



The SummerTree Institute
Making Environmental Education Irresistible

California Energy Commission

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February 23, 2015

Karen Douglas, Commissioner
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

Charlton H. Bonham, Director
California Dept. of Fish and Game
1416 Ninth Street
Sacramento, CA 95814

James G. Kenna, State Director
California State Office
Bureau of Land Management
2800 Cottage Way, Suite W-1623
Sacramento, CA 95825

Ren Lohofener, Regional Director
Region 8
U.S. Fish and Wildlife Service
2800 Cottage Way
Sacramento, CA 95825

Re: DRECP NEPA/CEQA Comments

Dear Commissioner Douglas, Director Bonham, Director Kenna and Director Lohofener,

The SummerTree Institute appreciates the opportunity to comment on the development of the Desert Renewable Energy Conservation Plan. SummerTree is very supportive of renewable energy production within California that protects its valuable natural resources, especially those identified as sensitive, rare, and unique. Specifically, we are commenting about the unusual and ancient plant resources within the California Desert Conservation Area that Congress has previously designated as either Unusual Plant Assemblages (UPAs), Areas of Critical Environmental Concern (ACECs), or both, and as such are part of the National Landscape Conservation System.

Ancient Desert Plants in the California Desert Conservation Area and the DRECP Planning Area

My background as a botanist on BLM's Desert Planning Staff, assembled to create the CDCA Plan, as well as my tenure as BLM's Desert District Botanist for the CDCA has familiarized me with the ACECs and UPAs across the California Desert, since I worked on the team that originally surveyed and recommended many of them. I was also assisting Dr. Vasek's UCR research team when we gathered data to determine the age of "King Clone", the oldest known clonal ring of creosote in

the Mojave Desert¹. This ancient creosote ring, now within BLM's "Soggy Dry Lake Creosote Rings ACEC" is also included within the "Johnson Valley/Lucerne Valley Creosote Bush (*Larrea*) Clones" Unusual Plant Assemblage (UPA #IV B1 on Map 6 in the CDCA Plan 1980 as amended-1999). "King Clone", and likely many other ancient creosote rings yet to be studied within this area began life when the last glaciers retreated at the end of the Pleistocene nearly 12,000 years ago. While the oldest individuals here have been determined to be close to 10,000 years old, the average age of the entire population of creosote bushes here is most likely well over 600 years.

ACECs and UPAs designated for conservation by Congress, and administered by BLM for conservation, have been included within DFAs

The DFA in Johnson Valley in the Preferred Alternative and several other alternatives includes both the ACEC and UPA which were designed to protect these ancient creosote clones. Here we have a population of ancient relics, still living, that hold within their tissues untold mysteries about individual organisms that have survived thousands of years of climate change and environmental succession...only to be possibly removed and destroyed for a facility whose lifespan may be 20-30 years at best. We would not think of cutting down our oldest sequoias or bristlecone pines to give a permit for a 20 – 30 year structure in those forests, but we hardly think twice about removing desert plants that are over twice as old. Both the ACEC and UPA designated to protect ancient creosote bushes should be removed from the DFA. In actuality, this DFA has so many other sensitive resources, including Joshua Tree Woodlands, desert tortoise habitat, etc., that the entire DFA is not appropriate here.

Other desert plants have been found to live astonishingly long lives. Just to the north, the Fry Mountain Ancient Mojave Yucca (*Yucca schidigera*) Clones UPA was designated to protect a population of Mojave Yuccas, one of which was determined to be about 2,000 years old. This UPA also should not be included within a DFA.

Our position is that no UPAs should be included within a DFA, since the CDCA Plan Goals include a specific requirement to: "Manage unusual plant assemblages (UPAs) so that their continued existence is maintained. In all actions, include consideration of UPAs so that impacts are avoided, mitigated or compensated."

Value of ancient desert plants to wildlife

Each individual ancient desert plant may support hundreds to thousands of generations of wildlife, providing long-term shelter, nesting and roosting sites, and food. The longest-living plants in any environment are the anchors of the community, able to survive extended droughts, excessive heat, deep freezing, herbivory, and disease far better than can younger plants in the same environment. Many of our ancient desert plants germinated hundreds of years ago, when conditions for establishment were much more advantageous to survival. Current climatic conditions do not favor recruitment of young seedlings, especially of plants

¹ Vasek, Frank C. 1980. Creosote bush: long-lived clones in the Mojave Desert. *American Journal of Botany*. 67(2): 246-255.

that normally live hundreds to thousands of years. Removal of ancient established plants now may result in many centuries (or more) of absence of those plants from the landscape, even after a disturbed area is allowed to return to its “previous state”, since projections are that this desert will likely receive even less rain in the future than it has historically. This illustrates the importance of protecting areas with the oldest, most well-established plants, which also have the deepest roots that secure their survival through droughts.

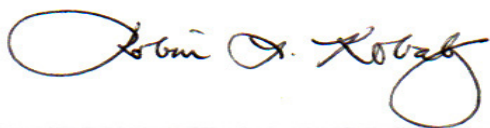
Contribution of ancient desert plants to carbon sequestration

New research, notably by Dr. Michael Allen, et al ², has been uncovering the critical importance of long-lived, deep-rooted plants in our global carbon sequestration evaluations. Ancient desert plants, including important microphyll woodland plants such as ironwood, mesquite, palo verde, cats claw acacia, etc., have life-long underground root partnerships with fungi. This symbiotic relationship with mycorrhizal fungi results in greatly increased nutrient and water uptake, as well as increased immunity to disease for the plant. For this service, the fungal root partner gets a source of food (sugar) which it cannot make itself. The startling side-product is that calcium carbonate crystals form along the network of fungal hyphae, ultimately creating vast underground “pools” of caliche which sequesters CO₂ otherwise released into our atmosphere. Each individual ancient plant in the DRECP Plan Area has already sequestered CO₂ for hundreds to thousands of years, and will continue that service—unless we destroy them to build a facility that was approved to ostensibly create a net reduction of atmospheric CO₂. The longer our ancient desert plants are allowed to survive, the more they will contribute to the long-term sequestration of CO₂ from the atmosphere. Dr. Allen hypothesizes that more CO₂ is sequestered underground in desert soils than that occurring free in our atmosphere (personal communication).

My appeal to the decision-makers of the DRECP is to be mindful during every phase of this plan of the long-term effects of each action on our ancient desert soils, our ancient desert plants, and the wildlife and humans that rely on the slowness of desert processes that have allowed their survival through so many natural extremes and changes. At the very least, DFAs should be phased throughout the life of the plan, so as we learn more about both the desert and renewable energy technology, we have truly taken a “no regrets” approach...one that I wholeheartedly agreed to when I served on this plan’s Independent Science Advisory Panel.

Thank you for considering these issues of great importance to us and to our California Desert.

Sincerely,



Robin Kobaly
Executive Director
The SummerTree Institute

2 Carbon Balance in California Deserts: Impacts of Widespread Solar Power Generation, Center for Conservation Biology, University of California, Riverside, November 2013.