



Conservation  
Lands  
Foundation  
*Protecting America's Heritage*



Attn: Greg Miller, Assistant District Manager – Resources  
22835 Calle San Juan De Los Lagos  
Moreno Valley, CA 92553

Re: Comments on Draft Supplemental Environmental Impact Statement for the Haiwee Geothermal Leasing Area (HGLA)

Dear Mr. Miller;

Thank you for the opportunity to provide comments on the Draft Supplemental Environmental Impact Statement (DSEIS) for the Haiwee Geothermal Leasing Area (HGLA). This comment letter is submitted by: The Amargosa Conservancy, who works toward a sustainable future and responsible resource use in the Amargosa basin, a similarly groundwater dependent system in southern Inyo County, CA and Nye County, NV. The Bodie Hills Conservation Partnership, which is a coalition of organizations working toward the permanent protection of the Bodie Hills, an American treasure with exceptional scenic, historic and recreational values. The California Wilderness Coalition (CalWild), who protects and restores the state's wildest natural landscapes and watersheds on public lands. Conservation Lands Foundation (CLF), who works to protect, restore, and expand the National Conservation Lands through education, advocacy and partnerships while supporting more than 60 community-based organizations across the West. Defenders of Wildlife (Defenders) on behalf of its 1.8 million members and supporters in the U.S., including 279,000 in California. Friends of the Inyo (FOI), a Bishop, CA based non-profit with over 800 members who is devoted to the preservation of the Eastern Sierra landscapes, animals, plants and natural ecosystems. The Sierra Club, which is America's largest grassroots environmental organization, with more than 3.5 million members and supporters, including 400,000 in California. In the Eastern Sierra, the local Range of Light Group is part of the Toiyabe Chapter of the Sierra Club and consists of over 400 Sierra Club members in Inyo and Mono Counties. The Wilderness Society

(TWS) which was founded in 1935 and represents over one million members and supporters. TWS's mission is to protect wilderness and inspire Americans to care for our wild places.

As detailed below, we recommend that BLM select Alternative D, which allows for leasing, exploration and development in the Development Focus Area (DFA) and does not allow leasing, exploration and development in the Areas of Critical Environmental Concern (ACECs) and California Desert National Conservation Lands (CDNCLs).

HGLA Background: The DSEIS for the HGLA evaluates alternatives for geothermal leasing on approximately 22,805 acres of BLM-administered public lands and subsurface mineral estate. Within the HGLA, approximately 21,233 acres are BLM-managed lands; the remaining 1,572 acres are split-estate where the BLM manages only the subsurface mineral rights and the surface is privately owned. Once the National Environmental Policy Act (NEPA) analysis is finalized, the Bureau of Land Management (BLM) will use the results of that analysis to determine which public lands and federal mineral estate within the HGLA will be available for geothermal leasing, exploration, and development in areas not already designated as such (i.e., DFA) in the California Desert Conservation Area (CDCA) Plan, as amended. The final decision will also consider approval of three pending geothermal lease applications within the HGLA.

Alternatives in the DSEIS include the following alternatives:

1. Alternative A (BLM-Preferred Alternative): Allow Geothermal Leasing in the entire HGLA, including approving three pending geothermal lease applications;
2. Alternative B: Allow Geothermal Leasing in the Entire HGLA with No Surface Occupancy in Sensitive Areas;
3. Alternative C: Retain current management of the HGLA, and approve pending geothermal leases outside of lands with sensitive resources;
4. Alternative D: No Action (i.e., lands within the HGLA outside of existing DFAs would not be made available for geothermal leasing, exploration and development and would remain under current management as specified in the CDCA Plan, as amended. Any proposed geothermal facilities in the DFA would be under the CDCA Plan, as amended. The current pending lease applications would be neither denied nor authorized and would be processed in conformance with the CDCA Plan, as amended. Any geothermal leasing, exploration or development proposed within existing conservation areas (i.e., ACECs and CDNCL) would not be allowed; leasing, exploration and development within the DFA would be allowed).

