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UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF ARIZONA

WESTERN WATERSHEDS PROJECT and SIERRA CLUB, Plaintiffs, vs. BUREAU OF LAND MANAGEMENT, Defendant.	Case No.: **COMPLAINT** **(Declaratory and Injunctive Relief)**

INTRODUCTION

1. Plaintiffs Western Watersheds Project and Grand Canyon Chapter of the Sierra Club (hereafter "WWP") challenge the environmental analysis completed by Defendant Bureau of Land Management ("BLM") for the agency's new Resource Management Plan ("RMP") for the Sonoran Desert National Monument. BLM issued a Final Environmental Impact Statement and Record of Decision for the Sonoran Desert National Monument RMP in September 2012, more than eleven years after President Clinton established the Monument and directed BLM to complete a new plan for its management. Plaintiffs now challenge the aspect of BLM's analysis that pertains to livestock grazing on the Monument.

2. The Sonoran Desert is the most biologically diverse desert in North America. President Clinton established the 496,337 acre Sonoran Desert National Monument in January 2001 to protect the biodiversity of plants and animals and their habitats, as well as the numerous historic sites, found in this desert setting. According to the proclamation that established the monument, this newly protected area in the heart of Arizona has "an extraordinary array of biological, scientific, and historic resources" that provide for a "spectacular diversity of plant and animal species," including imperiled species such desert bighorn sheep, Sonoran pronghorn, Sonoran desert tortoise, and many other birds, reptiles, and plants.

3. Recognizing the harmful impacts that livestock grazing was having on this ecosystem, the proclamation closed all grazing allotments in the southern portion of the monument, and allowed grazing to continue on the northern portion of the monument **only** if BLM determined that grazing is compatible with the "paramount purpose of protecting the objects identified in this proclamation." It also required BLM to prepare a management plan that addresses the actions "necessary to protect the objects identified in the proclamation."

4. Shortly after designation of the Monument, BLM contracted with scientists to study the impacts of livestock grazing on the Monument's ecological communities. These multi-year studies resulted in several reports that came out in 2002-2006 finding that livestock were degrading soils, reducing plant diversity, increasing weeds and non-native plants, and damaging wildlife habitat on the monument. Yet, in 2012, BLM determined in the analysis for the Final Environmental Impact Statement (FEIS) that livestock grazing was compatible with protecting the objects identified in the proclamation on the majority of lands within the northern portion of the Monument and that therefore grazing could continue on those lands.

5. As discussed in more detail below, BLM's livestock compatibility determination was based on a flawed, inadequate, and incomplete Land Health Evaluation and analysis and thus is arbitrary and capricious. Because the RMP Record of

Decision relied on the compatibility determination to allow continued livestock grazing in the northern portion of the Monument, that aspect of the decision is unlawful and must be remanded to the agency to conduct a proper livestock compatibility determination.

JURISDICTION AND VENUE

6. Jurisdiction is proper in this Court under 28 U.S.C. § 1331 because this action arises under the laws of the United States, including the National Environmental Policy Act, 42 U.S.C. § 4321 *et seq.;* the Sonoran Desert National Monument Proclamation, Proclamation No. 7397, 66 Fed. Reg. 7354; the Administrative Procedure Act, 5 U.S.C. § 701 *et seq*.; the Declaratory Judgment Act, 28 U.S.C. § 2201 *et seq*.; and the Equal Access to Justice Act, 28 U.S.C. § 2214 *et seq*. An actual, justiciable controversy now exists between Plaintiffs and Defendant, and the requested relief is therefore proper under 28 U.S.C. §§ 2201-02 and 5 U.S.C. §§ 701-06.

7. Venue is proper in this Court pursuant to 28 U.S.C. § 1391(e) because a substantial part of the events or omissions giving rise to the claims herein occurred within this judicial district and a substantial part of the public lands and resources at issue are located within this district.

8. The Federal Government has waived sovereign immunity in this action pursuant to 5 U.S.C. § 702.

PARTIES

9. Plaintiff WESTERN WATERSHEDS PROJECT ("WWP") is a regional, membership, not-for-profit conservation organization, dedicated to protecting and conserving the public lands and natural resources of watersheds in the American West. WWP has offices throughout the West, including in Tucson, Arizona, and more than 1,300 members located throughout the United States. Through agency proceedings, public education, scientific studies, and legal advocacy conducted by its staff, members, volunteers, and supporters, WWP is actively engaged in protecting and improving plant and animal communities and other natural resources and ecological values of western watersheds. Since 2007, WWP has actively participated in management of livestock

grazing on the Sonoran Desert National Monument through letters, comments, field trips, and oral communications to the BLM, expressing its concerns over livestock grazing on the monument. WWP provided extensive comments on the Draft RMP and Draft EIS and submitted a timely protest of the Proposed RMP and Final EIS.

10. Plaintiff GRAND CANYON CHAPTER OF THE SIERRA CLUB is one of the oldest grassroots environmental organizations in the country. The Sierra Club's mission is to explore, enjoy, and protect the wild places of the earth; to practice and promote the responsible use of the earth's ecosystems and resources; and to educate and enlist humanity to protect and restore the quality of the natural and human environments. The Grand Canyon Chapter has long been committed to protection of Arizona's lands, wildlife, water, and communities and has been significantly involved in activities related to the Sonoran Desert National Monument, including the management of livestock grazing. The Sierra Club has participated in the planning process for the Monument, including participating in public meetings, submitting comments on the Draft RMP and Draft EIS in 2011, and protest of the proposed RMP and Final EIS in July 2012.

11. Plaintiffs' staff and members regularly use and enjoy the public lands, wildlife, and other natural resources on the Sonoran Desert National Monument for many health, recreational, scientific, spiritual, educational, aesthetic, and other purposes. WWP and Sierra Club staff and members pursue activities such as hiking, wildlife viewing, biological and botanical research, photography, and spiritual renewal on the Sonoran Desert National Monument. Livestock grazing that degrades this fragile ecosystem impairs the use and enjoyment of this monument by Plaintiffs' staff and members.

12. Plaintiffs' staff, members, and supporters will continue to visit the Sonoran Desert National Monument in the future for many purposes such as hiking, wildlife viewing, photography, scientific study, spiritual renewal, and to otherwise enjoy the natural scenery and beauty of the Sonoran Desert. Plaintiffs, both organizationally and on behalf of their staff, members, and supporters, have an interest in the preservation and

protection of the Sonoran Desert National Monument, and are directly harmed by Defendant's violations of law challenged herein.

13. The above-described conservation, recreational, scientific, and aesthetic interests of Plaintiffs' staff, members and supporters have been, are being, and, unless the relief prayed for is granted, will continue to be adversely affected and irreparably injured by Defendant's violations of law. Plaintiffs have no adequate remedy at law, and thus the requested relief is appropriate.

14. Defendant BUREAU OF LAND MANAGEMENT ("BLM") is an agency or instrumentality of the United States, and is charged with managing the public lands and resources of the Sonoran Desert National Monument, in accordance and compliance with federal laws and regulations.

FACTUAL BACKGROUND

A. Sonoran Desert National Monument

15. The Sonoran Desert is a hot, arid region that stretches between southwest Arizona, southeast California, and northern Mexico. The Sonoran Desert has remarkably high biological diversity for both plants and animals. This desert is well known for its "forests" of saguaro cactus, but is also home to other trees such as paloverde, desert ironwood, and mesquite, a variety of shrubs, and many species of ephemeral plants that arise after seasonal rains.

