Mountain Lion Management History

Lion management throughout the range of this species is challenging because of the secretive nature and naturally low densities typical of this solitary large carnivore, and the rugged terrain it typically inhabits. Consequently, no statewide “census” of lion populations has ever been attempted in Colorado or the West Slope. Lion research in Colorado has focused on relatively small geographic areas involving population segments where intensive, expensive studies have revealed information for reference values on abundance, sex and age structure, fecundity, survival, mortality factors, predation, depredation, behavioral patterns, movements, dispersal, and effects of sport-hunting. Current research in the Upper Arkansas study area on Colorado’s Eastern Slope using newly validated techniques will provide data types described previously, but at much larger scales and with the ability to draw more rigorous conclusions due to the strengths of the study design.

Agencies charged with lion management attempt to address the desires of the public, whose values vary and sometimes compete between maintaining abundant populations, providing hunting opportunity, and minimizing the potential for human-lion conflicts. Lions have been classified as a big game species since 1965 in Colorado. Prior to 2000, Colorado had not formulated any plans for lion management. In 1999, the Executive Director of the Department of Natural Resources (DNR) formed the Predator Management Advisory Committee, for the purpose of providing policy advice to DNR and its subordinate agency, Colorado Parks and Wildlife (CPW). This group helped develop brief plans that set annual hunter harvest and total mortality objectives based on the preceding 3-year average levels in 25 distinct geographic areas called Data Analysis Units (DAUs). By 2003 these plans were deemed too generic, inflexible and lacking a credible basis. During 2004, a new planning effort was completed producing 19 separate DAU plans for the state. This more comprehensive planning effort provided statewide direction and management sideboards related to habitat models, population extrapolations, and mortality off-take rates. The plans mentioned game damage caused by lions and human conflicts associated with lions, but management objectives were firmly focused on supportable mortality amounts.

The long-term increase in Colorado’s lion population likely resulted from a combination of regulating human-caused mortality of lions since 1965 and increases in mule deer and elk populations. Consequently, lion harvest limit allocations and the amount of harvest have increased since 1980 (Figures 1) both across the state and in more recent years in the two West Slope Regions (Figures 2 and 3). The 2004 DAU management plans and analysis suggested that similar
harvest could be obtained with substantially lower harvest limits. An emphasis of these plans was to reduce hunter harvest of females in select DAUs. Therefore, in 2007 a mandatory lion hunter education course was instituted to help increase the focus of harvest on male lions. As a result, female lion harvest composition declined and the combined effect of the reduced harvest limits and the emphasis on reducing female mortality caused an initial decrease in the total amount of hunter harvest. Recent research has revealed the importance of focusing on adult female harvest composition, as opposed to the overall female harvest mortality. The compositional monitoring threshold incorporated in this West Slope Mountain Lion Management Plan focuses on adult female proportions versus the total female proportion that was previously a standard objective in the 2004 lion DAU management plans.

Figure 1. Annual mountain lion harvest by gender, total mortality, and total harvest limit in Colorado from 1980-2018. Note transition from calendar year to winter year in 2007.
Figure 2. Historic Northwest Region harvest by gender, total mortality and proportion of females (adult and subadult) in harvest. This includes all historic GMUs in the NW Region, including those now in the Glenwood SMA.

Figure 3. Historic Southwest Region harvest by gender, total mortality and proportion of females (adult and subadult) in harvest.

Non-harvest, human-caused mortality has also increased statewide since the late 1980s (Figure 1) and in more recent years on the West Slope (Figures 2 and 3). Some have attributed this to increasing lion populations. However during the past 30+ years the human population, related
development, volume of automobile traffic, and the amount of outdoor recreation in Colorado have also increased considerably. It is likely that a combination of factors contribute to the increases in non-harvest lion mortality, including better documentation of these forms of mortality in more recent decades.

Figure 4. Non-harvest human-caused mountain lion mortality in the Northwest Region from 2000-2018.

