

# Appendix C

## Climate Change Supplement





## C CLIMATE CHANGE SUPPLEMENT

Climate change science and the study of the ecological effects of climate change is a vast and rapidly advancing field of study. Section 3.4.2 of this framework provides an overview of the current state of climate change science by describing the ecological effects of climate change and the vulnerability of the species and natural communities to changing climate conditions. A detailed description of climate change projections and tools was provided in Appendix P of the Draft DRECP,<sup>1</sup> and a reproduction the Draft DRECP Appendix P is included in this appendix as supplemental information used in developing this framework.

New information, approaches, and tools for adapting to and managing for climate change will continue to be developed by scientists and agencies, consistent with the direction provided by the President's Climate Action Plan, the National Fish, Wildlife and Plan Adaptation Strategy, the California Adaptation Strategy, and the State Wildlife Action Plan. Biological conservation strategies and land use decisions need to be informed by the best information and data as it becomes available. The DRECP gateway (<http://drecp.databasin.org/>) provides access to the latest climate change data and tools, including data described in this climate change supplement on terrestrial intactness, climate refugia, and climate velocity.

New approaches to predicting species distributions under future climate scenarios are also being developed. The DRECP gateway provides access to the results of recent studies<sup>2,3</sup> that model the potential stable range, lost range, and new range for various species. Integrating this and other modeling into the knowledge base will inform the development of effective climate adaptation and resiliency strategies in the California deserts.

Another recently developed tool for visualizing climate change data is the DRECP Climate Console. The DRECP Climate Console is a web mapping application designed for exploring climate projections and fuzzy logic model results for the DRECP area. Hundreds of climate datasets have been incorporated into the system, as well as several fuzzy logic model results (i.e., Terrestrial Intactness, Site Sensitivity, Climate Exposure, and Potential Climate Impact). This allows the user to examine the future climate predictions and potential for climate change impact within one or more administrative units or ecological boundaries of interest. More information is available on the DRECP gateway.

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<sup>1</sup> CEC, CDFW, BLM, USFWS (California Energy Commission, California Department of Fish and Wildlife, U.S. Bureau of Land Management, and U.S. Fish and Wildlife Service). 2014. *Draft Desert Renewable Energy Conservation Plan (DRECP) and Environmental Impact Report/Environmental Impact Statement*. SCH no. 2011071092; BLM/CA/PL-2014/025+1793; FWS-R8-ES-2014-N165. September 2014.

<sup>2</sup> Davis, F., J. Kreidler, O. Soong, D. Stoms, S. Dashiell, C. Schloss, L. Hannah, W. Wilkinson, J. Dingman. 2013. *Cumulative Biological Impacts Framework for Solar Energy Projects in the California Desert*. Prepared by the University of California, Santa Barbara for the California Energy Commission. Publication number: CEC-500-2015-062.

<sup>3</sup> Chornesky E., D. Ackerly, P. Beier, F. Davis, L. Flint, J. Lawler, P. Moyle, M. Moritz, M. Scoonover, K. Byrd, P. Alvarez, N. Heller, E. Micheli, S. Weiss. 2015. *Adapting California's Ecosystems to a Changing Climate*. *BioScience* 65: 247-262.

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