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Memorandum

To: David Harlow, Director, Desert Renewable Energy Conservation Plan

From: Laura Crane, The Nature Conservancy

Date: March 16, 2013

Subject: Comments to the "*Description and Comparative Evaluation of Draft DRECP Alternatives*"

Docket No. 09-RENEW EO-01

On behalf of The Nature Conservancy ("the Conservancy"), we are writing to provide further comments to the *"Description and Comparative Evaluation of Draft DRECP Alternatives"* ("December Draft"). We thank you for the opportunity to review and comment on the December Draft prior to the release of the draft Desert Renewable Energy Conservation Plan ("DRECP"). As a stakeholder in the DRECP process, our organization supports this critical plan and we thank you for the opportunity to review the documents and submit the attached response.

On January 31, 2013, the Conservancy submitted our first comment letter to the December Draft, which contained analyses and strategies important to informing the selection of a preferred alternative. Within this letter we provide further recommendations related to mitigation, durability, the approach for designating NLCS lands, the pending project process, groundwater and Golden Eagle. If you have any questions, please do not hesitate to contact me at (760) 365-5457 or lcrane@tnc.org.

We look forward to continuing to work collaboratively on the Desert Renewable Energy Conservation Plan.

Sincerely,

Laura Crane
The Nature Conservancy

Enclosed: *Second Comment Letter in Response to the Description and Comparative Evaluation of Draft DRECP Alternatives*

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Second Comment Letter in Response to the
"Description and Comparative Evaluation of Draft DRECP Alternatives"

Introduction

The mission of The Nature Conservancy is to conserve the lands and waters on which all life depends. The Conservancy is a stakeholder to the DRECP and we are committed to using our on-the-ground experience and our scientific expertise to strengthen the DRECP conservation planning process.

The DRECP is at a critical stage in the planning process and we are firmly committed to its successful completion. We believe that the concerns raised thus far are surmountable and that with corrections the DRECP will be able to achieve its renewable energy and conservation goals. With this in mind, in the following pages we recommend specific strategies that should be pursued prior to release of the draft DRECP.

Recommended Strategies

1. **Creating a Mitigation Framework for the DRECP**: In Appendix A of this letter, the Conservancy provides recommendations for creating a mitigation framework for the DRECP based on the mitigation hierarchy of avoidance, minimization and compensatory offset mitigation of impacts. In summary, our recommendations are:

    1.1. Develop a conservation reserve design to implement mitigation and strictly adhere to the design elements to ensure that all mitigation investments contribute to the implementation of the design.

    1.2. Follow the mitigation hierarchy—avoid, minimize, compensate. Do not include Ecologically Core lands in Development Focus Areas (DFAs). We are also concerned about the inclusion of Ecologically Intact areas in the DFAs. [1] Set and enforce rule sets that will avert and reduce

[1] Ecologically Core and Intact areas are defined and mapped in The Conservancy's "*Mojave Desert Ecoregional Assessment*." The categorization scheme used to describe the conservation value of lands in the Mojave Desert Ecoregional Assessment is roughly equivalent to the system used to categorize lands according to their conservation value in "*A Framework for Effective Conservation Management of the Sonoran Desert in California,"* allowing for an analysis of almost all desert DRECP lands in California.

harm. Provide incentives to locate development in low ecological conflict areas and disincentives to siting in high ecological conflict areas.

1.3. Implement a regional compensatory mitigation program based on landscape-scale ecological assessments that protect the most important functions, assemblages of species, and specific habitats, rather than approving one-off actions based on project proximity, private land cost or availability.

1.4. For mitigation lands, provide enduring protection of their ecological values, and ensure that mitigation actions are clearly described, transparent, enforceable, well-funded, monitored for long-term effectiveness, and adaptively managed.

1.5. Include focus on a broad variety of species and habitats rather than just listed and sensitive species, and assess cumulative impacts in setting and implementing program goals.

1.6. Make federal, state and local mitigation programs and requirements internally consistent and compatible, to the extent legally possible, and ensure that programs and specific mitigation actions are subject to public review and comment prior to adoption and before critical implementation steps are taken.

1.7. Mitigation on public lands must be enduring and additive—i.e., not substitute for existing agency obligations. Land uses that are incompatible with the mitigation goals and ecological functionality of the mitigation lands should be prevented or restricted so as to be compatible. Land use classifications relied on for ecological protection should not be subject to administrative alteration.

1.8. Impacts to surface water and groundwater resources should always require mitigation, including monitoring and offsets.

2. **NLCS Designations and Durable Conservation Designations:** In Appendix B of this letter, the Conservancy responds to the methodology that the REAT agencies proposed in the December Draft[2] to designate National Landscape Conservation System (NLCS) lands. Appendix B outlines TNC recommendations for using available land use designations and other techniques in ways that are within the existing authority of BLM and the REAT agencies to make mitigation on public lands enduring. In summary, our recommendations are:

2.1. The REAT agencies should revise and better define their methodology for identifying NLCS lands. Two categories of lands should be added to the NLC System: 1) BLM lands identified as critical to meeting the Biological Goals and Objectives (BGOs) of the DRECP (and therefore

[2] The REAT agencies' NLCS recommendations were largely contained in Appendix D of the December Draft.

included in the reserve design) and 2) Lands that meet one or more of the criteria for NLCS designation outlined in Appendix D of the December Draft.

2.2. BLM and DRECP agency partners need to better define how NLCS designations will be made permanent and how NLCS lands will be managed to protect ecological values.

2.3. Evaluate and utilize other options that may increase durability—e.g., withdrawals, third party and intergovernmental easements/deed restrictions, wilderness study areas, including the overlapping of protective devices.

2.4. Review canceling or precluding existing uses that are incompatible with conservation values, especially in conservation reserve lands (e.g., off highway vehicle, grazing, mining) through withdrawals and targeted Resource Management Plan changes.