Figure 5. Non-harvest human-caused mountain lion mortality in the Southwest Region from 2000-2018.
The 2004 lion DAU management plans were based on a series of assumptions about lion population size and the population responses to varying levels of mortality. The plans noted that information about how populations actually responded to these assumptions was lacking, as was the ability to collect valid information that could detect population changes in a timely and effective manner. This led to implementation of two long-term research projects in Colorado designed to evaluate lion management assumptions, inform management decisions, and quantify actual population responses to management actions. On the Uncompahgre Plateau, research activities were completed in 2014. Subsequent data analysis and evaluation have concluded, and while not yet published beyond annual reports and draft manuscripts, preliminary project findings are incorporated into this plan (Logan and Runge 2020). On the northern Front Range, research has concluded on estimating abundance, diet composition, and age class from non-invasive sampling. Additionally, this research evaluated lion demographic and behavioral characteristics in a significantly human altered environment. Colorado Parks and Wildlife is currently in the third year of a 9-year lion research project in the Upper Arkansas area of southeastern Colorado. This project will build knowledge of predator-prey dynamics, improved density estimates, evaluate lion population composition structure under different harvest regimes and shed light on the relationship of human-lion conflicts under varying lion harvest and abundance scenarios. Within this plan, provisions are made to allow for future periodic evaluation and updating so that the plan can incorporate knowledge gained from this and other research that may be conducted in the future.

**Harvest Management**

Regulation of hunting for lions in the western states typically follows 1 of 3 harvest strategies including general seasons, limited entry, and harvest limit/quota systems (CMGWG 2005).

1) General seasons allow unlimited hunting of lions of either sex, and the only restrictions include the number of licenses issued and/or bag limit allowed per hunter (typically 1 per season), and timing and length of the hunting season. General seasons provide the highest hunting opportunity, but likely result in uneven hunting pressure (i.e., accessible areas are heavily hunted and inaccessible areas are not), which limits control over the amount, composition, and distribution of the harvest.

2) Limited entry programs restrict the number of hunters per hunt area through a limited license allocation, using either first come first serve or lottery license sales. This approach is most restrictive in terms of hunter opportunity, but can be useful to disperse hunting pressure, control harvest levels, and may increase the opportunity for hunters to be selective (increasing male harvest) in areas where hunting pressure is low.

3) Harvest limit/quota management limits the total harvest and/or number of female lions harvested from defined areas. The hunting season closes in an area once the harvest limit has been met. Hunters are required to monitor status of the hunting season by checking a website prior to hunting to determine if an area is open or closed to hunting. Advantages to this approach are that hunting opportunity remains high and the amount and distribution of harvest can be regulated. Potential disadvantages of harvest limit/quota management include the number of hunters per hunt area is unlimited until harvest limits are filled and desired harvest
may be exceeded if more than 1 lion is harvested the same day the limit is reached. Also, a high amount of competition among hunters/outfitters for the lions available under the harvest limit can result in decreased harvest selection, increasing the amount of females in harvest.

Female sub-quotas can be used to support a management objective of maintaining harvest levels with reduced impact on the lion population. Advantages include the ability to stop harvest based on a female objective, while problems include illegal non-reporting of harvested females to avoid closing units and sacrificing hunter opportunity to pursue males once the smaller female sub-quota is achieved.

Colorado has managed lion hunting recreation with a harvest limit or quota system since before 1980. As originally conceived, the “quota” is the maximum amount of harvest allowable within a specific geographic area. Once the “quota” is met, the hunting season for that area is closed for that year. Lion hunting licenses are available in unlimited numbers, but hunters must check an online harvest limit report to determine if the harvest limit group of game management units (GMUs) they wish to hunt remains open to hunting. The harvest limit/quota system optimizes hunting opportunity while limiting hunting harvest to acceptable levels on an annual basis. In most DAUs in Colorado, historic “quotas” have historically been set higher than actual harvest objectives, because the full quota may not be achieved each year. This has occurred because of several factors: hunting conditions are not always conducive to harvest, the behavior of hound hunters not filling the quota to facilitate the opportunity to pursue lions and train their dogs throughout the entire season, and in some areas the constraints of guided hunts as the primary mechanism to obtain harvest. Using the name “harvest limit” instead of “quota” gives a more accurate description of how this term functions within a harvest limit group.

Historic “quotas” in Colorado have not been synonymous with the harvest objective, though the term has been mistakenly believed to be one and the same. When quotas went unfilled it created an erroneous perception for some that management was failing to achieve the desired harvest. The upper end of harvest objectives and the total mortality limits codified in the 2004 lion DAU management plans were intended to be the maximum amount of acceptable annual mortality; a value not to be exceeded. The contrast of perception and intention surrounding these terms has contributed to some of the debate about lion management today.

