LAND USE PLANNING COMPANION PLAN

December 2016

CALIFORNIA DEPARTMENT OF FISH & WILDLIFE

SWAP
California State Wildlife Action Plan

Photo Credit:

Left:
Bixby Creek Bridge, The Big Sur, California
Date: 21 May 2010
Photographer: Ian McWilliams via Wiki Commons

Right:
Jack Rabbit near Palm Desert, California
Date: 30 July 2011
Photographer: Rasmus Lerdorf via flickr

Prepared by Blue Earth Consultants, LLC

December 2016

Disclaimer:

Although 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 the California Department of Fish and Wildlife leadership team and staff; the California Fish and Game Commission; cooperating state, federal, and local government agencies and organizations; California Tribes and tribal governments; and various partners (such as non-governmental organizations, academic research institutions, and citizen scientists).

Table of Contents

Acronyms and Abbreviations iii

1. Introduction 1

1.1 SWAP 2015 Statewide Goals 2

1.2 SWAP 2015 Companion Plans 2

Need for Partnerships 2

Companion Plan Purpose and Sector Selection 2

Companion Plan Development 3

Companion Plan Content 4

2. Land Use Planning Sector 4

2.1 Land Use Planning in California 4

2.2 Current Land Use Planning Management and Conservation in California 5

3. Common Themes across Nine Sectors 7

3.1 Climate Change-related Issues 7

3.2 Integrated Regional Planning 8

4. Commonly Prioritized Pressures and Strategy Categories across Sectors 9

4.1 Pressures Identified across Sectors 9

4.2 Strategy Categories Identified across Sectors 10

5. Land Use Planning Priority Pressures and Strategy Categories 11

5.1 Priority Pressures 11

5.2 Priority Strategy Categories 12

6. Collaboration Opportunities for Joint Priorities 13

Alignment Opportunities and Potential Resources 13

7. Evaluating Implementation Efforts 15

8. Desired Outcomes 16

9. Next Steps 17

10. Acknowledgements 18

Appendices 19

Appendix A: References 19

Appendix B: Plans, Strategies, and Documents Identified by the Development Team 21

Appendix C: Land Use Planning Companion Plan Development Team Members and Affiliations.....26
Appendix D: Potential Partners for Collaboration.....27
Appendix E: Potential Financial Resources.....30
Appendix F: Companion Plan Management Team.....32
Appendix G: Glossary.....33

Text Boxes

Text Box 1: What is a State Wildlife Action Plan?.....1
Text Box 2: Definitions Important to SWAP 2015.....1
Text Box 3: Companion Plan Sectors.....2
Text Box 4: Examples of Collaborative Conservation Efforts.....6
Text Box 5: Additional Pressures and Strategies for Future Consideration.....13

Figures

Figure 1: Aligning SWAP 2015 and Partner Priorities.....3

Tables

Table 1: SWAP 2015 Pressures.....10
Table 2: SWAP 2015 Conservation Strategy Categories.....11
Table 3: Collaboration Opportunities by Strategy Category.....13

Acronyms and Abbreviations

AFWA	**Association of Fish and Wildlife Agencies**
BLM	**U.S. Bureau of Land Management**
Blue Earth	**Blue Earth Consultants, LCC**
BMP	**Best Management Practice**
CalEPA	**California Environmental Protection Agency**
CBC	**California Biodiversity Council**
CBIA	**California Building Industry Association**
CCC	**California Coastal Commission**
CDFW	**Department of Fish and Wildlife**
CDWR	**California Department of Water Resources CEQA**
CEQA	**California Environmental Quality Act**
CESA	**California Endangered Species Act**
Ch.	**Chapter**
CNRA	**California Natural Resources Agency**
CVJV	**Central Valley Joint Venture**
DRECP	**Desert Renewable Energy Conservation Plan**
DOI	**U.S. Department of Interior**
EIR	**Environmental Impact Report**
EPS	**Economic and Planning Systems, Inc.**
ESA	**Endangered Species Act**
GIS	**Geographic Information Systems**
HCP	**Habitat Conservation Plan**
KEA	**Key Ecological Attribute**
LCC	**Landscape Conservation Cooperative**
LCD	**Landscape Conservation Design**
LCP	**Local Coastal Plan**
MPO	**Metropolitan Planning Organization**
NCCP	**Natural Community Conservation Planning**
NCCPA	**Natural Community Conservation Planning Act**
NCTC	**National Conservation Training Center**
NGO	**Non-governmental Organization**
NOAA	**National Oceanic and Atmospheric Administration**
NRCS	**National Resources Conservation Service**
OPC	**California Ocean Protection Council**
OPR	**Governor's Office of Planning and Research**
PPIC	**Public Policy Institute of California**
RAMP	**Regional Advance Mitigation Planning**
RCD	**Resource Conservation District**
SANDAG	**San Diego Association of Governments**
SB	**Senate Bill**

SBCAG	**Santa Barbara County Association of Governments**
SCC	**California State Coastal Conservancy**
SCAPOSD	**Sonoma Country Agricultural Preservation and Open Space District**
SCS	**Sustainable Community Strategy**
SCWRP	**Southern California Wetlands Recovery Project**
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**
TBC3	**Terrestrial Biodiversity and Climate Change Collaborative**
TNC	**The Nature Conservancy**
UCCE	**University of California Cooperative Extension**
USDA	**U.S. Department of Agriculture**
USEPA	**U.S. Environmental Protection Agency**
USFS	**U.S. Forest Service**
USFWS	**U.S. Fish and Wildlife Service**
WCB	**Wildlife Conservation Board**
WRAMP	**Wetland and Riparian Area Monitoring Program**
WRP	**Wetlands Reserve Program**
WSFR	**Wildlife and Sport Fish Restoration**

1. Introduction

The California State Wildlife Action Plan 2015 Update (SWAP 2015; see Text Box 1) provides a vision and a framework for conserving California's diverse natural heritage. SWAP 2015 also calls for the development of a collaborative framework to sustainably manage ecosystems across the state in balance with human uses of 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 undertook the preparation of companion plans for SWAP 2015. 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 partnerships and by mutually managing and conserving the state's natural and cultural resources. Text Box 2 highlights important definitions for SWAP 2015 and the companion plan process.

