

Memorandum

To: David Harlow, Director, Desert Renewable Energy Conservation Plan (DRECP)

From: Laura Crane, The Nature Conservancy

Date: April 24, 2012

Subject: Comments on the DRECP Draft Baseline Biology Report

Docket No. 09-RENEW EO-01

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We would like to thank you for the opportunity to review and comment on the draft Baseline Biology Report for the Desert Renewable Energy Conservation Plan (DRECP). We have incorporated our specific comments on the report within the attached and referenced word document. Our organization fully supports this critical plan and our comments are intended to strengthen the DRECP.

Capturing the baseline environmental and biological setting within the Plan Area is fundamental to establishing the foundation for conservation planning; a foundation that is vital to creating and maintaining the needed conditions for recovery and persistence of covered and associated natural community resources given accelerating and unpredictable changes in ecosystem dynamics from climate change, land use changes and other impacts. The following comments are our recommendations for improving the draft baseline biology report in a manner to meet the above goal.

Our predominant recommendation is that the introduction of the baseline biology report needs to include a discussion of how the information contained in the report will be used to establish the foundation for conservation planning in the DRECP area. This discussion is omitted in the draft report, and should outline the purposes the report is intended to serve and all uses for which the report may be applied in conservation planning; including reserve design and development focus area delineation. In addition, the linkages between environmental and biological setting, species considered for coverage, landscape issues, key ecological processes, ecological stressors and threats, and proposed actions should be clearly documented, either in the introduction or in some other prominent place within the report.

Thank you for your consideration of our comments. We look forward to continuing to work collaboratively on the Desert Renewable Energy Conservation Plan.

Sincerely,

A handwritten signature in cursive script that reads "Laura Crane". The signature is written in black ink and includes a long horizontal flourish at the end.

Laura Crane
The Nature Conservancy

Attachment

Attachment 1 –

Comments by The Nature Conservancy to the draft DRECP Baseline Biology Report

Section 1 – Introduction

1. As noted in the cover memorandum, the introduction should include a discussion of how the information contained in the report will be used to establish the foundation for conservation planning in the DRECP area.
2. Citations should be provided for all definitions that are based upon a written source. If any of these definitions were created for this report, this should be stated as well.

Section 2 – Environmental Setting

3. Section 2.1.4.4, Mojave River, we believe that there is current, not just historical, perennial flow in the river in the three referenced areas (The Narrows, Camp Cady and Afton Canyon), as well as upstream of Helendale.
4. Section 2.1.4.5, Amargosa River, current thought is that the river is mostly groundwater dependent, and research is ongoing to identify sources.
 - a. The Amargosa River description should also reference the State of the Basin report prepared by the Amargosa Conservancy. This report describes the current location, condition and chemistry of Amargosa springs and the river.
 - b. The description should reference the 22-mile reach of the Amargosa with perennial flow that is designated as a Wild and Scenic River.
 - c. The reference to the 2006 Draft Amargosa ACEC plan should be revised, as the plan is draft and not final. We understand that the plan is currently being revised and will be released jointly with the Amargosa River Comprehensive Wild and Scenic River Management Plan.
5. Section 2.1.4.7, states “There are approximately 240 swamps/marshes mapped in the Plan Area, including features at the southern end of the Amargosa River and around the Salton Sea (Figure 2-3; USGS 2012).” It should be noted that swamps and marshes are common in the central and southern Amargosa drainage in both CA and NV (Ash Meadows and Tecopa-Shoshone-Amargosa Canyon area) and in Death Valley National Park (Saratoga Springs)

6. Section 2.1.4.8, states “Higher concentrations of springs/seeps occur in the Sierra Nevada, Northern Transverse Ranges, along the edges of the San Bernardino National Forest, and in a section of the Mojave National Preserve (Figure 2-3; USGS 20120).” It should also be noted that seeps and springs are common and significant along the Amargosa River and in the Kingston Mountains.
7. Section 2.1.4.10, Groundwater Basin Resources, should also include a reference to the bi-state groundwater basins affecting the Amargosa River, where groundwater pumping in Nevada for agriculture and proposed renewables development affects resources within DRECP Plan Area.

