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Significant Earthquakes and Faults

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Oak Ridge Fault

TYPE OF FAULTING: thrust

LENGTH: 90 km

NEAREST COMMUNITIES: Santa Paula, Fillmore, Saticoy, Ventura

MOST RECENT MAJOR RUPTURE: Holocene, in part; mainly Late Quaternary

RATE: between 3.5 and 6 mm/yr

INTERVAL BETWEEN MAJOR RUPTURES: unknown

PROBABLE MAGNITUDES: M_W6.5 - 7.5

OTHER NOTES: This fault dips to the south, at a fairly shallow (less than 45 degrees) angle. Thus, epicenters of earthquakes on this (and any other thrust) fault may appear far removed from the surface trace.

The surface trace of the Oak Ridge thrust is fairly easy to find on just about any map of the area you might have -- it forms a ridge (hence its name) to the south of its trace, and is roughly paralleled by both the Santa Clara River and California State Highway 126, from the town of Piru to the coast, just southeast of Ventura. The Oak Ridge thrust continues off shore, out to a point about 20 kilometers due south of Santa Barbara. The offshore segment is associated with a definite zone of active seismicity, though the only known Holocene surface rupture is found well onshore, between the towns of Bardsdale and Fillmore. At its eastern end, the Oak Ridge thrust becomes progessively more difficult to trace, and appears to be overthrust by the Santa Susana fault, thus becoming a blind thrust fault. Indeed, the fault associated with the 1994 Northridge earthquake is probably part of the Oak Ridge fault system, as it shares many of the characteristics of this fault. This blind thrust fault is known either as the **Pico Thrust**, named for the Pico Anticline (a geologic fold it is creating), or as the **Northridge Thrust**, for more obvious reasons.

References

This fault is featured on the following maps:

Northwest Fault Map

Los Angeles Fault Map

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