It's time to manage mountain lions in Texas

L. Mark Elbroch, Panthera, 8 West 40th Street, 18th Floor, New York, NY 10018, USA

Patricia M. Harveson, Sul Ross State University, PO Box C-16, Alpine, TX 79832, USA

Correspondence: L. Mark Elbroch, Panthera, 8 West 40th Street, 18th Floor, New York, NY 10018, USA. Email: melbroch@panthera.org

ABSTRACT Mountain lions, also called cougars, pumas and Florida panthers, are a wide-ranging, large felid in the western hemisphere. Every U.S. state in which there are breeding populations of mountain lions offer the species some level of protection, except Texas. Here, we summarize historical research on mountain lions in Texas, human perceptions about the species, and historical discussions within Texas Parks and Wildlife Department (TPWD) about mountain lion management obtained via the Public Information Act (Texas Government Code, Ch. 552). To date, genetic research supports two distinct mountain lion populations, one west of the Pecos River and another in South Texas, which evidence suggests is suffering from isolation and is in immediate risk of extinction. Anthropogenic mortality rates in Texas are among the highest in the U.S., and well beyond the suggested harvest rates recommended to maintain stable mountain lion populations. Similarly, adult female mountain lion survival in Texas suggests that populations were likely declining when the studies were active. Internally, TPWD has repeatedly discussed initiating a mountain lion management policy, the benefits of requiring mandatory reporting for all mountain lion mortalities, as well as the unreliable nature of sightings data, which they have historically used as a metric for abundance. Public support, including among rural communities, is good for both mountain lions and TPWD. Ultimately, we present evidence to suggest that it is time to actively manage mountain lions in Texas and for the TPWD to create

a management plan for the species. A management plan is both necessary to fulfill state mandates for the protection of nongame species, as well as to build a science-based conservation strategy for the species.

KEYWORDS harvest, history, mortality, public opinion, *Puma concolor*, stakeholders, Texas, wildlife management

INTRODUCTION

Cultural values continue to evolve in the U. S. Today, people are more tolerant of large carnivores than a century ago, and more aware of the ecological benefits of living with carnivores (Chapron et al. 2014, Bergstrom 2017). The general public has also increasingly called on state and federal wildlife agencies to be more inclusive and transparent in their decision-making and actions with regards to wildlife management, and carnivore management in particular (Jacobson and Decker 2008, Treves et al. 2016, Bergstrom 2017, Artelle et al. 2018, Decker et al. 2019).

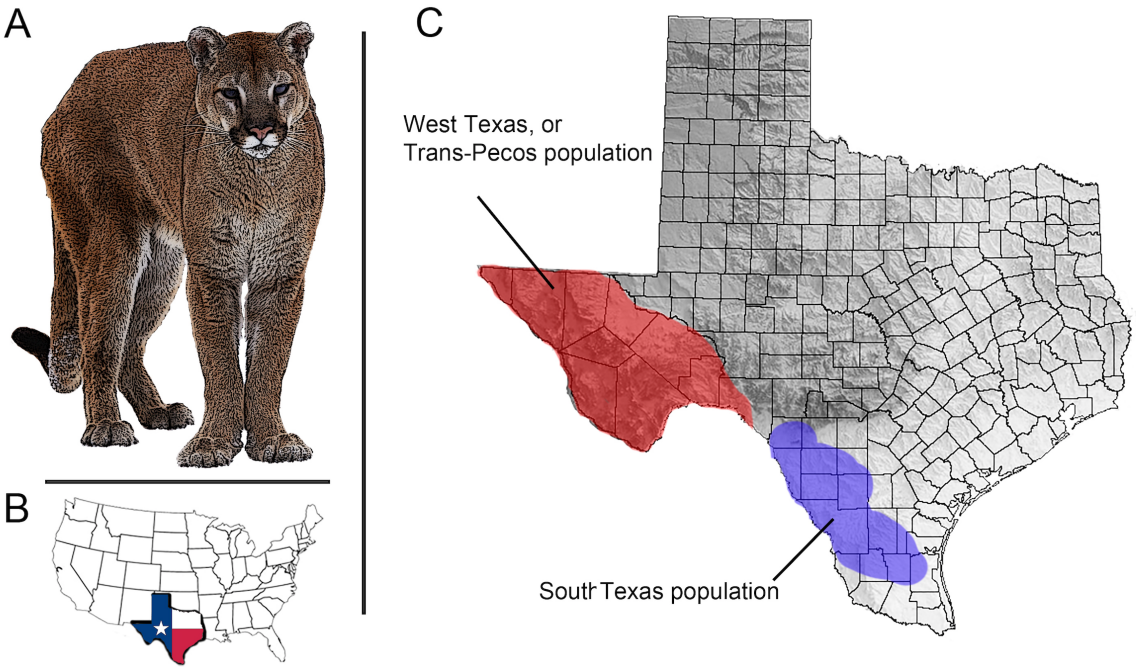
Mountain lions (*Puma concolor*), also called cougars, pumas and Florida panthers, are a wide-ranging, large felid in the western hemisphere, and a species often in the cross hairs of conservation management conundrums (Mitchell et al. 2018, Beausoleil et al. 2021). Mountain lions compete with humans for space, ungulates, and other resources (Elbroch et al. 2017), and pose real and perceived risks to people, pets and livestock (Wolfe et al. 2015). Yet, mountain lions also increase biological diversity and likely increase the ecological resilience and health of the ecosystems they inhabit (Barry et al. 2019, LaBarge et al. 2022). As governed by wildlife regulations and fair chase principles, they also provide recreational hunting opportunity across

much of the West. Every U.S. state in which there are breeding populations of mountain lions offer the species some level of protection, except Texas (Table 1).

Mountain lions were widely treated as vermin in the early 20th century, but between 1965-1973, most western states began to regulate mountain lions via managed hunting seasons, primarily due to advocacy efforts by the general public (Mattson and Clark 2010) and pioneering research for the species led by Dr. Maurice Hornocker (Hornocker 1970). California prohibited legal mountain lion hunting in 1972 and then assigned the species permanent protection in 1990. In Texas, the Sierra Club introduced two bills to the Texas Legislature in 1971, one suggesting the classification of mountain lions as a game species and the second suggesting complete protection for the species. Both bills were defeated, and in 1973, the Nongame Species Act Passed. The act designated mountain lions as a nongame species with essentially zero protections. In 1977, Texas added regulations to provide protections to some nongame species, but mountain lions were excluded.

Today, mountain lions can be killed in Texas "at any time, by any means, and in any quantity" (S1, available in Supporting Information) as long as an individual holds a valid hunting or trapping license issued by the state and has permission to be on the land. Texas is the only state that allows recreational trapping of mountain lions. Further, it is up to individuals to voluntarily report mountain lions they kill to the Texas Parks and Wildlife Department (TPWD). In 1982, TPWD began utilizing these voluntary mortality reports in combination with voluntary sighting reports to monitor mountain lions across the state (Harveson et al. 1996).

Chapter 67 of Texas Parks and Wildlife Code (S2), dictates that TPWD will "develop and administer management programs to ensure the continued ability of nongame species of fish and wildlife to perpetuate themselves successfully" (S2, Section 67.002). Further, the Code dictates



.Figure 1. A) Mountain lion, Puma concolor. B) Location of Texas in USA. C) The state of Texas, with relief and county lines. The red delineates the approximate distribution of the West Texas, or Trans-Pecos mountain lion population, and the blue the approximate distribution of the South Texas population, which is far less certain.

TPWD "conduct ongoing investigations of nongame fish and wildlife to develop information on populations, distribution, habitat needs, limiting factors, and any other biological or ecological data to determine appropriate management and regulatory information" (S2, Section 67.003). The Code also gives TPWD the authority to regulate take of nongame species and to initiate other protective measures for these species.

Here, we summarize historical research on mountain lions in Texas, human perceptions about the species, and historical discussions within TPWD with regards to mountain lion management obtained via the Public Information Act (Texas Government Code, Ch. 552). Ultimately, we present evidence to support our argument that it is time to actively manage mountain lions in Texas and for the TPWD to create a management plan for the species. A

management plan is both necessary to fulfill state mandates for the protection of nongame species, as well as to build a science-based conservation strategy for the species.

SUMMARY OF TEXAS MOUNTAIN LION RESEARCH

There are two mountain lion populations in Texas, one in West Texas often referred to as the Trans-Pecos population, and a second in South Texas (Walker et al. 2000, Holbrook et al. 2012*a*, *b*) (Figure 1). Mountain lion research has predominantly occurred in Big Bend National Park (Pence et al. 1987, McBride and Ruth 1988, Davin 1989, Ruth 1991, Rumbelow 2017) and other public lands (McBride 1976, Smith et al. 1986, Guzman 1998, Pittman et al. 2000). Nevertheless, more recent work has included private lands in both ecoregions (Waid 1990, Harveson 1997, Young et al. 2010, Harveson et al. 2012, Harveson et al. 2016, Karelus et al. 2021*a*). There are also several comprehensive genetic studies of Texas mountain lions (Walker et al. 2000; Gilad et al. 2011; Holbrook et al. 2012*a*, *b*), several modeling efforts to estimate abundance and population trends (Harveson 1997, Harveson et al. 1999, Young 2009, Harveson et al. 2012, Mrozinski 2018), and studies on the distribution, movement, habitat, and connectivity of the species across Texas (Hernandez-Santin 2012, Dennison et al. 2016, Stevens 2017, Karelus et al. 2021*b*, Sochi et al. 2021). Other research includes older diet studies via scat and stomach analyses, summarized in Harveson et al. (1996), more recent research on diet and predator-prey interactions (Harveson et al. 2000, Dennison et al. 2016, Harveson et al. 2016, Stangl 2020), and human dimensions issues (McBride and Ruth 1988, Packard et al. 1991, Peña 2002, Rumbelow 2017).

In every study in which mountain lions were marked and followed to determine their fate, humans were the primary cause of mortality (range 18-42%). In South Texas, mountain lions

were primarily shot by hunters and ranchers, whereas in the Trans-Pecos, they were primarily trapped on private lands (Young et al. 2010, Harveson et al. 2012). Anthropogenic mortality rates in Texas are among the highest in the U.S., and although the impacts of harvest intensity on population dynamics are variable (Logan and Runge 2021), they are well beyond the suggested harvest rates recommended to maintain stable mountain lion populations (Beausoleil et al. 2013, Logan 2017, Logan and Runge 2021; Figure 3). Similarly, adult female mountain lion survival in Texas studies is generally lower than female survival reported in other U.S. studies; female survival estimates in Texas suggest that populations were likely declining when the studies were active (Figure 4).

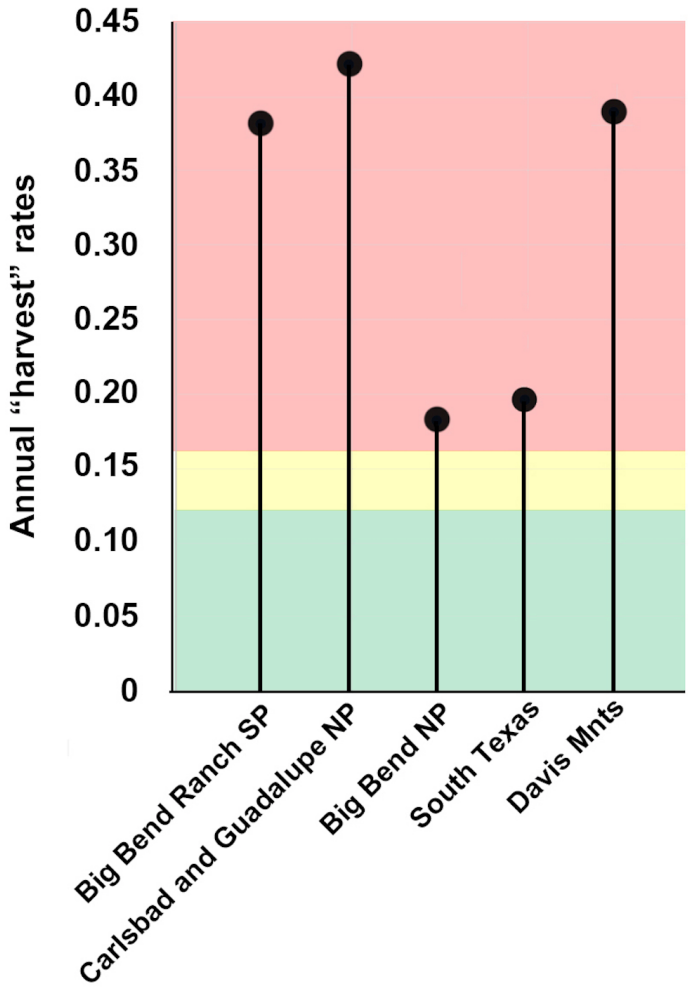


Figure 3. Harvest rates, defined as trapping + hunting mortality reported for Texas mountain lion studies. The background color depicts harvest thresholds that likely reflect population growth (green), stability (yellow) and decline (red), as determined by several

All Texas research to date has estimated mountain lion densities of less than 1 resident adult / 100 km^2 (Pittman et al. 2000, Harveson et al. 2012, Mrozinski 2018), which is well below most estimates for the species elsewhere (e.g., 1.6-2.8 adults and subadults/100 km^2; Beausoleil et al. 2021); low densities in Texas are in part driven by the arid environments of the region, but almost certainly due to anthropogenic impacts as well, given that human mortality is almost always additive (Wolfe et al. 2015).

Using estimates of mountain lion distributions and then extrapolating mountain lion density to these regions, the TPWD conservatively estimated that there were 253 mountain lions in the Trans-Pecos and 198 in South Texas (S3).

Genetic diversity has dropped significantly in South Texas over time, whereas diversity appears unchanged in West Texas, where researchers speculate that admixture is supported by immigration from populations in Mexico and New Mexico (Holbrook et al. 2012*a*, *b*). Holbrook et al. (2012*b*) went on to estimate that the effective population size of the South Texas population has declined by greater than 50% due to habitat fragmentation and predator control in recent years, and the increased isolation of the South Texas population. Holbrook et al. (2012*b*), which was coauthored by a TPWD biologist, concluded that "a management plan incorporating population monitoring is needed if the persistence of mountain lions in western Texas is desired," and that "management actions are likely needed if mountain lions are to be maintained in southern Texas."

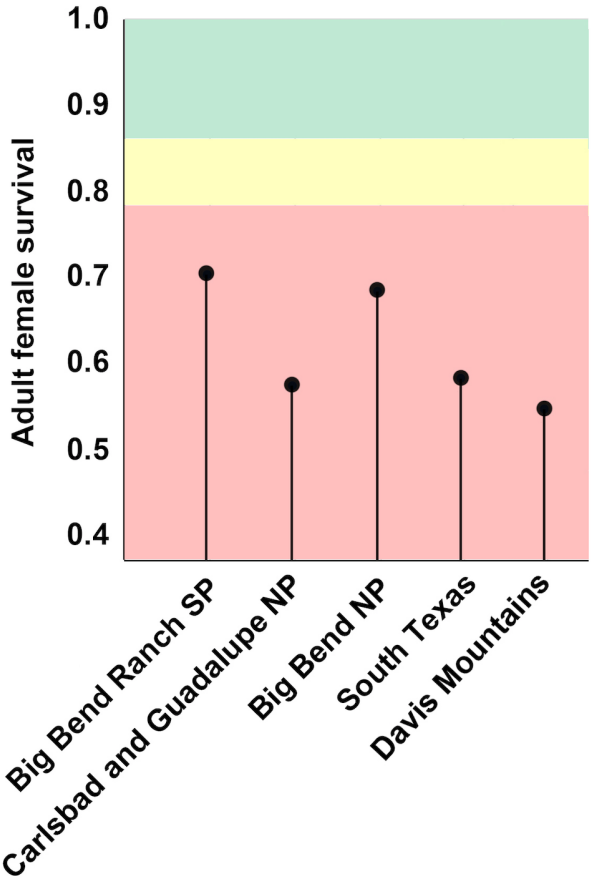
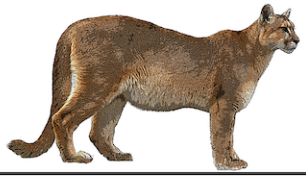


Figure 4. Annual female survival reported for Texas mountain lion studies. The background color depicts thresholds for female survival that likely reflect population growth (green), stability (yellow) and decline (red), as determined in a review conducte

SUMMARY OF DISCUSSIONS WITHIN TPWD

The TPWD has actively discussed the possibility of implementing mountain lion regulations and changing their status to a game species for 30 years, with select events highlighted in a timeline in Figure 2. Below, we describe specific events in 1992, 1998, 2010, 2012, and 2021. Simultaneously, there has been regular communication, media attention, and pressure from people outside the state agency interested in initiating mountain lion management in Texas (Figure 2). For example, the Texas Organization for Endangered Species discussed the addition of mountain lions as threatened in 1990 and subsequently wrote to numerous Texas researchers and TPWD in 1991 to express concerns about the lack of information about the species in the state (S5). Several organizations, the Sierra Club foremost among them, filed petitions for legislative and regulatory changes to improve protection of mountain lions dating back to 1971 (Figure 2).

As introduction, TPWD agreed that they needed to create a Mountain Lion Management Policy in 1992, and they have repeated this need at regular intervals since that time (e.g., S6, S7). Further TPWD agreed to conduct or support the necessary research to develop such a management policy many times over the last 30 years as well (e.g., S8, S9, S10). The agency has often discussed the need for mandatory reporting of all mountain lions killed by any means as a method to collect data and learn more about Texas mountain lion populations, dating back to at least 1992 (S8, Group 8, S9). Internal communications suggest that the reason that TPWD has



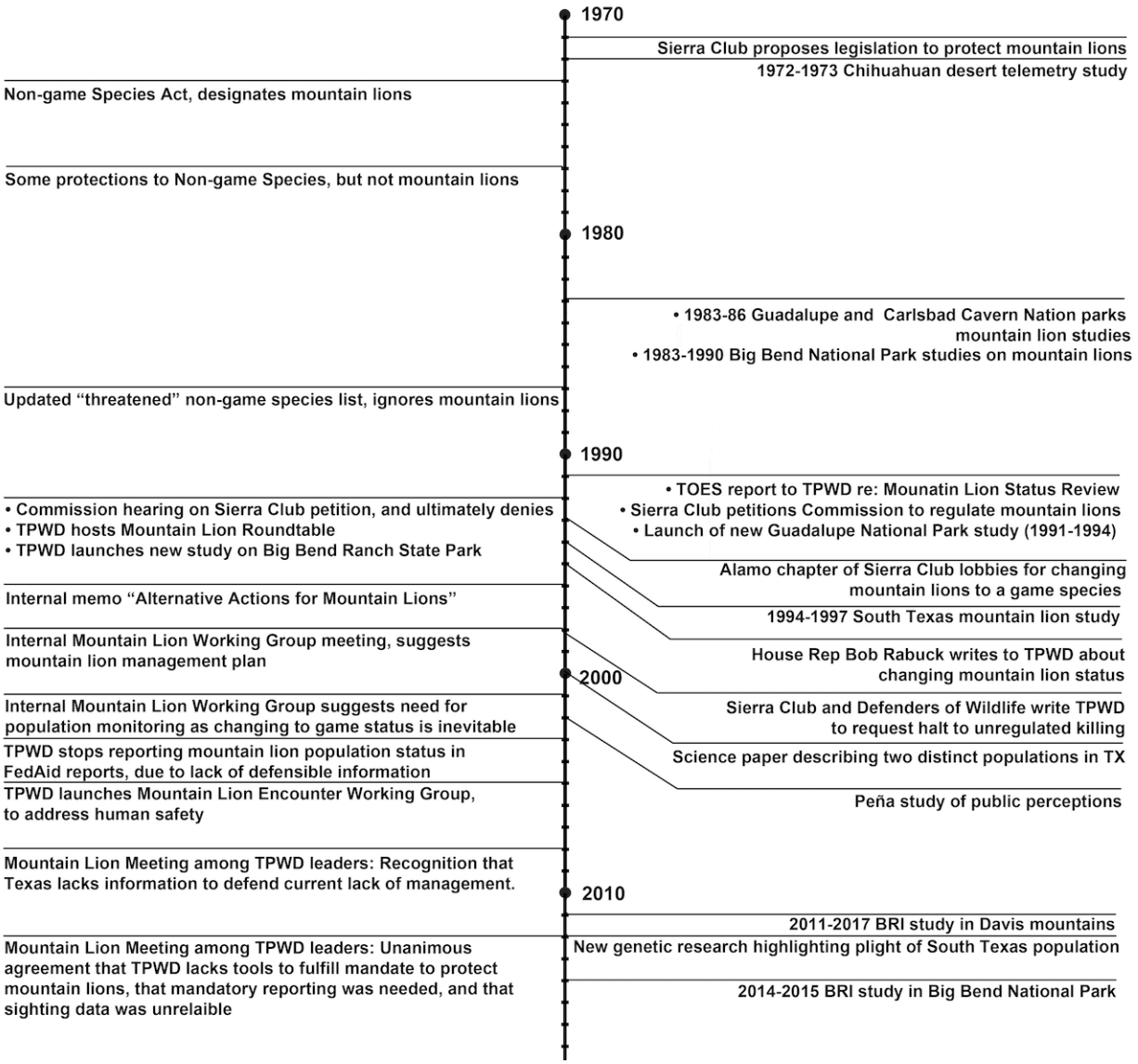


Figure 2. A time line of select significant events with regards to mountain lion management in Texas. On the left are activities internal to Texas Parks and Wildlife Department and on the right, those external.

not begun managing mountain lions is concerns over relationships with key constituents and private landowners (e.g., S3, S12, Group 6, S15).

In a 1992 letter to the then head of the Wildlife Commission, the Executive Director of TPWD stated: “Mandatory reporting of harvested lions may be considered after three to five years if voluntary data reporting is inadequate to evaluate the status of the mountain lion in Texas” (S6). Internal and external critics cautioned that sighting data were an indefensible metric for mountain lion abundance as early as 1996 (Harveson et al. 1996), and in 2003, the TPWD acknowledged that it could no longer use their own monitoring data to assess the status of mountain lions in annual Federal Aid reports, as required by the State Wildlife Grants Program: “the current reporting system provides no measure of the population parameters needed to determine population status” (S4). However, minutes from a TPWD meeting in 2008 indicated that some people in the agency maintained the public narrative that Texas mountain lion populations were stable and in fact increasing, based on their voluntary sightings and mortality database (S3).

In 1998, an internal TPWD mountain lion working group composed of nine personnel encouraged the development of a mountain lion management plan (TPWD 1998; S7). In 2001, the same working group reported that they believed “the mountain lion will ultimately become a game animal and a tool for estimating lion numbers will be important in that process” (S11).

In 2010, Dr. Michael Tewes of the Caesar Kleberg Wildlife Research Institute convened an expert panel with three mountain lion experts from outside Texas, to meet with TPWD and Caesar Kleberg Wildlife Research Institute personnel. Among panelist recommendations were to “Manage and sustain cougar harvest in Texas,” and “Develop reliable, regional and statewide maps of relative cougar abundance, habitat quality, and landscape linkages” (S14). They also recommended that TPWD implement mandatory reporting for all mountain lions killed by any means.

In 2012, TPWD held an internal Mountain Lion Meeting at the Mason Mountain WMA with 15 senior members of the Wildlife Division within TPWD. They reviewed past discussions about mountain lions, and summarized agency activities, including 1) the lethal removal of 58 mountain lions to support bighorn sheep restoration in West Texas from 2000-2007, and 2) the impact of trapping on West Texas populations (one trapper killed 62 lions in 2011). While the group debated the costs and benefits of the different regulatory options for mountain lions, one staff member voiced that TPWD was shirking its responsibilities for monitoring and managing mountain lions, and that "…the time to manage [mountain lions] was 20 years ago." (S15).

The 2012 meeting attendees unanimously agreed that: 1) TPWD policies did not provide TPWD with the tools necessary to meet their mandate "to develop and administer management programs to insure the continued ability of nongame species of fish and wildlife to perpetuate themselves successfully," or their goal of maintaining two populations of mountain lions in Texas; 2) Voluntary sighting reports were unreliable and should not be used to estimate mountain lion abundance or monitor their populations; and 3) Mandatory harvest reporting of all mountain lions killed, especially east of the Pecos River, was the most economically feasible tool to effectively monitor lions (S15). Further, the group agreed that they should institute a 36-hour trap check for mountain lions and create legislation to stop canned hunts of mountain lions, because unregulated trapping and canned hunts undermined the agency's credibility.

In 2021, TPWD updated its Species of Greatest Conservation Need (TPWD 2021), a list maintained as part of the Texas Conservation Action Plan. Mountain lions were reassessed and reduced from S2 to S2/S3, where S2 is an Imperiled classification and defined as, "Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from

the nation or state/province," and where S3 is a Vulnerable classification, defined as "Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, other factors making it vulnerable to extirpation." The ongoing inclusion of mountain lions in the list of Species of Greatest Conservation Need in Texas has yet to impact their status as a nongame species or to initiate new regulations regarding the species.

PUBLIC OPINION ABOUT MOUNTAIN LIONS AND TPWD

Like elsewhere, mountain lions are a controversial species in Texas, and perhaps this was nowhere more apparent than in the 1992 Mountain Lion Round Table in Del Rio, hosted by 19 TPWD staff, 6 Wildlife Commissioners, and attended by 109 members of the public. The perspectives shared during this event ranged the full spectrum from heavy control of mountain lions with zero protections, to complete protection, except killing mountain lions in self-defense (S12).

Nevertheless, the controversial debates and sentiments shared during the 1992 round table were likely skewed by extreme views of the species. Peña (2002) reported the results of 802 interviews (355 classified as rural respondents, 425 urban) conducted in Texas. Eighty-four percent of respondents agreed that mountain lions are an essential part of nature, and 74% agreed that efforts should be made to ensure their survival in Texas. Further, 84% of respondents reported that they supported limiting (e.g., implementing hunting seasons) or stopping mountain lion hunting. Peña's (2002) work supports more recent findings from a national survey, in which 61% of respondents that ranked their like/dislike for 26 animal species using a 7-point bipolar response scale, liked to strongly liked mountain lions (George et al. 2016).

The people of Texas also support TPWD. In a recent survey of the people of Texas, 56% of respondents expressed trust in TPWD to manage fish and wildlife (Dietsch et al. 2018). We include this information to alleviate potential concerns that people do not support TPWD. Further, 78% of respondents did not agree with the statement that private property rights are more important than protecting species, which directly counters concerns expressed by TPWD about losing favor with private landowners (S3, S12, Group 6, S15).

CREATING A SCIENTIFIC MOUNTAIN LION MANAGEMENT PLAN

As mandated by Chapter 67 of the Texas Parks and Wildlife Code, Texas wildlife managers make difficult decisions to ensure sustainable wildlife populations held in public trust, all while balancing, and sometimes deflecting political will and the influences of different stakeholder groups (Fuller et al. 2020, Lute et al. 2020, Beausoleil et al. 2021). Management decisions are more controversial when abundance estimates for species are lacking, as they are for mountain lions in Texas, and when the veracity of estimates are questionable, as is the case for any inferences made from mountain lion sightings about abundance (Van Dyke and Brocke 1987, Mitchell et al. 2018, Beausoleil et al. 2021).

