

Mammal
Holdermann
2003

PERFORMANCE REPORT

As Required By

STATE WILDLIFE GRANTS PROGRAM

TEXAS

Federal Aid Grant No. T-1

WILDLIFE DIVERSITY SCIENCE

Mountain Lion Status

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PROPERTY OF
Science and Resources Management
Big Bend National Park, Texas

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PERFORMANCE REPORT

State: Texas Grant Number: T-1
Grant Title: Wildlife Diversity Science
Program: Wildlife Diversity
Project Title: Mountain Lion Status in Texas
Period Covered: September 1, 2002 to August 31, 2003

I. Objective:

Determine the current distribution and population status of mountain lions in Texas and evaluate the need for management actions to meet biological requirements, recreational interests, and depredation control.

II. Background:

The mountain lion is legally classified as a non-game mammal in Texas within the broad scope of wildlife regulatory authority delegated to the Texas Parks and Wildlife Department (TPWD) by state statutes. This status has remained unchanged since 1975.

A brief history of mountain lion management in Texas was provided by Sullins (2002).

III. Procedures:

Mountain lion sighting data were obtained primarily through voluntary public reporting to the TPWD, Wildlife Division, Wildlife Diversity Branch (Austin), and to a lesser extent, to division regional offices. Sighting information from the public was most frequently reported to the TPWD telephonically, but also in person. TPWD personnel receiving the information minimally recorded the date, time, county, specific location (i.e., town, highway, drainage, etc.), and duration of the sighting, along with a physical description of the animal(s) or sign, and a description of the animal's activity. Based on the details of this information and any physical evidence provided, the interviewer judged whether the observation was valid or invalid. TPWD personnel sometimes visited the reporter in person or the sighting location in an attempt to clarify details of the report or to obtain physical evidence.

The U.S. Department of Agriculture (USDA), Animal and Plant Inspection Services, Wildlife Services (WS), was the principal source for mountain lion mortality data. These data were supplemented by harvest data from TPWD wildlife management areas and trappers. Data from lions killed for control purposes generally included date, county, age

class and sex, weight, total length, and method of take of the harvested lion. The age class assigned to a mountain lion carcass was estimated based on the criteria provided by Logan and Sweanor (2001).

Mountain lion sighting and mortality reports for the September 2002-August 2003 reporting segment were forwarded to the TPWD Region I, District 1 Office, Alpine, TX. Reports were reviewed for completeness and accuracy and then entered into an electronic database system for data storage and analyses. Sighting and mortality reports were associated with the Texas ecoregions described by Gould (1969). The current report is based on data from this system.

IV. Findings:

Sightings:

A total of 60 valid mountain lion sightings were reported from 9 ecoregions and 42 counties during the report segment (Table 1). Numerical rank of valid sightings by ecoregion was: Cross Timbers and Prairies (n=14) > Edwards Plateau (n=12) > Pineywoods (n=10) > Blackland Prairies (n=7) > Post Oak Savannah (n=6) > Trans-Pecos (n=5) > South Texas Plains (n=4) > Gulf Prairies and Marshes (n=1) = Rolling Prairies (n=1). Mountain lions were reported in every month of the year; however, slightly over half (57%) occurred during the period October 1 through December 31, 2002 in coincidence with deer hunting seasons.

Mortalities:

A total of 53 mountain lion mortalities were reported statewide (Table 2). A vast majority of these (n=49, 92%) were reported from the Trans-Pecos ecoregion and the balance from the Edwards Plateau (n=3) and South Texas Plains (n=1). Mortalities of known age and sex included: adult males (n=11); subadult males (n=4); adult females (n=18); and subadult females (n=9). Fifty-one mortalities (98%) represented mountain lions killed for control purposes to protect domestic livestock or other wildlife and only one mortality was reported taken by a sport hunter.

On May 13, 2003, an old-aged female lion attacked a hiker in Big Bend National Park, Brewster County, and was euthanized by National Park Service (NPS) officials later the same day (R. Skiles, NPS, pers. comm.). Injuries to the hiker were minor.

