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Comment  
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## **\*1011 THE CLASH BETWEEN PUBLIC OPINION AND WILDLIFE SCIENCE IN THE CATALINA BIGHORN SHEEP REINTRODUCTION PROJECT**

*In November 2013, the Arizona Game and Fish Department began a five-year project to reintroduce bighorn sheep to the Santa Catalina Mountains north of Tucson. Within weeks of the first release, mountain lions began eating the new arrivals. In response, to help the herd gain a foothold, the Department made good on its written policy and killed two of the predatory lions. Public outrage ensued. This comment explores both articulated and latent reasons for public criticism. I begin by explaining that an already skeptical public was unprepared to read about high sheep and lion mortalities. I then examine the notion of charismatic megafauna and the derivative belief that these killings were unfair, despite Arizona's robust mountain lion population and sizeable annual harvest. I conclude by demonstrating that the Department may have unknowingly mismanaged public expectations by implying that public opinion, rather than wildlife science, controlled the implementation of the project.*

### **INTRODUCTION**

On November 18, 2013, thirty-one bighorn sheep leapt from steel cages and headed for the high ground in what would become their new home--the Santa Catalina Mountains north of Tucson.<sup>1</sup> Transplants from mountains near Yuma and Quartzite,<sup>2</sup> the sheep are the first of about 100 that the Arizona Game and Fish Department (Department) plans to relocate in the next five years to replace a herd that became extirpated in the 1990s.<sup>3</sup> Helping advise the Department are the United States Forest Service and the Catalina \*1012 Bighorn Advisory Committee (Committee), a panel of representatives from six disparate interest groups.<sup>4</sup>

Though the Department released details and decisions about the Catalina Bighorn Sheep Reintroduction Project (Project)<sup>5</sup> gradually, its zeal was immediately apparent. For example, Department regional game specialist Jim Heffelfinger said this to the *Arizona Daily Star* nine months before the sheep were transplanted: "It's exciting. We all want to see desert bighorn sheep back in the Catalinas."<sup>6</sup> The public shared this excitement; a crowd of over 100 onlookers gathered to watch the November 2013 release.<sup>7</sup>

### **I. CONTROVERSY**

But not all local residents share the Department's enthusiasm for the project.<sup>8</sup> Many opponents have voiced their concerns in the editorial pages of the *Star*. One writer lamented that history will repeat itself because the same stressors that led to the herd's demise in the 1990s -- hikers and dogs -- have not been remedied.<sup>9</sup> Other criticisms include that the project was an "ill-conceived attempt to micromanage nature"<sup>10</sup> and a veiled attempt to expand the range of bighorn sheep for trophy hunters.<sup>11</sup> Interestingly, the Department is not the only party whose motives have been questioned; Randy Serraglio, a

Committee member from the Center for Biological Diversity, accused the *Star* of “sensationalizing this story” to “sell papers.”<sup>12</sup>

**\*1013** Perhaps the most contentious issue is a component of the Department’s reintroduction strategy: killing mountain lions that prey on newly arrived sheep.<sup>13</sup> Outlined in the “Santa Catalina Adaptive Mountain Lion Management Plan” (Mountain Lion Management Plan),<sup>14</sup> the policy states that for the first two years of the project, “[e]very bighorn sheep kill confirmed to be caused by a mountain lion would result in pursuit and removal by the administrative houndsmen and/or removed [sic] by marksman.”<sup>15</sup> As of this writing, mountain lions have killed eleven sheep.<sup>16</sup> Though the Mountain Lion Management Plan permits the Department and Committee to reevaluate removal and discuss alternatives,<sup>17</sup> the Department has so far killed three mountain lions that preyed on sheep.<sup>18</sup> The remaining lions either eluded trackers or were not pursued.<sup>19</sup>

In addition to objections about the Mountain Lion Management Plan, criticisms have emerged about the Department’s information regime. State Senator Olivia Cajero Bedford,<sup>20</sup> a member of both the Appropriations and Natural Resources and Transportation Committees,<sup>21</sup> said this about the project to the *Star*: “It’s not transparent. There’s secretiveness about it. They should be more forthright.”<sup>22</sup> Senator Bedford’s reaction may have been influenced by the Department’s decision to update the public via newsletters once **\*1014** every two weeks.<sup>23</sup> This criticism from an elected official demonstrates that both the public and lawmakers expect an unusually high level of transparency from wildlife managers.

