



United States Department of the Interior



NATIONAL PARK SERVICE

Mojave National Preserve
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April 10, 2015

Memorandum

To: Field Manager, Bureau of Land Management, Barstow Field Office

From: Superintendent, National Park Service, Mojave National Preserve *Todd F. Swiers 4-10-15*

Subject: NPS response to BLM selecting Alternative B as the "Preferred Alternative"

The National Park Service (NPS) appreciates the opportunity to review the Bureau of Land Management's (BLM) Administrative Final Environmental Impact Statement/Environmental Impact Report (AFEIS) on the proposed Soda Mountain Solar project that abuts Mojave National Preserve (Preserve). While NPS supports the development of renewable energy projects on public lands, we have asserted consistently since 2007 that the Soda Mountain Solar project is proposed for an inappropriate location. The site is inconsistent with the central strategy of Secretarial Order No. 3330 to "...use...a landscape-scale approach to identify and facilitate investment in key conservation priorities in a region," and the direction "to avoid potential environmental impacts from projects through steps such as advanced landscape-level planning that identifies areas suitable for development because of low or relatively low natural and cultural resource conflicts."

NPS stands by its previous comments on the Draft Environmental Impact Statement (DEIS) and AFEIS for the Soda Mountain Solar Project. Constructing the project as proposed would severely compromise the opportunity to restore connectivity of desert bighorn sheep populations between the North and South Soda Mountains. It would also reduce essential desert bighorn sheep foraging areas and adversely impact lambing success in the South Soda Mountains, potentially increasing the local extinction risk of the Soda Mountain population. These factors will impact the landscape-scale sustainability of the species throughout the Mojave Desert.

Impacts to Desert Bighorn Sheep:

- The potential impacts to desert bighorn sheep are NPS's greatest concern with this project.
- Interstate 15 (I-15) bisects the Soda Mountain Solar project site and the South Soda Mountains (in the Preserve) and the North Soda Mountains (on BLM). Desert bighorn sheep recently recolonized naturally in the South Soda Mountains. This population has become a top conservation priority for the California Department of Fish and Wildlife (CDFW) and NPS. *The*

North Soda Mountains are not currently populated with desert bighorn sheep, but there is clear evidence of historic sheep use within and between these mountain ranges.

- The proposed project will impede restoration of the only opportunity to reestablish demographic connectivity across I-15. NPS asserts that leaving the corridor open for potential restoration, by not constructing the project, or, if the project is built, constructing an overpass for desert bighorn sheep connectivity across I-15 between the north and south Soda Mountains is critical for the species meta-population dynamics and would meet the Secretary's goals for regional landscape-scale conservation priorities (Secretarial Order No. 3330).
- Oregon State University professor Dr. C.W. Epps, a leading authority on desert bighorn sheep, and others pointed out in a 2013 report on the proposed project that *"The potential connection between the S. Soda Mountains and the habitat patches north of I-15 is a critical component of what we consider to be the most efficient management strategy for maximizing meta-population connectivity: restoring one key dispersal corridor across each of the interstate highways that currently fragment the Mojave Desert (I-15, I-40, and I-10)."*
- The CDFW wrote BLM in April 2013, specific to the Soda Mountains, citing desert bighorn sheep experts R.A. Weaver and J.L. Mensch Soda Mountain work from 1970: *"Construction of any facilities that would further restrict opportunities for movement would be detrimental to the persistence of bighorn sheep."* CDFW went on to say, *"Today, the Department continues to emphasize the importance of reestablishing and maintaining connectivity between the South Soda Mountains and North Soda Mountains in terms of demographic and genetic benefits, and the importance of both in maintaining meta-population function."* They explained further that CDFW went on record more than 40 years ago about the Soda Mountains area and the importance of sheep movement between the North and South Soda Mountains.
- The proposed project will encroach on desert bighorn sheep habitat in areas that provide important seasonal forage. The DEIS indicated the array layout was modified to avoid two rare plants and numerous arroyos. However, the array layouts were not modified to avoid the desert bighorn sheep habitat and will impact the slopes adjacent to the South Soda Mountains which are important seasonal foraging areas for desert bighorn sheep.