V. Analysis:

Few mountain lion sightings were reported from the Tran-Pecos ecoregion, where 51 lions were killed for control purposes during the reporting segment, and where lions are thought to be relatively common. Conversely, the majority of sightings came from the central and eastern portions of the Edwards Plateau, Cross Timbers and Prairies, Blackland Prairies, Post Oak Savannah, and Pineywoods ecoregions, where mountain lions are thought to be in the early stages of recolonization and relatively scarce. These

patterns of reporting suggest that the public is more inclined to report seeing a mountain lion where the species is rare and the experience is considered a novelty and less likely to report a sighting where the species is an established component of the region's wild fauna. Other, less obvious factors, may have contributed to this reporting bias of mountain lion sightings in Texas.

The current system of reporting sightings and mortalities is adequate to determine the general distribution of mountain lions, but it provides no measure of the species' population status. A true picture of the mountain lion's status could only be determined from, direct or indirect, information about population abundance, reproduction, and mortality, and tracking these parameters through time. In 2003, the TPWD will sponsor a study entitled: "Population size, population structure, and habitat factors of mountain lions in Texas". This research project will attempt to answer some of the fundamental questions about mountain lion population parameters through an innovative, genetic approach.

VI. Recommendations:

1. Coordination between the mountain lion project leader and the designated points of contacts within the 4 TPWD regions and the USDA, WS, field offices should be renewed and improved. This coordination should emphasize the need to standardize reporting throughout the state. Additionally, the project leader, who manages these data, should provide the regional offices and Wildlife Services with quarterly data summaries of reported information. This latter practice could provide valuable feedback to regional offices and could serve to strengthen the overall reporting process.
2. The objective for the mountain lion federal aid report should be amended to read: "To determine the current distribution of mountain lion populations in Texas and evaluate the need for management actions to meet biological requirements, recreational interests, and depredation control". The objective to determine the "population status of mountain lions" should be omitted, since the current reporting system provides no measure of the population parameters needed to determine population status. The research project mentioned above may provide an indirect mechanism to measure some of these parameters.
3. All past and future mountain lion sighting and mortality data should be entered and stored in a TPWD electronic database specifically designed for this purpose. Such a database would serve as the primary source regarding mountain lion sightings and mortalities in Texas. It would allow critical review and analyzes of this information and would greatly facilitate retrieval and use of these data for a wide variety of scientific and management purposes.
4. Once the TPWD electronic database is populated with all available past (back to 1980) and current data, these data should be reexamined for changes in the spatial and temporal patterns of mountain lion distributions in Texas.

VII. Prepared by: David A. Holdermann Approved by: _____
Program Specialist V Federal Aid Coordinator

Date: _____ John Herron
Program Director, Wildlife
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Literature Cited

- Gould, F.W. 1969. Texas plants: a checklist and ecological summary. Texas Agricult. Exp. Station. MP-585/revised. Texas A&M, College Station.
- Logan, K.A. and L. L. Sweanor. 2001. Desert puma: evolutionary ecology and conservation of an enduring carnivore. Island Press, Washington.
- Sullins, M.R. 2002. Mountain lion status survey. Final Rep., Fed. Aid Proj. No. R-4-R, Texas Parks and Wildlife Dept., Austin.

Table 1. Mountain lion sightings reported in Texas by county, TPWD, Wildlife Division, administrative region, and ecoregion, September 1, 2002 – August 31, 2003.