3. **Incentives for Locating Projects within DFAs:** To ensure robust development in DFAs, the DRECP should establish specific incentives for developers to locate all new applications within DFAs, and to provide incentives to relocate existing applications (as defined in Appendix I – Pending Project Process) from higher conflict areas to these focal areas. Our recommendations are:

3.1. Provide incentives for development on disturbed portions of both BLM managed DFAs and DFAs on private lands in order to maximize use of low ecological conflict lands in the desert regions.

3.2. Provide faster permitting for applications within DFAs. The December Draft provided few details about the framework for permitting within in DFAs. This framework must be clear and must offer efficient permitting with agency accountability measures to attract development into the focal areas.

3.3. Improve and facilitate mitigation for applications in DFAs by offering a more rapid and efficient method of satisfying mitigation requirements, with greater certainty about commitments and costs.

3.4. Expedite transmission infrastructure approvals (including both new transmission lines and any required upgrades) to service DFAs. REAT agencies and the CAISO should designate transmission needs for DFAs as “policy-driven projects” within the Transmission Planning Process (TPP).

4. **Pending Project Process**: In Appendix C of this letter, the Conservancy outlines recommendations in reference to the Pending Project Process (Appendix I of the December Draft). In summary, we recommend the REAT agencies:

4.1. Review pending project sites against conservation land values, and set permitting priorities for those projects located outside high value conservation lands rather than based on application date or other criteria.

4.2. Establish uniform Best Management Practice (BMP), mitigation, and other standards that will be applicable to approval of pending projects. Set standards for pending projects equivalent to the variance area project approval standards.

5. **Protection of Groundwater Resources:** In Appendix D of this letter, the Conservancy outlines recommendations and includes a framework for protection of groundwater resources within the Plan Area. We strongly recommend that the DRECP:

5.1. Avoid approving groundwater pumping by utility scale solar renewables from over drafted or over allocated desert basins.

5.2. Require groundwater modeling, monitoring and trigger (pumping cutoff or reduction), and compensatory mitigation requirements for all renewables groundwater use that may cause unavoidable impacts in desert basins.

5.3. Include aquatic and riparian species as covered species, or eliminate consideration of renewables siting in basins where groundwater withdrawals may adversely affect those species over the long term (e.g., Amargosa Watershed as defined in TNC's January 31, 2013 comment letter).

6. Golden Eagle: The following are observations and comments in response to Appendix K – Golden Eagles of the December Draft. Our comments are not focused on permitting strategy, but are related to the biological goals and objectives and research priorities.

6.1. Consistent with our January recommendations, the top priority should be to complete Biological Goals and Objectives, including those for Golden Eagle.

6.2. The Nature Conservancy has been identified as a likely partner for research priorities 10 and 11. We look forward to discussing this further and gaining clarity about the role that TNC may have in achieving these research priorities.

7. Conservation Priorities in Proposed Development Focus Areas

7.1. Development in the Amargosa Watershed. We reiterate our recommendation that the REAT agencies remove any Development Focus Areas proposed for the Amargosa Watershed from consideration. The Amargosa Watershed is an ecologically fragile groundwater-dependent system and home to a collection of listed, endemic, rare and sensitive species in California and

Nevada. These species are groundwater dependent and development within this watershed presents a significant threat to their survival.

7.2. **Development in the Tehachapi Region.** TNC has included Tehachapi Region-specific recommendations in two DRECP comment letters (August 9, 2012 and January 31, 2013). In addition, the Bureau of Land Management recently completed a several year process to update their Bakersfield Resource Management Plan. The plan calls for the preservation of the ecological linkage between the Sierra Nevada and Transverse Ranges and the avoidance of utility scale renewable energy installations in the linkage. This decision was supported by both public input and BLM's planning process. TNC therefore recommends the DRECP adopts similar protections for the Tehachapi ecological linkage.

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Appendix A

Creating a Mitigation Framework for the DRECP

The DRECP has the opportunity to create an effective mitigation framework that protects public and private lands with measures that deliver lasting, tangible results. As the basic rule of thumb, the DRECP should ensure that all mitigation is additional, enduring, monitored, account for the full cumulative impact of development, and be at a sufficient scale to ensure ecological viability. We intend our recommendations to demonstrate how the DRECP can use the mitigation hierarchy as the basis of a renewable energy program.

The selection of several of the DFA alternatives appears to overlook the first, and in terms of limiting harm, most important, element of the mitigation hierarchy: avoid development in ecologically important areas. Significant acreages of Ecologically Core and Intact lands (based upon TNC's 2010 Mojave Desert Ecoregional Assessment[3] and 2009 Sonoran Desert Assessment[4]) are included in most of the alternatives. We recommend that the DRECP alternatives eliminate all Ecologically Core lands from any further consideration as part of an improved DFA, and, to the extent possible, avoid including any Ecologically Intact lands in DFAs as well.

Beyond the elimination of these ecologically important lands, the DRECP should include rule sets, i.e. best management practices (BMPs) that all facilities must implement to minimize harm to species and habitats. Requiring, for example, such actions as reducing groundwater use and eliminating disturbance where rare plants or habitats exist, will help avert and reduce the severity of harm to ecological resources. Carefully conducted restoration of habitat impacts can also contribute significantly to reducing the long-term effects of facility siting, although restoration of desert lands, once disturbed, is quite difficult, often unsuccessful, very expensive at scale, and should be cautiously pursued, based upon the conclusions of recent studies on the subject (Abele 2011).

The Mitigation Hierarchy: Avoidance and Minimization

The first step of the mitigation hierarchy—avoidance—requires that renewable energy facilities be sited in locations that entirely avoid the most ecologically important and/or sensitive habitats. We

[3] As designated in: Randall, J. M., S.S. Parker, J. Moore, B. Cohen, L. Crane, B. Christian, D. Cameron, J. MacKenzie, K. Klausmeyer and S. Morrison. 2010. Mojave Desert Ecoregional Assessment. Unpublished Report. The Nature Conservancy, San Francisco, California. 106 pages + appendices. Available at: http://conserveonline.org/workspaces/mojave/documents/mojave-desert-ecoregional-2010/@@view.html.

