Ferruginous Pygmy-Owls in the Sonoran Desert

All photographs by Aaron D. Flesch

Photo 1. Adult female watching her nest cavity as we checked its contents with a micro video camera in the Sonoran Desert of northern Sonora, Mexico. The owl was perched in Foothill Palo Verde (*Parkinsonia microphylla*).

Ferruginous Pygmy-Owls (*Glaucidium brasilianum*) are small diurnal birds of prey that have declined to endangered levels in southern Arizona, USA. We assessed resources important to habitat selection and reproductive performance of pygmy-owls at five spatial scales across broad gradients in vegetation structure and aridity in the Sonoran Desert. Resources at the nest-cavity scale explained more variation in selection and performance than those at larger scales, highlighting their importance for conservation. At these small scales, owls selected nest cavities with smaller entrances, larger volume, greater height, and orientations that produced cooler microclimates in the hottest regions of the study area, and these choices all promoted higher performance.

Photo 2. Nest site located in a giant saguaro cactus (*Carnegiea gigantea*) near the western edge of the Arizona Upland subdivision of the Sonoran Desert in northern Sonora, Mexico. Trees and shrubs around the nest saguaro include mesquite (*Prosopis velutina*) and triangle-leaf bursage (*Ambrosia deltoidea*).

Photo 3. Adult female leaving her nest cavity in a giant saguaro cactus as we approached to check its contents. Virtually all cavities used for nesting by pygmy-owls in the Sonoran Desert are located in large columnar cacti, and most are excavated by Gila Woodpeckers (*Melanerpes uropygialis*).

Photo 4. A picture from another angle of an adult female leaving her nest cavity in a giant saguaro cactus. To check nest contents we often flushed owls off their nests, which afforded unique yet rather fleeting opportunities to photograph them in flight.

Photo 5. Adult male guarding its nest from the top of flowering giant saguaro cactus.

These photographs illustrate the article "Importance of environmental and spatial gradients on patterns and consequences of resource selection," by Aaron D. Flesch and Robert J. Steidl, which appeared in *Ecological Applications* 20(3):1021–1039, June 2010.