In 2013, an April lion season (April 1-30) was implemented to provide hunting opportunity in locations where harvest objectives were not being achieved during the regular season. In these areas, an additional season provides extra hunting opportunity and hunter harvest within the previous lion DAU management plan objectives. In its original design, the April season was intended to be a simple extension of the existing lion season structure. The “regular” lion season opens after the last day of the 4th deer and elk season; typically around the middle of November through March 31. However, because Colorado’s license year is April 1 - March 31, administrative and logistical requirements resulted in establishment of a regular and an April season harvest limit, which has caused confusion in when, where, and why seasons would be open in April and what the objectives would be. Prior to 2019, CPW used the 3-year running average of residual harvest limit from the regular season and set that amount on an annual basis as the harvest limit for the April season in order to function as an extension of the regular season. Harvest during 2016-2018 April
seasons averaged less than 10 lions in each year. Beginning in 2019, to more efficiently manage the lion regulatory cycle and remove confusion over how April harvest limits were set, CPW combined the numeric harvest limits from the April season and regular season into one single annual harvest limit.

All hunter harvest of lions must be reported as part of a mandatory check process required in some form since before 1980. In 1989, the agency included a requirement that all discovered non-hunt mortality must also be documented through the mandatory check process. Data collected at the mandatory check include: harvest date, location (legal description, Universal Transverse Mercator location, and hunt area), sex, lactation history (whether or not females have ever nursed young based on nipple characteristics; Anderson and Lindzey 2000), estimated age from tooth wear and degree of staining, collection of teeth for cementum annuli aging, number of days spent hunting, and hunting method. Trainer and Golly (1992) reported 76% agreement ≤1 year of annuli ages compared using blind tests of 2 premolars from the same lion (n = 426; 92% agreement for lions <4 years old), and annuli age comparisons of known age lions were 95% accurate (within 1 year; Trainer and Golly 1992, Anderson 2003). In 2019, the recording system used for these mortality reports was overhauled and data are now collected on a computer or mobile application as opposed to a paper form.

This mandatory reporting system is the most accurate way of accounting for human-caused mortality, so while time consuming for staff to implement, it attains quality data. Lion carcasses or pelts harvested by hunters may be frozen, which can reduce the collection of teeth or the ability to inspect evidence of the gender. Washington noted that hound hunters correctly determined the gender of lions at bay about 70% (57-88%) of the time, whereas agency personnel correctly determined the gender of lions during mandatory checks 87% (71-90%) of the time (Beausoleil and Warheit 2014). They recommended better training of agency staff and education with hunters to improve the credibility of data that is important to management purposes. In Colorado, hunter education on gender identification is part of the mandatory mountain lion hunter education course. Agency staff is trained annually on the data collection process from mandatory inspections. In addition to mortality data, CPW compiles data on human-lion conflicts and game damage claims, and gauges social concerns through public meetings, contacts with the public, hunter surveys, and public attitude surveys.

Methods of Mountain Lion Hunting

Lion hunting in Colorado is accomplished primarily by tracking and baying lions using trained hunting dogs (i.e., hunting with hounds). However, during lion seasons, harvest may also occur through opportunistic encounters (spot and stalk) or by calling lions using predator calls (mouth calls). The majority of lions harvested annually in Colorado are taken by hunting with hounds (typically >95%). Compared to 20-35 years ago, recent advancements in technologies has dramatically changed the manner of guided hound hunting, which is the primary way most lions are harvested in Colorado. Collar technology on pursuit hounds allow an outfitter to release hounds and track them on a computer or hand held GPS device. Collars may be equipped to detect when the dogs have a lion at bay. This allows for examination of the closest or easiest path for the hunter and guide to approach the bayed lion without actually engaging in foot pursuit from the
release of hounds to the point of bay. All-terrain vehicles (ATVs), snowmobiles, cell phones, and digital radios all combine to make hound hunting lions more efficient than in past decades.

