

STATE OF CALIFORNIA

Energy Resources Conservation and Development Commission

In the Matter of:

APPLICATION FOR CERTIFICATION
FOR THE HIDDEN HILLS SOLAR
ELECTRIC GENERATING SYSTEM

DOCKET NO. 11-AFC-02

**INTERVENOR
CENTER FOR BIOLOGICAL DIVERSITY**

Exhibit 500

Testimony of Ileene Anderson

**Re: Impacts to Sensitive Plants and Wildlife from the Proposed Hidden Hills Solar
Electric Generating System**

Docket 11-AFC-02

Summary of Testimony

The proposed project will be detrimental to numerous rare species. In some instances the Final Staff Assessment (FSA) fails to evaluate the impacts to rare species from proposed infrastructure. Elsewhere, the FSA fails to adequately avoid, minimize and mitigate the direct, indirect, and cumulative impacts to these rare species as required under CEQA (and NEPA).

The proposed project in itself as well as in conjunction with other cumulative projects, including the associated transmission line (that while necessary for the proposed project, was not considered in the FSA), will further imperil already rare species driving them closer to extinction and may result in the need for additional species to be safeguarded under Endangered Species Act protection.

Qualifications

My qualifications are provided on my Resume attached to this Testimony and as discussed below.

I have over 23 years of experience in identifying, surveying for and documenting biological resources in southern California, including the Mojave desert.

I have a Master's of Science in Biology and a Bachelor's of Arts in Biology from the California State University, Northridge. I have continuing education in restoration/revegetation/reclamation of native habitats at the University of California, Riverside.

I have directed and participated in numerous field surveys for federal- and state-listed threatened and endangered species, as well as other rare and common species. I have written results in conformance with the California Environmental Quality Act and the National Environmental Policy Act.

I have written, implemented and monitored a variety of restoration and revegetation plans, primarily implemented as mitigation.

I have published articles on these subjects in peer-reviewed scientific journals and presented papers/posters at scientific meetings.

I have provided expert testimony on plant and animal issues at State Water Resources Control Board, California Public Utilities Commission and the California Energy Commission hearings.

I was a two-term federal appointee to the BLM's California Desert Advisory Council representing renewable resources, and served one year as chairperson.

I am currently a staff biologist with the Center for Biological Diversity, where I focus on native natural resource issues primarily in the southern half of California, including desert regions of Inyo County.

Statement

After my review of the biological sections of the FSA and site visits on November 3, 2011 with the CEC and an independent visit to the adjacent public land areas including Stump Springs on July 23, 2012, I agree with Staff that the project as proposed would have significant impacts to the biological resources in the Pahrump Valley, affecting sensitive plant and wildlife species and eliminating a broad expanse of relatively undisturbed Mojave Desert habitat (FSA at 4.2-1). However, my conclusion is that while the FSA identifies many of the on-site resource issues, analyzes the impacts and proposes some mitigation measures, it fails to adequately identify all of the on-site resources, and therefore fails to evaluate the impacts to those resources and propose adequate alternatives to avoid those impacts or minimization or mitigation measures. Typically a project of this size on relatively in-tact desert lands in a remote area adjacent to federally designated wilderness would involve many seasons of surveys to thoroughly document all of the resources that occur on the site. Multiple years of surveys are particularly

important in the desert because of the unpredictable and variable precipitation patterns which drive the biological systems. Failure to conduct adequate surveys prior to construction of the project also effectively eliminates the most important function of surveys - using the information from the surveys to avoid and minimize harm caused by the project and reduce the need for mitigation. Often efforts to mitigate harm are far less effective than preventing the harm in the first place. In addition, without understanding the scope of harm before it occurs, it is difficult to quantify an appropriate amount and type of mitigation for unavoidable impacts.

Overarching Issues

The generalized strategy of mitigation for desert tortoise habitat is proposed to mitigate a multitude of other species – golden eagles, migratory/special status species birds, bats, badger, kit fox, waters of the State and some rare plants. While the Final Staff Assessment (FSA) requires that acquired mitigation lands must be habitat for these impacted species, because that habitat is already inhabited by the same species for which mitigation is sought, this mitigation strategy ensures a *net decrease* in habitat for impacted species¹. To actually provide mitigation that staunches species' habitat losses, I recommend a *minimum* 3:1 mitigation is more appropriate to assure, not only that the project impacts are mitigated appropriately for all habitat types, but that the net losses of habitat for rare species are stopped. This strategy is essential to prevent future listings under Endangered Species Acts – both state and federal.

The FSA proposes a number of conservation plans and strategies that would be relied on to avoid or minimize or mitigate impacts, yet these crucial plans are not provided in the FSA, nor are the specific details to be included in these plans provided in order to evaluate their effectiveness. Therefore it is impossible for me to evaluate or determine the efficacy of proposed avoidance, minimization or mitigation to actually adequately mitigate impacts. It also suggests to me that the FSA is premature and would benefit from having more substantive information in the form of final plans available for decision makers and the public. While I recognize that the regulatory agencies have the responsibility of assuring that mitigation meets all the LORS and conditions, I have not always found that to be the case. Studies of mitigation adequacy have borne this out as well.² Making all of the plans available as part of the public process is important to assure the public that their public resources are being protected – without public disclosure of these plans during the process there is no way for me to evaluate whether the Commission has put in place adequate plans to prevent degradation of our natural heritage, clean air and water. I recommend that the Commission put in place a public process that enables public input on the plethora of “mitigation” plans that are being proposed as conditions of certification for this (and other) proposed projects and only if these plans are made available will it be possible for me to provide additional testimony on their adequacy.

