

June 23, 2008

Mitch Ellis, Complex Manager
Southwest AZ National Wildlife Refuge Complex
US Fish & Wildlife Service
356 West First Street
Yuma, Arizona 85364
KofaLionComments@fws.gov

RE: Development of an Environmental Assessment for a mountain lion management plan on the Kofa National Wildlife Refuge, Arizona

Dear Mr. Ellis

The Cougar Fund provides these comments on behalf of our members in response to the U.S. Fish and Wildlife Service's request for input in the development of an Environmental Assessment for a mountain lion management plan on the Kofa National Wildlife Refuge, Arizona.

The Cougar Fund is a national nonprofit dedicated to the conservation of the mountain lion throughout its present and historic range. We work on behalf of our members to ensure that the management of mountain lions, their prey and their habitat is in accordance with the highest standards of peer reviewed science. We also work to educate the public about the many issues that surround mountain lions. We believe in the importance of integrating, or balancing where necessary, in mountain lion management the diversity of human values while maintaining healthy and ecologically-effective populations of mountain lions across the landscape.

THE ANALYSIS SHOULD BE BROADENED TO INCORPORATE AN ECOSYSTEM MANAGEMENT APPROACH THAT CONSIDERS ALL OF THE POTENTIAL CAUSES OF BIGHORN SHEEP DECLINE

Creating a separate document for addressing mountain lion predation leads inevitably to a fragmenting of management strategies and implementation that neither serves bighorn sheep, mountain lions, biodiversity or the public interest. Rather, the U.S. Fish and Wildlife Service (FWS) and Arizona Game and Fish Department (AGFD) should implement an ecosystem management approach to the Kofa NWR and surrounding environs that creates the opportunity for a more successful long-term management and conservation program for all species on the refuge.

Taking an ecosystem management approach would allow for a far more effective consideration of the ultimate causes of the decline in Kofa bighorn sheep and thus stimulate the development of more effective and socially acceptable solutions. The analysis of mountain lion predation should be performed in conjunction and not separately from all potential causes of bighorn population declines. Researchers

investigating the population dynamics and predator-prey relations of bighorn sheep have proposed that the ultimate causes of decline of bighorn sheep populations is not predation by mountain lions but rather drought (Logan and Sweanor 2001, Bender and Weisenberger 2005), habitat succession (Holl et al. 2004), disease (Logan and Sweanor 2001) and potentially declines in primary prey (Logan and Sweanor 2001, Kamler et al. 2002, Holl et al. 2004). Drought is clearly in play on the Kofa, as the investigative report noted – “McKinney et al. (2006b) observed moderate nutritional deficiencies of desert bighorn sheep adults and lambs that corresponded with drought conditions and lower production and productivity of a population in central Arizona.”

Thus, we contend that the proposed EA should be scrapped and instead an adaptive, ecosystem management approach be adopted for the Kofa NWR.

NEED TO PROVIDE EMPIRICAL SUPPORT FOR CLAIM THAT MOUNTAIN LION PREDATION IS LIMITING BIGHORN POPULATIONS

To date, neither the FWS nor the AGFD has provided substantive evidence that predation is either limiting the size of the bighorn population or causing a reduction in that population. AGFD has claimed in its Predation Management document for the Kofa National Wildlife Refuge, “We conclude that any amount of predation on bighorn sheep by lions in the Kofa Mountains Complex is significant and represents additive mortality in these GMUs that have already been impacted by drought.” http://www.azgfd.gov/w_c/bhsheep/predation.shtml. Yet, the mere fact that mountain lions have recently preyed on Kofa bighorn sheep is wholly insufficient evidence to validate this claim. In point of fact, the FWS and ADFG stated in the Investigative Report and Recommendations for the Kofa Bighorn Sheep Herd (FWS and ADFG 2007) that, “The overall impact of mountain lion predation on the sheep population is unknown.” Consequently, after reviewing the relevant scientific literature and the information presented by the FWS and the AGFD, we find that there is currently a lack of empirical evidence to support claims that mountain lions are contributing to declines or limiting the growth of bighorn sheep on the Kofa NWR.

The literature suggests that although mountain lion predation can effect bighorn populations, its effect on large population such as the Kofa may be negligible. In fact, the 2007 report, as well as a literature review conducted by Dr. Chuck Anderson (2008), conclude that predation by mountain lions has not been found to cause bighorn population declines except when those populations are *small and isolated*. The Kofa population, although isolated, is by no means small. Moreover, as the 2007 report notes, “There are few data on the effects of mountain lion predation on large, resident herds of desert bighorn sheep.” In other large populations where data is available, such as Peninsular bighorn sheep in southern California (population 330), mountain lion predation apparently reduced adult survival rates but did not cause a population decline (Hayes et al. 2000).

The EA must also consider how much predation is additive or compensator. Logan and Sweanor (2001) estimated that 30% of bighorn mortality caused by lions was compensatory, whereas Ross et al. (1997) found that more than 1/3 of lion-killed bighorn sheep had apparent disabilities.

In short, the FWS must provide empirical support in the EA for its claim that mountain lion predation is limiting bighorn sheep populations on the KOFA.

