

Wildlife Use of Mesquite Bosques in the Sonoran Desert

Background:

Mesquite bosques, or woodlands, are potentially important and diverse habitats that occur in the Sonoran Desert and other parts of the arid Southwest. These bosques consist of primarily mesquite trees and a diverse understory of vegetation that may provide habitat for a wide-variety of species. While bosques are generally considered of high conservation value, their use by wildlife has received little study in the Sonoran Desert. In 2009, the U.S. Army Yuma Proving Ground (YPG) completed a comprehensive survey of bosques on the facility. Unlike bosques elsewhere in the Southwest, which frequently occur as narrow strips along riparian zones, many on YPG occur as isolated patches of varying size and are not associated with defined drainages. In 2009, the Research Branch of the Arizona Game and Fish Department initiated an observational study of wildlife using these habitats. Our objective is to identify species using these bosques and seasonal patterns of that use. We also will assess how wildlife use is influenced by bosque size, bosque shape, and bosque proximity to permanent water sources and other terrain features.

Location:

We are working on the U.S. Army Yuma Proving Ground (YPG) in southwestern Arizona.

Approach:

In March 2009, we placed a total of fifty digital trail cameras within sixteen bosques, ranging from about half an acre to forty acres in size. In 2011, we expanded our research to include 9 more bosques and 15 more cameras. To maximize wildlife detections, we placed cameras along wildlife trails or near openings. The cameras are equipped with an infrared motion sensor triggered by animal movement and an infrared flash for night-time photos. Cameras are checked monthly and data downloaded from the memory card. For each animal photo, we record the species, number of individuals, time, date, and other data. Cameras will remain operational through 2014.



Preliminary Results:

As of March 2010, we have documented over 10,000 wildlife events that include 13 species. The most common species in order of frequency have been mule deer, desert cottontail rabbits, black-tailed jackrabbits, and coyotes. Most wildlife have been photographed during nighttime, particularly during the hottest months of May through August. Bosque size appears to play a role in wildlife use. Cameras in bosques 10 acres in size or larger have documented the most use, whereas those in bosques less than 1 acre in size have documented the least use, especially by larger mammals. Other species, including birds and various small mammals like bats, also use these bosques, however, they are not effectively documented using trail cameras. More detailed results, as described in the Approach section, will follow once field work is completed in 2013.

**Benefits:**

Mesquite bosques are diverse desert habitats that are used by a wide variety of species. This study will allow us to identify factors influencing use of bosques by wildlife. Information obtained by this study will assist land managers when planning future development projects potentially affecting these unique habitats.

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[back to top](#)