



DRAFT ENERGY DEVELOPMENT COMPANION PLAN

Fall 2015



Photo Credit:

Left:

San Geronio Pass Wind Farm

Date: 18 March 2006

Photographer: Kit Conn via Wikipedia

Right:

California Condors roosting in trees in Hopper Mountain National Wildlife Refuge, California, USA.

Date: 10 July 2006

Photographer: Pacific Southwest Region U.S. Fish and Wildlife Service via Wiki Commons

Prepared by Blue Earth Consultants, LLC



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Disclaimer:

While we have made every effort to ensure that the information contained in this report accurately reflects SWAP 2015 companion plan development team discussions shared through web-based platforms, e-mails, and phone calls, Blue Earth Consultants, LLC makes no guarantee of the completeness and accuracy of information provided by all project sources. SWAP 2015 and associated companion plans are non-regulatory documents. The information shared is not legally binding nor does it reflect a change in the laws guiding wildlife and ecosystem conservation in the State. In addition, mention of organizations or entities in this report as potential partners does not indicate a willingness and/or commitment on behalf of these organizations or entities to partner, fund, or provide support for implementation of this plan or SWAP 2015.

The consultant team developed companion plans for multiple audiences, both with and without jurisdictional authority for implementing strategies and conservation activities described in SWAP 2015 and associated companion plans. These audiences include, but are not limited to, California Department of Fish and Wildlife leadership team and staff, California Fish and Game Commission, cooperating State, Federal, and local government agencies and organizations, California Tribes and tribal governments, and partners (such as non-governmental organizations, academic, research institutions, and citizen scientists).



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Acronyms and Abbreviations

| | |
|----------------------------|---|
| AB | Assembly Bill |
| AFWA | Association of Fish and Wildlife Agencies |
| AMP | Advanced Mitigation Program |
| ARCCA | Alliance of Regional Climate Collaboratives for Adaptation |
| BLM | U.S. Bureau of Land Management |
| Blue Earth | Blue Earth Consultants, LLC |
| BMP | Best Management Practice |
| CA ISO | California Independent System Operator |
| CAMP | Climate Adaptation and Mitigation Partnership |
| CBC | California Biodiversity Council |
| CCC | California Coastal Commission |
| CDFG | California Department of Fish and Game |
| CDFW/the Department | California Department of Fish and Wildlife |
| CEC | California Energy Commission |
| CEQA | California Environmental Quality Act |
| Ch. | Chapter |
| CNRA | California Natural Resources Agency |
| CPUC | California Public Utilities Commission |
| DOGGR | Division of Oil, Gas & Geothermal Resources |
| DRECP | Desert Renewable Energy Conservation Plan |
| DWR | California Department of Water Resources |
| ESA | Endangered Species Act |
| FCAT | Forest Climate Action Team |
| FERC | Federal Energy Regulatory Commission |
| GGRF | Greenhouse Gas Reduction Fund |
| GHG | Greenhouse Gas |
| HCP | Habitat Conservation Plan |
| HMLA | Habitat Management Land Acquisition |
| IPP | Independent Power Producer |
| ISEGS | Ivanpah Solar Electric Generating System |
| KEA | Key Ecological Attribute |
| LCC | Landscape Conservation Cooperative |
| NCCP | Natural Community Conservation Plan |
| NGO | Non-governmental Organization |
| NPS | National Park Service |
| PG&E | Pacific Gas & Electric Company |
| RAMP | Regional Advance Mitigation Planning |
| RPS | Renewable Portfolio Standard |
| SB | Senate Bill |
| SCE | Southern California Edison |



| | |
|------------------|---|
| SDG&E | San Diego Gas and Electric |
| SGC | Strategic Growth Council |
| SGCN | Species of Greatest Conservation Need |
| SWAP | State Wildlife Action Plan |
| SWG | State and Tribal Wildlife Grants |
| SWRCB | State Water Resources Control Board |
| TNC | The Nature Conservancy |
| US EIA | U.S. Energy Information Administration |
| USFS | U.S. Forest Service |
| USFWS | U.S. Fish & Wildlife Service |
| WCB | Wildlife Conservation Board |

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1. Introduction

The California State Wildlife Action Plan 2015 Update (SWAP 2015) provides a vision and a framework for conserving California’s diverse natural heritage. SWAP 2015 also recognizes the need and calls for developing a collaborative framework to manage ecosystems sustainably across the State in balance with human uses of the natural resources. To address the need for a collaborative framework, California Department of Fish and Wildlife (CDFW), Blue Earth Consultants, LLC (Blue Earth), and partner agencies and organizations began preparation of sector-specific companion plans. While this document reports on the progress made thus far on collaboration, the intent is to set a stage for achieving the State’s conservation priorities through continued partnership and by mutually managing and conserving the State’s natural and cultural resources. Text box 2 highlights important definitions to SWAP 2015 and the companion plan process (CDFW, 2015; Chapter [Ch.] 1.5.4).

Text Box 1. What is a State Wildlife Action Plan?

In 2000, Congress enacted the State and Tribal Wildlife Grants (SWG) program to support state programs that broadly benefit wildlife and habitats, but particularly “Species of Greatest Conservation Need” (SGCN) defined by the individual states. Congress mandated each state and territory to develop a SWAP that outlined a comprehensive wildlife conservation strategy to receive federal funds through the SWG program. From 2005 through 2014, CDFW received approximately \$37 million through SWG program in matched with approximately \$19 million in State government support for the wildlife conservation activities. The SWG program requires SWAP updates at least every 10 years. CDFW prepared and submitted SWAP 2015, the first comprehensive update of the California SWAP 2005, to the U.S. Fish and Wildlife Service (USFWS) on 10/1/2015. The update allows CDFW to expand and improve the recommended conservation activities addressed in the original plan by integrating new knowledge acquired since 2005.¹

¹ For more information see: CDFW, “California State Wildlife Action Plan (SWAP),” 2015, 27 Oct. 2015. <https://www.wildlife.ca.gov/SWAP>.

Text Box 2. Definitions Important to SWAP 2015

Conservation Target: An element of biodiversity at a project site, which can be a species, habitat/ecological system, or ecological process on which a project has chosen to focus.

Goal: A formal statement detailing a desired outcome of a conservation project, such as a desired future status of a target. The scope of a goal is to improve or maintain *key ecological attributes* (defined below).

Key Ecological Attribute (KEA): Aspects of a target’s biology or ecology that, if present, define a healthy target and, if missing or altered, would lead to the outright loss or extreme degradation of the target over time.

Objective: A formal statement detailing a desired outcome of a conservation project, such as reducing the negative impacts of a critical *pressure* (defined below). The scope of an objective is broader than that of a goal because it may address positive impacts not related to ecological entities (such as getting better ecological data or developing conservation plans) that would be important for the project. The set of objectives developed for a conservation project are intended, as a whole, to lead to the achievement of a goal or goals, that is, improvements of key ecological attributes.

Pressure: An anthropogenic (human-induced) or natural driver that could result in changing the ecological conditions of the target. Pressures can be positive or negative depending on intensity, timing, and duration. Negative or positive, the influence of a pressure to the target is likely to be significant.

Species of Greatest Conservation Need (SGCN): All state and federally listed and candidate species, species for which there is a conservation concern, or species identified as being vulnerable to climate change.

Strategy: A group of actions with a common focus that work together to reduce pressures, capitalize on opportunities, or restore natural systems. A set of strategies identified under a project are intended, as a whole, to achieve goals, objectives, and other key results addressed under the project.

Stress: A degraded ecological condition of a target that resulted directly or indirectly from negative impacts of pressures (e.g., habitat fragmentation).

(CDFW, 2015; Ch. 1.5.4)



1.1 SWAP 2015 Statewide Goals

SWAP 2015 has three statewide conservation goals with 12 sub-goals, under which individual regional goals are organized (CDFW, 2015; Ch. 4.1). These statewide goals set the context for the companion plans and SWAP 2015 implementation.

Goal 1 - Abundance and Richness: Maintain and increase ecosystem and native species distributions in California while sustaining and enhancing species abundance and richness.

Goal 2 - Enhance Ecosystem Conditions: Maintain and improve ecological conditions vital for sustaining ecosystems in California.

Goal 3 - Enhance Ecosystem Functions and Processes: Maintain and improve ecosystem functions and processes vital for sustaining ecosystems in California.

1.2 SWAP 2015 Companion Plans

Need for Partnerships

The state of California supports tremendous biodiversity. However, the State also has a large and growing human population and faces many challenges, such as climate change, which affects biodiversity and natural resources in general. To balance growing human activities with conservation needs for sustaining the State’s ecosystems, collaboratively managing and conserving fragile natural resources is a necessity. As many desirable conservation actions identified under SWAP 2015 are beyond CDFW’s jurisdiction, the Department determined that more detailed coordination plans are needed in line with and beyond the recommendations presented in SWAP 2015. Called “companion plans,” these sector-specific plans (Text Box 3) were created collaboratively with partners and will be instrumental in implementing SWAP 2015 (See Appendix D for a list of partners that informed development of this companion plan).