Defensible population estimates are the cornerstone to any mountain lion management plan, as are accurate estimates of cause-specific mortality for mountain lion populations. Today, there are numerous methods to estimate local mountain lion population abundance, ranging from genetic sampling in combination with spatially-explicit capture recapture (Davidson et al. 2014), to mark-recapture with GPS collars in combination with spatial overlap (Rinehart et al. 2014, Beausoleil et al. 2021), or more recently, camera trap studies employing random encounter or space-to-event modeling (Moeller et al. 2018, Nakashima et al. 2018). There are also ways to

scale local estimates to statewide estimates (e.g., Robinson et al. 2015, Beausoleil et al. 2021). A defensible management plan will also require that Texas mountain lion populations remain connected with each other, as well as with other mountain lion populations across state and international borders to ensure immigration and emigration (Sweanor et al. 2000, also see Karelus et al. 2021*b* which describes current work on the subject).

Nevertheless, the absence of the requisite data to create a successful management plan should not preclude the establishment of mountain lion regulations, either via TPWD under current nongame designation, or via a legislative change for the species from nongame to game species. As reported above, we believe there is substantial evidence to suggest Texas mountain lion populations are in decline, and that immediate actions need to be made to: 1) conduct research and collect the data needed to understand regional and statewide mountain lion population dynamics and abundance, 2) conduct the research to determine the importance of wildlife corridors and mountain lion populations outside Texas, including Mexico, in maintaining healthy Texas populations, and 3) establish protections for mountain lions while that data is being collected, especially resident animals and dispersers found east of the Pecos River.

For example, evidence suggests that the South Texas mountain lion population is in immediate need of limiting take (e.g., via hunting seasons, harvest limits), as well as the identification and protection of viable corridors to increase genetic exchange with West Texas populations or those to the south in Mexico (Holbrook et al. 2012*a*, *b*). Further, the high mortality rates due to trapping and shooting in all Texas populations studied to date suggests the need for, at minimum, gathering the data to further assess anthropogenic impacts on mountain lions. As emphasized repeatedly by TPWD (S8, Group 8, S9, S15), the agency should immediately implement mandatory reporting of all mountain lions killed by any means.

Today, TPWD has the opportunity to address ongoing concerns about the lack of information about Texas mountain lions raised by stakeholders external and internal to TPWD, and to better meet the agency's mandate to ensure mountain lions persist in Texas. Here, we compiled the current science for the species in Texas, which makes plain that immediate action is warranted. The TPWD has the authority to modify nongame species regulation, even in the absence of legislation that formally changes mountain lions to a game species. Ultimately, however, we encourage a change in species status to ensure more resilient conservation management of the species. The TPWD can and should create transparent and defensible mountain lion management for the people of Texas and the US more broadly. Such action will strengthen the trust between TPWD and the public it serves (Artelle et al. 2018; Fuller et al. 2020).

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Table 1. Summary of mountain lion harvest regulations for western US states, and sources for information.

State	Regulated?	Legal status	Year regulated	Hunting?	Trapping?	Harvest limits by area?	Any unlimited units?	Female sub-quotas?	Bag limits per hunter?	Open season	Kittens protected?	Source
Arizona	Yes	Game Animal	1970	Yes	No	Yes	No	No	1	Aug 20–May 31	Kittens and females with kittens	https://www.azgfd.com/hunting/species/biggame/mountainlion/
California	Yes	Specially Protected Mammal	1990	No	No	N/A	N/A	N/A	N/A	N/A	N/A	https://wildlife.ca.gov/Conservation/Mammals/Mountain-Lion#56231950-conservation-and-management
Colorado	Yes	Game Animal	1965	Yes	No	Yes	No	No	1	April 1–April 30; Nov 29–Mar 31	Kittens and females with kittens	https://cpw.state.co.us/thingstodo/Pages/MountainLion.aspx
Idaho	Yes	Game Animal	1972	Yes	No	Yes (Female quotas only)	No	Yes	1 or 2, depending on unit	Aug 30–Jun 30	Kittens and females with kittens	https://idfg.idaho.gov/sites/default/files/seasons-rules-big-game-2021.pdf?july-1-2021-update

										Without Dogs: varies by unit		
Montana	Yes	Game Animal	1971	Yes	No	Yes	No	No	1	Without Dogs: Oct 23–Dec 1, With Dogs: Dec 1–Apr 14.	Kittens and females with kittens	https://fwp.mt.gov/binaries/content/assets/fwp/hunt/regulations/2021/2021-lion-final-for-web.pdf
Nebraska	Yes	Game Animal	1995	Yes	No	Yes	No	Yes	1	Main: Jan 2–Feb 28 Aux: Mar 13–Mar 31	Kittens and females with kittens	http://outdoornebraska.gov/wp-content/uploads/2020/08/mountain-lion-regs-2021-int-1.pdf
Nevada	Yes	Game Animal	1965	Yes	No	Yes	No	No	2	Year round or until the statewide quota fills	Kittens and females with kittens	https://www.eregulations.com/nevada/hunting/mountain-lion-hunts

New Mexico	Yes	Game Animal	1971	Yes	No	Yes	No	Yes	2	Apr. 1-March 31	Kittens and females with kittens	https://www.wildlife.state.nm.us/download/publications/rib/2021/hunting/2021_2022-New-Mexico-Hunting-Rules-and-Info.pdf
North Dakota	Yes	Game Animal	2005 (first regulated hunting season)	Yes	No	Yes	No	No	1	Sept 3 - March 31	Kittens and females with kittens	https://gf.nd.gov/hunting/mountain-lion
Oregon	Yes	Game Animal	1967	Yes	No	Yes	No	No	2-Jan	Jan 1 – all year	Kittens and females with kittens	https://myodfw.com/articles/hunting-cougar-oregon
South Dakota	Yes	Game Animal	1978 (Threatened) 2003 (Game animal)	Yes	No	Yes (2 sections only)	No	Yes	1	Jan 1 – all year	Kittens and lions accompanying another lion	https://gfp.sd.gov/mountain-lion/
Texas	No	Non-Game Animal	N/A	Yes	Yes	No	No	No	N/A	All Year	No	https://tpwd.texas.gov/huntwild/wild/nuisance/mountain_lion/

Utah	Yes	Game Animal	1967	Yes	No	Yes	No	No	2	Nov 3 - Jun 30	Kittens and females with kittens	https://wildlife.utah.gov/guidebooks/2021-22_cougar.pdf
Washington	Yes	Game Animal	1968	Yes	No	Yes	Yes	No	1	Sep 1- Dec 31; Jan 1 – Apr 30	Kittens and females with kittens	https://www.eregulations.com/washington/hunting/cougar-general-seasons
Wyoming	Yes	Game Animal	1973	Yes	No	Yes	Yes	No	1	All Year, varies by unit	Kittens and females with kittens	https://wgfd.wyo.gov/WGFD/media/content/PDF/Regulations/CH-42-FINAL_2021.pdf

Supporting Information

Article: It's time to manage mountain lions in Texas

L. Mark Elbroch, Panthera, 8 West 40th Street, 18th Floor, New York, NY 10018, USA

Patricia M. Harveson, Borderlands Research Institute, Sul Ross State University, PO Box C-16, Alpine, TX 79832, USA

Correspondence: L. Mark Elbroch, Panthera, 8 West 40th Street, 18th Floor, New York, NY 10018, USA. Email: melbroch@panthera.org

NOTES**Names redacted from internal communications, except reports, which we considered public. Page numbers for entire document found in lower, right corner.

S1. TPWD 1996. "Alternative actions for mountain lions." A document prepared by the legal department of TPWD for a senior staff member in West Texas, pg. 3.

S2. Parks and Wildlife Code, Chapter 67, Nongame Species, pg. 8.

S3. TPWD 2008. Internal TPWD document, "Minutes from mountain lion meeting September 4-5, 2008," pg 11.

S4. Holdermann 2003. Performance report for Federal Aid Grant, State Wildlife Grants Program – wildlife diversity science – mountain lion status, November 2003, pg. 14.

S5. Garrett 1991. Letters from Dr. Gary Garrett, President of Texas Organization for Endangered Species, to Drs. Robert Dowler, Sam Beasom, James Scuddy, David Schmidly, Henry Wright, and Nick Parker, encouraging work that determines the status of mountain lions in Texas, obtained via TPWD, which also received copies of these letters, pg. 24

S6. TPWD 1992. Letter from the Executive Director of TPWD to the Wildlife Commission about the Sierra Club petition, May 1992, and the response letter from the Chair of the Regulations Committee to the Executive Director of TPWD, pg. 30.

S7. TPWD 1998. Letter from the Black Gap WMA Area Manager to the Director of the Wildlife Division, TPWD, Oct 1998, summarizing key points of the Elephant Mountain "mountain lion meeting," pg. 36.

S8. TPWD 1992. Texas Parks and Wildlife News article, "TPWD responds to Sierra Club Petition," July 24, 1992, pg. 38.

S9. TPWD 1992. Letter to Scott Royder of the Sierra Club from the TPWD Executive Director, June 1992, pg. 40.

S10. TPWD 1994. Letter to Dede Armentrout of the national Audubon Society from Parks and Wildlife Commission, Dec 1994. Including the article by Ted Williams, "The Lion's Silent Return," from Audubon Magazine, November-December 1994 issue.

S11. TPWD 2001. Internal TPWD communication summarizing consensus points of the "mountain lion team" on proposed mountain lion research and management more broadly, pg. 50.

S12. TPWD 1992. Mountain lion roundtable, Del Rio, April 1992, Summary Report, pg. 52.

S13. Internal communication regarding an inquiry made by Texas House of Representative Raybuck about mountain lion management, Nov 1995, pg. 108.

S14. Tewes 2010. "Information and research needs for cougar populations in Texas", Report for Caesar Kleberg Wildlife Research Institute prepared by Michael Tewes, Aug 2010, pg. 115.

S15. TPWD 2012. "Summary of Mountain Lion Meeting," an internal TPWD meeting among senior staff held in December, 2012, pg. 127.

Alternative actions for Mountain lion:

SUMMARY OF STATUTORY AUTHORITY (see citations below):

Take of game animals is prohibited unless specifically authorized following a finding of fact that the season can be opened safely (relative to the species populations) or to prevent waste. This places the burden on the department of understanding optimum population levels (as applied to either the definition of "depletion" or "waste") and the dynamics of those populations before justifying to the commission a proposed open season. Take of nongame is allowed unless finding of fact shows that continued take may prevent a species from perpetuating itself. These modes of responsibility (Game vs Nongame regulation) are very different and may be important in determining the best course of action relative to Mountain Lions in Texas. Depredation statutes apply to both game animals and nongame equally (i.e., animals protected by the P&W Code) and, once activated through a permit, supercedes all other statutes and regulations except the North American Migratory Game Bird Treaty and the Endangered Species Act. Statute addressing permit/license/tag fees are included so that discussions may be amplified to actual operational issues.

POTENTIAL COURSES OF ACTION:

1. **No change from current:** Unprotected Nongame status. Allows take at any time, by any means, and in any quantity. Provides landowners unlimited flexibility in protecting property and allows hunter the opportunity to take ML coincidental to any field activity.

2. **Change to Unprotected Nongame, but Permitted:** Establishing a permit that would be required to possess a ML or its parts. This permit would not limit harvest in any way, but the regulations creating it would require all persons who have taken a ML to obtain a permit (within a reasonable period of time following the take) to keep it. [This could be combined with a restricted "period of take", but is not included in this simplest of applications.] This would provide an enforceable means of obtaining an accurate count/location of/for kills. These data would be needed to determine if future restrictive/limiting measures were effective.

3. **Change to Protected Nongame, but Limited:** Through a permit mechanism as described in 2 above (again, with or without a restricted "period of take"), the Commission could limit the take via a state, regional, or county quota. This could function similar to New Mexico's current regulations (except in New Mexico the "season" is restricted to 6 months as well [however, they are dealing with a "game" species whereas we would not be under this scenario]), whereby when a state, regional, or county quota is reached (as determined from permits issued), further take is prohibited in that area (e.g., New Mexico's season closes the Thursday after a quota is reached, but continues

where the quota has not yet been reached). The last unlimited hunt in New Mexico (which was only 4 months long) became its quota under the restriction (i.e., the last unlimited hunt was not considered a problem for the population, but regulations prevents that harvest from growing further). Limiting take would limit hunter access to ML, but would have little or no impact on landowners (i.e., because of depredation statutes) or hunters guided by control hunters (i.e., if the hunter and control hunter is named on the depredation permit).

4. **Change to Protected Nongame and prohibit take:** Commission action may prohibit take if it determines that there is a danger that ML may not be able to perpetuate itself as a species. This may be a hard fact to demonstrate, except in specific locations, because existing information suggests the continued expansion of ML range in Texas and determining population status of a "solitary" species is extremely difficult. Prohibiting take would limit hunter access to ML, but would have little or no impact on landowners (i.e., because of depredation statutes) or hunters guided by control hunters (i.e., if the hunter and control hunter is named on the depredation permit).

5. **Change to Game Animal Status:** This would be the most difficult to accomplish and apply in Texas. First, ML may only be added to the Game Animal list by the Legislature. This would require a committee debate and a floor debate because a bill changing ML status probably would not make the Local and Uncontested Calendar or pass unopposed from committee to any other calendar. If this change of status were accomplished by statute, take would be immediately prohibited until finding of fact allowed the Commission, through some future action, to provide an open season (i.e., period of time, means, methods, area of affect would all have to be specified by proclamation). This finding of fact would require the same, or similar, accuracy and precision of estimates used to justify seasons for other game species, but at considerably greater effort and difficulty than for other game animal species, because ML are a "solitary" species. Landowners would have the same options as above for relief from depredation and the same options for who/how the animals are taken would apply. However, as opposed to nongame options above, seasons etc. would have to pass the test of preventing depletion as defined by P&W Code Chapter 61.

IMPORTANT STATUTES:

DEFINITIONS:

Nongame - § 67.001. Definitions

In this chapter, "nongame" means those species of vertebrate and invertebrate wildlife indigenous to Texas that are not classified as game animals,

game birds, game fish, fur-bearing animals, endangered species, alligators, marine penaeid shrimp, or oysters.

Game Animals - § 63.001. Game Animals

(a) The following animals are game animals; mule deer, white-tailed deer, pronghorn antelope, desert bighorn sheep, gray or cat squirrels, fox squirrels or red squirrels, and collared peccary or javelina.

(b) No species or any animal set out in Subsection (a) of this section or any other animal is a game animal if it is not indigenous to this state.

Game Animals and Nongame - § 61.005. Definitions

In this chapter;

(1) "Wildlife resources" means all wild animals, wild birds, and aquatic animal life.

(2) "Depletion" means the reduction of a species below its immediate recuperative potential by any cause.

(3) "Waste" means the failure to provide for the regulated harvest of surplus wildlife resources when that harvest would allow, promote, or optimize a healthy and self-sustaining population of a species.

AUTHORITY:

Nongame - § 67.002. Management of Nongame Species

(a) The department shall develop and administer management programs to insure the continued ability of nongame species of fish and wildlife to perpetuate themselves successfully.

(b) In managing nongame species of fish and wildlife, the department may:

(1) disseminate information pertaining to nongame species conservation, management, and values;

(2) conduct scientific investigation and survey of nongame species for better protection and conservation;

(3) propagate, distribute, protect, and restore nongame species;

(4) research and manage nongame species;

(5) develop habitats for nongame species; and

(6) acquire habitats for nongame species.

Nongame - § 67.004. Issuance of Regulations

(a) The commission by regulations shall establish any limits on the taking, possession, propagation, transportation, importation, exportation, sale, or offering for sale of nongame fish or wildlife that the department considers necessary to manage the species.

(b) The regulations shall state the name of the species or subspecies, by common and scientific name that the department determines to be in need of management under this chapter.

Nongame - § 67.0041. Regulations and Permits

(a) The department may issue permits for the taking, possession, propagation, transportation, sale, importation, or exportation of a nongame species of fish or wildlife if necessary to properly manage that species.
(b) The department may charge a fee for a permit issued under this section. The fee shall be set by the commission.

Nongame and Game Animals - § 42.002. Resident License Required
(a) Except as provided by Subsection (b) of this section, no resident may hunt any bird or animal in this state without having acquired a hunting license.
(b) A resident possessing a valid resident alligator hunter's license, resident trapper's license, or fur-bearing animal propagation permit is not required to have a license issued under this section to take or possess the species covered by the license or permit.

Nongame and Game Animals - § 42.010. Issuance and Form of Licenses and Tags
(b) The department may issue tags for animals or birds allowed by law to be killed during each year or season to holders of licenses authorizing the killing of animals or birds. The commission may establish fees for the tags.

Nongame and Game Animals - § 11.027. Establishment of Fees; Revenue
(b) The commission by rule may establish and provide for the collection of a fee to cover costs associated with the review or an application for a permit required by this code.

Game Animals - § 61.021. Taking Wildlife Resources Prohibited
Except as permitted under a proclamation issued by the commission under this chapter, no person may hunt, catch, or possess a game bird or game animal, fish, marine animal, or other aquatic life at any time or in any place covered by this chapter.

Game Animals - § 61.053. Open Seasons
The commission shall provide open seasons for the hunting, taking, or possession of game animals, game birds, or aquatic animal life if its investigations and findings of fact, reveals that open season may be safely provided or if the threat of waste requires an open season to conserve game animals, game birds, or aquatic animal life.

DEPREDATION STATUTES:
SUBCHAPTER H. PERMITS TO CONTROL WILDLIFE PROTECTED BY THIS CODE
§ 43.153. Application for Permit
(a) A person who has evidence of damage by depredation or threat to public safety may file with the department an application for a permit to kill the protected wildlife.

(b) The application must be in writing and be sworn to by the applicant and must contain:
    (1) a statement of facts relating to the damage or threat; and
    (2) an agreement by the applicant to comply with the provisions of this subchapter relating to the disposition of the protected wildlife.
(c) The application must be accompanied by:
    (1) a statement signed by the employee of the department who make the investigation that damage is being done or that a threat exists and control measures have been recommended;
    (2) a statement by the applicant that he has taken all measures recommended by the department for the prevention of the damage or threat; and
    (3) a certification of the county judge that the application is true.

§ 43.154. Permit

(a) On receipt of an application, the department may issue a permit for the killing of wildlife without regard to the closed season, bag limit, or means and methods.
(b) The department shall deliver the permit, if issued, to the county judge that sent the notice of damage or threat. The permit may not be delivered earlier than 24 hours after the notice from the county judge was received by the department.
(c) A permit must specify:
    (1) the period of time during which it is valid;
    (2) the area in which it applies;
    (3) the kind of wildlife authorized to be killed; and
    (4) the persons permitted to kill the noxious wildlife.

PARKS AND WILDLIFE CODE

TITLE 5. WILDLIFE AND PLANT CONSERVATION

SUBTITLE B. HUNTING AND FISHING

CHAPTER 67. NONGAME SPECIES

Sec. 67.001. DEFINITION. In this chapter, "nongame" means those species of vertebrate and invertebrate wildlife indigenous to Texas that are not classified as game animals, game birds, game fish, fur-bearing animals, endangered species, alligators, marine penaeid shrimp, or oysters.

Acts 1975, 64th Leg., p. 1405, ch. 545, Sec. 1, eff. Sept. 1, 1975. Amended by Acts 1985, 69th Leg., ch. 267, art. 1, Sec. 63, eff. Sept. 1, 1985; Acts 1997, 75th Leg., ch. 863, Sec. 7, eff. Sept. 1, 1997; Acts 1997, 75th Leg., ch. 1256, Sec. 109, eff. Sept. 1, 1997.

Sec. 67.0011. EXEMPTION OF CRAYFISH. This chapter does not apply to crayfish, other than in public water.

Added by Acts 1981, 67th Leg., p. 399, ch. 161, Sec. 4, eff. May 20, 1981.

Sec. 67.002. MANAGEMENT OF NONGAME SPECIES. (a) The department shall develop and administer management programs to insure the continued ability of nongame species of fish and wildlife to perpetuate themselves successfully.

(b) In managing nongame species of fish and wildlife, the department may:

(1) disseminate information pertaining to nongame species conservation, management, and values;

(2) conduct scientific investigation and survey of nongame species for better protection and conservation;

(3) propagate, distribute, protect, and restore nongame species;

(4) research and manage nongame species;

(5) develop habitats for nongame species; and

(6) acquire habitats for nongame species.

Acts 1975, 64th Leg., p. 1405, ch. 545, Sec. 1, eff. Sept. 1, 1975. Amended by Acts 1985, 69th Leg., ch. 267, art. 1, Sec. 64, eff. Sept. 1, 1985.

Sec. 67.003. CONTINUING SCIENTIFIC INVESTIGATIONS. The department shall conduct ongoing investigations of nongame fish and wildlife to develop information on populations, distribution, habitat needs, limiting factors, and any other biological or ecological data to determine appropriate management and regulatory information.

Acts 1975, 64th Leg., p. 1405, ch. 545, Sec. 1, eff. Sept. 1, 1975.

Sec. 67.004. ISSUANCE OF REGULATIONS. (a) The commission by regulation shall establish any limits on the taking, possession, propagation, transportation, importation, exportation, sale, or offering for sale of nongame fish or wildlife that the department considers necessary to manage the species.

(b) The regulations shall state the name of the species or subspecies, by common and scientific name, that the department determines to be in need of management under this chapter.

Acts 1975, 64th Leg., p. 1405, ch. 545, Sec. 1, eff. Sept. 1, 1975. Amended by Acts 1997, 75th Leg., ch. 1256, Sec. 110, eff. Sept. 1, 1997.

Sec. 67.0041. REGULATIONS AND PERMITS. (a) The department may issue permits for the taking, possession, propagation, transportation, sale, importation, or exportation of a nongame species of fish or wildlife if necessary to properly manage that species.

(b) The department may charge a fee for a permit issued under this section. The fee shall be set by the commission.

Added by Acts 1985, 69th Leg., ch. 267, art. 1, Sec. 65, eff. Sept. 1, 1985. Amended by Acts 1997, 75th Leg., ch. 1256, Sec. 111, eff. Sept. 1, 1997.

Sec. 67.005. PENALTY. (a) A person who violates a regulation of the commission issued under this chapter commits an offense that is a Class C Parks and Wildlife Code misdemeanor.

(b) A person who violates a regulation of the commission issued under this chapter and who has been convicted on one previous occasion of a violation of a commission regulation under this chapter commits an offense that is a Class B Parks and Wildlife Code misdemeanor.

(c) A person who violates a regulation of the commission issued under this chapter and who has been convicted on two or more previous occasions of a violation of commission regulations under this chapter commits an offense that is a Class A Parks and Wildlife Code misdemeanor.

Acts 1975, 64th Leg., p. 1405, ch. 545, Sec. 1, eff. Sept. 1, 1975. Amended by Acts 1985, 69th Leg., ch. 267, art. 3, Sec. 77, eff. Sept. 1, 1985.

Minutes from Mountain Lion Meeting
September 4th – 5th, 2008

Take home messages – from slides:

1. From studies at Big Bend National Park, Big Bend Ranch State Park, and Guadalupe Mountains National Park - Female annual survival rates ranged from 57% - 70%; Male annual survival rates ranged from 45% - 56% - Summary of four studies beginning in 1986.

2. "Light" harvest = 18% (Wyoming); "Intensive" harvest = 43% (Wyoming) – Population can recover to pretreatment levels in 2 – 3 years. New Mexico demonstrated that a population experimentally reduced by 55% replaced itself in 31 months. In Utah, a population experimentally reduced by 36% recovered in 9 months The populations in Utah and New Mexico were reduced, and then protected from harvest.

3. South Texas and Trans-Pecos populations are somewhat distinct. "Effective" population size = 5600 (estimates above 500 are not cause for concern; below 500 cause for concern.) (98 tissue samples from 2003-2004 (Most from Trans-Pecos). This number is adequate for genetic diversity. If populations are looked at separately, the results are similar to other areas in the US; South Texas mean heterozygosity is 0.35 compared to 0.48 in the Trans Pecos. Randy DeYoung study will expand this work using specimen collections from around the state. EP trappers, ADL agents work hard – create effective barrier in parts of Texas.

4. GARP (Genetic Algorithm Rule Set Production) Model – Based on 203 museum samples from the US with 63 held back from model for independent testing. 14 environmental variables used – shows about ½ of the state (western half most favorable habitat). Based on only a portion of available museum specimens in order to obtain a "true" look at the population in the US. Model results match closely with known range maps. Some questions on use of model based on modeled habitat on eastern front R Mountains and not in R Mountains). Average omission 7.0 (exclusion of known locations) Average commission 50.51 (inclusion of areas with no known locations) (Average means over all of the model runs completed 1000). Model is very strong.

5. Extrapolating mountain lion density estimates (averages) from Guzman (0.43/100km^2) and Harveson (0.56/100km^2)to area predicted by 6 or more of the GARP models provides a conservative estimate 253 lions in Trans-Pecos; 198 lions in South Texas. **Extrapolate to all of Texas using Guzman's lower avg. density estimate where have 6 or more GARP models area prediction increases to 189,000 km^2 range = ~ 800 lions.** Conservative estimate. A more liberal estimate for statewide population is achieved by extrapolating the highest density estimate from Harveson (liberal) of 0.65/100km^2 and Guzman lowest estimate (conservative) 0.26/100km^2 to all habitat predicted by the 10 best model set from GARP (liberal estimate of total potential area 198, 954 km^2) provides a statewide potential estimate range from 517-1293. (Using avg. density est. for Guzman and Harveson with all GARP predictions the range changes to 855-1114.) We must recognize that we are extrapolating beyond study boundaries; density estimates vary across the range, we are

assuming that they wouldn't vary to get this number. Best probably to say we estimate there are fewer than 1500.

6. [redacted] says to incorporate prey base numbers into model (which cannot be done with ecological niche modeling). ADC averages 40 lion kills annually over last 10 years (predominantly in the Trans-Pecos. The department is trying to get better information on the status of mountain lions in Texas. Our mission is to manage all wildlife. We have been collecting and we still have some gaps over the last 15 years.

7. We know that there are at least two lion populations existing: One in South Texas and one in Trans-Pecos. Together, we conservatively estimate that there may be 450 (95% CI 240-658) lions occupying those areas. This means outside of the Trans-Pecos/S Texas Ecoregions there may be anywhere from 400 to 650 lions in other Ecoregions.

8. It is those other areas that we are interested in gathering more information about. Would landowners be willing to participate in helping us gather this information on their property?

9. Over the last 10 years, reported lion take by USDA Wildlife Services has averaged about 40 lions per year. Wildlife Services tracks their depredation harvest annually and shares that data with tPwD. We suspect that the total number may be significantly higher than that reported since TPWD does not require a hunter or trapper to report harvesting a mountain lion.

10. A suggestion was made to reconstruct round table that was done in the 1990's. (**The contact with leaders in the ranching community must be done before any general landowner meeting or round-table discussion, and only if key landowners indicate support for a specific strategy of collecting the harvest data).

11. Increase training for Department staff. Many types of training were discussed, but discussion focused on providing on-site training for staff in the identification of lion sign. Recommendations were made to hold the training in lion habitat for staff most likely to conduct investigations and/or to conduct training for all field biologists, and could be expanded to other divisions with a "train-the-trainer" approach.

12. Open a discussion to amend the protocol or amend the interpretation of the protocol to increase discretionary ability of Wildlife Division staff to respond to certain types of mountain lion sightings.