16. These varied plant communities provide habitat for a plethora of wildlife. The Sonoran Desert has over 2000 native plant species in total, many of which are endemic to the Sonoran Desert, as well as 60 mammals, 350 birds, 20 amphibians, and more than 100 reptiles that inhabit the area. The Sonoran Desert is one of the richest and most exceptional birding areas in the United States.

17. One of the defining characteristics of the upland Arizona portion of the Sonoran Desert is the bi-seasonal rainfall pattern, with winter rains coming from the Pacific and summer moisture coming from tropical monsoons. Years with good precipitation result in large populations of annual plants and wildflowers while other

years result in drought and much less annual production. The mild winters rarely experience frost and thus almost half of the biota of this region is tropical in origin.

18. Livestock grazing, off-road vehicle use, encroachment of agriculture and human development, climate change and the introduction of non-native species are the primary threats facing the Sonoran Desert ecosystem.

19. Amidst this unique ecosystem, President Clinton established the Sonoran Desert National Monument in 2001 pursuant to his authority under the Antiquities Act. In Presidential Proclamation 7397, President Clinton set aside this area to protect its resources from development and degradation. The monument is located about 60 miles southwest of Phoenix, Arizona and encompasses 496,337 acres.

20. The proclamation begins by noting that the monument is a "magnificent example of untrammeled Sonoran desert landscape." This desert ecosystem has "an extraordinary array of biological, scientific, and historic resources. The most biologically diverse of the North American deserts, the monument consists of distinct mountain ranges separated by wide valleys, and includes large saguaro cactus forest communities that provide excellent habitat for a wide range of wildlife species."

21. The proclamation continues by discussing the "spectacular diversity of plant and animal species" here. The higher peaks on the monument contain unique woodland communities, while lower elevation lands "offer one of the most structurally complex examples of paloverde/mixed cacti association in the Sonoran Desert." The proclamation highlights the saguaro cactus forests, stating that these forests, with their signature saguaro plants together with a wide variety of other trees, shrubs, and herbaceous plants, are "an impressive site to behold" and "a national treasure."

22. In discussing the lower elevation, flatter areas of the monument, the proclamation notes the creosote-bursage plant community, which thrives in open expanses between mountain ranges and acts as a connector to other plant communities. The monument also contains desert grasslands and ephemeral washes, which support denser vegetation such as mesquite, ironwood, paloverde, and desert willow trees, as well

as a variety of herbaceous plants. This vegetation provides dense cover for bird species for nesting, foraging, and escape, and "birds heavily use the washes during migration."

23. Of particular relevance here, the proclamation remarks on the rich diversity, density, and distribution of plants in the Sand Tank Mountains area on the monument, which is due to the management regime in place in that particular area that has excluded livestock grazing there for more than fifty years.[1] The proclamation stated that in order to extend the extraordinary diversity and overall ecological health of the Sand Tank Mountains area, adjacent monument lands with similar biological resources should be subject to similar management to the fullest extent possible.

24. Wildlife diversity is also a focal point of the proclamation. "The diverse plant communities present in the monument support a wide variety of wildlife, including the endangered Sonoran pronghorn, a robust population of desert bighorn sheep, especially in the Maricopa Mountains area, and other mammalian species such as mule deer, javelina, mountain lion, gray fox, and bobcat."

25. The proclamation makes note of other mammals, birds, reptiles, and amphibians on the monument. It mentions several bat species found here, including the endangered lesser long-nosed bat. More than 200 species of birds are found on the monument as well as many raptors and owls. Reptiles such as the red-backed whiptail and the Sonoran desert tortoise inhabit the monument, and 25,000 acres of land in the Maricopa Mountains has been designated as critical habitat for the desert tortoise. Because of its declining numbers, the U.S. Fish and Wildlife Service has determined that the Sonoran desert tortoise is warranted for listing under the Endangered Species Act.

26. In addition to the biological resources on the monument, the proclamation also stresses the importance of the "many significant archaeological and historic sites, including rock art sites, lithic quarries, and scattered artifacts." The monument contains

[1] This area was withdrawn for military purposes in 1941. Pursuant to the proclamation, the military withdrawal terminated on November 6, 2001 and BLM has assumed management responsibility.

remains of prehistoric travel corridors and villages as well as remnants of several important historic trails, including the Juan Bautista de Anza National Historic Trail, the Mormon Battalion Trail, and the Butterfield Overland Stage Route.

27. In light of these biologic and historic values, President Clinton used his authority under the Antiquities Act to create the Sonoran Desert National Monument "for the purpose of protecting the objects identified above."

28. To further this purpose, the proclamation prohibited motorized and mechanized vehicle use off roads and withdrew the land from any form of entry, sale, leasing, or other disposition, including for mining or mineral development.

29. The proclamation also prohibited BLM from renewing grazing permits for all allotments within the monument south of Highway 8 at the end of their term; and stated that grazing north of Highway 8 "shall be allowed to continue only to the extent that the Bureau of Land Management determines that grazing is compatible with the paramount purpose of protecting the objects identified in this proclamation."[2]

30. According to the proclamation, the BLM was required to prepare a management plan that addresses the actions necessary to protect the objects identified in the proclamation. In light of the proclamation designating this area as a national monument, BLM no longer manages this area simply on a multiple use basis but instead must manage it primarily for the protection of the objects of interest identified in the proclamation.

B. Livestock Grazing on the Monument

31. The majority of the land now encompassed within the Sonoran Desert National Monument was grazed by livestock for many decades. The Sand Tank Mountains area, mentioned above, in the southwest corner of the monument is the only substantial area that has not been impacted by grazing over the past fifty years.

32. As of February 28, 2009, the allotments south of Highway 8—Vekol, South

[2] Highway 8 crosses the Monument from east to west. Slightly more than half of the Monument occurs north of the Highway.

Vekol, Table Top, Santa Rosa and a portion of the Big Horn allotment—were permanently closed to livestock grazing pursuant to the proclamation. To the north of Highway 8 is the remainder of the Big Horn allotment, and the Lower Vekol, Conley, Hazen, Beloat, and Arnold allotments. These northern allotments were the subject of BLM's livestock compatibility determination.

33. Grazing permits for these allotments allow for two types of grazing: perennial and ephemeral. Perennial grazing authorization allows for a certain number of cattle to graze the allotment during a certain period of time each year for the ten-year term of the permit.

34. Ephemeral grazing authorization allows for additional grazing on a seasonal basis when rainfall provides adequate forage. Depending on the seasonal forage production, BLM authorizes a certain number of cows to graze for a limited time in that season. On the monument, ephemeral grazing occurs primarily when winter rains trigger sufficient forage production, generally in the form of annual plants and wildflowers that carpet the desert floor.

35. Of the remaining allotments on the monument, the Arnold allotment has only ephemeral grazing. The other five allotments north of Highway 8 have permits that authorize both perennial and ephemeral grazing. Each of the perennial permits has a yearlong season of use, meaning that the allotted number of cattle can use the allotment all year, and varies in number of cattle permitted from 101 cattle up to 350 cattle. Each permit also identifies the permitted animal unit months, or AUMs, allowed on an allotment. An AUM is the amount of forage needed to sustain a cow and calf pair for one month. The perennial permits for these five allotments range from 1164 to 4158 AUMs.

36. The ephemeral grazing that occurs on the monument varies by year, with BLM often allowing hundreds, and in some cases thousands, of cattle to graze for several weeks or months under ephemeral permits. This type of permit authorizes grazing of AUMs in addition to the AUMs authorized by the perennial permits, sometimes by as much as several thousand additional AUMs.