Text Box 3. Companion Plan Sectors:

- ☞ Agriculture
- ☞ Consumptive and Recreational Uses
- ☞ Energy Development
- ☞ Forests and Rangelands
- ☞ Land Use Planning
- ☞ Marine Resources
- ☞ Transportation Planning
- ☞ Tribal Lands
- ☞ Water Management

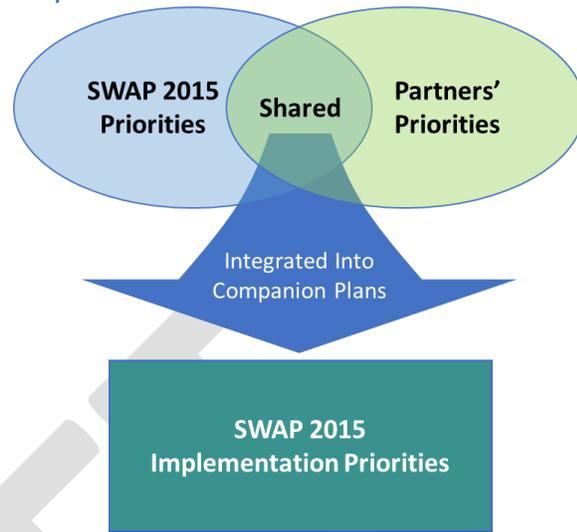
Companion Plan Purpose and Sector Selection

Companion plans present shared priorities identified among SWAP 2015 and partners involved in the companion plan development. Figure 1 illustrates how, through collaboration with partner organizations, priorities for SWAP 2015 have come together in the companion plan and will be elevated as high implementation priorities for SWAP 2015.

The companion plans respond to feedback from many sources, including CDFW staff and partners who support natural resources management and conservation. This includes the California Biodiversity Council (CBC), under which a resolution to promote interagency alignment within the State was signed

in 2013. The companion plans also fulfill the strong suggestion from the Association of Fish & Wildlife Agencies (AFWA) and the National Fish, Wildlife, and Plants Climate Adaptation Strategy¹ to incorporate increased partner engagement as a best practice in wildlife conservation planning. This effort also directly helps CDFW comply with recently added provisions to the Fish and Game Code under Assembly Bill (AB) 2402, specifically under Section 703.5(b), which states that CDFW shall “seek to create, foster, and actively participate in effective partnerships and collaborations with other agencies and stakeholders to achieve shared goals and to better integrate fish and wildlife resource conservation and management with the natural resource management responsibilities of other agencies” (California Fish and Game Code, 2015).

Figure 1: Alignment of SWAP 2015 and Partner Priorities in Companion Plans



CDFW selected sector categories based on the needs for the Department as well as the themes and subjects identified in other existing plans including the California Climate Adaptation Strategy,² 2014 update to the Safeguarding California: Reducing Climate Risk,³ The President’s Climate Action Plan,⁴ and the National Fish, Wildlife, and Plants Climate Adaptation Strategy.⁵

Because each companion plan focused on teamwork during its development phase, they inherently help set a stage for implementing SWAP 2015 through future collaborations. Together, SWAP 2015 and associated companion plans describe the context and strategic direction of integrated planning and management efforts that will help sustain California’s ecosystems.

Companion Plan Development

The SWAP 2015 companion plan **management team** (see Appendix C for a list of members), comprised of CDFW staff with support from Blue Earth staff, provided general direction to the **development team** (see Appendix D for a list of members). Blue Earth facilitated sector-specific discussions among the

¹ For more information, see: USFWS and National Oceanic Atmospheric Administration (NOAA), “National Fish, Wildlife, and Plants Adaptation Strategy,” 2012. Web. 27 Oct. 2015. <http://www.wildlifeadaptationstrategy.gov/>.

² For more information, see: California Natural Resources Agency (CNRA), “Climate Adaptation Strategy,” 2009. Web. 27 Oct. 2015. http://resources.ca.gov/docs/climate/Statewide_Adaptation_Strategy.pdf.

³ For more information, see: CNRA, “Safeguarding California: Reducing Climate Risk – Update,” 2014. Web. 27 Oct. 2015. http://resources.ca.gov/docs/climate/Final_Safeguarding_CA_Plan_July_31_2014.pdf.

⁴ For more information, see: Executive Office of the President, “The President’s Climate Action Plan,” 2013. Web. 27 Oct. 2015. <https://www.whitehouse.gov/sites/default/files/image/president27sclimateactionplan.pdf>.

⁵ For more information, see: USFWS and NOAA, “National Fish, Wildlife, and Plants Adaptation Strategy,” 2012.



CDFW staff and development team members, who represented a cross section of sector interests and mandates. Team members were selected based on their positive response to outreach efforts by CDFW to seek participation and representation from public and private partners heavily involved in the conservation and management of the State’s natural resources.⁶

Beginning in early 2015, a series of four planning and collaboration meetings were held for each sector. The meetings consisted of an initial kickoff session with participation from all sectors followed by three sector-specific meetings. During these meetings, development team participants discussed their ongoing and potential future efforts that would benefit wildlife and habitat conservation in the State. The development teams and CDFW then identified collaboration opportunities and joint priorities or overlaps among SWAP 2015 and partners’ strategies and actions. Blue Earth and CDFW organized the feedback from the facilitated development team discussions into nine companion plan documents. In addition, the management team led a review process between CDFW and development team partners, along with a subsequent public review phase for the nine companion plan documents.

Companion Plan Content

Each companion plan addresses:

- SWAP 2015 priorities - statewide goals and strategies;
- companion plan overview - approach, purpose, development process, and content;
- description of the sector;
- common themes across the sectors;
- common priority pressures and strategies across the sectors;
- SWAP 2015 components that best align with the priorities of the participants’ organizations under each sector;
- collaboration opportunities identified for joint priorities under each sector – alignment opportunity and potential resources by jurisdiction, locality, and strategy;
- considerations for evaluating future collaboration efforts and desired outcomes/outputs; and
- next steps relevant to the sector.

2. Energy Development Sector

2.1 *Energy Development in California*⁷

California is a national leader in advancing successful and sustainable energy efforts. While the State’s major energy sources include oil, gasoline (industry, transportation, offshore), natural gas, nuclear,

⁶ Disclaimer: Although the management team sought to engage a broad range of partners in the development team process, CDFW recognizes that there are many other partners that will play important roles in implementing SWAP 2015 and companion plan.

⁷ This section describes the entire energy development sector, but for purposes of this companion plan, only new renewable energy development and transmission/distribution plan siting was considered by the development team because these were two areas of greatest concern identified in companion plan discussions.



hydroelectric, and geothermal, renewable energy sources such as wind and solar have increasingly become a focus for the State as part of its new energy technology development efforts (California Energy Commission [CEC], 2015a). Increasing renewable energy in the State is an important strategy to reduce carbon emissions, maintain clean and healthy air and water resources, and support future economic growth (CDFW, 2014a). To keep these activities in balance with conservation efforts, CDFW is “committed to effectively responding to climate change and actively supporting renewable energy development” by working with stakeholders to minimize impacts on California’s wildlife and environment (CDFW, 2014a).

In the electricity generation field (electric utilities and independent power producers), California ranked second in the nation in net electricity generation from renewable energy sources other than hydroelectric and first as the highest producer of geothermal energy electricity (United States Energy Information Administration [US EIA], 2014). In addition to other efforts in the energy development sector, California Governor Jerry Brown proposed a plan in early 2015 to enhance California’s solar and wind utility industries by raising the Renewables Portfolio Standard to 50% by 2030 (Governor’s Office of Planning and Research, 2015).

Although environmental stresses can occur from many types of energy development in the State, for the purposes of the 2015 Energy Development Sector companion plan, the CDFW has chosen to focus on the potential impacts of the Governor’s proposal and the expected development of significant numbers of new renewable energy, electric transmission, and electric distribution line projects within the State.

California agencies have a long history of working with utilities and independent power producers to balance the State’s environmental and energy needs. For example, the CEC oversees a natural gas research program that awards grants for energy innovations in production, including developing approaches to mitigating the effects of natural gas production through air treatment devices (CEC, 2015b). In addition, the CEC sets voluntary guidelines to reduce impacts to birds and bats from wind turbines by methods such as developing mitigation measures and impact avoidance through plan designs (CEC, 2007). Furthermore, in 2013 CDFW, CEC, and the Ivanpah Solar Electric Generating System (ISEGS) owners signed an agreement to purchase 7,000 acres of land under the State’s Senate Bill (SB) 34 Advanced Mitigation Program (AMP) to support the ISEGS solar project’s land mitigation requirements and strengthen conservation of desert tortoise habitat (BrightSource, 2013). A subsidiary of NextEra Energy Resources, McCoy Solar LLC, similarly agreed to purchase 2,365 acres of desert tortoise mitigation habitat, 45 acres of burrowing owl mitigation habitat, and 70 acres of State water mitigation habitat through the CDFW’s SB34 AMP.

Developed by a coalition of Federal, State, non-governmental organizations (NGOs), and academic researchers, the Regional Advance Mitigation Planning (RAMP) approach will allow for natural and wildlife resources “to be protected or restored as compensatory mitigation before infrastructure projects are constructed, often years in advance” (California Department of Water Resources [DWR], 2008). Better conservation of natural and wildlife resources, along with cost efficiencies can be expected



if energy developers and permittees can incorporate RAMP into their infrastructure projects' planning processes.

2.2 Current Energy Development Management and Conservation in California

Balancing California's sustainable energy endeavors with the conservation of natural and wildlife resources is an important goal to achieve for the well-being of future generations and the environment. Many State energy agencies, utilities, and energy developers focus on the conservation of California's natural and wildlife resources through planning, land stewardship, and compensatory mitigation actions as part of their ongoing operations or as mitigation for development projects. One goal of the California Public Utilities Commission's (CPUC) *2011 Energy Efficiency Strategic Plan* framework is coordinating regulation and management programs affecting energy, air and water resources, solid waste, and climate change (CPUC, 2011).

Utilities and independent power producers are required to protect and restore the environment to mitigate project impacts from both utility upgrade projects and new infrastructure development. For example, Southern California Edison (SCE) revitalized 150 acres of coastal wetlands, created a fish nursery, and established a refuge for migratory birds and waterfowl as a part of its San Dieguito Wetlands Restoration Project to mitigate the impacts from the San Onofre Nuclear Generating Station. As part of this mitigation, the company also created the Nation's first 174-acre sustainable, artificial reef to facilitate giant kelp growth and provide habitat for coastal fish and invertebrates (SCE, 2015).