[4] Conservation Biology Institute. 2009. A framework for effective conservation management of the Sonoran Desert of California. Prepared for The Nature Conservancy.

reiterate our recommendation that the DRECP use landscape-scale ecological assessments to identify and avoid areas and associated species and habitats that are Ecologically Core. Ecologically Core lands are those that The Nature Conservancy identified as possessing the highest conservation value. These lands are largely undisturbed and un-fragmented, and support the conservation targets (species, ecological systems, springs and seeps) selected in The Nature Conservancy's ecoregional analyses as critical for long-term conservation of biodiversity. Their full protection is essential.

In addition, we are concerned about inclusion of Ecologically Intact lands in the DFAs. These lands of high conservation value are largely undisturbed and unfragmented and support conservation targets. They buffer Ecologically Core lands and require levels of protection that will allow them to remain undisturbed to preserve ecological processes and to provide viable habitat and connectivity for native animals, plants, and communities[5]. To the extent possible, Ecologically Intact lands should also be fully protected.

The second step of the mitigation hierarchy, minimization, requires that facilities be sited and operated in a manner that minimizes harm to habitats and species. This means identifying, developing, and employing best management practices (BMPs) that avert or limit site-specific harm to habitats and species. BMPs also specify monitoring and enforcement mechanisms, including adaptive management provisions, for inclusion in development permits. Adaptive management requires modification of projects based on the results of monitoring actual ecological impacts, as distinct from projected impacts, taking into account variances over time from the ecological conditions that may have been initially presumed to be stable over the projected life of the project.

Following are the Conservancy's specific recommendations on the application of avoidance and minimization within the DRECP mitigation framework.

The process of identifying the Reserve Design is the primary method employed by the DRECP to identify and avoid places of high biological, ecological and other resource values to ensure that development does not unreasonably degrade these resources. It is critical that lands necessary to meet BGOs are clearly defined, and that the DRECP explicitly preclude development in these areas.
The secondary method employed by the DRECP to avoid places of high biological and ecological value is to provide incentives for development in areas of low biological and ecological value. DFA

[5] Most Ecologically Intact lands are functionally equivalent to Ecologically Core lands and may contain many of the same conservation targets, including sensitive species. However, they may have been classified as Ecologically Intact because they support more widespread ecological systems, are at higher risk of degradation, or support conservation targets for which the conservation goals have already been met on Ecologically Core lands.

identification requires an inventory of included habitat and species values to define and apply effective avoidance and minimization measures. While each DFA should have relatively low ecological values overall, there may be portions of a DFA that rank high in conservation values. Portions of a DFA that contain high value lands and waters should routinely be excluded from development areas, and must always be excluded when it is impossible to mitigate off-site for the loss of these values. Example avoidance areas include the last or largest occurrences of plant or animal populations at a site, migration corridors, springs and phreatophytic vegetation, or habitat that is in exceptionally good condition when compared to the remainder of the region.

In addition, DFA decisions should incorporate avoidance of:

1. Priority habitat for imperiled species
2. Outstanding examples of natural habitats (e.g., habitats containing a high degree of diversity, habitats that are relatively free of invasive species)
3. The last or largest occurrences of plant or animal populations
4. Lands with wilderness characteristics
5. Wildlife corridors and linkages
6. Abiotic features of ecological importance such as springs, groundwater infiltration zones, sand source areas, or rock outcroppings.

Unfortunately, while segregating avoidance areas within a DFA is highly desirable, it may not in fact result in the long-term elimination of development impacts. While undeveloped portions of a DFA may retain some functionality for biotic features, this functionality may be impaired to the degree that full off-site compensation should still be required. For example, the development footprint within a DFA may be designed around rare plant populations, but the targeted rare plant populations may not survive once cut off from surrounding lands and associated ecological functions by the surrounding development or whose critical pollinators are deterred or impeded by the development.

Following avoidance, the DRECP should employ methods to minimize impacts. Minimizing impacts to biotic features on site prior to development should include measures such as plant and topsoil salvage. For example, the DRECP should require developers to use topsoil salvage techniques under rare plants (e.g. buckwheat, bear poppy, etc.) where invasive species are not a problem and follow all applicable laws and guidance for salvage of all cacti and yucca prior to site disturbance

The Mitigation Hierarchy: Offset of Unavoidable Impacts - A Compensatory Mitigation Program

For those impacts that cannot be avoided or minimized, effective measures must be taken to offset unavoidable negative impacts to affected habitats and species to ensure the viability of species and habitats over time. A successful mitigation framework established in the DRECP must offer a variety of ways to effectively offset impacts -- i.e. a compensatory mitigation program must adapt to differences in the DFAs, individual projects and technologies, and reflect the varying availability of private lands. It must account for the full cumulative impact of projects across a landscape, and be at a sufficient scale to ensure ecological viability. It must be as enduring and long-lasting as the potential impacts of projects.

Acquisition and long-term management of private lands is a clear first preference for compensatory mitigation where private lands with high ecological values exist. However, to ensure that unavoidable impacts are fully offset in settings where private lands are not available or do not contain high ecological values, the Conservancy recommends that the REAT agencies include an off-site mitigation program providing for durable and enduring mitigation on BLM-administered lands.

The remainder of this appendix presents a methodology for identifying appropriate sites for compensatory off-site mitigation. There are no easy answers for how to achieve effective off-site mitigation, so it is important to focus first and centrally on avoiding and minimizing adverse ecological effects. Thus, we emphasize that implementation of compensatory mitigation programs should be consistent with the goal of concentrating as much renewable energy infrastructure as possible into DFAs designed to avoid areas of high conservation value[6].

Selection of sites for compensatory off-site mitigation and selection of conservation targets

When compared with the DFA (reference site), candidate compensatory off-site mitigation sites should be chosen using the following scheme, which incorporates a hierarchical geographic model and addresses concerns about site similarity and other issues. Note that the steps are meant to be applied in order, as a filtering approach for first identifying and then prioritizing among mitigation investment locations.

1. Candidate compensatory off-site mitigation sites must contribute to the implementation of an established conservation reserve design. The reserve design will likely be larger with more needs than mitigation for renewable energy facilities alone will cover. Therefore, it is important within the reserve design to prioritize where to make the mitigation investment.
2. Candidate compensatory off-site mitigation sites must be located within the **same ecoregion** as the DFA. The DRECP should be clear about the approach used to define the ecoregion.