37. It is well recognized that livestock grazing in the Sonoran Desert can have significant impacts on the natural and cultural resources there. Grazing use has resulted in compaction and erosion of soils, destruction of biological soil crusts, reduction in vegetation cover, loss of native plant diversity, increase in non-native plants, and altered plant community structure and composition. This damage to vegetation also degrades wildlife habitat.

38. Compaction of soils by livestock inhibits water infiltration and increases surface water run-off, thereby increasing erosion of surface soil and decreasing the water available to vegetation. Depletion of vegetative cover by livestock and the resultant increase in bare ground also increases soil erosion. This loss of vegetation cover and soil has long-term impacts to soil and plant productivity and the hydrology of watersheds.

39. Destruction of biological soil crusts also impairs ecological functions. Soil crusts are important assets to plant growth, enhancing plant uptake of nutrients and nitrogen, which is particularly important in nitrogen-limited desert ecosystems. These crusts provide favorable sites for germination of native plant seeds, and hinder germination of non-native seeds that prefer disturbed sites. Soil crusts also help prevent water and wind erosion. Recovery of soil crusts from disturbance can take years or even decades.

40. Plant community structure on the Sonoran Desert National Monument generally consists of an understory of perennial and annual grasses and forbs[3], a mid-story of shrubs, cacti, and small trees, and an overstory of somewhat larger trees as well as saguaro cacti. In the driest areas of the monument, trees, shrubs, and grasses are confined to drainages where supplemental water supports diverse plant communities. Because of the dry climate, overall plant productivity is low, particularly during periods of drought.

41. Cattle usually prefer to eat grasses, but will also eat forbs and browse

[3] Forbs are broad-leaved herbaceous plants other than grasses, sedges, or rushes, and include a variety of wildflowers.

shrubs and small trees if grasses are unavailable. Because of their forage preferences, cattle can alter the natural structure of communities by grazing the understory or mid-story more heavily, reducing the abundance of plants in the understory and favoring expansion of trees and shrubs. Where vegetation is reduced by grazing, the plant community may not recover unless grazing is discontinued because of the normally low productivity in the desert.

42. Grazing significantly reduces native plant diversity, changing the composition of the plant community by eliminating plants that are sensitive to grazing and allowing only those plants more adapted to disturbance to grow. Likewise, grazing causes native species, especially native grasses, to be replaced with non-native invasive species because cattle prefer the native species, selecting them as forage and allowing invasive species to spread. These non-native species often increase the risk of wildfire.

43. Livestock are particularly detrimental to saguaro cactus communities because cattle trample saguaro seedlings, and also graze understory plants and grasses that provide shade and structural protection for the seedlings and juvenile cacti. Because saguaros stay small for decades, they remain vulnerable to the threat of livestock grazing for many years before outgrowing the direct threat posed by cattle trampling. Saguaros growing in the shelter of leguminous trees (known as "nurse plants") are especially at risk because these same trees are the only source of shade for livestock in the hot desert and thus attract heavy use by livestock.

44. The consumption and trampling of vegetation by livestock reduces forage and cover for many wildlife species, including birds, small mammals, insects, and other native herbivores like deer and pronghorn. Many animals in the Sonoran Desert are highly dependent on seasonal pulses of plant productivity that occur in response to rain events. Ephemeral grazing that occurs during those same periods is particularly detrimental to the survival and reproduction of those species. Many wildlife species also heavily rely upon desert washes for protection and food, and livestock often congregate there, removing forage and eliminating protective cover for wildlife.

45. Grazing structures such as water developments and fences can directly and indirectly harm wildlife. Water developments that remove water from washes impact downgradient xeroriparian vegetation, which is important to native wildlife for food and cover. These developments also create "hot spots" of extreme degradation of vegetation and soil, as well as high levels of non-native plants, because of the concentrated presence of livestock at these sites. Fences also fragment habitat, limit movement of large mammals, and entangle and ensnare untold numbers of wildlife each year.

46. Many of the species directly named in the Sonoran Desert National Monument proclamation are impacted by livestock grazing, such as Sonoran desert tortoise and desert bighorn sheep. For instance, cattle eliminate nutritionally important forage for desert tortoise adults and hatchlings, which depend heavily on availability of plants after seasonal rainfall events. Thus, ephemeral grazing is particularly detrimental to the tortoise. Cattle can also trample and crush individual tortoises or their burrows. Livestock operations affect desert bighorns by removing forage, impairing bighorn movements with fences, and excluding bighorns from suitable habitat, movement corridors, or water sources because bighorns tend to avoid cattle.

47. Finally, cattle damage cultural and historical sites by trampling artifacts and other features on the soil surface. They also induce changes in plants and soils that lead to erosion and gullying which can displace or bury archaeological sites.

C. Pacific Biodiversity Institute and Nature Conservancy Research

48. Not long after the Sonoran Desert National Monument was established, BLM entered into contracts with The Nature Conservancy and the Pacific Biodiversity Institute to study the ecological condition of and livestock grazing impacts to the monument. Several reports were issued as a result of these contracts.

49. The Pacific Biodiversity Institute studies assessed the natural communities and ecological condition of the Sonoran Desert National Monument and adjacent areas. Fieldwork for these studies occurred from 2002 to 2006 and several reports were completed, which included maps of the various natural communities on the monument as

well as assessments of the ecological condition of each community and the stressors that affected each community. To do this, Pacific Biodiversity Institute conducted sampling on 320 plots. Livestock grazing impacts were quantified at some of these plots as well.

50. The results of these studies indicated that the communities most impacted by livestock grazing had the most disturbance in the form of low vegetation cover, low native species diversity, high levels of non-native species—especially in herb and grass cover, and soil erosion and compaction. These communities were at the lower elevations of the monument and consisted of creosote-bursage desert scrub, paloverde-mixed cacti-mixed scrub on bajadas, mesquite woodlands, valley xeroriparian areas, and braided channel floodplains.

51. The creosote-bursage desert scrub community, one of the primary communities on the monument, is where most of the livestock grazing occurs and likewise is one of the most disturbed communities. As noted by the report, "[t]he influence (stresses) of livestock extends throughout most of the community, as few of the regions we visited within the study area are without some indication of livestock influence."

52. In contrast, the communities least accessible to livestock, such as the higher elevations of paloverde-mixed cacti-mixed scrub on rocky slopes, mountain uplands, and rocky outcrops, had the least disturbance, with few exotic species, high diversity of native plants, and little soil disturbance. However, in 2005 and 2006, signs of livestock use were seen in these higher elevation areas, indicating an increasing risk of livestock impacts to these less accessible areas. Surveyors speculated that this new use was due to the extreme drought and decreased availability of forage in the lower elevations.

53. The native grasslands also showed a contrast between grazed and ungrazed areas, with the grazed grasslands on the monument showing significant disturbance and poor conditions while ungrazed grasslands on adjacent property were in much better condition and had much higher levels of native grasses. In looking specifically at grazed valley riparian areas, the study noted that these areas had a high abundance of exotic

grasses and very low abundance of native grasses, and that the native grass cover was being reduced by livestock activity.

54. The reports also documented that within communities most affected by grazing, the areas around livestock congregation areas, such as water sources and other range developments, had the most severe degradation, with highly altered vegetation composition and structure and altered soil surfaces.

55. The reports considered PBI data in context of BLM's Standards and Guidelines for Rangeland Management and concluded that most of PBI's sample plots would fail to meet BLM's criteria for rangeland health.

56. A separate report issued by The Nature Conservancy in February 2005 assessed existing scientific research on impacts of livestock grazing in the Sonoran desert and its implications for grazing management on the monument. This report considered the prior Pacific Biodiversity Institute studies on the monument as well as dozens of other studies of livestock grazing systems and impacts conducted in desert ecosystems.

