

## UA Sense of Place Trip #4: Santa Catalina Mountains

Trip #4 treks up the Santa Catalina Mountains, all the way to the top of Mt. Lemmon. Geologically, the Catalinas are a mountain range quite unlike others visited during previous field trips. Metamorphic core complexes are formed by regional crustal extension, thermal intrusion, and uplift, all resulting in mountain ranges with granite cores surrounded by deformed and metamorphosed igneous and sedimentary rocks (Crittenden et al., 1980; Davis and Coney, 1979). These rocks were once deep within the crust and consequently pulled and stretched under conditions of high temperature and pressure, but horizontal movement along low-angle detachment faulting brought these deep rocks to the surface, where they are now visible at road cuts along the lower part of the Catalina Highway (Bezy, 2004).

Ecologically, southern Arizona is internationally known for its sky islands, i.e., high mountains (the “islands”) sticking up from low deserts (the “ocean”) (Crowley and Link, 1989). Floral and faunal influences from the Sierra Madre to the south and the Rocky Mountains to the north as well as from the Sonoran and Chihuahuan Deserts combine to make southern Arizona sky islands highly diverse. The Catalinas peak out almost 2000 m (6500 ft) higher than Tucson, and the Catalina Highway makes for easy passage across this large elevational gradient. Along the way, multiple ecosystems are traversed (Lowe, 1967).

The Catalina Mountains are also a textbook of wild land fire. Most of the mountain burned recently in two large fires, much to the grief of Tucson (Barnes, 2005). Fire used to burn on the Catalinas frequently but with low intensity such that mature trees typically were not killed (Swetnam and Baisan, 1996). The question for Tucson, as well as for similar settings worldwide, is how to manage forests to accommodate the inevitability of fire without suffering devastating, big, intense wildfires.

Driving the Catalina Highway is not just educational. It is an honor to experience so conveniently such diversity and richness in geology, ecology, and cultural history.

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