If it is the decision of BLM to select what has been described as "Alternative B" in the AFEIS as its "Preferred Alternative" for the Final EIS and Record of Decision (ROD), NPS requests the following mitigation measures be carried out in an attempt to minimize the impacts to desert bighorn sheep associated with this project:

- Construct an I-15 overpass (at the north end of the site) to mitigate for blocking 5 existing undercrossings, including the undercrossing with the most promise for restoring connectivity (see E illustrated in Figure 1). Water sources must be installed to encourage bighorn sheep usage of the overpass.
- Prohibit construction within the essential desert bighorn sheep foraging habitat in the arrays as defined by the CDFW as lands in the East and South Arrays that are 0.25 miles from 10% slope (see Figure 1).
- Install and maintain water sources and fencing at locations D, E, and F (illustrated in Figure 1) to increase the effectiveness of these undercrossings for use by desert bighorn sheep.
- Acquire and protect land in desert bighorn sheep movement corridors.

- Purchase and retire the Clark Mountain grazing allotment currently located in desert bighorn sheep habitat (see Figure 2 below).
- Fund a desert bighorn sheep reintroduction study in the North Soda Mountains.
- Implement a desert bighorn sheep translocation to establish a population in the North Soda Mountains once the reintroduction study is complete.
- Fund long-term monitoring, to be conducted by NPS, CDFW, and/or the US Geological Survey (USGS) to measure the success of these mitigations and suggest additional steps that might be needed to successfully conserve the species.
- Convene science panels on a 5-year cycle to evaluate the restoration of connectivity and condition of desert bighorn sheep in the Soda Mountains.
- Provide financial support for NPS staff time for working on the design and implementation of project mitigation measures.

It is important that NPS, BLM, the proponent, and other appropriate agencies work closely to further develop and implement these mitigation measures.

Reasoning for Recommended Mitigation:

- Use of a wildlife overpass to facilitate desert bighorn movement over highways is an excellent tool that far surpasses use of underpasses to date.
 - For example: A road realignment was going to cut off the Black Mountain desert bighorn herd (AZ) from “food, water, mates, and lambing grounds, and restrict genetic interchange, threatening the herd’s existence” (Gagnon et al. 2013).
 - These three overpasses (with fencing to direct sheep over the pass) were finished in Fall 2010 and movement over them started in February 2011. During the next two years, Gagnon et al. (2013) documented 1,742 sheep using the overpasses. Concurrently, vehicle collisions were reduced 45-82% reduction in vehicle-sheep collisions.
- This proposed project will reduce the chances that the existing undercrossings will be used by ewes frequently enough to establish demographic connectivity. However, removing solar array areas from essential desert bighorn sheep foraging habitat could reduce the reluctance of bighorn sheep to use undercrossings at D and E illustrated in Figure 1 below, and installing fencing and water sources at these undercrossings would partially mitigate the impacts to connectivity. These mitigation measures, in conjunction with the construction of an overpass, would significantly increase the chances that demographic connectivity could be effectively restored and maintained.
 - A study on underpass use in the Black Mountain area (the same location as above) found that 32 rams used the underpasses over an approximate two-year period (Bristow and Crabb 2008).
 - No ewes were observed to use the underpasses; however, this should not be taken to mean that underpasses will not facilitate ewe movements across I-15 at Soda Mountain. Each area is unique, and Bristow and Crabb (2008) did not try to facilitate movement with temporary guzzlers. They did find that the underpass closest to escape terrain/habitat was used most frequently. In the South Soda Mountain area, this would be represented by underpasses A, E, and F in the briefing, all of which fall within the dispersal distance of male and female desert bighorn.

- The use of temporary water provisioning to facilitate sheep movements through the underpasses has not been attempted, but experts agree that it could work and should be done in conjunction with a long-term monitoring plan to gauge success (Epps et al. 2013).
- Although reintroduction will not compensate for the negative impacts of this project on desert bighorn sheep demographic connectivity, it will increase the potential for sheep to move between the mountain ranges, particularly in conjunction with sufficient water sources, fencing, and solar setbacks from desert bighorn habitat.
- Retirement of the Clark Mountain Grazing Allotment, though not directly adjacent to the Soda Mountain Solar project site, would improve the overall sustainability of the Mojave Desert bighorn population. Disease transmission from domestic to wild sheep is a well-known cause of declines in herds of desert bighorn but the scientific literature also supports concern for transmission of disease from cattle (e.g. Clark et al. 1985, Foreyt and Lagerquist 1996, Jessup 1985, Singer et al. 1997, 1998, and Wehausen 1988). Sampling by CDFW and NPS in 2003 indicated positive results for several cattle disease pathogens in desert bighorn including Infectious bovine rhinotracheitis, bovine respiratory syncytial virus, and bovine viral diarrhea virus. A positive result of retiring a grazing allotment has occurred for the desert bighorn sheep population at Cady Mountain. The population successfully expanded and some ewes colonized both Soda Mountain and the South Bristol Mountains following retirement of cattle grazing in that area (Epps personal communication).

