

## ABSTRACT

### GHOST PINE OF THE KAWEAH: AN INVESTIGATION INTO THE *PINUS SABINIANA* RANGE DISCONTINUITY IN THE SOUTHERN SIERRA NEVADA FOOTHILLS, CALIFORNIA

*Pinus sabiniana*, a dominant endemic of the woodlands surrounding California's Central Valley, presents a 55-mile range disjunction in the southern Sierra foothills. It is hypothesized that the gap results from changes in an environmental gradient. Point samples totaling 874 were obtained at 15 sites in Fresno, Tulare, and Kern counties. Multiple Logistic Regression tests revealed *Pinus sabiniana* presence is associated with elevation ( $P < 0.001$ ), decreased slope ( $P < 0.001$ ), and decreased exposed rock ( $P = 0.002$ ). Multi-Response Permutation Procedures revealed significant differences between groups with or without *Pinus sabiniana* for abiotic and biotic factors. Indicator Species Analysis identified 11 shrub and 9 tree species with significantly higher relative abundance and frequency within the gap. Only one shrub and *P. sabiniana* had higher abundance and frequency outside the gap. A presence relationship with decreased slope and exposed rock is established. Increased interspecific competition as a result of increased species diversity is implied as well.

Robin Ann Brake  
August 2005