13. Discern whether internal TPWD protocol could be re-implemented with a multi-divisional approach.

Comments for Key Landowners Regarding Improved Information on Lion Harvest

Texas is experiencing increased pressure and criticism from environmental groups, as well as other State agencies, regarding our lack of information about the mountain lion population. We do not limit harvest by season or bag limit, and we are having difficulty justifying our current

regulations when we know so little about lion numbers and populations trends. **Like you, we believe that the lion population in Texas is secure, and we do not believe any change in regulatory status is needed at this time.** However, the Department, along with our different constituencies, needs better information about lion populations Improved information will help us to avoid future attacks on our regulations and possible legislation that would change the status of mountain lions---we do not want to lose the flexibility we currently have.

[redacted]: Questions for Influential Landowners

Preface and set the stage: Increasing efforts about the possibility of changing the status of mountain lions in Texas.

1. Do you have any suggestions of how we should proceed? If legislation is introduced, we are going to need more data; i.e., accurate number of lions killed. It is best to gather this information now, rather than reacting.

2. Do you think that it is a good idea and would you be willing to support us in our attempts to do this? Would you be willing to report your lion kill if confidentiality is enforced?

3. If so, what are some recommendations that you might have to assist us in this endeavor? (data collection)

PERFORMANCE REPORT

As Required By

STATE WILDLIFE GRANTS PROGRAM

TEXAS

Federal Aid Grant No. T-1

WILDLIFE DIVERSITY SCIENCE

Mountain Lion Status

Principal Investigator: David Holdermann

Mike Berger
Director
Wildlife Division

Robert L. Cook
Executive Director
Texas Parks and Wildlife Department

November 17, 2003

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 euphonized 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 where 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 Savannak, 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
Program Specialist V

Approved by: _____
Federal Aid Coordinator

Date: _____

John Herron
Program Director, Wildlife Diversity

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: evoluntionary 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 decription
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 decription
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

15 October 1991

Dr. Robert Dowler
Department of Biology
Angelo State University
San Angelo, TX 76904

Dear Dr. Dowler:

The Texas Organization for Endangered Species (TOES) recently reviewed the status of the mountain lion (Felis concolor) in Texas by examining available literature and contacting experts knowledgeable about the species' status in Texas. The purpose of this review was to determine if this species is Threatened or Endangered in Texas, or if more information is needed.

TOES noted that very little information is available in the literature to provide a definitive status of the mountain lion in Texas. Mortality and sighting data reported by the Texas Parks and Wildlife Department (TPWD) appear to be the most recent and thorough available. However, this and other information available is not conclusive enough to determine if mountain lions are increasing, stable, or declining throughout Texas. In consideration that little legal protection is given the mountain lion, there is concern that some mountain lion populations might be in jeopardy, and TOES has placed this species on its "Watch List" - potentially threatened in Texas.

Therefore, because of the lack of conclusive information available on the status of the mountain lion in Texas, the Texas Organization for Endangered Species encourages resource agencies and the academia such as TPWD, universities, and privately funded research organizations to initiate research directed towards determining the conclusive status of the mountain lion in Texas. This information would be useful to TPWD to manage the species accordingly and for TOES to determine if listing is necessary.

We would appreciate the Angelo State University initiating research directed towards gaining a better understanding of this elusive feline in Texas.

Sincerely,

Gary Garrett, Ph.D.
President

15 October 1991

Dr. Sam Beasom
Ceasar Kleberg Institute
Campus Box 218
Kingsville, TX 78363

Dear Dr. Beasom:

The Texas Organization for Endangered Species (TOES) recently reviewed the status of the mountain lion (Felis concolor) in Texas by examining available literature and contacting experts knowledgeable about the species' status in Texas. The purpose of this review was to determine if this species is Threatened or Endangered in Texas, or if more information is needed.

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We would appreciate the Ceasar Kleberg Institute initiating research directed towards gaining a better understanding of this elusive feline in Texas.

Sincerely,

Gary Garrett, Ph.D.
President

15 October 1991

Dr. James Scuddy
Department of Biology
Sul Ross State University
Alpine, TX 79830

Dear Dr. Scuddy:

The Texas Organization for Endangered Species (TOES) recently reviewed the status of the mountain lion (Felis concolor) in Texas by examining available literature and contacting experts knowledgeable about the species' status in Texas. The purpose of this review was to determine if this species is Threatened or Endangered in Texas, or if more information is needed.

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We would appreciate Sul Ross State University initiating research directed towards gaining a better understanding of this elusive feline in Texas.

Sincerely,

Gary Garrett, Ph.D.
President

15 October 1991

Dr. David Schmidly
Dep. Wildlife & Fishery Sciences
Texas A&M University
College Station, TX 77843

Dear Dr. Schmidly:

The Texas Organization for Endangered Species (TOES) recently reviewed the status of the mountain lion (Felis concolor) in Texas by examining available literature and contacting experts knowledgeable about the species' status in Texas. The purpose of this review was to determine if this species is Threatened or Endangered in Texas, or if more information is needed.

TOES noted that very little information is available in the literature to provide a definitive status of the mountain lion in Texas. Mortality and sighting data reported by the Texas Parks and Wildlife Department (TPWD) appear to be the most recent and thorough available. However, this and other information available is not conclusive enough to determine if mountain lions are increasing, stable, or declining throughout Texas. In consideration that little legal protection is given the mountain lion, there is concern that some mountain lion populations might be in jeopardy, and TOES has placed this species on its "Watch List" - potentially threatened in Texas.

Therefore, because of the lack of conclusive information available on the status of the mountain lion in Texas, the Texas Organization for Endangered Species encourages resource agencies and the academia such as TPWD, universities, and privately funded research organizations to initiate research directed towards determining the conclusive status of the mountain lion in Texas. This information would be useful to TPWD to manage the species accordingly and for TOES to determine if listing is necessary.

We would appreciate Texas A&M University initiating research directed towards gaining a better understanding of this elusive feline in Texas.

Sincerely,

Gary Garrett, Ph.D.
President

15 October 1991

Dr. Henry Wright, Chairman
Dep. Range & Wildlife Management
Texas Tech Univeristy
Lubbock, TX 79409

Dear Dr. Wright:

The Texas Organization for Endangered Species (TOES) recently reviewed the status of the mountain lion (Felis concolor) in Texas by examining available literature and contacting experts knowledgeable about the species' status in Texas. The purpose of this review was to determine if this species is Threatened or Endangered in Texas, or if more information is needed.

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We would appreciate Texas Tech University initiating research directed towards gaining a better understanding of this elusive feline in Texas.

Sincerely,

Gary Garrett, Ph.D.
President

15 October 1991

Dr. Nick Parker
Texas Cooperative Fish & Wildlife Research Unit
Room 9, Gooddard Building
Texas Tech Univeristy
Lubbock, TX 79409

Dear Dr. Parker:

The Texas Organization for Endangered Species (TOES) recently reviewed the status of the mountain lion (Felis concolor) in Texas by examining available literature and contacting experts knowledgeable about the species' status in Texas. The purpose of this review was to determine if this species is Threatened or Endangered in Texas, or if more information is needed.

TOES noted that very little information is available in the literature to provide a definitive status of the mountain lion in Texas. Mortality and sighting data reported by the Texas Parks and Wildlife Department (TPWD) appear to be the most recent and thorough available. However, this and other information available is not conclusive enough to determine if mountain lions are increasing, stable, or declining throughout Texas. In consideration that little legal protection is given the mountain lion, there is concern that some mountain lion populations might be in jeopardy, and TOES has placed this species on its "Watch List" - potentially threatened in Texas.

Therefore, because of the lack of conclusive information available on the status of the mountain lion in Texas, the Texas Organization for Endangered Species encourages resource agencies and the academia such as TPWD, universities, and privately funded research organizations to initiate research directed towards determining the conclusive status of the mountain lion in Texas. This information would be useful to TPWD to manage the species accordingly and for TOES to determine if listing is necessary.

We would appreciate the Texas Cooperative Fish and Wildlife Research Unit initiating research directed towards gaining a better understanding of this elusive feline in Texas.

Sincerely,

Gary Garrett, Ph.D.
President

FRANCES PLEASE MAKE TWO COPIES OF THIS FRONT PAGE.

[redacted]

272416 COORDINATION · ROUTING

ORG.	NAME	INITIAL	DATE
F&W	[redacted]		5/13/92
F&W			
EO			5/18
~~EO~~			
	[redacted]		

I would not quote a Division Director in a letter without including them on your ~~list of~~ routing.

REMARKS: Signed copy for EO.

RETURN TO: Kirsten 4978

Staff meeting

Faxed to [redacted] 5/21/92

[redacted]

[redacted] Ba[redacted] Member
[redacted] Commission
[redacted]

[redacted]

Thank you for your letter concerning resolution of the mountain lion issue. I sincerely appreciate the careful consideration and time you have dedicated to this important and controversial subject.

The purpose of this letter is to address each of your recommendations and to provide the following information.

I. Mr. [redacted], TPWD attorney, advises that the Sierra Club petition does, in fact, require action by the entire Commission. Staff recommends that the Sierra Club petition be denied by the TPWD Commission. Although information is limited, wildlife staff believes that mountain lion numbers in Texas are increasing and that the occupied range of the mountain lion in Texas is slowly expanding. There is no biological information to indicate a need to protect the mountain lion in Texas at this time. I recommend that Commission action on the Sierra Club's petition be placed on the agenda for the July Commission meeting.

(Corrected on letterhead)

* I recommend no action on petition at this time. Actions proposed in ¶ II & III are beginnings of studies needed for rulemaking activity. I also recommend a legal opinion from legal staff on options currently available as well as legislative solutions.
– [redacted]
5/26/92

II. Staff concurs with your recommendation to develop a Mountain Lion Management Policy for Texas. This project will include a significant effort to expand data and information collected by the public on a voluntary basis and verified by TPWD staff. Cooperative efforts between TPWD, USDA-APHIS Animal Damage

SIGNED AND DISPATCHED: ____________ 19 ______

PWD 482 (Rev. 2/78)

6000

Control, Texas Agricultural Extension Service, conservation organizations, and landowner/livestock producers will be emphasized to help publicize and gain acceptance for the volunteer reporting program.

The policy will call for an annual review of data collected and program status by the TPWD Regulations Committee. Mandatory reporting of harvested lions may be considered after (three to five) years if voluntary data reporting is inadequate to evaluate the status of the mountain lion in Texas.

III. The Department will undertake education efforts in regard to the mountain lion in Texas. As stated in the January Staff Report, a campaign will be launched to educate sportsmen, landowners and the general public about mountain lions, including their habits, habitat, life history, ecological niche and related information to promote a greater awareness of the mountain lion in Texas.

The preparation of a mountain lion field guide was recently initiated by wildlife personnel in the Trans Pecos. We also intend to produce a video on mountain lions presenting our story, to publish an informational brochure for wide distribution to the general public and to publish an article about mountain lions in the TPWD magazine. Your suggestion to include mountain lion information in our hunting guide is a good idea, we will see what we can do.

Although no additional public meetings on mountain lions are planned at this time, I suggest we consider sponsoring or cosponsoring an informational seminar on native cats of Texas in 1993 as part of our educational efforts. I believe this will help to put our current mountain lion situation in perspective with

the history habitat and knowledge about the bobcat, margay, and ocelot.

Sincerely,

[redacted]
Executive Director

[redacted]

TEXAS
PARKS AND WILDLIFE DEPARTMENT
4200 Smith School Road Austin, Texas 78744

CHARLES D. TRAVIS
Executive Director

April 16, 1992

[redacted]
Texas Parks and Wildlife Department
4200 Smith School Road
Austin, Texas 78744

Dear [redacted],

I am writing you this letter in my role as a Commissioner and Chairman of the Regulations Committee. I would like to address the subject of the Sierra Club's petition regarding the status of the mountain lion in Texas and the Department's position on this issue. I have carefully and fully reviewed the information provided by the staff of the Wildlife Division regarding the historic and current status of the mountain lion in Texas. I have also given consideration to the various points of view expressed by interested members of the public at the recent mountain lion round table in Del Rio. I have had several informal discussions with other members of the Commission. In light of the above, I would like to propose that the following course of action be followed by the Department.

I) I recommend that no change be made regarding the current status of the mountain lion in Texas. I do not believe that there is any biological justification which can support a change of status at this time. Thus, I recommend that the Department take whatever official action is necessary in order to formally deny the Sierra Club's petition regarding mountain lions in Texas. If any action by the Commission is required, it should be taken at its next scheduled meeting.

II) I recommend that the Department adopt a mountain lion management plan, the purpose of which shall be to gather biological data so as to further monitor the status of mountain lions in Texas. Initially this plan shall call for the Department to collect data which shall be submitted to them by the public on a voluntary basis. The data collected should include verified lion sightings as well as data relating to lion mortalities. The Wildlife Division shall create an information request form which will enable the public to provide the Department biological data. The information request form should be customized to the geographic regions of Texas, providing basic data such as sex, general body condition, reproductive condition, approximate age and county of collection in areas of high lion population such as the Trans-Pecos and South Texas, while allowing for more specific information such as examination of the lion and tissue collection by a Department biologist in areas such as East Texas. In all cases, however, the information request form shall be as user friendly as possible and strictly voluntary.

The creation of the mountain lion information request form should be publicized as widely as possible to those groups most likely to encounter mountain lions. This effort should include publication in the Department's Hunting Guide, direct mail efforts targeting members of various livestock associations, and known lion hunters.

A report detailing the biological data collected as well as compliance rates with the voluntary information request shall be presented to the Regulations Committee of the Commission no less frequently than once a year. If the Regulations Committee finds the Department's data collection effort to be inadequate after a three to five year trial period due to the voluntary nature of the information request form, then the Committee may recommend that the Commission consider making the request form mandatory with commensurate penalties to be imposed for non-compliance.

III) I recommend that the Department undertake a public education effort in regard to the mountain lion. It is important that the public be told the reality that the mountain lion in Texas is a non-endangered, non-threatened part of the Texas ecosystem which data indicates is expanding in both range and number. The Department should also disseminate data collected in prior and ongoing studies regarding mountain lions via Department publications and programs.

[redacted], I feel that the above is the only sound approach to the mountain lion issue and is in accordance with the sentiments which much of the Commission has expressed to me. I feel strongly that no further public meetings are warranted or justifiable at this time regarding this issue. Please let me know how you plan to proceed on my recommendation.

Sincerely,

[redacted]

LMB:vls

cc: All Commissioners

TEXAS PARKS & WILDLIFE

OFFICE MEMORANDUM

COORDINATION-ROUTING			
ORG.	NAME	INITIAL	DATE
REMARKS:			
RETURN TO:			

TO: [redacted]
Director, Wildlife Division

FROM: [redacted]
Area Manager, Black Gap WMA

SUBJECT: **Mountain Lions (CONFIDENTIAL)**

RE: **BBRSP/Trans-Pecos Region**

DATE: **October 13, 1998**

A mountain lion team meeting was held at Elephant Mountain WMA on October 12, 1998 to discuss past, present, and future mountain lion issues. Personnel in attendance included: [redacted]. Only Big Bend Ranch State Park and Trans-Pecos issues were discussed and addressed. Team members believe mountain lion issues in other ecological regions should be addressed by Department personnel in those areas. Thoughts, suggestions, and recommendations made by the team include:

1. Predator control, concerning the removal of mountain lions in the Trans-Pecos and adjacent property to BBRSP in particular, continues to be spotty or checker boarded. The BBRSP lion study had the misfortune of being adjacent to an intense and effective predator control program. Intense and or widespread control programs in the TP are uncommon but do occur in a few isolated locations. The team thinks predator control in the TP will continue to be checked boarded but even more so in the future as absentee landowners acquire property/ranches and allow little or no hunting. These type of landowners as well as an increase in Texas Nature Conservancy holdings, two national parks, and numerous state parks and natural areas will continue to provide "safe havens" for segments of the TP lion population.
2. The TPWD mountain lion status survey continues to indicate a stable trend of reported or known lion mortalities through 1997. However, the team feels the TP lion population may be at a lower level than previous years. It is to soon to estimate or know what the 1998 mortality survey will show but observed lion sign by TPWD personnel and contacts with private hunters, ADC, and other reliable sources indicates a decrease in the lion population. Prolonged drought conditions (5 years), resulting in a decrease in the prey base, is thought to be the main cause for a decrease in the lion population. Predator control activities should also be considered as a factor in the decrease but to a much lesser extent.
3. The team did discuss the subject of estimating lion populations but felt extremely uncomfortable with the process. As you know there are no feasible survey techniques for lions and the team did not want to get into the game of assigning a population estimate each year and ending up with trend guesses. Once a population estimate was made then we would most likely have to live with it forever. Population estimates might also invoke quotas, etc. etc.

4. Mountain lion issues have and continue to be addressed by TPWD. A Mountain Lion Round Table was held in Del Rio, Texas in ???? to gather public input. As a result of the meeting two mountain lion research studies were initiated, one in the Trans-Pecos and one in South Texas. These studies have been completed and the information from them and previous Texas lion studies has provided the Department with valuable information regarding Texas mountain lions
5. At this time the TP lion team recommends that a statewide management plan for mountain lions be initiated. The plan should be a formal document which will address issues and provide future management guidelines and direction. Mountain lion issues and management appear to differ over the state and should be addressed separately. Future management decisions and or guidelines may need to be addressed by ecological area.
6. During this process, the TP lion team recommends that all states having mountain lions be contacted for a copy of their lion management plans.
7. As an initial phase of the management plan process, the TP lion team recommends that a Mountain Lion Round Table(s) be held to gather input and disseminate information. All those players, participants, invitees, etc. from the previous round table should be included. Biologists from other lion states should be invited as well and asked to present their respective programs/management. TP landowners will say here they come again but anything we do concerning lions will probably elicit such a response in the TP.
8. The TP lion team discussed statutory alternatives for the mountain lion but recommended no change from the current regulations. The team feels the mountain lion population is not in danger of depletion but does think lion populations over the state may require different management strategies. The team would like to defer possible regulation changes until after the Round Table(s) are held and a statewide management plan is prepared.
9. A statewide mountain lion team should be convened to address and initiate the above recommendations.

I think you can see a considerable amount of thought and effort was put into this process by the TP lion team and I appreciate their efforts. The team unanimously agreed with all the above recommendations and thinks this process will point TPWD in a positive, proactive direction in managing one of the state's unique species.

Please advise if you have any questions or if we can provide any further information.

texas parks&wildlife news
TEXAS PARKS AND WILDLIFE DEPARTMENT • AUSTIN, TEXAS 78744

In the July 24, 1992, issue:

TPWD RESPONDS TO SIERRA CLUB PETITION

AUSTIN--The Texas Parks and Wildlife Department has officially denied a request from the Lone Star Chapter of the Sierra Club requesting a change in classification for the mountain lion. However, the department is expanding efforts to collect data on lion populations and distribution.

The letter, sent by TPWD Executive Director Andrew Sansom, said, "No change will be made regarding the current status of the mountain lion in Texas. There has been no biological information brought forward which would be supportive of a change of status at this time."

Sansom said in the letter that the department will develop a mountain lion management policy for Texas in response to information received at a mountain lion round-table held April 8-9 in Del Rio and upon recommendation from the Texas Parks and Wildlife Commission's regulations committee.

"This project will include a significant effort to expand data and information collected by the public on a voluntary basis and verified by TPWD staff," the letter said. "Cooperative efforts between TPWD, USDA-APHIS Animal Damage Control, Texas Agricultural Extension Service, conservation organizations and landowner/livestock producers will be emphasized to help publicize and gain acceptance for the volunteer reporting program. Efforts to collect this data have already begun."

The regulations committee will annually review data collected and the program's status. "Mandatory reporting of harvested lions may be considered if voluntary data reporting is inadequate to evaluate the status of the mountain lion in Texas," the letter continued.

Sansom also said in the letter that the department will launch a campaign to educate sportsmen, landowners and the general public about the mountain lion's habits, habitat, historic range and fluctuating population, life history, ecological niche and related information.

Mountain lions are classified as unprotected nongame animals. TPWD staff believe mountain lions are increasing in numbers and expanding their range in Texas.

Bob Cook, wildlife branch chief, said Texas is the only private lands state with a viable population of mountain lions. He said he believes there are healthy populations in the Trans-Pecos and the South Texas brush country.

It is unknown exactly how many mountain lions are roaming Texas, or how many are killed each year. From 1980-88, the USDA's Animal Damage Control harvested an average of 33 lions a year in Texas. The average reported harvest nationwide from 1979-88 was 1,312 each year.

Mountain lions generally breed and give birth every two years with a litter size of about three. They mature at 20-24 pounds. Their home range is an estimated 40-125 square miles and their main prey is deer. Cook said they are solitary predators. Adult males grow to 120-140 pounds while adult females will weigh about 80-100 pounds.

One cougar to 10-100 square miles is considered to be a good population, he said. In a statewide survey from January 1983 to May 1989, the department received 776 reports of mountain lion mortalities in 40 counties. There were 322 sightings in 65 counties.

LW 7/24/92

COMMISSIONERS

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TEXAS
PARKS AND WILDLIFE DEPARTMENT
4200 Smith School Road • Austin, Texas 78744 • 512-389-4800

ANDREW SANSOM
Executive Director

June 30, 1992

Mr. Scott Royder
Lone Star Chapter
Sierra Club
P. O. Box 1931
Austin, Texas 78767

Dear Mr. Royder:

The purpose of this letter is to address the petition filed by the Lone Star Chapter and to provide the following information.

I. No change will be made regarding the current status of the mountain lion in Texas. There has been no biological information brought forward which would be supportive of a change of status at this time.

II. Subsequent to input received at a roundtable concerning mountain lions held in Del Rio, April 8-9, 1992 and as recommended by the Texas Parks and Wildlife Commission Regulations Committee, we will develop a Mountain Lion Management Policy for Texas. This project will include a significant effort to expand data and information collected by the public on a voluntary basis and verified by TPWD staff. Cooperative efforts between TPWD, USDA-APHIS Animal Damage Control, Texas Agricultural Extension Service, conservation organizations, and landowner/livestock producers will be emphasized to help publicize and gain acceptance for the volunteer reporting program. Efforts to collect this data have already begun.

The policy will call for an annual review of data collected and program status by the Regulations Committee. Mandatory reporting of harvested lions may be considered if voluntary data reporting is inadequate to evaluate the status of the mountain lion in Texas. Staff will make annual reports to the Regulations Committee on voluntary compliance.

III. The Department will undertake education efforts in regard to the mountain lion in Texas. A campaign will be launched to educate sportsmen, landowners and the general public about mountain lions, including their habits, habitat, historic range and fluctuating population, life history, ecological niche and related information to promote a greater awareness of the mountain lion in Texas.

In conclusion, the agenda outlined above is an appropriate response based on the biological data now available to us.

Sincerely,

[redacted]

Executive Director

AS:RLC:kjc

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To [redacted] | From [redacted]

Co. | Co. 1/4/95

Dept. Chairman Baen asked to sign this letter

Phone # | Fax # after he saw the quote in "AUDUBON"

Mt. Lion file

TEXAS
DLIFE DEPARTMENT
Austin, Texas 78744 • 512-389-4800

ANDREW SANSOM
Executive Director

December 27, 1994

Dr. Dede Armentrout
Southwest Regional Vice President
National Audubon Society
2525 Wallingwood, Suite 301
Austin, Texas 78746

Dear Dede:

The article on mountain lions in the November-December 1994 issue of Audubon magazine has done more to damage Audubon's creditability and relationship with the Department and Commission than any previous issue I am aware of. I believe clarification on some of the points raised in the piece or attributed to you may be appropriate.

On page 32 of the article, you are quoted as saying, "We've lost a number of species over several decades because the [Texas] Parks and Wildlife Department didn't manage them." If you made that statement, I respectfully request a list of the species you referenced. I consider the quote a very serious allegation.

Also on the same page, there is a statement that indicates the mountain lion study initiated by the Department on Big Bend Ranch State Natural Area has been "ripped apart by virtually every legitimate lion researcher in the country." I do not believe this is the case and would like to clarify this matter.

Early in 1993, Scott Royder, telephoned the Department and asked to see the objectives of the proposed mountain lion study. Rather than send him just the objectives, the Department sent him a copy of the draft research proposal which was clearly stamped "Draft" in large letters at the top of the first page. Mr. Royder sent the Department's draft research proposal to Mr. Kenneth Logan in New Mexico. Not knowing that he had been asked to review an early internal draft, Mr. Logan noted obvious limitations in the proposal, provided a thorough review, and sent a copy of his review to the Department.

Early in 1994, the Department sent a revised version of the research proposal to reviewers outside of the agency. These included Mr. Logan, Mr. Harley Shaw, Mr. Rocky McBride, Dr. Bruce Leopold, and Dr. Mike Tewes (see enclosed copies of their reviews). The reviewers offered some excellent suggestions for improving the study, most of which have been incorporated into the final research work plan. I have been unable to find any evidence that any legitimate

lion researcher ripped the study apart. Once again, any substantiation you can provide me to support this allegation would be most helpful.

The Department is conducting two in-depth regional (BBRSNA and South Texas) mountain lion studies to supplement information obtained from the statewide sighting and mortality surveys. Through these studies, the Department is attempting to obtain reliable, scientific information on which to base management decisions concerning mountain lions in Texas.

We need the support of the National Audubon Society and other conservation organizations on this difficult issue and the Audubon piece is not helpful in that regard nor does it accurately characterize the actions or position of Texas Parks and Wildlife in my opinion.

Sincerely,

[redacted]

Parks and Wildlife Commission

YDG:RG 359

Enclosures

cc: Commissioners

[redacted]

The Lion's Silent Return

By Ted Williams

America's mountain lion has staged an amazing comeback—no thanks to us.

OUR LION was up on Hardscrabble Ridge a good half-mile from the den site, proclaimed Ken Logan's radio receiver. So today, July 18, 1994, we could safely try for her cubs. The week before, Logan and his assistant, Jeff Augustine, had backed off in a hurry when the sleek, healthy 80-pounder—F-91, as they call her—had perked her ears forward, hissed, and angled toward them. Few of the world's large carnivores are less dangerous to our species than the mountain lion—*Felis concolor* (cat of one color), alias cougar, catamount, puma, panther, painter. But the ground rules change when you barge into its den, grab nursing cubs, fit them with radio collars, and start punching holes in their ears.