## **II. Foreseeable Predation**

In response to public criticism about the Mountain Lion Management Plan, the Committee and Department noted that mountain lion removal is “a short-term management strategy to allow for the bighorn sheep population to grow and become self-sustaining.”<sup>24</sup> But there are at least two circumstances that suggest mountain lion removal may continue in the near future.

The first is the post-release behavior of transplanted bighorn sheep. As shown in previous restoration projects, newly released sheep have a tendency to scatter and then linger in one area.<sup>25</sup> Here, some sheep became increasingly vulnerable because they loitered in rocky outcroppings surrounded by dense vegetation<sup>26</sup>-- the preferred hunting terrain of mountain lions.<sup>27</sup>

The second circumstance that suggests that predation may continue is the robust mountain lion population in the Catalinas. According to the Department, the population is “among the most abundant in Arizona,”<sup>28</sup> which suggests that there is no shortage of potential predators for newly arriving sheep. To compound matters, mountain lions easily migrate between ranges to fill vacant territory,<sup>29</sup> which suggests that replacement lions are an ongoing concern. Though the Department has not addressed these observations directly, it noted the following about mountain lion population dynamics: “although the numbers themselves may favor mountain lions, the Catalinas are home to a robust deer and javelina population that mountain lions can also use for food.”<sup>30</sup>

When considered together, both the sheep’s innate post-release vulnerability and the sizeable population of mountain lions in the Catalinas suggest that predation events were highly probable. Yet the resulting outcry reveals that the public was ill prepared to read about the high number of sheep and lion deaths. Though the Department released the *procedure* for dealing with predation events in the Mountain Lion Management Plan, its mistake may have been omitting an accompanying estimation of mortalities.

## **\*1015 III. LATENT REASONS FOR PUBLIC CRITICISM**

A policymaker reviewing the Project rollout may struggle to pinpoint the Department’s error. After all, sheep transplantations in Arizona are nothing new. The Department has relocated over 2,000 bighorns since 1957, which helped grow the state herd from 1,500 to over 5,500 today.<sup>31</sup> Additionally, the Department seems to have adequately informed the public about the Project. It voluntarily held public meetings to announce its plan, released the controversial Mountain Lion Management Plan ahead of the November 2013 release, wrote editorials in local newspapers, and chose a management strategy that employed a “historical new approach that involved a collaborative effort bringing together a local group of diverse stakeholders.”<sup>32</sup> Taken together, the Department’s actions indicate a desire to establish consensus and maintain transparency. These efforts, however, may be unable to overcome the public’s underlying emotional and moral objections to mountain lion removal.

## A. CHARISMATIC MEGAFUNA EVOKE STRONG EMOTIONS

One likely explanation for public discontent is an ideological difference between the Department and critics about the value of mountain lions. The Department's viewpoint is evident: killing a few lions to establish a herd of sheep is an acceptable trade-off. Members of the public, on the other hand, object to this reasoning. For them, emotion outweighs overly detached wildlife management decisions.<sup>33</sup>

So what is it about the idea of mountain lion removal that evokes strong emotions? At least two reasons stem from contemporary culture. First, the public places mountain lions in a special conceptual category--charismatic megafauna.<sup>34</sup> These animals are valued both for their awe-inspiring physical characteristics and the larger motifs they symbolize, including American cultural heritage<sup>35</sup> and wilderness.<sup>36</sup> As a result, wildlife enthusiasts likely \*1016 remain hyper-vigilant for questionable management decisions. Second, the public may tend to protect animals that are rarely seen in the wild.<sup>37</sup> Unlike bighorn sheep, which are easy to observe, spotting a secretive mountain lion is significantly more challenging. The Committee underscored this difficulty and stated that finding a lion is often a chance encounter, even for hunters, noting, "it is a rare and often coincidental occurrence for any hunter to successfully take a lion."<sup>38</sup>