Our comments on the DSEIS for the HGLA are as follows:

1. **Alternatives**: Certain alternative geothermal technologies were considered as alternatives but eliminated from further analysis. Specifically, the Dry Cooling System technology (DSEIS Section 2.3.1.3) was eliminated over concern that dry cooling would decrease the overall efficiency of powerplants during the summer season when ambient air temperatures are high and electricity demand is greatest. However, this technology was

considered because the HGLA is in an area with limited water sources (i.e., Rose Valley groundwater) where current groundwater pumping in support of operating geothermal powerplants in the Coso Known Geothermal Resource Area (KGRA) within the China Lake Naval Air Weapons Station is at or near the sustained yield of the groundwater basin.

**Comment:** We recommend that BLM analyze the Dry Cooling System technology alternative because we believe that dry cooling technology is feasible, reasonably cost effective and would conserve substantial amounts of ground water from Rose Valley. We incorporate into this letter, by reference, a comment letter from Ronald DiPippo, Ph.D. to Inyo County dated August 14, 2008 (attached) and March 16, 2009 (attached), on the Coso/Hay Ranch DEIR.

The Coso Operating Company that maintains and operates the existing geothermal powerplants in the Coso KGRA uses water cooling technology, which is among the most water use intensive cooling technologies. While the efficiency of a dry cooled system is reduced in the hot summer months, it is feasible during the remainder of the year when ambient air temperatures are lower, especially in the late fall through early spring seasons. Furthermore, dry cooling would eliminate the substantial waste of groundwater associated with the wet cooling technology currently used at Coso powerplants. Using air cooled steam condensing technology, while not as efficient as the current water cooled steam condensers, should not be rejected from analysis simply because it would require additional investment by Coso Operating Company and decrease their profits.

Operation of the Coso KGRA powerplants began in about 1989, initially producing about 300 MW, with powerplants fed by steam from approximately 200 production wells. Based on research study of the KGRA from 1993 – 1999 using high-resolution satellite imagery, Fialko and Simons<sup>1</sup> determined that ground subsidence within the Coso KGRA covering an area of approximately 50 km<sup>2</sup> had occurred due to the extraction of geothermal fluids that exceeded the natural groundwater recharge underlying the geothermal field. They considered subsidence in the KRGA was due primarily to reduced steam pressure in the geothermal reservoir and reduction in temperature.

**Comment:** BLM has a legal obligation under the Federal Land Policy and Management Act (FLPMA) to manage public lands “...on the basis of multiple use and sustained yield unless otherwise specified by law.” (FLPMA, Section 102(7); and that, “the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use.” (FLPMA Section 102(8). Regarding management of public lands in the California Desert Conservation Area, FLPMA states, “(b) It is the purpose of this section to provide for the immediate and future protection and administration of the public lands in the California desert within the framework of a program of multiple use and sustained yield, and the maintenance of environmental quality.” (FLPMA Section 601(b).

---

<sup>1</sup>Y. Fialko and M. Simons. 2000. Deformation and seismicity in the Coso geothermal area, Inyo County, California: Observations and modeling using satellite radar interferometry. *Journal of Geophysical Research*, Vol. 105, No. B9, Pages 221,781 – 21,793, September 10, 2000.

BLM is charged with managing public lands in the HGLA under the above provisions of FLPMA, including geothermal leasing, in a manner that sustains the groundwater resource and environmental quality. BLM is obligated to not only consider, but to analyze an alternative to geothermal leasing in the HGLA that limits geothermal technology to the use of air cooled steam condensers for the purpose of conserving and sustaining groundwater for the use and benefit of current and future generations.

Background information: Due to decline of the Coso geothermal field from depletion of groundwater associated with the steam reservoir, Coso Operating Company acquired the Hay Ranch property in Rose Valley to supply groundwater for injection into the Coso geothermal field. Inyo County regulates the amount of groundwater pumping and has implemented a comprehensive groundwater management program to prevent significant impact to groundwater and groundwater-related resources.

The total amount of groundwater pumped from the Hay Ranch property from December 25, 2009 to May 8, 2019 is approximately 17,803 acre-feet (5.8 billion gallons). Coso Operating Company is allowed to pump up to 1,611 acre-feet/year from June 1, 2017 to May 31, 2019, subject to the terms and conditions of the Conditional Use Permit from Inyo County and compliance with the mitigation and monitoring plan. The allowable pumping rate has varied since it began in 2009 based on results groundwater monitoring and analysis, ranging from a high of 4,839 acre-feet/year to a low of 1,611 acre-feet/year. Authorized pumping from 2017 to 2021 is 1,611 acre-feet/year. The 2008 Final Environmental Impact Statement on the Coso Operating Company Hay Ranch Water Extraction and Delivery System<sup>2</sup> includes the following Response to comments (p. 2-6): The lack of substantial recharge combined with the net difference between fluid production and injection results in a net withdrawal of fluid from the Coso system. The net yearly fluid withdrawals are on the order of 2.5 million cubic meters of water. If this were spread uniformly over the Coso geothermal field (about 2 km by 5 km), this would result in a yearly water level decline of 0.25 m. (about 4 m over 15 years).” And, “The annual loss of water from the geothermal reservoir establishes the need for the proposed project; and, The proposed project would just serve to stop the decline in production.”