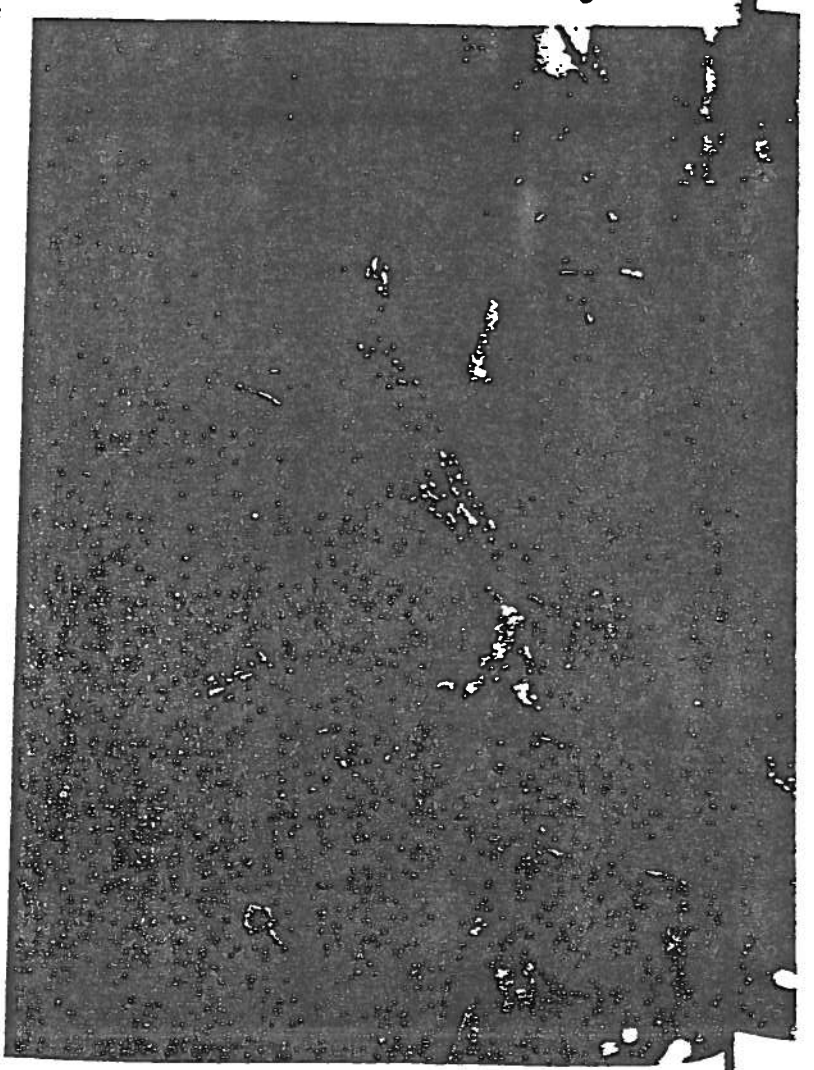
As lion habitat, New Mexico's San Andres Mountains are right for all the wrong reasons. They are part of the vast White Sands Missile Range, where visitors, especially the press, are carefully herded and controlled. Legalizing my presence in this lovely, accidental wilderness was a brace of military police that flanked me as we ascended the 45-degree slope in 100-degree desert heat. Corporal Charles Ray and Specialist Richard Thorp, barely out of their teens and full of Rachel Carson's sense of wonder, told me that Army life had its highs and lows, and that this day in lion country with the scientists of the world-renowned Hornocker Wildlife Research Institute was the highest of the highs. It pleased me to hear them breathing as hard as I when I stopped to adjust my canteen-crammed day pack and extract a yucca spike that had broken off when it hit my femur.

Hiking, Logan had called our activity. As a proper swamp Yankee, I knew it as rock climbing, but he couldn't have driven me off that mountain with the can of Grizzly Guard pepper spray that dangled from Augustine's belt. I marveled at the beauty of this 750-square-mile chunk of Chihuahuan desert, the biggest left in the United States. Lush in the absence of cows, the southern slopes under the high, limestone-layered peaks bloomed with prickly pear; whitethorn acacia; tall, spindly ocotillos; and muhly grasses greening from recent rain. On flats and northern slopes, blue and side-oats grama were greening too, and everywhere palmetto-shaped yuccas and dense stands of sotol brightened the brown rubble.

The air was sweet and clean, and save for the glint of our truck windshields far below, the wild mountainscape was unstained by human spoor. Once we saw the tracks of an adult male lion, and here and there fresh "scrapes"—subtle depressions in duff and dust that sometimes reeked of urine.

For an hour we glassed the den site. No sign of cubs. Logan, his research partner Linda Sweanor, to whom he is married, and Jeff Augustine descended for a closer look. "She's moved them," said Sweanor. "That's why she's up on Hardscrabble." So we rock-climbed to the new den, sucking wind and water. Once Logan fell, bending his radio antenna.

We got to within 50 feet of F-91, but ledge and junipers hid her from our sight. "She knows we're here," Logan announced. Sweanor crossed the valley to watch from the opposite slope and keep us posted on the walkie-talkie. The cubs were growing swiftly; in a few days they'd be weaned and faster than human sprinters. If we didn't tag them to-



day, there probably wouldn't be another chance.

While we waited, Logan related an earlier adventure with a lion known as F-6. Her cubs had been growing swiftly. Logan had tried to intimidate F-6 by easing toward the den. She had charged. "Her ears were forward and her eyes were just glued on me," he recalled. "There was a mountain mahogany bush in front of me, and I thought, 'As soon as she hits that, she's going to break off.' Well, she just blew through it." Inches from Logan's head—so close he could hear the thin desert air sighing across her rippling flanks—F-6 had veered and gone pumping up the mountain.

We hovered around F-91's new den site for three hours, but she held her turf. "Let's try something," said Logan, grabbing the pepper spray. "Let's ease up on her in a group; maybe we can intimidate her." I picked up a baseball-bat-size sotol stalk, eliciting a cheerful "Good idea!" from Augustine. The MPs goggled at each other but advanced like good soldiers.

No grass stem stirred as F-91 slipped out of her den and ghosted down the southeast fork of Bosque Spring Draw.

The spotted, blue-eyed cubs hissed and growled, scratched our wrists and bit us through our leather gloves. Piercing their ears for plastic tags and tattoo numbers seemed somewhat less traumatic than piercing the ears of teenage girls. Only F-232 got a radio collar. Like M-233, she had a pink nose. Black-nosed M-234 calmed quickly, sucking water from a baby bottle and laying down his freshly perforated ears in contentment. We left them at the den and ran. And as we moved out, F-91 moved in—America's lion, perceived as lord and vermin, loved and loathed by a confused, ignorant nation.

If Africa's lion is king of beasts, America's is footman to the lost dauphin. A big male might go 220 pounds and measure nine feet, but only if you count his arm-thick tail, which is half the length of his body. Because the hyoid bone, at the base of its tongue, is not flexible, our lion can't even roar—a condition that has earned it the further indignity of being lumped with the "small cats." The only crest it ever adorned was the chicken-coop roof, draped thereon as a freshly ventilated carcass.

A mountain lion in Arizona. Above: Researcher Ken Logan and a cub tagged in New Mexico.

The lion of the New World first made it into old-world literature in 1500, when Italian explorer Amerigo Vespucci described one he'd seen on a beach in what is now called Central America. At that time no terrestrial mammal native to the Western Hemisphere was more widely distributed. Lion country covered all of what came to be the first 48 states, jutting far into Canada and taking in almost all of South America. Quickly, Europeans set about trying to rectify this fact by declaring all-out war on the species,

INCITE

behavior that flabbergasted the Indians and for which their only explanation was that whites were insane.

By the early 1900s bounties and intense government control programs had nearly eliminated mountain lions from the United States. The conservation movement was young and vibrant, but Americans still believed that there were "bad" animals like mountain lions and "good" animals like deer, and that conservation entailed killing the former on behalf of the latter. Thus the architect of the movement, Theodore Roosevelt, was able to dismiss our lion as an evolutionary error in need of correction by people who cared. "Lord of stealthy murder," he called it.

Through the first three-quarters of the 20th century, things got steadily worse for *Felis concolor*. Writing in the November 1969 *National Geographic*, Maurice Hornocker—founder of the Hornocker Wildlife Research Institute and the first scientist to

INCITE

seriously study mountain lions in the field—reported that best estimates put the U.S. population at less than 6,500 and probably falling.

But as deer and elk recovered from unrestricted hunting early in the century, so did the cat that eats them. Today, even with its U.S. range diminished by two-thirds, the mountain lion is still the most widely distributed land mammal native to the Western Hemisphere, and some biologists are saying the United States may have as many as 50,000. "The world's big carnivores aren't doing too well. But our lion is an exception, an amazing success story," says Hornocker. "It has come back without any costly committees or commissions, without any congressional hearings, without any threatened or endangered status." Lions have recovered to the point that people squatting in formerly vacant habitat are feeling unsafe, occasionally with good reason. Of the dozen humans known to have been killed since 1890, eight have died in the past 23 years.

The mountain lion *is* classified as endangered in Florida, where 30 to 50 animals are known to abide. Elsewhere east of the Mississippi it may have been extirpated as a breeding species. While a few cats have been showing up in the Northeast, it's unclear if they represent a remnant of the eastern subspecies, *Felis concolor couguar*, or if they or their ancestors were dumped by people who had acquired them in, say, Texas, where cubs are legally hawked as pets and/or fodder for canned hunts.

We probably spent four million dollars studying the mountain lion, and all we have proven is that it's a big pussycat and eats meat," boomed the voice on my pocket tape recorder. "In California the do-gooders stopped the lion hunt. Now there are too many." The interview had been with Brub Stone, a board member of the Gila (New Mexico) Fish and Gun Club, and I was replaying it for Maurice Hornocker as we sat at his kitchen table in Sun Valley, Idaho. Hornocker—a fit 63, with youthful blue eyes—roared with laughter, then regaled me with stories of other Brubs he'd offended with facts they didn't want to know: "When I used to go to the outfitter and guide meetings in the sixties, I didn't just wear my bulletproof vest but my bulletproof shorts. They were out for blood. 'Who was this crazy college kid Fish and Game had hired to find out about these damned vermin? Hell, we know all about them.' They were convinced lions had killed all the deer and elk in Idaho and were eating each other."

Later, when we had moved out onto the deck and were watching wood ducks and brook trout slice silver V's and O's in the obsidian surface of the stream below, Hornocker talked about his early research. He had been informed by wildlife literati that a population study of mountain lions was quite impossible. The beast, they said, was simply too elusive. From 1964 to 1974 he and an assistant chased lions through the rugged, remote River of No Return country of central Idaho, treeing them with dogs and immobilizing them with drugs. In hunting season, when rime ice feathered the mossy boulders along Big Creek and the bull trout were campfire orange, they'd shoot two deer and an elk for food,

INCITE

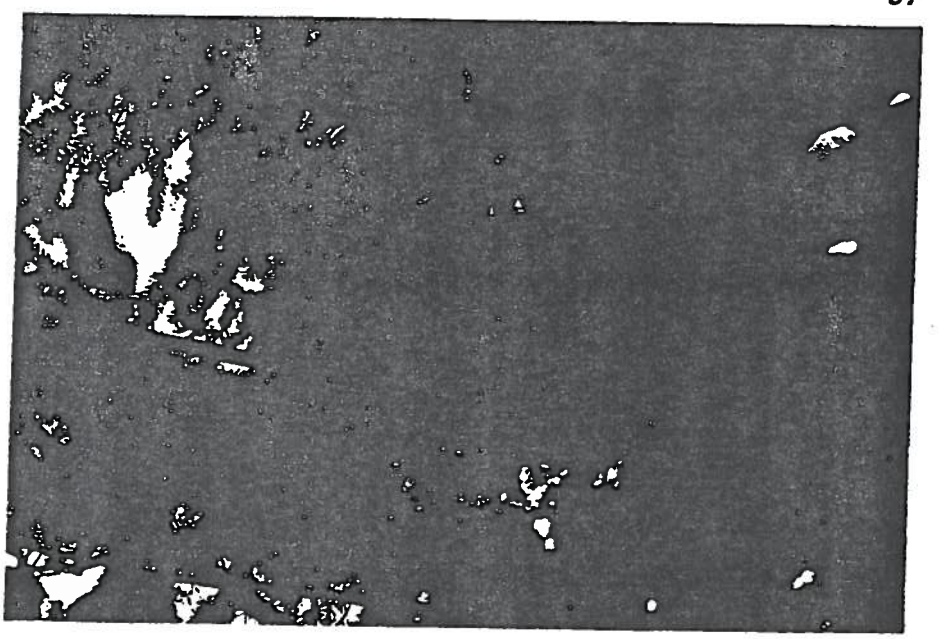
recovery of any species, you need to learn as much as you can about it. Good science is serendipitous; facts that had seemed not worth knowing or politically incorrect turn out to be vital for effective management. In Florida good science has revealed that "panthers" have been isolated not by nature but by human development and that historically they exchanged genes with cats far to the west and north. Now it is clear that this grievously inbred population—which we have perhaps wrongly called a subspecies—cannot be "polluted," as had been argued, by an infusion of new genes. In fact, it cannot *survive* without such an infusion, which now is under way with a planned introduction of lions from Texas.

When Kerry Murphy, Hornocker's man in the greater Yellowstone ecosystem, learned that five lions had established territories in Paradise Valley, just outside the park, it seemed like a worthless fact obtained at needless cost to lions. Stressing animals by running them with dogs and injecting them with drugs has been criticized as inhumane. But it is kinder than preserving the scientific vacuum in which state and federal resource agencies commonly operate. When the Montana Department of Fish, Wildlife and Parks proposed a sport-hunting quota of five lions for Paradise Valley, Murphy successfully opposed it by showing that such mortality could expunge the species from that part of the study area.

Ask Hornocker if lion reintroduction is biologically practicable in upstate New York, northern New England, or the Great Smoky Mountains, and he'll tell you it's a piece of cake. Ask eastern fish-and-game officials, and most will tell you it's impossible. What they really mean is that release of cougars, as they are called in the East, would scandalize the hook-and-bullet lobby, which pays their salaries and which prefers that no quadruped assist in killing the East's overabundant deer.

The origin of the few animals apparently extant in Yankeeland, and indeed their very presence, are facts game managers don't want to know. They claim there's no evidence of cougars even as they resolutely refuse to look for that evidence. Nor are they bestirring themselves to seriously protect habitat. Why the denial mode? If the animals did not originate in Texas or elsewhere in the West, it could mean that the eastern cougar—*Felis concolor couguar*—is not extinct. This is a terrifying thought to managers because, without admitting that the beast still exists, the U.S. Fish and Wildlife Service has listed it as endangered—status that would mandate a budget-smashing recovery plan if ever the eastern cougar appeared in the flesh.

A cougar population sparser than the East's seems to be a goal in Texas. Enthroned on a deer-hunting stand 33 miles south of Marfa in November 1989, Larry Martin spied four young female lions padding up a dry creek bed. In Texas you may kill as many mountain lions as you please whenever you please, so Martin dropped all four. "Happy Hunter," effused the *Marfa Independent*.



A female mountain lion in White Horse Canyon, near Missoula, Montana.

Less happy about such 19th-century-style management is Dede Armentrout, in charge of the National Audubon Society's southwest regional office. "We've lost a number of species over several decades because the [Texas] Parks and Wildlife Department didn't manage them," she remarks. "It kept saying, 'We've got plenty; don't worry your pretty little heads.'"

Last year Texas conservationists failed in a legislative effort to control lion killing. Speaking out against the bill in a staff report, Parks and Wildlife revealed that it "believed" lion numbers to be "healthy." This, however, is a belief based not on science but on hearsay. "It is believed that mountain lions must be controlled in the vicinity of the bighorn sheep brood pens," continues the report. But, again, there is no scientific basis for such a conclusion. New Mexico—aberrant among states in possessing the courage to underwrite good science and then act on the facts regardless of who might not want to know them—ceased killing lions on behalf of bighorns, then hired Hornocker to do the White Sands study. Lo and behold, lion predation of bighorns *declined*.

Among the facts Texas Parks and Wildlife officials don't want an ignorant public to know is that they don't know anything about lions either. Accordingly, in the state-owned Big Bend Natural Area, they have commissioned a make-believe study that has been ripped apart by virtually every legitimate lion researcher in the country. They initiated another make-believe study, on state land adjacent to the Big Bend Natural Area, after locals caterwauled about lions killing mule deer. The initial approach was simply to knock off a bunch of lions and watch what happened. "Until a new biologist complained, the department wasn't looking at teeth, sex, age, or even stomach contents," reports Armentrout.

Mountain lion regs in California, where the animals may be killed only when threatening humans or livestock.

TOM GALLAGHER

aching the meat round the 200-quare-mile study rea, where it ould stay frozen rough the long, utal winter. Be-use radio teleme-y had not been rfected, tagged ons had to be icked, observed, d recaptured.

What Hornock-showed the rld about the big pussycat that eats at is that there can never be "too ny." He proved that America's lion trols itself by setting up and guarding rmous territories, and that because it ributes itself so sparsely over the h it is incapable of materially affect-healthy prey populations. Armed this knowledge, every lion state in West save Texas upgraded the status *elis concolor* from varmint to be shot ight to game to be conserved—or in ase of California, nongame to be rved. That's what good science can r wild animals.

But good science doesn't happen much these days in state and federal wildlife agencies. Piñata-like dispersal of funds and rapid turnover of bureaucrats make long-term field research like Hornocker's White Sands lion project, now in its 10th and final year, next to impossible. As leader of the Cooperative Wildlife Research Unit at the University of Idaho, in Moscow, Hornocker had watched his career slip away in endless meetings, planning sessions, and paper pushing. He was, as he recalls, "writing memos in response to memos asking me to write memos." There wasn't time for much else, least of all good science. So 10 years ago he quit and set up his unique nonprofit institute, now with an annual budget of $1.5 million. Currently he has a dozen projects under way in the United States and is studying Amur leopards and Siberian tigers in Russia.

Hornocker is learning that the facts America doesn't want to know about its lion extend way beyond those that merely challenge frontier gospel. Eight years ago the institute discovered that mountain lions, which early in the century had been shot and poisoned out of Yellowstone National Park, had slipped back in. Since then one of Hornocker's major goals has been to find out how they will interact with the wolves the government is planning to release there; but he can't get the attention of the Interior Department, which refused his recent request to fund the work even as it asked him to assist in rewriting lion-management plans for the national parks. Money, as the official explanation goes, is tight. Also, Interior officials and some environmentalists don't like the idea of someone poking around the park learning things that might further delay wolf recovery.

But if you want to facilitate real natural, and to be avoided at any cost. "Remove dense and low-lying vegetation where cougars can hide," warns *The New York Times*. "Install outdoor lighting.... Do not hike alone." If it has really come to this, why not also suggest wearing steel trash cans and diving helmets or safer yet, staying indoors?

It's not the idea of getting killed that undoes us; it's the idea of getting eaten. About 50 herdsmen are gored to death by cattle each year, but as Hornocker says, "You don't see movies entitled *The Night of the Cow*."

The best way to avoid confrontations with lions is to give them the space they need. But this, too, is a fact we don't want to know, especially if the developer slapping houses on the foothills is building one for us. So even as lions increase, their future dims.

A viable lion population—defined by biologists as one capable of persisting for 100 years—requires 250 breeding adults of each sex. Numbers vary according to location and prey density, but based on Ken Logan's data from New Mexico, 500 breeding lions need 10,000

square miles. Much easier to ban hunting, buy some land here and there, and keep fragmenting habitat.

Ten thousand square miles, Logan told me as we climbed the abandoned observation tower on Skillet Knob, is 13 times the size of the San Andres Mountains. But that kind of habitat probably exists in New Mexico. A future for New Mexico's lions will, of course, require sound hunting regulations, which Logan has been asked to help draft. And it will require at least two large safe havens—lion reservoirs the size of the White Sands study area where *Felis concolor* can breed and from which youngsters can disperse.

From the rickety observation platform we gazed out over valleys brown and green, and down and up at eroded peaks washed in purples, reds, and golds—lion country as priceless as the Serengeti. Five miles to our southwest the Chalk Hills hung across a mottled sky; the Mockingbird Mountains rose 15 miles to our north, the Black Range 60 miles west, the Sacramentos 40 miles south. In the dry Tularosa lake bed, 30 miles to our southeast, the gypsum salts that give the missile range its name oozed with reflected heat.

"Blip, blip, blip..." said Logan's radio receiver. It was F-90 to the southeast. We found F-147 high in the Mockingbirds. And there was M-46 in the Chalk Hills on a course that had taken him past Bosque Canyon. So he had left the tracks we'd seen on our climb for F-91's cubs. F-183 turned up over in West Bosque Canyon. From White Rock Canyon due north, we picked up the frequency of M-221—a 19-month-old subadult unsettled, looking for home range. And here was F-89 moving toward us along a ridge to the east, shadowed by M-210. Probably they were mating.

Logan aimed his receiver southwest toward Hardscrabble Ridge, and we picked up the signals of F-91 and her cub F-232—the one I'd held 24 hours earlier. Far below us a sparrow hawk dipped out of a dying updraft. We stayed there a long time, washed by the faint San Andres breeze, turning like compass needles over lodestone, listening to our American lions. Way out there, with them now, we padded along high ledges, ghosted through rocky draws, flowed over green foothills. We saw and heard and smelled everything in lion country, and all of it that day was beautiful and right.

Ruben

A.1

[redacted]

From: [redacted]

[redacted]

The mountain lion team met this morning concerning the proposed research study on BBRSP and South Texas. Those in attendance included: [redacted]

A consensus was made by those in attendance regarding a number of issues and those are listed below.

STUDY NEED

The group believes it will be important to have a tool for estimating mountain lion populations, particularly in the future. The group believes the mountain lion will ultimately become a game animal and a tool for estimating lion numbers will be important in that process, particularly if harvest quotas are required. At the current time all other western states have harvest quotas but those quotas are based on population estimates which are nothing more than SWAGS (1 guess + 1 guess = two guesses).

Lion researchers have been trying for years to develop such a method and to my knowledge it has not been accomplished yet. In view of past history, the chances of the proposed study are probably slim but you never know!

PREDATOR CONTROL NORTH OF BBRSP

The team believes it is important to determine if active predator control practices are still being conducted north of BBRSP as when the previous lion study was conducted. To my knowledge predator control is still taking place but the main honey hole for that control was the portion of La Mota Ranch which now belongs to TPW/BBRSP. With that said, could an intense control program on the remaining property north of BBRSP still effect the proposed study? No one knows for sure but it is highly possible.

STAFF ASSISTANCE

The team would like to see TPWs role primarily as a technical advisor. The team thinks that if a study is conducted in the Trans-Pecos, and BBRSP in particular, that TPW should be involved to a certain extent. We think it is important to keep our finger in the pie, only if it is a little finger. Capture periods for the proposed study are from September - December. This is probably the busiest time of the year for TPW staff as we have deer surveys, public hunts, technical guidance, etc. etc. Besides those activities just mentioned our staff have more than a full plate. If we divert personnel from Black Gap, Elephant, District, etc. to BBRSP for more than several days at a time then we can expect something to go undone on these projects. Some activities can go undone but I would hate to think some of our sheep restoration projects suffered or failed because we were tied up with a lion project on BBRSP. ***In simple words, we are very limited to the manpower we can commit to this project. The team is also concerned that if the study is funded/conducted and flounders then local TPW staff be obligated/ordered/assigned to bail it out. If you remember this happened in S Texas and of course no amount of money or staff could salvage the Edwards Plateau study, which should have been a pilot study, survey, etc. etc. to begin with.***

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LODGING and COORDINATION WITH BBRSP

Lodging may or may not be available on BBRSP. When the previous lion study was conducted there was an excess of lodging available. In fact, BBRSP was not even open to the public for the first two years of the study and if I'm not mistaken they were not fully staffed either. The site is a very busy place now with more staff and more public use. Someone needs to touch base with Delton/Louis regarding this study on their site.

RECOMMENDATIONS

As stated earlier the lion team recognizes the need for a population estimating tool. The team also recognizes this study was probably initiated in part from program staff at Austin HQ. As a result the team believes program and SRSU staff are probably not aware of the logistics and manpower required to conduct such a study in a remote location such as BBRSP.

The team recommends that exact manpower needs, equipment, funding, etc. etc. from TPW be determined before and if the study is funded.

The team recommends the BBRSP site manager, PL Regional Director, etc. etc. be consulted before and if the study is funded to determine if lodging will be available and if the study will be compatible with current activities on the study site.

Considering all the ifs associated with conducting such a study, the team recommends determining if lions are even available on the study site.

Considering all the above thoughts/information, the lion team recommends a pilot study be conducted to determine if the study is even feasible before committing to a full blown study. The team would hate to see another study belly up like the last two!

I hope this information is of some help to you. If you need any further information please advise.

[redacted]

[redacted] wrotc:

> [redacted],
> Please send out to the mtn. lion team a copy of the research proposal submitted by Dr. Harveson. I would like to get comments on this before I respond to Ron by 2/18/01. Let me know what you all think.
>
> My comments are basically that I don't disagree we need to develop a method for doing this but I don't know about our committment in regard to man-hours and man-days devoted soley to this project. You know how long it took last time we did something like this, are we ready to do it again? Do we have time to do it again? Do we absolutely need to, at this time, do this? Is there political pressure from somewhere to do this? etc, etc.

Mountain Lion Roundtable

Del Rio, Texas

April 8-9, 1992

SUMMARY REPORT

Wildlife Branch
Fisheries and Wildlife Division

Texas Parks and Wildlife Department

SUMMARY OF THE MOUNTAIN LION ROUNDTABLE

April 8-9, 1992
Del Rio, Texas

Parks and Wildlife Commission

Honorable Ygnacio D. Garza, Chairman

Honorable John Wilson Kelsey, Vice-Chairman

Honorable Lee Marshall Bass, Member

Honorable Henry C. Beck, III, Member

Honorable Teresa (Terry) Hershey, Member

Honorable George C. (Tim) Hixon, Member

Honorable Chuck Nash, Member

Honorable Beatrice Carr Pickens, Member

Honorable Walter Umphrey, Member

Andrew Sansom
Executive Director

Dr. Rudolph Rosen, Director
Fisheries and Wildlife Division

Robert L. Cook, Chief
Wildlife Branch

MOUNTAIN LION ROUNDTABLE

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MOUNTAIN LION ROUNDTABLE

EXECUTIVE SUMMARY

The purpose of this roundtable was to establish goals for mountain lion management, determine how these goals would be accomplished, and methods of monitoring progress.

Invitational letters were mailed to 97 prospective participants representing a diversity of interests in mountain lions. One hundred nine (109) public participants, assisted by 6 commission members and 19 department staff, attended the meeting held on April 8-9, 1992 at the Eagle Room of the Budweiser distributorship in Del Rio, Texas.

A group process was used to identify goals and methods of accomplishments. Participants were divided into 8 subgroups to encourage diverse participation from all backgrounds and interests. A facilitator was assigned to each subgroup to preside and keep the meeting on schedule, and to record all identified goals along with the means and measures for monitoring progress toward accomplishemnt of each goal.

The following goals for mountain lion management were identified by roundtable participants, and are presented in the words of the participant.

- Maintain a healthy, huntable statewide population.
- No public hunting except for personal defense.
- No change in present policy.

(Continued)

MOUNTAIN LION ROUNDTABLE

EXECUTIVE SUMMARY (Continued)

- Management that allows lions and humans to co-exist with least regulatory restrictions.
- Maintain mountain lions as non-game animal.
- Do an intensive study on the animal to determine a course of action for management.
- Maintain viable populations with equal consideration for property rights.
- Prevent lawsuits over mountain lions.
- Legal control of depredating lions without any delays.
- Conserve the environments capable of supporting viable mountain lion populations.
- Provide for educational programs for Texas citizens to fully understand mountain lion ecology and management.
- Mechanism for control of problem animals.
- Leave management to ranchers and landowners to keep lions free and thriving.
- Protect lions in biotic areas where they need protection such as Northeast Texas.
- Need to study mountain lion in South Texas to understand ecology and management.
- Control lions in the interest of wildlife introductions, i.e., bighorn sheep.