Public indignation may also hinge on notions of fairness. Despite the fact that mountain lions are not a threatened or sensitive species in Arizona<sup>39</sup> and may be hunted year-round,<sup>40</sup> many may believe that it is simply unfair to kill an instinct-driven predator for eating a specific type of prey. The public's dislike of removal is even more apparent when one considers that mountain lion hunting is permitted in the Game Management Unit where the sheep were released.<sup>41</sup> In fact, 22 mountain lions were harvested in the Unit in 2012.<sup>42</sup> Statewide, the numbers are even more telling: an average of 260 lions were harvested per year between 2007-2011.<sup>43</sup> It is perhaps then just the *idea* of removal, rather than the actual death of mountain lions, that irks the public, as hunters could have taken the two mountain lions whose removal caused this controversy.

## B. UNCLEAR MOTIVATION FOR THE PROJECT

Yet dislike of mountain lion removal may not wholly justify public criticism. There may be a more subtle explanation: mismanaged expectations. The Department's error may have been overselling the idea that the motivation to undertake the project was the public's desire for reintroduction, rather than the scientific goal of a healthier ecosystem, or the financial or recreational goal of establishing a herd for hunting. To illustrate this uncertainty, consider what a wildlife enthusiast might think after reading the following: "Jim \*1017 Paxon of the Arizona Game and Fish Department told *The Arizona Republic* a 'group of citizens' approached the Department more than a year ago to discuss re-establishing a herd in the Catalinas."<sup>44</sup> This press account suggests that the Department undertook the Project at the behest of a small group of citizens, rather than as part of a long-term, statewide reintroduction strategy. Additionally, the Department told the *Star* "research shows that Tucsonans support having bighorn sheep in the Catalinas."<sup>45</sup> Again, the Department may have overstated the extent to which public opinion drives the implementation of the Project.

The Department's motivation to undertake the Project may have been further confused when it addressed funding. It noted: "no taxpayer dollars are being used for this project .... This effort is funded entirely with fees paid for by hunting licenses and permits, as well as excise taxes on hunting equipment and private donations."<sup>46</sup> This statement may be read in several ways. It may demonstrate that the Department is a budget-conscious agency. Conversely, it may demonstrate that the Department knew the Project would be controversial and believed interest group financing would reduce eventual criticism.

## IV. OBSERVATIONS

Fallout from the Project yields several observations. First, policymakers should consider the expectations that arise when an agency cites public sentiment as the motivation for a wildlife project. If a project really is driven by the public's urging -- as the Department implies here by saying that it is "committed to working with and through [its] community partners in this adaptive decision-making process"<sup>47</sup> -- then frequent public meetings, more updates, and more interviews with the press may be needed. Second, even if a stakeholder committee provides input in the decision making process, the public will likely balk at the idea that reaching a consensus among polarized interest groups adequately accounts for the public interest.

Alternatively, if the motivation for a project is ecosystem health, then wildlife biology should trump public expectations. Under this approach, the Department might emphasize prior transplantations to educate the public about expected sheep and mountain lion mortalities. The Department seems to have employed this more scientific approach as a buffer against recent criticism, noting “this is a five-year program, and we are in this for the long haul.”<sup>48</sup>

Overall, the Department’s candor, use of the Committee, and bi-weekly updates are commendable efforts to inform the public. Yet criticism persists. The likely reason is that rationed information is incompatible with public control of a project. The Department’s error may have been failing to explain, *before* the November 2013 release, the \*1018 degree to which the public controls the fate of the Project. Though neither is easy, managing public expectations is equally important as managing newly arrived bighorn sheep.

## Footnotes

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<sup>1</sup> CATALINA BIGHORN ADVISORY COMM., CATALINA BIGHORN SHEEP REINTRODUCTION PROJECT, UPDATEFROM NOV. 19 -- DEC. 11, 2013 [hereinafter UPDATEFROM NOV. 19 -- DEC. 11, 2013], *available at* [http://www.catalinabighornrestoration.org/CBR-Documents/Cat\\_BHS\\_Update\\_12202013\\_posted.pdf](http://www.catalinabighornrestoration.org/CBR-Documents/Cat_BHS_Update_12202013_posted.pdf) (last visited Mar. 4, 2014).