Landscape level planning by multiple agencies is another important way to protect natural and wildlife resources while allowing for significant levels of additional energy development, such as compensatory mitigation driven by project permitting. The Desert Renewable Energy Conservation Plan (DRECP), developed by the CDFW, Bureau of Land Management [BLM], CEC, and USFWS, will seek to create renewable energy development areas and simultaneously conserve California's natural and wildlife resources (California Department of Fish and Game [CDFG] et al., 2010). These are just a few examples of efforts in the energy development sector to balance conservation and restoration of California's natural and wildlife resources with societal development needs.

Many other State agencies contribute to balancing the State's natural resource and energy goals through specific projects. The California Natural Resources Agency's (CNRA) mission statement is "to restore, protect and manage the State's natural, historical, and cultural resources for current and future generations using creative approaches and solutions based on science, collaboration, and respect for all the communities and interests involved" (CNRA, 2015). In following through on this mission CNRA, in collaboration with the CEC, works to attain the energy efficiency goals in AB 32, a law requiring a sharp reduction of greenhouse gas (GHG) emissions in California, as well as facilitating access to local, decentralized renewable resources within utility programs (CNRA, 2009).

In 2011, CDFW received funding from the USFWS SWG program to identify and quantify potential conservation conflicts between solar energy development and special-status upland species of the San Joaquin Valley and to generate tools and information that will facilitate efforts to avoid significant



impacts to listed and sensitive species from solar energy projects (CDFW, 2014b). Another SWG project in 2006 supported development of a California bat conservation plan that included drafting wind energy survey guidelines (CDFW, 2014b). The 2005 SWAP recommended that several regions pursue changes in the operations of hydropower projects to increase water flow for aquatic species and ecosystems through the Federal Energy Regulatory Commission (FERC) relicensing process (CDFG, 2005).

CDFW, in partnership with other agencies and sector stakeholders, can work together to protect and conserve the State's current natural and wildlife resources by continuing to provide the guidance necessary to manage energy development while also providing new opportunities for growth in this sector. Through planning and land stewardship efforts that incorporate SWAP 2015 goals, the energy development sector can improve natural resource conservation and simultaneously meet statewide renewable energy production goals. This companion plan seeks to strengthen past efforts by enhancing existing and creating new partnerships in the public and private sectors to achieve SWAP goals and meet the State's renewable energy goals.

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Text Box 4. Collaborative Conservation Effort Examples in the Energy Development Sector

There are numerous collaborative conservation and management efforts found in California. Below we share three examples related to energy development in the State. These examples demonstrate existing conservation efforts that aligned with SWAP 2015. The partners addressed in each description are indicated in **bold**.

- Natural Community Conservation Planning: An early example of conservation collaboration between the energy sector and **State and Federal agencies** is the 1995 **San Diego Gas & Electric (SDG&E) Company** Subregional Natural Community Conservation Plan (NCCP), signed by **USFWS, CDFW, and SDG&E** (CDFW, 2013c). Developed under the NCCP program, which encourages collaboration among partners to promote ecosystem conservation with compatible land uses (CDFW, 2013b), the plan (with consideration of local Habitat Conservation Plan [HCP] objectives) outlines conservation and impact mitigation strategies **SDG&E** will implement for 110 plant and animal species. The plan also requires that **SDG&E** use parcels of land they own in the region to increase habitat connectivity for identified species. **SDG&E, CDFW, and USFWS** developed activities highlighted in the plan cooperatively.
- Pairing Regulatory Compliance and Conservation: The Advanced Mitigation Program (AMP), established in 2010 by SB34, provides a mechanism for coordination between **government agencies (State and Federal)** and **renewable energy developers** for developer mitigation of large-scale renewable energy projects through the purchase of high-value conservation lands. The AMP helps streamline the permitting process for the development of renewable energy projects by creating an in-lieu fee program to streamline compensatory mitigation efforts. The program entails collaboration among **CDFW, CEC, BLM, USFWS, and developers** to conduct advanced mitigation actions, such as the purchase of conservation easements that protect valuable habitat and species. The habitat present on these lands can be then be purchased by **renewable energy developers** to satisfy the mitigation requirements of new energy development projects. The first project authorized under the AMP involved coordination among **CDFW, CEC, and ISEGS** for **ISEGS** to purchase 7,000 acres of land in San Bernardino and Riverside counties as mitigation for a new solar energy project (CDFW, 2013a).
- Energy Development and Conserving Desert Ecosystems: The Desert Renewable Energy Conservation Plan (DRECP) will improve the permitting process for renewable energy projects and enhance protection and conservation of California's desert lands through collaboration among **CEC, CDFW, BLM, USFWS, and renewable energy developers**. The DRECP covers over 22.5 million acres of land in Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego counties. Like the AMP, the DRECP will help **renewable energy developers** implement mitigation efforts contributing to the restoration, preservation, and protection of the State's desert ecosystems and valuable species in these ecosystems. The DRECP will also protect cultural resources, recreation opportunities, and visual landscapes (DRECP, 2015).

3. Common Themes across Nine Sectors

Equally important to discussion topics unique to each sector is the common themes considered across all sectors. This section shares overarching themes identified through the development of the nine companion plans within the scope of SWAP 2015. As described below, the top two most commonly discussed topics were: 1) climate change and 2) integrated regional planning.

3.1 *Climate Change Related Issues*

All sectors highlighted the potential far-reaching effects on California's natural resources induced or exacerbated by climate change as a major issue. The negative impacts to the State's ecosystems described in SWAP 2015 may increase in their magnitude and severity by the compounding effects of climate change (CDFW, 2015; Ch. 2.5.3). The implications of climate change are likely to be profound and influence many facets of the State's natural resources. Therefore, development teams considered collaboration across sectors related to natural resource management and conservation essential to assist ecosystem adaptation effectively and minimize negative effects from the shifting climate.

The suggested collaborative activities under various sector discussions that relate to climate change include a comprehensive assessment of the State's climate change vulnerability and implementation of appropriate adaptation actions (CDFW, 2015; Ch. 2.5.3). Detailed activities addressed during the discussions include, but are not limited to: establishing a sustainable habitat reserve system to reduce other habitat threats and increase habitat resilience to climate change; incorporating climate change impacts (e.g., habitat shifts and sea level rise) into the management of watersheds, habitats, and vulnerable species; improving regulation of greenhouse gas emissions; developing comprehensive research guidelines to evaluate climate change effects; and engaging in education and outreach activities to raise awareness of climate change.

3.2 *Integrated Regional Planning*

California hosts a landscape that is ecologically, socio-economically, and politically intricate. The current status of the State's ecosystems reflects the synergistic interactions among ecological conditions and processes, as well as diverse human activities and conflicting needs and the regulations imposed on those activities.

The concept of integrated regional planning arises from the recognition that addressing only one aspect of such a multi-faceted, dynamic human and natural system would not be sustainable. Integrated regional planning in the context of SWAP 2015, paraphrased from the definition in the California Water Plan, is an approach to prepare for effective management, including conservation activities, while concurrently achieving social, environmental, and economic objectives to deliver multiple benefits across the region and jurisdictional boundaries (DWR, 2014). The expected outcomes of adopting an integrated regional planning approach are to 1) maximize limited resources to provide for increased public well-being, and 2) receive broader support for natural resource conservation beyond the conservation community while systematically improving ecosystem conditions that sustain the ecological integrity of the region.



Integrated regional planning begins with the acceptance of diverse natural resource management priorities associated with the region and the accompanying activities necessary to pursue those interests. Based on this understanding and philosophy, attempts by natural resource management agencies to integrate activities often include negotiations during regional planning processes. Expected efforts under integrated regional planning processes include: planning to reduce conflicts among priorities and activities; minimizing overlapping efforts by aligning similar activities; streamlining and integrating needed processes across the priorities; and collaborating to complement efforts and pursue mutual priorities and interests. As an example, integrated planning could occur by zoning larger planning regions, coordinating multiple needs for the region, and limiting activities within each zone to avoid incompatible activities, or at least reduce unintended negative consequences of isolated but interactive activities. In sum, integrated regional planning requires open-mindedness, transparency, patience, and comprehensive and strategic planning between natural resource management priorities and regional and/or local jurisdictions through coordination.

In developing the companion plans, all sectors considered an integrated regional planning framework as one of the State's top priorities. The needs and tasks related to integrated regional planning and expressed through the discussion among the sector groups were: preparing, approving, and implementing regional- and landscape-level conservation plans; pursuing necessary resources systematically for conservation strategy implementation; coordinating effective partnerships; adapting to emerging issues; and reviewing and revising the plans. Existing efforts recognized for supporting integrated regional planning include NCCPs, HCPs, Habitat Connectivity Planning for Fish and Wildlife,⁸ the Master Plan for Marine Protected Areas, and individual species management plans. SWAP 2015 also addresses those activities and plans.

In addition, SWAP 2015 highlights where partners can potentially integrate SWAP with other agency conservation programs, including the efforts by California Wildlife Conservation Board (WCB), identified and discussed among the companion plan development teams.

4. Commonly Prioritized Pressures and Strategy Categories across Sectors

Below is an overview of pressures and strategy categories considered important across the nine sector teams. SWAP 2015 adopted the Open Standards for the Practice of Conservation⁹ process and applied it to each targeted ecosystem to identify strategies that could influence key ecosystem pressures (CDFW, 2015; Ch. 1.5.4). During development team meetings, CDFW shared lists of those identified pressures and strategy categories that are considered relevant to each sector. Through voting, each development team prioritized the pressures and strategy categories by the importance to the sector. The commonly prioritized pressure and strategy categories described below were identified by synthesizing overarching

⁸ For more information, see: CDFW, "Habitat Connectivity Planning for Fish and Wildlife," 2015. Web. 27 Oct. 2015. www.wildlife.ca.gov/Conservation/Planning/Connectivity.