(Continued)

MOUNTAIN LION ROUNDTABLE

EXECUTIVE SUMMARY (Continued)

- Quantify livestock losses and control costs.
- Ensure that the mountain lion is not placed on Federal or State endangered or threatened list.
- Maintain viable lion populations within levels acceptable to society and land uses within a region.
- Develop a management plan that quantifies population and harvest trends before changing legal status of lions or making them a liability to landowners.
- Develop a biologically defensible means of surveying lion populations.
- Base status of lions on biological information rather than hype or emotions.
- Protect the property rights of resource producers and habitat owners.
- Provide a strict cost/benefit analysis of all TPWD lion activities.
- Prevent environmental groups from dictating TPWD management policies.
- Recognize economic barrier to habitat expansion.
- Collect a good data base on lions taken in Texas.
- Enhance communication with information on attitudes from vested interests where mountain lions occur.
- Allow lions trying to re-inhabit former habitat that opportunity by banning hunting in those areas only.

(Continued)

MOUNTAIN LION ROUNDTABLE

EXECUTIVE SUMMARY (Continued)

- Reject any tax funded study of lions at this time.
- Copy New Mexico's program to determine range and viability of lions.
- Release 1080 for areas where lions are not wanted; make all controls available.

When summarized by broad subject matter, the proposed goals were as follows:

- Maintain a viable, breeding, huntable population on a statewide basis within levels acceptable to society and land uses.
- No change in present policy which classifies lions as huntable non-game with few regulations to prevent control measures.
- Do an intensive study to determine status, trends and management needs.
- Leave management to landowners to keep lions free and thriving.
- Protect lions in biotic areas where they need protection such as East Texas.
- Control lions in the interest of wildlife, i.e., bighorns, mule deer and pronghorns.
- Develop management plans and gather data prior to changing the present status of lions.

(Continued)

EXECUTIVE SUMMARY (Continued)

- Make controls such as 1080 available to ranchers; publish and encourage control methods.
- Ban public hunting except for personal defense.

MOUNTAIN LION ROUNDTABLE

INTRODUCTION

Initiation

The recent controversy concerning mountain lions in Texas was initiated in December 1991 when the Sierra Club petitioned the Texas Parks and Wildlife Department to classify the mountain lion as a threatened nongame species. The Parks and Wildlife Regulations Committee rejected the status change, citing evidence that lion populations were increasing. However, the Committee offered to host a mountain lion roundtable to gather public input regarding lion management goals and methods of accomplishment. The roundtable dates of April 8-9, 1992 were set and coordination between department personnel and diverse interest groups was begun to develop a format for the meeting.

An invitation letter was sent to a wide spectrum of persons and groups selected to represent a diversity of experience, knowledge and perspective relative to mountain lions in Texas. All members of the Parks and Wildlife Commission were invited to attend and participate in discussions.

Purpose

The primary purpose of this roundtable was to gather a diverse group of individuals together who have knowledge and interest in mountain lions. Participants were divided into subgroups of 10-12 each, and were asked to give their ideas for management in the form of goals, means and measures of accomplishment. The results of this roundtable will be considered by the Parks and Wildlife Department staff when recommending program needs for mountain lion management to the Commission.

Acknowledgements

Robert Cook, Branch Chief for Wildlife, was coordinator of the roundtable. Horace Gore served as assistant to Cook and compiled this report. Silvestre Sorola served as liaison at Del Rio, coordinating local arrangements.

(Continued)

Acknowledgements (Cont.) Thanks are extended to the subgroup facilitators who presided and recorded individual participant goals, means and measures. The roundtable facilitators were:

John Jefferson	Mike Morris
James Henson	Lee Ann Linam
Jaime Rutledge	Richard Taylor
Jim Carrico	Jay Williams

Dr. Michael Tewes, Caesar Kleberg Wildlife Research Institute, gave a slide presentation on Mountain Lion Ecology and Research Update. Roy McBride, lion hunter and research associate, gave a review of his experiences with mountain lions in Texas during the last 40 years. Kenny Logan spoke and showed slides on the ecology of a mountain lion population in New Mexico.

Special thanks are extended to the Del Rio Chamber of Commerce and Visitors Bureau for a "Border Buttermilk" social at Ramada Inn.

Pris Martin, Rob Fleming, Suzanne Davis and others did the graphics and literature layout. Mike Diver was responsible for printed materials. Kirsten Chote and Stacye Koon contributed in organizing the data gathered by facilitators. Staff members of the Information Services Section made significant contributions.

This publication is presented as a contribution of Job No. 69 of Federal Aid Project W-125-R.

MOUNTAIN LION ROUNDTABLE

METHODS

The 97 potential participants invited to participate in the roundtable were selected to represent:

- ranching-farming
- sportsmen
- resource management
- protectionists
- business
- outdoor news
- conservation
- academic/research

The roundtable was held on April 8-9, 1992 at the Eagle Room of the Budweiser distributorship in Del Rio, Texas. As expected, several interested participants came to the meeting as "observers." The result was a total of 109 public participants, assisted by 6 commission members and 19 department staff.

A group process was used as the method for conducting the roundtable:

- Participants were divided into 8 subgroups (Appendix D) to:
  - establish small working groups
  - represent varied backgrounds and interests
  - encourage individual participation
- Each group was assigned a facilitator to:
  - preside over the conclave
  - keep the meeting on schedule
  - record all goals, means and measures identified by individual participants

(Continued)

MOUNTAIN LION ROUNDTABLE

METHODS (Continued)

- Department staff and facilitators developed a grouping of goals to:
  - consolidate similar goals
  - eliminate duplication
  - facilitate general discussion
- Discussion during the joint session of all participants:
  - was presided over by department moderators
  - followed the goals as grouped by similarity

Goals developed during roundtable discussions and consolidation of those goals into specific subject matter were compiled for presentation in this report. An "informational mapping" format is used to succinctly outline the course of events during the roundtable. This format provides lists rather than narrative for goals, means and measures. All goals and related information are stated as much as possible in the phrases presented by participants. In the RESULTS section of this report, the information is generally presented in the words of participants.

MOUNTAIN LION ROUNDTABLE

ROUNDTABLE RESULTS - GOALS, MEANS AND MEASURES

Objectives	o **Identify goals for managing mountain lions** o **Present means of accomplishing goals** o **Present measures for monitoring the success of accomplishment**
Order of Comments	The goal statements, and means and measures are essentially in the words of each subgroup participant and in order of presentation by each participant.

Group 1

Goals	Means	Measures
o Maintain viable breeding population.	o Elevate lions to protected nongame status or managed protected hunted game status and maintain wildlife corridors. o Economic incentive for landowners to manage range to provide good habitat for deer (food supply for lions). o Permit system for taking lions based on population estimates and allowing for depredation permits.	o Monitor and protect lions to maintain viable population and protect habitat. o Standard population surveys where appropriate habitat exists. o Determine that population and harvest remain stable under current unregulated status. o Poll the operators of the land.

(Continued)

MOUNTAIN LION ROUNDTABLE

ROUNDTABLE RESULTS - GOALS, MEANS AND MEASURES

Group 1 (Cont.)

Goals	Means	Measures
	o Determine populations and harvest under current unregulated status. o Elevate lions to protected nongame status without hunting but with corridors.	
o Healthy, huntable statewide population.	o Translocation in some cases and by maintaining status quo in others; some form of regulation is probably necessary. o Statewide census o Moving lions from West Texas to North and East Texas. o Protection of nondepredating lions in areas where numbers are low.	o Poll the hunters. o Census population.
o No public hunting except for personal self defense.	o Elevate to protected nongame status.	o Through protected nongame status and enforcement.
o No policy change.	o Demonstrate by census that no change needed.	o Let TPWD continue to monitor population.
o Management scheme allowing lion and human coexistence with least regulatory restraint.	o Collect data on relationship with least cost and without any regulation change. o Leave things unchanged and census every 10 years for trends.	o Disseminate information on lions and encourage voluntary information on sightings and harvest.

(Continued)

MOUNTAIN LION ROUNDTABLE

ROUNDTABLE RESULTS - GOALS, MEANS AND MEASURES

Group 1 (Cont.)

Goals	Means	Measures
o No management plan for lions.	o Cancel next roundtable on lions.	o No suggestions.
o Healthy sustainable populations of mountain lions throughout Texas where there is lion habitat.	o A management plan that is area specific and a reporting system when lions are killed to give demographic information.	o Increase in numbers everywhere except West Texas and stable population in West Texas.

Group 2

Goals	Means	Measures
o Keep mountain lion as nongame animal.	o Leave management in hands of private landowners.	o Honor system by ranchers and trappers.
o Do an intensive study on the animal to determine a course of action.	o Assign a 10-year study to to one of the state universities.	o Is the population increasing or decreasing?
o No change in current status.	o No change. No study.	o No change except faster dogs.
o Current status.	o Current status.	o Current status - self explanatory.
o Keep the lion from putting ranchers out of business (livestock and hunting). Leave it alone.	o Keep listed as nongame.	o When ranchers don't have to spend so much to control them.

(Continued)

MOUNTAIN LION ROUNDTABLE

ROUNDTABLE RESULTS - GOALS, MEANS AND MEASURES

Group 2 (Cont.)

Goals	Means	Measures
o Maintain long-term viable populations of mountain lions in suitable habitats in Texas.	o Promote interest in mountain lions through sport hunting, information and education and Animal Damage Control.	o Continued long-term harvest data (both sport and depredation kill) and heighten informed interest from the general public.
o The lion is doing well, leave them alone. No study. No regulations or control.	o No change in present posture. Adopt staff's recommendation.	o If the TPWD starts a study and control regulations, the goal of maintaining a viable lion population will not be maintained and goal not accomplished.
o Maintain viable populations with overriding or equal consideration of property rights.	o Track ADC's[1] records and allow no cost or infringement of private property rights.	o N/A
o Keep lions from being used in lawsuits.	o Require anyone suing TPWD over any aspect of lion, to pay court costs especially if they lose!	o If any group sues, then pay their own court costs, and a punitive amount if they lose.
o To legally be able to control lions that are killing livestock and white-tailed deer, without any delay.	o Good research is being done in New Mexico. o Provide good information to the public.	o When livestock losses are stopped and the public stops asking why hunt the poor lions.

(Continued)

[1]Animal Damage Control, USDA

MOUNTAIN LION ROUNDTABLE

ROUNDTABLE RESULTS - GOALS, MEANS AND MEASURES

Group 2 (Cont.)

Goals	Means	Measures
o Conservation of environments capable of supporting viable mountain lion populations.	o Integrated wildlife management planning to include regulation of sport-hunting lions, lion control where necessary, integration of management of the prey base (e.g., white-tailed deer, mule deer, javelina).	o Compilation of records regarding sport-hunting lion harvest, lion control and population surveys.

Group 3

Goals	Means	Measures
o Continue the present, successful management strategy relying on private landowners to protect the lion and its habitat.	o Recognize the absolute necessity of cooperating with landowners and ranchers in managing the wildlife of Texas.	o Are mortalities and sightings remaining constant or increasing? If the answer is yes, the goal is being accomplished.
o I want the mountain lion to continue being managed by the landowners in the manner that had succeeded in increasing the population.	o Leave the mountain lion in Texas alone - TPWD concentrate on problems of diminishing species of animals.	o If mountain lions are observed; "kills" located, and visible evidence of their presence is found.
o I would like to see Texas wildlife and livestock be as unaffected as possible by the mountain lion.	o Maintain the status quo. Each landowner and livestock producer must be allowed to take care of his own business without further regulations.	o Through livestock counts and range and wildlife practices, it can be determined if adequate protection is being provided.

(Continued)

MOUNTAIN LION ROUNDTABLE

ROUNDTABLE RESULTS - GOALS, MEANS AND MEASURES

Group 3 (Cont.)

Goals	Means	Measures
o To insure forever a viable population of mountain lions in all habitat ranges in Texas.	o To make the mountain lion a game species with seasons, limits and means and methods of taking. o To provide depredation permits to livestock producers who have suffered losses. o Provide some mechanism for controlling problem animals.	o Monitor populations and develop a permit system - perhaps a lottery for taking an annual quota of lions within sustainable limits.
o Maintaining viable populations of lions within the state while minimizing conflict with other resources.	o Determine status and distribution of lions in the state. o Delineate areas through study; act where lion populations have greatest probability of being maintained. o Management scheme based on protection in some areas, control in problem areas and regulated hunting (quota system) in others.	o Monitoring lion populations in key areas within state. Utilizing proven population indices (track surveys in conjunction with radio-telemetry studies). Collecting information on lion harvest each year (number, sex, age) along with records of depredation problems.
o My goal is to keep the mountain lion off of the endangered species list and keep it as a nongame animal. Also to stop the study of the issue due to lack of funds or the misuse of funds.	o Mountain lions are not endangered so there is no need to study the issue. Landowners rights should be the main consideration.	o Due to private property ownership, the goal has already been accomplished. The mountain lion has made a comeback without government regulations due to landowner protection. The lions are now causing problems with livestock and other wildlife.

(Continued)

MOUNTAIN LION ROUNDTABLE

ROUNDTABLE RESULTS - GOALS, MEANS AND MEASURES

Group 3 (Cont.)

Goals	Means	Measures
o Gain knowledge through research.	o Research projects supported by universities, foundations and private individuals.	o By the number of projects devoted to lion research and whether or not good density and distribution data can be gathered.
o Manage the land unit for its highest sustained yield (multiuse) without degrading that unit. If necessary, management of mountain lions may become part of that goal.	o Planning, define objectives, implement monitoring, cost/benefit ratio, retain flexibility.	o Wildlife diversity at predetermined levels, with established livestock operation profit.
o Maintain a population level of mountain lions in Texas compatible with multiple land uses.	o Monitor mountain lion population levels, depredation losses and adjust lion management (hunting, ADC) to accomodate the habitat.	o Develop and use highlevel thermal-infrared photography methodology for night population estimation.
o Maintain a flexible management system for mountain lions in Texas.	o N/A	o N/A
o Provide an educational program for Texas citizens to fully appreciate and understand mountain lion ecology and management.	o Provide methodology and funding for Texas' youth education on natural resources including mountain lions.	o A testing methodology for hunter education as to knowledge of natural resources in Texas and measures for TEA to test all youth on natural resources knowledge.

(Continued)

MOUNTAIN LION ROUNDTABLE

ROUNDTABLE RESULTS - GOALS, MEANS AND MEASURES

Group 3 (Cont.)

Goals	Means	Measures
o Determine status of mountain lion.	o Cooperation between landowners, TPWD, USFWS and universities to determine current status. o TPWD and USFWS provide funding. o Universities provide personnel. o Landowners provide historical information and access to lions.	o Research reports, both progress and final. Target goal for completion in five years.

Group 4

Goals	Means	Measures
o Maintain a viable lion population within each biotic region of the state.	o Assess (research) each biotic region to determine "natural" populations, carrying capacities, feasibility and estimated losses.	o Establish long-term program of monitoring of populations and periodic sociological assessments.
o Consider approaches in various parts of the state. Northeast Texas lions need full protection.	o N/A	o N/A
o I want to understand the ecology and management of mountain lions in South Texas.	o Perform an in-depth capture/telemetry study in previously unstudied population.	o Targeted research objectives are accomplished.

(Continued)

MOUNTAIN LION ROUNDTABLE

ROUNDTABLE RESULTS - GOALS, MEANS AND MEASURES

Group 4 (Cont.)

Goals	Means	Measures
o Control in the interest of wildlife reintroductions such as bighorn sheep, and livestock depredation.	o Control of mountain lions in areas of bighorn reintroduction with traps and dogs. Also allow livestock producer to protect his interests as he deems necessary on his own property.	o Monitor wildlife populations, enumerate livestock losses to lions.
o Maintain lion control flexibility.	o Do not change status of lion.	o Status not changed.
o Maintain individual landowners/livestock producers right to protect their animals at all times.	o Make no regulations restricting livestock producers from protecting domestic animals and game animals from mountain lions.	o Do not change status as it now exists.
o The lion is on the increase; it needs to be controlled.	o Texas Parks and Wildlife bring back predator control; department to trap and hunt the lion back out of livestock and game areas.	o Do not spend one cent of the hunters money or landowner paid fees on studying mountain lions or protecting them.
o Balanced distribution to minimize impacts on landowners.	o Increase lion prey on public lands (except bighorn lands). Allow complete control of lions by landowner.	o N/A
o To keep lions free, undarted, uncollared and to protect the rights of habitat owners who produce them.	o Do nothing.	o Continue use of same data collection as present.

(Continued)

MOUNTAIN LION ROUNDTABLE

ROUNDTABLE RESULTS - GOALS, MEANS AND MEASURES

Group 4 (Cont.)

Goals	Means	Measures
o Ensure that Texas livestock and wildlife producers will be able to control depredating lions at any time whether or not they are given game animal status.	o Maintain the status quo until a mass of scientific evidence indicates a different cause of action.	o N/A
o Quantify population status of mountain lions by geographic region, including age distribution and general health (reproductive rates) over a five-year period.	o Document status using samples collected by lion hunters and surveys. o Document distribution and effects of lions on livestock by involving game wardens and TPWD biologists in specified reporting scheme. o If money exists, the data collection could involve a telemetry study.	o Evaluate reliability of data based on accepted scientific regimen.
o The mountain lion should be a managed mammal based upon sound scientific data, complemented by anecdotal data, to assure species viability in various biotic regional regimes.	o Conduct baseline scientific studies to determine population densities in specific regions and determine genetic viability of populations.	o When specific management action and programs are undertaken by TPWD to protect both lion population viability and to provide necessary protection for livestock owners.
o Quantify livestock losses, control costs, etc.	o Survey of ranchers losses/ control costs. o Data from Texas ADC reported losses/control costs.	o Analyze data and publish report of collected data.

(Continued)

MOUNTAIN LION ROUNDTABLE

ROUNDTABLE RESULTS - GOALS, MEANS AND MEASURES

Group 4 (Cont.)

Goals	Means	Measures
o Accurate surveys of lion numbers be made before any change of lion management is considered. Surveys use only sightings or signs for data.	o Verification be determined by TPWD, Animal Damage Control and Extension Service	o Have livestock producer groups involved in any survey actions.
o Maintain "viable" lion populations within levels acceptable to society, including primary land users in a region.	o Use data collected to set acceptable removal rates by region and payment programs to reimburse livestock producers for losses. Do not make any changes in status until data collection is completed.	o Develop long-term population monitoring program and look for trends in data.

Group 5

Goals	Means	Measures
o Develop managment plan that quantifies population and harvest trends before changing legal status of lions or making them a liability to private landowners.	o Conduct 5-year study(ies) on lions (at least in South Texas and Trans-Pecos) similar to New Mexico study.	o By 1995 have data collection in place (methodology for population trend; demographics, livestock losses). o By 1998, have another lion roundtable to ascertain lion management based on informed decisions.

(Continued)

MOUNTAIN LION ROUNDTABLE

ROUNDTABLE RESULTS - GOALS, MEANS AND MEASURES

Group 5

Goals	Means	Measures
o Develop a biologically defensable means of surveying lion populations.	o N/A	o N/A
o That designation of status of the mountain lion be based on biological information and not on hype, feelings or emotions.	o By utilizing data already available and by continued research and monitoring of lion populaitons. Don't rush. Lion populations are still growing.	o Availability of research findings (sharing of information) with anyone interested.
o Maintain viable populations of mountain lions throughout range of the species in Texas.	o Begin good research on population status and trends (and origins of animals in eastern half of Texas).	o Document results of improved research programs and disseminate information to all interested parties.
o Develop information adequate to determine population trend, animal origins and approximate population size.	o N/A	o N/A
o To protect the private property rights of the resource producers and habitat owners. o To keep the lion free and unregulated.	o Allow free market system to work in game management.	o When landowners and TPWD can again work cooperatively without the disruptive influence of resource protection personnel and environmental groups.

(Continued)

MOUNTAIN LION ROUNDTABLE

ROUNDTABLE RESULTS - GOALS, MEANS AND MEASURES

Group 5 (Cont.)

Goals	Means	Measures
o To provide a strict cost/ benefit analysis of all TPWD lion activities. o To avoid expenditure of tax dollars on unnecessary study management plan.	o No action policy on the part of TPWD regarding lion - no study - no management plan.	o N/A
o To prevent environmental groups from dictating TPWD management policies.	o N/A	o N/A
o Recognize economic barrier to habitat expansion.	o N/A	o N/A
o Allow the taking of lions that are killing livestock.	o The approval of 1080 as a coyote control to increase deer numbers.	o Do nothing!
o Take necessary measures to increase deer numbers and range.	o N/A	o N/A
o I want to not put the mountain lion on the endangered list and not to classify it as a game animal.	o Leave it in the hands of the the landowner or livestock producer.	o By using the data already available, thus saving large amounts of money.

(Continued)

MOUNTAIN LION ROUNDTABLE

ROUNDTABLE RESULTS - GOALS, MEANS AND MEASURES

Group 5 (Cont.)

Goals	Means	Measures
o Make no restrictions regarding mountain lion. o Study populations to determine numbers and changes in these numbers.	o Keep policy based on the biology of the lion and the interests of the owners of the habitat the lions need. Find a way to determine the health of the lion populaiton.	o By seeing the discussion change from emotion to reality.
o Maintain a viable population while minimizing conflicts.	o Develop a program where landowners are involved with TPWD in documenting information needed to develop, implement and revise a management plan. o Monitor trends in population, conflicts and harvest. o Identify livestock husbandry practices that reduce depredation and are logistically practical. o Take a regional approach; the methods appropriate for the mountainous areas, desert flats, and South Texas differ.	o No increase in the index used to monitor conflicts, no drastic decline in population trends.
o Collect a good data base on the number and location of mountain lions taken in Texas. o Maintain present status until more data are collected.	o Solicit sighting and mortality information from <u>all</u> sources, i.e., landowners, hunters organization, etc.	o Level of response from the various sources of data.

(Collected)

MOUNTAIN LION ROUNDTABLE

ROUNDTABLE RESULTS - GOALS, MEANS AND MEASURES

Group 5 (Cont.)

Goals	Means	Measures
o Status of the mountain lion in Texas to remain the same, and to be able to protect livestock owners against devastational predation.	o To let the private land-handle his own problem or or situation.	o By numbers of lions taken.

Group 6

Goals	Means	Measures
o Baseline biological information on distribution, population characteristics hunter take (sex, age).	o Long-term research study on mountain lions, prey, human influences, landowner and public attitudes so that factual information can be established on which to base management decisions and hopefully resolve an inevitable recurring human conflict based on unknowns.	o Production of factual information and management plan with primary consideration of private landowner interests.
o Information on attitudes from vested interests in areas where mountain lions occur to enhance communication.	o No fund 9 or other TPWD revenue to fund these studies -- and recognize problems of any study with consideration of private landonwers.	o N/A
o Management plan for mountain lions.	o N/A	o N/A

(Continued)

MOUNTAIN LION ROUNDTABLE

ROUNDTABLE RESULTS - GOALS, MEANS AND MEASURES

Group 6 (Cont.)

Goals	Means	Measures
o Protect private landowner (rancher).	o Capture mountain lions in areas that are heavily populated with sheep and goats. Also to protect deer population. o Keep present program in place. Place no restrictions on ADC's program. o If parkland (TPWD state parks) border private land, allow problem cats to be harvested or landowner compensation for loss of livestock.	o No change. o Less lion activity in Pecos River area.

o To see that the lion is managed in such a way to ensure its future survival and protect livestock interests.
o To see that the status of the lion be changed from unlimited harvest to limited.
o To allow lions trying to reinhabit former habitat opportunity by banning hunting in those areas only.
	o Long-term research on mountain lions, prey, human influences, landowner & public attitudes so that factual info can be established on which to base management decisions and hopefully resolve an inevitable recurring human conflict based on unknowns.
	o Recognize study problems:
	  o expense
	  o no snow
	  o no public lands
	  o same scenario as California with Sierra petition and studies
	  o TPWD staff recommends no study
		o Production of factual info and management plan (with primary consideration of private landowner interests).
		o Viable lion populations.

(Continued)

MOUNTAIN LION ROUNDTABLE

ROUNDTABLE RESULTS - GOALS, MEANS AND MEASURES

Group 6 (Cont.)

Goals	Means	Measures
	o Scientific monitoring of populations based on solid data, not verbal reports.	
o Essentially change nothing. Lions are increasing and are in no danger. Currently, landowners can regulate numbers as they see fit. o Personal goal would be to control lion numbers only enough to maintain mule deer	o Since private landowners control the majority of Texas land, it is critical that any game/nongame strategy implemented not infringe on the respective owners perception of personal rights. If owners feel they have some control over a situation they likely will do what is best for wildlife in general. The more regulations and infringement on owners and the more economic costs, the worse things get.	o If the wishes of the majority of landowners in Texas (not non landowners) are being met, then the plan is working. To often, small special interest groups tend to lead the majority against their will due to carefully applied political pressue!
o Leave the status the same.	o Ranchers recognize the value of wildlife and, as McBride stated, water and food supplies have increased numbers more than anything - Big Bend Nat'l Park is supposed to represent the undisturbed balance of nature but there is less game and fewer lions there because of less game than there are on private ranches.	o No change.

(Continued)

MOUNTAIN LION ROUNDTABLE

ROUNDTABLE RESULTS - GOALS, MEANS AND MEASURES

Group 6 (Cont.)

Goals	Means	Measures
	o Allow landowners to be in charge and they will do what is best to balance livestock/ game resources.	
o Management of the lion population which would assure the viability of a healthy lion population - based on sound biological data.	o Long-term research study on mountain lions, prey, human influences, landowner and public attitudes so that factual information can be established on which to base management decisions and hopefully resolve an inevitable recurring human conflict based on unknowns. o Determine active management plan by TPWD based on results of biological studies especially Texas specific studies (vs. current TPWD nonmanagement).	o Production of factual information and management plan (with primary consideration of private land-owner interests). o Ongoing population monitoring.
o Keep the mountian lion classified as nongame in Texas.	o N/A	o No change.
o Keep programs administered by TPWD.	o N/A	o No change.
o Follow TPWD Wildlife Branch staff recommendation of "no change" in current classification.	o Elevate TPWD Wildlife Branch back to Division status.	o No change.

(Continued)

MOUNTAIN LION ROUNDTABLE

ROUNDTABLE RESULTS - GOALS, MEANS AND MEASURES

Group 6 (Cont.)

Goals	Means	Measures
o Continue to manage lions as we do today to continue healthy population.	o Reject any tax-funded study of lions. o Encourage the TPWD to adopt policies that can be supported by landowners.	o N/A
o Leave the current system and status of mountain lions in place.	o Department can abandon plans to spend tax dollars that contradict staff recommendations.	o TPWD budget, staff hours, policies reflect the current system and status of lions is the same.
o The current system seems to be working fine, no change needed.	o Encourage legislature to not appropriate funds for lion status change or studies. o Comptroller do performance audit of TPWD. o Expose to public wasteful programs in hard times.	o By continuing healthy and dynamic lion populations in West Texas, without unneeded restriction.
o Insure sustainable and healthy populations of both lions and mule deer in Davis Mountains.	o Long-term research on mountian lions, prey, human influences, landowner & public attitudes so that factual information can be established on which to base management decisions. Hopefully, resolve an inevitable recurring human conflict based on unknowns. o Research information about lion populations; prey patterns in West Texas.	o Production of factual information and management plan (with primary consideration of landowners interests). o Increase communication and cooperation among interested parties. o Ongoing census of deer and lion populations to determine population and health quality. o Stabilization of increasing deer and lion population.