<sup>2</sup> *Id.*

<sup>3</sup> Press Release, Ariz. Game & Fish Dep’t, Advisory Group Recommends Restoring Iconic Bighorn Sheep to Santa Catalinas; Desert Bighorns Absent Since 1990s May Be Returned by Fall (May 29, 2013), [http://www.catalinabighornrestoration.org/CBR-Documents/BighornreintropressrelFINAL52813\(3\).pdf](http://www.catalinabighornrestoration.org/CBR-Documents/BighornreintropressrelFINAL52813(3).pdf); Douglas Kreutz, *Game and Fish Respond to Questions About Bighorn, Lion Deaths*, ARIZ. DAILY STAR (Dec. 8, 2013), [http://azstarnet.com/news/local/game-and-fish-respond-to-questions-about-bighorn-lion-deaths/article\\_719f9da4-1f49-5122-81eb-08953e1e4269.html](http://azstarnet.com/news/local/game-and-fish-respond-to-questions-about-bighorn-lion-deaths/article_719f9da4-1f49-5122-81eb-08953e1e4269.html).

<sup>4</sup> CATALINA BIGHORN ADVISORY COMM., *Frequently Asked Questions* [hereinafter Advisory Committee FAQ], <http://www.catalinabighornrestoration.org/FAQs.html> (last visited Mar. 4, 2014).

<sup>5</sup> ARIZ. GAME & FISH DEP’T, CATALINA BIGHORN SHEEP REINTRODUCTION PROJECT [hereinafter Department Project Homepage], [http://www.azgfd.gov/w\\_c/bighornSheep.shtml](http://www.azgfd.gov/w_c/bighornSheep.shtml) (last visited Mar. 4, 2014).

<sup>6</sup> Douglas Kreutz, *Bighorns Could be Moved to Catalinas*, ARIZ. DAILY STAR (Feb. 10, 2013), [http://azstarnet.com/news/science/environment/bighorns-could-be-moved-tocatalinas/article\\_ed2a4b9f-780f-5513-a79e-b864559b755e.html](http://azstarnet.com/news/science/environment/bighorns-could-be-moved-tocatalinas/article_ed2a4b9f-780f-5513-a79e-b864559b755e.html).

<sup>7</sup> Laura Palmisano, *Desert Bighorn Sheep Return to Santa Catalinas*, ARIZ. PUB. MEDIA (Nov. 18, 2013), <https://www.azpm.org/p/home-featured/2013/11/18/28525-desert-bighorn-sheep-return-to-santa-catalinas>.

<sup>8</sup> Douglas Kreutz, *Bighorn Sheep Released in the Catalinas*, ARIZ. DAILY STAR (Nov. 19, 2013), [http://azstarnet.com/news/local/bighorn-sheep-released-in-catalinas/article\\_f112e3da-288a-5d6c-b4b9-019c0b3f5e59.html](http://azstarnet.com/news/local/bighorn-sheep-released-in-catalinas/article_f112e3da-288a-5d6c-b4b9-019c0b3f5e59.html).

<sup>9</sup> E. Linwood Smith, *Pusch Ridge Bighorn Sheep and People: A Bad Combination*, ARIZ. DAILY STAR (Dec. 17, 2013), [http://azstarnet.com/news/opinion/pusch-ridge-bighorn-sheep-and-people-a-bad-combination/article\\_3aae1d03-a0e8-5340-a560-790da4d7c268.html](http://azstarnet.com/news/opinion/pusch-ridge-bighorn-sheep-and-people-a-bad-combination/article_3aae1d03-a0e8-5340-a560-790da4d7c268.html).

10 Kreutz, *supra* note 3.

11 Tim Steller, *Tim Steller: Bighorns' Proposed Return to Catalinas Raises Hunting Debate*, ARIZ. DAILY STAR (July 7, 2013), [http://azstarnet.com/news/local/tim-steller-bighorns-propose-dreturn-to-catalinas-raises-hunting-debate/article\\_d8060339-2c2c-58b8-8eb4-82943b764fd8.html](http://azstarnet.com/news/local/tim-steller-bighorns-propose-dreturn-to-catalinas-raises-hunting-debate/article_d8060339-2c2c-58b8-8eb4-82943b764fd8.html).