[6] The methodology we present in the following section does not include steps to ensure that the conservation actions taken at a given compensatory off-site mitigation location provide for no net loss of biodiversity—a clear requirement.

3. Candidate compensatory off-site mitigation sites must be located within the **same ecological subregion** as the DFA. In addition, when the compensatory off-site mitigation includes requirements for a species listed as endangered or threatened under the Endangered Species Act, the compensatory mitigation sites must be located within the **same recovery unit** as the DFA. Again, the DRECP should be clear about the approach used to define the subregions.

    a. Within the DRECP, this means that the compensatory off-site mitigation site must be chosen from within the mapped region representative of the same desert tortoise subpopulation as that found in the DFA.

    b. Compensation for groundwater pumping must be located in the same or a hydrologically connected groundwater basin.

4. To the extent possible, the location of the candidate compensatory off-site mitigation sites should be based on the geographic distribution of the species or feature being impacted. For example, the least common/most restricted feature could be:

    a. A rare plant,

    b. The Mohave ground squirrel,

    c. A riparian corridor or spring,

    d. Non-biological resources such as lands with wilderness characteristics.

    If the least common and most geographically restricted feature limits regional mitigation candidate areas to places that do not meet all mitigation needs, it may be necessary to mitigate for the least common and most geographically restricted feature separately and in addition to the regional mitigation obligations.

5. Mitigation targets (or covered species) should include federal/state listed and candidate threatened and endangered species**,** and BLM Special Status Species, **as well as more common species** and all major habitat types. Every time a large amount of habitat is destroyed, formerly common species become less common and sometimes even edge into rarity, so impacts are felt beyond endemics and highly-protected listed species. The DFA mitigation program should account for this.

6. The candidate compensatory off-site mitigation site must have **the same biological values, similar species, habitat types and natural features**, including topography, hydrology, geology, and plant communities as the development site. The type of mitigation must also be appropriate for the impacted resource; for federally listed species and some other resources, impacts must be offset by equivalent or greater benefits to the same resource, in other cases mitigation approaches can be used that value lands based on species habitat suitability, biodiversity, or monetizing mitigation. Candidate compensatory off-site mitigation sites must:

a. Contain at least the impacted species and habitat types found in the DFA in whole or in part (single site versus multiple site mitigation accounting). Both special status and non-special status species must be considered.

    i. Compensatory off-site mitigation should seek to provide benefits to the full array of species, habitats, and ecological processes damaged by the development, not just to those species for which mitigation is customarily administratively mandated. Mitigation targets should be broadened beyond species that are rare, sensitive, and/or declining, or that have protected regulatory status for other reasons. Targets should thus include a wide array of species, habitat types, and ecological features[7].

b. Have healthy populations of covered species that are at least as large as those contained within the DFA.

c. Contain at least as many springs and seeps, wetlands, and at least as many acres of riparian vegetation, desert washes, playas, and other intermittently-wet hydrological features as the DFA. If the mitigation site is within an over-appropriated or depleted groundwater basin, sufficient water rights in active use (or interests in land carrying actively used water rights) must be acquired and permanently retired from other uses to clearly reverse the situation as part of the protection strategy.

d. Contain the same unusual plant assemblages (e.g. Juniper co-occurrences with Joshua trees. For a complete list see the starred items in: http://www.dfg.ca.gov/biogeodata/vegcamp/pdfs/natcomlist.pdf).

e. Contain lands with wilderness characteristics of at least equal quality and acreage to any lands with wilderness characteristics impacted on the site.

7. To the extent feasible, the candidate compensatory off-site mitigation sites should have the **same landscape values and ecological functionality** as the DFA.

    a. The candidate compensatory off-site mitigation sites must have similar landscape-level biological linkage areas required for the continued functioning of biological and ecological processes as those found within the DFA. These include:

        i. Wildlife linkages and corridors,

        ii. Areas important for ecological processes such as sand or sediment transport, and

[7]This does not necessarily entail different mitigation actions, but rather careful selection of an area to invest mitigation dollars to benefit a wider range of species, habitats and ecological processes.

iii. Groundwater infiltration zones and aquifer linkages to surface water expressions.

b. Areas that provide movement corridors between ecologically-defined and effectively protected landscape units or habitat blocks are preferred. Areas that are bounded by closed barriers between adjacent and nearby units should be avoided. Linkage protection is an example of a conservation action that can yield ecological benefits far beyond the location of the mitigation site itself, just as the development can have detrimental effects far beyond the footprint of the development itself.

c. An area where surrounding land uses are likely to preserve and enhance mitigation benefits over time is preferred. Areas significantly impacted by trespass, areas invaded by non-native species, areas with adverse changes in water quantity or quality due to human activities, and/or areas with significant levels of anthropogenic dust, noise, or night-time light may be able to provide only relatively little ecological benefit (e.g., they may support no target species or may even serve as a population "sink" for species that they do attract) and should generally be avoided.

d. Areas with heterogeneity in biota, climate factors, or physical gradients that will accommodate the long and short-term movements of species, including plants and other organisms whose individuals are either sedentary or slow moving but which have a mobile life stage. Such sites are preferred because they expand the available bioclimatic "space" for species to adjust to changing conditions and thereby facilitate adaptation. Adjacency or connectivity to areas with these characteristics is suitable if they are not available at a sufficient scale on the proposed acquisition site itself.

8. All candidate compensatory off-site mitigation sites must be of **comparable or greater contiguous size than the DFA, and/or include lands contiguous to or within much larger protected areas** (e.g. inholdings in National Parks/or the Mojave National Preserve). Acquisition of scattered, isolated, smaller parcels for mitigation of development within a DFA is not acceptable, absent unusual circumstances, such as the need to mitigate for the damage or loss of several rare plant species with restricted and disjunct populations.

Assessment and Prioritization of Candidate Mitigation Sites.