I discuss additional species specific issues below.

¹ Exhibits 501& 502

² Ibid.;

Desert Tortoise

The FSA estimates that six to 33 adult/subadult tortoises, three to 34 juvenile tortoises, and 46 to 158 desert tortoise eggs occur on the proposed project site (at 4.4-2). The project site is located in the Eastern Mojave Recovery Unit of the desert tortoise – a recovery unit that is in decline, having population decreases of 20% between the baseline collected from 2001 to 2005 and 2007³, and continued declines in 2008⁴, 2010⁵ and currently in 2012⁶ to the lowest densities ever recorded – 2.2 tortoise/km². This decline is documented over twenty years *after* the species was placed under California Endangered Species Act protection.

While desert tortoise are found on the proposed project site and the FSA estimates that six to 33 adult/subadult tortoises, three to 34 juvenile tortoises, and 46 to 158 desert tortoise eggs occur on the proposed project site (at 4.4-2), Biological Resources - Figure 5 lacks a clear legend, which confuses me as to what the map actually represents. From reading the text, however, it appears that most of the sign and actual desert tortoises are found on the eastern portion of the site (at 4.4-119), yet no alternative is presented to modify the project boundaries the project to *avoid* most of these animals. Instead of modifying the boundaries to avoid the majority of the state and federally threatened tortoises, the FSA proposes to keep the applicant-proposed boundaries and instead require a desert tortoise relocation/translocation plan (Bio-10). Unfortunately, desert tortoise translocation has a poor survival record. One recent report on desert tortoise relocation/translocations of desert tortoise documents⁷ an unacceptable 44% confirmed mortality of translocated desert tortoise in the first year and a half. Thirty-five additional tortoises (22%) were “missing” – status unknown. Coupled with that, all translocated tortoise had tested negative for deadly diseases prior to being translocated, but post-translocation, 11% tested positive setting up a tragic epidemiological situation for not just the translocated tortoises, but the host population as well.

As part of the Desert Renewable Energy Conservation Plan (DRECP), an Independent Science Advisor committee was convened, and they produced Recommendations for the DRECP⁸. In that document they state “moving organisms from one area to another—for example, out of an impact area into a reserve area—is *not* a successful conservation action and may do more harm than good to conserved populations by spreading diseases, stressing resident animals, increasing mortality, and decreasing reproduction and genetic diversity” and “in all cases must be treated as experiments subject to long-term monitoring and management” (at vi). Furthermore, the Independent Science Advisors also offer a desert tortoise specific recommendation - “As with the Mohave ground squirrel, the advisors do *not* recommend translocation of desert tortoise as

³ Exhibit 503

⁴ Exhibit 504

⁵ Exhibit 505

⁶ Exhibit 506

⁷ Exhibit 507

⁸ Exhibit 508

effective mitigation or conservation action, in part because translocated tortoises suffer high mortality rates” [original emphasis] (at pg. 83). This important recommendation is additionally noteworthy because the two desert tortoise researchers on the ISA were both independent researchers on the Fort Irwin translocation effort, as well as other translocations. Their recommendation strongly suggests that translocation may do more harm than good. Therefore, I recommend that an alternative be considered that would avoid the need to translocate tortoises. The project should be re-sited and boundaries moved to avoid all or the majority of the desert tortoise in the area.

Re-siting and moving the boundaries of the project to avoid the desert tortoises on the eastern part of the project would also solve the conundrum of keeping “California” tortoises in California (versus having to translocate “California” tortoises into the best nearby tortoise habitat, which happens to be on BLM land in Nevada and not in Wilderness [see discussion below on conserved lands] as proposed in the FSA (at 4.4-119)

Despite my concerns about desert tortoise translocation as a practice, if translocation does occur the FSA does not provide adequate guidance or the actual translocation plan, so it is impossible for me to evaluate the proposed action and its consequences.. The FSA states that the translocation plan “shall utilize the most recent USFWS guidance on translocation that includes required siting criteria” (at 4.4-240), but it does not provide a reference as to what the USFWS’ most recent guidance is. In addition, not even a draft of the desert tortoise translocation plan is available for review, again, making it impossible to evaluate the impacts

Another concerning issue is the stated requirement in Bio-10 “Disease prevalence within the resident desert tortoise population is less than 20 percent” (at 4.4-240). While it is important to address the underlying disease prevalence in any tortoise population, it is unclear why 20% disease prevalence is chosen as optimum for host population. It makes no sense to me to translocate animals into a diseased population and putting animals in harm’s way. With the absence of a translocation plan, it is unclear if all tortoises will be translocated or if only disease-free tortoises will be translocated, where they will be translocated, what the status of the host population is, etc. The lack of a detailed translocation plan confuses me as to the proposed disposition of the on-site tortoises and the potential effect on the larger desert tortoise population in the area.

