The Status of Mountain Lions in Texas

William B. Russ, *Texas Parks and Wildlife Department, Box 112, Sanderson, TX 79848*

Abstract: The mountain lion (*Felis concolor*) is legally classified as a nongame mammal in Texas within the broad scope of wildlife regulatory authority delegated to the Texas Parks and Wildlife Department. Lions are not subject to any specific protective regulations; however, mountain lions are recognized as an important part of the native fauna of Texas. The Department is currently collecting mortality and sighting data by ecological region to determine current distribution and population status of Texas lions. Sighting data are reported by county with the date, number and estimated age of lions, and location. Mortality data includes the above information plus weight, length, and reason for death. Over 1,500 mortalities and 1,400 sightings were reported from 1983 to 1994. Sightings were recorded in all ten ecological regions and mortalities in all ecological regions except the Blackland Prairies and Post Oak Savannah. Most sightings and mortalities have occurred in the Trans-Pecos Ecological Region. Texas mountain lion management addresses a wide spectrum of issues including their impact on domestic livestock, wildlife, and encounters with human beings; while filling an ecological role as one of the largest predators in Texas and providing sport hunting opportunities.

Proc. Annu. Conf. Southeast Assoc. Fish and Wildl. Agencies 49:545–551

The mountain lion is legally classified as a nongame mammal in Texas within the broad scope of wildlife regulatory authority delegated to the Texas Parks and Wildlife Department by state statutes. This status has been unchanged since 1975.

The Lone Star Chapter of the Sierra Club filed a petition in December 1991 to place the mountain lion on the list of threatened nongame wildlife. The Department, in response to this request, sponsored and conducted a Mountain Lion Roundtable at Del Rio, Texas, in April 1992 to assess population status and public interest. A set of goals was established for future lion management. The Texas Parks and Wildlife Commission then formally considered the Sierra Club's request at a public hearing in May 1992, but took no action because a change of status was not supported by biological information.

The history of lion management in Texas primarily has been one of large scale population control by livestock producers. Ranchers have attempted to

eradicate mountain lions from livestock production areas through both organized government control programs and their own opportunistic efforts. However, since about 1970, land use patterns have changed markedly in areas where lion populations seem to be highest. Large tracts have been purchased by individuals and governmental agencies for recreational use. Control efforts have been reduced or have ceased altogether on many of these tracts. However, livestock producers continue intensive removal activities when a lion moves into livestock production areas.

The Department is currently collecting mortality and sighting data by ecological region to determine the current distribution and population status of Texas lions. Data compiled by Mabie (1983) documented lion sightings for the state into the early 1980s. Based on records of department personnel and other sources, mountain lions are widely distributed. Most sightings occurred in the Trans-Pecos Region with increasing reports in the South Texas Plains and the Edwards Plateau.

Methods

Data on lion mortality and sighting reports were based on several studies in Texas. Gould (1969) divided Texas into 10 vegetational regions for mountain lions based on topographic, climatic, and edaphic factors, as well as plant community similarities (Fig. 1). Each mortality or sighting was plotted on a Texas county map. Several counties extend into 2 or more ecological regions; therefore, accurate county locations are critical in locating the sighting or mortality in the correct ecological region.

A statewide survey of mountain lion mortalities and sightings was conducted by Wildlife and Law Enforcement Division personnel from 1 January, 1983–31 May, 1989 and compiled by Russ (1989). Mortality and sighting reports by ecological regions for the period June 1989–December 1994 were combined with Russ' (1995) data to obtain a 12-year (1983–1994) summary (Tables 1, 2). Many reports were received from the U.S. Department of Agriculture Animal Damage Control personnel, landowners, and the general public in addition to Texas Parks and Wildlife Department (TPWD) personnel. Mortalities were verified and sighting reports were either validated by field visit or corroborated through contact with observers before they were accepted as valid by TPWD. Information was collected on time of day the lion was sighted, descriptions of animal, distance, habitat type, activity, and other questions related to the observer's familiarity with wildlife.