Response to comments (p. 2-15): “The purpose of the project is to supply supplemental injection water to the Coso geothermal field, which is experiencing annual reservoir decline due to the loss of fluid through the cooling towers.”

Decline in the Coso geothermal power plants began in 2010 according to Business Wire.<sup>3</sup> It reported, “The increase in the decline rate has more than offset the gains expected from the Hay Ranch water injection program and an extensive capital improvement program. In aggregate, production in 2010 is forecasted to be 1,611 GWh which is approximately 26% below original production estimates in 2007 of 2,184 GWh at the same time. The average net capacity of the facility is now forecasted to be approximately 195 MW.”

---

<sup>2</sup>[http://www.inyowater.org/wp-content/uploads/legacy/INDEX\\_DOCS/Coso%20Hay%20Ranch\\_FEIR\\_De\\_c\\_30\\_08.pdf](http://www.inyowater.org/wp-content/uploads/legacy/INDEX_DOCS/Coso%20Hay%20Ranch_FEIR_De_c_30_08.pdf)

<sup>3</sup><https://www.businesswire.com/news/home/20101116007535/en/Fitch-Downgrades-Coso-Geothermal-Power-Holdings-LLC>

In addition, a 2015 article in The Sheet (Take a tour at Coso Geothermal)<sup>4</sup> included an overview of the Coso geothermal operation by Steve Ellis, officer with the Coso Operating Company, who stated, "... the plant produced up to 274 Megawatts (MW) at its peak and is currently running at 145 Megawatts."

**2. Status of the Rose Valley Groundwater Basin:** In 2016 the Argonne National Laboratory conducted a study of groundwater consumption for the BLM and determined that Reasonable Foreseeable Development within the HGLA would require an average of 1,830 acre-ft/year under Alternative A (BLM-Preferred Alternative). Page 95 of the DSEIS states, "Based on the calculated recharge rates and observed impacts at the Coso geothermal facilities, the combined groundwater withdrawal is predicted to cause the lowering of the groundwater table and decrease water available to wells, wetlands, and Little Lake. However, all alternatives proposed tie water consumption to the safe yield in the basin, therefore it is unlikely that any geothermal leasing will negatively impact water resources."

Pages 95-96 of the DSEIS provide additional detail regarding current and projected groundwater use and impacts, as follows: "...long-term extraction to augment geothermal reservoir fluid levels would likely have significant impact on sensitive receptors and, in particular, to surface water features at the south end of the valley on the Little Lake Ranch property. The Hay Ranch groundwater diversion project is currently operating at a permitted extraction rate of 3,000 acre-feet per year, comprising a significant fraction of the estimated 5,100 acre-feet per year annual recharge to the Rose Valley aquifer. In addition, LADWP has a proposal to extract approximately 870 acre-ft of groundwater on property they own at the north end of Rose Valley. The timeframe for the LADWP project has not been identified. As discussed above, potentially significant impacts to the groundwater resources of Rose Valley are predicted for even modest long-term pumping to augment geothermal reservoir fluid levels.

Appendix G presents a report on groundwater flow modeling analysis. Results indicate that groundwater extraction for just one or two geothermal plants would likely reduce groundwater flow to Little Lake Ranch. This extraction would exceed the 10 percent flow reduction threshold identified in the Hydrologic Monitoring and Mitigation Plan for the Hay Ranch project (MHA 2008). The analysis presented in Appendix G indicates that a 30-year pumping rate of approximately 1,150 acre-feet per year from a well located at the northern end of the HGLA could be sustained. This would not reduce groundwater flow to Little Lake by more than 10 percent. However, the analysis also indicates that the maximum predicted drawdown at the Little Lake Ranch North well, located near the north end of the Little Lake Ranch property, could exceed 3.5 ft approximately 30 years after the start of pumping at that rate. This would exceed the Maximum Acceptable Drawdown threshold of 0.4 feet established for this well in the Hay Ranch HMMP. Considering the Hay Ranch project, significant long-term groundwater extraction, without restraints, is unlikely to be sustained without impacting the surface water at Little Lake Ranch. However, BLM would require water production stipulations of the action alternatives (e.g. trucking water to the site) which should minimize long-term impacts from geothermal development."