12 Douglas Kreutz, *Ariz. Wildlife Agency Delays Information on Bighorns*, ARIZ. DAILY STAR, (Jan. 17, 2014), [http://azstarnet.com/news/local/ariz-wildlife-agency-delays-information-on-bighorns/article\\_b6682fa9-8b1a-5875-9ad8-2e07832f3e63.html](http://azstarnet.com/news/local/ariz-wildlife-agency-delays-information-on-bighorns/article_b6682fa9-8b1a-5875-9ad8-2e07832f3e63.html).

13 ARIZ. GAME & FISH DEP'T, SANTA CATALINA ADAPTIVE MOUNTAIN LION MANAGEMENT PLAN (June 5, 2013) [hereinafter MOUNTAIN LIONMANAGEMENT PLAN], available at [http://azstarnet.com/news/blogs/starnet-blog/pdf-big-horn-sheep-deaths-notunexpected/pdf\\_a834cd34-5d3e-11e3-ad60-0019bb2963f4.html](http://azstarnet.com/news/blogs/starnet-blog/pdf-big-horn-sheep-deaths-notunexpected/pdf_a834cd34-5d3e-11e3-ad60-0019bb2963f4.html).

14 *Id.*

15 *Id.*

16 CATALINA BIGHORN ADVISORY COMM., CATALINA SHEEP REINTRODUCTION PROJECT, UPDATE FROM FEB. 3 -- FEB. 16, 2014 [hereinafter UPDATE FROM FEB. 3 -- FEB. 16], available at [http://www.catalinabighornrestoration.org/CBRDocuments/Cat\\_BHS\\_Update\\_02162014\\_posted.pdf](http://www.catalinabighornrestoration.org/CBRDocuments/Cat_BHS_Update_02162014_posted.pdf) (last visited Mar. 4, 2014); Department Project Homepage, *supra* note 5.

17 MOUNTAIN LIONMANAGEMENT PLAN, *supra* note 13 at 7.

18 CATALINA BIGHORN ADVISORY COMM., CATALINA SHEEP REINTRODUCTION PROJECT, UPDATE FROM JAN. 20 -- FEB. 2, 2014 [hereinafter UPDATE FROM JAN. 20 -- FEB. 2, 2014], available at [http://www.catalinabighornrestoration.org/CBRDocuments/Cat\\_BHS\\_Update\\_02022014\\_posted.pdf](http://www.catalinabighornrestoration.org/CBRDocuments/Cat_BHS_Update_02022014_posted.pdf) (last visited Mar. 4, 2014); Department Project Homepage, *supra* note 5.

19 *See e.g.* CATALINA BIGHORN ADVISORY COMM., CATALINA BIGHORN SHEEP REINTRODUCTION PROJECT, UPDATE FROM JAN. 6 -- JAN. 17, 2014, available at [http://www.catalinabighornrestoration.org/CBRDocuments/Cat\\_BHS\\_Update\\_01192014\\_posted.pdf](http://www.catalinabighornrestoration.org/CBRDocuments/Cat_BHS_Update_01192014_posted.pdf) (last visited Mar. 4, 2014) (detailing numerous predation events where the Department either did not pursue predatory lions or the pursuit was unsuccessful).

20 Senator Bedford is a Democrat who represents much of southwestern Arizona, including southwestern Tucson.

21 ARIZ. STATE LEG., MEMBER PAGE, [http://azleg.gov/MembersPage.asp?Member\\_ID=27&Legislature=50&Session\\_ID=102#bio](http://azleg.gov/MembersPage.asp?Member_ID=27&Legislature=50&Session_ID=102#bio) (last visited Mar. 4, 2014).

22 Kreutz, *supra* note 12.

23 *Id.*

24 Kreutz, *supra* note 3.

25 UPDATEFROM NOV. 19 -- DEC. 11, 2013, *supra* note 1.

26 *Id.*

27 ARIZ. GAME & FISH DEP'T, *Frequently Asked Questions About Mountain Lions* [hereinafter Mountain Lion FAQ], [http://www.azgfd.gov/h\\_f/documents/MountainLion\\_FAQs\\_Nov11.pdf](http://www.azgfd.gov/h_f/documents/MountainLion_FAQs_Nov11.pdf) (last visited Mar. 4, 2014).

