

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](#).

North Lake faults (Class A) No. 2127

Last Review Date: 2016-04-13

Compiled in cooperation with the New Mexico Bureau of Geology & Mineral Resources

citation for this record: Machette, M.N., and Jochems, A.P., compilers, 2016, Fault number 2127, North Lake 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 02:22 PM.

Synopsis	Little is known about this pair of faults on the northern margin of the San Agustin Plains. The western scarp was mapped in the field and using aerial photography, whereas the eastern scarp was delineated from aerial photography and map interpretation. The faults form northeast- and southwest-facing scarps on piedmont-slope deposits of suspected Quaternary age. No scarp profiles have been measured and the age of the piedmont-slope deposits is not well established.
Name comments	The western scarp was first mapped by Coffin (1981 #7449) and the scarps were later mapped by Machette and McGimsey (1983 #1024) on the basis of aerial photo interpretation. Coffin (1981

	#7449) named the western scarp the “North Lake fault,” and this name is applied to both scarps due to prior usage. They trend to the southeast and bound both sides of North Lake on the northern margin of the San Agustin Plains, about 20 km northeast of Datil, New Mexico.
County(s) and State(s)	SOCORRO COUNTY, NEW MEXICO
Physiographic province(s)	COLORADO PLATEAUS
Reliability of location	Good Compiled at 1:24,000 scale. <i>Comments:</i> Fault traces from unpublished mapping of Machette used to compile the 1:250,000-scale fault map of Socorro quadrangle by Machette and McGimsey (1983 #1024) and from 1:24,000-scale geologic mapping by Coffin (1981 #7449). Also shown on 1:100,000-scale geologic map of Socorro County (Osburn, 1984 #1238).
Geologic setting	These two closely spaced southeast-trending faults oppose the regional structural grain (northeast-trending), which is probably controlled by earlier (Tertiary) rifting.
Length (km)	6 km.
Average strike	N48°W
Sense of movement	Normal
Dip Direction	NE; SW
Paleoseismology studies	
Geomorphic expression	These faults control the position of North Lake, a small ephemeral lake. The larger of the scarps faces northeast and blocks local drainages, forming the lake. The faults appear subdued on aerial photography, but no detailed studies have been made of their morphology. Machette and McGimsey (1983 #1024) estimated about 6 m of displacement for the western (larger) of the two scarps.
Age of faulted surficial	No detailed study or mapping of the faulted deposits has been conducted. Neither Coffin (1981 #7449) nor Machette and

deposits	McGimsey (1983 #1024) indicated the age of the faulted deposits.
Historic earthquake	
Most recent prehistoric deformation	middle and late Quaternary (<750 ka) <i>Comments:</i> Based on presence of scarps on deposits inferred to be of middle Pleistocene or younger age.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr <i>Comments:</i> Slip rates cannot be calculated from the meager data available for these faults. However, they probably are less than 0.2 mm/yr based on slip rates calculated for other young faults in the region.
Date and Compiler(s)	2016 Michael N. Machette, U.S. Geological Survey, Retired Andrew P. Jochems, New Mexico Bureau of Geology & Mineral Resources
References	#7449 Coffin, G.C., 1981, Geology of the northwestern Gallinas Mountains, Socorro County, New Mexico: Socorro, New Mexico Institute of Mining and Technology, unpublished M.S. thesis, 217 p., 2 pl., scale 1:24,000. #1024 Machette, M.N., and McGimsey, R.G., 1983, Map of Quaternary and Pliocene faults in the Socorro and western part of the Fort Sumner 1° x 2° quadrangles, central New Mexico: U.S. Geological Survey Miscellaneous Field Studies Map MF-1465-A, 12 p. pamphlet, 1 sheet, scale 1:250,000. #1238 Osburn, G.R., compiler, 1984, Geology of Socorro County: New Mexico Bureau of Mines and Mineral Resources Open-File Report 238, 13 p. pamphlet, 1 sheet, scale 1:200,000.

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