NEED TO EMPIRICAL SUPPORT FOR MANAGEMENT PRESCRIPTIONS

Whatever prescription is included in the EA, the FWS must include scientific justification for it. The FWS states that the proposed alternative for the EA is to prescribe the lethal removal of any mountain lion found to be preying on more than 1 bighorn sheep. On what basis does the EA make this proposal? What empirical support is available to justify this claim? What does the available literature tell us about the efficacy of this approach? How does it compare to other approaches for conserving bighorn sheep? Is this approach accepted by a broad range of public interests?

We point out that Anderson (2008) reviewed the literature concerning predation on bighorn sheep and concluded that efforts to sustain population of bighorn sheep of more than 125 individuals were not aided by either targeted removals of mountain lions or wholesale population reductions of this predator. Rather, he noted that improving habitat quality and increasing the amount of habitat may provide a more effective strategy. This again points to the value of taking an ecosystem management approach rather than a piecemeal approach suggested by the focus of the proposed EA.

NEED TO ENSURE CONSERVATION OF MOUNTAIN LIONS ON THE KOFA NATIONAL WILDLIFE REFUGE

The conservation of large carnivorous mammals, such as the mountain lion, and the protection of the habitats they need to survive, is one of the greatest conservation challenges facing our society in the 21st century. Effective conservation of these species is considered a key aspect of our efforts to conserve biodiversity (Ray et al. 2005). Public polls and scientific studies also reveal the public's growing appreciation of these charismatic, biologically invaluable and culturally significant species (e.g., Kellert and Smith 2000). At the same time the growth of human populations and increasing development of wildlife habitat threatens the long-term viability of carnivore populations, the health and integrity of their ecosystems, and ultimately the health and well-being of the human communities that depend upon them.

As the human demographics of Arizona and other parts of the American West continue to change, the management of mountain lions has come under increasing examination not only in terms of its scientific foundations but also how it reflects the diversity of human values of residents. Ultimately, advances in our understanding of the ecological role of mountain lions, the public's increasing interest and changing perspectives of mountain lion management requires a significant reorientation in how wildlife agencies manage and conserve mountain lion populations (Torres et al. 2001).

FWS and AGFD appear to view the return of mountain lions to the Kofa as largely problematic. Yet if mountain lions inhabited the Kofa prior to the early 1900s and became absent due to human eradication efforts than their return is more aptly characterized as a natural recolonization that may serve to improve biodiversity in the long-term. The mountain lion is the only large native obligate carnivore sustaining viable populations in Arizona and most of the western United States (Cougar Management

Guideline Working Group 2005). Mountain lions are considered an important umbrella species (Beier 1993, Logan and Sweanor 2001) and are an indicator species for habitat connectivity (Penrod 2000). Mountain lions strongly influence energy flow in ecosystems and have a greater influence on ecosystem processes than their mere numbers would suggest and therefore meet the criteria for a keystone species (Logan and Sweanor 2001). As a top level carnivore, mountain lions play an integral role in maintaining the integrity of the natural landscape, and their removal can lead to significant ecological alteration and a loss in biodiversity and ecological integrity (Terborgh et al. 1999). It is important that, whatever management approaches are adopted for the Kofa, conservation of mountain lion populations be considered an integral component.

NEED TO INCORPORATE BROAD ARRAY OF HUMAN VALUES INTO MANAGEMENT ON THE KOFA

It is crucial to the long-term success and effectiveness of conserving wildlife populations on the Kofa NWR that management strategies incorporate the broad array of human values towards wildlife and nature. Based on our review of media coverage and conversations with interested parties we are concerned that special interests are driving the push to kill mountain lions in order protect bighorn sheep and maintain hunting opportunities for sheep. Our concern is bolstered by the fact that trophy hunting of bighorn sheep is being allowed to continue on the Kofa at a time where the status of the population is apparently of great concern to FWS and ADFG.

As governmental entities obliged to serve the public interest, the FWS and ADFG should take steps to ensure that their policies for the Kofa reflect the common interest, and not merely the values of a few special interests. To this end, we recommend that the FWS and ADFG engage interested stakeholders in the development of a comprehensive, ecosystem based and adaptive management plan for managing the wildlife and habitats on the Kofa.

In Conclusion

As our understanding of the ecological role of mountain lions increases and public attitudes towards this species continues to change, it is essential that the FWS and AGFD engage in adaptive ecosystem management on the Kofa and incorporate policies that reflect the broad array of human values towards bighorn sheep and mountain lions and their habitats. The EA should provide a more comprehensive analysis of the interrelated threats to bighorn sheep posed by drought, habitat succession, recreational impacts and disease. It is also beholden on the FWS to provide empirical support for any management claim or prescription put forth in any environmental document on the Kofa National Wildlife Refuge.

If the FWS and state would truly like to preserve, protect, perpetuate, and manage wildlife populations and their habitats on the Kofa NWR to ensure healthy, productive populations, then the state should be willing and prepared to work with interested stakeholders and experts to create an adaptive management plan. The Cougar Fund is very interested in helping the FWS and AGFD seek collaborative-based solutions with all

concerned stakeholder. Please do not hesitate to contact us for any reason. Thank you once again for considering our comments

Sincerely,

Sara Carlson
Program Director

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