While the FSA indicates that the translocated tortoises will be moved onto lands that “will be managed for conservation so that potential threats from future impacts are precluded” (at 4.4-241), the FSA goes onto identify land use designation in the project region including Desert Wildlife Management Areas (DWMAs), designated critical habitat units (CHUs), areas of critical environmental concern (ACECs), as well as National Park Service lands, and BLM Wilderness Areas. While I agree that National Park Service lands and BLM Wilderness Areas do meet the criteria stated in the FSA to preclude future impacts, DWMAs and ACECs are land use plan designations that can be and have been changed through plan amendments, affording no long-term assurances of conservation. While critical habitat designations are U.S. Fish and Wildlife service designations, management of these types of land is dependent on the land management

agency. Indeed recent desert tortoise density data in the western Mojave indicate that BLM-managed critical habitat had statistically-significant lower densities of desert tortoise than either the adjacent the Desert Tortoise Research Natural Area (DTRNA), which is an assemblage of public and private lands managed for desert tortoise, or private lands⁹. If tortoises are not avoided by the project and must be translocated, I recommend they are moved into areas that are conserved in perpetuity to eliminate the chance that the translocated desert tortoises would be moved again in the future.

Because a translocation plan has not been provided, there is no way for me to comment on it. However, Bio-10 does not require long-term monitoring of relocated desert tortoise which is the only way to actually evaluate success of the translocation and is also recommended by the ISA. Because of the poor track record of successful relocation/translocation of desert tortoise¹⁰, long-term post-relocation monitoring is essential to fully evaluate the success of any relocation effort. Long-term monitoring and reporting should be for the life of the project at a minimum.

I fail to see justification for the requirement of only a 1:1 mitigation ratio for shadscale scrub habitat. Desert tortoise sign was found in this habitat type according to the FSA (at 4.4-119). The USGS model for desert tortoise identifies this area as 0.7 or higher habitat for desert tortoise¹¹. Currently in 3 of the 6 DRECP alternative scenarios¹², this proposed project site is considered for conservation, not development. Additionally, shadscale scrub, while not uncommon (G5S4), is a much less common plant community than Mojave Desert Scrub¹³, which is actually not a recognized plant community, but based on a the creosote dominance is a G5S5 community. Based on the value of the project site as a whole and the shadscale scrub community in particular with desert tortoise sign found onsite, at minimum a 3:1 mitigation ratio is scientifically justifiable and should be applied to the whole site, not just the “Mojave Desert Scrub” plant community.

The FSA generally fails to require that mitigation lands be in the Eastern Mojave recovery unit. In my opinion, lack of such a requirement undermines the efficacy of the proposed mitigation and fails to fully mitigate the impacts to the unique genetic type of desert tortoise found in the eastern Mojave recovery unit. CEC mitigation requirements of desert tortoise acquisition lands for the Ivanpah Solar Electric Generating System (ISEGS), which is located in the Northeastern Mojave Recovery Unit, required a 2:1 mitigation ratio in addition to the 1:1 required by the BLM for a total of 3:1. After two time extensions from the original deadline for acquisition, lands in the West Mojave Recovery Unit were acquired¹⁴. While I support acquisition of lands for conservation in general, this “mitigation” did nothing to offset impacts to the Northeastern Recovery Unit that was being impacted and the CEC should clearly require the habitat to be in the

⁹ Exhibit 509

¹⁰ Exhibit 507

¹¹ Exhibit 510

¹² Exhibit 511

¹³ Exhibit 512

¹⁴ Exhibit 513

proper recovery unit and not repeat its earlier mistake. The FSA also fails to evaluate if there is adequate desert tortoise habitat to be acquired in the Eastern Mojave Recovery Unit as mitigation. If inadequate mitigation is available in the same recovery unit as where the impact is occurring, then an alternative site should be considered as avoidance and minimization should be the only options.

Recent science indicates that canid (coyote) predation affects both resident, control and translocated desert tortoises¹⁵. While the minimization measures that are proposed for reducing some predators on the proposed project site and reconfigured alternatives, the new and best available science needs to be incorporated into the Conditions of Certification for this (and other projects). Ravens, another human subsidized predator in the desert, have also been identified as predators on desert tortoises. The Conditions of Certification require that payment be made to support the USFWS Regional Raven Management Program (Bio 13(2)). The CEC or CDFW should set up and implement a similar program to address the regional canid (coyote and feral dog) management in support of reducing predation of desert tortoises (and other rare animals) and that payment in support of that program also be required as a Condition of Certification.

Birds/Bats/Eagles

I concur with the FSA's determination that "significant residual impacts to avian species would remain even after the implementation of the proposed conditions of certification" (at 4.2-4). The significance of the impact indicates that this technology is inappropriate for this proposed project site and I recommend that the project be denied based on the unavoidable and unmitigable impacts to avian species or a PV or distributed PV alternative selected.

I also note that the required Avian, Bat, and Golden Eagle Protection Plans are not available for review, so it is unclear to me if they will adequately avoid and minimize impacts.

