



# What's in a Home Range?

article and photo by LOUIS A. HARVESON, BRI



HOME RANGES vary considerably by species, habitat/region, and gender. These two young bucks likely have large home ranges that will stabilize as they become more mature.

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Aside from dietary descriptions, one of the most common types of wildlife study is one that examines spatial ecology. Spatial ecology refers to a wide range of metrics that wildlife biologists measure to better understand how animals move within a landscape, how they utilize various habitat components, and how much space they need to survive.

Some of the common metrics we tabulate include movement rates, areas of activity, or home ranges. These metrics provide insight into how we might manage wildlife populations. Turkeys, for example, have many specific habitat needs, including roosting cover, water, areas for bugging (spring plus summer) and nesting cover. The juxtaposition (or spatial relationship) of those habitat requirements will allow you to better understand how and where to manage for turkeys on your ranch. If one of the essential habitats is missing from your ranch or are so spread out, you likely won't have large populations of wild turkeys.

One of the most common characteristics we measure is an animal's home range. In 1943, William H. Burt was credited with coining the term "home range." He defined home range as "the area traversed by an individual in its normal activities of food gathering, mating, and caring for young." Because of the nutritional needs of individual animals, there is a compelling trend that smaller animals have smaller home ranges, and larger animals have larger ranges.

Carnivores also have tremendous home ranges compared to similarly sized herbivores. Energy transfer, food chains, and even the Laws of Thermodynamics, help regulate how many carnivores can be sustained by set levels of prey populations. For example, in South Texas, we estimated that an average male mountain lion home range was 81,000 acres. Within that home range, we estimated that there were greater than 2,500 white-tailed deer, less than 1,600 javelinas, and greater than 2,000 feral hogs (not to mention all the small prey) to support the mountain lion!

Home ranges of various wildlife species studied in West Texas (unless otherwise noted) by the Borderlands Research Institute.

Wildlife	Area	Sex	Home Range (Acres)
Gambel's quail	Culberson County	M+F	272
Scaled quail	Pecos County	M+F	320-640
Montezuma quail	Davis Mtns	M+F	40-3,900
Ringtail	Elephant Mtn	M+F	120
Badgers	South Texas	M	1,700
Feral Hog	Davis Mtns	M	12,000
		F	8,400
Javelina	Davis Mtns	M+F	400
Desert mule deer	Apache Mtns	M	6,000-73,000
	Davis Mtns	M	14,000
		F	2,600
Desert bighorn sheep	Elephant Mtn	M	3,600
		F	2,600
Pronghorn (translocated)	Marfa Plateau	M	35,000
		F	28,000
Elk	Glass Mtns	M	62,000
		F	25,000
Mountain Lion	Bofecillo Mtns	M	86,000
		F	51,000
Black Bear	Chicos Mtns	M	24,000
		F	8,000
Jaguar	Pantal, South America	M+F	175,000

What home range statistics really provide the landowner is a glimpse of how much habitat is required for that individual (or population) to carve out a living.

We also see some patterns in spatial ecology when we look at different seasons. Male white-tailed deer, for example, may expand their home range tremendously or they may abandon it completely during the rut. On the other hand, females who have tremendous nutritional demands during gestation and lactation may concentrate their movements to highly productive habitats that also provide cover for their fawns.

Spatial measurements also vary greatly by habitats (or region). The high densities of white-tailed deer in the Hill Country versus the densities of whitetails in other regions of our state are good examples of this. High-density habitats provide more resources resulting in smaller home ranges.

Wildlife biologists have developed many clever ways to monitor wildlife and to determine their home range, including attaching radio transmitters or GPS devices and importing data into GIS mapping software. Researchers across Texas have com-

pared home ranges for about every species you can think of. To give you an example of how much space is required for various species, I have provided a table of home range sizes for small to large wildlife from West Texas.

What home range statistics really provide the landowner is a glimpse of how much habitat is required for that individual (or population) to carve out a living. The food, cover, and water requirements of wildlife are different from species to species. But as stewards of the land, the more we know about the habitat and home range requirements of a species, the better decisions we can make for their benefit. Unfortunately, this type of information is becoming even more important as the Texas landscape becomes more and more fragmented with highways, fences, and other man-made barriers. 🐾