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) as defined by 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 the SWG program, matched with approximately $19 million in state government support for 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). 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]

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)**:* An aspect of a target's biology or ecology that, if present, defines a healthy target and, if missing or altered, would lead to 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.

Target: Same as *conservation target* defined above.

***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 as defined in SWAP 2015.

***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)

1.1 SWAP 2015 Statewide Goals

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

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, that affect 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 (see Text Box 3) were created collaboratively with partners and will be instrumental in implementing SWAP 2015 (See Appendix C).

Text Box 3: Companion Plan Sectors

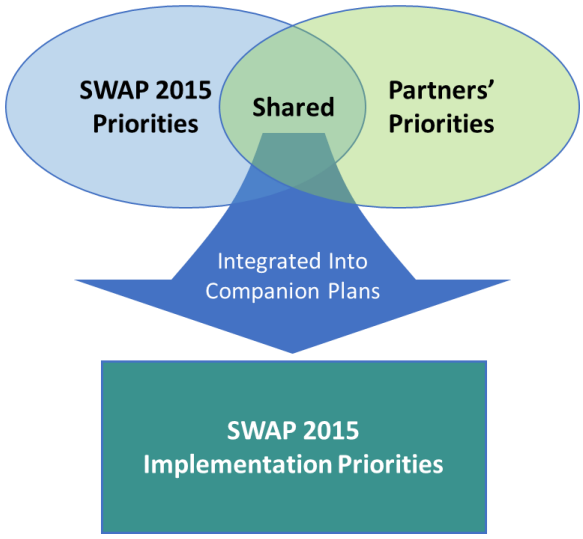
- Agriculture
- Consumptive and Recreational Uses
- Energy Development
- Forests and Rangelands
- Land Use Planning
- Marine Resources
- Transportation Planning
- Tribal Lands
- Water Management

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, shared priorities come together in the companion plans and become elevated as implementation priorities for SWAP 2015.

The companion plans respond to feedback from many sources, including CDFW staff and partners involved in 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 are also aligned with the National Fish, Wildlife, and Plants Climate Adaptation Strategy (U. S. Fish and Wildlife Service [USFWS] 2012), which emphasizes increased partner engagement as a best practice in climate change adaptation. Developing the companion plans also directly helps CDFW comply with recently enacted legislation, 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" (CDFW 2012).

Figure 1: Aligning SWAP 2015 and Partner Priorities



CDFW selected sector categories based on the department's needs as well as the themes identified in other existing plans, including the 2009 California Climate Adaptation Strategy (California Natural Resources Agency [CNRA] 2009), the 2014 Safeguarding California Plan (CNRA 2014), The President's Climate Action Plan (Executive Office of the President, 2015), and the National Fish, Wildlife, and Plants Climate Adaptation Strategy (USFWS 2012).

Companion Plan Development

Because the companion plans focused on teamwork during their development, they inherently help set a stage for implementing SWAP 2015 through future collaborations. Together, SWAP 2015 and the associated companion plans describe the context and strategic direction of integrated planning and management efforts that are crucial for sustaining California's ecosystems. The SWAP 2015 companion plan management team, composed of CDFW and Blue Earth staff, provided general direction to the companion plan development teams to develop each sector plan (See Appendix F). To form sector teams, CDFW sought statewide representation of public and private partners with topic expertise and who were heavily involved in natural resource conservation and management (see Appendix C).[1]

Beginning in early 2015, Blue Earth facilitated a series of four web-based collaboration meetings for each sector. A kickoff meeting provided development teams with an overview of SWAP 2015 and the companion plan development process, followed by three sector-specific meetings. During these sector meetings, participants discussed their ongoing and potential future efforts that would benefit wildlife

[1] Although the management team sought to engage a broad range of partners, CDFW recognizes that there are many other partners who play important roles in conserving and managing natural resources in California who were not involved in developing the companion plans.

and habitat conservation in the state. The development teams and CDFW then identified shared priorities, as well as collaboration opportunities for achieving those mutual interests. Two internal drafts of the companion plans were reviewed by the development teams prior to the public release of the third draft in the fall of 2015. The final nine companion plans were published incorporating responses to public comments.

Companion Plan Content

Each companion plan addresses the following components:

- SWAP 2015 overview
- Companion plans overview—approach, purpose, development process, and content
- Sector overview
- Common themes across sectors
- Common priority pressures and strategies across sectors
- Priority pressures and strategies for the sector
- Potential collaboration activities
- Potential partners and resources
- Evaluating implementation
- Desired outcomes
- Next steps

2. Land Use Planning Sector

2.1 Land Use Planning in California

California is the most populous U.S. state, with more than 39 million people as of 2015 (U.S. Census Bureau 2015). By 2050, California's population is expected to reach 50 million (PPIC 2015). With this population increase, the state's land use planning sector needs to manage growth while making ecosystem conservation efforts a priority.

California's natural resources are significant in that they provide recreational, economic, aesthetic, and inspirational value. The state's rich landscape diversity, size, and variation offer unique opportunities to integrate natural resource considerations into land use planning. With nearly 156,000 square miles of land, there are currently 539 incorporated cities and counties in California that are required to adopt "a comprehensive, long-term general plan for [their] physical development" (U.S. Census Bureau 2010; OPR 2001). These general plans outline the city's and/or county's policies and help guide implementation regarding development such as housing, commercial industry, roads, and parks (OPR 2001). In addition, these plans highlight areas of concern such as environmental hazards and natural resource conservation opportunities (OPR 2001). State law requires that each general plan incorporate the following seven components: land use, circulation, housing, conservation, open space, noise, and safety. Cities and counties can also adopt additional elements, however, such as recreation and urban design (OPR 2001). Region-scale land use planning is more common in California. When planning at this

level, partnerships with local land use authorities and stakeholder groups are needed to help understand and navigate the regional planning process.