57. Based on the synthesis of all existing research, the February 2005 report described livestock grazing impacts to plants, soils, wildlife, and cultural resources in the Sonoran desert. It then assessed current grazing management strategies used by BLM and other land managers.

58. The report stated that:

> The unique ecological characteristics of the Sonoran Desert require specific attention when considering development and implementation of a grazing management strategy. Current approaches to grazing in the Sonoran Desert mostly seem to follow the conceptual thinking underlying grazing management strategies developed and tested for ecosystems typically of higher productivity and of significantly different ecosystem dynamics. As a result, **no currently described approach, including continuous grazing and each of the specialized grazing systems, is completely applicable to or appropriate for the Sonoran Desert ecosystem within the current formulations.**

59. In sum, this report concluded that no known system of grazing is compatible with protecting the Sonoran Desert ecosystem and its resources.

D. BLM Land Health Evaluation and Compatibility Determination

60. Despite all of these studies showing that livestock grazing was having significant impacts on resources on the Monument, including resources specifically named in the Monument proclamation such as the creosote-bursage and paloverde-mixed cacti plant communities, saguaro cactus forests, desert washes, and habitat that supports a variety of wildlife species, BLM did not immediately conduct the compatibility determination required under the proclamation. Instead, BLM waited several more years to initiate its compatibility analysis, which consisted of several steps.

1. Identify Monument objects.

61. To make the compatibility determination, BLM first identified the Monument objects specific to the Sonoran Desert National Monument. BLM identified the following objects: Functioning desert ecosystem; Diversity of plant and animal species; Saguaro cactus forests; Sand Tank Mountains; Vegetation communities: creosote-bursage, desert grassland, and washes; Wildlife; and Archaeological and historic sites.

2. Scientific literature review.

62. Next, BLM conducted a review of scientific literature addressing potential effects of livestock grazing in the Sonoran Desert. BLM summarized the literature pertaining to Functioning Desert Ecosystems, Saguaro Cactus Forests, Vegetation Communities, Wildlife, and Archaeological and Historic Sites in its compatibility determination. BLM did not discuss the Nature Conservancy Literature Review Report, which had just been completed in 2005, nor did it cite to many of the studies included in the Nature Conservancy Report in its compatibility determination.

63. BLM summarized its own literature review, noting that the lack of quantification of the intensity, frequency, and timing of livestock grazing makes it difficult to ascertain the levels of livestock grazing that are causing effects within the

Sonoran Desert. However, general potential effects include negative effects to annual and perennial vegetation, saguaro cactus, wildlife—particularly bighorn sheep, and archaeological resources. The report noted in particular that grazing can reduce plant species diversity and recruitment of young saguaros. Negative effects to soils, vegetation, and archaeological resources are heightened around livestock watering sources and other concentration areas.

3. Land Health Evaluation Part I: Assess Standards.

64. The third step in the compatibility determination was to conduct a Land Health Evaluation (LHE) by doing allotment-by-allotment evaluations for the six allotments north of Highway 8. This evaluation assessed whether ecological conditions were meeting the Arizona Standards for Rangeland Health. These three Standards pertained to upland sites, riparian-wetland sites, and desired resource conditions. The BLM used these standards as proxy measurements for determining harm to all monument objects.

65. BLM wrote a preliminary draft LHE in 2008. It then revised that draft and provided a second draft to four peer reviewers in 2009 to solicit comments from them about the analysis. BLM made further revisions to the LHE and issued the final version as an appendix to the EIS.

66. Standard One for upland sites looks at soil infiltration, permeability, and erosion rates by assessing ground cover as well as qualitative signs of erosion. BLM determined that Standard Two for riparian-wetland sites was not applicable because no riparian areas or wetlands occurred on any of the allotments. Standard Three for desired resource conditions looks at production and diversity of native plant communities by assessing plant composition, structure, and distribution.

67. To assess whether conditions were meeting Standard One and Standard Three, BLM used some of the data collected by Pacific Biodiversity Institute as well as some of its own data. With regard to its own data, BLM compared vegetation production data from 1981 to production data it collected in 2008/2009 and concluded it showed

virtually no change in vegetation production over the 28-year period. BLM did not explain how it compared these data given that it used two different methods, and that the more recent method used in 2008/2009 was not appropriate for measuring production according to one of the peer reviewers.

68. BLM also collected monitoring data at key areas in 2004 and 2009. A key area is a long-term monitoring plot located within a single ecological site and plant community, is representative of the community in which it is located, and represents where livestock grazing pressure is occurring across the management area. BLM placed the key areas at a distance of approximately one mile from water sources to prevent collecting data in areas of the heaviest impacts. Thus, BLM did not assess the impacts of heavy grazing around numerous water sources or other livestock congregation areas on the monument, and, as a consequence, did not assess impacts to monument objects that occurred in these areas.

69. For the final LHE, BLM considered data only from 2009 that was collected at 36 key areas and did not consider data from 2004 or 1980. It had included the earlier data in the draft LHEs, which indicated that several attributes such as bare ground, microbiotic soil crusts, vegetation cover and composition had downward trends in condition between 1980, 2004 and 2009 at numerous sites. BLM claimed that it disregarded data from before 2009 because it had used different methods to measure the same attributes even though it had also used different methods to measure vegetation production in 1981 and 2009 yet looked at the trend of that attribute in the final LHE.

70. To assess Standard One, BLM did a qualitative evaluation in 2009 to determine degree of departure from desired ecological conditions for soil stability, hydrologic function, and biotic integrity, and also looked at quantitative 2009 data for vegetative cover and microbiotic soil crusts. Based on the surveys from 2009 alone, BLM concluded that all allotments were meeting Standard One.

71. To assess Standard Three, BLM first established desired plant community objectives for each of the ecological sites. Ecological sites are distinctive kinds of soil

and topographic features that result in a characteristic natural plant community. The Monument contains the following ecological sites: sandy wash, loamy swale, limy fan, limy upland deep, limy upland, granitic hills, and sandy loam deep ecological sites. BLM also established objectives for cactus ferruginous pygmy-owl habitat within the sandy wash ecological site.

72. The objectives generally relate to vegetation canopy cover, vegetation composition, and for the limy upland and granitic hills ecological sites, recruitment of saguaros. The BLM used these ecological site objectives as proxy measures for the needs of monument objects, including habitats and populations of imperiled species.

73. To establish the objectives, BLM looked at data from corresponding ecological sites on the Barry Goldwater Range and Area A ("BGR/Area A"), where livestock grazing had been excluded since the 1940s. BLM did not take into account that this area has impacts from historical grazing use and continued trespass livestock, which were noted in the PBI reports. Where BLM did not have data from corresponding ecological sites on BGR/Area A, it considered information from Natural Resources Conservation Service ecological site descriptions and reference sheets to set objectives.

74. BLM claimed it used the average value from the BGR/Area A ecological sites to quantify the objectives for each attribute and to account for the variability within a given ecological site.

75. Table F-9 in the final LHE contains data from BGR/Area A, but the average of the actual data for canopy cover and composition does not match the objectives for those two attributes. For example, for the sandy wash ecological site, the average of the data for actual canopy cover is 37% while the objective is 34%; for the limy fan site the average of the data for actual canopy cover is 8.8% while the objective is 7%; and for the limy upland deep site the average of the data for actual canopy cover is 13.3% while the objective is 10%. Likewise, the averages of the actual vegetation composition data do not match the objectives. Composition at the limy upland deep site averaged 23.5%, and yet BLM's objective for composition was set to just 12%. BLM did

not develop composition objectives for the granitic hills sites, and did not explain their absence in the final LHE.