Section 3 – Physiological and Ecological Processes

8. As stated in this section, “Ecological processes that are not specifically addressed in this section include population dynamics, structural complexity, evolution, and ecological succession” (pg. 3-6). This section should include a cursory explanation of how the deserts differ from other ecosystems in relation to each of these topics, as they are fundamental to our understanding of ecosystem function.
9. This section needs a more robust discussion of the desert climate, including explicit discussion of how species have adapted to cope with hot, dry conditions of the desert. This is one of the most important topics for framing a discussion of desert ecology.
10. The section should include a discussion of the differences in climate, vegetation, ecosystem processes and other factors, between the Mojave Desert Ecoregion and the Sonoran Desert Ecoregion. We suggest this be incorporated in section 3.3.2 on ecological gradients.
11. This section should include a discussion of springs and seeps, as these features are a critical component of the hydrology of the desert, and support much of the region’s biodiversity.
12. We recommend that section 3.3 be renamed “Ecological Factors and Processes,” as most of the items included within this section are best described as factors rather than processes.
13. We suggest that this section reference the books, “Ecological communities and processes in the Mojave Desert ecosystem” by Rundel and Gibson, and “The California Deserts” by Pavlik. The latter is cited in the section on fire, but could be used and cited more broadly. Both of these sources cover important information about ecological processes in the desert.

Section 4 – Natural Communities and Biological Setting

14. The organization structure of the vegetation classification system should be made easier to understand. In Table 4-1, there appears to be some overlap in the categorization of natural communities that calls into question the hierarchical structure, and how these communities nest within each other. In particular, “North American Warm Semi-Desert Cliff, Scree, and Other Rock Vegetation” appears as a Macrogroup under both “Dune Community” and “Rocky, Barren, and Unvegetated Community”. Also, there are cases in this table where the Macrogroups are listed, but no acreage is given.
15. We recommend that this section include a discussion of the differences in community types and biological diversity between the Mojave Desert Ecoregion and the Sonoran Desert Ecoregion.

Section 5 – Species Considered for Coverage

16. This section should include a more robust introduction with a brief explanation of how the seventy-seven species proposed for coverage were selected, with particular reference to the biological and ecological factors considered. It should also include summary information about the seventy-seven covered species covered. This summary should include:
 - a. How many species/subspecies are proposed in each of the major groupings [birds, fish, mammals, plants, reptiles/amphibians];
 - b. How many of the seventy-seven species have species distribution models (SDM) created for them, including what cautions readers should exercise when presented with the results of the SDMs; and
 - c. Are there any general weaknesses in the data for the seventy-seven proposed species? If so, identify and clearly state.
17. The species proposed for coverage should include the Amargosa pupfish and the speckled dace; two at-risk sensitive species that are extant in native habitats, and are in areas where solar plant groundwater pumping may well pose a principal threat.
18. Section 3.1, regarding the Amargosa vole, there has been recent trapping and research led by the California Department of Fish and Game and US Geological Survey. This is mentioned in the introduction, but should be included as a reference, as the results have expanded the range of the species, as well as detected disease.