(Continued)

MOUNTAIN LION ROUNDTABLE

ROUNDTABLE RESULTS - GOALS, MEANS AND MEASURES

Group 6 (Cont.)

Goals	Means	Measures
	o Dissemination of this information to landowners, agencies, public, through concensus, communication and cooperation between landowners and government and conservation organizations. o Develop regional management plan.	
o Not allow "political" processes such as this to influence TPWD's staff recommendations.	o Evaluate TPWD Wildlife Branch back to Division status.	o "Petition denied" and this is the end of the process rather than the beginning.
o I would like to see a program similar to New Mexico to determine range and viability of the mountain lion.	o Use the same set of procedures as New Mexico. o Use Davis Mountains as research area.	o Public is educated that mountain lions aren't endangered. o Status quo.
o No change in status. o More information. o More education.	o Work closely with landowners. o See better survey methods. o Let the public know the true facts about Texas mountain lions.	o Monitor Commission decision on current status of mountain lion. o Working relations with landowners. Are they better or worse? o More of the public understanding that lions are increasing and in no danger of extinction.
o Increased hunting opportunities for sportsmen and landowners.	o N/A	o N/A

(Continued)

MOUNTAIN LION ROUNDTABLE

ROUNDTABLE RESULTS - GOALS, MEANS AND MEASURES

Group 7

Goals	Means	Measures
o Maintain a genetically strong population and allow variety of management options.	o Institute research, then make changes or leave as is.	o Monitor research results. o Ask the people who are affected.
o Acquire quantitative information on the status of mountain lions in Texas regarding New Mexico study.	o Design and staff a research program that will acquire the necessary information.	o Seek assistance of established mountain lion status researchers for periodic review of Texas program to assure quality control.
o No change in present status.	o Maintain a viable population while protecting the deer and livestock. o Use of Animal Damage Control (ADC).	o Monitor the meetings of the TPWD - no change in laws. o Protection afforded game animals (deer) and livestock.
o Do not change the current status of nongame animals.	o Keep a steady and watchful eye on the expanding population.	o Increased prey populations.
o No study.	o Gather information as changes are needed - make them.	o Increased lion mortality records in adjacent or fringe territories of lions. By the same indicators that are now in use to determine status of lions in Texas. Kill records of ADC: TPWD status records. The rise and fall of mountain lions can be easily detected.
o Nothing for now. There seems to be an abundance of lions at this time.	o Ask TPWD and legislature to take no action at this point.	o Gather information on population on a regular basis.

(Continued)

MOUNTAIN LION ROUNDTABLE

ROUNDTABLE RESULTS - GOALS, MEANS AND MEASURES

Group 7 (Cont.)

Goals	Means	Measures
o Nongame animal; no change of status; no study.	o No action by State of Texas on lions at all. o Help deer herd to increase. o Control coyote population.	o No change in TPWD policy or Texas law. o Increase in deer herd. o Fewer coyotes - a good control program. o Less regulations on types and methods of coyote control - available to ranchers only.
o Keep the lions in check so we can maintain deer and antelope populations.	o Deer and game census. o Controlled hunting of game species. o Control lions as needed. o Continue status quo on mountain lions.	o Deer and game census. o Keeping records of all kills on the ranch. o No change in TPWD policy.
o Leave it just like it is.	o Don't do anything. o We could have TPWD surveys, trappers and ranchers reports.	o Using counts of TPWD Personnel, ADC and ranchers.

(Continued)

MOUNTAIN LION ROUNDTABLE

ROUNDTABLE RESULTS - GOALS, MEANS AND MEASURES

Group 8

Goals	Means	Measures
o No change in current status.	o Enough information curently available. Continue to monitor current population with present methods. There are enough studies now being conducted without the expenditure of more funds that could be utilized on other species.	o If any species of animals are given value, the free-enterprise system that this country was founded on will insure that there will always be a viable population. The hunters and wildlife managers of the state will tell TPWD if the lion population is in trouble, long before a study will.
o To ensure that the welfare of the mountain lion comes first.	o The state must be willing to take whatever action and spend whatever funds is needs to accomplish the goal however politically unpopular.	o Once studies are completed, take whatever action is necessary to to support mountain lion populations up to the maximum healthy numbers.
o To understand what constitutes a healthy population of mountain lions in this state considering all factors.	o Adequate studies must be undertaken to determine the lion's real status and to to determine what population can be supported.	o Continue monitoring of lion populations and health as a routine operation.
o To ensure that whatever action is taken does not put us in a reactionary mode.	o The state must take action to cover the most conservative "worst case" scenario to prevent future problems.	o N/A

(Continued)

MOUNTAIN LION ROUNDTABLE

ROUNDTABLE RESULTS - GOALS, MEANS AND MEASURES

Group 8 (Cont.)

Goals	Means	Measures
o TPWD to take action to protect the lion statewide until sufficient (sound, objective) biological data can be provided from specific regions of the state.	o TPWD immediately develop and implement a research plan to contract an objective out-of-state researcher to begin a long-term study to determine population status using most effective methods.	o We will know the status (by number) of the lion in Texas (region specific).
o Based on biological information, regulate and/or protect the lion throughout the state depending on specific regional information.	o TPWD immediately take action to protect lions (especially in areas of state where possibly rare) while data is collected and analyzed.	o Lions will be protected in areas of the state where they are rare or threatened and endangered species.
o TPWD action to protect the lion (as non-game protected species) statewide until sound biological data are provided from new and existing research from objective researchers here with available resource to produce results.	o Work cooperatively with all involved during process.	o Lions will be continually monitored/regulated (just as deer are) throughout the state.
o To conduct a study to determine lion populations in Texas.	o Utilize university students, TPWD personnel, researchers etc., to conduct a 6 to 12 month study statewide to determine if a viable wild lion population exists.	o Without an official study based on scientific data (and not word-of-mouth "Quesstamates" and folklore stories) the mountain lion may be destined to the same fate as the jaguar, ocelot, jaguarundi and margay.

(Continued)

MOUNTAIN LION ROUNDTABLE

ROUNDTABLE RESULTS - GOALS, MEANS AND MEASURES

Group 8 (Cont.)

Goals	Means	Measures
o The mountain lion should be protected and allowed to exist in its ecological habitat free of being lethally hunted, i.e., killed, except for cases of personal attack.	o In order to protect the mountain lion, TPWD should adopt the Sierra Club proposal and conduct a study of the populations and behavior patterns. This study should also require reports of "problem" mountain lions by ranchers so that such lions may be relocated or otherwise dealt with in a non-lethal manner.	o The goal of protecting mountain lions will be accomplished if they are not being killed. There will be fewer attacks on livestock if ranchers use non-lethal methods to make attacks less likely.
o To work with ranchers to reduce predators in non-lethal ways and provide economic compensation.	o Information should be made available to ranchers on how to reduce predation on livestock without killing lions.	o Ranchers and hunters leave the deer population as prey for lions.
o Continue to manage the lion as we are now doing, but not allow them to over-populate a given area.	o Allow the individual landowner to continue to control the lion as he sees fit.	o When the population of lions is controlled and managed in such a way to cause no problems to other forms of wildlife, or domestic animals, but not to the point of being endangered.
o Wise utilization of a wildlife resource.	o Require all lion kills (maybe also sightings) to be reported to county game warden within 24 hours of kill. TPWD to tag carcass and take any internal samples or measurements. Program for 5 years. No change in status during period.	o Keep statistics from report forms. In 5 years, the trend should be clear. Encourage active cooperation from private landowners

(Continued)

MOUNTAIN LION ROUNDTABLE

ROUNDTABLE RESULTS - GOALS, MEANS AND MEASURES

Group 8 (Cont.)

Goals	Means	Measures
	o A viable hunting program of surplus mature animals. o Have incentive program to promote reporting all kills. o Minimum interference with private property and incentive for their cooperation.	
o Release 1080 for areas the lion is unwanted. Make all controls available.	o Legislation needed for 1080. Other control methods published and encouraged.	o We will have fewer livestock kills.
o The mountain lion to be managed like the deer herd using the same tools by Texas Parks and Wildlife.	o Using ranch count, making sure the lion has value to the rancher.	o When the rancher is glad to sell the lion and the number of lion harvested must be increased for good management.

MOUNTAIN LION ROUNDTABLE

ROUNDTABLE OVERVIEW

Major Goals

As a combined effort, 38 goals for lion management were identified by the 8 subgroups. When similar goals were consolidated and duplications eliminated, 9 major goals surfaced as the most important for mountain lion management in Texas.

- Maintain a viable, breeding, huntable population of lions on a statewide basis within levels acceptable to society and land uses.
- Ban public hunting except for personal defense.
- Make no change in present policy for lions which classifies lions as huntable nongame with few regulations to prevent control measures.
- Initiate an intensive research study to determine status, trends and management needs.
- Leave management to landowners ~~who have kept lions free and thriving~~.
- Protect lions in ~~biotic~~ areas where they need protection to increase, such as East Texas.
- Control lions in the interest of wildlife introductions, such as bighorn sheep, mule deer and pronghorns.
- Develop a management plan prior to making any changes in the present status of lions.
- Legalize control such as 1080 and make them available to ranchers; publish and encourage control measures.

The lack of compatibility of some of the goals is obvious. The future of mountain lions in Texas will rest on a working

(Continued)

MOUNTAIN LION ROUNDTABLE

ROUNDTABLE OVERVIEW

Major Goals (Cont.)	relationship between Texas Parks and Wildlife, private landowners on whose land the lions must depend for survival, conservation organizations and other state and federal agencies in Texas. ~~The ultimate goal of this Roundtable will be a compatible plan which will achieve the best solution to problems and desires associated with the mountain lion in Texas.~~

Appendix A

TEXAS PARKS AND WILDLIFE DEPARTMENT MOUNTAIN LION ROUNDTABLE

Del Rio, Texas

Wednesday, April 8, 1992

12:30 p.m.	REGISTRATION, Eagle Room of the Budweiser distributorship
1:30 p.m.	Welcome and Introductions – Robert L. Cook, TPWD
1:35 p.m.	Opening Remarks – Nacho Garza, TPWD Commission Chairman
1:40 p.m.	What do you believe about Mountain Lions? – Rudy Rosen, TPWD
1:55 p.m.	Why Are We Here? – Andrew Sansom, Executive Director, TPWD
2:05 p.m.	Mountain Lion Ecology and Research Update – Dr. Michael Tewes
2:25 p.m.	A Review of My Experiences with Mountain Lions in Texas 1950–1991 – Roy McBride.
2:45 p.m.	Break – 15 minutes
3:00 p.m.	The Ecology of a Mountain Lion Population in New Mexico – Kenny Logan.
3:30 p.m.	**Break Out Session** Subgroups with Diverse Interests Identify Goals (what do you want Texas to do with mountain lion management) and Strategies (how do we accomplish your goals) to Address Mountain Lion Management in Texas. The purpose of this activity is for individuals to identify and list their goals as they relate to the mountain lion and its future in Texas. It is essential that the goals of the participants be clearly understood by TPWD.
5:00 p.m.	List and Discuss Goals and Strategies from each Table.
5:30 p.m.	Announcements and Adjourn
6:00 p.m.	Border Buttermilk Reception – Ramada Inn

Thursday, April 9, 1992

8:00 a.m.	**General Session** Review results and discuss today's objectives.
8:15 a.m.	**Mixed Group Session** Subgroups with Diverse Opinions Identify Goals of Common Interests (where we agree) and Goals of Divergent Interests (where we do not agree).
10:15 a.m.	Break – 15 minutes
10:30 a.m.	**General Session** – Presentation of Goals and Strategies for Mountain Lion Management in Texas
12:00 p.m.	Dutch Treat Lunch, Eagle Room
1:30 p.m.	Needs and Future Plans – Where do we go from here?
2:00 p.m.	Closing Remarks
2:15 p.m.	Adjourn

Appendix B

MOUNTAIN LION ROUNDTABLE ATTENDEES

Universities/Researchers
Roy McBride
Toni Ruth
Mike Tewes, TX A&I
Jim Scudday, Sul Ross
Jim Teer, Welder
Steve Demarias, TX Tech
Kenny Logan
Linda Sweanor
Jane Packard, TX A&M
Terry Maxwell, Angelo State
Carson Watt, TX A&M
Jim Stribling, TX A&M

Livestock/Landowners
David Langford, TWA
Martin Wardlow, TWA
Leif Johnson
Jim White, DM-TP
Tom Beard, TSWCR
Topper Frank
Al Brothers
Van Adamson
Bill Morrill
Cliff Teinert
Roland Wauer
Steve Munday, TSWCR
Charles Probandt, TSGR
Ben Love, NCA
Homer Mills
Robert Ayres
Jule Richmond, TSGR
Claudia Abbey Ball
Jimmy White, III
Buddy Clark

Press
John Jefferson
Dan Klepper
Bud McDonald
Griffen Cole
Karen Gleason

Hunter Organization
Charles Drechsel, TBS
Bill Hintze, Safari
Tom Humphrey, Safari

TX Parks & Wildlife Commissioners
Tim Hixon
John Kelsey

TX Parks & Wildlife Commissioners (cont.)
Chuck Nash
Walter Umphrey
Lee Bass
Nacho Garza

TX Parks & Wildlife Department
Andy Sansom
Rudy Rosen, F&W
Jim Carrico
David Palmer, LE
Stanley Brooks, LE
John Caudle, LE
Mike Morris, LE
Robert Cook, F&W
Horace Gore, F&W
Jaime Rutledge, F&W
Rick Taylor, F&W
Sylvestre Sorola, F&W
Jack Kilpatrick, F&W
Bill Russ, F&W
Billy Pat McKinney, F&W
Lee Ann Linam, RP
Lyndal Waldrip, CE
Jay Williams, F&W
David Cook, LE

Conservation Organization
Cliff Ladd, TX Org. End. Sp.
Dede Armentrout, Audubon
Elizabeth Sizemore, WOLF
Scott Royder, Sierra
Hal Irby, Wildlife Soc.
Susan Petersen, TX Comm. Natural Resources
John Hollrah, Voice of Animals
Dana Forbes, Friends of Animals
Rick Lobello, B.B. Ntl. Hist. Assn.
Lynn Cuney, Wildlife Rescue

Agencies
Sam Brownlee, GLO
Robert Arnberger, NPS
Jim Henson, SCS
Mike McMurray, TDA
Gary Nunley, ADC
Sam Crowe, ADC

Agencies (cont.)
Gary Valentine, SCS
John Phelps, AZ
Sid Sullenger, UT Lands
Dale Rollins, TX Ag. Ext.
Donnie Steinbach, TX Ag. Ext.
Raymond Skyles, NPS
Pat Henson, SCS

Observers/Participants
Andy Foster
T.J. Jarret
Steve Kelton
Henry K. Pitts
Zack Davis
Paul Henderson
Paul V. Loeffler
Jane White
Richard Dickerson
Heather Churn
Don Petty
Nelson Allen
Terry Maxwell
Dr. W.A. Belcher
Robert Allison
Jerry Turrentine
Jack Henson
Jerry Puckett
Clyde Earwood
Kay Love
Steve Beever
Matt Zuefle
Marshall White
Pat Holloway
Gene Holloway
Pat Auld
Toxie E. Beavers
Charles Burford
Dr. Paul Weyerts
Sarah Burke
Tully Shahan
Ginger Perner
Paul C. Perner III
Earl Malone
W.B. Smith
Faye Drechsel
Rocky McBride
Rowdy McBride
Andy & Shana Smith
Debbie McMullan
Andra Askins

Observers/Participants (cont.)
John T. Fargason
Roxanne Fargason
Don N. Duncan
Barbara Marshall
Jim White III

Invited – Unable to Attend
Alan Allen
Ken Armbrister
Perry R. Bass
Sam Beasom
Janice Bezanson
Al Brothers
Bob Burleson
Tom Cate
Renaldo Cuellar
Robert Dowler
Wayne Evans
Troy Fraser
Pete Gallego
Gary Garrett
Ernestine Glossbrenner
Robert Goldsberry
Sam Hamilton
Robert Haynes
Jerry Henderson
Harvey Hilderbran
Maurice Hornocker
Richard Hughes
Robert Junell
Don King
Mike Leggett
Steve Lewis
Nancy Mathews
William B. Osborne, Jr.
Lee Pfluger
Irma Rangel
Ray Sasser
Bill Sims
John Sproul
Stuart Stedman
Carlos Truan
Doug Waid
Jimme Wilson
Blackie Woods
Judith Zaffirini
Buddy Gough
James Volz
Cliff Newell
Susan McBee
Shannon Tompkins
Larry McKinney
Chester Burdett
Ron Holliday
Henry C. Beck
Terese Hershey

Invited –
Unable to Attend (cont.)
Beatrice C. Pickens
Steve Hartmann

Appendix C

Mountain Lion Roundtable
Group Participants by Table

Table 1 - John Jefferson - Facilitator

Van Adamson
Tim Hixson
Dana Forbes
John Kelsey
Claudia Ball
Dede Armentrout
Dan Klepper
Terry Maxwell
Richard Dickerson
Pat Henson
Steve Beever

Table 2 - James Henson - Facilitator

Jim White, Sr
Earl Malone
Kenny Logan
Bill Morrill
John Phelps
Buddy Clark
Bud McDonald
Andra Askins
Paul Henderson
Roy McBride

Table 3 - Jaime Rutledge - Facilitator

Gary Valentine
Donnie Steinbach
Sam Brownlee
Sid Sullenger
Ginger Perner
Linda Sweanor
Jim Teer
Jane White
Martin Wardlow
Tom Beard

Table 4 - Jim Carrico - Facilitator

Steve Demarias
Mike McMurray
Ben Love
Jule Richmond
Jack Kilpatrick
Mike Tewes
Robert Arnberger
Paul Perner
Barbara Marshall
Gary Nunley
Roland Wauer

Table 5 - Mike Morris - Facilitator

Dale Rollins
Jim Scudday
Clifton Ladd
Kay Love
Charles Probandt
Debbie McMullan
A. Samuel Crowe
Jane Packard
Bill Russ
Andy Smith Jr.

Table 6 - Lee Ann Linam - Facilitator

Toni Ruth
Shana Smith
Rich Lobello
Homer Mills
Susan Petersen
T.J. Jarrett.
D.K. Langford
Rocky McBride
Steve Munday
Robert Ayers

Mountain Lion Roundtable
Group Participants by Table

Table 7 - Rick Taylor - Facilitator

Tommy Humphrey
Robert Allison
Billy Pat McKinney
Raymond Skiles
Hal Irby
Dr. Paul Weyerts
Rowdy McBride
Jim White III
David Cook
Cliff Teinert
W.P. Belcher

Table 8 - Jay Williams - Facilitator

Charles Burford
Jerry Puckett
William H. "Bill" Hintze
Charles Drechsel
John Hollrah
Elizabeth Sizemore
Scott Royder
Andy Foster
Topper Frank

MOUNTAIN LIONS IN TEXAS
STAFF BRIEFING REPORT TO TPWD REGULATIONS COMMITTEE
JANUARY 22, 1992

Introduction

The adult mountain lion or cougar of Texas (Felis concolor stanleyana) is basically a solitary predator. Cougars are territorial, leaving scent along boundaries. However, territories are determined more by the lion's mutual avoidance of each other than by aggressive defense of space. Adult males generally weigh 120-140 pounds, while adult females usually average 80-100 pounds. Mountain lions occur at low densities under most circumstances. Depending upon habitat quality and prey base, densities of one lion per 10-100 square miles are considered to be average to good populations. In Montana, for example, a typical male's territory encompasses 50-150 square miles, while that of a female is usually smaller than 50 square miles. Mountain lions are secretive and are largely nocturnal. They are difficult to locate and observe. They tend to avoid humans and human activity, thereby, making them even more difficult to study. Females reach sexual maturity at about 20-24 months and usually give birth to their first litter of kittens after their second year. The gestation period is about 90 days and the average litter size is about 3 kittens. The kittens stay with their mother for about 15-18 months. Breeding age females usually produce litters every other year. Research indicates that deer are the preferred prey species of cougar, however, they also utilize a wide variety of other animals including javelina, rabbits, sheep, rodents, skunks, porcupines and goats. When the major prey populations plummet, for whatever reasons, cougars are apt to switch to preying on smaller wildlife and domestic livestock.

Background of Regulatory Status

In 1972, the Sierra Club requested the State Legislature to designate the cougar or mountain lion as a game animal and give it some manner of protection. The Legislature did not adopt the proposed legislation but in 1973 passed the "nongame species act" which provided classification for mountain lions as a nongame species.

In 1977 the Texas Parks and Wildlife Department developed regulations relating to protection of nongame species, by developing the list of species to be protected from hunting. The process for this rule-making procedure included extensive input from conservation and environmental organizations, college and university faculty members, laymen, and the general public. A total of 48 individuals or organizations participated in the process and made numerous recommendations concerning species or subspecies to be placed on the protected list or removed from the list. No individual or group proposed the mountain lion for listing as a protected species in Texas.

In 1987 the Texas Parks and Wildlife Commission revised its list of protected nongame species and replaced the word "protected" with the word "threatened." A total of 46 individuals or organizations participated in this process and submitted recommendations concerning 295 species or subspecies. Only 2 of the 46 participants nominated the mountain lion as a candidate for protection. The Commission chose not to add the mountain lion to the "threatened" list at that time.

Current Regulatory Status and Concerns

In December 1991, the Sierra Club petitioned the Texas Parks and Wildlife Commission to place the mountain lion on the list of threatened nongame wildlife which would prohibit any taking of these animals without a permit from the Texas Parks and Wildlife Department.

The Sierra Club, in its State Capitol Report dated December 13, 1991, reported to its membership that "Texas is the only state (where mountain lions exist) that continues to designate mountain lions as 'varmints'. The dictionary defines 'varmint' as a person or animal regarded as objectionable." The report goes on to state that "Thus, it is our view that Texas considers mountain lions like coyotes, in a category that has no purpose other than derogatory name-calling that misleads Texans into thinking that mountain lions do not deserve to exist in the Texas Ecosystem."

Nowhere in regulations of the Texas Parks and Wildlife Department or in the Texas Parks and Wildlife Code is the mountain lion referred to as a "varmint." The Texas Parks and Wildlife Department recognizes the mountain lion as an important part of the natural history of this State and, like all species native to the State, deserving of protection as required to perpetuate the species in the State.

The Sierra Club's recent petition calls for a complete ban on hunting mountain lions except under permit issued by the Department. Their request ignores important facts about mountain lions. A thorough literature review by researchers in Colorado (Anderson 1983) tabulated 23 density estimates reported in the literature from studies in western states. They arranged them in descending order and determined that hunting and other man induced factors had no apparent effect on the density of mountain lions. Hunting was not identified as a factor leading to an extirpation of mountain lions in these reports.

Today, after years of declining predator control efforts and more environmentally sensitive control techniques, staff believes that mountain lions in Texas are increasing in numbers and are believed to be expanding their occupied range by returning to habitats from which they have been seldom known in modern times. This opinion is based on information

gathered by the Texas Parks and Wildlife Department from landmanagers, sportsmen and interested citizens.

The Texas Parks and Wildlife Department does not census lion populations directly, but gathers information on lion mortalities and sightings as a means to monitor population trends and document occupied range. There are no techniques available to efficiently and effectively census mountain lion populations over large areas such as South, Central and West Texas. Widespread mountain lion studies are expensive and time consuming. Researchers from Hornocker's team are currently involved in a 10-year study of mountain lions on the White Sands Missile Range in New Mexico at a cost of over $100,000 per year.

A statewide survey of mountain lion mortalities and sightings was conducted by Texas Parks and Wildlife Department Wildlife and Law Enforcement Division personnel for the period between January 1, 1983 - May 31, 1989. Data were recorded by county with the date, number and age of the lion, and location for each mortality or sighting. The mortality or sighting was plotted on a distribution map by ecological area based on the reported county location. A total of 776 lion mortalities was reported in 40 Texas counties. The Trans-Pecos Ecological Area ranked first in total mortalities (81%).

A total of 322 lion sightings was reported in 65 Texas counties during the 6-year survey period. The Trans-Pecos Ecological Area ranked first in total sightings (48%) and had the highest total for each survey year except 1988, when the South Texas Plains ranked first.

The survey indicated that populations are increasing. Occupied lion range is apparently slowly extending into the northern, central and eastern areas of Texas.

Figure 1 presents a map indicating the distribution of mountain lion mortalities and sightings in the Ecological Areas of Texas from 1983-1989.

The recently documented kill of three mountain lions in the Pineywoods of East Texas supports the consensus of Department staff that "lion range is slowly expanding into the northern and eastern areas of Texas." However, staff recognizes that these lions were possibly released from captivity.

Figure 2 presents a summary of lion mortality information from the Texas Animal Damage Control Service for selected periods during the past 70 years. Harvest trends are believed to be indicative of general population trends.

The mountain lion was nominated to be placed on the "Threatened List" of the Texas

Organization for Endangered Species (TOES) by one of that organization's members during 1990. TOES reviewed the status of the mountain lion in Texas during an 8-month period by examining available literature and contacting experts knowledgeable about the species' status in Texas. TOES found that little information was available in the literature to provide a definitive status of the mountain lion in Texas. The organization denied the request to place the mountain lion on their "Threatened List", however, because little legal protection is provided to this species and there is a concern for the well being of some populations of this species, TOES placed the mountain lion on its "Watch List". In addition, TOES encouraged agencies and the academia to initiate research directed towards better determining the status of the mountain lion in Texas.

Roy McBride, a noted mountain lion researcher in West Texas states in a letter dated January 3, 1991 that "Mountain lion populations have fluctuated from a record low in the 1950's to a very substantial increase in the 1970's. They currently have stabilized at a level commensurate with the carrying capacity of the areas they occupy. South Texas and the Trans-Pecos hold the bulk of the population, and I see no short term threat to their healthy and viable population. In my opinion, lions are not threatened or endangered at this time."

Gary Nunley, State Director for the Texas Animal Damage Control Service, in recent correspondence indicates that "the area of lion habitat in West Texas that this program works have greatly decreased over the years due to the decrease of sheep in the Trans-Pecos. The lions that we take now in this area is over a much smaller area. Our field personnel, through their observations, believe that there are more lions now than in many decades."

In February 1991, Dr. Mike Tewes, Coordinator of the Feline Research Program at Texas A&I University, in a letter addressing the status of the mountain lion in Texas, states "I strongly council against the listing of the mountain lion as threatened or endangered in Texas."

Summary

Texas is one of the world's leading producers of wool (sheep), mohair (goats), beef (cattle) and other livestock such as horses and poultry. This industry and the owners of domestic livestock have a legitimate concern for protecting their economic investment. This does not require that lions be exterminated.

All eleven western states with established mountain lion populations allow the control of lions molesting and/or depredating on domestic livestock or pets. The mountain lion is

classified as a game animal in ten western states, each permitting the sport hunting of lions under various rules and regulations. There has been a moratorium on sport hunting of mountain lions in California since 1972.

The Texas Parks and Wildlife Department, cooperating landowners, and the Texas Bighorn Society are continuing their efforts to re-establish the Desert Bighorn Sheep in the Trans-Pecos of West Texas. It is believed that mountain lions must be controlled in the vicinity of the bighorn sheep broodpens in the Sierra Diablo mountains and in all other restoration areas until the free-ranging populations of sheep are well established.