76. BLM did not have reference areas for the Sandy Loam Deep, Limy Upland, or Loamy Swale ecological sites and it is unclear how the agency set its quantitative objectives for these sites.

77. BLM also did not explain why it changed objectives between two drafts and the final LHE. As shown in the table below, six objectives changed between draft one, draft two, and the final LHE but BLM did not adequately explain or justify the changes. Each of the changes lowered the standard, resulting in a greater number of plots meeting objectives.

Ecological Site	Draft one	Draft two	Final LHE
Sandy bottom veg can cover	34%	34%	34%
Sandy bottom comp shrubs	14%	14%	14%
Sandy bottom CFPO can cov	50%	50%	***40%***
Sandy bottom CFPO comp shrubs	14%	14%	14%
Loamy swale veg can cov	20%	20%	20%
Loamy swale per grass comp	10%	10%	10%
Limy fan veg can cov	7%	7%	7%
Limy fan comp rat-bur shrub	9%	9%	9%
Limy upland deep veg can cov	10%	10%	10%
Limy upland deep rat-bur comp	12%	12%	12%
Limy upland veg can cov	16%	***12%***	12%
Limy upland comp shrub	5%	5%	5%
Limy upland saguaro recruit	1/12.5m	1/12.5m	***.96/12.5***
Granitic Hills veg can cov	16%	16%	16%

Granitic Hills saguaro recruit	1/12.5m	1/12.5m	***.83/12.5m***
Sandy loam deep veg can cov	20%	20%	***15%***
Sandy loam comp shrubs	17%	***16%***	16%

78. To assess conditions on the allotments north of Highway 8, BLM collected data at 36 key areas in 2009. As noted above, BLM did not consider its earlier data from these same key areas in the assessment.

79. BLM also considered some of the Pacific Biodiversity Institute data that had been collected on those allotments in 2002-2006. However, it excluded all of the PBI data from plots that were less than 1000 meters from a livestock water source or that crossed multiple ecological sites. BLM claimed those plots were not representative of what was occurring within the majority of the ecological site. Thus, it used only 48 of Pacific Biodiversity Institute's 320 study plots on those allotments and did not consider any information about impacts in numerous heavy use areas.

80. One of the peer reviewers of the draft LHE commented that excluding the PBI plot data from disturbed areas biased the analysis because the plots that had the most livestock impacts were purposefully removed from consideration.

81. For the data BLM used in the LHE, BLM compared these data to the vegetation condition objectives to determine if each ecological site on each allotment north of Highway 8 was meeting Standard Three. In the draft LHE, BLM concluded that if the data value was not equal to or above the objective, the plot did not meet the objective. In the final LHE, BLM considered the plot to be meeting the objective if the data value was within 80% of the objective to account for variability within ecological sites. This variability was in addition to the objectives already reflecting average conditions at each reference site.

82. BLM noted that the peer reviewers of the second draft LHE had suggested accounting for variability, but BLM did not explain how it came up with the 80% method or provide any support for it. Peer reviewers had suggested other methods for accounting for variability. Plaintiffs are not aware of BLM using the 80% method in any other land

health evaluations.

83. In order to determine whether the whole ecological site was meeting Standard 3, BLM used the preponderance of the evidence approach. If more than half of the number of plots representing that ecological site were achieving all of the desired plant community objectives, then that ecological site within an allotment was considered to be meeting Standard 3. BLM did not weigh the amount of acreage represented by each plot when determining whether the overall ecological site was meeting standards.

84. BLM stated it used the preponderance of the evidence approach because there were not enough plots on each ecological site to statistically analyze each site. But it did not explain or provide support for why it chose that particular method, where almost half of the plots on an ecological site within an allotment could be failing objectives yet the site as a whole passes, or how it shows Monument objects are being protected.

85. Because BLM lowered six of the objectives and implemented the 80% method between the first draft and final LHE, more plots achieved objectives in the final LHE than in the draft LHEs. This led to more ecological sites meeting Standard 3 in the final LHE than in the drafts.

86. In the final LHE, BLM came to the following conclusions for Standard 3: (1) on the Bighorn allotment, the limy upland deep ecological site was not achieving Standard 3, which represents 29,384 acres of the 92,204 acres on the allotment; (2) on the Beloat allotment, the sandy wash and limy fan ecological sites were not achieving Standard 3, which represents 17,969 acres of the 33,600 acres on the allotment; (3) on the Conley allotment, the sandy wash, limy fan, limy upland deep, limy upland, and granitic hills ecological sites were not achieving Standard 3, which represents 73,278 acres of the 77,708 acres on the allotment; (4) on the Hazen allotment, the sandy wash and limy fan ecological sites were not achieving Standard 3, which represents 5,699 acres of the 31,926 acres on the allotment; (5) on the Lower Vekol allotment, the sandy wash and limy upland ecological sites were not achieving Standard 3, which represents 583 acres of

the 15,409 acres on the allotment; and (6) on the Arnold allotment, the limy fan ecological site is not achieving Standard 3, and this is the only ecological site monitored within the 1,609 acres of this allotment on the Monument.

87. Thus, a total of more than 128,500 acres on the Monument were determined not to be achieving Rangeland Health Standard 3.

4. Land Health Evaluation Part II: Assess Causality.

88. The next part of the LHE was to determine whether livestock grazing was a significant causal factor in not achieving Standard 3. The BLM made this determination based on the level of livestock utilization, which was assessed via use pattern mapping, as well as utilization monitoring on the Bighorn and Conley allotments, conducted by BLM in 2009.

89. Utilization measures the percentage of available forage that has been consumed or destroyed in the current year by comparing the amount of herbage left after grazing with the amount of herbage produced during the year. On the Monument, BLM used the Ocular Estimate Method, where employees visually estimated the percentage of a plant's weight remaining after utilization. Classes of use consisting of negligible (0-5%), slight (6-20%), light (21-40%), moderate (41-60%), heavy (61-80%), and severe (>80%) show relative degrees of use. BLM estimated utilization on a few key perennial shrub species but did not conduct utilization monitoring on perennial grasses or any annual species.

90. BLM noted that consistently high levels of utilization over a period of years may indicate that livestock grazing may need to be adjusted. Utilization guidelines are intended to be met over the long term and not on a year-to-year basis. Utilization measurements can be used to help in interpreting cause-and-effect relationships for observed changes in resource attributes such as soil cover species composition, residual cover, etc., and to help adjust stocking rates when used in conjunction with other monitoring information.

91. BLM used utilization information from 2009 as the sole means of

determining whether livestock use was causing the failure to meet land health standards. BLM did not consider any other information to assess whether livestock had been a significant cause of impacts like change over time in native plant composition or the elimination of perennial grasses from most of the Monument.

92. One of the peer reviewers provided extensive comments explaining why using only data collected in 2009 was not sufficient for the causality determination. He noted that only one year of utilization data cannot account for long-term effects or use patterns that might occur in non-ephemeral years when livestock are grazing more perennial plants. BLM did not address those comments in the final LHE or EIS.

93. BLM asserted that if utilization was less than 40% in 2009, livestock use was not the causal factor in failing to meet Standard 3. It cited to an article by Holechek to support that figure, stating that shrub utilization exceeding 40% can impede shrub viability and the Monument is comprised primarily of shrubs. In fact, the Holechek paper cited a single Arizona study that assessed utilization levels on perennial grasses, but BLM apparently chose to monitor shrub utilization because very few perennial grasses exist on the Monument except in areas that receive little or no livestock use.