28 Kreutz, *supra* note 3.

29 UPDATEFROM NOV. 19 -- DEC. 11, 2013, *supra* note 1.

30 *Id.*

31 CATALINA BIGHORN ADVISORY COMM., *Frequently Asked Questions 12/24/2013* [hereinafter Advisory Committee Dec. FAQ], [http://www.azgfd.gov/w\\_c/documents/FAQs\\_CatBHSAdCom\\_FINAL\\_12-24-2013.pdf](http://www.azgfd.gov/w_c/documents/FAQs_CatBHSAdCom_FINAL_12-24-2013.pdf) (last visited Mar. 4, 2014).

32 UPDATEFROM NOV. 19 -- DEC. 11, 2013, *supra* note 1.

33 Brian Dolan, Mike Quigley & Randy Serraglio, *Restoring Bighorn Sheep Won't Require Wholesale Slaughter of Lions*, ARIZ. DAILY STAR (July 5, 2013), [http://azstarnet.com/news/opinion/restoring-bighorn-sheep-won-t-require-wholesaleslaughter-of-lions/article\\_e275cfba-057c-55ea-9a3c-62e92996df81.html](http://azstarnet.com/news/opinion/restoring-bighorn-sheep-won-t-require-wholesaleslaughter-of-lions/article_e275cfba-057c-55ea-9a3c-62e92996df81.html) (noting, as Committee members, that lions preying on sheep after transplantation is a “natural dynamic that is fraught with misperception and emotion.”).

34 *See, e.g.*, Peggy Pickering Larson, *The Iconic Mountain Lion*, ASDM NEWS (Arizona-Sonora Desert Museum, Tucson, Ariz.), July 2013, at 3, *available at* <https://www.desertmuseum.org/newsletters/news201307.pdf> (noting that the mountain lion, “a spectacular and majestic symbol of America’s wilderness,” “has served as the Desert Museum’s mascot for 61 years.”).

35 *See* Shannon Petersen, *Congress and Charismatic Megafauna: A Legislative History of the Endangered Species Act*, 29 *Envtl. L.* 463, 467 (1999) (“[M]ost in Congress believed the Act to be a largely symbolic effort to protect charismatic megafauna representative of our national heritage, like bald eagles, bison, and grizzly bears.”).

36 *See, e.g.*, Larson, *supra* note 34.

37 I analogize the perceived higher value of elusive wildlife to the perceived higher value of scarce goods to a consumer. *See generally* Luigi Mittone and Lucia Savadori, *The Scarcity Bias*, 58 *APPLIED PSYCHOLOGY: AN INTERNATIONAL REVIEW* 453, 453 (2009) *available at* <http://eds.a.ebscohost.com.ezproxy2.library.ari/ehost/pdfviewer/pdfviewer?sid=54efcabc-68cd-4c53-a6ad-09fd2dc4ab67%40sessionmgr4004&vid=2&hid=4205>. For discussion of how scarcity principles are used strategically in legal disputes, see Robert B. Cialdini et al., *The Science of Influence*, 9 *No. 1 Disp. Resol. Mag.* 20, 21 (2002).

38 Advisory Committee FAQ, *supra* note 4.

39 Mountain Lion FAQ, *supra* note 27.

40 ARIZ. ADMIN. CODE § R12-4-304(A)(8) (2011); *see also* ARIZ. GAME & FISH DEP'T, 2013-14 ARIZONA HUNTING REGULATIONS 61, *available at* <http://www.azgfd.gov/regs/mainregs.pdf>.

41 *Id.*

42 Advisory Committee Dec. FAQ, *supra* note 31.

43 ARIZ. GAME & FISH DEP'T, HUNT ARIZONA: SURVEY, HARVEST AND HUNT DATA FOR BIG AND SMALL GAME  
151 (2012), available at <http://www.azgfd.gov/regs/HuntArizona2012.pdf>.

44 *How Many Bighorn Sheep Should Die Outside Tucson?*, ARIZ. REPUBLIC (Dec. 17, 2013),  
<http://www.azcentral.com/opinions/articles/20131218bighorn-sheep-die-editorial.html>.

45 Kreutz, *supra* note 3.

46 *Id.*

47 *Id.*

48 *Id.*