Land use planning also occurs in different jurisdictional units, notably through Metropolitan Planning Organizations (MPOs) that serve the most populous areas throughout California. Under the Sustainable Communities Act (Senate Bill [SB] 375), MPOs are required to adopt sustainable community strategies (SCSs) that outline coordinated efforts to reduce greenhouse gas emissions through planning for transportation, land use, and housing. These strategies are reviewed by the California Environmental Protection Agency (CalEPA) and the Air Resources Board to confirm that, if implemented, the SCS would meet regional greenhouse gas reduction targets (CalEPA and Air Resource Board 2015).

Another important land use planning framework unique to the state is the Natural Community Conservation Planning Act (NCCPA), which establishes the program and process for development of Natural Community Conservation Plans (NCCPs) (California Fish and Game Code 2012). This framework is wider in scope than the California Endangered Species Acts (CESA) and the federal Endangered Species Acts (ESA) through a broad-based ecosystem approach to planning and adaptive management that not only protects listed species but also sustains ecosystem integrity, including biodiversity and key ecological processes. Though strictly voluntary, approval of each NCCP requires conducting a scientifically sound ecosystem assessment and impact analysis of anticipated activities that may occur within the planning area. An NCCP identifies and provides for the protection of plants, animals, and their habitats at a regional scale, while allowing for compatible and appropriate economic activities. Working with land owners, environmental organizations, and other interested parties, a local agency oversees the numerous activities that help develop an NCCP.

Along with these programs, land use plan components may include community issues (e.g., new growth or environmental protection), future demand for services (e.g., sewer, water, and roads), potential problems (e.g., overloaded sewer facilities or crowded roads), and goals and policies for directing and managing growth (OPR 2001). Given expected population increases and development of associated infrastructure, together with predicted climate change impacts, there is a greater need for creating well-designed land use plans to benefit the state's natural resources.

2.2 Current Land Use Planning Management and Conservation in California

Many state land use planning agencies have incorporated required and voluntary ecosystem conservation elements focused on conserving California's natural and wildlife resources into their planning programs. One of the longest standing examples of mandatory conservation planning is through the California Environmental Quality Act (CEQA), which requires local and state governments to analyze environmental impacts expected from major projects and to identify measures to avoid or mitigate significant impacts to a non-significant level (OPR 2001).

Balancing land use with the conservation of natural resources and cultural heritage is an important goal for California, and a number of state agencies have embraced this concept. For example, the mission of the CNRA 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). The CNRA has explored ways to achieve their mission, including protecting pristine forestlands from logging activities and preserving habitat for species adapted to unique or extreme conditions (e.g., the Salton Sea) (CNRA 2015).

Between 2007 and 2014 CDFW led several conservation projects related to land use planning, funded through the SWG Program. One of these projects systematically reviewed studies that observed recreation impacts on wildlife, developed a geographic information system (GIS) database to help identify field site selection and analysis, and created a digitalized aerial image database of recreational trails (CDFW 2014; Reed et al. 2014). The outputs from these projects could help land use planning by linking recreational impacts to wildlife.

Text Box 4: Examples of Collaborative Conservation Efforts

There are numerous collaborative conservation management efforts found in California. Below are two such examples related to land use planning. The partners addressed in each description are indicated in **bold**.

- *Linking Land Conservation Strategies to Transportation Planning*: The **Santa Barbara County** *2040 Regional Transportation Plan & Sustainable Communities Strategy* applied a Regional Greenprint approach to catalog open space, habitat, and farmland as constraints to urban development. Using a variety of existing GIS data layers from diverse partners (e.g., **U.S. Forest Service (USFS)**, **California Geoportal**, and **CDFW's** California Natural Biodiversity Database), the Regional Greenprint identified habitat and agriculture priorities and assessed future transportation and community growth scenario options based on impacts to habitat and agriculture. The Regional Greenprint provides a mechanism for the **Santa Barbara County Association of Governments (SBCAG)** to collaborate with **local governments**, **federal**, **state**, and **regional** partners to consider impacts of planning on sensitive habitat and design mitigation activities to offset the impacts of transportation projects and development (SBCAG, 2013).
- *Applying an Ecosystem Approach to Conserve Natural Communities*: **CDFW's** NCCP program offers a mechanism to use an ecosystem approach for biodiversity protection and balance conservation with compatible land use activities. Each NCCP is led by a **local agency** who collaborates with **CDFW**, **USFWS**, and **environmental organizations**, **landowners**, and other **interested stakeholders** to develop landscape-scale conservation plans. There are currently 22 NCCPs statewide, which protect over 9 million acres (CDFW 2015a). NCCPs are often created in conjunction with regional HCPs, plans required under the ESA as part of incidental take permits. HCPs have evolved from single-species plans to regional planning documents that address multiple species and habitats and allow for the alignment of conservation priorities with compatible economic activities (Economic & Planning System, Inc. [EPS] 2014). Regional HCPs and NCCPs have resulted in economic benefits to both the public and private sectors. For example, the private sector has benefited from streamlined permitting processes that result in cost savings and reduced uncertainty during project development phases. For the public sector, regional HCPs/NCCPs reduce time required to evaluate and implement permitting decisions (EPS 2014). The economic and environmental benefits of the NCCPs demonstrate how **federal**, **state**, **regional**, and **local** partners can use collaborative conservation planning to balance land use and ecosystem conservation.

Similarly, the 2013–2014 "Inland Deserts Region (Region 6) Southlands Management Project" sought to improve habitat for SGCNs through active management (e.g., integrating wildlife conservation into local land use decisions) of natural resources on CDFW-managed lands (CDFW 2014). The 2007 "Department of Fish and Game Lands Resource Assessment and Monitoring Project" conducted an inventory of and monitored SGCN and habitats on CDFW and nearby lands, in addition to developing monitoring strategies to identify species conservation goals for future land management (CDFW 2014).