Results and Discussion

A total of 1,563 mountain lion mortalities was recorded for the 12-year period from 1983 to 1994 in 60 of 181 Texas counties and lion mortalities exceeded 100 animals each year since 1989. Reported mortalities were about 2.5

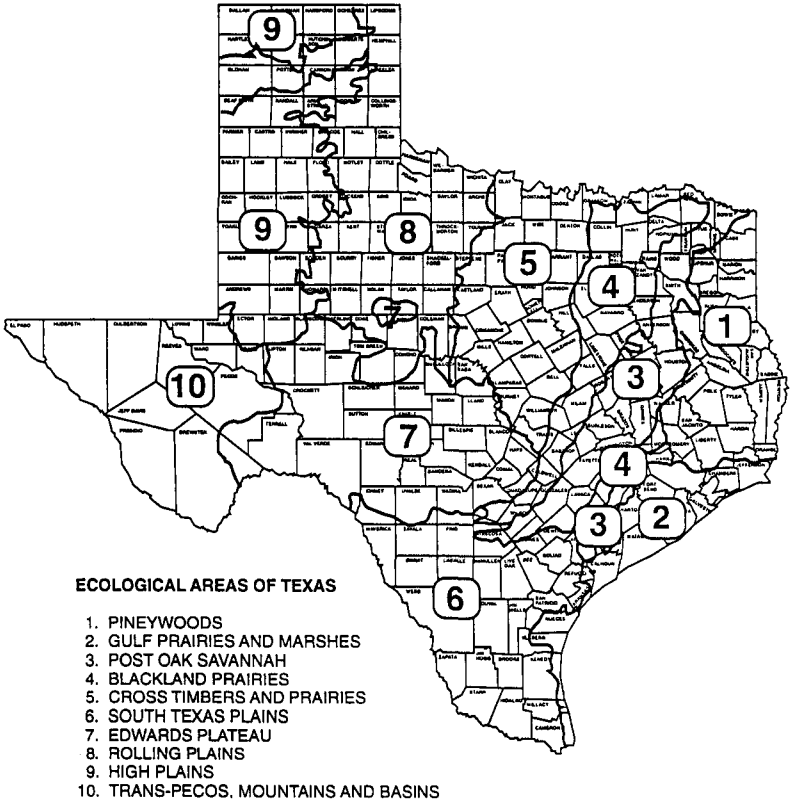

Figure 1. The ecological areas of Texas based on Gould's 1969 vegetational areas.

times more numerous and more widely distributed in 1994 than in 1983. The Trans-Pecos Ecological Region ranked first in mortalities with 73% of total mortalities. The Edwards Plateau Ecological Region was second, with 18%, and the South Texas Plains Ecological Region was third, with 8% of the total. Less than 2% of the total mortalities were reported in the remaining ecological regions except for the Post Oak Savannah and Blackland Prairies ecological regions where no mortalities were reported. This is first confirmed lion mortalities by TPWD personnel reported for the Pineywoods Ecological Region.

Mountain lions were killed in only 3 ecological regions in 1994 (Table 3). Private hunters, usually paid by landowners, took the largest numbers of lions, 34% of the total, with 75% of these reported from the Trans-Pecos Ecological Region and 21% from the Edwards Plateau. Animal Damage Control personnel reported 28% of the total mortalities with almost equal numbers from the Trans-Pecos and Edwards Plateau. Lions were also killed by landowners, sport hunters, TPWD personnel, accidents, and one lion was killed by another lion.

A total of 1,408 mountain lion sightings was recorded for 1983–1994 in 181

Table 1. Texas mountain lion mortalities by ecological region, 1983–1994.