Section 6 – Anthropogenic Land Uses and Influences

19. Section 6.1 would benefit from including estimates of the acreages of land under “urban development”, “rural development” and “agricultural development”, including actively cultivated and formerly cultivated agricultural land.
20. Section 6.4 should capture the baseline of existing energy generating power plants within the Plan Area by generation type (e.g., conventional thermal, solar, wind, geothermal). For example, it would be helpful to have further information about the twenty-two energy power plants constructed within or near the range of Mohave ground squirrel, as identified by USFWS, and noted in the report.
21. Section 6.5 should provide more recent estimates of the number of cattle and sheep on public lands, or acreages of active grazing allotments in the California deserts, as these numbers may have been reduced in the past few decades. The unhealed effects of past grazing activities are an important factor to be considered in conservation planning.
22. Section 6.7 would benefit from the addition of estimates of the acreage of land owned or managed by the military in the Plan area.
23. We recommend that section 6.9 be renamed “Non-Native Invasive and other Pest Species”, as the current heading may imply that invasive species can be native. The definition of invasive species commonly used in state and federal policy and in conservation planning, however, is non-native species that spread in the area under consideration on their own once introduced, and which have harmful effects on the economy, human health, and/or the environment.
 - a. This section should outline the role of certain invasive grasses in promoting and carrying far larger (in terms of area covered) and more frequent wildfires than previously occurred in the Plan area (and in North American deserts generally). Studies by Matt Brooks and others have shown that dense populations of red brome (*Bromus madritensis ssp rubens*), cheat grass (*B. tectorum*), and Mediterranean grass (*Schismus arabicus* and *S. barbatus*) ignite easily, carry fires over large areas, and rebound quickly following fires, often taking over even larger areas. On the other hand, native species, particularly shrubs and cacti are often killed by fire, particularly when the interval between fires is short, on the order of 1-10 years. It has been suggested that dense populations of Saharan mustard (*Brassica tournefortii*) may also play a role in promoting wildfires.
 - b. Other invaders of desert riparian and aquatic areas (springs, seeps, perennial pools) include red swamp crayfish (*Procambarus clarkii*), mosquitofish (*Gambusia*

affinis) and *Arundo donax*. A number of studies suggest that the red swamp crayfish, in particular, has devastating effects on pupfish populations and populations of other native aquatic animals and plants in the Mojave and Sonoran deserts.

- c. The Section should make it clear that *Amsinckia tessellata* is a native species. We are not aware of this species being regarded as a pest in any conservation area within the Plan area.
- d. The Section should also make it clear that while there are several non-native species of *Lepidium* and *Rumex* found in the Plan area, there are also several valued native species of these two genera that can be found there too.

24. This section should also note that non-native fish species in the Salton Sea have become vital sources of food for several important native fish-eating species of birds. This includes at least one species of *Tilapia*, a group considered invasive and problematic in some other conservation areas in the US and elsewhere.

Section 7 – Conservation and Management Factors and Issues

25. We recommend that an additional category should be added to Tables 7.1 and 7.2 to group key ecological pattern or habitat features that are currently lumped into the “Ecological Process” categories. For example, Table 7.2 lists “large, contiguous blocks of dense riparian habitat” (Yellow-billed cuckoo) as a Key Ecological Process Issue. This description speaks to habitat configuration and spatial structure, not an ecological process. This is more than just semantics, as it will help to link conservation strategies with the ultimate cause of habitat degradation or change rather than a derived impact.
26. The section needs a more thorough treatment of climate change related effects and potential synergies with other stressors. Providing some discussion of the changes that have been modeled that have implications for habitat quality or species viability would greatly strengthen this section. Topics such as changes in ecosystem dynamics (fire, invasive species), water availability (as a function of changes in precipitation timing and type), vegetation composition, and wildlife ranges would provide more context and set the stage for determining a triage framework for addressing the highest priority impacts with the greatest opportunity for leverage. As noted in the cover memorandum, the report should include a discussion of how the information presented in Tables 7-1 and 7-2 will be used in conservation planning. For example, will the information be translated into measures and management/conservation strategy priorities to guide implementation? Are

these tables meant to represent a “baseline” and as stressors increase or decrease the list will change?

27. Table 7-2, further synthesis of ecological stressors would be helpful. For example, are there stressors that cross-cut communities and may emerge as priorities to address at the landscape scale?
28. Similarly, Table 7-2 needs an evaluation and discussion of the threats and stressors that may be technically infeasible to abate. For example, invasive plants, such as Saharan mustard (*Brassica tournefortii*) or red brome (*Bromus madritensis ssp rubens*), where the scale of the problem may impede success, should be noted.

Appendix B

29. In reference to Southwestern Willow Flycatcher, there is no mention of occurrence in the Amargosa; despite indications of use by migrants, appropriate habitat and probable breeding pairs along Willow Creek and southern canyon. USFWS recently proposed Willow Creek and Amargosa Canyon as critical SWFL habitat (76 FR 50559).
30. Regarding Amargosa Vole, groundwater pumping from the carbonate aquifer in the Pahrump Valley is correctly cited as a threat, but pumping from the alluvial aquifer is also problematic, and should be noted.