---

<sup>4</sup> <http://thesheetnews.com/2015/12/04/take-a-tour-at-coso-geothermal/>

**Comment:** The most current groundwater flow model for Rose Valley was published in 2017 by Inyo County.<sup>5</sup> This study concluded that the annual recharge to the Rose Valley is 3,623 acre-feet/year, significantly less than the 5,100 acre-feet/year reported by Argonne National Laboratory in its report to the BLM in 2016. Thus, the most recent estimate of sustained yield of groundwater withdrawal from Rose Valley is 3,623 acre-feet.

The most recent use of groundwater from Rose Valley by Coso Operating Company was 1,611 acre-feet/year from June 1, 2017 through May 31, 2019, which is also allowed to extend to year 2021 as per the conditional use permit from Inyo County.<sup>6</sup> LADWP has a proposal to extract approximately 870 acre-ft of groundwater on property they own at the north end of Rose Valley, and Argonne National Laboratory estimated that 1,830 acre-feet/year would be needed to support new geothermal powerplants in the HGLA under the Reasonable Foreseeable Development scenario for Alternative A (BLM-Preferred Alternative).

**Comment:** Combined, the current and projected groundwater consumption totals 2,481 acre-feet/year, leaving approximately 1,142 acre-feet/year available within the sustainable yield of the basin. This amount is less than the 1,830 acre-feet/year needed to support geothermal development under Argonne’s Reasonable Foreseeable Development scenario by 688 acre-feet.

**Comment:** BLM should update the current use of groundwater in Rose Valley by accounting for the annual amounts, in acre-feet for the following, and add the total to the analysis of current groundwater consumption:

- 30 domestic wells in the Dunmovin area that BLM reports exist and that are assumed to consume relatively small quantities of groundwater for domestic uses and small scale irrigation in the Dunmovin area.
- Coso Ranch South well, southern Coso Junction Store well (Coso Junction #2), and the Cal- trans well at Coso Junction that are regularly used by businesses in the area.
- Coso Ranch South well that provides water at a rate of 5 – 10 tanker truckload per day for the Cal-Pumice mine.
- Coso Junction Store well that supplies the general store and Coso Operating Company offices at Coso Junction.
- A well at the north end of the Little Lake Ranch property that provides water to a local cinder mine.

The DSEIS for the HGLA includes the following statement on pages 62 – 63: “The Haiwee RFD scenario realization will require water for well drilling, dust control during construction, and makeup water to compensate for evaporative loss during plant operation if the plant designs include conventional, i.e., “wet”, cooling towers. The source for this water is currently unknown because each project developer would need to obtain water rights. However, based on the expressed public concern for, and limited availability of groundwater underneath the HGLA, the BLM has decided to prohibit or restrict by stipulation any groundwater extraction in the HGLA for consumptive use.”

---

<sup>5</sup>[http://www.inyowater.org/wp-content/uploads/2013/01/Updated-Rose-Valley-Modeling-Rpt\\_8-24-2017.pdf](http://www.inyowater.org/wp-content/uploads/2013/01/Updated-Rose-Valley-Modeling-Rpt_8-24-2017.pdf)

<sup>6</sup>[http://www.inyowater.org/wp-content/uploads/2013/01/ellis\\_letter\\_2017-07-27.pdf](http://www.inyowater.org/wp-content/uploads/2013/01/ellis_letter_2017-07-27.pdf)

**Comment:** Groundwater is not subject to appropriation under California law, so the statement that “...each project developer would need to obtain water rights.” needs to be corrected. Please clarify what water would potentially be available given that BLM has decided to prohibit consumptive use of groundwater from Rose Valley, and how such water would be legally obtained for use in geothermal development.

