

MOUNTAIN LION FOUNDATION

*Saving America's Lion*TM

Board of Directors

Toby Cooper
Board Chair

Elizabeth Sullivan
Vice Chair

Jonathan Naimon
Treasurer

Kathy Fletcher
Steve Harris
Rabbi Joseph Hurwitz
John Taft

Executive Director
Timothy Dunbar

July 23, 2010

Mountain Lion Management Plan Comments
South Dakota Department of Game, Fish and Parks
523 E Capitol Avenue
Pierre, SD 57501

Via Overnight Courier and email (chad.switzer@state.sd.us)

Re: Draft 2010 - 2015 South Dakota Mountain Lion Management Plan

Honorary Board

Robert Bateman
Michael Blake
Doris Day
Sir William Fries II
Mr. & Mrs. Gordon P. Getty
Marian Heiskell
Sandy Lerner
Barry Lopez
Peter Matthiessen
Hon. William Newsom
Russell Peterson
Alan Rabinowitz
Robert Redford
Nathaniel P. Reed
Dr. George Schaller
Hon. Russell Train
Robert Wagner

To the South Dakota Department of Game, Fish and Parks Commission:

On behalf of the Mountain Lion Foundation (MLF) and our members and supporters in South Dakota and throughout the United States, I present these comments on the South Dakota Department of Game, Fish and Parks' (SDGF&P) Draft 2010 - 2015 Mountain Lion Management Plan. The Mountain Lion foundation is dedicated to protecting and conserving mountain lions throughout the United States and in promoting peaceful coexistence between mountain lions and humans.

The Mountain Lion Foundation's review of South Dakota's Draft 2010 - 2015 Mountain Lion Management Plan found the document full of conflicting numbers, flawed mathematical equations, bad scientific practices, faulty assumptions, and a complete disregard of the basic biological and behavioral qualities of the species. The following are our most vehement objections to this Plan.

First, the South Dakota Department of Game, Fish and Parks have turned the issue of managing the State's mountain lion population into a much narrower focus of managing mountain lions in the Black Hills.

The state of South Dakota encompasses 75,896 square miles of land. Of this, the Black Hills region is less than seven percent of the state's land area. SDGF&P's mountain lion management plan presents the Black Hills as the "only" viable mountain lion habitat in South Dakota because this is where resident territories and breeding populations are currently found.

What is not presented to the public is the fact that, until the species was extirpated from the state sometime around 1906, mountain lions could be found throughout the entire state. Because of this human induced extinction, South Dakota's mountain lion population is undergoing the slow process of

recolonization. A process which has slowed even further in consequence of the disproportionate number of trophy-hunting related lion mortalities throughout the region (South Dakota, Wyoming, and Montana) which have vacated previously held resident territories.

Studies show that mountain lions are a highly adaptable species which can live in almost all types of environments ranging from high mountain forests to harsh desert canyons. A key determining factor for suitable lion habitat is the availability of their primary prey species--deer. The National GAP Analysis Program's listing of suitable habitat, and prey species probability virtually guarantees that mountain lions could exist almost anywhere within South Dakota. Mountain lions as a species are biologically designed to disperse. Maturing juveniles have been known to travel hundreds of miles to establish home range territories. By not allowing the species to roam, inbreeding will inevitably occur (as is seen with the approximately 100 panthers left in Florida) and the genetic health of the population will decline.

The bottom line is that mountain lions should be managed on a larger, regional scale and not confined within the Black Hills. Until the recolonization process is complete, with a mountain lion population appropriately scattered throughout the state, any discussion about overpopulation and habitat limits is premature.

Second, the relatively small size of South Dakota's mountain lion population, makes the accurate estimate of population numbers critical in making any reasonable management decisions, and dramatically increases the margin of error risks. An analysis of SDGF&P's mountain lion population estimate raises several questions as to the validity of their population growth model, and identifies major errors in their mathematical calculations.

For example, SDGF&P's rate-of-growth calculation is based on the **maximum** growth rate, found in **one** study (Logan and Sweanor 2000), which took place in an environment totally dissimilar to that found in South Dakota. In actuality, mountain lion growth rate values can and do change annually in any one area, and are highly dependent on unique geographic factors. By not looking beyond a single aspect of a single study, SDGF&P researchers are violating sound analytical practices and have risked developing a population estimation formula which is likely to be misleading and far from reality.

After creating this potentially faulty population growth model, SDGF&P attempted to justify their conclusions by using their 2007-2009 mountain lion harvest data. But according to them, *"No harvest occurred in 2008 due to movement of the harvest season to January 2009. Harvest data for 2009 provided a similar estimate of population size to that of 2007."* The three years of harvest data supposedly used for the population estimate is actually just 2007's mortality numbers, which means they are **relying on only one year's data to assume population trends**. SDGF&P rationalize this choice by saying 2009 was *"similar"* to 2007 and thus they only needed to use results from one of the years. Their harvest data is noted below.