An evaluation report of SWAP 2005 implementation indicated how CDFW has incorporated information, research, and knowledge into regional planning efforts such as the San Joaquin Multi-Species Habitat Conservation Plan (HCP), Placer County HCP/NCCP, Yolo County HCP/NCCP, Butte County HCP/NCCP, Bay- Delta HCP/NCCP, Yuba-Sutter HCP/NCCP, and Western Riverside County Multi-species HCP (CDFW 2015). CDFW Western burrowing owl data, for example, were used to analyze the expected impacts from activities under the Butte County HCP/NCCP and to design the conservation strategy, including avoidance and mitigation measures for the species (CDFW 2015).

Another example of this sector's contribution to and engagement in restoration through broader scale land use planning efforts is the San Francisco Estuary Project's "Comprehensive Conservation and Management Plan." The plan includes goals to establish and implement land use patterns and best management practices, as well as to adopt land use policies that offer active stakeholder participation in cooperative efforts for watershed conservation (San Francisco Estuary Project 2007). By continuing to manage land use planning effectively, CDFW and its partners can protect and conserve the state's natural and wildlife resources while also providing new opportunities to increase sustainable land use development.

3. Common Themes across Nine Sectors

Equally important to discussion topics unique to each sector are the common themes across all sectors. This section summarizes the two major overarching themes discussed through the course of developing the nine companion plans: climate change and integrated regional planning.

3.1 Climate Change-related Issues

Climate change continues to be one of the major pressures forcing us to examine the relationship between modern society and nature. Describing climate science, however, has been difficult due to its inherent complexity. Because of this and other factors, our society has not been able to fully embrace the seriousness of the implications of climate change. In the most recent analyses, the global average temperature is projected to increase in the range of 0.3–4.8°C (0.5–8.6°F) by 2100, and in California, the increase is projected to be 1.5°C (2.7°F) by 2050 and 2.3–4.8°C (4.1–8.6°F) by 2100 (IPCC 2014; CNRA 2014).

The effects of climate change are already present. Global sea level rise over the past century has exceeded the mean rate of increase during the previous two millennia, and the earth's surface temperature over each of the last three decades has been successively warmer than any previous decade since 1850. The evidence of these observed climate change impacts is manifested the strongest

and most comprehensively in natural systems where many species of terrestrial, freshwater and marine organisms have shifted their geographic ranges, migration patterns, abundances, and life cycle activities in response to ongoing climate change (IPCC 2014).

As climate conditions are inextricably linked to the welfare of environments and societies, even the most conservatively projected increase in global mean temperatures would trigger significant changes to socio-economic and ecosystem conditions. Food production, energy and water development, and preparation and response to catastrophic events are examples of human systems that would be negatively affected by climate change. Pressures and stresses to ecosystems identified in SWAP 2015 will likely increase in magnitude and severity through the compounding effects of climate change (SWAP 2015).

Accordingly, the potential far-reaching effects on California's natural resources induced or exacerbated by climate change were a common concern among sectors, and cross-sector collaboration was considered critical for ecosystem adaptation while avoiding disasters.

Two key discussion points amongst sectors were to strategically assess the state's climate change vulnerabilities and implement adaptation actions. These actions included, but were not limited to: establishing a well-connected reserve system to increase ecosystem integrity (e.g. habitat resilience and mobility); incorporating climate change related factors (e.g. carbon sequestration, habitat shifts and sea level rise) into natural resource management; improving regulations to reduce greenhouse gas emissions; developing research guidelines to comprehensively evaluate climate change effects; and raising awareness of climate change.

3.2 Integrated Regional Planning

California presents a landscape that is ecologically, socioeconomically, and politically intricate. The current status of the state's ecosystems reflects not only the interactions between biological and abiotic components, but also among ecosystems and diverse human activities that are further controlled by mandates imposed on regulated activities.

The concept of integrated regional planning arises from the realization that addressing only one aspect of a complicated human/nature system is not sustainable. Paraphrased from the definition in the California Water Plan, integrated regional planning 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 (CDWR 2014). Expected outcomes of adopting an integrated regional planning approach include; maximizing limited resources to meet diverse demands, receiving broader support for natural resource conservation, and sustaining and improving ecosystem conditions, both for intrinsic and resource values.

Integrated regional planning begins with accepting diverse priorities and values articulated by the stakeholders of a region. With this mutual understanding, attempts are made, often through intense negotiations, to integrate various activities associated with multiple interests occurring in the region. Expected tasks under integrated regional planning include: identifying conflicting or redundant activities

occurring in a region, minimizing redundant activities by aligning similar efforts, streamlining and integrating needed processes across different priorities, and collaborating and complementing efforts to effectively achieve mutual and/or diverse interests. As an example, integrated regional planning could result in zoning a region and limiting activities within each zone to avoid or reduce incompatible activities occurring in the region, or deferring timing to reduce negative consequences of interactive activities occurring in a region. In sum, integrated regional planning requires trust, open-mindedness, transparency, patience, strategic thinking, and collaboration among partners who seek to use the same or similar resources from different perspectives.

Establishing a framework for integrated regional planning was considered as one of the state's top priorities across sectors. Related topics included: preparing, approving, and implementing regional and landscape-level conservation plans; systematically pursuing necessary resources to implement conservation strategies; coordinating effective partnerships; adapting to emerging issues; and reviewing and revising the plans. Several existing plans were recognized as ongoing integrated regional planning efforts: Natural Community Conservation Plans (NCCPs), Habitat Conservation Plans (HCPs), Habitat Connectivity Planning for Fish and Wildlife (CDFW 2015), the Master Plan for Marine Protected Areas, individual species management plans, and SWAP 2015 and related endeavors, including this companion plan.

SWAP 2015, Chapter 7 describes implementation and integration opportunities, and identifies where partners can engage in cooperative implementation. Such opportunities include programs under various state and federal agencies such as Regional Advance Mitigation Planning (RAMP) by Caltrans and CDWR; California Water Plan, California Water Action Plan, and the Central Valley Flood System Conservation Strategy by CDWR; Fire and Resource Assessment Program by CALFIRE; and federal programs under regulations such as the Central Valley Project Improvement Act, and the National Forest Management Act (CDFW 2015).