Based on the CEC workshops that I have attended and the research on impacts to avian species from similar power tower technologies, I remain convinced that as proposed the project could have significant impacts on avian species including golden eagles. The only peer-reviewed published paper on power tower technology impacts to birds¹⁶ informs us that impacts will occur and although the impact may not be a linear relationship based on the sizes of the projects, the number of birds that could be impacted by the mirrors or the solar flux are significant. The FSA is on the right track to estimating the impacts of the proposed project in my opinion.

The analysis that the Staff has done regarding avian exposure to concentrated solar radiation is based on the best available science, and I agree with Staff's determination based on available data a threshold of safe exposure does not exist above a

¹⁵ Exhibit 514

¹⁶ Exhibit 515

solar flux density of 4 kilowatts per square meter or kW/m² for a one-minute exposure. (FSA Appendix BIO1 at pg.1). Clearly I know that solar flux causes mortality to small birds, and especially aerial foragers, because of the actual surveys at the Solar 1 site¹⁷. While extrapolation from the Solar 1 site of 32 ha to this proposed project's much larger 1,326 ha may not be linear, significant impacts to avian species will likely occur by flying through the radiation flux zone. Impacts have been documented to include mortality caused by heavily singed flight and contour feathers. In addition there remain unanswered questions regarding the effects of solar flux levels on avian eyes and impacts to their vision which is a crucial sense for birds, especially through cumulative exposure.

Additional concerns regarding avian species that are not addressed in the FSA include nearby attractants to migratory birds. The mesquite thickets adjacent to the proposed project site associated with the playa are key refugia for birds traveling through the desert and are a resource that attracts birds to traverse the proposed project site, potentially putting them in harm's way. Similarly nearby Stump Springs and other springs are an attractant for resident and migratory birds that will be put in harms way.

While I do not know of any avian migratory pathway delineations or studies in the specific project area, and no such studies are provided as part of the FSA, the proposed project site is surrounded by Important Bird Areas (IBAs) including the Shoshone-Tecopa IBA west of the Nopah Range in California, the Ash Meadows National Wildlife Refuge (also an IBA) to the north in Nevada, the Spring Mountains IBA to the northeast in Nevada and the East Mojave Peaks to the southeast in California¹⁸. These important areas provide essential resources to migratory birds as they traverse the desert landscape. It is my opinion that the proposed project site lies in direct flight paths between these IBAs.

Burrowing Owl

As the FSA notes, burrowing owls are generally occur at low densities in scattered populations in the Mojave Desert (at 4.2-66). The remaining stronghold for burrowing owls in California – the Imperial Valley – has documented decline of 27% in the past¹⁹, resulting in an even more dire state for burrowing owls in California. Because burrowing owls are in decline throughout California, and now their “stronghold” is documented to be declining severely, it is my opinion that the burrowing owls on this proposed project site (and on other renewable energy projects) become even more important to species conservation efforts. While I support the acquisition of habitat specifically for burrowing owls as identified in the FSA, it is impossible for me to evaluate the impact of the proposed project primarily because as the FSA points out, “the exact number of owls on site was not quantified” (at 4.2-67). I am concerned that the most recent burrowing owl survey protocols²⁰ were not followed (FSA at 4.2-147). I question how adequate mitigation can actually be determined without the proper surveys.

¹⁷ Ibid

¹⁸ Exhibit 516

¹⁹ Exhibit 517

²⁰ Exhibit 518

While I recognize that the current California Fish and Game Code 3503.3 prohibits active relocation of burrowing owls, it does not prohibit monitoring of passively relocated owls to determine the ultimate fate of the burrowing owls. I know of no scientific evidence that passively relocating burrowing owls is a successful strategy for long-term survival of burrowing owls. Therefore I am surprised to find that Bio-17 (burrowing owl mitigation requirements) failed to require long-term monitoring of passively relocated burrowing owls. I strongly recommend that as part of the Burrowing Owl Relocation and Mitigation Plan, which is not available for review, that long-term monitoring for the life of the project at minimum, be implemented for relocated burrowing owls.

It is my opinion that the mitigation acquisition of only 600 acres to offset impacts to on-site burrowing owls is too low, especially in the Mojave desert. Mean burrowing owl foraging territories are 242 hectares in size, although foraging territories for owl in heavily cultivated areas is only 35 hectares²¹. Regardless, the acquisition of only 600 acres (243 hectares) appears to mitigate for only one territory. The FSA indicates that five territories occur on the proposed project site (at 4.2-149). It is my opinion that additional mitigation acreage needs to be required – calculated using the mean foraging territory size times the number of territories, resulting in 1,210 hectares (2,990 acres) of habitat that would need to be acquired. I note that using the average foraging territory size for mitigation calculations may not accurately predict the carrying capacity and may *overestimate* the carrying capacity of the lands selected for mitigation. While the FSA relied on guidance from CDFW from 2012, that guidance still does not fully incorporate current population declines²² and additional research on the species habitat²³. Lastly, because the carrying capacity is tied to habitat quality, I recommend that language be included that mitigation lands that are acquired for burrowing owl that can not be avoided be native habitat on undisturbed lands, not cultivated lands, which are subject to the whims of land use changes. I believe the long-term persistence of burrowing owls lie in their ability to utilize natural landscapes, not human-created ones.

