**Mexican Spotted Owl Site Occupancy Trends and Small Mammal Abundance in the Canyonlands of Utah

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The Mexican Spotted Owl (*Strix occidentalis lucida*) is widely distributed in forest habitat from the central highlands of Mexico north to the four-corners region of the southwest U.S. However, in southern Utah, Mexican Spotted Owls are only found in arid rocky

canyonlands, e.g., ~30 owl pairs occupy narrow canyons within Zion National Park, and up to 10 territories occur in Capitol Reef National Park. We studied the owl's territorial occupancy and primary prey species in Capitol Reef and adjacent environs during 2000-2015. We recorded Spotted Owl territorial occupancy states, including absence, single, or owl pair (and we searched for young). At a sample of territories, we measured relative abundance of primary prey species (*Neotoma* and *Peromyscus* spp.) using mark-recapture techniques. We were specifically interested in Woodrats and White-footed Mice because they have been identified as the primary prey of Spotted Owls in rocky canyon habitat using pellet analysis. We successfully captured, marked, and released over 6000 small mammals of various species at five owl territories in Capitol Reef and three territories in Grand Staircase-Escalante National Monument (GSENM). We also recorded various habitat measurements at each small mammal trap location. Spotted Owl territorial occupancy varied strongly during 2000-2007 in GSENM, and during 2013-2015 in Capitol Reef. We observed that low site occupancy in GSENM was correlated with low relative abundance of prey species, and associated with a severe drought throughout the region. During 2013 and 2014 in Capitol Reef, we observed low owl occupancy, with only one occupied territory. During 2015, six extinct territories were re-colonized by Spotted Owls, however, small mammal abundance declined during 2013 to 2015. We will continue to measure long-term patterns among owl occupancy, prey relative abundance, vegetation changes and variation in climate.