4. Commonly Prioritized Pressures and Strategy Categories across Sectors

SWAP 2015 adopted the Open Standards for the Practice of Conservation (Conservation Measures Partnership 2013), a conservation planning framework, and applied the process to select actions needed to conserve focal ecological components (conservation targets). The process started with examining the status of targets by identifying and evaluating their key ecological attributes, factors influencing their compromised conditions (stresses), and the sources of these stresses (pressures). Based on the situational analysis, conservation strategies (sets of actions) were selected for each target, either to improve the conditions of key ecological attributes, or to reduce the negative impacts from the stresses and pressures (CDFW 2015).

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". 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. Table 1 below lists the 29 standard pressures addressed under SWAP 2015.

Table 1: SWAP 2015 Pressures

• Agricultural and forestry effluents	• Livestock, farming, and ranching
• Air-borne pollutants	• Logging and wood harvesting
• Annual and perennial non-timber crops	• Marine and freshwater aquaculture
• Catastrophic geological events[1]	• Military activities
• Climate change	• Mining and quarrying
• Commercial and industrial areas[2]	• Other ecosystem modifications[6]
• Dams and water management/use	• Parasites/pathogens/diseases
• Fire and fire suppression	• Recreational activities
• Fishing and harvesting aquatic resources	• Renewable energy
• Garbage and solid waste	• Roads and railroads
• Household sewage and urban waste water [3,4]	• Shipping lanes[7]
• Housing and urban areas[2]	• Tourism and recreation areas
• Industrial and military effluents[4, 5]	• Utility and service lines
• Introduced genetic material	• Wood and pulp plantations
• Invasive plants/animals	

Pressures include the following:

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)

4.2 Strategy Categories Identified across Sectors

SWAP 2015 outlines 11 categories of conservation strategies (Table 2) under which regional strategies are organized, similar to the manner in which the regional goals are tiered under the statewide conservation goals (CDFW 2015). These strategies, grouped in various categories, are meant to work synergistically to achieve the statewide goals and priorities.

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)

The three most common priority strategy categories across the nine sectors were Data Collection and Analysis (7 sectors prioritized this strategy), Management Planning (7 sectors), and Partner Engagement (5 sectors). The strategy categories identified as most relevant to the land use planning sector are described in Section 5.2 below.

5. Land Use Planning Priority Pressures and Strategy Categories

As described in SWAP 2015, pressures such as commercial and industrial area development and housing and urban development to meet California's growing population could affect the state's biodiversity and natural resources (CDFW 2015). Although challenges exist, these seemingly negative aspects of pressures present opportunities for improving ecological health through collaborative conservation work.

For the purpose of developing companion plans, CDFW went through the pressures and strategy categories that were selected for various conservation targets under SWAP 2015 (CDFW 2015). Those elements considered relevant to each sector were collected from the document and prioritized by importance to the sector. Section 5.1 and 5.2 provide the results of this prioritization, and Text Box 5 lists pressures and strategies considered important but not included in this plan (for future consideration).

5.1 Priority Pressures

Commercial and industrial areas – Economic and population growth, which are drivers to development, lead to an increasing need for commercial/industrial activities such as agricultural development (e.g., grape production) and its associated services, transportation, and infrastructure needs. These needs place pressure on the state's land, water, and other natural resources across scales (upland, shoreline, and marine). Commercial and industrial areas include factories and other commercial centers such as manufacturing plants, shopping centers, office parks, military bases, power plants, train and ship yards, and airports.

Housing and urban areas/development – Economic and population growth also lead to an increasing need for housing development and its associated services, transportation, and infrastructure needs. These needs place pressure on the state's land, water, and other natural resources across scales (upland, shoreline, and marine). Additionally, demographic shifts are predicted to result in a decreased demand for traditional single-family homes and an increased demand for transit-oriented or walkable,

dense, multi-family communities. This includes housing and non-housing development that typically integrates with housing in cities, towns, and settlements. This may also include development of other non-agricultural land uses with substantial footprints. More specifically, these developments include urban areas, suburbs, villages, vacation homes, shopping areas, offices, schools, and hospitals.

5.2 Priority Strategy Categories

The top five strategy categories selected by the land use planning development team are (in alphabetical order) data collection and analysis; economic incentives; land acquisition, easement, and lease; management planning; and training and technical assistance. These categories are described below.

Data Collection and Analysis – Data collection and analysis is the utilization of robust data and thorough analysis to facilitate more effective implementation of conservation strategies under other categories. Example strategies include providing information via integrated data rich platforms, seeking funding for technical assistance, and research.

Economic Incentives – Economic incentives are available and deployable resources for private landowners and other stakeholders to implement responsible stewardship and enhancement of landscapes, ecological conditions, and species. Example strategies include: developing and providing economic incentives, seeking funding though grants, cooperating with other agencies, and identifying other opportunities that could serve as sources for economic incentives.

Land Acquisition, Easement, and Lease – Land acquisition and easement are types of transactions and agreements that help set aside or obtain land or water rights to support conservation of the land, water, or habitat upon which species depend. Example strategies include: purchasing land and/or acquiring easements; acquiring grasslands/riparian areas; and designating conservation areas.

Management Planning – Management planning is the development of management plans or processes for species, habitats, and natural processes/conditions that will lead to implementation of more effective conservation strategies. Example strategies include developing and implementing existing management plans and providing input on local planning.

Training and Technical Assistance – Training and technical assistance enhance resource conservation efforts of managers, scientists, stakeholders, or others by building capacity for implementing effective conservation activities and techniques. Example strategies include: developing training materials and information; conducting training and technical assistance; and providing science-based applications and tools that are useful for conservation activities.