The most recent guidance on burrowing owls, that the FSA purports to use, requires that “Habitat should not be altered or destroyed, and burrowing owls should not be excluded from burrows, until mitigation lands have been legally secured, are managed for the benefit of burrowing owls according to Department-approved management, monitoring and reporting plans, and the endowment or other long-term funding mechanism is in place or security is provided until these measures are completed”.²⁴ (at pg.12), yet this requirement is not part of Bio-17. I believe that the CEC should follow the requirement of the CDFW.

²¹ Exhibit 519

²² Exhibit 517

²³ Exhibit 519

²⁴ Exhibit 518

Desert Kit Fox

The desert kit fox is experiencing unprecedented impacts from development of renewable energy projects in its habitat. To date on public lands alone, eighteen solar and transmission project applications covering more over 96,000 acres are currently filed as of January 2013²⁵. Fifteen approved solar projects, most of which are currently under construction, cover almost 39,000 acres of desert kit fox habitat²⁶. Over 30,000 additional acres of proposed solar projects are actively under going environmental review²⁷. As of January 2013, eleven wind projects covering almost 75,000 acres have been approved with many of them in the construction phase²⁸. Three additional projects covering 16,611 acres are currently under environmental review²⁹. In addition, twenty-eight projects are authorized to do wind testing on almost 270,000 acres³⁰. Another forty wind project applications are in development or propose testing, covering an additional 485,000 acres³¹. The potential cumulative development for wind in desert kit fox habitat could cover close to 850,000 acres. In my review of these projects, very few of them evaluate the impacts to desert kit fox populations or require any mitigation other than “passive relocation”. As the FSA identifies, desert kit fox appear to have great site fidelity, are not easily “passively relocated” and go to great effort to return to their on-site territories (at 4.2-95)

The FSA fails to adequately evaluate the impacts to desert kit foxes from the proposed project. The most recent Bureau of Land Management Final Environmental Impact Statement for a large scale solar project includes a much more comprehensive evaluation of desert kit fox occupancy on the project site and requires significantly greater avoidance, minimization and mitigation measures³² than the FSA. Measures include but are not limited to:

- Baseline desert kit fox census and population health survey, by characterizing the demography (e.g., size, structure, and distribution) of the kit fox population on the site and receiving areas, and a testing component in which researchers trap and test a representative subsample of the population for canine distemper, and generally describe animal health on the site and receiving areas.
- Kit fox management plan that incorporates baseline desert kit fox census and health survey findings into a cohesive management strategy that minimizes disease risk to kit fox populations; provides a program for tagging, radio-tracking and monitoring of a subset of displaced kit foxes during the construction phase to understand how displacement affects regional kit fox populations; specifically identifies preconstruction survey methods for kit foxes (and large carnivores e.g., badgers) in the Project area; describes preconstruction and construction-phase relocation methods from the site, including the possibility for passive and active

²⁵ Exhibit 520

²⁶ Ibid

²⁷ Ibid

²⁸ Exhibit 521 and 522

²⁹ Exhibit 522

³⁰ Exhibit 521

³¹ Ibid

³² Exhibit 523

relocation from the site (and outlines identified CDFW permit and MOU requirements for active relocation); coordinates survey findings prior to and during construction to meet the information needs of wildlife health officials in monitoring the health of kit fox populations; and includes contingency measures that would be performed if canine distemper were documented in the Project area or in potential relocation areas, and measures to address potential kit fox reoccupancy of the site

- Implementation of the desert kit fox management plan that includes preconstruction surveys, avoidance of active den complexes and implementation of measures to monitor, minimize and contain any canine distemper outbreaks.

I recommend that the CEC adopt similar strategies for evaluating desert kit fox occupancy and health, including first avoiding impacting den complexes as much as possible by proper project siting and impact minimization. I believe that an approach similar to that described above will help to minimize impacts to this species.

Special Status Plants

As with so many of the species “mitigations” in the FSA, Bio-20 requires a “Special-status Plant Mitigation Plan”, which is unavailable for review (FSA at 4.2-262) and therefore it is unclear how effective the proposed mitigation will be. Based on the measures proposed in Bio-20, it appears to me that there will be a *net loss of special-status plant species* if the proposed project is permitted. Part of the proposed mitigation is Compensation Lands Acquisition (at 4.2-263) however, it is my understanding that a similar measure to acquire lands with special status plant communities which was required as a Condition for Certification of the ISEGS has yet to be fulfilled over two years after project approval.

Bio-20 also allows for an alternative “mitigation” through Compensation through Restoration of At-Risk Occurrences (FSA at 4.2-265). Again a “Restoration Plan” is required, but is not available for review. Of greater concern however, is the fact that no timeline or duration for such restoration is identified in Bio-20. If the proposed project is implemented, the on-site special-status plant species will be eliminated with little chance of recolonization even over geologic time. Therefore the restoration/protection measures suggested in Bio-20 need to be guaranteed in perpetuity.

Groundwater Dependent Vegetation

I agree that monitoring proposed in Bio-23 to help assure that impacts are minimized to groundwater dependent vegetation. However, no Groundwater Dependent Vegetation Monitoring Plan is available for review and assessing its likelihood of actually protecting groundwater dependent vegetation. While Bio-23 requires peer review of the Groundwater Dependent Vegetation Monitoring Plan, it needs to require that the peer reviewers’ critique be addressed and incorporated into the Plan in order to assure that a robust, scientifically defensible monitoring plan is produced.