The only alternative in the DSEIS for the HGLA that is reasonable given that BLM has decided to prohibit the consumptive use of groundwater is Alternative D (No Action), which would allow leasing and development in the DFA, but lands within the HGLA outside of existing DFAs would not be made available for geothermal leasing, exploration and development and would remain under current management as specified in the CDCA Plan, as amended. Any proposed geothermal facilities in the DFA would be under the CDCA Plan, as amended. The current pending lease applications would be neither denied nor authorized and would be processed in conformance with the CDCA Plan, as amended.

**Comment:** In the 2012 Draft EIS for the Haiwee Geothermal Leasing Area, the groundwater impact analysis considered the impacts of developing one and two 30-MW powerplants, each of which would require replenishment of lost geothermal fluids over the 30-year project life. The analysis found that, “...in all cases, the predicted reduction in groundwater flow exceeds the threshold of 10 percent identified as protective of Little Lake surface water features in the Hay Ranch Groundwater Extraction Project Hydrologic Monitoring and Mitigation Plan (HMMP) prepared by MHA (2008). That is, supplying groundwater for 100% injection (zero net withdrawal) requiring operation of one geothermal reservoir augmentation well for the 30 year project life would likely reduce groundwater flow to Little Lake by greater than 10 percent potentially causing adverse impacts to surface water features on the property.”

It is critically important to note that the above analysis did not consider the effects of groundwater pumping for the Coso Hay Ranch Groundwater Extraction and Transfer Project or the LADWP’s proposed Haiwee Reservoir water seepage capture project. When added, the cumulative impact analysis would show much greater use of groundwater and adverse impacts to Little Lake.

**3. Conservation lands in the HGLA:** The CDCA Plan, as amended, established ACECs and CDNCL, as follows:

- Ayers Rock ACEC (1,564 acres) – for protection of Native American pictographs, Mohave ground squirrel habitat.
- Rose Spring ACEC (800 acres) – for protection of prehistoric cultural resources.
- Mohave Ground Squirrel ACEC (198,552 acres) – for protection of Mohave ground squirrel habitat.
- Sierra Canyons ACEC (26,405 acres) – for protection of habitat for migratory birds, nesting golden eagles, desert tortoise and winter range for the Haiwee mule deer herd.
- CDNCL – nearly 100% overlap with the Mohave ground squirrel ACEC.

Under the CDCA Plan, as amended, all the above ACECs have a 0.1% disturbance cap and CDNCLs have a 1% disturbance cap; and renewable energy development is prohibited, including geothermal.

**Comment:** Please indicate how many acres for each of the above conservation lands occur within the HGLA boundary. Also, the CDCA Plan, as amended in 2016, prohibits renewable energy development, including geothermal, within the above conservation lands for the purpose of protecting them and their associated significant biological, cultural and scenic values. Section 202(c)(3) of FLPMA requires that the Secretary of the Interior, through BLM, “give priority to the designation and protection of areas of critical environmental concern.” Alternative A (BLM-Preferred Alternative) and other alternatives that would allow any geothermal development within these ACECs is contrary to BLM’s legal obligations under FLPMA. Therefore, the No Action Alternative is the only one that meets this requirement, because it would restrict leasing and development to only those lands within the DFA.

Regarding CDNCL, the Omnibus Public Lands Management Act of 2009 established the National Landscape Conservation System (now known as National Conservation Lands) and specified that BLM is to conserve, protect, and restore the outstanding cultural, ecological, and scientific values of the National Landscape Conservation System for the benefit of current and future generations. Alternative A (BLM-Preferred Alternative) and other alternatives that would allow any geothermal development within these lands is contrary to BLM’s legal mandate under the Omnibus Public Lands Management Act. The only alternative that meets this requirement is the No Action Alternative.

Six years after the passage of the Omnibus, as directed by Congress, BLM chose to use a CDCA plan amendment as the process through which to identify the portions of the CDCA to add to the National Conservation Lands, and in so doing, identified the California Desert National Conservation Lands. This plan amendment clearly states the intent of the agency to fulfill its congressional mandate by identifying lands for inclusion in the CDNCLs and managing these lands consistent with other units of the System. It also acknowledges that the CMAs pertaining to the CDNCLs must be consistent with the Omnibus Act and Secretarial Order 3308, which require the BLM to ensure that National Conservation Lands are managed to protect the values for which they were designated.

