

## **Using the ARMI Metric, Proportion Area Occupied, for Monitoring Arroyo Toads in Southern California.**

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ARMI (Amphibian Research and Monitoring Initiative, USGS) has adopted proportion of area occupied (PAO, MacKenzie et al. 2002) as a standardized metric for midlevel monitoring of amphibian populations. We describe a monitoring program using this metric for the endangered arroyo toad (*Bufo californicus*) on 89 km of potential habitat within Marine Corps Base Camp Pendleton (MCBCP). The presence of tadpoles is used to document the presence of adult breeding populations. In 2003, we implemented the first year of a 5 year rotating panel design by comprehensively surveying 120 randomly stratified survey lengths (250 km each). The survey lengths were visited from 1 to 4 times throughout the breeding season. We then used the loglinear modeling program PRESENCE to model the data and correct for imperfect detection probabilities. We also evaluated over 14 habitat and survey specific variables in the models including landscape variables, environmental variables, and the presence of non-native plants and aquatic animals. In 2003, 87.4% (se = 9.5) of wet habitat was occupied by breeding arroyo toads and the absence of crayfish was the most significant predictor of tadpole presence. At this time, we do not know if this relationship is causative or correlative.