Cumulative Impacts to Species and Habitats

The FSA's lack of complete analysis of the cumulative impacts from this proposed project and the many proposed projects across the state line is also of concern to me. There is no natural ecological boundary between the states in this area and many of the impacts of the project will be felt on both sides of the border. For example, if kit fox or burrowing owls are passively relocated they may move into adjacent habitat in Nevada and may again be displaced by the many proposed projects there including the Pahrump Valley Solar Ranch (Exhibit 535). Similarly, impacts of the proposed reductoring of the existing transmission line, a new substation and the construction of a new transmission line down Tecopa Road on golden eagles or other avian species and the potential to attract ravens is not addressed solely because the state line, yet this transmission project is necessary for the Hidden Hills solar project and literally connected to it, is in Nevada. According to BLM (Gregory Helseth, personal communication), a Draft Environmental Impact Statement will be available in April or May 2013. In my opinion, these cumulative impacts to biological resources, water resources and others have not been adequately identified or analyzed in the FSA.

Habitat Loss and Compensatory Mitigation

For many of the rare wildlife species, "Bio-12" is proposed as the mitigation for impacts. "Bio-12" is focused on compensatory mitigation for desert tortoise through the acquisition and conservation of "mitigation" lands (FSA at 4.2-242). While I support mitigation for desert tortoise, modified as I propose above, the mitigation measure needs to require that the mitigation actually benefit the other rare animals for which it is proposed to mitigate – just as it states for the special-status plant species (FSA at 4.2-262)

Bio-25 allows for compensatory mitigation to be achieved by paying an in lieu fee to the Department of Fish and Wildlife pursuant to Fish and Game code sections 2069 and 2099, or the Advanced Mitigation option available through the California Department of Fish and Wildlife's Advanced Mitigation Program established by Senate Bill X8 34 (FSA at 4.2-282). This approach does not assure that the locally impacted resources including desert tortoise, burrowing owls, special status plants, and jurisdictional waters will actually be mitigated. For example, ISEGS eventually chose to opt into the Advanced Mitigation Program and paid into the fund which had acquired lands in the western Mojave desert, hundreds of miles away from the project impacts. Additionally the company filed a petition to amend the conditions of certification because the mitigation lands in the West Mojave could not meet the original condition of certification for mitigating Waters of the State through acquisition in the Ivanpah Valley watershed³³. Because this proposed project would eliminate and severely degrade habitat for species in the eastern portion of Inyo County if approved, I believe it is essential to mitigate the impact in that same general area, preferably adding to already conserved

³³ Exhibit 524

lands. I recommend that Bio-25 be modified to incorporate a local approach to compensatory mitigation.

As stated above, even with rare species occurring on the mitigation lands, the Commission must recognize that the proposed project is *a net loss* of occupied habitat and possibly individuals of these species and require a higher mitigation ratio than is proposed.

Cryptobiotic Soils

Cryptobiotic soils are an essential component in arid ecosystems to prevent desertification and perform a myriad of ecological functions including soil stability, porosity and water retention³⁴. They stabilize soils and prevent erosion, decreasing fugitive dust³⁵. They are easily disturbed and slow to regenerate³⁶. The FSA is lacking an evaluation of location and extent of the cryptobiotic soils on the proposed project site and an analysis of the impacts of the project on these important soils organisms. It is my opinion that the disturbance of these types of soil crusts will greatly increase many factors that will negatively affect nearby ecological functions including increased amount of PM-10 emissions from the proposed project site, alteration in hydrology and water retention among many other aspects. The updated staff assessment must estimate the impact to these essential components of the landscape.

Cryptobiotic soils also uptake CO₂ at significant levels in the Mojave desert³⁷. Because the FSA failed to evaluate the density and distribution of cryptobiotic soils on the proposed project site, it is impossible to calculate the amount of CO₂ uptake that is currently occurring on the site and how the amount of CO₂ reduction from the proposed project will offset that currently intact, functioning carbon sink provided by the on-site cryptobiotic soils.

Fire Threats

If the project is approved, years of construction will ensue in addition to the proposed project using super heated fluids on site. There is significant danger of fires occurring on the site and spreading into the adjacent wildlands. Fire in desert ecosystems is well documented to cause catastrophic landscape scale changes³⁸ and impacts to the local species³⁹. While the FSA mentions the impacts of fire on the landscape in many places, it only identifies Bio-6, -8 and -18 to address issues related to fire. While Bio-6 requires Best Management Practices to prevent fires (at 4.2-229), fire is not mentioned in Bio-8 and is only mentioned in Bio-18 as it pertains to weed and vegetation clearance (at

³⁴ Exhibit 525

³⁵ Exhibit 526

³⁶ Exhibit 527

³⁷ Exhibit 534

³⁸ Exhibit 528, Exhibit 529, Exhibit 530, Exhibit 531, Exhibit 532

³⁹ Exhibit 533

4.2-259). The FSA fails to adequately analyze the impact that a fire could have on the natural lands adjacent to the project site if it escaped from the site or address the need for a fire plan or mitigation of this impact. A fire prevention and protection plan needs to be required to preclude the escape of fire onto the adjacent landscape (avoidance), lay out clear guidelines for protocols if the fire does spread to adjacent wildlands (minimization) and a revegetation plan if fire does occur on adjacent lands originating from the project site (mitigation) or caused by any activities associated with construction or operation of the site even if the fire originates off of the project site.