⁹ For more information on the Open Standards for the Practice of Conservation, see: Conservation Measure Partnership, "The Open Standards," 2015. Web. 28 Oct. 2015. <http://www.conservationmeasures.org/>.



discussion themes (for pressures) and by counting the frequency of the prioritization (for strategy categories) across the sectors.

4.1 Pressures Identified across Sectors

A pressure, as defined in SWAP 2015, is “an anthropogenic (human-induced) or natural driver that could result in impacts to the target (i.e., ecosystem) by changing the ecological conditions” (CDFW, 2015; Ch. 1.5.4, 26). Pressures can have either positive or negative effects depending on their intensity, timing, and duration, but they are all recognized to have strong influences on the well-being of ecosystems (CDFW, 2015; Ch. 1.5.4). Table 1 lists the 29 standard pressures addressed under SWAP 2015 (CDFW, 2015; Ch. 1.5.4).

Table 1. SWAP 2015 Pressures

| | |
|--|--|
| <ul style="list-style-type: none"> • Agricultural and forestry effluents • Air-borne pollutants • Annual and perennial non-timber crops • Catastrophic geological events • Climate change • Commercial and industrial areas² • Dams and water management/use • Fire and fire suppression • Fishing and harvesting aquatic resources • Garbage and solid waste • Household sewage and urban waste water^{3,4} • Housing and urban areas² • Industrial and military effluents^{4,5} • Introduced genetic material • Invasive plants/animals | <ul style="list-style-type: none"> • Livestock, farming, and ranching • Logging and wood harvesting • Marine and freshwater aquaculture • Military activities • Mining and quarrying • Other ecosystem modifications⁶ • Parasites/pathogens/diseases • Recreational activities • Renewable energy • Roads and railroads • Shipping lanes⁷ • Tourism and recreation areas • Utility and service lines • Wood and pulp plantations |
| <p>Pressures include the following:</p> <ul style="list-style-type: none"> ¹ Volcano eruption, earthquake, tsunami, avalanche, landslide, and subsidence ² Shoreline development ³ Urban runoff (e.g., landscape watering) ⁴ Point discharges ⁵ Hazardous spills ⁶ Modification of mouth/channels; ocean/estuary water diversion/control; and artificial structures ⁷ Ballast water | |

(CDFW, 2015; Ch. 1.5.4)

As described under Section 3.1, the climate change pressure was one of the common themes discussed across the sectors. There were no other standardized pressures listed under Table 1 that were commonly prioritized across all sectors. For more information on pressures prioritized for the energy development sector, please refer to Section 5.1 below.



4.2 Strategy Categories across Sectors

SWAP 2015 outlines 11 categories of statewide conservation strategies under which regional strategies are organized, similar to the manner in which the regional goals are tiered under the statewide conservation goals (CDFW, 2015; Ch. 4.2). The statewide and regional strategies are meant to work synergistically to achieve the statewide goals and priorities. Table 2 lists the 11 standardized statewide strategy categories addressed under SWAP 2015 (CDFW, 2015; Ch. 4.2).

Table 2. SWAP 2015 Conservation Strategy Categories

| | |
|---|-------------------------------------|
| • Data Collection and Analysis | • Law and Policy |
| • Direct Management | • Management Planning |
| • Economic Incentives | • Partner Engagement |
| • Environmental Review | • Outreach and Education |
| • Land Acquisition, Easement, and Lease | • Training and Technical Assistance |
| • Land Use Planning | |

(CDFW, 2015; Ch. 4.2)

Of these 11 strategies, the three most commonly prioritized strategy categories across the nine sectors were: **Data Collection and Analysis** (78% or 7 sectors prioritized this strategy), **Management Planning** (78% or 7 sectors), and **Partner Engagement** (56% or 5 sectors). The strategy categories identified as most relevant to the energy development sector are described in Section 5.2 below.

5. Energy Development Priority Pressures and Strategy Categories

The energy development sector faces many challenges regarding the increasing need for energy and utility transmission infrastructure development to consider the number and geographic distribution of existing and future renewable energy production facilities. Pressures such as renewable energy and utility line development could have a significant effect on the natural resources identified in SWAP 2015 (CDFW, 2015; Ch. 2.5.2). Likewise, stresses related to each of these infrastructure pressures, such as the permanent or temporary loss of habitat and changes in water levels or changes in vegetation community structure or composition, can drive the need for conservation activities within this sector. Activities and strategies to address these pressures and stresses may include land conservation as part of compensatory mitigation requirements, renewable energy development location and siting strategies, and establishing collaborative partnerships between project proponents, agencies, and conservation entities. Although key challenges exist, each can be seen as future opportunities and recommendations to support, improve, and enhance the implementation of SWAP 2015.

During companion plan development meetings held in early 2015, the top pressures and strategies (described below in Section 5.1) were prioritized through ranking and voting by the development teams. The list drew upon efforts undertaken between 2013 and 2014 to identify province- and state-scale pressures and strategies for SWAP 2015 (CDFW, 2015; Ch. 1.5). Through a facilitated discussion, the development team discussed pressures and prioritized the strategy categories based on member



knowledge and involvement in the sector, as well as suggesting specific strategies within each category. Below is a list of the top pressures and prioritized strategy categories based on this discussion.

5.1 Priority Pressures

Renewable energy – Energy generation projects, transmission infrastructure, and ongoing operations and maintenance (e.g., upgrades, repairs, and vehicle traffic) can result in wildlife habitat loss and degradation, as well as direct mortality of animals and plants. In addition, renewable energy development can result in indirect impacts to wildlife resources (e.g., noise from operations, increased predation) from the introduction of non-native or invasive species and alteration of predator resources (e.g., perching sites). Example pressures from the energy development sector include exploring, developing, and producing renewable energy from new projects such as geothermal power plants, solar farms, wind farms, and wave/tidal farms.

Utility and service lines – Existing and new utility transmission and distribution infrastructure (e.g., electric) and the ongoing operations and maintenance of such facilities, can result in impacts to wildlife movement, fragmented habitats, and may cause direct mortality of animals and plants.

5.2 Priority Strategy Categories

Highlighted below are the top three strategy categories the development team prioritized in alphabetical order: **Land Acquisition and Easement**,¹⁰ **Management Plan Development**, and **Partner Engagement**. A more comprehensive table of the team’s discussion is included in Section 6. *Collaboration Opportunities and Potential Resources by Strategy Category* (Table 3). The strategy category definitions described below include information from SWAP 2015 with additional insights gathered during the sector development team meetings (CDFW, 2015; Ch. 4.2). The example strategies and conservation activities were prioritized by development team members early in the companion plan process.

Land Acquisition and Easement – Land acquisition and easement are types of transactions and agreements that help set aside or obtain land or water rights, which support conservation of the land, water, or habitat that species depend upon.

- An example strategy is conserving and protecting lands through acquisition and easement efforts as either an independent program or as mitigation for project specific impacts.
- Conservation activities include: identifying priority lands/water with high conservation value or in critical locations; coordinating activities between resource agencies and project developers to identify and approve mitigation lands which would satisfy permit requirements; facilitating associated processes; and either purchasing the lands and then placing a conservation easement on the secured lands or securing a conservation easement to protect lands or waters.

¹⁰ During energy development sector discussions, the term “lease” was removed from this strategy category.



Management Plan Development¹¹— Management plan development for long-term management and conservation of acquired conservation lands should lead to the implementation of effective conservation strategies. In the case of the energy development sector, the team included energy development plans and associated planning activities (e.g., landscape level land use planning, energy infrastructure siting processes, and energy procurement plans and processes) as part of this strategy category.

- Example strategies include: identifying clear and consistent processes for proactively conserving lands; improving the Habitat Management Land Acquisition (HMLA) process to expedite approval of mitigation lands; creating consistent mitigation policies for lead agencies that impose compensatory mitigation requirements on applicants as required by the California Environmental Quality Act (CEQA) process; and improving conservation management in the energy sector through programs aimed at streamlining the mitigation acquisition process where RAMP is considered in other areas of the State and driven by the priorities of the Department in cooperation with the energy sector and other stakeholders.
- Conservation activities include: working with energy regulators (e.g., CPUC, CEC, California Independent System Operator [CA ISO]) to incorporate sensitive habitat information into the decision-making process for siting or procurement of new energy assets at the statewide and regional programmatic level; conducting additional landscape level land use planning efforts similar to DRECP in other locations; developing key species/habitat management plans; securing agreement among agencies and stakeholders to monitor the plan's implementation effectiveness; using resource plans to encourage more effective conservation outcomes; and developing agreed upon (by resource agencies, conservation groups, and project proponents) resource management guidelines for sensitive species and habitats that can be implemented by any entity.

Partner Engagement – Partner engagement is the process for developing collaboration among State and Federal agencies, Tribes and tribal communities, non-governmental organizations, private landowners, and other partners to achieve shared conservation objectives and enhance coordination across jurisdictions and areas of interest.

- Example strategies include establishing and developing co-management partnerships or working with energy regulators to incorporate CDFW goals into energy infrastructure siting and procurement decisions and/or procedures at the programmatic level.
- Examples of conservation activities include: identifying natural resource managers and stakeholder organizations for partnering opportunities to meet overarching conservation or mitigation objectives; creating efficiencies in permitting and compensatory mitigation processes;

¹¹ The strategy category Management Planning is used differently here than in SWAP 2015 to encompass the more specific conservation processes (e.g., Management Plan Development) within the energy development sector. More specifically, the Habitat Management Land Acquisition (HMLA) process, as well as California Environmental Quality Act (CEQA), are the primary tools by which conservation is facilitated in the energy development sector (e.g., through compensatory mitigation).



minimizing contradictory or duplicative requirements; and encouraging more effective and proactive conservation actions.