Text Box 5: Additional Pressures and Strategies for Future Consideration

Pressures

- Habitat type and extent change
- Water supply

Strategies

- Improve monitoring and evaluation of:
  - Habitat change (type and extent) at multiple scales
  - Climate change impacts and mitigation options
  - Urban growth and land use change
- Identify funding for technical assistance and financial incentives

6. Collaboration Opportunities for Joint Priorities

Conservation programs in California are managed by diverse partners, including state and federal agencies, local governments, and NGOs. Because SWAP 2015 is a comprehensive conservation plan, integrating their work into SWAP is crucial for impactful conservation outcomes for the state (SWAP 2015 Chapter 7). While the full array of relevant efforts is too extensive to list here, potential alignment opportunities were identified. Conservation activities considered most relevant to each prioritized strategy category (as described in Section 5.2) are summarized in Table 3. Potential partners and financial resources for implementing these conservation activities are listed in the Appendix D and E. Together, Table 3 and Appendix D and E summarize the key findings for this sector.

Alignment Opportunities and Potential Resources

Table 3 highlights conservation activities by the strategy categories considered important for collaboration, and which could be implemented over the next 5–10 years. While some activities are applicable across many spatial scales and jurisdictions, they are assigned only to the most relevant scale and jurisdiction. The information in Table 3 is not comprehensive, and does not obligate any organization to fund or provide support for strategy implementation.

Table 3: Collaboration Opportunities by Strategy Category

Data Collection and Analysis
Potential Conservation Activities
Statewide • Standardize data collection to create reports of statewide trends • Develop a statewide platform for integrating data from many sources including spatial capability
Regional • Develop an eco-regional plan on solar development, agricultural value, and climate analysis • Develop regional green prints • Fund planning and data collection to expand metrics and include multi-benefit processes/larger scales

Local/Site-specific

- Collect and share spatial data (e.g., GIS)
- Conduct climate change vulnerability analyses
- Conduct monitoring and research to enhance conservation and land management in response to climate change
- Create a statewide network of UC researchers and educators dedicated to the creation, development, and application of knowledge in agricultural, natural, and human resources
- Disseminate data to private landowners
- Determine wetlands status and trends
- Develop a sea level rise planning database
- Develop accounting tools to leverage incentives
- Develop a climate adaptation strategy for coastal salt marsh ecosystems
- Encourage database developers to communicate and streamline formats
- Incorporate data into urban footprint scenario models
- Invest in research on existing efforts with high conservation potential
- Look at carbon sequestration values and integrate with water, habitat, and farm land
- Share assessment results though digital databases accessible to and translatable for managers
- Undertake conservation land use assessments
- Work with ranchers, agencies, and others to foster good stewardship practices for rangeland watersheds

Economic Incentives

Potential Conservation Activities

Statewide

- Engage in USFWS' Conservation Easement Program
- Participate in state technical advisory committees

Local/Site-specific

- Ensure protected areas have adequate stewardship funding for management planning and actions
- Help private landowners implement conservation projects through grants
- Look for innovative financing solutions for conservation focused investors
- Provide incentives to farms to allow their fields to be flooded for bird benefits (e.g., BirdReturns Project)
- Support water quality trading and riparian area restoration
- Work on forest-to-farm marketing strategies

Land Acquisition, Easement, and Lease

Potential Conservation Activities

Local/Site-specific

- Acknowledge value of working lands and derive revenue for land use type to support conservation (e.g., loan/private investment, carbon offsets, sustainable forestry)
- Evaluate potential threats or pressures (e.g., coastal resilience planning)
- Identify multi-benefit conservation values that include other land use priorities for management purpose
- Prioritize conservation locations
- Provide science support in relation to climate change for decision-making

Management Planning

Potential Conservation Activities

Statewide

- Develop plans through USFWS's Comprehensive Conservation Plans for National Refuge lands
- Focus research and extension on solving priority problems in the management of the State's agriculture, natural resources, and human development
- Propose new refuge lands through USFWS Preliminary Project Proposals
- Support the bird habitat conservation goals of the CVJV Implementation Plan

Regional

- Ensure local actions contribute a landscape-level vision for a large geographic area that has many habitats, conditions, and human uses

Local/Site-specific

- Encourage multi-benefit conservation through natural infrastructure
- Explore better management avenues for natural resources, threats, or pressures within infrastructure planning
- Focus on climate adaptation planning
- Implement coastal resilience approaches
- Participate in management and conservation planning efforts with partners
- Plan local efforts to be consistent with Landscape Conservation Design (LCD)
- Update local coastal plans (LCPs)

Training and Technical Assistance

Potential Conservation Activities

Statewide

- Focus trainings on board development, implementation capacity on statewide conservation efforts, and technical literacy improvement of RCDs and landowners
- Help reduce soil erosion, enhance water supplies, improve water quality, increase wildlife habitat, and reduce damages caused by floods and other natural disasters

Regional

- Utilize Regional Water Quality Control Boards wetlands training (e.g., CA Rapid Assessment Method)

Local/Site-specific

- Conduct ongoing education and workshops
- Conduct outreach and technical assistance in context of assessment methods for riparian and wetlands
- Develop a conservation module for urban footprints and green printing
- Develop tools to help with infrastructure and land use decisions
- Increase capacity to implement resources available to private landowners
- Hold training sessions on structured decision-making, vulnerability assessments, and climate adaptation planning (e.g., Climate-Smart Conservation)
- Prepare technical guidance document for work on sediment augmentation
- Utilize tools that share multiple benefits and carbon value

7. Evaluating Implementation Efforts

Implementing SWAP 2015 and its nine companion plans is a complex undertaking. This section (and SWAP 2015 Chapter 8) emphasizes the importance of adaptive management based on performance monitoring and evaluation during the implementation stage.

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

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 for adaptive management; and
3. effects monitoring, which addresses if and how the target conditions are being influenced by strategy implementation.

Monitoring and evaluating SWAP 2015 implementation are critical steps to demonstrate and account for the overall progress and success achieved by the plan. By incorporating lessons learned through monitoring conservation activities and evaluating for future actions, CDFW and partners have opportunities to improve performance and adapt emerging needs that were not previously considered. For stakeholders including decision-makers, partners, and funders, the resulting data would be useful for not only understanding the status of SWAP 2015 and companion plan implementation, but also to prioritize resource allocations necessary for managing natural resources in the state.

SWAP 2015 developed performance measures for each strategy category (SWAP 2015 Chapter 8). These measures are critical in assessing SWAP 2015 performance and will be used for estimating the plans' overall contributions to natural resource conservation in California.