94. BLM did not conduct utilization monitoring or use pattern mapping of any herbaceous plants that were grazed during the ephemeral use season of 2009. In areas where no key perennial forage species occur, no utilization monitoring occurred and thus no way to assess impacts of livestock use. The use pattern map showed large areas where there were "annuals only" or "very little forage," but BLM did not evaluate livestock impacts in these large areas because they contained none of the key perennial species.

95. BLM conducted use pattern mapping across the Monument in March of 2009. This is a qualitative method that maps the proportion of vegetation production that has been consumed or destroyed by animals. This method is normally used to help identify and solve livestock distribution problems and make adjustments in grazing plans. Here, it was used to determine causality for non-achievement of land health standards.

96. To map utilization patterns, BLM drove along roads on the northern portion

of the Monument and assessed utilization classes (negligible to severe) for livestock use of key species at each stop along the road. It also marked boundaries between use classes. Data points having the same use level were linked together as a polygon and the use polygons were mapped.

97. Initially, BLM created a hand-drawn map with the use classes shown in different colors. The map also identified large areas that were "unsurveyed" (likely due to the distance from roads) and areas that were considered "unsuitable" for grazing because of steep, rocky slopes that BLM deemed relatively inaccessible to cattle.

98. Areas that were determined to be heavy or severe use during the road surveys of March 2009 were resampled using the ocular method in April 2009.

99. After BLM completed the use pattern mapping, it established utilization transects in areas that had shown heavy or severe use to verify if livestock had clearly caused that level of use. In June 2009, BLM conducted utilization monitoring on ten transects on the Conley allotment and four transects on the Bighorn allotment to reassess use levels.

100. The result of the additional monitoring (use pattern resampling and utilization monitoring) was that BLM universally changed the polygons on the use pattern maps to reflect lower levels of use. BLM did not explain how it incorporated the new data to adjust the use polygons and alter the use pattern map.

101. BLM later converted its hand-drawn field map to a digital map that was included in the final EIS. On this map, the "unsuitable" areas were still identified, but BLM had reclassified "unsurveyed" areas to negligible or slight use with no explanation. BLM also changed areas identified on the field map as having just annual species and no perennial forage to light use even though it had conducted no monitoring of grazing on annual vegetation. A number of the key areas at which BLM collected ecological site data occurred on these portions of the monument where livestock use was assigned rather than assessed.

102. Based on the 2009 utilization transects and use pattern mapping, BLM

assumed that in areas that had at least moderate utilization (>40%), livestock grazing was the causal factor in not achieving rangeland health standards. In contrast, if areas had negligible to light livestock use (<40%), BLM assumed that livestock grazing was not the causal factor for non-achievement of standards. BLM attributed these non-livestock-caused failures to fire, drought, historic livestock use patterns, OHV use, or combinations thereof. BLM did not explain what it meant by "historic livestock use patterns" or how those patterns differed from current patterns to ensure that grazing was not the cause of the failing land health standards.

103. BLM also did not explain how the 2009 utilization data could assess whether livestock caused failing land health standards that were documented in previous years during the 2002-2006 Pacific Biodiversity Institute studies. BLM used the subsequent 2009 data and ignored contemporaneous data collected during the 2002-2006 field work that quantified livestock use at that time.

104. No livestock had grazed the Hazen allotment for several years when BLM conducted its use pattern mapping. BLM had no utilization information from the last time the Hazen allotment was grazed. Similarly, no livestock grazing was authorized on the Bighorn allotment after February 28, 2009. Thus, use pattern mapping and utilization monitoring that occurred in March through June 2009 occurred when no livestock were present on the Hazen or Bighorn allotments.

105. Based solely on the 2009 use pattern mapping and utilization transects, BLM determined whether the failure of an ecological site to meet land health standards was caused by livestock grazing. In the final LHE, BLM concluded that of the 29,384 acres not meeting Standard 3 on the Bighorn allotment, livestock grazing was a significant causal factor on 2,974 acres. Of the 73,278 acres not meeting Standard 3 on the Conley allotment, livestock grazing was a significant causal factor on 5,517 acres. Of the 583 acres not meeting Standard 3 on the Lower Vekol allotment, livestock grazing was likely a factor on 7 acres. For the 17,969 acres not meeting Standard 3 on the Beloat allotment, the 5,699 acres not meeting Standard 3 on the Hazen allotment, and the 1,609

acres not meeting Standard 3 on the Arnold allotment, livestock grazing was not the causal factor.

106. In sum, BLM determined that livestock were the *causal* factor for the non-attainment of Land Health Standards on just 8,498 of the 128,500 acres that were failing standards in the northern portion of the SDNM. BLM did not attempt to distinguish whether livestock grazing was a significant *contributing* factor on the remaining acres or evaluate whether it could be a cumulative impact causing harm to monument objects.

107. BLM never estimated the acreage within the monument that was likely to be failing standards because of heavy livestock use in proximity to livestock concentration areas. BLM purposefully excluded these areas from assessment because they were known to have heavy livestock impacts. The LHE and the Compatibility Determination do not estimate the number of acres or the potential for impacts in these areas.

108. BLM failed to acknowledge the observations of Pacific Biodiversity Institute surveyors that livestock use on the monument had greater overall impact to vegetation than off-road vehicle use, the second biggest land use in the Monument.

109. BLM recommended in the final LHE the number of AUMs permitted for each allotment within the Monument. BLM also recommended adjusting the season of grazing to primarily fall-winter-spring, with reduced levels of grazing in summer. This would entail authorizing 65% of permitted use from October 1 to April 30, and 35% of permitted use from May 1 to September 30.

110. BLM provided little analysis of the impacts of this change in use other than to state that it would reduce potential competition with special status wildlife species and other wildlife during the critical summer months, and it generally reflects the pattern of current grazing practices because the majority of desirable forage occurs in winter and spring.

111. It also stated that ephemeral grazing does not appear to influence achievement of Land Health Standards. The conclusion was unsupported by any

monitoring or utilization measures of annual ephemeral plants.

5. Compatibility Determination Conclusions.

112. In the compatibility determination, BLM stated that if existing grazing use was a significant causal factor for non-achievement of standards, then such grazing is not compatible with the protection of the objects of the Monument. Grazing was determined to be a significant causal factor only where greater than 40% utilization levels occurred.

113. In the creosote-bursage vegetation community, 106,010 acres out of 151,643 total acres in this community are not achieving Land Health Standard 3. The areas failing the standard fall within the limy upland deep and limy fan ecological sites on the Bighorn, Beloat, Conley, Hazen, and Arnold allotments. BLM stated that long-term trend data was not available to ascertain whether progress was being made toward achievement of Standard 3.

114. BLM determined that current grazing management practices were causal factors in failing to achieve Standard 3 on 7,980 acres of the creosote-bursage community while the remaining 98,030 acres were failing Standard 3 due to other causes such as historic livestock grazing, livestock use patterns, fire, drought, OHV use, etc. BLM did not explain how it could distinguish historic livestock grazing and livestock use patterns, which were considered "other" causes for failing Standard 3, from current livestock grazing practices.

115. In the paloverde-mixed cacti vegetation community and saguaro cactus forest, Standard 3 was not being achieved on 21,539 of the 87,366 acres in this community. The areas failing the standard fall within the limy upland and granitic hills ecological sites on the Conley and Lower Vekol allotments. Current grazing practices were factors in failing to achieve Standard 3 on 511 acres.