Date	County	Region	Eco-region ^a	Valid	Comment
9/11/2002	Limestone	3	BP	yes	One foot print seen in sand; good description
10/14/2002	Austin	4	BP	yes	Seen at close range as it crossed a ranch road
11/16/2002	Waller	4	BP	yes	Jumped at close range; watched for 10 min.; good description
12/8/2002	Hill	2	BP	yes	Lion seen by hunter at close range; good description
3/27/2003	Limestone	3	BP	yes	Seen running across highway; observer a wildlife biologist
7/24/2003	Rains	3	BP	yes	Lion observed along pond edge with binocular; tracks also seen
9/0/2002	Fannin	3	BP	yes	Lion walked through yard at rural residence; killed chicken; good description
10/13/2002	Grayson	3	BP	no	Vague description; observer unclear about what was seen
2/9/2003	Colorado	4	BP	no	Observer 10 years old; observation incomplete; color of lion was black
2/11/2003	Navarro	3	BP	no	Seen at close range but description not convincing
5/6/2003	Hunt	3	BP	no	Claimed coyotes treed lion; observer heard but did not see lion
9/15/2002	Fannin	3	BP	no	Observed from distance of several hundred yards; appeared black
11/10/2002	Grayson	3	CTP	yes	Lion photographed in open area; copy of photo in TPWD files at Alpine
12/11/2002	Stephens	2	CTP	yes	Adult lion photographed at deer feeder; copy of photo in TPWD file/Alpine
10/14/2002	Denton	2	CTP	yes	Tracks seen in mud
10/18/2002	Lampasas	2	CTP	yes	Lion description unclear; a classic kill of emu (covered w/ brush) at site
10/30/2002	Bell	2	CTP	yes	Seen on field edge with binocs
10/30/2002	Cooke	2	CTP	yes	Lion crossed highway in front of vehicle; good description
11/2/2002	Grayson	3	CTP	yes	Lion photographed along shore of Lake Texoma
11/4/2002	Lampasas	2	CTP	yes	Lion video-taped by hunter
11/19/2002	McLennan	2	CTP	yes	Lion(s) seen several times
11/30/2002	Stephens	2	CTP	yes	Lion crossed in front of vehicle on ranch road; good description; seen twice
1/5/2003	Eastland	2	CTP	yes	Lion crossed open area in front of hunter; good description
2/3/2003	Bell	2	CTP	yes	Killed a total of 15 domestic sheep; kill descriptions and tracks fit a lion
5/18/2003	Bosque	2	CTP	yes	Lion seen at close range; description fairly good
11/0/2002	Eastland	2	CTP	yes	Lion crossed open power line r-o-w; track seen also; very good description
10/12/2002	Comanche	2	CTP	no	Vague report
10/25/2002	McLennan	2	CTP	no	Report based on tracks near horse carcass; description poor
2/7/2003	Williamson	2	CTP	no	Seen on golf course near metro Austin, TX
2/16/2003	Williamson	2	CTP	no	Black lion seen stalking feral hogs
5/3/2003	Travis	2	CTP	no	Animal of deer size with a long mane
7/13/2003	Bell	2	CTP	no	Poorly described
10/1/2002	Sutton	2	EP	yes	Seen at close range while hunting
11/3/2002	Val Verde	2	EP	yes	Lion seen through binoc at distance of about 200 yds.; good description
11/4/2002	Val Verde	2	EP	yes	Lion observed by deer hunter at distance of about 30 yds.; excellent description
11/5/2002	Blanco	2	EP	yes	Observer saw lion in open habitat; good description
12/21/2002	Reagan	2	EP	yes	Lion seen at 3-400 yds. distance by hunter; excellent description
1/17/2003	Kimble	2	EP	yes	Lion seen at close range (30 yds.) by deer hunter
1/18/2003	Medina	2	EP	yes	Lion crossed in front of hunter; hunter shoot at but missed
2/3/2003	Bexar	4	EP	yes	Tracks of 2 size classes seen in mud
4/1/2003	Real	2	EP	yes	Lion seen briefly from a blind; in pursuit of turkeys
5/25/2003	Uvalde	4	EP	yes	Seen through night vision glasses; description good