Conservation standards for the system have also been outlined in Department of the Interior guidance and BLM policies. As mentioned above, Secretarial Order 3308 established a unified conservation vision for managing the National Conservation Lands ‘as required by the Omnibus Act of 2009’ to “conserve, protect, and restore nationally significant landscapes.” In 2011, BLM released the 15-Year Strategic Plan, setting specific goals for how to manage the National Conservation Lands focused on conservation, protection and restoration. In 2012 Policy Manuals were released that interpreted the national policy and set guidance for daily management decisions.

Due to the overarching management standards essential for the agency to fulfill its conservation mandate, BLM should not allow geothermal development within ACECs and CDNCLs. Allowing for geothermal development within ACECs and CDNCLs is clearly contrary to the laws and policies outlined above. The only alternative that satisfies BLMs legal requirements is the No Action Alternative because it would restrict leasing and development to only those lands within the DFA.

**4. Cultural Resources:** The pending geothermal leases and the HGLA are located within an important ethnographic (i.e., cultural) landscape. This landscape holds a number of important cultural sites including



three springs, two Archaeological Districts, a National Historic Landmark, and two sites that are eligible for listing on the National Register of Historic Places.

**Comment:** We echo the concerns of the Big Pine Paiute Tribe of the Owens Valley set forth in their comment letter of July 23, 2012, that the approval of the pending geothermal leases and the opening of the entire HGLA to geothermal development will have irreversible and significant impacts on this ethnographic landscape and the interconnected sites located within. We also support the Tribe's call for an Ethnographic Landscape Analysis to be included as part of the BLM's EIS within an added "Native American Issues and Concerns" section and that this Analysis follow the guidelines set forth by the Advisory Council on Historic Preservation on Native American Traditional Landscapes and the Section 106 Review Process.

**5. Lands with Wilderness Characteristics:** FLPMA requires BLM to inventory and consider lands with wilderness characteristics (LWC) during the land use planning process. 43 U.S.C. § 1711(a); see also *Ore. Natural Desert Ass'n v. BLM*, 625 F.3d 1092, 1122 (9th Cir. 2008) (holding that "wilderness characteristics are among the values the FLPMA specifically assigns to the BLM to manage in land use plans"). Lands with wilderness characteristics are identified as having the following characteristics: roadlessness, naturalness and outstanding opportunities for solitude or outstanding opportunities for a primitive and unconfined type of recreation. See, BLM Manual 6320, pp. 5-9.

**Comment:** As BLM acknowledges in the DSEIS, the geothermal leasing application area and the HGLA overlap a unit which BLM recently inventoried and found to have wilderness characteristics (CDCA 131-1). While the current Plan does not require BLM to manage said unit in order to protect those characteristics, it does require compensatory mitigation if wilderness characteristics are directly impacted. The required compensation is a 2:1 ratio for impacts from any activities that impact those wilderness characteristics, except in DFAs and transmission corridors and a 1:1 ratio for impacts from any activities that impact the wilderness characteristics in DFAs and transmission corridors.

**6. Protected and Sensitive Species:** Section 3.7.2.3 describes Protected and Sensitive Species within the HGLA, including the threatened desert tortoise and threatened Mohave ground squirrel.

**Comment:** We recommend the species occurrence description be updated to include the following:

Desert tortoise: The most recent observation of an adult female desert tortoise in Rose Valley was made on May 1, 2019. The specific location is on public land – T. 22S, R. 37E, Sec. 36, SE 1/4 of the NW 1/4. The observation was made by Tom Hopkins, a member of the public and the species identification was confirmed by Jeff Aardahl, wildlife biologist with Defenders of Wildlife. The observation and supporting data was submitted to the California Natural Diversity Database.

Mohave ground squirrel: The range of the Mohave ground squirrel is described as extending from "Lucerne Valley to the southeast, Olancho to the northwest, and the Avawatz Mountains to the northeast." Current range maps of this species indicate its range does not extend to the Avawatz Mountains, although it does extend into

portions of the National Training Center at Fort Irwin. The current range map and status of the species was reported by Leitner.<sup>7</sup>