In addition to the desert bighorn sheep mitigation actions above, NPS maintains that mitigation for impacts to visual resources, night sky resources, loss of habitat for desert kit fox, burrowing owl, and desert tortoise, and the potential impact to water resources within the Preserve are also essential and vital for sustaining the overall health of the ecosystem. NPS recommended mitigation measures for those impacts were described in the following documents: the NPS comment letter on the Administrative DEIS dated September 19, 2013; the NPS comment table for the Soda Mountain Solar Administrative DEIS dated September 13, 2013; the NPS comment letter on the Soda Mountain Solar DEIS dated March 3, 2014; and the NPS comment letter on the Administrative FEIS dated November 12, 2014.

References

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- Wehausen, J. D. 1988b. Cattle impacts on mountain sheep in the Mojave Desert: report II. Unpublished report to the California Department of Fish and Game under Interagency Agreement No. 85/86C-1492.

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Attachments:

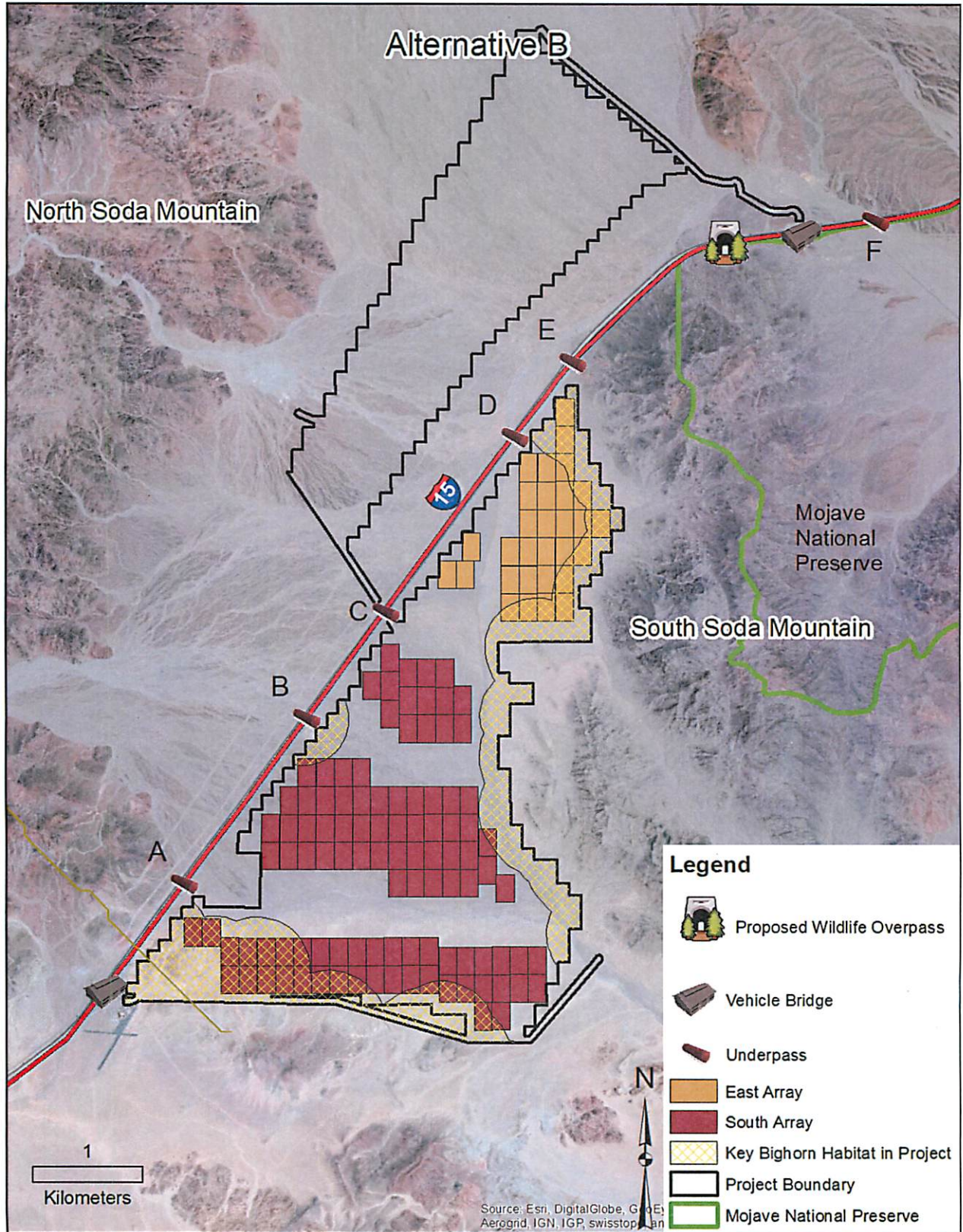


Figure 1 – Bighorn Sheep Mitigation – Alternative B showing location of proposed wildlife overpass, existing culverts, and setback from essential foraging habitat.