Text Box 5. Identified Pressures and Strategies for Future Consideration

SWAP 2015 describes the 29 major pressures (Table 1) on the State’s ecosystems (CDFW, 2015; Ch. 2.5.2). The list below provides additional pressures and strategies the development team identified as important for this sector that should be considered during future SWAP updates. These pressures and strategies were not highlighted as top priorities for the energy development sector under the main SWAP 2015.¹

Pressures

- Drought (hydro-energy related and increased energy demand to move water from one location to another)
- Energy development
 - Conversion of agricultural land from agriculture to renewable energy
 - Conversion of previously undisturbed wildlife habitat to renewable energy or creating obstacles or barriers to movement between native habitats
 - Non-renewable energy development – pipeline, well, oil, and gas development, including fracking, off-shore drilling, and other new technologies that allow new oil and gas development
- Importation of energy resources from other parts of the country as energy procurement issues (varies by utility and based on demand and policy requirements)
- Institutional issues
- Maintenance activities
- Population growth

Strategies

- Develop integrated regional planning (See Section 3.2 for more detail)
- Implement low impact development and improve efficient use of existing resources (e.g., using existing building or transmission infrastructure)

¹ Note: Some additional pressures identified by development teams may already be addressed in SWAP 2015.

6. Collaboration Opportunities for Joint Priorities

This section describes the potential alignment opportunities for SWAP 2015 with existing plans and strategies from other sector agencies and organizations that development team members have identified. Section 6.1 introduces the four categories that are used to organize such opportunities; they are based on jurisdiction and locality of plans and strategies. Following Section 6.1, collaboration opportunities and resources identified by each strategy category are shared in Table 3, *Collaboration Opportunities and Potential Resources by Strategy Category*. For a more extensive list of plans,



strategies, and documents identified through the companion plan development process, please see Appendix B.¹² SWAP 2015 integration with other partners' programs is an integral part of balancing the needs of wildlife with the needs of society and is explored in SWAP 2015 (CDFW, 2015; Ch. 7.1.2).

6.1 Alignment Opportunities by Jurisdiction and Locality

The section below describes four categories of locality and jurisdiction broadly where potential alignment opportunities typically fit: Federal, State, Regional and Multi-partner, and Non-governmental. These categories are based on jurisdiction and locality of the management and conservation efforts. Example opportunities for each category are also provided here.

Federal

Plans identified in this category typically draw upon national guidance reflecting the goals and strategies of Federal agencies and organizations. For example, the United States Forest Service (USFS) has several types of conservation and management plans, such as the *Cleveland National Forest (CA) Land Management Plan* and the *2012 Planning Rule Directives*. The USFWS and BLM have several types of plans that help guide actions in the State, including USFWS' *Regional Species Recovery Plans* and BLM's *Resource Management Plans for California's Public Lands*, as well as site specific management plans for *Areas of Critical Environmental Concern*. In addition, the Department of Defense's *Integrated Natural Resource Management Plans* provide for the collaborative management of natural resources on military lands and waters. Although these plans guide Federal agency actions, they also play a key role in how these agencies engage in collaboration with states and other partners.

State

Plans identified in this category reflect numerous State agency priorities, strategies, and conservation actions of California. These plans and strategies guide decision-making, resources allocation, and implementation priorities of the State agencies. Examples of key statewide plans and strategies include, but are not limited to, CDFW's *SWAP 2015*, a joint strategy developed by the CDFW, CEC, and BLM/USFWS (Federal agencies) called the *Planning Agreement for the Desert Renewable Energy Conservation Plan*, and the Sierra Nevada Conservancy's *Climate Action Plan of the Sierra Nevada: A Regional Approach to Address Climate Change*.

Regional and Multi-partner

Numerous regional and multi-partner plans help guide conservation efforts across the State. These plans and strategies, like those at the Federal level, describe strategies and activities that align with this companion plan and SWAP 2015. At a regional level, NCCPs, HCPs, and county general plans can be used to inform a wide array of conservation planning efforts. Many of the large-scale, multispecies HCP's and NCCPs are habitat-based plans that encourage future development to occur in already developed areas, while setting up a system of large contiguous protected lands based on a comprehensive landscape-level

¹² This is not an exhaustive list of sector plans and strategies in alignment with SWAP 2015 goals.



conservation strategy designed for the planning area. Planning at this scale provides regional protection for plants, animals, and their habitats, while allowing compatible and appropriate economic activity (e.g., *East Contra Costa County NCCP/HCP*). Sustainable community plans, such as those funded through the California Strategic Growth Council (SGC), often include regional and local plans and policies that benefit natural resources in ways consistent with conservation goals outlined in SWAP 2015. Examples of such policies include restricting urban boundaries adjacent to key areas, zoning such areas as open space, or identifying key habitat areas characterizing the natural community for management or restoration as natural areas (SGC, 2014).

Non-governmental

Like the plans described above, private landowners/companies and NGOs also play a key role in wildlife conservation and, they have plans that describe their desired conservation outcomes and management priorities compatible with those of SWAP 2015. Examples include, but are not limited to, San Diego Gas & Electric's *Sunrise Powerlink Project*, *Subregional NCCP*, and *Low-Effect HCP for the Federally Endangered Quino Checkerspot Butterfly* and Southern Sierra Partnership's *Framework for Cooperative Conservation and Climate Adaptation for the Southern Sierra Nevada and Tehachapi Mountains*.

6.2 Collaboration Opportunities and Potential Resources by Strategy Category¹³

For each prioritized strategy category described in Section 5 above, Table 3 below shares example conservation activities that are, will, or might be implemented in the next 5-10 years. These conservation activities are listed adjacent to example potential partners and financial resources that development team members identified. Although the table below shares examples of potential activities where partnerships could occur at different spatial scales (statewide, regional, and local/site-specific), other activities addressing priority strategies should be considered as this is not a comprehensive list.¹⁴ Similarly, while the identified example conservation activities could apply across many spatial scales and jurisdictions, the current table highlights the most relevant scale of implementation. As described earlier in this document, Table 3 does not indicate a willingness and/or commitment on behalf of these organizations or entities to partner, fund, or provide support for the strategy implementation.

¹³ Disclaimer: Please note this is not an exhaustive list of potential partners and financial resources. The organizations listed in Table 3 were identified through this companion plan process, but their identification here does not indicate agreement to partner and/or provide financial resources for the conservation activities.

¹⁴ **Statewide** indicates actions occurring across the state. **Regional** indicates efforts that occur at a smaller than statewide scale and across more than one locality or site. **Local/Site-specific** indicates activities occurring at a specific location (e.g., city or park unit) or site (e.g., Morro Bay Estuary or Mojave Desert).

Table 3. Collaboration Opportunities and Potential Resources by Strategy Category

| Example Conservation Activities | Example Potential Partners | Example Potential Financial Resources |
|---|---|---|
| Priority Strategy: Land Acquisition and Easement | | |
| <p>Regional</p> <ul style="list-style-type: none"> Utilize project permit mitigation and regional habitat conservation plans <p>Local/Site-specific</p> <ul style="list-style-type: none"> Collect data (e.g., energy project impacts, mitigation strategies) Conduct large-scale renewable energy infrastructure siting and permitting mitigation analyses to set aside land that will not be developed Conduct more open-ended conservation in energy bond terms (e.g., permitting, mitigation impacts) Connect rural and urban communities to coordinate downstream needs and planning (e.g., climate action planning, fire risk, water supply, crop production) Coordinate identification of mitigation lands and select sites that better meet conservation goals Identify strategic renewable energy mitigation projects Keep track of available mitigation acreage and proactively increase acreage when it runs low Prioritize new energy infrastructure development to maintain agriculture and open space lands Write mitigation measures for large-scale renewable energy line development | <p>Federal</p> <ul style="list-style-type: none"> BLM Department of Defense National Park Service (NPS) USFS <p>State</p> <ul style="list-style-type: none"> CDFW State Water Resources Control Board (SWRCB) <p>Local/County</p> <ul style="list-style-type: none"> City and county governments Regional and local HCP/NCCP management agencies (e.g., Riverside Regional Conservation Authority, Coachella Valley Conservation Commission) <p>NGO/Foundation/Business</p> <ul style="list-style-type: none"> CA Council of Land Trusts CA Rangeland Trust Desert Managers Group Desert Tortoise Council Non-profits focused on conservation Peninsula Open Space Trust Sequoia Riverlands Trust Sierra Cascade Land Trust Council Southern Sierra Partnership State utilities & Independent Power Producer (IPP) groups Wildlife Heritage Foundation | <p>Federal</p> <ul style="list-style-type: none"> Compensatory mitigation Land and Wildlife Conservation Fund <p>State</p> <ul style="list-style-type: none"> Affordable Housing and Sustainable Communities Program (CA Strategic Growth Council) Greenhouse Gas Reduction Fund (GGRF) Sierra Nevada Conservancy State bonds (Water, Park) <p>Non-governmental</p> <ul style="list-style-type: none"> Businesses and Nonprofits' grant programs Foundations Land trusts or large land owners that have land they can donate Mitigation bankers (for-profit, non-profit) |
| Priority Strategy: Management Plan Development | | |
| <p>Statewide</p> <ul style="list-style-type: none"> Connect SWAP land concerns with the CPUC Energy Division procurement arena and better coordinate between the agencies <p>Regional</p> <ul style="list-style-type: none"> Consider other sector industries in planning efforts | <p>Federal</p> <ul style="list-style-type: none"> BLM DOD NPS USFS USFWS USACE <p>State</p> | <p>Federal</p> <ul style="list-style-type: none"> Endangered Species Act (ESA) Section 6 |