Some groups and individuals are concerned about the use of dogs as a hunting method for lions, and some states have banned hunting with hounds (e.g., Oregon, Washington). In 2005, CPW hired Corona Research to survey attitudes of Coloradans about issues related to lions. Some key elements related to lion hunting include: a) An overwhelming majority of Coloradans thought it was important for lions to exist, even if they never saw one, and it was important for them and future generations to have lions; b) Coloradans were split about hunting lions, with 47 percent in support of legal and regulated hunting and 41 percent opposed; and c) 46 percent disagreed that lion hunting should be banned, while 34 percent agreed with a ban. These results provide a broader representation of attitudes of Coloradans about lion conservation and hunting, well beyond the traditional constituents that agency personnel more frequently contact during the process of structuring hunting management. As we recommend in the Research Needs portion of the planning document, a more updated survey in the near future would be useful to evaluate if those sentiments reported above have changed among citizens.

In states where hunting with hounds has been prohibited, opportunistic lion hunting (during big game seasons or predator calling) is capable of obtaining similar or higher harvest levels as before the bans. States in which lion hunting with hounds has been prohibited typically compensate for substantially decreased success rates by reducing the price of a license, increasing the number of licenses, and easing mechanisms by which licenses can be obtained. Results from Washington (Martorello and Beausoleil 2003) revealed that opportunistic lion hunting is less selective of sex and age class than hunting with hounds and female lions are more vulnerable to harvest from opportunistic hunting than from hound hunting. Relative female harvest levels increased from 42% to 59% when hunting with hounds was banned in Washington (mean annual harvest before hound hunting ban = 157 and after hound hunting ban = 199). In Oregon, similar increases in the proportion of females in harvest were observed, and within 7 years, total harvest amounts regularly exceeded harvest amounts prior to the ban on hound hunting (Don Whittaker, Oregon Dept. of Fish and Wildlife, personal communication 2015).

Lion harvest data from Colorado suggest that hunters using the services of an outfitter are more selective in the harvest of females (36% F) than hunters not using an outfitter (44% F). In comparing the methods of hunting lions in Colorado, the use of hounds appears to improve hunter selectivity regarding females (37% F hound hunters compared with 55% F for opportunistic hunting). This suggests that applying mechanisms to expand hunting seasons absent the use of hounds is likely to result in an increase in the absolute amount of and composition of females in harvest. In addition, if opportunistic hunting harvest increased and hunting with hounds was reduced, we would expect an increase in the number of dependent young being orphaned due to hunting because of the apparent increased vulnerability and the higher proportion of females harvested with non-selective methods (Martorello and Beausoleil 2003).

Differences in the composition and amount of females in hunter harvest are likely a combination of a hunter’s ability to determine gender (while a lion is treed or at bay), but are also related to differences in lion vulnerability between hunting methods. Anderson (2003) observed that nightly
movement distances from GPS data averaged over 3 times longer for male lions than for females (mean end-point distance = 4.6 km versus 1.5 km, 2.9 mi versus 0.9 mi). These longer distance movements expose males more than females to hunting methods where tracking is involved (i.e., hunting with hounds). Opportunistic hunters who do not track lions while hunting are more likely to harvest the more abundant sex, typically females, because relative abundance and chance encounters drives harvest vulnerability.

Mountain Lion Conflicts
There are two broad categories of human-lion conflicts: game damage and human safety. Game damage primarily refers to the economic costs of lion depredation on domestic livestock. Human safety primarily refers to the concerns about and the real or perceived risks to human safety that may be posed by lions. State law provides allowance for the public to kill a lion that is considered a threat to people’s safety or to livestock [Colorado Revised Statute 533-3-106(3): Nothing in this section shall make it unlawful to trap, kill, or otherwise dispose of bears, mountain lions, or dogs without a permit in situations when it is necessary to prevent them from inflicting death, damage, or injury to livestock, real property, a motor vehicle, or human life]. Animals killed under the authority of this provision must still be reported within 5 days of its death to CPW and the state of Colorado retains legal possession of such animals; consequently, CPW is able to obtain information on the number of such losses. If lions are killed in the summer and/or in remote locations or are too badly decomposed, obtaining gender or tooth samples is difficult and less data are generally collected on such animals.