After identifying alternative candidate sites that meet the biological needs of the species and all other mitigation obligations for the unavoidable impacts that warrant compensatory offsite mitigation (Steps 1-8, above), the plan should specify priorities among candidate sites. The purpose of this assessment is to determine, of the sites that meet all mitigation obligations, which area or areas represent the best regional locations for mitigation investment, using these criteria:

1. Identify specific conservation actions that would need to be taken at each of the identified mitigation candidate sites to meet the biological needs of identified species, based upon the best available scientific information regarding the status of species and the impacts of permitted activities on those species (e.g., acquisition of private land, specific management actions on public land). In addition, the plan should evaluate the likelihood of success of the conservation measures (e.g., feasibility).

2. Within the above limitations, priority should be given to candidate compensatory off-site mitigation sites that present the best options for successful mitigation and conservation co-benefits, without regard to the proximity of the mitigation site to the DFA. The offset and impact need to be ecologically similar but the assumption that "closer is better" in mitigation siting is often not defensible ecologically, especially given the associated edge effects caused by nearby infrastructure. Proximity to a DFA may be a variable for particular resources or species but not for others, and prioritization of sites should appropriately reflect that variation.

3. Candidate compensatory off-site mitigation sites must first and foremost achieve the goals and objectives of biological mitigation requirements. Among those locations that meet compensatory mitigation requirements, candidate compensatory off-site mitigation sites will be prioritized to maximize benefits to **as many additional ecological and non-ecological values as possible** in a single location (biological, ecological, cultural, military, etc.). Priorities include:

    - Locations where surrounding land uses are likely to enhance mitigation benefits over time
    - Sites that feature desert aquatic and riparian habitats supplied by perennial, protected sources of water
    - Locations that feature distinct or unique assemblages of species or communities or locations that provide valuable ecosystem services (e.g., rare plant assemblages, desert washes)
    - Locations that feature high-quality habitat for, and healthy populations of, both target species (especially special status species) and non-target species
    - Locations that contribute to the permanence of conservation protections, and offer assured long-term protection of conservation values.
    - Locations where the likelihood of success of mitigation is high and obstacles are minimal.

Cumulative Impacts.

To assess cumulative effects, accounting systems should track the effects of compensatory mitigation actions to a range of affected habitats, in area, abundance or other functional units across a number of infrastructure projects. Monitoring and reporting should feed into a regional monitoring system that

allows for the analysis of broader impacts, cumulative impacts, and the progress of restoration over time.

Mitigation actions should be informed by region-wide cumulative impact analyses done not only for listed and sensitive species—but also for natural communities at the habitat-type level. Cumulative impact assessments need to consider the full range of threats to a species or community, including impacts projected to be caused by climate change. Modeling and forecasting should be developed for species and resources that are most imperiled.

Research.

Research needs must be identified and incorporated into the monitoring and adaptive management plan. More research is needed to adequately understand how development within a DFA may impact biotic features nearby and within the DFA but not within the development footprint.

- It may be of interest to compare the functionality and biodiversity of similarly-sized and adjacent DFA test-sites that are: (1) bladed, (2) “mowed”, (3)”tilled and rolled” and (4) adjacent non-DFA sites that are intact
- Monitoring and modeling may be necessary to evaluate potential groundwater impacts
- Effectiveness of desert tortoise translocation from DFAs to translocation sites
- Need for desert tortoise fencing at the DFA post construction to exclude tortoises and prevent them from being killed on roads leading to and within the renewable energy facilities.

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Appendix B

NLCS Designations and Durability of Proposed Conservation and Land Use Designations

Determining whether areas chosen for inclusion in the DRECP's eventual Conservation Reserve Design (CRD) will function adequately to permanently satisfy the BGOs depends on whether existing legal and administrative protections for those lands are in fact "durable." That is, the central question is whether the Plan can assure that the conservation status and values of reserve design lands will not be subject to future incompatible or destructive alterations in the designation or uses of the land. Our durability recommendations focus on using available land use designations and other techniques in ways that are within the existing authority of BLM and the REAT agencies.

In Appendix D of the December Draft, the REAT agencies recognized the opportunity under Public Law 111-11 to designate public land within the California Desert Conservation Area that BLM will manage for conservation purposes as part of the National Landscape Conservation System (NLCS). Below are The Nature Conservancy's comments on the alternatives that the BLM developed to identify and designate additional NLCS lands as part of the DRECP, as well as our comments related to the durability of this designation and other options available to the REAT agencies for conservation and mitigation purposes.

Recommendations for Durable Conservation Designations.

Apart from certain congressional or presidential designations[8], third party agreements, and possibly other options that BLM has not customarily relied on in this setting, BLM's ecologically protective land categories can be administratively altered. Some administrative land designations are more permanent and difficult to alter than others. The array of protective devices and categories available to agencies to protect the conservation status of public lands is reasonably broad, and durability varies across a

[8] Congressional designations include, e.g., include Wilderness Areas, Wild and Scenic Rivers, National Parks and Wildlife Refuges; the president can designate areas as National Monuments under the Antiquities Act. We believe that lasting protection for BLM's desert lands held for conservation would be substantially improved by new legislation allowing BLM to remove conservation lands from all conflicting uses, including FLPMA's multiple use command, and providing associated stewardship resources and enforcement powers.

spectrum from designations offering very little permanence to those approaching direct congressional or presidential designation[9].

Designating lands to be part of the National Landscape Conservation System appears at first blush to be the best currently available option to timely provide more lasting protection for ecologically important areas. We believe, though, that there are also other protective actions that agencies might employ to provide lasting protection for conservation lands that can supplement reliance on NLCS designations, as well as existing ACEC and critical habitat designations. These are discussed after an analysis of NLCS additions, immediately below.

NLCS Designations

As established in the Omnibus Public Lands Management Act of 2009 (Public Law 111-11), the statutory goal of the NLCS is to conserve nationally significant landscapes with outstanding ecological, cultural and scientific values[10]. The statute itself added approximately 3.9 million acres in the California Desert Conservation Area (CDCA) as National Conservation Lands in certain legislatively defined protective categories—e.g., wilderness, national monuments, historic trails, wild and scenic rivers

Congress also provided in Section 2002 (a)(2)(D) of that law that BLM should add to the NLCS system "public land within the California Desert Conservation Area administered by the Bureau of Land Management for conservation purposes." BLM refers to this category of lands as Desert Conservation Lands (DCLs). In Appendix D, BLM proposes the process for evaluating and adding public lands to the NLC System.