| Example Conservation Activities | Example Potential Partners | Example Potential Financial Resources |
|--|---|---|
| <p>Local/Site-specific</p> <ul style="list-style-type: none"> • Focus on crop planning in urban and rural areas • Emphasize SWAP goals in compensatory mitigation and implementation • Identify criteria for management plans (e.g., include spatial scales and create high-level planning framework) • Conduct landscape-level planning to help identify where transmission lines and power plants will be sited • Update siting tools such as the Renewable Portfolio Standard (RPS) Calculator, with environmental screen components, to account for land use issues • Involve key stakeholders to gain support for siting plan development • Specify SWAP goals in climate actions plans, conservation frameworks, and county plans • Work on additional HCPs | <ul style="list-style-type: none"> • CA Department of Conservation - Division of Oil, Gas & Geothermal Resources (DOGGR) • CA Office of Planning and Research • CDFW • Forest Climate Action Team (FCAT) • Sierra Nevada Conservancy <p>Local/County</p> <ul style="list-style-type: none"> • Local Planning Boards • Regional and local HCP/NCCP management agencies (e.g., Riverside Regional Conservation Authority, Coachella Valley Conservation Commission) <p>NGO/Foundation/Business</p> <ul style="list-style-type: none"> • American Wind Energy Association • Sierra Climate Adaptation and Mitigation Partnership (CAMP) • Solar Energy Industries Association • State utilities & Independent Power Producer (IPP) groups • Western States Petroleum Association | |
| Priority Strategy: Partner Engagement | | |
| <p>Statewide</p> <ul style="list-style-type: none"> • Participate in other agencies’ proceedings related to energy siting or other relevant topics <p>Regional</p> <ul style="list-style-type: none"> • Develop regional HCPs that cover entire service territories <p>Local/Site-specific</p> <ul style="list-style-type: none"> • Collaborate on conservation plans with local and community partners • Identify opportunities for agency partnerships in the area of renewable energy project siting • Provide information to inform and influence new renewable energy procurement siting decisions | <p>Federal</p> <ul style="list-style-type: none"> • BLM • NPS • USFS • USFWS <p>State</p> <ul style="list-style-type: none"> • CA Coastal Commission (CCC) • CDFW • CEC • CPUC • Sierra Nevada Conservancy <p>Local/County</p> <ul style="list-style-type: none"> • City and County Governments <p>NGO/Foundation</p> | <p>Federal</p> <ul style="list-style-type: none"> • ESA Section 6 <p>Non-governmental</p> <ul style="list-style-type: none"> • Private foundations (private/public) |

| Example Conservation Activities | Example Potential Partners | Example Potential Financial Resources |
|--|--|---------------------------------------|
| <ul style="list-style-type: none"> Initiate dialogue related to partnership plans Work with other agencies at the project/field level to look for common ground for siting and mitigation efforts Identify priority conservation areas where land trust partners can be engaged early in process to buy into the strategy and opportunity | <ul style="list-style-type: none"> Alliance of Regional Climate Collaboratives for Adaptation (ARCCA) CA Council of Land Trusts CA ISO CA Rangeland Trust CAMP State utilities & Independent Power Producer (IPP) groups | |

7. Evaluating Future Collaboration Efforts

Implementation of SWAP and its nine companion plans is a complex undertaking. The first section below describes the desired outcomes and outputs of the energy development companion plan implementation identified through the development team discussions. A desired outcome is an improved (and intended) future state of a conservation factor due to implementation of actions or strategies (CDFW, 2015; Ch. 11). Through the companion plan process, the management team defined a desired output as a deliverable that can be measured by the activities and processes that will contribute to accomplishing the desired outcomes and goals. The list of desired outcomes and outputs in the subsection below is followed by a high-level description emphasizing the importance of adaptive management to SWAP 2015 and the companion plans, and how their implementation effectiveness would be evaluated by applying the adaptive process addressed under the main document.

7.1 Desired Outcomes and Outputs

Participants were asked what the sector’s top desired outcomes and outputs are in the next 5-10 years, based on the development team discussions, their knowledge of the sector, and within the context of SWAP 2015. The identified outcomes and outputs for each strategy category, not listed in order of priority, are provided below.

Land Acquisition and Easement

- Mechanisms developed for agencies and partners to conduct conservation efforts at the landscape scale, and mechanisms improved to conserve critical lands and ecosystem processes.
- Pressures (e.g., land conversion and population size) identified and conservation goals incorporated into all energy planning processes and projects to promote conservation of land based on its conservation value and ecosystems processes and function.
- Compensatory mitigation land options, consistent with SWAP goals identified and processed through the relevant agencies and within the permit-required timeframes.
- Renewable energy development projects and mitigation actions that are consistent with SWAP goals identified and implemented to meet the Governor’s goal of enhanced wind and solar energy.

Management Plan Development

- HCPs implemented, general utility corridors identified, and agency priorities understood across sectors (e.g., energy and resource agencies) to simplify and streamline planning and energy project siting processes, particularly at the landscape scale.
- Links between specific project needs and actions and the strategies of SWAP 2015 and companion plans identified, incorporated into project planning, and assessed on a yearly basis.
- Structured and unstructured processes identified and implemented to assist individual landowners undertaking conservation actions on their land to help them achieve conservation goals and apply identified best management practices (BMPs).
- Environmental screening system integrated into renewable energy and transmission line calculator tools (e.g., RPS) to improve consideration of environment and wildlife needs in planning efforts.

Partner Engagement

- Priority habitats that multiple partners seek to conserve identified, and agreement reached on areas that need to be conserved.

7.2 Evaluating Implementation Efforts

SWAP 2015 sets a stage for adaptive management, including implementation evaluation, by developing the plan based on the Open Standards for the Practices of Conservation (CDFW, 2015; Ch. 1.5.4). SWAP 2015 implementation will be monitored over time in concert with other conservation activities conducted by CDFW and its partners. SWAP 2015 recognizes three types of monitoring (CDFW, 2015; Ch. 8.3):

1. Status monitoring, which tracks conditions of species, ecosystems, and other conservation factors (including negative impacts to ecosystems) through time
2. Effectiveness monitoring, which determines if conservation strategies are having their intended results and identifies ways to improve actions that are less effective (i.e., adaptive management)
3. Effect monitoring, which addresses if and how the target conditions are being influenced by strategy implementation

Monitoring the SWAP and companion plan implementation and evaluating the monitoring results are critical steps for CDFW and partners to demonstrate and account for the overall progress and success achieved by SWAP 2015. By incorporating lessons learned through monitoring and evaluation into future actions, CDFW and its partners have opportunities to improve performance on coordination and collaboration and to adapt emerging needs that were not considered during the time of the plan development into future actions. Similarly, monitoring and the evaluation results could help inform stakeholders, including decision-makers, partners, and funders, about the status of the plan implementation, as well as where to best deploy resources to achieve desired outcomes and outputs effectively.



SWAP 2015 developed performance measures for each strategy category (CDFW, 2015; Ch. 8.3). These measures are critical in helping guide the Department and partners in assessing the effects and effectiveness of SWAP 2015 and the companion plans, as well as the level of the companion plan's contribution to the conservation of California's ecosystem.

8. Next Steps

During the third and final companion plan development team meeting, participants were asked to identify key next steps to ensure successful implementation of the companion plan, ideally within the next one to five years. The feedback fell into four categories in most cases which were used to organize the information: Partnership and Collaboration; Human and Financial Resources; Communication and Outreach; and Monitoring, Evaluation, and Relevant Tools.

Partnership and Collaboration

- Continue partner collaboration (e.g., through yearly interagency meetings, annual technical working groups, and/or a shared schedule with milestones and check-ins) on the goals of SWAP 2015 and companion plans to ensure continued consensus on and cooperation toward shared goals and prioritization of identified strategies and projects on multiple scales.
- Determine appropriate mechanisms for CPUC RPS and other staff to partner with staff from other agencies and organizations on future projects (e.g., policy rulemaking) with better environmental benefits.
- Build upon existing models for data sharing and collaboration (e.g., the University of California, Santa Barbara Bren School's Data Basin tool analyzing conservation value, energy value, and solar development opportunities in San Joaquin Valley and the San Joaquin Valley Geospatial Data Gateway).
- Address integration of energy policy topics in future companion plan updates as it relates to partners' (e.g., utilities) priorities.

Human and Financial Resources

- Develop timelines for agencies and staff to help staff understand how and when they can be involved in projects that meet the goals of SWAP 2015 and companion plans.
- Ensure engagement of partners that have the time and human resources to continue the companion plan process (e.g., utilities and power companies).
- Identify mechanisms to support projects and activities that would help further the strategies and goals of SWAP 2015 and companion plans (e.g., engagement of the CBC, CA ISO, San Gabriel Mountains National Monument Community Collaborative, and/or the SWG program) to ensure successful implementation of SWAP 2015 and companion plans.
- Implement recommendations included in SWAP 2015 Chapter 7 focused on integration and financial resources and identify mechanisms for capacity development to help increase human and financial resources.



Communication and Outreach

- Increase stakeholder awareness of SWAP 2015 and companion plan process to help coordinate and leverage projects with similar goals and strategies.

Monitoring, Evaluation, and Relevant Tools

- Determine prioritized mechanisms for the State to implement a process for incorporating findings of SWAP 2015 and companion plans into the RPS calculator, and identify conservation lands that can be factored into the process.
- Incorporate land use data into the RPS calculator.
- Account for technologies, cost, and future development and location of transmission lines in RPS Calculator revisions and consider best ways to represent land use information.

9. Closing

This companion plan was developed in collaboration with many partners who deserve special recognition for their time and commitment (please see Appendix D for a list of development team members). As an initial step towards building a collaborative approach for implementation of SWAP 2015 and the nine sector-focused companion plans, CDFW will develop a work plan that describes actions to implement the plans and address the next steps identified.