Ecological region	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Total
Pineywoods	0	0	0	0	0	0	0	1	2	0	0	0	3
Gulf Prairies and Marshes	0	0	0	0	1	0	0	0	1	0	0	0	2
Post Oak Savannah	0	0	0	0	0	0	0	0	0	0	0	0	0
Blackland Prairies	0	0	0	0	0	0	0	0	0	0	0	0	0
Cross Timbers and Prairies	1	1	0	1	1	0	2	0	0	1	1	0	8
South Texas Plains	4	9	13	7	9	18	6	2	2	15	20	13	118
Edwards Plateau	3	7	7	20	7	21	27	21	38	43	47	39	280
Rolling Plains	1	0	1	0	1	0	0	0	0	1	2	0	6
High Plains	0	1	0	0	1	0	0	0	0	0	0	0	2
Trans-Pecos Mountains and Basins	56	71	93	100	111	131	113	82	95	74	112	106	1144
Total	65	89	114	128	131	170	148	106	138	134	182	158	1563

Table 2. Texas mountain lion sightings by ecological region, 1983–1994.

Ecological region	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Total
Pineywoods	0	0	0	0	0	0	0	1	1	4	5	24	35
Gulf Prairies and Marshes	1	0	0	3	0	1	2	0	1	6	4	19	37
Post Oak Savannah	1	1	0	2	0	3	1	1	2	17	14	23	65
Blackland Prairies	0	1	1	1	0	1	0	0	1	0	0	7	12
Cross Timbers and Prairies	0	0	0	3	6	6	1	8	6	29	22	42	123
South Texas Plains	0	9	11	15	17	30	19	4	23	52	55	75	310
Edwards Plateau	2	2	12	2	6	10	10	23	34	75	54	81	311
Rolling Plains	1	0	0	0	1	1	2	5	4	9	9	20	52
High Plains	0	0	0	0	0	0	0	0	0	1	3	2	6
Trans-Pecos Mountains and Basins	10	23	17	26	25	28	35	28	53	73	69	70	457
Total	15	36	41	52	55	80	70	70	125	266	235	363	1408

Table 3. Cause and number of 1994 Texas mountain lion mortalities by ecological region.

Mortality cause	*N* Mortalities by ecological region			
	Trans-Pecos Mts. and Basins	Edwards Plateau	South Texas Plains	Total
Private hunter	40	11	2	53
Landowner	24	2	3	29
Animal damage control (Gov't.)	23	21	0	44
Sport hunter	9	2	6	17
Texas Parks and Wildl. Dep.	6	0	0	6
Accident	3	3	2	8
Predation by lion	1	0	0	1
Totals	106	39	13	158

of 254 Texas counties. The Trans-Pecos Ecological Region ranked first in total sightings with 32% of the total. The Edwards Plateau and South Texas Plains ecological regions were second and third with each having 22% of the total sightings. The Cross Timbers and Prairies had 9% of the total, with 5% for the Post Oak Savannah and 4% for the Rolling Plains. The Gulf Prairies and Marshes had 3%. This survey recorded the first confirmed lion sightings by TPWD personnel for the Pineywoods (35 sightings) and High Plains (6 sightings). Verified mountain lion sightings were recorded in all 10 ecological regions of Texas.

East Texas, comprised primarily of the Pineywoods and Post Oak Savannah ecological regions, has become a focal point concerning the status of Texas lions. The first Pineywoods sighting in modern times was recorded in 1990 and had increased to 24 sightings in 14 counties by 1994. Three lion mortalities were recorded in this region since 1990. The Post Oak Savannah had single sightings recorded in 1983 and in 1984. Sightings had increased to 23 in 15 counties in Post Oak Savannah by 1994. Juvenile lion sightings also increased dramatically in the Pineywoods and Post Oak Savannah regions, with 7 sightings between 1992 and 1994. Mountain lions seem to be extending their range in the eastern regions of Texas.

Mountain lion mortalities in Texas from 1983 to 1994 is represented in Figure 2. Consistent years of lion mortalities indicate the distribution in Texas. Stable populations occur in the west, central, and southern portion of the state with the range extending eastward. As discussed above, mountain lion mortalities or sightings were recorded in all the ecological regions; however, data are not sufficient to make a reliable statewide population estimate. It should be noted that some lions seen or killed in the outlying part of the identified distribution in Texas may arise from animals which have escaped from captivity or been transported and released by private citizens. These factors must be considered in validating all reports.