The NLCS designation, given the congressionally framed conservation intent, can be seen as potentially adding significant incremental protection to ecologically important desert areas. The NLCS designation could bring into a single system some of BLM's premier designations and, if appropriately defined and regulated, could offer a level of protection to CDCA lands perhaps nearly comparable to those previously identified by Congress, such as wilderness, wilderness study areas, wild and scenic rivers, and national scenic and historic trails.

[9] Designations—even very durable designations such as Wilderness--do not assure that the land will in fact be managed and protected for conservation purposes. Accordingly, in determining the long term success of the reserve design in meeting the BGOs, the DRECP must consider and evaluate other factors, such as whether adequate resources will be devoted to long term stewardship, what entity will be responsible for that stewardship, current and likely stresses on the resources, and the status and condition of adjoining lands, among other things.

[10] Section 2002 (a) provides "In order to conserve, protect and restore nationally significant landscapes that have outstanding cultural, ecological, and scientific values for the benefit of current and future generation, there is established in the Bureau of Land Management the National Landscape Conservation System."

The DRECP process and REAT partners can effectuate protection of CDCA lands necessary to meet the BGOs of the DRECP. Pursuant to the December 2012 Memorandum Agreement between the BLM and State Department of Fish and Wildlife, federal and state agencies together have the option to designate all of the Conservation Reserve Design lands eventually deemed necessary to meet the BGOs as components of the NLC System, and to designate additional NLCS lands of conservation importance beyond those strictly required to meet the DRECP goals. We support this dual-goal approach of designating NLCS lands and recognize that restrictions on use may be less stringent in areas of the CDCA where NLCS designation is appropriate for reasons other than meeting the DRECP BGOs.

The BLM identified ten different criteria for identifying BLM managed lands that should have an NLCS designation, in addition to those lands specifically designated by the statute as having nationally significant resource values (e.g., wilderness). In particular, the BLM identified two criteria for additional NLCS designations of lands that are focused on species, habitats and ecological diversity:

1. Species Habitat – high quality habitat for multiple native species; or critical habitat for a listed species
2. High level of ecological diversity

The Nature Conservancy agrees with these two criteria but believes that BLM should add a third criterion justifying NLCS designation directly relevant to ecological significance: "Lands critical to meeting the Biological Goals and Objectives (BGOs) of the DRECP."

Our recommendation is that **all lands that are critical to meeting the BGOs of the DRECP will necessarily need to be managed for conservation, are nationally significant, and should receive the NLCS designation,** as well as other protections to ensure continued and durable protection.

Since evaluation of the lands necessary to meet the BGOs should be a primary consideration in the NLCS designation evaluation, we believe that establishment of BGOs and a corresponding reserve design must be a prerequisite to identifying and evaluating alternatives for NLCS designation.

Further, without a spatially explicit reserve design, we have deep concerns about some of the alternatives that the BLM proposed in Appendix D. In particular, Alternative 3 "West Mojave Emphasis" and Alternative 6 "Solar Programmatic EIS Emphasis," specifically exclude lands from consideration under the NLCS that will likely be necessary to meet DRECP's BGOs. For example, Alternative 6 excludes variance lands in the Solar PEIS from possible NLCS designation. According to the Final Solar PEIS, while variance lands may be available for "responsible utility-scale solar development outside of SEZs" they are "intended to be the exception rather than the rule." In fact, a large number of the lands open for solar energy development under the Variance Process contain very high ecological values.

The Nature Conservancy compared the Variance Lands against the results of TNC's Mojave Desert Ecoregional Assessment and found that 28% of the variance lands within the Mojave Ecoregion were identified by TNC as Ecologically Core. Again, Ecologically Core lands are those that The Nature Conservancy identified as of the highest conservation value and as critical for long-term conservation of biodiversity. Our expectation, based on our Mojave Desert Ecoregional Assessment, is that some of the lands currently identified as potentially available for solar development under the Variance Process are actually critical for meeting the BGOs of the DRECP. If meeting the BGOs requires that lands currently identified by the Solar PEIS as variance lands be included in the reserve design, these lands should be excluded from the variance applications, protected as part of the reserve design, and included in NLCS designations.

Whether even NLCS designation would offer long-term protection to conservation lands is problematic, since existing BLM managerial policy for NLCS lands and the proposed NLCS "rule set," do not necessarily assure protection of lasting conservation values. First, the NLCS program is quite recent, and legal and regulatory aspects of NLCS designations of CDCA lands—especially how permanent such designations will be and how these lands will be managed—are not yet clear. Designation of lands within the CDCA[11], like BLM's other administratively imposed protections, can in all probability be altered through BLMs planning processes. Second, the proposed NLCS rule sets in Appendix D have not been refined to clarify appropriate uses for NLCS lands that are part of the DRECP reserve design versus those lands that are not part of the reserve design. For NLCS lands that are part of the reserve design, the rule set should prohibit uses inconsistent or incompatible with conservation values (e.g., grazing, mining, OHV open routes, non-utility scale solar development).

Additional Assurances.

We believe that BLM and the REAT agencies can and should provide additional assurances that NLCS designations for lands within the reserve design are intended to be permanent and not alterable through the land use planning process, absent compelling need.

The Conservancy proposes that the DRECP agencies should also rely on additional or supplemental measures to achieve durability in conservation land protection. These include the following:

1. **Land Withdrawals and Transfers**. Section 204 of FLPMA permits the Secretary of Interior to withdraw lands from multiple use. Although withdrawals in excess of 5000 acres are complex and

[11] BLM would have to manage and protect NLCS lands within legislatively specified categories other than FLPMA—e.g., wilderness—according to standards defined by those statutes. However, in the case of CDCA lands, FLPMA commands BLM to manage those lands under a multiple use and sustained yield standard that allows the agency considerable discretion to define and shift land uses.

require congressional review, the BLM should assess the possibility and utility of withdrawing conservation lands from all other inconsistent uses under this section for terms that are congruent with permit terms for solar plant use of public lands[12]. The Secretary may also make transfers of lands to other federal agencies. This, too, should be explored as a device to ensure that BLM's multiple use command does not defeat the purpose for which conservation lands are reserved.