	2007	2008	2009
Females	16	No harvest	15
Males	3	No harvest	11
Total	19	0	26

Yes, female mortality data was *similar* (16 to 15) but the male lion harvest (3 to 11) increased drastically! That's up 267 percent . . . how convenient to ignore the higher male harvest year.

Even if you overlook the fact that they are only using one year's data to support a trend analysis, and selecting their favorite year to build upon, they still screwed up their calculations.

SDGF&P noted that "*In 2007, estimates of population size were generated for the female segment of the population . . .*" This decision was made "*. . . due to total harvest of one radio collared male.*" At the time, South Dakota's collection of radio-collared lions totaled 35 (15 males, 20 females- page 29). When calculating the female segment of the population by harvest data from 2007, the harvest rate should therefore be calculated as 5/20 collared females, NOT 5/35 total (male + female) collared lions. This error in their mathematical calculations for population estimates on page 5 leads to a drastically different estimate of South Dakota's mountain lion population.

A total of 16 total female lions were killed that year. Five of those killed were radio collared, thus 5 out of 20 radio-collared female mountain lions were killed ($5/20 = 0.25 = 25$ percent). So if those 16 lions represent 25 percent of the female population, then SDGF&P's data shows there could only be **64 female lions in the state** (16 is 25 percent of 64). By dividing instead by 35 lions, the 112 lion result SDGF&P is presenting as females only, is actually a combination of males and females.

SDGF&P further compounds their error by assuming that their estimated female population number represents 70 percent of the total lion population in South Dakota.

This 70 percent female estimate appears to be based on data from SDGF&P's own lion harvest data for 2007 and 2009. During these two years, 31 females and 14 males were killed (45 total). The 31 females represent about 70 percent of the total harvest, so SDGF&P made a giant leap in assuming 70 percent of the entire population must also be female, and thereby able to create a lot of kittens. As justification for this assumption, SDGF&P researchers incorrectly cited Logan & Sweanor's research from a 2000 lion population study in New Mexico.

Yes, Logan & Sweanor did find that their study population sometimes had slightly more females than males because males have a higher mortality rate (via killing each other for home ranges and through competition for breeding females), and a female bias was noted in first-time litters, but in the end, Logan and Sweanor concluded "*none of the annual comparisons of adult sex ratios in either area were significantly different from 1:1.*" This is clearly a case where SDGF&P researchers once again only rely on a single source, and then "cherry-picked," data which would appear to validate their conclusions.

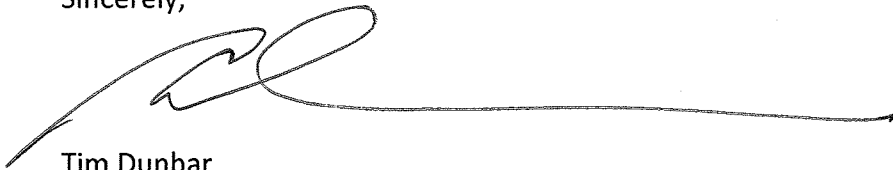
Third, SDGF&P claims that the Black Hills can only support a population of somewhere between 150 to 200 lions and that recreational hunting quotas must increase to "*ensure a healthy, self-sustaining population of mountain lions in the Black Hills of South Dakota.*" They base this conclusion of their assertion that there are currently 251 mountain lions (138 adults, 113 kittens) residing in the region.

MLF has clearly demonstrated the inaccuracy of SDGF&P's mountain lion population estimate. But even using the Departments own population estimate numbers it is disingenuous to include "kittens," as if they were adults, just to create a false sense of overcrowding in order to justify the need for an increase in the annual hunting quota.

In conclusion, the Mountain Lion Foundation finds that the South Dakota's Draft 2010 - 2015 Mountain Lion Management Plan is poorly written, contains conflicting numbers (such as the total number of mortality events), has critical errors in their mathematical equations which profoundly affect their estimated population figures, and makes assumptions far beyond anything that can be proven with current research.

The Mountain Lion Foundation formally requests that the South Dakota Game, Fish and Parks Commission reject this flawed document and authorize a complete audit of the process as well as a peer review and second opinion on the proposed 2010 - 2015 Mountain Lion Management Plan from credible outside experts.

Sincerely,

A handwritten signature in black ink, appearing to read 'Tim Dunbar', with a long horizontal flourish extending to the right.

Tim Dunbar
Executive Director
The Mountain Lion Foundation