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A NEW STRATEGY FOR MONITORING ARROYO TOAD POPULATIONS

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In 2003, we implemented a new monitoring program for the endangered arroyo toad (*Bufo californicus*) on Marine Corps Base Camp Pendleton (MCBCP). To address the problems associated with large variations in adult toad activity, we employed a spatial and temporal monitoring approach. In this approach, we track presence of breeding arroyo toads over a wide geographic area rather than abundance at a small number of discrete sites. Presence of breeding populations are documented by tadpoles which have double the detection probability of adult toads. This year, we began monitoring 89 km of potential toad breeding habitat within MCBCP. We implemented the first year of a rotating panel design by comprehensively surveying 120 randomly stratified survey lengths (30 km). We then used the loglinear modeling program PRESENCE to model the data and correct for varying detection probabilities. In 2003, 87.4% (se = 9.5) of the wetted habitat was occupied by breeding arroyo toads. We evaluated over 14 habitat and survey specific variables in the models. These included landscape variables, environmental variables, and the presence of nonnative plant and aquatic vertebrate species. Results showed that the absence of crayfish was the single most significant predictor of the presence of arroyo toad larvae.