2. **Third party reservation of conservation rights**. In instances where private lands are transferred in to the BLM, BLM has in some instances accepted deed or other conservation-based restrictions limiting the multiple use of those lands. We recommend that BLM also consider joint federal-state agreements for land management that would commit both jurisdictions to long-term conservation management and actions of subject lands, and restricting incompatible actions.

3. **Mitigation Banks.** We also recommend that BLM explore the possibility of placing public lands that are reserved for regional or site specific mitigation in mitigation banks, managed by a state or other federal agency, or a third party under contractual agreements that would insure that the conservation status of the banked lands would endure.

[12] Secretarial withdrawals of more than 5000 acres are limited to renewable 20-year terms. Withdrawals of fewer than 5000 acres for "resource use" may be made for such time as the Secretary desires. "Resource use" is not defined. Section 204(d)(2).

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Appendix C

Recommendations for the Pending Project Process

Appendix I defines criteria used to define projects that will be either covered by or exempt from the DRECP process. Most project site applications filed before 2010 would apparently not be governed by either the BLM PEIS or DRECP rule sets. These siting applications are scattered fairly widely across the California desert, including a number slated to be located in high value ecological habitats. Permitting for these projects is ongoing. Serious challenges have been mounted against a number of these pending projects located in areas where ecological or cultural resources would be adversely affected, resulting in high costs, delays, and, in some cases, project cancellations. And, where projects have been approved, important approval conditions have not been consistent across the region, and resolution of mitigation issues has frequently proved to be difficult.

If existing project approval conditions are significantly different from those prevailing under PEIS and DRECP rules, the large numbers of projects that are potentially exempt from the DRECP and PEIS rules may well make the results of the federal and state planning processes considerably less meaningful.

In our view, BLM and the state DRECP participants should review existing regulatory authorities, guidance, and procedural and substantive requirements being applied in current project reviews, with a view to announcing uniform rule sets that, to the extent possible, will be applied to all pending and variance projects that are now in the approval queue[13]. These rules should be separate from and more stringent than those applicable to siting in Solar Energy Zones and Development Focus Areas, where more lenient rules and an expedited process are needed to provide siting incentives. Without clear definition and discrimination between the SEZ and DFA requirements and those applicable to all other projects, especially pending projects, the central goals of both the PEIS and DRECP may not be attainable.

In sum, issues associated with pending projects are critical to the structure and success of the DRECP. As outlined, the current document does not discuss or deal effectively with these issues. Completing full ecological analyses to determine what is needed to protect species and ecological processes is clearly of cardinal importance to determine where renewables siting should be discouraged or precluded. This analysis must be coupled with a careful consideration of the extent, location, and

ecological appropriateness of pending projects[14], the reasonable need for land to meet 2040 goals, and a collaborative process to determine best methods to induce development to site in optimal locations.

[14] The agencies should conduct a parallel review of pending projects to determine which may be located in high conflict areas, including Ecologically Core or Intact Areas, and set processing priorities based on this review.

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Appendix D

Protection of Groundwater Resources

The discussion of protection of groundwater resources is virtually absent from the December Draft. The treatment of groundwater resource protection in the Biological Resources sections, Conservation Actions appendix and descriptions of the draft Alternatives in Appendix B, is non-specific and lacks essential detail. It may be that promised forthcoming sections on hydrology and groundwater, along with definitions of appropriate avoidance, minimization and mitigation measures for groundwater will help fill in how the DRECP will treat groundwater issues associated with renewable energy facilities. However, since groundwater pumping is not currently a covered activity, we urge that the draft DRECP deal expressly with groundwater protection and linkages to surface ecological resources in other provisions of the Plan.

Apart from The Conservancy's recommendation that the DRECP not place DFAs or otherwise accommodate the siting of renewables facilities in the Amargosa groundwater basin (or other overdrafted basins) as a prudent avoidance measure, The Conservancy has provided a set of recommendations that should be adopted by the DRECP for all renewable energy facilities receiving permits through the DRECP (Attachment 1).

The core principles are:

1. Minimize and compensate for all groundwater use;
2. Understand groundwater basin hydrology and dependent surface resources;
3. Model and monitor predictively the effects of pumping
4. Reduce or halt pumping if adverse effects on water dependent resources are likely, even over a long term,

These recommendations are based upon the fact that desert groundwater is an exceedingly scarce, declining, and crucially important resource, often little understood; that renewables pumping is a new and likely permanent use of water; and that adverse effects of pumping on surface water-dependent resources are often conveyed over long distances and delayed, so by the time effects are noticed, it is too late to protect these resources. These principles are compatible with the groundwater best management practices and mitigation provisions in the Solar PEIS as well.

Attachment 1: Principles for Responsible Water Use by Solar Energy Facilities in the Southwestern Deserts of the U.S.

Introduction

Large-scale solar development is an important component of a comprehensive renewable energy portfolio for the United States, and The Nature Conservancy encourages responsible siting of solar energy facilities. We work with natural resource agencies, energy developers and communities to ensure that solar development in the Mojave, Great Basin, and Sonoran deserts contributes to a more balanced energy portfolio, while preserving the unique ecological resources of our desert landscapes and ecosystems.

Industrial scale solar facilities can require significant amounts of water for cooling, cleaning mirrors, generating steam, and plant operations. Water use—especially pumped groundwater –in the desert can adversely affect ecological resources.. Yet, there is an absence of clearly articulated, scientifically robust agency guidelines for water resource management and protection in the desert.

Impacts to the relatively few, usually small, riparian or wetland areas where water is present at the surface can have far-reaching implications for ecosystems and species, exacerbated by the effects of climate change.