The Mohave ground squirrel has been documented as occurring extensively throughout Rose Valley and extending into the Coso region, so its presence in the HGLA is not simply expected, and its habitat is not simply potential as described in the DSEIS for the HGLA. We recommend updating the occurrence of the Mohave ground squirrel in the HGLA using the California Natural Diversity Database, and also the Field Ecology Technical Report for the Coso Geothermal Study Area.<sup>8</sup> P. Leitner conducted live trapping surveys for the Mohave ground squirrel within the Coso Geothermal Study Area, which overlaps the current HGLA. He documented the occurrence of Mohave ground squirrels in Joshua Tree Woodland, in Creosote Bush Scrub on alluvial fans, one on the east slope of the Sierra Nevada and one on the west slope of the Coso Range, Saltbush Scrub on the floor of Rose Valley and the basins and flats within the Coso Range. Leitner stated, “The present study has resulted in the capture of more Mohave ground squirrels than have been reported in all recently published surveys taken together. This was not necessarily due to unusually high population densities at our trapping sites, although that may have been a factor, especially at the Rose Valley, Sugarloaf, and Sierra Slope locations.” He concluded his report with the statement, “In summary, the CGSA [Coso Geothermal Study Area] supports Mohave ground squirrel populations that are at least as abundant as any recorded to date. Since the species has been trapped at 14 sites within this relatively small area and occurs in almost all habitats, it will be very difficult to carry out geothermal exploration and development activities without causing some adverse impacts.

This is particularly true because the areas of relatively level terrain favored by these animals are also the best sites for geothermal facilities.”

**7. Impact Analysis:** Section 4.7.2 of the DSEIS for the HGLA analyzes impacts on biological resources associated with each alternative. Under Alternative A (BLM-Preferred Alternative), the conservation lands (ACECs and CDNCLs) would remain in place but the prohibition on geothermal development would be lifted. This would result in habitat loss and fragmentation, especially for the desert tortoise and Mohave ground squirrel. Impact under the other action alternatives would still result in habitat loss and fragmentation although conservation lands would be given greater protection through no surface occupancy stipulations.

BLM claims that by limiting geothermal development to lands within the existing DFA, impacts to Special Status Species, especially the desert tortoise and Mohave ground squirrel, would still occur but would be reduced because development would be located in less sensitive areas.

**Comment:** Based on studies by P. Leitner and published in the Field Ecology Report for the Coso Geothermal Study Area in 1980, the saltbush scrub in the lower portions of Rose Valley and the creosote bush scrub west of Highway 395 had the highest number of Mohave ground squirrels among the eight study sites he sampled through live trapping. The saltbush scrub habitat in Rose Valley yielded 54 individuals and the creosote bush scrub west of Highway 395 yielded 29 individuals. Both these sites and their more extensive habitats are within

---

<sup>7</sup> <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=15148&inline>

<sup>8</sup> <https://archive.org/details/fieldecologytech4830ock>

the DFA. BLM should refrain from portraying the DFA as having potential for lower impact to the Mohave ground squirrel. The opposite appears to be the case given the results of live trapping by P. Leitner.

BLM states that CMAs from the DRECP amendments to the CDCA Plan would “...protect sensitive resources in all land allocation areas.”

**Comment:** BLM’s proposal to implement various CMAs may serve to minimize direct impact to these species from construction and geothermal operations, but they do not “protect” these species from habitat loss and fragmentation.

**Comment:** BLM should identify areas within the DFA that should be designated for no-surface occupancy based on the presence of the desert tortoise and Mohave ground squirrel as documented through additional field surveys, the California Natural Diversity Database and the results of P. Leitner’s Mohave ground squirrel surveys in support of the EIS for geothermal leasing in the Coso KGRA.

**8. Off-road Vehicles:** The DSEIS at Section 3.16 states that 17 open routes are designated within the HGLA (at pg. 45). Cumulative mileage of those 17 routes is not provided. Appendix T includes an updated map and information on Recreational Use and Visitation for the Ridgecrest SRMA. However, it is unclear where the Ridgecrest SRMA is located. The CDCA Plan, as amended, identifies an Eastern Sierra Special Recreation Management Area (SRMA), which was established with the goal of offering recreational opportunities that maintain the natural character of the landscape and protect sensitive resources, while encouraging a variety of outdoor activities that provide pleasure to the user.

