



A Tale of Two Mountain Lion Populations

Article and Photos by

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Whether you know it as puma, mountain lion, cougar, panther or painter, the big cat is our last true large carnivore in Texas. The days when Texas supported populations of wolves, jaguars and grizzly bears are gone and are unlikely to return. Texas still boasts viable populations of mountain lions.

Evidence suggests that mountain lions were ubiquitous in Texas, occurring in all 10 ecoregions. Today, their distribution has been reduced to the western and southern portions of the state. Their declining distribution is not unique to Texas. Throughout the United States, mountain lion populations were extirpated from the eastern seaboard through the Midwest and Great Plains states. However, within the last decade, mountain lions appear to be recovering and reclaiming some of their former distribution in the United States.

For Texas, mountain lions chiefly occur in the Trans-Pecos where stereotypical mountainous habitat is in abundance. Over the last 30 years, the majority of reported mountain lion sightings and mortalities have occurred in this region. It stands to reason that the majority of research that has been conducted on mountain lions has also occurred in the Trans-Pecos. Aside from far West Texas, the Brush Country of South Texas has also been known to generate a respectable number of sightings and mortalities, but our understanding of the extent of this population was lacking.

Partnering with Texas Parks and Wildlife Department (TPWD), the Caesar Kleberg Wildlife Research Institute (CKWRI), and Texas A&M University, we conducted two ecological studies on mountain lions. The first was coordinated by TPWD and occurred in Big Bend Ranch State Park in Presidio and Brewster counties, and the second was coordinated by CKWRI and occurred exclusively on private lands along the Nueces River in LaSalle, McMullen, Duval and Webb counties. Although independent, the two studies had a



MOUNTAIN LIONS were captured using trained hounds or leg-hold snares. This adult male, temporarily detained by a snare, weighed in at a healthy 123 pounds.

common goal of furthering our knowledge about mountain lion population dynamics. Below, we compare some of the findings from those studies.

In both studies, mountain lions were captured using trained hounds and leg-hold snares. Upon capture, mountain lions were sedated; outfitted with radio collars, and sampled for age, gender and tissue. Radioed mountain lions were monitored using standard aerial and ground telemetry techniques. Using our radioed sample, we were able to estimate population structure, density, reproductive output and survival.

Between the two studies, we captured and monitored 40 mountain lions (19 in South Texas, 21 in West Texas). Because of low sample size, annual sex ratios were highly variable ranging from 0.5-2.5 males to 1 female. Both studies had a high age class, with only a handful of sub-adult mountain lions being captured or



recorded on the study sites. Sex ratios were more typical of other mountain lion studies in West Texas; whereas, we recorded highly skewed ratios in South Texas. Specifically, we found a disproportionate number of males compared to females in our South Texas study (likely a result of high mortality of the female cohort).

Densities were also low in both of our Texas study sites, compared to other density estimates across the western states. Mountain lion density (mountain lion/100 square miles) in West Texas averaged 1.1 mountain lions/100 square miles and only 0.69 mountain lions/100 square miles in South Texas. Although mountain lion densities vary considerably across habitats in North America, these density estimates were among some of the lowest reported by other researchers.

During the course of the study, researchers documented 13 different litters in each study site. Litter sizes averaged 1.54 and 1.77 cubs in South Texas and West Texas, respectively. Because many cubs were not found until they were close to 6 months old, the average litter sizes noted above are inherently low of true litter size. Throughout North America, most studies have found litters to average two to three kittens, with some reports of up to five. Birth interval (the time elapsed between consecutive litters born by the same female) was exceptionally low for both studies. In the Rocky Mountain States, most female mountain lions have a birth interval ranging from 18-36 months. This long birth interval allows the mother mountain lion to adequately train her offspring to hunt large prey. In Texas, birth intervals were recorded at 12 months for South Texas and 18 months for West Texas. We believe the short birth interval (e.g., South Texas) is a response to the high and varied prey base that is available to them. In both studies, we found that small prey (rabbits, rodents, etc.) made up a significant amount of the mountain lion diets, as opposed to large prey (deer, javelina, etc.). Further, the prey base in South Texas was tremendous with high densities of



BY INTENSIVELY monitoring radio-collared females, researchers were able to document reproductive rates, litter sizes and birth intervals of mountain lions in South and West Texas.



GOOD SCIENCE and landowner participation are critical elements to the future of mountain lion conservation in Texas.

white-tailed deer, javelinas and feral hogs. These factors most likely allow for early independence and dispersal of mountain lion offspring.

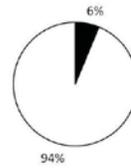
One of the more interesting findings of our studies was regarding the survival and mortality factors of mountain lions. Specifically, the two study sites had very distinct types of pressures on them. In South Texas, the majority of mortalities (five of the nine mortalities recorded) were attributed to deer hunters that harvested the mountain lion opportunistically. In West Texas, the majority of mortalities came in the form of trapping where 15 of the 16 mortalities recorded were from trapping.

Annual survival rates were estimated at 75 percent for South Texas and 70 percent for West Texas. Because of the influx of hunters in South Texas and more pleasant temperatures in West Texas during the months of September thru February, we evaluated the seasonality of mountain lion mortalities. We separated mortalities into two, six-month periods – high harvest pressure (September-February) and low harvest pressure (March-August) – and noted marked differences. During low har-

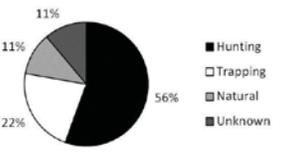


THE MYSTIQUE of the mountain lion can largely be attributed to its elusive and solitary behavior.

West Texas



South Texas



vest pressure, seasonal survival rates were high with 96 percent in South Texas and 93 percent in West Texas. With high harvest pressure, seasonal survival rates fell to 78 percent for South Texas and 75 percent for West Texas.

The aforementioned studies have provided some of the most detailed information on the life history and population dynamics of mountain lions that we have collected in Texas, to date. The most interesting aspect of these studies is the noted difference between the two populations of mountain lions. In fact, they differ in habitats, diets, home range sizes, population pressures and based on other findings, they are also genetically separated.

Mountain lions are certainly one of the most charismatic wildlife species in Texas. Their ability to kill prey five times their weight, their solitary nature, and their elusive behavior makes them especially intriguing. Although these two studies have provided insight to many facets of their ecology, future research endeavors are warranted to further our knowledge and our ability to conserve Texas' most elusive large carnivore.

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