermost Pliocene to lower Pleistocene volcanic rocks and probably cut a middle Pleistocene (340?210 ka) basalt flow.  |
| <b>Length (km)</b>               | 3 km.   |
| <b>Average strike</b>            | N18°W   |
| <b>Sense of movement</b>         | Normal<br><br><i>Comments:</i> Predominantly normal movement is inferred from topographic relations.  |
| <b>Dip Direction</b>             | E; W  |
| <b>Paleoseismology studies</b>   |   |
| <b>Geomorphic expression</b>     | Northwest- to north-trending scarps formed on Pliocene-Pleistocene basalt define a fairly narrow, symmetric physiographic trough. The trough bottom is covered by late Quaternary alluvium that is not faulted and locally by a middle Pleistocene basalt flow that is probably faulted. Scarps on the trough margins are moderately steep, especially on the southwest side, but the probable scarp formed on the middle Pleistocene basalt flow is very gentle. |
| <b>Age of faulted surficial</b>  | Latest Pliocene to early Pleistocene, middle Pleistocene  |

|  |   |
|--|---|
| <b>deposits</b>                            |   |
| <b>Historic earthquake</b>                 |   |
| <b>Most recent prehistoric deformation</b> | middle and late Quaternary (<750 ka)<br><i>Comments:</i> Middle Pleistocene basalt flow (ca. 300 ka) is probably faulted, but there is no definitive evidence of late Quaternary activity.  |
| <b>Recurrence interval</b>                 |   |
| <b>Slip-rate category</b>                  | Less than 0.2 mm/yr<br><i>Comments:</i> A low long-term slip rate is inferred based on about 2 m of displacement of deposits estimated to be approximately 300 ka.  |
| <b>Date and Compiler(s)</b>                | 1997<br>Philip A. Pearthree, Arizona Geological Survey  |
| <b>References</b>                          | #2073 Menges, C.M., and Pearthree, P.A., 1983, Map of neotectonic (latest Pliocene-Quaternary) deformation in Arizona: Arizona Geological Survey Open-File Report 83-22, 48 p., scale 1:500,000.<br><br>#2153 Pearthree, P.A., Vincent, K.R., Brazier, R., and Hendricks, D.M., 1996, Plio-Quaternary faulting and seismic hazard in the Flagstaff area, northern Arizona: Arizona Geological Survey Bulletin 200, 40 p., 2 pls.<br><br>#2160 Wolfe, E.W., Ulrich, G.E., Holm, R.F., Moore, R.B., and Newhall, C.G., 1987, Geologic map of the central part of the San Francisco volcanic field, north-central Arizona: U.S. Geological Survey Miscellaneous Field Studies Map MF-1959, 86 p. pamphlet, 2 sheets, scale 1:50,000. |

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