Even small increases in water use can cause dramatic changes in water conditions, including critical reductions in spring flows, stream flows, wetland areas and groundwater levels; these losses, in turn, can devastate ecosystems that depend on the water. Because of the very low precipitation inputs, and correspondingly low flow-through rates in desert groundwater systems, impacts of groundwater pumping become evident very slowly and can persist for extremely long periods of time.

Given the importance of water to natural ecological systems in the desert, and the prospect of significant new demand for water by new solar facilities, it is critically important to establish standards and guidelines to prevent unacceptable impacts to local ecosystems.

We propose that the solar industry voluntarily adopt the following standards as best management practices and mitigation requirements. Individual facility measures should be formulated and adopted as permit requirements through applicable federal (NEPA) and state (CEQA) environmental review processes.

Establish the Physical and Biological Context

Inventory Water-focused Ecosystems and Water Conditions that Support Them – Identify natural features where surface waters exist, including areas where near-surface groundwater conditions support unique habitats. Conduct a thorough inventory of natural water features in the basin, including springs, streams (ephemeral and perennial), areas of high groundwater levels and the ecosystems that depend on these resources. This inventory should include: 1) a characterization of the water-supported habitat and the species that are known to reside in or otherwise depend upon the habitats; and 2) a characterization of the water conditions that support the habitat.

Understand Basin Water Balance – Prepare a comprehensive basin water balance for the relevant flow system using best available information to estimate inflows, outflows, developed use, and relative magnitude of new or planned water development. A basic understanding of the water balance for a given desert valley or watershed is essential to evaluating the reasonableness of each proposed development site. The appropriate flow system boundaries for defining the "basin" of interest must be established for each solar development site, and the rationale for that flow system definition should be developed using the best available information. In some cases, the flow system of relevance may be a single, isolated valley-fill groundwater basin, and in other cases the flow system may include downstream or adjacent valleys that receive, or may receive water, via surface or subsurface flows from the valley where the project is located. Cases of interbasin hydrologic connectivity via permeable bedrock aquifers are well documented in the region, and the possibility of this type of hydrologic connectivity should be explicitly considered. If an evaluation of the water balance defining "sustainable yield" already exists, it should be updated to reflect the most recent precipitation and water use data and new understanding of geology.

Consider Cumulative Impacts of Multiple Projects – Base all water resource evaluations on assumptions that consider the potential cumulative impacts of all current and reasonably likely future development in a basin, including non-energy water uses.

Conduct Groundwater Modeling – Require groundwater modeling to anticipate and avert impacts that would otherwise not be noticed until after it is too late to take corrective action. In many desert settings, the impacts of groundwater pumping may become evident over very long periods of time. In this case, reliance only on monitoring to identify impacts would mean permanent loss of natural communities. Therefore, modeling must be included in each development approval to anticipate the range of responses that may be expected over long periods of time, and to shape water use and monitoring strategies that ensure water resource sustainability in the basin, For each basin in which development is planned, a groundwater model should be built using the best available information, and simulations should be conducted to better understand the long-term (100-year range) response to the different development scenarios.

Resolving Uncertainty – In some instances, key information or parameters needed to understand and model the effects of groundwater pumping may be missing. Until adequate information is available, conservative (reasonable worst case) assumptions should be used to bound water withdrawal and use approvals. In all cases, collection and analysis of additional critical data and information during project life should be required. Where new information predicts significant adverse effects, conditions of water use should be appropriately modified.

Project Design

Minimize Project Water Use – Minimize water use through selection of power production and associated technologies and operational protocols. As an example, use of dry cooling for concentrating solar generation facilities (or photovoltaic generation) should be emphasized and incentivized over wet cooling technologies. In addition, long-term operations protocols that minimize on-going water use for cleaning, dust control, and all other plant uses should be incorporated in solar development plans and permits.

Reduce Third-Party Water Use – Where there is already some level of developed water use in the basin, development permits should require a net reduction in total basin water use, unless a credible analysis demonstrates that additional water development can be accommodated in the basin without any negative environmental or water supply sustainability impacts. Mechanisms for meeting this requirement may include: 1) acquiring existing water rights to supply the facility and retiring or reducing the previous use of the acquired water to accommodate the planned new use or 2) providing for reduction in current use to accommodate the new use without increasing the total water use.

Access Other Renewable Water Sources – Where the infrastructure already exists, renewable water sources from outside of the basin should be considered as a water source for developments. While many desert valleys are isolated and wholly reliant on local water supplies, in some cases water sources from outside the basin, such as Colorado River water, California State Water Project Water, or desalination water may be accessible, and use of these outside resources may provide immediate and long term benefits. In these cases, an evaluation of the relative risks, costs and benefits of these renewable sources, as compared with using limited local water sources should be conducted. Where such an analysis indicates that use of renewable surface water supplies may be favorable and may avoid or reduce impacts from use of resident groundwater water supplies, preference should be given to use of renewable water sources.

Use Optimal Withdrawal Sites – Minimize impacts to natural water features by choosing the best withdrawal locations. In some cases, the specific location at which water is withdrawn from a source, whether surface water or groundwater, may be more or less detrimental to the ecosystems that depend on the water. Development plans should choose least harmful locations of water withdrawals,

including groundwater withdrawals. In cases where new use will replace existing uses, the location of withdrawals should be moved if impacts can be reduced by such a relocation.

Long Term Project Operations

Conduct Appropriate Monitoring and Modeling – Long-term operation of the solar site should include appropriate monitoring of the water conditions, guided by updated modeling. Monitoring should include local and regional groundwater levels and related surface water flows. An approved development plan should include sponsoring or participating in a comprehensive basin monitoring plan that is periodically updated with new information.

Identify Triggers and Develop Contingency Plans – Permits should require clearly articulated triggers that indicate when groundwater pumping is likely to cause an unacceptable drop in water levels or adverse water quality changes, and identify contingency plans and predictable and enforceable mitigation steps if those triggers are reached.

Compensate for Groundwater Impacts – Compensatory actions for groundwater impacts may be required to offset impacts at any point during the life of the project. Acquisition of ecologically valuable land with associated water rights is an available and preferred mode of compensation.