Appendices

Appendix A: List of Potential Partners and Coordination Bodies

Disclaimer: Please note this is not an exhaustive list of potential partners. The organizations listed in here were identified through this companion plan process, but their identification here does not indicate agreement to partner and/or provide financial resources for the conservation activities. Furthermore, the strategy categories checked off for each organization were completed to the best knowledge of the development team members; some organizations' efforts were unknown (blank cells).

| Potential Partners/Coordination Bodies | Land Acquisition and Easement | Management Planning | Partner Engagement |
|---|-------------------------------|---------------------|--------------------|
| Alliance of Regional Climate Collaboratives for Adaptation (ARCCA) | | ✓ | ✓ |
| American Wind Energy Association | | ✓ | ✓ |
| CA Biodiversity Council (CBC) | | | ✓ |
| CA Coastal Commission | | | ✓ |
| CA Council of Land Trusts | ✓ | ✓ | ✓ |
| CA Department of Fish and Wildlife (CDFW) | ✓ | ✓ | ✓ |
| CA Energy Commission (CEC) | ✓ | | ✓ |
| CA Forest Biomass Working Group | | | ✓ |
| CA Hydropower Reform Coalition | ✓ | | ✓ |
| CA Independent System Operator (CA ISO) | | ✓ | ✓ |
| CA Natural Resources Agency (CNRA) | ✓ | ✓ | ✓ |
| CA Office of Planning and Research | | ✓ | ✓ |
| CA Public Utilities Commission (CPUC) | | ✓ | ✓ |
| CA Rangeland Trust | ✓ | ✓ | ✓ |
| CA Tahoe Conservancy | ✓ | ✓ | ✓ |
| CA Wind Energy Association (CalWEA) | | ✓ | ✓ |
| Center for Natural Land Management | | | ✓ |
| Desert Managers Group | ✓ | | ✓ |
| Desert Tortoise Council | ✓ | | ✓ |
| Edison Electric Institute | | | ✓ |
| Forest Climate Action Team (FCAT) | | ✓ | ✓ |
| Imperial Irrigation District | ✓ | ✓ | ✓ |
| Independent Energy Producers Association (IEP) | | | ✓ |
| Regional Water Quality Control Boards | | ✓ | ✓ |
| Local and Municipal Electric Utilities, Irrigation Districts and Co-ops | ✓ | ✓ | ✓ |
| Los Angeles County Supervisors Office | | | ✓ |
| Los Angeles Department of Water and Power | ✓ | ✓ | ✓ |
| Mojave Desert Land Trust | ✓ | | ✓ |

| Potential Partners/Coordination Bodies | Land Acquisition and Easement | Management Planning | Partner Engagement |
|---|-------------------------------|---------------------|--------------------|
| National Audubon Society | ✓ | ✓ | ✓ |
| National Hydropower Association | ✓ | ✓ | ✓ |
| National Park Service (NPS) | ✓ | ✓ | ✓ |
| Natural Resources Defense Council | | | ✓ |
| Northern Sierra Partnership | ✓ | ✓ | ✓ |
| Pacific Gas and Electric Company (PG&E) | ✓ | ✓ | ✓ |
| PacifiCorp (Pacific Power) | ✓ | ✓ | ✓ |
| Peninsula Open Space Trust | ✓ | | ✓ |
| Renewable Energy Transmission Initiative | | ✓ | ✓ |
| Sacramento Municipal Utility District (SMUD) | ✓ | ✓ | ✓ |
| San Diego Gas & Electric (SDG&E) | ✓ | ✓ | ✓ |
| San Joaquin Council of Governments | | ✓ | ✓ |
| Sequoia Riverlands Trust | ✓ | | ✓ |
| Sierra Cascade Land Trust Council | ✓ | | ✓ |
| Sierra Climate Adaptation and Mitigation Partnership (CAMP) | | ✓ | ✓ |
| Sierra Nevada Conservancy | ✓ | ✓ | ✓ |
| Sierra Nevada Forest Community Initiative | ✓ | | ✓ |
| Solar Energy Industries Association | | ✓ | ✓ |
| Southern CA Edison | ✓ | ✓ | ✓ |
| Southern Sierra Partnership | ✓ | ✓ | ✓ |
| State Water Resources Control Board (SWRCB) | ✓ | | ✓ |
| The Conservation Fund | ✓ | ✓ | ✓ |
| The Nature Conservancy (TNC) | ✓ | ✓ | ✓ |
| The Trust for Public Lands | ✓ | ✓ | ✓ |
| Tortoise Group | ✓ | | ✓ |
| Transition Habitat Conservancy | ✓ | | ✓ |
| U.S. Army Corps of Engineers (USACE) | ✓ | ✓ | ✓ |
| U.S. Bureau of Land Management (BLM) | ✓ | ✓ | ✓ |
| U.S. Department of Defense | ✓ | ✓ | ✓ |
| U.S. Fish and Wildlife Service (USFWS) | ✓ | ✓ | ✓ |
| U.S. Forest Service (USFS) | ✓ | ✓ | ✓ |
| Western Governors' Association | | | ✓ |
| Western States Petroleum Association | | ✓ | ✓ |
| Wildlife Heritage Foundation | ✓ | ✓ | ✓ |
| World Wildlife Fund (WWF) | ✓ | ✓ | ✓ |



Appendix B: Plans, Strategies, and Documents Identified by the Development Team

- Bureau of Land Management (BLM). *Resource Management Plans for California's Public Lands*. 2006. Print. <http://www.blm.gov/style/medialib/blm/ca/pdf/pa/planning.Par.25515.File.dat/RMP.pdf>.
- California Biodiversity Council (CBC). *Strengthening Agency Alignment for Natural Resource Conservation*. 2013. Print. <http://ucanr.edu/sites/CBC/files/204079.pdf>.
- California Department of Fish and Game (CDFG), California Energy Commission (CEC), United States Bureau of Land Management (BLM), and United States Fish & Wildlife Service (USFWS). *Planning Agreement for the Desert Renewable Energy Conservation Plan*. 2010. Print. <http://www.energy.ca.gov/2009publications/REAT-1000-2009-034/REAT-1000-2009-034-F.PDF>.
- California Department of Fish and Wildlife (CDFW). *Coachella Valley Multiple Species Habitat Conservation Plan*. 2007. Print. <https://www.wildlife.ca.gov/Conservation/Planning/NCCP/Plans/Coachella-Valley>.
- . *East Contra Costa County NCCP/HCP*. 2007. Print. <https://www.wildlife.ca.gov/Conservation/Planning/NCCP/Plans/East-Contra-Costa>.
- . *San Joaquin Multi-Species HCP*. 2000. Print. www.sjcog.org/DocumentCenter/View/5.
- . *Santa Clara Valley Habitat Plan*. 2006. Print. <https://www.wildlife.ca.gov/Conservation/Planning/NCCP/Plans/Santa-Clara>.
- . *Western Riverside Multi-Species HCP*. 1997. Print. <https://www.wildlife.ca.gov/Conservation/Planning/NCCP/Plans/Riverside>.
- California Tahoe Conservancy. *A Regional Greenhouse Gas Inventory for the Lake Tahoe Basin*. 2013. Print. http://laketahoesustainablecommunitiesprogram.org/wp-content/uploads/2014/04/Final-Sustainability-Action-Plan_1.13.14-1.pdf.
- Department of Defense. *Integrated Natural Resource Management Plans*. Multiple Dates. Print. <https://www.fws.gov/endangered/esa-library/pdf/INRMP.pdf>.
- East Alameda County Conservation Strategy. *East Alameda County Conservation Strategy Document Final*. 2010. Print. <http://www.eastalco-conservation.org/documents.html>.
- San Diego Gas & Electric. *Subregional NCCP*. 1995. Print. <https://www.wildlife.ca.gov/Conservation/Planning/NCCP/Plans/San-Diego-GE>.
- . *Low-Effect HCP for the Federally Endangered Quino Checkerspot Butterfly*. 2007. Print. <http://www.gpo.gov/fdsys/pkg/FR-2007-03-13/pdf/E7-4531.pdf#page=1>.
- . *Sunrise Powerlink Project*. 2008. Print. <http://www.cpuc.ca.gov/environment/info/aspen/sunrise/toc-feir.htm>.



- Sierra Nevada Conservancy. *The State of the Sierra Nevada's Forests*. 2014. Print.
<http://www.sierranevada.ca.gov/our-work/docs/StateOfSierraForestsRptWeb.pdf>.
- . *Why Do We Need a Sierra Nevada Watershed Improvement Program?* Print.
<http://www.sierranevada.ca.gov/our-work/sierra-nevada-wip/SNWIPhandout.pdf>.
- . *System Indicators - Demographics and Economy*. 2011. Print. http://www.sierranevada.ca.gov/our-region/sys_ind_docs/demographics_and_economy.pdf.
- . *The Climate Action Plan of the Sierra Nevada: A Regional Approach to Address Climate Change*. 2009. Print. http://www.sierranevada.ca.gov/docs/climate_action_plan-1.pdf.
- Southern Sierra Partnership. *Framework for Cooperative Conservation and Climate Adaptation for the Southern Sierra Nevada and Tehachapi Mountains Vol 1*. 2010. Print.
http://www.southernsierrapartnership.org/uploads/2/3/7/6/23766303/ssp_framework_-_volume_1.pdf.
- U.S. Environmental Protection Agency (USEPA). *San Joaquin Valley Strategic Plan*. 2011. Region 9. Print.
<http://www.epa.gov/region9/strategicplan/EPA-r9-SJV-strategicplan.pdf>.
- U.S. Fish & Wildlife Service (USFWS). *Regional Species Recovery Plans*. Various Dates. Print.
http://ecos.fws.gov/tess_public/pub/speciesRecovery.jsp?sort=1.
- . *Santa Rosa Conservation Strategy*. 2005. Print. http://www.fws.gov/sacramento/es/Recovery-Planning/Santa-Rosa/es_recovery_santa-rosa-strategy.htm.
- U.S. Forest Service (USFS). *2012 Planning Rule Directives*. 2012. Print.
<http://www.fs.usda.gov/detail/planningrule/home/?cid=stelprd3828310>.
- . *Cleveland National Forest Land Management Plan*. 2006. Print.
http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5320708.pdf.