Mountain lion damage has been confirmed in most of their range. Most

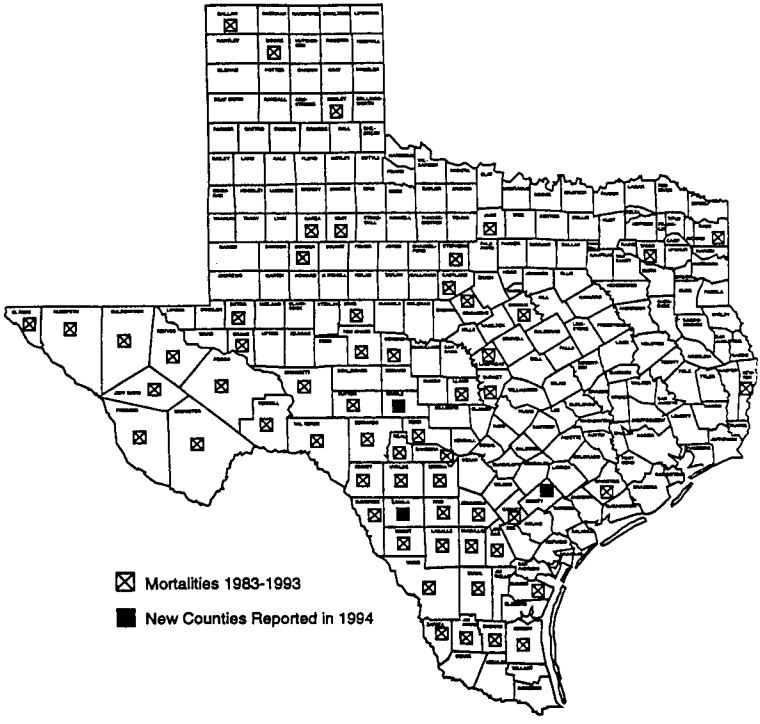

Figure 2. Texas mountain lion mortalities by county from 1983–1994.

predation losses involved livestock such as sheep, goats, and cattle, but domestic pets (dogs and cats) were also killed by lions. Their role as a major predator on large game animals is of special concern to landowners desiring the enhancement of wildlife populations. Lion predation on a recently reintroduced desert bighorn sheep population on the Black Gap Wildlife Management Area has been documented as the major source of mortality (M. Pittman, Texas Parks and Wild. Dep., pers. commun.) Seven out of 20 bighorn sheep were killed by lions in a 5-month period. This level of predation is an example of small populations prevented from increasing to sustainable numbers. Two documented attacks on human beings in Texas occurred in Big Bend National Park.

Mountain lions are a prized trophy when taken by sportsmen; 17 lions were harvested during 1994 in 3 ecological regions of Texas. Lions can also become a lifetime memory when observed in the wild by a wildlife enthusiast. Analyses should be developed to estimate the recreational value of mountain lions. Mountain lions also fulfill an ecological role as one of the largest predators in the state.

Texas has a widely distributed mountain lion population. Although Texas lion numbers appear stable, research on population levels, recruitment, survival, age structure, and reproduction rate is being collected in west and south Texas.

This information will be used to address the future management needs of this species.

Literature Cited

Gould, F. W. 1969. Texas plants—a checklist and ecological summary. Texas Agri. Exp. Sta. MP-585/Revised. 121pp.

Mabie, D. W. 1983. Feline status study. Annu. Perf. Rep., Fed. Aid Proj. W-103-R-13, Texas Parks and Wildl. Dep. 5pp.

Russ, W. B. 1989. Mountain lion status survey. Final Rep., Fed. Aid Proj. W-103-R-19, Texas Parks and Wildl. Dep. 11pp.

———. 1995. Mountain lion status survey. Perf. Rep., Fed. Aid Proj. W-125-R-6, Texas Parks and Wildl. Dep. 14pp.