Immediate agency responses to game damage and human safety conflicts in Colorado are primarily aimed at individual animals involved in the conflict. This does not preclude the agency from applying larger scale management efforts to address such conflicts. Colorado Parks and Wildlife previously identified 2 West Slope management areas in which the objective was increased harvest to suppress the lion population (former DAUs L-7 and L-9). Figure 6 shows the location of previous mountain lion DAUs in Colorado.
Some recent research suggests that management targeting an area for increased harvest (rather than an individual conflict animal) may not be effective because of rapid immigration from adjacent source populations (Robinson et al. 2008, Cooley et al. 2009b). These authors postulate that it is possible that the increased presence of younger immigrant animals, social disruption of lion populations, and spatial changes in use patterns of immigrants that result from increased harvest may all contribute to increases in human conflicts and game damage (Peebles et al. 2013). A correlative study in British Columbia found that when accounting for human density and habitat productivity, harvest levels comprised the most correlated variable to conflict numbers (Teichman et al. 2016). Unfortunately, this study did not account for underlying lion densities, which could strongly relate to harvest levels and defined conflict in very broad terms, including roadkill, livestock depredation and perceived risks from sightings. Similar to Peebles et al. (2013) the authors of this study looked at the relationship between conflicts and mortality at very large scales and collapsed data from large spatial scales for purposes of the analysis.

In contrast, an Oregon lion population study found an inverse relationship between conflict lion mortalities and lion harvest (Hiller et al. 2015). The authors present an analysis showing that under high lion population densities, the number of lions killed due to livestock conflicts decreased as harvest density increased. Their results indicated that hunter harvest may be a useful tool in managing livestock conflicts in circumstances when agency managers can increase prey populations, increase hunter harvest on lions, and reduce vulnerability of livestock. To date, the scientific evidence regarding the effectiveness of population scale management to effect reductions in conflicts is equivocal. In fact, data from Colorado do not suggest a relationship between high lion harvest and increased conflicts, but rather just the opposite. Areas of highest harvest removal as
shown in Figure 2 of the West Slope Lion Management Plan document do not correlate with highest non-agricultural conflicts and many areas of high conflict in Colorado have, in fact, very little or no harvest.

Laundre and Papouchis (2020) used the example of California, a state without a legal lion hunting season, to test various assumptions that some might make about the role harvest might play in managing conflict, depredations and deer numbers. As in some other studies, the issue of scale of analysis is important. Pooling data on lion population size, human population size, conflicts and harvest across entire states for comparison, as done in this study ignores other significant differences between states, and more importantly, context to those data categories within each state. Research in Colorado regarding the effects of harvest and lion population density suggest management to reduce conflict has varied results and is not solely linked to harvest. Few, if any studies, have been able to look at the value of small-scale, localized harvest or agency removals of lions involved in human-lion conflicts, and then make conclusions about that impact on quantifiable reporting of human-lion conflicts. Monitoring goals in the Glenwood SMA, should allow evaluation of the full suite of management tools and their efficacy in reducing conflicts.

**Game Damage**

Colorado has been liable for monetary losses caused by lions to livestock since the 1920s. However, it wasn’t until the 1970s that game damage laws and liability were first codified in statute. Liability for damage caused by wildlife is governed by Colorado Revised Statute §33-3-103. Regulations that establish the process for submitting a claim and the process whereby a stock producer can prove their claim and value of the stock were first established in the mid-1970s. Consequently, CPW has a long history of damage payments related to lion depredation on livestock. However, records were not accurately maintained regarding claim numbers, location, dates, and amounts until the 1990s.

In 1996 the Colorado Department of Agriculture (CDA) was granted “exclusive jurisdiction over the control of depredating animals that pose a threat to an agricultural product or resource.” Thus, CDA has exclusive authority to determine the disposition of an individual lion if it is depredating on livestock, while the CPW retains authority to manage lion populations, body parts, and all forms of recreational or scientific use. A Memorandum of Agreement between the CDA and CPW provides operational guidance for both agencies. This aids both agencies in implementing their management authority and helps assure documentation of agriculture-related lion deaths and the legal disposition of carcasses. As a matter of policy, any lion that is involved in a depredation incident shall be destroyed if it can be captured or identified.

In 2002, the Colorado legislature limited the State’s liability for damage caused by lions to livestock or personal property used in the production of raw agricultural products and further limited liability to not more than $5,000 per head of livestock. As a consequence of this change, non-agricultural personal property claim payments have been eliminated.