Appendix C: CDFW Companion Plan Management Team

| Name | Title |
|-----------------|--|
| Armand Gonzales | SWAP 2015 Project Lead |
| Junko Hoshi | SWAP 2015 Assistant Project Lead |
| Kurt Malchow | SWAP 2015 Companion Plan Development Lead |

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Appendix D: Energy Companion Plan Development Team Members and Affiliations

| Affiliation | Participant |
|--|--|
| California Department of Fish and Wildlife | Julie Vance Magdalena Rodriguez |
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| Southern California Gas Co. (Sempra) | Blair Baker |
| Transition Habitat Conservancy | Jill Bays |
| U.S. Bureau of Land Management | Jeremiah Karuzas |
| William and Flora Hewlett Foundation | Matt Baker |



Appendix E: Glossary

Most terms in this section originate from the glossary in the Conservation Measures Partnership's (CMP) Open Standards for the Practice of Conservation (Version 2.0). These definitions are based on current usage by many CMP members, other conservation organizations, and planners in other disciplines. Some terms have been added or refined to clarify how CDFW uses them.

activity: a task needed to implement a strategy, and to achieve the objectives and the desirable outcomes of the strategy.

biodiversity: the full array of living things.

conservation: the use of natural resources in ways such that they may remain viable for future generations. Compare with preservation.

distribution: the pattern of occurrences for a species or habitat throughout the state; generally more precise than range.

driver: a synonym for factor.

ecosystem function: the operational role of ecosystem components, structure, and processes.

ecosystem health: the degree to which a biological community and its nonliving environmental surroundings function within a normal range of variability; the capacity to maintain ecosystems structures, functions, and capabilities to provide for human need.

ecosystem processes: the flow or cycling of energy, materials, and nutrients through space and time.

ecosystem: a natural unit defined by both its living and non-living components; a balanced system for the exchange of nutrients and energy. Compare with habitat.

endangered species: any species, including subspecies or qualifying distinct population segment, which is in danger of extinction throughout all or a significant portion of its range.

fragmentation: the process by which a contiguous land cover, vegetative community, or habitat is broken into smaller patches within a mosaic of other forms of land use/land cover; e.g., islands of an older forest age class immersed within areas of younger-aged forest, or patches of oak woodlands surrounded by housing development.

goal: a formal statement detailing a desired outcome of a conservation project, such as a desired future status of a target. The scope of a goal is to improve or maintain key ecological attributes. A good goal meets the criteria of being linked to targets, impact oriented, measurable, time limited, and specific.

habitat: where a given plant or animal species meets its requirements for food, cover, and water in both space and time. May or may not coincide with a single macrogroup, i.e., vegetated condition or aquatic condition. Compare with ecosystem.

impact: the desired future state of a conservation target. A goal is a formal statement of the desired impact.



listed: general term used for a taxon protected under the federal Endangered Species Act, the California Endangered Species Act, or the California Native Plant Protection Act.

native: naturally occurring in a specified geographic region.

objective: A formal statement detailing a desired outcome of a conservation project, such as reducing a critical pressure. The scope of an objective is broader than that of a goal because it may address positive impacts not related to ecological entities (such as getting better ecological data or developing conservation plans) that would be important for the project. The set of objectives developed for a conservation project are intended, as a whole, to lead to the achievement of a goal or goals, that is, improvements of key ecological attributes. A good objective meets the criteria of being: results oriented, measurable, time limited, specific, and practical. If the project is well conceptualized and designed, realization of a project's objectives should lead to the fulfillment of the project's goals and ultimately its vision. Compare to vision and goal.

outcome: an improved (and intended) future state of a conservation factor due to implementation of actions or strategies. An objective is a formal statement of the desired outcome.

output: a deliverable that can be measured by the activities and processes that will contribute to accomplishing the desired outcomes and goals.

population: the number of individuals of a particular taxon in a defined area.

preservation: generally, the nonuse of natural resources. Compare with conservation.

pressure: an anthropogenic (human-induced) or natural driver that could result in impacts to the target by changing the ecological conditions. Pressures can be positive or negative depending on intensity, timing, and duration. See also direct pressure and indirect pressure.

program: a group of projects which together aim to achieve a common broad vision. In the interest of simplicity, this document uses the term "project" to represent both projects and programs since these standards of practice are designed to apply equally well to both.

project: a set of actions undertaken by a defined group of practitioners – including managers, researchers, community members, or other stakeholders – to achieve defined goals and objectives. The basic unit of conservation work. Compare with program.

public: lands owned by local, state, or federal government or special districts.

result: the desired future state of a target or factor. Results include impacts which are linked to targets and outcomes which are linked to threats and opportunities.

Species of Greatest Conservation Need (SGCN): all state and federally listed and candidate species, species for which there is a conservation concern, or species identified as being highly vulnerable to climate change.

stakeholder: any individual, group, or institution that has a vested interest in the natural resources of the project area and/or that potentially will be affected by project activities and have something to gain



or lose if conditions change or stay the same. Stakeholders are all those who need to be considered in achieving project goals and whose participation and support are crucial to its success.

strategy: a group of actions with a common focus that work together to reduce pressures, capitalize on opportunities, or restore natural systems. A set of strategies identified under a project is intended, as a whole, to achieve goals, objectives, and other key results addressed under the project.

stress: a degraded ecological condition of a target that resulted directly or indirectly from pressures defined above (e.g., habitat fragmentation).

wildlife: all species of free-ranging animals, including but not limited to mammals, birds, fishes, reptiles, amphibians, and invertebrates.

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References

- BrightSource. "California Department of Fish and Wildlife and Energy Commission Complete Landmark Land Mitigation Deal for Ivanpah Solar Project." 2013. Web. 13 May 2015.
<http://www.brightsourceenergy.com/california-department-of-fish-and-wildlife-and-energy-commission-complete-landmark-land-mitigation-deal-for-ivanpah-solar-project#.VVpSBPIVhBd>.
- California Department of Fish and Game (CDFG). *California Wildlife – Conservation Challenges: State Wildlife Action Plan*. 2005. Print. <http://dfg.ca.gov/SWAP/2005/docs/SWAP-2005.pdf>.
- CDFG, California Energy Commission (CEC), United States Bureau of Land Management (BLM), and United States Fish & Wildlife Service (USFWS). *Planning Agreement for the Desert Renewable Energy Conservation Plan*. 2010. Print. <http://www.energy.ca.gov/2009publications/REAT-1000-2009-034/REAT-1000-2009-034-F.PDF>.
- California Department of Fish & Wildlife (CDFW). "Climate and Energy." *Climate Science and Renewable Energy Branch*. 2014. Web. 16 Apr. 2014a. http://www.dfg.ca.gov/Climate_and_Energy/.
- . *California State Wildlife Action Plan (SWAP)*. 2015. Print. <https://www.wildlife.ca.gov/SWAP/Final>.
- . *State Wildlife Grants*. 2014b. XLS.
- California Department of Water Resources (DWR). "California Water Plan Update 2013." 2014. Web. 22 Oct. 2015. <http://www.waterplan.water.ca.gov/cwpu2013/final/index.cfm>.
- . *Regional Advance Mitigation Planning in California*. 2008. Print. <https://rampcalifornia.water.ca.gov/documents/18/df8a475-27cc-4985-8fce-5d42f2423ca6>.
- California Energy Commission. "The California Energy Almanac." *Energy Almanac*. 2015a. Web. 13 May 2015. <http://www.energyalmanac.ca.gov/>.
- . "Energy Innovations Small Grants." *Natural Gas Research Program*. 2015b. Web. 13 May 2015. [http://www.energy.ca.gov/research/innovations/naturalgas.html /](http://www.energy.ca.gov/research/innovations/naturalgas.html/).
- . "California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development." 2007. Web. 13 May 2015. <http://www.energy.ca.gov/windguidelines/>.
- California Fish and Game Code. Assembly Bill 2402. 2015 (enacted). Print. http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201120120AB2402.
- California Natural Resources Agency (CNRA). "Mission Statement." 2015. Web. 20 Apr. 2015. <http://resources.ca.gov/>.
- . "2009 California Climate Adaptation Strategy." 2009. Web. 29 Jul. 2015. <http://www.energy.ca.gov/2010publications/CNRA-1000-2010-010/CNRA-1000-2010-010.PDF>.
- California Public Utilities Commission (CPUC). *CA Energy Efficiency Strategic Plan*. 2011. Print. http://www.cpuc.ca.gov/NR/rdonlyres/A54B59C2-D571-440D-9477-3363726F573A/0/CAEnergyEfficiencyStrategicPlan_Jan2011.pdf.



Governor's Office of Planning and Research. "Renewable Energy in California." 2015. Office of Planning and Research. Web. 16 Apr. 2015. http://www.opr.ca.gov/s_renewableenergy.php.

Sierra Nevada Conservancy. "Abandoned Mine Lands." 2011. *Our Region*. Web. 21 Apr. 2015. <http://sierranevada.ca.gov/our-region/abandoned-mine-lands>.

Southern California Edison (SCE). "Protecting & Restoring the Environment: Revitalizing Coastal Wetlands & Marine Habitats." 2015. Web. 20 Apr. 2015. <https://www.sce.com/wps/portal/home/about-us/environment/protection-restoration>.

Strategic Growth Council (SGC). "California Strategic Growth Council." 2014. Web. 23 Jul 2015. <http://sgc.ca.gov/>.

U.S. Energy Information Administration (EIA). "California." 17 July 2014. State Profile and Energy Estimates. Web. 16 Apr. 2015. <http://www.eia.gov/state/?sid=CA>.

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