Conclusions

I would like to summarize my conclusions as follows:

Despite some avoidance, minimization, and mitigation for the identified rare species, the project will still result in a net loss of habitat for many rare and common species. The FSA still fails to evaluate many very important biological issues. Therefore I find the review of impacts and suggested mitigations to be unsatisfactory. Without basic information about the use of the area by a variety of wildlife, plants and cryptobiotic soils it is impossible to assess the extent of the impacts to species populations in this area from the proposed project or reconfigurations.

The documents seem to indicate that the staff believes that most all the potential plant and wildlife impacts can be resolved by simply purchasing land elsewhere suitable for the desert tortoise. While desert tortoise habitat acquisition and protection in other nearby areas is an essential keystone of mitigation for the loss of habitat at the proposed project site, it does not and cannot mitigate for the loss of habitat of other species if their habitat does not occur on the compensation lands and the mitigation ratios proposed are far too low.

I suggest that field studies be initiated on any proposed compensation lands to assure that proper habitat is acquired to help mitigate impacts. Absent any real information in the field, any suggested mitigation or perceived impacts are pure conjecture.

I also suggest that the key plans that are referenced in the FSA as conditions of certification be provided for public review prior to the evidentiary hearings so that their adequacy can be evaluated.

In summary, I find the document to be lacking as it pertains to biological resources. These deficiencies need to be addressed and remedied in a revision to the FSA or other environmental documentation prior to project permitting.

Declaration of Ileene E. Anderson

**Re: Impacts to Sensitive Plants, Plant Communities, Wildlife and Habitat from the
Proposed Hidden Hills Solar Electric Generating System**

DOCKET NUMBER 11-AFC-02

I, Ileene Anderson, declare as follows:

- 1) I am currently a biologist for the Center for Biological Diversity. I have worked with the organization for seven years.
- 2) My relevant professional qualifications and experience are set forth in the attached resume and the attached testimony and are incorporated herein by reference.
- 3) I prepared the testimony attached hereto and incorporated herein by reference, relating to the impacts of the proposed project on wildlife and plants.
- 4) I prepared the testimony attached hereto and incorporated herein by reference relating to the proposed Hidden Hills Solar Electric Generating System in the Pahrump Valley in Inyo County.
- 5) It is my professional opinion that the attached testimony is true and accurate with respect to the issues that is addressed.
- 6) I am personally familiar with the facts and conclusions described within the attached testimony and if called as a witness, I could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: February 4, 2013

Signed: _____



At: Los Angeles, California



Curriculum Vitae For Ileene Anderson



Education

- M.S. with Distinction, Biology, California State University, Northridge, 1992
- B.A. Cum Laude, Biology, California State University, Northridge, 1989
- A.S. with Honors, Electronics, Bakersfield College, 1981

Professional Experience

2005 - present

Biologist and Wildlands Desert Director with the non-profit Center for Biological Diversity. Provide scientific expertise necessary for the conservation of California's internationally recognized unique flora and fauna in a variety of public and private land use arenas. My primary projects focus on central and southern California, including the California deserts, San Joaquin Valley issues, Santa Ana River issues, Santa Clara River issues, southern California forests and numerous projects that occur within their watersheds. I review and provide comments on California Environmental Quality Act and/or National Environmental Policy Act, provide scientific expertise on resource issues including as an expert witness, engage as a stakeholder in HCP/NCCP activities including the Desert Renewable Energy Conservation Plan; do public/media relations (print, radio, & TV). I oversee staff in three states on desert issues and organize staff and volunteers for project implementation on a variety of conservation issues.

1997- 2005

Southern California Regional Botanist for the non-profit California Native Plant Society (CNPS). Provided scientific expertise necessary for the conservation of California's unique vegetation types in a variety of public and private land use plans, including the Four Southern California Forests Updated Land Use Management Plan, the West Mojave Habitat Conservation Plan, the West Riverside Multiple Species Habitat Conservation Plan, the Northern and Eastern Colorado Desert Plan, the Northern and Eastern Mojave Desert Plan, and many other smaller planning efforts. I have commented on hundreds of California Environmental Quality Act and/or National Environmental Policy Act documents, written petitions for plant protection under the federal Endangered Species Act, provided scientific expertise for lawsuit settlement agreements, done public relations in both print and radio, ran CNPS internal consensus building meetings, and organized volunteers for a variety of conservation and fund-raising issues.

1995 - 2005

Consultant on a variety of botanical projects, including rare plant surveys, quantitative and qualitative vegetation community characterization, restoration plans, vegetation monitoring and weed surveys. Project locations comprise a variety of plant communities in southern/central California including riparian, coastal sage scrub, alluvial fan scrub, alkali meadows, chaparral, and a variety of desert scrubs. A full list of projects is available upon request.