**Comment:** BLM needs to provide the cumulative mileage of the 17 routes within the HGLA.

**Comment:** BLM needs to include a focused analysis of the use in the area of the HGLA, particularly as it relates to off-road vehicle use. Our concern relates to the fact that current open routes could be closed if geothermal projects are constructed within the HGLA area, potentially displacing off-road vehicles into currently undisturbed habitat. Because the Eastern Sierra SRMA’s goal (stated above) focuses on maintaining the natural character of the landscape, industrial development in the HGLA coupled with the potential additional routes from displacement of existing routes will degrade the experience for which the SRMA was established.

**Comment:** As part of the analysis requested above, BLM needs to also analyze the cumulative fragmentation of wildlife habitat that would result of industrial geothermal installations and new roads were constructed in the area. The HGLA may fall within key wildlife connectivity areas as identified in the Desert Linkages report<sup>9</sup> and this important issue needs to be fully addressed in the supplemental NEPA review.

**9. Ground subsidence:** The existing Coso Geothermal Facility has caused ground subsidence that is being carefully monitored by the Facility and China Lake Naval Air Weapons Center, where the facility is located. Because of the subsidence, an effort to counteract further subsidence was put in place. The Coso Geothermal Facility acquired water rights from the Hay Ranch and built an approximately nine-mile pipeline, primarily on public lands (BLM and DoD) in order to pump and export 4,800 acre-feet per year of water from the Rose

---

<sup>9</sup><http://www.scwildlands.org/reports/ALinkageNetworkForTheCaliforniaDeserts.pdf>

Valley to the Coso Geothermal Facility. The pipeline was completed in 2009 and required revegetation of the pipeline route. The revegetation effort, if implemented, has failed along a majority of the pipeline right-of-way. Figure 1 shows an example of the failed revegetation effort which is apparent on the left side of the Gill Station/Coso Road.



Figure 1. Failed revegetation along the pipeline route of the Hay Ranch Water Extraction and Delivery System by 2017.

**Comment:** BLM needs to include effective and binding revegetation obligations for all projects in the HGLA that require revegetation as part of project permitting.

**Conclusion:** Based on our analysis of the current status of groundwater underlying Rose Valley, existing consumption of groundwater, and the occurrence of the desert tortoise and Mohave ground squirrel, we consider Alternative D (No Action) to be most consistent with BLM's mandates under FLPMA for multiple use and sustained yield of public land resources, management of ACECs and CDNCLs, and its Special Status Species Management Policy (Manual 6840) because it would restrict geothermal leasing and development to only those lands within the DFA.

Please contact me if you would like to discuss the following organizations comments and recommendations or additional information.

Sincerely,



Tanya Henderson  
Executive Director  
Amargosa Conservancy  
[tanya@amargosaconservancy.org](mailto:tanya@amargosaconservancy.org)



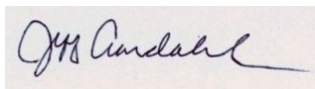
April Sall  
Director  
Bodie Hills Conservation Partnership



Linda Castro  
Assistant Policy Director  
California Wilderness Coalition (CalWild)



Elyane Stefanick  
California Program Director  
Conservation Lands Foundation  
[elyane@conservationlands.org](mailto:elyane@conservationlands.org)



Jeff Aardahl  
California Representative  
Defenders of Wildlife  
[jaardahl@defenders.org](mailto:jaardahl@defenders.org)



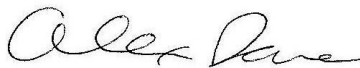
Jora Fogg  
Policy Director  
Friends of the Inyo  
[jora@friendsoftheinyo.org](mailto:jora@friendsoftheinyo.org)



Lynn Boulton  
Chair  
Range of Light Group, Sierra Club  
[amazinglynn@yahoo.com](mailto:amazinglynn@yahoo.com)



Fran Hunt  
Eastern Sierra Organizer  
Sierra Club  
[fran.hunt@sierraclub.org](mailto:fran.hunt@sierraclub.org)



Alex Daue  
Assistant Director, Energy & Climate  
The Wilderness Society  
[alex\\_daue@tws.org](mailto:alex_daue@tws.org)



Tom Budlong  
Concerned Citizen  
3216 Mandeville Canyon Road  
Los Angeles, CA 90049

CC: Carl Symons  
Field Manager

July 31st 2019

Ridgecrest Field Office  
300 S. Richmond Road  
Ridgecrest, CA 93555  
Via email to: [blm\\_ca\\_cd\\_haiwee\\_geothermal@blm.gov](mailto:blm_ca_cd_haiwee_geothermal@blm.gov)