116. BLM also claimed that the results of the Pacific Biodiversity Institute study indicated that recruitment of saguaros is occurring within the grazed portion of the Monument north of Highway 8 at appropriate rates compared to BGR/Area A. This conclusion was not supported by the Institute's reports, as vigorously stated by the

report's author in his comments on the draft RMP.

117. For the desert wash community, BLM assessed miles of area rather than acreage because this community is in linear form. Of the 490.5 total miles of this community on the Monument, 294 miles were not meeting Standard 3. The areas failing standards were within the sandy wash ecological site on the Beloat, Conley, Hazen, and Lower Vekol allotments. BLM determined that grazing practices were the causal factor on 12 miles.

118. BLM next asserted that diversity of perennial plant species north of Highway 8 is relatively similar to BGR/Area A based on the average number of species per plot to assess whether it was protecting the Monument object of plant species diversity. BLM did not discuss whether the composition of plants consisted of desirable or undesirable species or the percentage of each to compare with what is expected in each plant community.

119. Because BLM tied plant community objectives to wildlife objects, it concluded that areas on the Beloat, Conley, Hazen, and Lower Vekol allotments were not protecting certain wildlife objects due to the failure to meet Land Health Standard 3 for various ecological sites. As noted above, only a small proportion of these failing areas were deemed to be caused by current livestock grazing practices, but no other explanation was provided to determine the specific causal factors for the other failing areas, and no other management changes were proposed in the RMP to address these failings.

120. Finally, BLM assessed impacts to cultural resources and noted a few sites where livestock were having impacts, including one ten-acre site along the Anza National Historic Trail and the Butterfield Overland Stage Route.

121. The conclusion in the compatibility determination stated that 127,550 acres were not achieving Standard 3 on the Monument, representing 50.5% of land north of Highway 8. Livestock use pattern mapping and utilization data indicated that livestock were a causal factor on only 6.76% of the acres not achieving Standard 3. It also stated that most livestock use occurs during early winter and spring when there are high levels

of ephemeral forage.

122. Because livestock grazing was negatively affecting 8,498 acres of the Monument north of Highway 8, and was therefore incompatible with Monument objects, grazing would be unavailable in those areas.

E. Sonoran Desert National Monument Final EIS

123. In the Final EIS, BLM noted the purpose of the Monument designation was to protect and manage the Monument's natural, geologic, and cultural resources for long-term conservation, including protecting the ecological diversity of flora and fauna associated with the vegetation communities on the Monument. Specific flora, fauna, and plant communities mentioned in the EIS included saguaro cactus, Sonoran desert tortoise, and desert bighorn sheep, as well as desert grasslands and desert washes that are important for many species of wildlife.

124. BLM analyzed five alternative actions that varied in proposed management for certain activities like travel and public access, recreation, energy development, and livestock grazing. The Final EIS noted that livestock grazing is a ground-disturbing activity that can adversely impact soils (through accelerated erosion, compaction, displacement, puddling, and rutting), vegetation (through direct removal of vegetation, spread of invasive weed species, and changes in ecological conditions necessary to support functioning and healthy vegetation communities), and water resources (through effects that result in loss of water storage).

125. The Final EIS stated that the RMP would set forth planning-level decisions for the entire Monument as well as certain site-specific implementation-level decisions, including determinations about management practices for each grazing allotment.

126. With regard to livestock grazing, the alternative actions varied in the acreage and type of grazing allowed on the six Monument allotments north of Highway 8. The no action alternative simply maintained the status quo grazing on all 252,500 acres north of Highway 8. Alternative B reduced perennial stocking rates by about 40% and fenced off 8,500 acres to protect Monument objects that were incompatible with

grazing based on the LHE and compatibility determination.

127. Alternative C changed grazing to perennial use only, with no ephemeral grazing, and closed 44,800 acres to grazing to protect the 8,500 acres that were incompatible with grazing as well as connecting/surrounding areas. These areas would be excluded by using a combination of fencing and natural topographic features.

128. Alternative D closed to grazing all 252,500 acres on the six allotments once the grazing permits for those allotments expired.

129. Alternative E, which was the proposed alternative for the RMP, closed the same area as described in Alternative C plus the remainder of the Conley allotment, eliminating grazing on 95,290 acres and allowing it to continue on 157,210 acres. The majority of acres closed to grazing under Alternative E would be on the Conley allotment, with additional acres closed on the Bighorn allotment a small amount on the Lower Vekol allotment. No acres would be closed on the Arnold, Beloat, or Hazen allotments.

130. The EIS noted that the Conley allotment was proposed for closure because it had the largest departure from achieving Land Health Standard Three of all the allotments, it had the most acreage incompatible with grazing, and future management options for the remaining available portion would be limited due to the amount and location of fencing that would be required to exclude livestock from the incompatible areas.

131. Alternative E also would change grazing to 65% use in fall/winter/spring and 35% use in summer.

132. The Final EIS included tables showing the number of acres available to grazing and the number of permitted perennial AUMs for each allotment under each alternative. The actual authorization AUMs for each allotment would occur under the site-specific implementation-level decisions.

133. The Final EIS did not consider an alternative that would convert all grazing to ephemeral grazing, stating that decision would be determined on an individual

allotment basis during the implementation-level decisions.

134. After describing the alternative actions, the Final EIS described the resources on the Monument, such as the soils, vegetation communities, and wildlife species found there, as well as the activities and uses that occur on the Monument.

135. When discussing soil conditions, the EIS noted that some observations had been made in the Decision Area for several indicators of soil health, including total vegetative canopy cover and bare ground. These indicators were meeting rangeland health standards in most areas except for severely disturbed areas like livestock watering sites.

136. The Final EIS also stated that there was a lack of data on another indicator, the amount of disturbance to protective desert pavement or biological soil crusts, so this indicator was qualitative in nature. Desert pavement and biotic soil crusts provide important protection against wind and surface erosion, and may require considerable time to revegetate when damaged. The FEIS stated that little study or mapping of either desert pavement or biological soil crusts has occurred in the Sonoran Desert, but disturbed areas are most often found in close proximity to livestock waters, heavily used livestock trails, and off-road vehicle routes. Available data showed generally static conditions for this indicator.

137. The EIS acknowledged that soil disturbance and compaction are present in long-term use areas such as livestock-congregation sites, and that continuing drought could compound impacts to soil resources from livestock grazing.

138. With regard to vegetation resources, the Final EIS admitted that invasive plant species exist on the Monument, tend to invade disturbed areas such as around livestock watering facilities, and spread into uplands through various vectors, including livestock. The EIS also discussed the different vegetation communities that exist on the Monument but not the current condition of those communities.

139. The Final EIS described habitat for a variety of wildlife species on the Monument. One of these species was the Sonoran desert tortoise, which is an

Endangered Species Act candidate species, meaning it warrants protection under the Act. The Monument contains a significant amount of important habitat for the desert tortoise. Another species found on the Monument is desert bighorn sheep. Bighorn sheep are found in the Maricopa Mountains in the northern portion of the Monument.

140. The Final EIS also described uses of the Monument, including livestock grazing. It showed both the total perennial and ephemeral AUMs authorized each year from 1998 to 2007 for the six northern grazing allotments on the Monument. The changes in AUMs between years reflect years when permittees took non-use of some or all of their perennial AUMs, and years with wet winters that allowed for ephemeral use.

141. The EIS also noted that livestock grazing contributed a small percent of the total jobs and earnings in the Pinal County-Pima County-Maricopa County area. Thus, grazing in this area has only minor economic benefits in the local communities.

142. Finally, the Final EIS assessed the impacts of each of the five alternative actions on the resources and activities that occur on the Monument. It described impacts that occur from livestock grazing, as well as from the physical structures used to manage grazing such as fences and water developments, on various Monument resources, including soils, vegetation, wildlife, air quality, and cultural and heritage sites.