Over the last 15 years on the West Slope, the annual number of lion damage claims submitted to CPW has ranged from 18 to 65. In the 5 most recent years, claims have averaged 44 per year. Domestic sheep depredation accounts for the largest share of monetary compensation paid annually
over the past 5 years, averaging just over 50% of all claim payments on the West Slope (Figure 6 and Table 1). Other stock account for just over 40% of annual claim payments over the past 5 years, but involve relatively few numbers of animals, outside of goats (Table 1). The exotic stock classification includes llama, alpaca, guanaco, angora goats, and other livestock that typically are considered hobby stock animals. Because they are often highly valuable, damage claim amounts for exotic stock are often higher on a per claim basis compared to other livestock. The total monetary amount of damage paid on Colorado’s West Slope has been less than $100,000 in 14 of the last 15 years (Figure 6). Using the last 15 years of data, West Slope lion damage payments average less than $61,000 per year; during the most recent 5 years damage payments have averaged $65,000 per year.

Nearly two thirds of all lion game damage occurs from May through September. This largely coincides with the time that domestic sheep are on Bureau of Land Management and United States Forest Service summer grazing allotments and may also be the time that hobby stock are more commonly allowed to remain outside at night instead of held within barns as during winter months. On open range and even in pastures outside of homes, stock such as sheep or hobby animals would be more vulnerable to lion depredation during milder seasons.

![Figure 6. West Slope compensation paid for mountain lion damage in Colorado from 2004 through 2018.](image-url)
Table 1. Number of animals submitted in mountain lion damage claims to CPW from 2004-2018 by Region and animal type.

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Human Safety
Lion attacks on humans across North America are rare, but their frequency has increased in recent decades (Beier 1991, Torres et al. 1996, CMGWG 2005). This has also been found in Colorado. Lion attacks on humans occur primarily in the summer season (June-August), which likely correlates with the amount of outdoor recreation activity that occurs in Colorado lion habitat (Figure 7). Mattson et al. (2011) evaluated 386 human-lion encounters, including 29 fatal and 171 non-fatal injury attacks on humans, documented in the U.S. and Canada to determine the important risk factors in such encounters. They found that young females (≤2.5 years) were more likely to be involved in an attack on people than adult lions. Their examinations show that attacks on people are extraordinarily low-frequency, but high consequence events that are difficult to anticipate or prevent. They noted that aggressive behavior (yelling, throwing objects, charging, or discharging firearms) by people involved in close encounters with lions lessens the likelihood that the lion will attack. Unfortunately, several states have documented their first fatal human attacks over the last several years.

Figure 7. Seasonality of mountain lion attacks on humans in Colorado.

CPW Administrative Directive W-20 Human-Mountain Lion Interactions, establishes the agency procedures for dealing with general conflicts that may develop between humans and lions. This policy directs that agency management responses to a specific conflict between people and a lion or lions will be directed at the individual lion(s) involved and not at the population management scale. Administrative Directive OW-2 Predator Attacks on Human(s), details the manner in which the agency will respond to an attack by a lion (and any other predator) on a person. Both of these administrative directives allow for lion relocation under certain circumstances and provide direction for when that may happen. However, it is also the policy of CPW per these administrative directives that a lion will be euthanized when it’s determined to be dangerous because of its behavior, whereas a lion that is dangerous because
of its location may be euthanized or relocated. The determination on relative risk due to location or behavior presented by the individual lion will be made by the Regional staff involved with addressing the incident.

Per these administrative directives, CPW employees are required to document human-lion conflicts via a conflict recording system. Lions lethally removed under Administrative Directive W-20 will be recorded as such on the conflict report. These reports document essential information about the date, time, location, type of conflict, number of people, and animals involved, and the circumstances of the conflict. Along with the mortality recording system, this human-lion conflict recording system was overhauled in April 2019 to provide an electronic recording system that is consistent, standardized and used across the state to record each human-lion interaction reported to CPW. Due to the previous recording system using hardcopy paper forms across the state to record incidents, developing historically accurate precise enumerations of conflicts is difficult. The new web and mobile-based application currently in use is expected to provide much more consistent and precise data.

Two separate public opinion surveys in Colorado have revealed that the majority of Colorado citizens prefer that the agency apply non-lethal conflict management tools, except in the case of attacks on people (Zinn and Manfredo 1996, Corona Research 2005). However, when considering the location of an attack on a person, respondents equivocate; 49% opposed destroying a lion involved in an attack if the person was recreating in lion habitat (Corona Research 2005). These results and those previously mentioned regarding public opinions about lion hunting suggest that the public is quite divided in their perspectives about lions. Nevertheless, the Corona survey indicates that the public strongly supports active management of lions as well as encouraging responsible behavior by people to manage human-lion conflicts.