8. Desired Outcomes

Desired outcomes for this sector over the next 5–10 years, within the context of SWAP 2015, were identified and are provided below. These outcomes are organized by the selected strategy categories described in Section 5.2, and are not listed in order of priority.

Data Collection and Analysis

- Increased collection and utilization of climate change data, analysis, and modeling to inform land use planning decisions and permitting, as well as general city and county plans.
- Integrated activities coordinated and focused efforts brought together (e.g., risk assessments and vegetation surveys).
- Improved data sources and metrics for uniformly evaluating conservation impacts across ecosystems identified and implemented (e.g., ecosystem services, land use trends, habitat value, access, recreation benefits) and metrics used to inform land use planning decisions, permitting, conservation actions (e.g., avoided conversion, enhancement), and climate change adaptation.
- Success stories (e.g., species recovery) that demonstrate the positive potential of working landscapes identified and emphasized (e.g., recovery of the Aleutian goose through efforts between dairy ranchers managing their land to allow for and accommodate goose habitat).

Economic Incentives

- Conservation actions increased by private landowners through funding incentives.
- Public lands have stewardship mechanisms and adequate economic incentives in place to meet the needs for effective conservation.

Land Acquisition, Easement, and Lease

- Broader sources of funding secured for land protection, and all available sources of funding used (e.g., funding for development of conservation programs by regional transportation agencies through SB325).
- Numerical goals for the amount of land acquired, put under easement agreements, and protected status defined; leases developed; and appropriate funding sources for protection and management of these lands secured.
- Application of best management practices (BMPs) increased on working lands to demonstrate their potential positive conservation impacts.

Management Planning

- Natural infrastructure incorporated as a goal and potential solution in management planning and acquisition.
- See 1st bullet under Data Collection and Analysis.
- See 2nd bullet under Land Acquisition, Easement, and Lease.

Training and Technical Assistance

- Decision support and conservation stewardship tools necessary for different sectors (e.g., land managers, transportation, and SB 375) determined, and tools and trainings provided to relevant sectors (e.g., technical trainings on assessment methods for riparian and wetlands) to increase understanding of how tools can be implemented.
- New conservation stewardship tools (e.g., tools to help with infrastructure and land use decisions) developed that incorporate existing county planning agency conservation plans.
- Citizen science encouraged that augments data collection efforts and reduces data collection costs through creation of mobile applications.

9. Next Steps

The key next steps identified to ensure successful implementation of the companion plan over the next five years are: partnerships and collaboration, human and financial resources, and communication and outreach. Suggested activities relevant to these steps are found below.

Partnership and Collaboration

- Facilitate application of SWAP 2015 and companion plan by land use planners for development of environmental impact reports (EIR), CEQA processes, or general plan updates.
- Coordinate existing and potential partners, such as the California Association of Councils of Governments, to support implementation of SWAP 2015 and companion plan.

- Integrate and coordinate planning activities and plans that incorporate preservation and wildlife protection considerations (e.g., RCD plans, regional green prints, and local plans).
- Broaden scope of land use planning to include aquatic resources.

Human and Financial Resources

- Identify and engage development team members and additional potential partners willing to support the SWAP 2015 and companion plan implementation with human and/or financial resources.
- Work with partners to identify ways to integrate SWAP 2015 and companion plan language into organizational plans as appropriate.

Communication and Outreach

- Identify key intended audiences (e.g., members of the land use planning sector) and conduct routine outreach activities at the local and regional level (e.g., local road shows and presentations at the California Planning Association annual conference) to promote awareness and application of SWAP 2015 and companion plan. Show how land use planning recommendations and strategies can be applied at the local level, integrated into general plans and sustainable communities strategies, and used to promote climate adaptation.
- Use SWAP 2015 and companion plan text to create a user-friendly framework that fosters understanding of the complex information presented within each document, outlines how conservation activities can be achieved, and highlights successful activities.
- Develop a graphic or visual framework that describes how different sector conservation actions fit together to address SWAP 2015 and companion plan goals, strategies, and desired outcomes.
- Make SWAP 2015 and companion plans available online and include hyperlinks to other relevant information and sources, and update document as new relevant information becomes available.

10. Acknowledgements

This companion plan was developed in collaboration with many partners who deserve special recognition for their time and commitment. (Please see Appendix C for a list of land use planning development team members.) CDFW and Blue Earth express our warmest gratitude to those who were involved in the plan's development, as well as to the organizations that generously offered their staff time. As an initial step toward building a collaborative approach for implementing SWAP 2015 and the nine sector-focused companion plans, CDFW will develop an operational plan that describes logistics for moving forward.

Appendices

Appendix A: References

California Department of Fish and Wildlife (CDFW). 2012. Assembly Bill 2402. Fish and Game Code Section 703.5. http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201120120AB2402.

CDFW. 2014. State Wildlife Grants. XLS.

CDFW. 2015a. Natural Community Conservation Planning (NCCP). Web. 17 Apr. 2015. https://www.wildlife.ca.gov/Conservation/Planning/NCCP.

---. 2015b. California State Wildlife Action Plan – Implementation Evaluation 2005-2014. Prepared by Blue Earth Consultants, LCC. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=100062&inline.

---. 2015c. California State Wildlife Action Plan (SWAP). https://www.wildlife.ca.gov/SWAP/Final.

---. 2015d. Habitat Connectivity Planning for Fish and Wildlife. Web. 27 Oct. 2015. www.wildlife.ca.gov/Conservation/Planning/Connectivity.

CDFW . 2016. A Climate Change Vulnerability Assessment of California's Terrestrial Vegetation. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=116208&inline.

California Department of Water Resources (DWR). 2014. California Water Plan Update 2013. Web. 22 Oct. 2015. http://www.waterplan.water.ca.gov/cwpu2013/final/index.cfm.

California Environmental Protection Agency (CalEPA) – Air Resources Board. 2015. Sustainable Communities. Web. 11 Jun. 2015. http://www.arb.ca.gov/cc/sb375/sb375.htm.