1996 - 1999

Part-time instructor at College of the Canyons (community college in Valencia, California). Courses included Introductory Biology for majors (Organismal/Environmental and Cellular/Molecular), Current Topics in Environmental Biology, and Botany. I also developed a course in Economic Botany.

1992 - 1995

Lead Botanist for The Chambers Group (an environmental consulting firm). Projects for which I was responsible included mapping, inventories, and rare plant surveys, which were written in compliance with NEPA and/or CEQA guidelines, including impact analysis and mitigation. This information was typically included in Biological Assessments (BAs), Environmental Assessments (EAs), Environmental Impact Reports (EIRs) or Environmental Impact Statements (EISs). Supervisory duties included coordinating two other botanists. Project management was also part of my duties.

1990 - 1994

Sales Associate at the Theodore Payne Foundation. This part-time job primarily included helping customers select appropriate native plant material for their gardens. Other duties included propagation and transplantation of native plant species.

1990-1992

Herbarium Curatorial Assistant at Rancho Santa Ana Botanic Gardens. Herbarium specimen mounting and curation from international collections was the primary responsibility.

Professional Courses/Seminars

Methods of Habitat Restoration - University of California, Riverside, Winter 1993

Desert Restoration - SERCAL, October 1993

Habitat Restoration Evaluation - University of California, Riverside, Winter 1994

Basic Wetlands Delineation - Wetland Training Institute, Inc. November 1995

Mycorrhizae in Habitat Restoration - University of California, Riverside, Winter 1995

Soils Workshop - Natural Resources Conservation Service, November 1998

Plant Community Characterization and Series Identification- Native Plant Society, June 1999

Statistical Analysis for the Modified Whittaker Plot - Colorado State University, August 2002

Willow Flycatcher and Yellow-billed Cuckoo Workshops and Training, May and June 2012

Professional Affiliations

BLM California Desert Advisory Council - Department of Interior Appointee Representing Renewable Resources (Chairperson 2001) from 1996-2002

California Botanical Society

California Native Plant Society - Conservation Committee; Legal Committee.

Friends of the Santa Clara River - Director at Large

Society for Ecological Restoration - Coastal Sage Scrub Guild Co-coordinator (1995-2001)

Southern California Botanists - Director at Large (1994-2002)

Expert Witness

State Water Resources Control Board – May 2007 – Testified on Santa Ana River plant and animal issues.

California Public Utilities Commission – March 2008 – Testified on plant/revegetation issues for Sunrise Powerlink Project.

California Energy Commission – 2010-11 – Testified on a number of rare plant and animal issues for a number of solar projects.

Publications, Posters and Presentations

2011. The Politics of Listing Species. Presentation at the California Native Plant Society Conservation Conference, San Diego, CA, September 2011.

2011. Renewable Energy in Southern California. Presentation at the Wildlife Society- Western Section Conference, Riverside, CA, February 2011.

2010. Moving forward with the DRECP. Presentation at the Stakeholders meeting of the Desert Renewable Energy Conservation Plan, Ontario, CA, September 2010

2010. Considerations for the DRECP. Presentation at the Science Advisors Meeting for the Desert Renewable Energy Conservation Plan, Ontario, CA, April 2010.

2010. Desert Tortoise – Protection and Recovery. Presentation at the 35th Annual Symposium of the Desert Tortoise Council, Mesquite, NV. February 2010

2009. Center's Efforts to Protect and Recover the Desert Tortoise. Presentation at the 34th Symposium of the Desert Tortoise Council, Las Vegas, NV February 2009.

2009. Global Climate Change and its Effects on Plants and Animals in Southern California. Presentation at the G2 Gallery, Venice, CA. February 2009.

2007. Rethinking Mitigation – Western Riverside MSHCP. Presentation at the California Native Plant Society Conservation Symposium, Sacramento, CA, September 2007.

Dickey, John, Maurice Hall, Mark Madison, Jason Smesrud, Margot Griswold, Quitterie Cotten, Mica Heilmann, Greg Roland, Jim Jordahl, Richard Harasick, Wayne Bamossy, Richard Coles, Lizanne Wheeler, Pat Brown, Kevin Burton, Rick Fornelli, Ileene Anderson, Melissa Riedel-Lehrke, Ron Tiller, and Jim Richards 2005. Managing salt to stabilize the Owens Playa with saltgrass. Presented at the Center for Water Resources, Salinity Conference, Sacramento California.

Rodgers, Jane and Ileene Anderson 2002. A Rare Mint (*Monardella robisonii*) in a Rock-Climbing Mecca. Joshua Tree National Park. April 2002. Pgs 25 + appendices.

Anderson, Ileene, Margot Griswold, Dana Kamada, and Adrian Wolf. 2001. Coyote Canyon Landfill: Native Vegetation Restoration Results in Habitat Creation for a Threatened Species. Poster given at Society for Conservation Biology. July 2001.

Hartman, Steve and Ileene Anderson 1999. California Deserts in Transition: Ecosystem Planning. *Fremontia* 27(2): 13-17.

Anderson, Ileene 1998. Status of Sensitive Plant Populations on Public Grazing Allotments within the California Desert Conservation Area. California Native Plant Society. August 1998 Pgs. 34.