Date	County	Region	Eco-region ^a	Valid	Comment
6/5/2003	Medina	4	EP	yes	Good description of lion at close range
7/26/2003	Edwards	2	EP	yes	Adult with a cub; adult shot but not recovered
9/16/2002	Bexar	4	EP	no	Crossed highway in front of vehicle
9/24/2002	Comal	2	EP	no	Perched in tree; seen by vehicle headlights early in the morning
11/17/2002	Val Verde	2	EP	no	Animal seen by spotlight; poor description
2/6/2003	Gillespie	2	EP	no	Seen in morning in poor light; unsure of size and color
5/7/2003	Hays	2	EP	no	Animal was in tree and only partially seen
1/16/2003	Harris	4	GPM	yes	Observer video-taped lion passing through yard
1/20/2003	Harris	4	GPM	no	Ran across road in front of jogger
2/20/2003	Brazoria	4	GPM	no	No animal seen; cast of track being sent to J. Young
11/18/2002	Crosby	1	HP	no	Hunter called in lion rattling antlers for deer; description poor
9/3/2002	Grimes	3	POS	yes	Observed by hunter
11/2/2002	Fayette	4	POS	yes	Seen multiple times; description good
11/12/2002	Robertson	3	POS	yes	Lion video-taped by hunter; excellent description
12/1/2002	Bastrop	4	POS	yes	Lion seen at distance of 80 yds; calf kill nearby attributed to lion
6/15/2003	Colorado	4	POS	yes	Lion seen crossing road in front of observer who was in vehicle
7/7/2003	Henderson	3	POS	yes	Lion seen at a distance of approx. 90 ft.; excellent discription
10/1/2002	Burleson	3	POS	no	Seen briefly in open field; unsure of what was seen
10/14/2002	Morris	3	POS	no	Walking away from old barn
11/8/2002	Bastrop	4	POS	no	Photos of track look dog-like
9/26/2002	Newton	3	PW	yes	Seen by hunter in cleared electrical transmission line corridor
10/11/2002	Montgomery	3	PW	yes	Good description
10/15/2002	Nacogdoches	3	PW	yes	Lion crossed in front of vehicle (almost hit); good description
11/3/2002	Newton	3	PW	yes	Lion seen at deer gut pile; good description
11/10/2002	Newton	3	PW	yes	Lion observed by hunter in clearing; tracks examined; good description
11/15/2002	Harrison	3	PW	yes	Lion seen by hunter from tree stand as it crossed gas pipeline r-o-w
11/25/2002	Shelby	3	PW	yes	Lion seen crossing power line; good description
4/7/2003	Montgomery	3	PW	yes	Good description of lion
6/10/2003	Montgomery	3	PW	yes	Seen 50-60 yards away in cleared electric line corridor
8/21/2003	Newton	3	PW	yes	Game warden investigated sheep kills (2) with lion-like bite and claw marks
9/27/2002	Trinity	3	PW	no	Vague description
10/29/2002	Montgomery	3	PW	no	Crossed open area near house, Magnolia, TX
11/2/2002	Newton	3	PW	no	Very briefly seen; poor description
1/10/2003	Rusk	3	PW	no	Lion described as black and eating from dog bowl at house; dog mauled
2/15/2003	Orange	4	PW	no	Evidence insufficient to confirm identification
5/27/2003	Upshur	3	PW	no	Description unclear
6/24/2003	Jasper	3	PW	no	Large cat-like tracks seen in the Sabine Nat. Forest near deer carcass
10/14/2002	Childress	1	RP	yes	Seen by hunter at close range; good description
10/8/2002	Coleman	2	RP	no	Poor description
11/19/2002	Archer	2	RP	no	Seen at a distance of 400 yds.; description questionable
11/27/2002	Knox	1	RP	no	Lion crossed road in front of vehicle; poor description
5/19/2003	Motley	1	RP	no	Reported depredation; no description of cat
11/9/2002	Starr	4	STP	yes	Lion seen from hunter's blind at distance of about 60 yds.
12/14/2002	McMullen	4	STP	yes	Lion observed by deer hunter at distance of about 200 yds
12/15/2002	Zavala	4	STP	yes	Lion seen by hunter in open pasture and from tree stand; good description

Date	County	Region	Eco-region ^a	Valid	Comment
1/4/2003	McMullen	4	STP	yes	Lion observed by hunter; lion sat down and long tail seen
5/25/2003	LaSalle	4	STP	no	Animal only partially seen; with black hair
11/24/2002	Pecos	1	TP	yes	Black-colored lion observed by TPWD biologist with spotlight; color?
12/29/2002	Terrell	1	TP	yes	Lion observed at close range by hunter in blind
2/4/2003	Pecos	1	TP	yes	Lion broke free from leghold trap
4/17/2003	Pecos	1	TP	yes	Tracks seen by trapper near Lemon Flats
5/15/2003	Pecos	1	TP	yes	Sign observed and traps

^a BP = Blackland Prairie, CTP = Cross Timbers and Prairies, EP = Edwards Plateau, GPM = Gulf Prairies and Marshes, HP = High Plains, PW = Pineywoods, POS = Post Oak Savannah, RP = Rolling Plains, STP = South Texas Plains, TP = Trans-Pecos

Table 2. Mountain lion mortalities reported in Texas by county, TPWD, Wildlife Division, administrative region, and ecoregion, September 1, 2002 – August 31, 2003.