143. The EIS noted that livestock grazing can cause fugitive dust that degrades air quality, destroy or disturb cultural resource features and sites, cause soil compaction and erosion, remove or damage vegetation and reduce native plant diversity, increase invasive weeds, and displace wildlife and degrade wildlife habitat. These impacts are particularly evident around livestock congregation areas like watering sites and livestock trails. When comparing alternative actions, the alternatives that eliminated or reduced grazing the most would cause fewer adverse impacts to resources.

144. The EIS had limited discussion about impacts to specific wildlife species on the Monument. It noted that fences associated with grazing management can limit movement of bighorn sheep, and cattle can reduce available forage; but it failed to discuss impacts from interactions between cattle and bighorn sheep, which can cause

displacement of bighorns from habitat because they tend to avoid cattle.

145. The EIS also had limited discussion of impacts to Sonoran desert tortoise. Cattle can trample and crush individual tortoises and tortoise burrows. Cattle can also remove significant amounts of annual vegetation, especially during ephemeral use years. Such vegetation is particularly important to the desert tortoise, yet the BLM does not monitor utilization of annual vegetation. The EIS did not adequately discuss the impacts of grazing to the imperiled Sonoran desert tortoise.

F. Sonoran Desert National Monument Resource Management Plan

146. In September 2012, BLM issued the Record of Decision and Approved Resource Management Plan ("RMP") for the Sonoran Desert National Monument. In contrast to the discussion in the Final EIS, the RMP provided only planning-level decisions with regard to livestock grazing and did not include implementation-level decisions for management of the specific allotments. The RMP stated that implementation-level decisions for livestock grazing would be issued before the start of the grazing year.

147. The Record of Decision selected Alternative E, the proposed alternative, from the Final EIS as the planning decision for managing the Monument. It noted that the LHE and grazing compatibility determination formed the basis of the decision in the RMP with regard to continued livestock grazing on the Monument. The Record of Decision stated that the LHE found 127,550 acres, or 50.5% of all Monument lands north of Highway 8, were not achieving Land Health Standard 3, but that livestock grazing was a causal factor for non-achievement of Standard 3 on only 8,498 acres, or 3.4% of all of the Monument lands north of Highway 8.

148. The Approved RMP set forth the goals, objectives, and management actions for the various resources on and uses of the Monument. With respect to grazing, the RMP allocated acres available to grazing identified under Alternative E in the Final EIS. This allocation entailed closing to grazing the 8,500 acres identified as unavailable through the compatibility determination as well as additional acres connected to or

surrounding those acres plus the remainder of the Conley allotment, for a total of 95,290 acres. 157,210 acres would remain available for grazing on the Monument north of Highway 8, including the entire Beloat, Hazen, and Arnold allotments, 96% of the Lower Vekol allotment, and 81% of the Bighorn allotment.

149. The RMP did not analyze the feasibility of implementing changes in grazing management on allotments that spanned the monument boundary.

150. The RMP contained additional direction for managing livestock grazing, but did not include any specific management direction to protect the Sonoran desert tortoise or desert bighorn sheep from impacts of grazing such as trampling or crushing tortoises or their burrows, removal of annual vegetation critical to tortoises, or displacement of bighorn sheep due to interactions with cattle.

151. Plaintiffs submitted comments to BLM on the draft RMP/draft EIS and protested the Proposed RMP/Final EIS and thus exhausted their administrative remedies. They bring this suit under NEPA to challenge the analysis of livestock grazing in the Final EIS for the Sonoran Desert National Monument RMP.

CLAIM FOR RELIEF
VIOLATIONS OF THE NATIONAL ENVIRONMENTAL POLICY ACT

152. Plaintiff realleges and incorporates by reference the preceding paragraphs.

153. This claim for relief challenges BLM's violations of the National Environmental Policy Act, 43 U.S.C. § 4321 et seq., and NEPA's implementing regulations, in adopting the Record of Decision for the Sonoran Desert National Monument Resource Management Plan based on a flawed and legally inadequate Final EIS. Specifically, the Record of Decision relied on a flawed analysis in the Final EIS with respect to livestock grazing and its compatibility with protecting the objects identified in the Monument proclamation.

154. The Final EIS was flawed in relying on the Land Health Evaluation and grazing compatibility determination that were arbitrary and capricious for numerous reasons, including: (1) designating and changing ecological site objectives without

explanation; (2) ignoring relevant monitoring data and studies; (3) failing to explain and support its methods for assessing land health standards; (4) failing to include impacts of ephemeral grazing in its analysis; (5) failing to explain how only utilization data from 2009 could support its conclusions about causation of failing standards; (6) failing to explain and support the methods and conclusions of its use pattern mapping; (7) failing to adequately assess impacts to all monument objects; and (8) failing to respond adequately to responsible opposing viewpoints. The Final EIS also failed to adequately assess impacts of livestock grazing on the Sonoran desert tortoise and desert bighorn sheep.

155. The violations of NEPA include, but are not limited to, the following:

A. Violating NEPA's requirement to take a "hard look" at the direct, indirect, and cumulative environmental impacts of the proposed action along with other past, present, and future actions. 42 U.S.C. § 4332(2)(C);

B. Violating NEPA's requirement to insure that environmental information is available to the public before decisions are made, that the information is of high quality, and that the scientific analysis is accurate. 40 C.F.R. § 1500.1(b);

C. Violating NEPA's requirement to ensure the professional integrity, including the scientific integrity, of the discussions and analyses in environmental impact statements, and to identify the methodology and scientific sources relied upon for the agency's conclusions. 40 C.F.R. § 1502.24; and

D. Violating NEPA's requirement to disclose and discuss any responsible opposing viewpoints which were not adequately discussed in the draft EIS. 40 C.F.R. § 1502.9(b).

156. BLM has further violated NEPA and the Administrative Procedure Act ("APA") by approving the Sonoran Desert National Monument RMP based on the Final EIS without adequately, honestly, and clearly explaining the assumptions and analysis used in the LHE and livestock grazing compatibility determination, without adequately and fully responding to public comments on the LHE and compatibility determination, and without having a reasonable basis in science or fact for its conclusions in the LHE

and compatibility determination.

157. BLM's violations of NEPA and the APA as alleged herein are subject to judicial review under 5 U.S.C. § 706(2); and the Sonoran Desert National Monument RMP and Final EIS are arbitrary, capricious, an abuse of discretion, and/or contrary to law with respect to their analysis and decision on livestock grazing within the Monument.

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs pray that the Court grant the following relief:

A. Order, adjudge, and declare that BLM violated NEPA and the APA in approving the Sonoran Desert National Monument RMP based on the flawed analysis in the Final EIS with respect to livestock grazing.

B. Remand the portions of the RMP and Final EIS that pertain to livestock grazing and order BLM to conduct a proper analysis of livestock grazing and issue a new decision that complies with NEPA, the APA, and the Sonoran Desert National Monument Proclamation.

C. Grant such further injunctive relief as requested hereafter by Plaintiffs, including interim injunctive relief pending a new analysis and decision on livestock grazing, to protect Monument objects.

D. Award Plaintiffs their reasonable costs, litigation expenses, and attorneys' fees associated with this litigation pursuant to the Equal Access to Justice Act, 28 U.S.C. § 2412 et seq. and/or all other applicable authorities; and

E. Grant such further relief as the Court deems just and proper in order to provide Plaintiffs with relief and protect the public interest.

Dated: May 20, 2013

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