Staff has no evidence at this time which indicates that mountain lion populations are threatened in Texas. It is believed that their numbers are healthy, and that their range is expanding. There is, in staff's opinion, no biological basis for recommending any change in their status at this time.

Additional information on mountain lion ecology in Texas (distribution, population levels, recruitment, survival, age structure, reproduction rate) is currently needed and will be needed even more in the next decade to address the management needs of this species and the concerns of the citizens of Texas.

Proposed Action

1. The Department will sponsor and conduct a roundtable on mountain lion management and research in Texas. The mountain lion roundtable will be conducted within the next 120 days. Representatives from a wide variety of interest groups will be invited to attend and participate. Topics for discussion will include the development of a mountain lion management plan, implementation of a program to require reporting the harvest and take of mountain lions, development of a mountain lion research plan, population monitoring techniques, and the legal status of mountain lion in Texas.

2. TPWD will expand its efforts to collect harvest and distribution data including examination of harvested lions to determine age, sex, body condition and reproductive history and verification of reported sightings of mountain lions.

3. Through the cooperative efforts of the Conservation Communication, Law Enforcement, Fisheries and Wildlife, and Public Lands Divisions of TPWD an intensive campaign will be launched to educate sportsmen, landowners and the general public about mountain lions, including their habits, habitat, life history, ecological niche, and related information to promote a greater acceptance of the

mountain lion as a welcome and needed species in Texas.

4. Based on the information available and summarized in this report, staff has determined that there is no evidence at this time that indicates that the mountain lion is a threatened species in Texas and recommends no change in its current classification as a nonprotected nongame species.

Prepared by: Bobby G. Alexander
Robert L. Cook

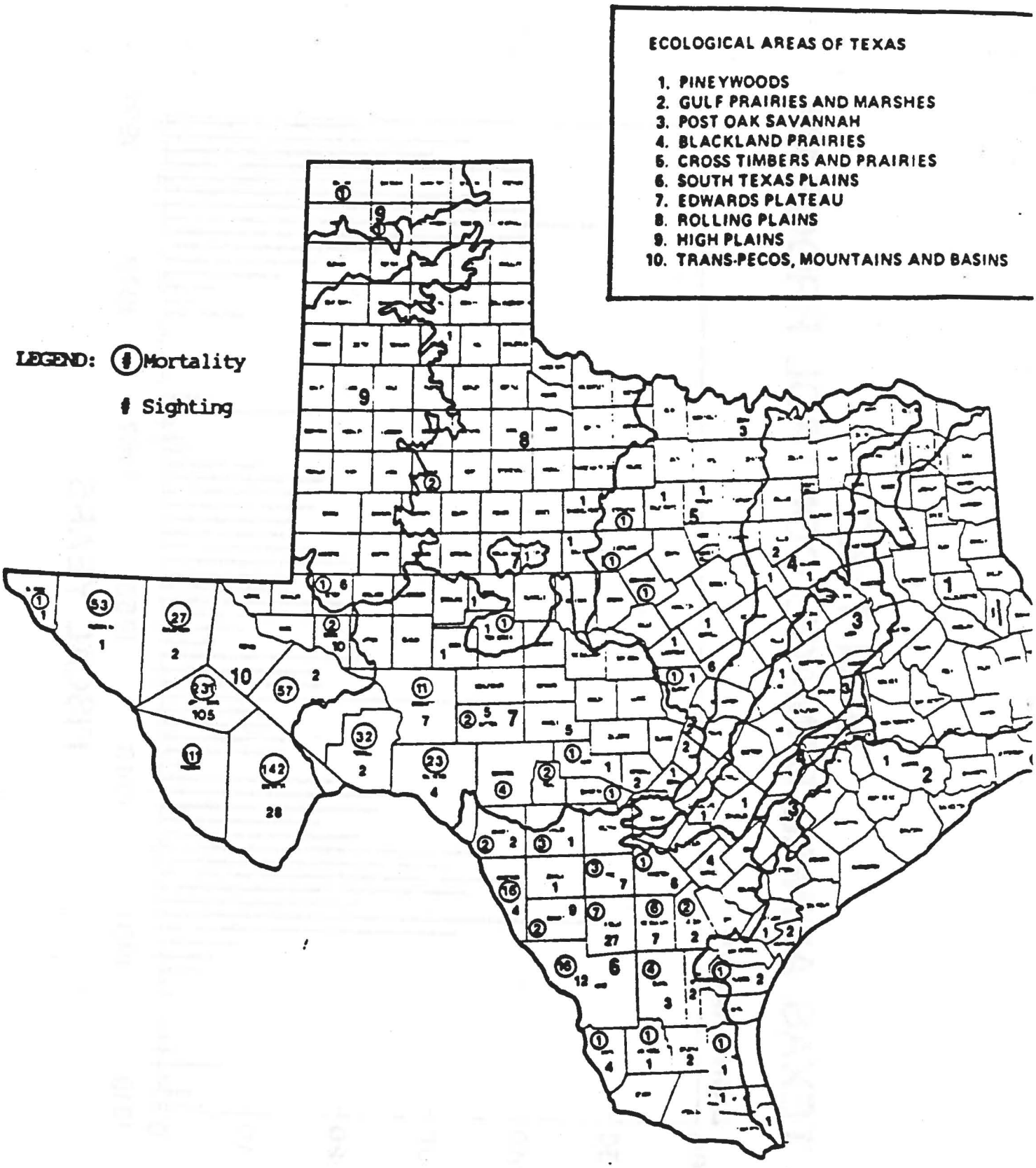

Figure 1. Distribution of mountain lion mortalities and sightings in the Ecological Areas of Texas, from 1983-1989.

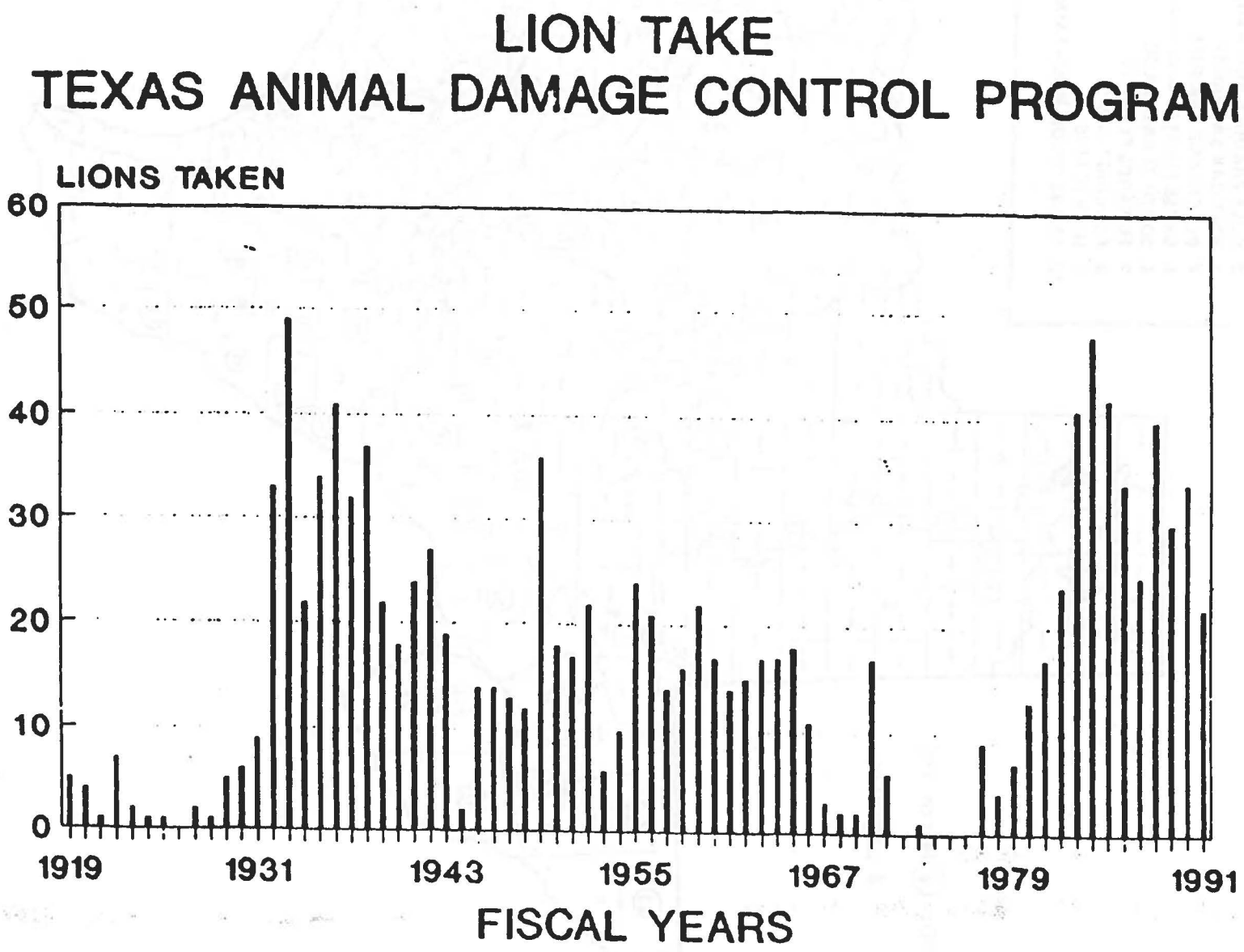
LION TAKE
TEXAS ANIMAL DAMAGE CONTROL PROGRAM
LIONS TAKEN
60
50
40
30
20
10
0
1919
1931
1943
1955
1967
1979
1991
FISCAL YEARS

Figure 2.

Author: [redacted] at HQ-XO
Date: 11/28/95 2:00 PM
Priority: Normal
Receipt Requested
Subject: Re: Representative Raybuck's inquiry on Mt Lions
---------- Message Contents ----------

[redacted] -- JUST BE AWARE THE REP. RABUCK IS AN INTERESTING GUY. I CAN'T FIGURE OUT WHERE HE IS COMING FROM MOST OF THE TIME. WHILE HE COMES ACROSS AS A FRIEND TO THE DEPARTMENT, LAST YEAR HE WENT AGAINST US ON QUITE A BIT OF OUR LEGISLATION, EVEN ON THE HOUSE FLOOR.

I WOULD GIVE HIM THE SPECIFIC INFORMATION HE REQUESTS BUT NOT GO TOO FAR OUT ON A LIMB UNLESS IT IS WITH FULL CONSENSUS OF THE DIVISION LEADERSHIP.

---------- Reply Separator ----------
Subject: Representative Raybuck's inquiry on Mt Lions
Author: [redacted] at HQB-FW
Date: 11/28/95 11:46 AM

[redacted] in the EO called me to return a call from Rep Raybuck regarding Mt lions. Raybuck is on the State Rec Resources Committee.

Spoke with Raybuck briefly. He is interested in drafting legislation to make Mt Lions a game animal. He wanted to know who carried the bill last time (Harris and Barrientos in 1993 - HB 583). Raybuck said he was aware of both sides of the issue, and wanted to figure out a way to give lions better protection while meeting rancher's concerns. We briefly discussed the lion's current status and what we have the authority to do through commission action. We also discussed making the lion a game animal in certain counties like elk and audads are. We could also leave an open season in some counties with no restrictions.
The main concern of course would be setting regulations based on population data (which we are beginning to get now), and allowing for the take of depredating lions. This was discussed in 1993, and one of the amendments to SB 583 would establish depredation permits and procedures. A temporary permit, issued on the spot by game wardens or sherrifs was also discussed. Reports of all lions killed under a depredation permit would be required.

I need to get back with Raybuck per his request (I will summarize what happened in 1993). What other information (if any) should I send? I was thinking of drafting a list of considerations for his review. Ralph Rayburn gave me a copy of the old bill and analysis done by John Herron. Please advise. Thank you.

On April 14, 1993 HB 583 was referred back to committee for amendments and then never heard from again.

Author: [redacted] at HQB-FW
Date: 11/28/95 1:32 PM
Priority: Normal
Subject: [redacted] note on Representative Raybuck's inquiry on Mt Lions
---------- Message Contents ----------

[redacted] - What are your thoughts about lions as game animals?

We have 2 other options in addition to a statuatory change making cougars a game animal:

1) Retain current status (nongame, no regulations)
2) Implement regulations doing some of what Rep. Raybuck proposes (seasons, closed areas, bag limit, etc.)

Personnally, I'm hesitant to change things. I don't think we'll ever have the data necessary to determine seasons and closed counties. For that matter, do we want to close any counties and is it our goal to help lions establish themselves in new counties? I don't think so. I think our position is to allow lions to reestablish themselves on their own.

And how would we determine when it's time to open a closed county?

Game status accomplishes little other than being symbolic; it won't give landowners any more flexibility in killing problem lions. It may restrict taking by landowners, or at least be perceived that way. And if we allow an exemption for landowners to kill lions, have we changed anything?

Game status will encourage more folks to hunt lions; so it is a way to promote lion hunting.

The only certain outcome will be polarizing the situation such that more landowners hate lions and TPWD and more lion advocates will hate landowners and TPWD.

A compromise may be to require reporting and/or tagging of all mountain lions killed. Then we would better know annual harvest by county. Could be done by regulation or legislation.

Suggest we meet with Rep. Raybuck and try to dissuade him.

Author: [redacted] at HQB-FW
Date: 11/28/95 3:04 PM
Priority: Normal
Subject: Re: [redacted] note on Representative Raybuck's inquiry on Mt Li
---------- Message Contents ----------

To the best of my knowledge we have absolutely no information which indicates that the mountain needs ANY "additional protection". I believe that now as in all recent years our information clearly indicates that the mountain lion population in Texas is spreading in distribution and increasing in numbers.....as is. What are we going to protect? This is the exact same situation that existed 2-3 years ago when a similar bill was drafted....and 5-6 years ago....and 8-9 years ago....and.... Please review this history closely.

Thank you.

[redacted]

---------- Reply Separator ----------
Subject: [redacted]note on Representative Raybuck's inquiry on Mt Lions
Author: [redacted] at HQB-FW
Date: 11/28/95 1:32 PM

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Author: [redacted] at HQB-FW
Date: 11/30/95 8:01 AM
Priority: Normal
Subject: Re: [redacted] note on Representative Raybuck's inquiry on Mt Li
---------- Message Contents ----------

Since our data indicate that only 11.4 percent of the 149 mountain lions killed in 1994 were killed by sport hunters (33.65% were killed by government control and 55.0% by private control) and it is reasonable to assume that those taken by sport hunters were most likely taken incidental to other hunting during the fall hunting season, it is unlikely that making mountain lions a game animal and closing the season during part of the year would result in more protection for the mountain lion. Conversely, making them a game animal with an open season in at least part of the state could even result in greater hunting pressure due to increased hunter interest.

On the plus side, making them a game animal would give them a dollar value in the eyes of the hunter and the landowner, result in some of the present mountain lion control being replaced by sport hunting recrational opportunity, and turn a liability into an asset for some private lanowners.

I agree with [redacted] that required reporting or tagging of all lions might be an acceptable compromise at the present time, and it would certainly give us some needed data.

[redacted]

_____ Reply Separator _____
Subject: [redacted] note on Representative Raybuck's inquiry on Mt Lions
Author: [redacted] at HQB-FW
Date: 11/28/95 1:32 PM

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more landowners hate lions and TPWD and more lion advocates will hate landowners and TPWD.

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Suggest we meet with Rep. Raybuck and try to dissuade him.

Author: [redacted] at HQB-FW
Date: 11/30/95 10:13 AM
Priority: Normal
Subject: Re[2]: [redacted] note on Representative Raybuck's inquiry on Mt
---------- Message Contents ----------

[redacted]-
I agree that the data do not indicate making the lion a game animal is warranted nor would it provide protection. There is already a considerable interest and economy in west Texas surrounding mountain lion sport hunting without the lion listed as a game animal.

For data collection purposes, reporting and tagging is certainly a reasonable consideration. However, I do not think this is a good time, nor may it ever be a good time, to impose another regulatory burden on landowners. I would not propose a mandatory tagging and reporting program, and I would advise legislators considering such that this would be highly controversial. Perhaps a tagging program east of I35 may be a thought, but I would not recommend a reporting and tagging program west of I35 without the idea being generated and supported by those landowners and landowner groups.-[redacted]

---------- Reply Separator ----------
Subject: Re: [redacted]s note on Representative Raybuck's inquiry on Mt Li
Author: [redacted] at HQB-FW
Date: 11/30/95 8:01 AM

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[redacted]

---------- Reply Separator ----------
Subject: [redacted]note on Representative Raybuck's inquiry on Mt Lions
Author: [redacted] at HQB-FW
Date: 11/28/95 1:32 PM

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Suggest we meet with Rep. Raybuck and try to dissuade him.

INFORMATION AND RESEARCH NEEDS FOR COUGAR POPULATIONS IN TEXAS

Michael E. Tewes

Report Number 10-8
Feline Research Center
Caesar Kleberg Wildlife Research Institute
3 August 2010

INTRODUCTION

In an effort to advance our understanding of cougar biology in Texas, a small group of experts from the western United States were invited to participate as an "Expert Cougar Panel" to provide advice and guidance. This Panel was charged with "Evaluating past research conducted in Texas, and suggest future information and research needs."

The Expert Cougar Panel convened June 28-29, 2010, at the Caesar Kleberg Wildlife Research Institute (CKWRI) of Kingsville, Texas. The primary expenses for travel were covered by the Texas Parks and Wildlife Department (TPWD), and additional support was provided by CKWRI Director, Dr. Fred Bryant.

The cougar experts who were invited and attended the discussions were Dr. Chuck Anderson of Colorado, Dr. Howard Quigley of Montana, and Mr. Ron Thompson of Arizona. All individuals have extensive experience in the research and management of cougars. Additional background information about their qualifications is provided at the end of this report.

A small group of individuals involved with cougar research and management in Texas were enlisted to interact and query the expert panel. This group included Dr. Michael Tewes (CKWRI, event organizer), Dr. John Young (TPWD), Dr. Louis Harveson (Sul Ross State University), and Dr. Randy DeYoung (CKWRI). Additional participants included Joe Holbrook (CKWRI), Daniel Kunz (TPWD, South Texas), and Jonah Evans (TPWD, West Texas). Although we considered inviting other biologists from Texas knowledgeable about cougar biology, we decided to keep the meeting small and informal to promote discussions and dialogue. We achieved that objective.

Following introductions, a series of presentations were given by biologists from Texas to provide the panel with background information on previous cougar research and information developed for Texas. Presenters of the powerpoint programs included Tewes, Young, Harveson, and Holbrook. The panelists asked frequent questions and fruitful discussions accompanied these presentations.

In addition, each panelist gave a powerpoint presentation about their involvement with cougar research and use of information. Again, good discussions accompanied these presentations, and ideas for applications to Texas were explored.

COMMENTS ON PAST RESEARCH

The panel acknowledged that previous research has provided a modest, although possibly dated, understanding of population status and distribution of cougars in Texas. The most recent field research occurred more than 15 years ago with the South Texas study by CKWRI and the West Texas study by TPWD, and the remaining field work even older.

The panel was requested to identify weaknesses. They described the research as "descriptive, broad based, and using small sample sizes".

Additional weaknesses and comments included:
1. The research has been short-term and needs to emphasize a long-term database.
2. Research has not been done in a coordinated fashion or at the same time.
3. Information is lacking from Mexico and the potential demographic and genetic contributions to the Texas population.
4. Cougar information needs to be obtained from the Mexican border states.
5. Research outside of national parks or protected areas is needed.
6. Obtain information related to the border fence.

Discussions about the unique difficulties of gathering information in Texas were detailed. Some reasons that make cougar research challenging include the recognition that individuals are wide-ranging and populations require extensive areas. With most of the land in Texas being privately held (97%), it is critical to have many private landowners as willing partners in any efforts to conduct research and gather information.

For example, the cougar research done in South Texas by Harveson and Tewes during the mid-1990s required the participation and support of over 40 different landowners with mostly contiguous ranches. Habitat and land access is just one of the challenges of cougar research. This scenario is in contrast with many of the western studies which occurred on large tracts of public land. A variety of other descriptions for the cougar environment of Texas was provided to the panelists to help them understand regional and statewide variations and patterns.

BENEFITS FROM INFORMATION AND RESEARCH

The Expert Cougar Panel supported use of the best science available to make sound management decisions for cougar populations and the subsequent benefits to people. In addition, Mr. Thompson provided a copy of the most recent version of the WAFWA 2010 - *Managing*

Cougars in North America which provided excellent coverage of the general areas of information often sought by state agencies.

The following areas were discussed that could benefit from cougar research and information. They are listed in no particular order and they are not prioritized according to importance.

1. Manage and sustain cougar harvest in Texas.
Although not as extensive as most of the other western states, there is a level of sport hunting and contracted cougar removal occurring in Texas. Information about cougar populations and demographics could be used to better manage this population for harvest. The TPWD is charged with sustaining wildlife populations in Texas, and maintaining a cougar population persistence in Texas was a goal unanimously supported by the diverse attendees of the Mountain Lion Roundtable held in Del Rio, Texas, during 1992.

2. Identify and anticipate potential cougar-human conflicts.
As people increasingly use rural lands for recreational purposes (hunting, outdoor activities), the potential for cougar-human interactions will increase. Also, increasing urban expansion into rural areas further increases the likelihood of cougar-human encounters, losses of livestock and family pets, and human fear associated with potential encounters.

3. Identify and better manage livestock depredations and damages.
We need to assess the effectiveness and ways to improve the benefits of site specific and landscape-scale removal of problem cougars. This information could help reduce depredations on livestock and impacts on livestock grazing practices within cougar habitat (cow/calf versus steer, timed seasonal breeding). Bodenchuck (2010) provided an excellent review of the importance of depredation management for cougars. Information on cougar occurrence and populations could help mitigate livestock depredation. This risk would be particularly important for the goat, sheep and exotic ungulate programs in the Hill Country.

4. Identify impacts of cougars on deer management programs.
The economic and recreational value of deer hunting in Texas is extensive and contributes significantly to the Texas economy. Deer management programs and deer breeding efforts can involve expensive investments, with cougar predation becoming an important consideration in some areas. Deer are the primary prey of cougars in Texas. Understanding the impact of cougars upon deer populations and hunting programs is ecologically and financially important.

5. Provide sound scientific information about cougars to groups that want to protect the cougar.
There are some organizations which support the total protection of cougars, and they sometimes use lack of information about population size or stability as justification for protection. Extreme restrictions would constrain the ability of wildlife managers to control or regulate cougar populations as needed, particularly in situations required for cougar conflicts with humans, livestock and wildlife.

6. Increase effectiveness of cougar removal and management for bighorn sheep.
Cougars can seriously impact bighorn populations and reintroduction efforts. Bighorn introduction programs are expensive and require careful management and supervision. Cougar damage to previous bighorn introductions in West Texas have been considerable. Information on the details of this impact can enable bighorn managers to refine their techniques and operations. For example, supplemental water and construction of watering devices for bighorn is often used as a management action. Cougars may focus their activity around water sites, thus serving as predator pits. The ecology of cougar-bighorn interactions needs to be better studied.

RESEARCH AND INFORMATION NEEDS

Research and information needs for cougar populations should be designed to provide the best recommendations for the situation in Texas. Harveson et al. (1996) provided a review of past cougar research and suggested future research needs about 15 years ago. McKinney (2010) provided a contemporary list of research and information needs often sought by cougar biologists and state agencies in the western United States.

Following the review of the background description and past research conducted in Texas, we requested that the panelists provide their recommendations for future information and research needs that would benefit cougar management in Texas. This information was collected in two ways. First, the recommendations and suggestions provided during the panel meeting were recorded and integrated in the discussion below. Second, a list of the research needs from the recommendations provided by McKinney (2010) was provided to the panelists and they were requested to identify and prioritize their recommendations. The list (attached at the end of this report) was useful and appropriate, particularly since one of the panelists (Ron Thompson) developed much of the content.

Population Genetics

Increase the use of genetic data, including a central genetic data depository, to monitor cougar populations. This methodology could provide much information, including levels of population connectivity, origin of dispersers, levels of genetic variability and inbreeding, effective population sizes, and whether populations in Mexico provide emigrants and population augmentation for cougars in Texas. (All three panelists ranked this item either in their top 3 selections or with a #1 ranking.)

The panel recommended the establishment of a long-term genetic base, both over time and geography, to generate information about mountain lion population characteristics. Secondary applications could include recent techniques that use viral DNA for fine scale evaluation of population structure and interchange, and the possible development of telomere aging techniques for cougars.

Population Distribution and Linkages

Develop reliable regional and statewide maps of relative cougar abundance, habitat quality and landscape linkages. Maps should include the distribution and movement patterns of cougars, dispersal corridors, relative abundance and source-sink areas. Similar to population genetics, the panelists ranked research on source-sink ecology as their highest emphasis.

Young and Tewes have developed cougar population models for Texas. Also, Young, Tewes and Harveson have developed cougar habitat models. The panel stated the need for model validation of cougar habitat use patterns, use of habitat linkages, exploration movements and dispersal movements (emigration and immigration). They also recommended research studies that focus efforts to develop, test and validate cougar population monitoring methodologies (e.g., occupancy modeling from remote camera data).

Cougar-Deer Ecology

The panelists understood the value of hunting in Texas, particularly for deer, and recommended that the role of cougar predation on ungulates be emphasized. If possible, they suggested that experimental research be conducted to evaluate population-level impacts of cougar predation on ungulate prey.

Top 3 Selections

Although each panelist independently identified their top three priorities, there was considerable overlap and consensus in items 1, 3, 5, 8, 10, and 11:

Chuck Anderson: 8. cougar genetics, 3. identify source-sink dynamics, 11. evaluate effectiveness of cougar removal

Howard Quigley: 10. cougar-ungulate studies, 5. validate models of cougar habitat, linkages and movements, 8. cougar genetics

Ron Thompson: 1. map cougar populations and habitat, 10. cougar-ungulate studies, 11. evaluate effectiveness of cougar removal

Below is the original, more comprehensive description used by McKinney (2010) for those items selected as the top 3 priorities:

1. Develop reliable regional and statewide maps of relative cougar abundance, habitat quality, and landscape linkages. Maps should include the distribution and movement patterns of cougars, dispersal corridors, relative abundance, and source-sink areas.

3. Conduct research to identify sink and source cougar populations and habitats.

5. Validate models of cougar habitat use patterns, use of habitat linkages, exploration movements, and dispersal movements (emigration and immigration).

8. Increase the use of genetic data, including a central genetic data depository, to monitor cougar populations. This methodology could provide much information, including levels of population connectivity, origin of dispersers, levels of genetic variability and inbreeding, effective population sizes, and whether populations in Mexico provide emigrants and population augmentation for cougars in Texas.

10. Conduct experimental research to evaluate population-level impacts of cougar predation on ungulate prey.

11. Evaluate the effectiveness of site specific and landscape-scale cougar removals on livestock.

Regional Comments

McKinney (2010:198) recognized that, "Each region of North America has a research priority that may be unique solely to it."