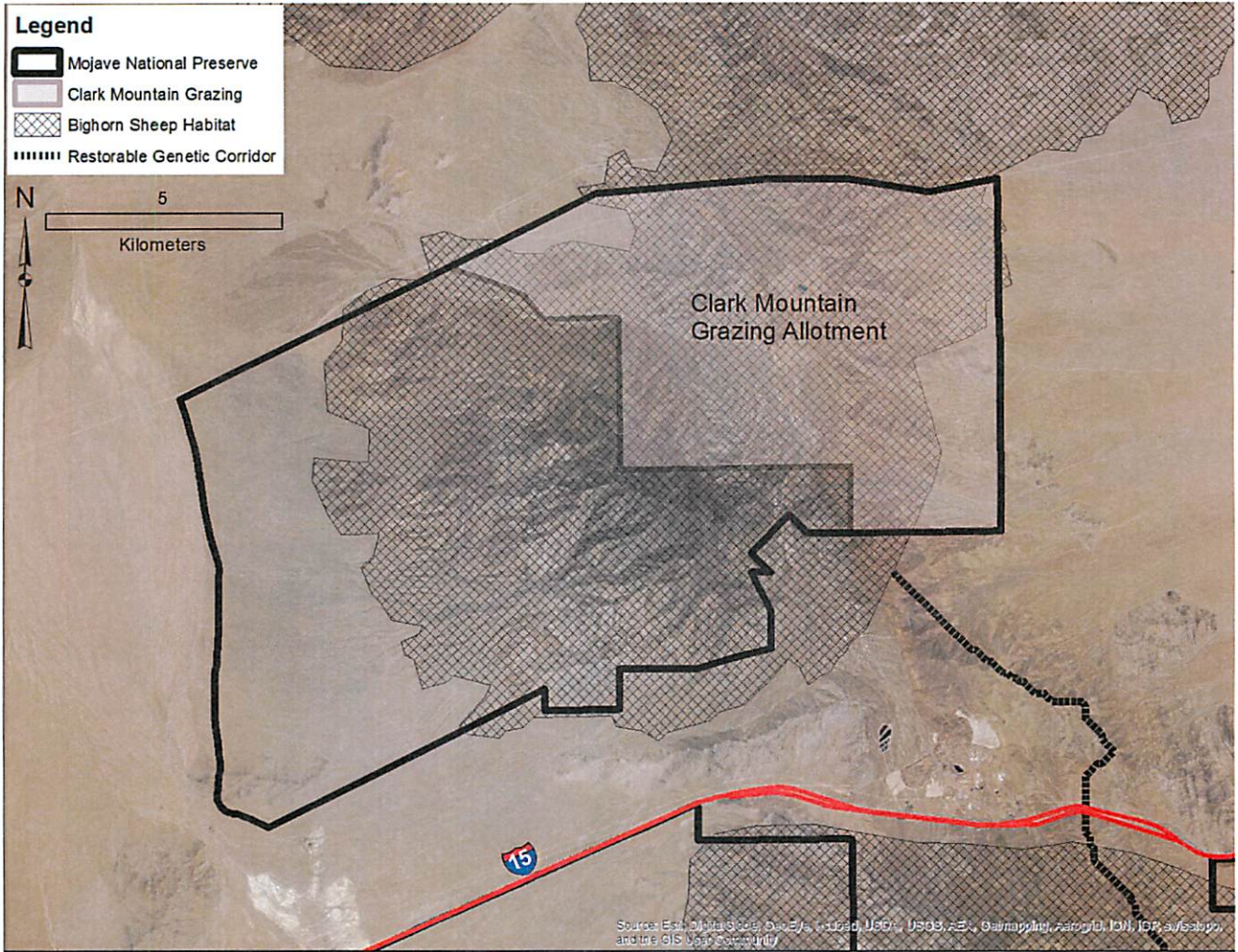


Figure 2 – Clark Mountain Grazing Allotment