Desert Renewable Energy Conservation Plan
Science Panel
April 22, 2010 Meeting
Ontario, CA

Renewable Energy Action Team Questions

The Renewable Energy Action Team (REAT) made up of the Bureau of Land Management, US Fish and Wildlife Service, California Department of Fish and Game, and California Energy Commission, submits the following questions and concepts that they would like addressed by the Desert Renewable Energy Conservation Plan (DRECP) Science Panel. The questions are divided into four primary concepts: 1) conservation area design, conservation area management, management outside of conservation areas to maintain area integrity; 2) managing uncertainty and risk; 3) monitoring and adaptive management; and, 4) cumulative effects. In addition, we included key concerns for several specific species. Please note that although several species are pulled forward from the proposed covered species list, we are interested in all species on the list.

1. Conservation area design and management:

    a. Assess the proposed covered species list and make recommendations on additions or eliminations to the list based on species life history characteristics; population size, structure, status, and trends; patterns of temporal and spatial variation; and other attributes of the proposed covered species and natural communities in the DRECP proposed plan area.

    b. Discuss how the ecological processes most critical to maintaining viability of species and natural communities and physical features can be effectively accommodated in designing conservation areas in the proposed plan area.

    c. Develop explicit conservation and management goals for the proposed covered species and/or natural communities; identify important ecological thresholds, and propose principles that will guide the conservation and recovery of proposed covered species and natural communities.

    d. Develop explicit goals for physical characteristics (e.g. microclimate variations, hydrology, soils, etc), identify thresholds, and propose management actions that are necessary for self-sustaining ecosystem function.

    e. Develop specific, objective guidelines, accounting for climate change uncertainty and risk, for designing a conservation area system that results in self sustaining ecosystems in the proposed plan area.

    f. Develop recommendations for conservation area design (e.g., core areas, buffers, linkages, wildlife movement areas) that considers the variety of wildlife life histories and habitat requirements, including narrow endemics on the proposed covered species list.

    g. Develop recommendations for a system of conservation areas that fully considers the variety of plant life histories, breeding systems, and pollinator variation (etc.) and the conservation of all plants on the proposed covered species list, including narrow endemics.

    h. Develop a decision support framework for guiding investment of management resources to the highest and best use.

2. Uncertainty and risk:

    a. What effects might climate change have on the plan area physical features, natural communities, ecosystem function, and proposed covered species, and how can these effects be addressed in the DRECP?

    b. Characterize potential for and impact to the proposed covered species, natural communities, and viability of a conservation area system from changing environmental conditions (e.g., large scale fires, floods, drought, non-native species invasions, outbreak of pests or pathogens, reduced air quality, etc.) What events (including parameters for size and scope) should we plan for, what mitigating factors should we consider?

c. What gaps in existing information create the greatest uncertainties for planning, analyzing, managing, and monitoring conservation areas in this plan area?

d. What are the most effective methods for addressing the information gaps identified above given the timeline we have to develop the plan?

e. Identify or develop a risk assessment framework for guiding future decision making.

3. Monitoring and adaptive management:

a. Is existing information sufficient to determine measurable indicators or ranges for monitoring species or ecosystem processes? If not, which of the proposed covered species should be eliminated due to a lack of data that would be difficult to overcome?

b. What management principles or hypotheses are most important to test via an adaptive management program?

c. What monitoring protocols are necessary and sufficient to detect changes in viability of proposed covered species and resiliency of natural communities and conservation areas?

d. Are there good indicators or umbrella species, physical measurements, or other factors that can be monitored, in the DRECP proposed planning area, as proxies for covered species, their habitat, or aspects of ecosystem health?

e. What population genetic issues should be addressed to assess the DRECPs effect on species long term conservation goals?

f. Develop a decision support framework for guiding investment of monitoring resources to the highest and best use.

g. Develop recommendations for monitoring data management and analysis.

4. Cumulative effects:

a. When looking at the relationship of physical features, ecosystem function, habitat, and species impacts to conservation area design and species conservation in the DRECP proposed plan area, is it better to have fewer large project areas with concentrated impacts or many small projects with dispersed impacts? Explain.

b. When looking at the relationship of physical features, ecosystem function, habitat and species impacts to conservation area design and species conservation, would it be better to meet the DRECP goals of species conservation and the Renewable Energy Portfolio Standard by designating areas for use only by specific renewable technologies? Explain.

Species Specific Questions:

Big Horn Sheep (Peninsular and Desert) - What conservation area and corridor design should be employed to address connectivity of herds and protection of calving areas?

Flat-tailed horned lizard and Mohave fringe-toed lizard – What conservation area design should be employed to ensure the long-term viability of the species habitat, including sand transport and population connectivity?

Desert tortoise – What conservation area design should be employed to promote the long-term viability of the species taking into consideration the effects of climate change on the DRECP plan area?

Mohave ground squirrel – What conservation area and connectivity designs need to be employed to ensure the long-term viability for the species given the current state of knowledge on the species?

Golden eagle – What conservation and management measures (conservation area design, etc) should be employed to ensure the long-term viability of the species in the California desert, including nesting and foraging habitat?