Information needs were particularly emphasized for South Texas and the Hill Country where cougar populations appear less robust than the West Texas populations. The panel recommended monitoring the age structure and sex ratio of the cougar populations in South Texas and the Hill Country. Information on adult survival, particularly for adult females (3 years of age or older), could provide important population information about reproductive potential. Distribution and genetic information as provided through mortality records also would be useful. Cougar population information could be helpful is assessing local impacts on deer management programs in South Texas, and depredation impacts of goats, sheep and exotics in the Hill Country.

Historically, cougar populations have exhibited a persistent, if not robust, pattern in West Texas. Varying levels of harvest and depredation control have occurred over the decades, and there continues to be a significant cougar population in this region. Cougar populations have a documented capability for rapid recovery following severe harvest, particularly if a source population occurs regionally and is capable of providing immigrants. Various mountain ranges provide a source for emigrating cougars that replenish harvested areas in West Texas, and the role of Mexico and New Mexico in providing emigrants needs to be better understood.

TOOLS TO PROVIDE THIS INFORMATION

Information on cougar population size and trends in different regions is probably the most sought information in any cougar program, and it also is extremely difficult and expensive to achieve. Consequently, often indirect measures are used to provide insight on these populations. During the meeting, the panelists recommended several tools used for these indirect measures.

Tool 1. Mandatory Reporting.

All three panelists recommended that cougar harvest should be reported, at least for the areas where little information exists such as South Texas and the Hill Country. Information collected

should include location, age (tooth sample), sex, reproduction (determination of initial nursing), weight and tissue samples for genetic analyses. The panelists suggested mandatory harvest reporting should last for three to five years, or until sufficient population level information has been obtained. Additional information also could be obtained by working with current houndsmen, trappers and animal damage control specialists.

This effort would provide a source for information on cougar distribution, population demographics and samples for genetic evaluation in a region where information is sorely lacking. Dr. Anderson stated that information on age structure, sex ratio, number and age of breeding females, longevity and similar attributes often reflect the status of a cougar population.
One panelist commented that information provided by mandatory check-ins could help avoid referendums to protect cougars. Some protectionist groups use the void of information argument as a basis for protectionism of cougars that would preclude their management.

Tool 2: Genetic Information.
Create and support a plan to collect and store tissue samples for a long-term genetic information project. This technology, as previously described, can provide much useful information for understanding and managing cougar populations in the future. One possible consideration would be the establishment of a Memorandum of Agreement between TPWD and CKWRI to provide a long-term relationship in a cougar genetics program. Tissue and DNA samples could be collected from cougars currently being taken by state or federal biologists for control purposes. One panelist mentioned that studies and funding related to the international border fence may be used to assess the demographic and genetic connectivity of the Mexico populations with the various regions of Texas. Furthermore, there will be a national data base established that other states can compare samples against (Jenks and Cooley 2010).

Tool 3: Use of GPS Collars.
The application of GPS collars for cougars is a recent technology that can provide extensive spatial data. Studies should be supported that use GPS collars. Also, a capture team could be developed and prepared to opportunistically take advantage of cougar encounters and to trap targeted individuals, particularly in South Texas and the Hill Country. The panelists identified several potential applications of GPS collars:

*Identify source-sink populations and source-sink habitats, particularly productive core areas and dispersal lanes or routes to other subpopulations. It also would provide movement and linkage information, particularly by marking subadult or young adult males which often become dispersers.

*Marking adult females with GPS collars would identify refugia for reproduction and cougar sources, female survival (which is related to reproductive potential), and the mapping of female cougar mortalities. Tracking female cougars will assist the identification of kittens and subadults which also can be monitored for various population information such as dispersal corridors, linkages and the effect of transportation infrastructure on landscape permeability.

*Identify potential landscape interfaces where human-cougar interactions are more likely. For example, using GPS collars on subadult cougars would provide information on movements into human-dominated landscapes. Cougar movements along urban interfaces and near schools, parks and similar locations would be of primary interest.

*Assist with cougar-deer studies to identify predation ecology and kill rates of trophy bucks, different buck cohorts, and contribution of cougar reductions in the doe cohort or on diseased individuals.

Tool 4: Use of Occupancy Modeling.
The panel recommended the use of occupancy models to validate population (PHVA, GARP) and habitat models, using a grid and nested sub-grid design. Use of remote cameras to determine presence/absence, abundance and other population attributes has become a powerful tool in assessing population occupancy and distribution.

Tool 5. Use of Human Dimensions.
One panelist suggested the application of human dimension efforts, particularly the use of public surveys to identify potential user groups and constituent groups. He also mentioned that small focus groups within TPWD can help identify goals and objectives regarding cougar issues.

SUMMARY

The Expert Cougar Panel held on June 28-29, 2010 provided a useful external evaluation of cougar information and research needs in Texas. Following an overview of past cougar research in Texas, the three cougar experts characterized this past research. The panel identified several information and research needs related to the cougar populations of Texas, and the benefits that could be derived from a higher level of understanding. Different tools or methods were discussed that could be applied to gather this information.

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QUALIFICATIONS OF THE EXPERT COUGAR PANEL

The assembled Expert Cougar Panel has extensive experience with the research and management of cougars in North America. Their expertise is highlighted by their recent contributions in major publications on cougar research and management.

Chuck Anderson was the senior author on the chapter titled "Cougar Management in North America" (Anderson et al. 2009) in the book *Cougar: Ecology and Conservation*. Chuck served as the Large Carnivore Biologist for the Wyoming Game and Fish Department (WGFD) from 1994-1997 and 2004-2006, where he analyzed annual harvest data and prepared annual recommendations for statewide cougar management. While working for WGFD, he collaborated in developing and writing (as lead author) two state cougar management plans. His dissertation research included (1) evaluation of cougar prey selection and predation rates, (2) monitoring cougar population trends from harvest data, and (3) cougar population genetics. In addition to his formal cougar experience, he grew up in the outfitting business where he assisted his father guiding cougar hunters from age 9 until his early 20s.

Howard Quigley co-authored the chapter titled "Cougar Population Dynamics" (Quigley and Hornocker 2009) in the book *Cougar: Ecology and Conservation*. Quigley also served on the Cougar Management Guidelines Working Group that published the *Cougar Management Guidelines* (CMGWG 2005). Howard has been involved in nearly two dozen cougar field projects in the Western United States and Latin America, as well as field projects on jaguars, Asiatic leopards, and Siberian tigers. He is the author of more than 30 professional papers.

Ron Thompson recently wrote a major portion of the chapter titled "Cougar research and management needs" (McKinney 2010) in the book *Managing Cougars in North America*, initially started by Ted McKinney, the namesake author who passed away prior to its completion. Ron is currently working as the Large Carnivore Biologist for the Arizona Game and Fish

Department. Previously, he was a contract wildlife biologist capturing and radio collaring cougars for a desert bighorn sheep-cougar interaction study in Arizona. He was a past contractor for the Turner Endangered Species Fund which included using adaptive management strategies for cougars. For the past five years he has been working on livestock-puma conflicts and management with private ranch owners in Sonora, Mexico.

ACKNOWLEDGMENTS

I appreciate the time and effort given by this Expert Cougar Panel. I want to extend my sincere appreciation to Chuck Anderson, Howard Quigley and Ron Thompson for taking leave of their busy schedules to help provide guidance and sharing their wisdom. I appreciate the financial support provided by the Texas Parks and Wildlife Department in underwriting the primary travel costs of the panel, and to Fred Bryant and the Caesar Kleberg Wildlife Research Institute for covering additional expenses and providing the venue for the meeting. Thanks is extended to Sara Barrera who served as meeting site facilitator. Additional assistance was provided by Wild Cat Conservation, Inc., and several individuals including John Young, Jennifer Korn, Joe Holbrook, Daniel Kunz, Jonah Evans, Bonnie Tewes and Christina Tewes. Finally, the idea of convening this review of cougar research belongs to the Director of the Caesar Kleberg Wildlife Research Institute, Dr. Fred Bryant. Thanks.

SURVEY OF RESEARCH AND INFORMATION NEEDS

Below is the survey sent to the panelists for their independent assessments.

Instructions: Please rank these research categories (Chap. 10, WAFWA) relative to your understanding of information needs for cougars in Texas. Give a "1" for highest priority and "3" for lowest priority. At the end, identify your top 3 selections. (Priorities of 3 panelists are listed in parenthesis.)

___ 1. Develop reliable regional and statewide maps of relative cougar abundance, habitat quality, and landscape linkages (CMGWG 2005). Maps should include the distribution and movement patterns of cougars, dispersal corridors, relative abundance, and source and sink areas. (2,2,1)

___ 2. Evaluate the relationship of cougars and highways, including cougar movements related to highways, vehicle-related mortality of cougars, and effects on landscape connectivity. (3,3,1)

___ 3. Conduct research to identify sink and source cougar populations and habitats. (1,2,1)

___ 4. Determine cougar population dynamics and natural history (CMGWG 2005) in diverse habitat regions or biomes. (2,3,3)

___ 5. Validate models of cougar habitat use patterns, use of habitat linkages, exploration movements, and dispersal movements (emigration and immigration). (3,1,1)

___ 6. Use research studies in focused efforts to develop, test, and validate cougar population monitoring methodologies (e.g., occupancy modeling from remote camera data). (2,2,1)

___ 7. Develop affordable and reliable survey methodologies to monitor cougar population trends. (2,3,1)

___ 8. Increase the use of genetic data, including a central genetic data depository, to monitor cougar populations. This methodology could provide much information, including levels of population connectivity, origin of dispersers, levels of genetic variability and inbreeding, effective population sizes, and whether populations in Mexico provide emigrants and population augmentation for cougars in Texas. (1,2,1)

___ 9. Investigate the effects of hunting harvest on changes in human-cougar conflict. (2,3,2)

___ 10. Conduct experimental research to evaluate population-level impacts of cougar predation on ungulate prey. (3,1,1)

___ 11. Evaluate the effectiveness of site specific and landscape-scale cougar removals on livestock. (1,3,1)

___ 12. Investigate age, sex, condition, densities, habitat use, distribution, and movement patterns of cougars in relation to human residential/urbanized areas. (2,3,2)

___ 13. Evaluate current and changing human attitudes and values related to cougars. (2,3,2)

___ 14. Investigate the effectiveness of relocating some 'problem' cougars. (3,3,2)

Summary of Mountain Lion Meeting - Dec. 18-19, 2012.

On December 18-19, 2012, TPWD conducted an internal meeting to discuss recent mountain lion research, current population status, and future management options. The meeting was organized by [redacted] (District 1 Diversity Biologist) and included the following Wildlife Division leadership and staff:

1) [redacted] (Wildlife Division Deputy Director)
2) [redacted] (Diversity Program Director)
3) [redacted] (Region 1 Director)
4) [redacted] (Region 2 Director)
5) [redacted] (Region 4 Director)
6) [redacted] (District 1 Leader)
7) [redacted] (Representing District 2)
8) [redacted] (District 3 Leader)
9) [redacted] (District 4 Leader)
10) [redacted] (District 8 Leader)
11) [redacted] (Conservation Outreach Program Coordinator)
12) [redacted] (Region 3 Diversity Biologist)
13) [redacted] (District 8 Tech Guidance Biologist)
14) [redacted] (Mason Mountain Biologist)

The first day of the meeting, [redacted] presented on the history and current status of mountain lions in Texas, Dr. Randall DeYoung presented on recent lion genetic research, and Dr. Michael Tewes presented on population and habitat models. Several important points emerged from these presentations:

1) Voluntary lion sightings have been collected since 1983. Sightings have fluctuated dramatically over the years depending upon effort from TPWD and the public. Researchers and TPWD biologists have pointed out that this method of monitoring lion populations has numerous flaws, is highly subject to external variables, and should not be used to monitor lion status.
2) Most states monitor lion populations with mandatory harvest reporting. Other options to monitor populations are extremely costly in time and labor.
3) Genetic research indicates that Texas has 2 genetically distinct populations of lions, one in South Texas, and the other in West Texas.
4) This research indicates that the South Texas population has become genetically isolated and has undergone a significant decrease in genetic diversity.
5) The population models presented by Dr. Tewes predicted that without some form of harvest management in south Texas, there is a high probability that this population will become extinct. However, additional data is needed to substantiate these models.

On the second day of the meeting we discussed several hypothetical management scenarios (from no action to major harvest restrictions) and the pros/cons of each option (see page 3). We also defined the following goals and objectives in order to help us identify the most important management strategies. Ultimately we agreed on the following management goal, objectives, and strategies:

> **Goal 1-** Fulfill our mandate in the TPWD Code to "*develop and administer management programs to insure the continued ability of nongame species of fish and wildlife to perpetuate themselves successfully*" (see page 4). Specifically, our goal is to manage for sustainable and healthy lion populations in Texas while providing recreational opportunities to the public and flexibility for landowners to manage lion depredation.

Objective 1- Maintain the 2 existing populations of lions in Texas. Redundancy is important for maintaining a resilient population that is able to recover from catastrophic events (extreme drought or disease).

Strategy 1- Develop and implement a program to monitor the population status of lions statewide.

Strategy 2- If or when necessary, manage regional harvest to maintain healthy, viable populations.

Objective 2- Update regulatory loopholes. There are loopholes in current state regulations relating to trap check requirements and possession of live lions. These loopholes have the potential to evoke a strong reaction in some constituencies. While these issues may complicate our efforts to achieve Objective 1, we believe they are ethically and biologically important to address.

Strategy 1- Institute a 36-hour trap check requirement for lions, as currently exists for furbearing species. Beyond the ethical issues of allowing lions to slowly perish in unchecked traps, there are valid concerns about significant losses of non-target species including black bears, deer, peccary, etc. Frequent trap checking allows trappers to detect and release non-targets with minimal injury.

Strategy 2- Prohibit the possession of live mountain lions. In 1995 when Texas approved a canned hunt bill that prohibits the use of "dangerous wild animals" in canned hunts, mountain lions were not included. This practice continues today in Texas and may encourage the mistreatment of mountain lions.

We agreed that maintaining a healthy lion population in Texas is our primary goal, however we also felt that is very important to address canned hunts and trap check rules. There was concern that if we attempt to address trap check rules that include bobcats, coyotes, and mountain lions, the issue could become complex and unwieldy and possibly detract from our ability to achieve our primary goal. We debated whether to address these issues immediately or postpone them until after goal 1 is achieved.

The committee unanimously agreed that:

1) Our current policies do not provide TPWD with the tools necessary to meet our mandate or our goal of maintaining two populations of mountain lions in Texas.
2) Voluntary sighting reports are unreliable and should not be used to monitoring lions.
3) Mandatory harvest reporting appears to be the only economically feasible tool to effectively monitor lions.

Next steps: We agreed that it is important to involve stakeholders in the decision making process. One proposal entailed creating hand picked working groups of local landowners and other stakeholders (~10 people), one in West Texas and the other in South Texas. It was proposed that we would brief the working groups on what we currently know about lions and either [redacted] or the appropriate RD's would lead these meetings. These stakeholder groups could help guide the process moving forward.

The following management options are not necessarily mutually exclusive. Some could potentially co-occur.

	Details	Pros	Cons
Unregulated (Non-Game)	•No reporting/status quo. •Unregulated harvest. •No trap checking requirements.	•Allows landowners to freely manage lions.	•No ability to TPWD to manage lion harvest. •No information on lion harvest. •Doesn't address risks to state populations. •Credibility in view of citizens.
Trap Check Requirement	•36-hour trap check requirement.	•Allows landowners to manage lions with traps. •Reduces loss of non-targets •More humane. •Consistent with furbearer regulations.	•Makes trapping more energy intensive. •Potential for other species (coyotes and bobcats) to complicate issue. Should trap-check rules apply across the board?
Restricting Canned Hunts	•Restricted through limiting capture/transport/possession of live lions?	•Prevents potential mistreatment of lions. •Consistent with other wildlife laws. •Upholds agency credibility.	•May upset some hunters/outfitters.
Mandatory Reporting (east of Pecos River)	•Harvest reporting. •Unregulated harvest. •No trap checking requirements.	•Could provide valuable information on lion harvest/populations for informing management decisions. •May be more palatable to Trans Pecos landowners. •Could collect sex/age/genetics/etc	•Reporting alone does not give TPWD the ability to manage lion harvest. •May upset some landowners. •Does not provide any info on Trans Pecos harvest (where the greatest number of lions are harvested).
Mandatory Reporting (rangewide)	•Harvest reporting •Unregulated harvest •No trap checking requirements.	•Could provide valuable information on lion harvest/populations for informing management decisions statewide. •Could collect sex/age/genetics/etc.	•Reporting alone does not give TPWD the ability to manage lion harvest. •May upset some landowners, especially in the Trans Pecos.
Regulated Harvest (game or non-game)	•Optional harvest limits by region. •Open or limited season. •Possible bag limit. •Possible trapping restrictions. •Game animal designations requires legislative action. Regulating non-game animals requires Commission approval.	•Lion harvest is regulated (or restricted) in every other state. •Allows TPWD to manage lions. •Potential revenue source for the state. •Supported by public opinion. •Increases value of the resource.	•Landowners may need a depredation permit to manage lions. •Trapping may not be a management option in some cases. •May upset some managers accustomed to the flexibility of the current (unregulated) status.
Protected Species	•No hunting or trapping except for damage control.	•Good for lion survival and reproduction.	•Very limited ability for TPWD to manage lion populations. •No public hunting opportunities. •No revenue to TPWD. •No ability for landowners to manage lions. •Likely upsetting to many hunters/ranchers.

PARKS AND WILDLIFE CODE

TITLE 5. WILDLIFE AND PLANT CONSERVATION

SUBTITLE B. HUNTING AND FISHING

CHAPTER 67. NONGAME SPECIES

Sec. 67.001. DEFINITION. In this chapter, "nongame" means those species of vertebrate and invertebrate wildlife indigenous to Texas that are not classified as game animals, game birds, game fish, fur-bearing animals, endangered species, alligators, marine penaeid shrimp, or oysters.

Acts 1975, 64th Leg., p. 1405, ch. 545, Sec. 1, eff. Sept. 1, 1975. Amended by Acts 1985, 69th Leg., ch. 267, art. 1, Sec. 63, eff. Sept. 1, 1985; Acts 1997, 75th Leg., ch. 863, Sec. 7, eff. Sept. 1, 1997; Acts 1997, 75th Leg., ch. 1256, Sec. 109, eff. Sept. 1, 1997.

Sec. 67.0011. EXEMPTION OF CRAYFISH. This chapter does not apply to crayfish, other than in public water.

Added by Acts 1981, 67th Leg., p. 399, ch. 161, Sec. 4, eff. May 20, 1981.

Sec. 67.002. MANAGEMENT OF NONGAME SPECIES. (a) The department shall develop and administer management programs to insure the continued ability of nongame species of fish and wildlife to perpetuate themselves successfully.

(b) In managing nongame species of fish and wildlife, the department may:

(1) disseminate information pertaining to nongame species conservation, management, and values;
(2) conduct scientific investigation and survey of nongame species for better protection and conservation;
(3) propagate, distribute, protect, and restore nongame species;
(4) research and manage nongame species;
(5) develop habitats for nongame species; and
(6) acquire habitats for nongame species.

Acts 1975, 64th Leg., p. 1405, ch. 545, Sec. 1, eff. Sept. 1, 1975. Amended by Acts 1985, 69th Leg., ch. 267, art. 1, Sec. 64, eff. Sept. 1, 1985.

Sec. 67.003. CONTINUING SCIENTIFIC INVESTIGATIONS. The department shall conduct ongoing investigations of nongame fish and wildlife to develop information on populations, distribution, habitat needs, limiting factors, and any other biological or ecological data to determine appropriate management and regulatory information.

Acts 1975, 64th Leg., p. 1405, ch. 545, Sec. 1, eff. Sept. 1, 1975.

Sec. 67.004. ISSUANCE OF REGULATIONS. (a) The commission by regulation shall establish any limits on the taking, possession, propagation, transportation, importation, exportation, sale, or offering for sale of nongame fish or wildlife that the department considers necessary to manage the species.

(b) The regulations shall state the name of the species or subspecies, by common and scientific name, that the department determines to be in need of management under this chapter.

Acts 1975, 64th Leg., p. 1405, ch. 545, Sec. 1, eff. Sept. 1, 1975. Amended by Acts 1997, 75th Leg., ch. 1256, Sec. 110, eff. Sept. 1, 1997.

Sec. 67.0041. REGULATIONS AND PERMITS. (a) The department may issue permits for the taking, possession, propagation, transportation, sale, importation, or exportation of a nongame species of fish or wildlife if necessary to properly manage that species.

(b) The department may charge a fee for a permit issued under this section. The fee shall be set by the commission.

Added by Acts 1985, 69th Leg., ch. 267, art. 1, Sec. 65, eff. Sept. 1, 1985. Amended by Acts 1997, 75th Leg., ch. 1256, Sec. 111, eff. Sept. 1, 1997.

Sec. 67.005. PENALTY. (a) A person who violates a regulation of the commission issued under this chapter commits an offense that is a Class C Parks and Wildlife Code misdemeanor.

(b) A person who violates a regulation of the commission issued under this chapter and who has been convicted on one previous occasion of a violation of a commission regulation under this chapter commits an offense that is a Class B Parks and Wildlife Code misdemeanor.

(c) A person who violates a regulation of the commission issued under this chapter and who has been convicted on two or more previous occasions of a violation of commission regulations under this chapter commits an offense that is a Class A Parks and Wildlife Code misdemeanor.

Acts 1975, 64th Leg., p. 1405, ch. 545, Sec. 1, eff. Sept. 1, 1975. Amended by Acts 1985, 69th Leg., ch. 267, art. 3, Sec. 77, eff. Sept. 1, 1985.

Dec 18, 2012

Mason Mountain WMA – Mountain Lion Meeting

Present – [redacted]

Started the meeting with [redacted] presentation on the historical research and regulation. TPWD lion data really starts in the early 90's. Much of our information about lions comes from the south TX study (Harveson) and the west TX study (Pittman) both conducted in the late 90's.

Some discussion on the 2005, TX Wildlife Action Plan with the objectives of 1) Develop a statewide management plan. 2) Develop a better way to collect harvest data. 3) Review the regulatory status.

TPWD has killed 58 lions between 2000-2007, to facilitate bighorn sheep restoration efforts.

Lions are primarily **trapped in west TX** and **shot by hunters** during deer season in south TX.

One trapper in the TP killed 62 lions in 2011 alone.

<u>Discussions of what do we do now:</u>

Sighting and mortality reports are down but are unreliable data.
[redacted]'s estimate of 1,500 lions is probably not good data.
West TX and South TX are 2 distinct populations.
South TX populations appear to be declining in genetic diversity
West TX populations appear to have high genetic diversity

14 states have viable lion populations – only TX allows trapping and still classify lions as non-game species.
TX does not have reliable population estimates of lions (we believe that lions are declining in south TX and may be experiencing high harvest levels in the west).

Presentations were made by [redacted]

[redacted] reported that the south TX lions issues could include predation ???, fragmented habitat and edge of their range while west TX lions have large habitats and few people.

[redacted] reported that TP lions would probably be fine without any changes but the south TX lion population appears to be declining and may need regulatory action to reduce harvest to sustain that population.

Day 2

[redacted] provided [redacted] comments on the importance of involving our stakeholders in the process.

Discussion from the group how ways to pull stakeholders into the process as we move forward. Everyone acknowledged the importance of having stakeholder share in the development of management options that TWPD will have available to them. The idea of have stakeholder meetings in the south and west with (maybe 10) key influential landowners might be a good first step.

The importance of involving Wildlife Services in the discussion was agreed within the group.

The group also felt it important not to have any depredation payments for livestock losses to lions.

It was agreed that south TX was the highest priority to get better harvest/biological data from all lions taken there. More discussion is needed on how to implement mandatory data collection from the TP region.

It may also be appropriate to ask for mandatory harvest data from all lands east of the Pecos River.

Data needed from the lions would include (sex, age and DNA sample)

Group agreed that due to the low densities of lions east of the Pecos River that all lions should be brought to a district bio for data collection. This should not place a hardship on staff to accomplish.

The following 2 points also need to be examined as part of a comprehensive plan for lions.

It was agreed that the 36 hour trap check rule should be considered at some point due to the potential for over harvest of females and kittens. It is also known that black bears and other non-target species are occasionally trapped and die in traps set for lions.

Regulations that prevent canned hunts for lions need to be developed as this directly affects TPWD credibility/integrity.

Mountain Lion Meeting: Dec 17th Mason Mountain WMA

expert panel recommended:

1. mandatory REPORTING
2. GENETIC INFORMATION
3. USE OF GPS COLLARS
4. OCCUPANCY MODELLING
5. HUMAN DIMENSIONS
6. IDENTIFY human/wildlife conflict areas

south texas population is becoming genetically isolated and somewhat inbred. Studies show 20% decline in genetic diversity in south texas over historic levels as collected from museum specimens

there is no trap check rule for Mountain Lions in Texas. 36 hours for all other trappable species. Also a concern for black bears.

mandatory reporting is the easiest way for us to get data.

Overall issues:

mandatory reporting (statewide, or even just in south texas). could be addressed w/ a post-harvest tag requirements

status as a game species

trap check rule change

possibility of diff. regulations in south v west texas

canned hunt regulations

4 dogs in this hunt:

public/constituents

Landowners

Lions

our Agency

[redacted]data show that with an open, closed, partially open season, west texas lions will have very slight pop growth or at least stable populations. south texas populations show SHARP declines with anything but a closed season and a 3 month season.

[redacted] thoughts: we have 2 primary responsibilities here: monitor and manage. we can always do monitoring, more and more research. But the time to manage is now. The time to manage was 20 years ago.

[redacted] thoughts: i disagree with a short term monitoring program. we're already doing so much less than other states, and what we should be doing as a responsible entity. Why shouldn't we be implementing permanent measures? Mandatory reporting can easily be sold as temporary, but more difficult in the long run to achieve our goals.

Wednesday

PROBLEM: we've never had the ability to properly manage/monitor these populations, which is part of our Leg. Mandate.

Very bare minimum (not ideal solution by any means) is mandatory reporting East of the Pecos River (really, the very bare minimum is in south texas). Next step up is mandatory requirement statewide.

Next step up is addressing the 36 hour trap check rule

Next step up is an appropriate change of legal status

Somewhere on the continuum is the elimination of canned hunts for lions

What does mandatory reporting look like? we want to collect age, sex, and DNA, along with location (county? ranch?), date, and collector name. We don't know whether there will be a permit, a pelt tag

We all seem to agree that we need to pursue not only some level of reporting, but in the future, pursue the ability to actually manage this resource, as mandated by Chapter 65. We all would like to address canned hunts and possibly (eventually, some day) have the discussion about the 36 hour trap check rule.

Questions asked of the committee:

Is anybody comfortable leaving lions the way they are now? Status quo acceptable? Unanimous no

Do we need harvest reporting statewide? unanimous Yes

We recognize that harvest reporting West of the Pecos is problematic, and though reporting statewide is a priority, it's a greater priority in south texas.

We discussed whether a management plan would be helpful at this juncture, but there were significant concerns that without tools to implement a plan, a management plan would be ineffective.

It may be too early to discuss a plan.

Our goal is to Maintain and conserve lions in Texas

Our goal is to Ensure that both of the current populations of lions remain viable in Texas.

Our goal is to address concerns voiced by our constituents

These issues are best addressed by seeking input from stakeholders to find out which issues are important to them, and which solutions are palatable to them.