Date	County	Region	Ecoregion ^a	Age class	Sex	Weight ^b	Total length ^c	Harvest method
10/2/2002	Brewster	1	TP	adult	male	110		unknown
10/28/2002	Brewster	1	TP	adult	female	120	84	trap
11/2/2002	Brewster	1	TP	adult	female	70		trap
11/11/2002	Pecos	1	TP	adult	female	90		trap
11/24/2002	Brewster	1	TP	cub	male	17	24	shot
11/24/2002	Brewster	1	TP	cub	female	17	24	trap
11/24/2002	Brewster	1	TP	adult	female	73	60.66	trap
11/25/2002	Pecos	1	TP	adult	female	78		trap
12/9/2002	Brewster	1	TP	subadult	female	62		unknown
12/12/2002	Pecos	1	TP	subadult	female	50	68	trap
12/12/2002	Brewster	1	TP	adult	female	88	72	trap
12/20/2002	Pecos	1	TP	adult	female	86	72.33	trap
12/20/2002	Brewster	1	TP	adult	male	120	72.33	trap
12/24/2002	Presidio	1	TP	adult	female	100	84	trap
1/16/2003	Brewster	1	TP	adult	male	109	81	trap
1/11/2003	Pecos	1	TP	adult	female	87		trap
1/21/2003	Brewster	1	TP	unknown	female	60		unknown
1/28/2003	Culberson	1	TP	adult	female	60		trap
1/30/2003	Presidio	1	TP	adult	unknown	130		trap
1/31/2003	Brewster	1	TP	subadult	female	50		shot
2/19/2003	Culberson	1	TP	subadult	male	45	57.48	trap
2/28/2003	Brewster	1	TP	adult	female	80	78	trap
3/-/2003	Presidio	1	TP	adult	unknown	130		trap
3/10/2003	Brewster	1	TP	cub	male	20	36	trap
3/14/2003	Brewster	1	TP	cub	male	25	36	trap
3/28/2003	Brewster	1	TP	adult	female	85	72.5	trap
3/26/2003	Pecos	1	TP	adult	male	124	72.83	trap
4/1/2003	Brewster	1	TP	adult	unknown	115		trap

Date	County	Region	Ecoregion ^a	Age class	Sex	Weight ^b	Total length ^c	Harvest method
4/1/2003	Brewster	1	TP	adult	unknown	80		trap
4/7/2003	Presidio	1	TP	adult	male	125		trap
4/15/2003	Presidio	1	TP	adult	male	130		trap
4/16/2003	Presidio	1	TP	subadult	female	65		trap
4/21/2003	Brewster	1	TP	adult	female	80	84	trap
5/5/2003	Brewster	1	TP	adult	male	128		trap
5/5/2003	Presidio	1	TP	adult	male			trap
5/12/2003	Presidio	1	TP	adult	male			trap
5/12/2003	Brewster	1	TP	adult	male	60		trap
5/13/2003	Brewster	1	TP	adult	female			shot
5/20/2003	Terrell	1	TP	subadult	female			trap
5/20/2003	Terrell	1	TP	unknown	female			trap
5/21/2003	Brewster	1	TP	unknown	male	85		unknown
5/22/2003	Pecos	1	TP	adult	female	80		trap
6/2/2003	Brewster	1	TP	adult	female	100	72.66	trap
6/2/2003	Brewster	1	TP	subadult	female	50	60.5	trap
6/5/2003	Presidio	1	TP	adult	female			trap
7/9/2003	Pecos	1	TP	adult	male			trap
7/9/2003	Terrell	1	TP	adult	unknown			trap
7/24/2003	Brewster	1	TP	adult	male			trap
7/30/2003	Pecos	1	TP	subadult	unknown			snare
4/3/2003	Val Verde	2	EP	adult	female	90		trap
7/28/2003	Val Verde	2	EP	subadult	female	71		snare
2/3/2003	Uvalde	4	EP	unknown	unknown			shot
4/19/2003	Kinney	4	STP	subadult	female	55-60	48	trap

^a BP = EP = Edwards Plateau, STP = South Texas Plains, TP = Trans-Pecos

^b Weight = pounds

^c Length = inches