California Fish and Game Code. 2012. Chapter 10 Natural Community Conservation Planning Act (2835). (enacted). http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=FGC&sectionNum=2835.

California Natural Resources Agency (CNRA). 2009. Climate Adaptation Strategy. http://resources.ca.gov/climate/safeguarding/Statewide_Adaptation_Strategy.pdf.

CNRA. 2014. Safeguarding California Plan. Print. http://resources.ca.gov/climate/safeguarding.

CNRA. 2015a. Conserving Treasure Lands and Valuable Natural Resources. Web. 24 Apr. 2015. http://resources.ca.gov/conserving_treasured_lands/.

---. 2015b. Mission Statement. Web. 20 Apr. 2015. http://resources.ca.gov/.

California Office of Planning and Research (OPR). 2001. A Citizen's Guide to Planning. Web. 17 Apr. 2015. http://ceres.ca.gov/planning/planning_guide/plan_index.html.

Conservation Measures Partnership. 2013. The Open Standards for the Practice of Conservation – Version 3.0, April 2013 http://www.conservationmeasures.org/.

Economic & Planning System, Inc. (EPS). 2014. Economic Effects of Regional Habitat Conservation Plans. http://www.buttehcp.com/documents/Documents/Other%20Documents/Economic%20Benefits%20White%20Paper%20-%20CHCPC.pdf.

Executive Office of the President. 2013. The President's Climate Action Plan. Web. 27 Oct. 2015. https://www.whitehouse.gov/sites/default/files/image/president27sclimateactionplan.pdf

Intergovernmental Panel on Climate Change. 2014. Climate Change 2014 Synthesis Report: Approved Summary for Policymakers. http://www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR_AR5_FINAL_full_wcover.pdf.

Maslin, M.. 2014. Climate Change: A Very Short Introduction. 3rd ed. Oxford University.

Natural Resources Conservation Service (NRCS). 2015. California Conservation Planning Initiative. Web. 17 Apr. 2015. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/ca/technical/cp/?cid=nrcs144p2_064047.

Public Policy Institute of California (PPIC). 2015. California's Population. Web. 13 May 2015. http://www.ppic.org/main/publication_show.asp?i=259.

Reed, S.E., Larson, C.L., Crooks, K.R., and A.M. Merenlender. 2014. Wildlife Response to Human Recreation on NCCP Reserves in San Diego County. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=99222.

San Francisco Estuary Project. 2007. Comprehensive Conservation and Management Plan. http://sfep.sfei.org/wp-content/uploads/2012/12/2007-CCMP.pdf.

Santa Barbara County Association of Governments (SBCAG). 2013. 2040 Regional Transportation Plan and Sustainable Communities Strategy. http://www.sbcag.org/uploads/2/4/5/4/24540302/final2040rtpscs-chapters.pdf.

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

U.S. Census Bureau. 2010. California. Web. 9 Jun. 2015. http://quickfacts.census.gov/qfd/states/06000.html.

U. S. Census Bureau. 2015. California – Quick Facts. Web. 27 May 2016. https://www.census.gov/quickfacts/table/PST045215/06.

U.S. Fish and Wildlife Service (USFWS). 2012. National Fish, Wildlife, and Plants Adaptation Strategy, 2012. Web 27 Oct. 2015. http://www.wildlifeadaptationstrategy.gov/.

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

Bay Area Open Space Council. 2011. The Conservation Lands Network - San Francisco Bay Area Upland Habitat Goals Project Report. http://www.bayarealands.org/.

Bay Delta Conservation Plan. 2015. Home. Web. 23 Apr. 2015. http://baydeltaconservationplan.com/Home.aspx.

Baylands Ecosystem Habitat Goals. 1999. A Report of Habitat Recommendations Prepared by the San Francisco Bay Area Wetlands Ecosystem Goals Project. Environmental Protection Agency and San Francisco Bay Regional Water Quality Control Board. http://www.sfei.org/documents/baylands-goals.

Bureau of Land Management (BLM). 1999. Carrizo Plain National Monument Resource Management Plan. http://www.blm.gov/style/medialib/blm/ca/pdf/bakersfield/carrizo.Par.8414.File.dat/CarrizoPlainNationalMonumentApprovedROD.pdf.

BLM. 2008. Cosumnes River Preserve Management Plan. http://www.blm.gov/style/medialib/blm/ca/pdf/folsom/plans.Par.67798.File.dat/CRP_Final_Mgmt_Plan.pdf.

California Coastal Conservancy (CCC). San Francisco Bay Subtidal Habitat Goals Report. 2010. http://www.sfbaysubtidal.org/.

California Department of Fish and Wildlife (CDFW). 1996. County of Orange (Central/Coastal) NCCP/HCP. https://www.wildlife.ca.gov/Conservation/Planning/NCCP/Plans/Orange-Coastal.

---. 1996. Rancho Palos Verdes NCCP/HCP. https://www.wildlife.ca.gov/Conservation/Planning/NCCP/Plans/Rancho-Palos-Verdes.

CDFW. 1997. Western Riverside Multi-Species HCP. https://www.wildlife.ca.gov/Conservation/Planning/NCCP/Plans/Riverside.

CDFW. 2000. San Joaquin Multi-Species HCP. www.sjcog.org/DocumentCenter/View/5.

CDFW. 2001. Placer County Conservation Plan. https://www.wildlife.ca.gov/Conservation/Planning/NCCP/Plans/Placer-County.

CDFW. 2004. San Diego Multiple Habitat Conservation Program. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=35066&inline=1.

CDFW. 2005. Yolo Natural Heritage Program. https://www.wildlife.ca.gov/Conservation/Planning/NCCP/Plans/Yolo.

CDFW. 2006. Imperial Irrigation District NCCP/HCP. https://www.wildlife.ca.gov/Conservation/Planning/NCCP/Plans/Imperial.

---. 2006. Santa Clara Valley Habitat Plan. https://www.wildlife.ca.gov/Conservation/Planning/NCCP/Plans/Santa-Clara.

CDFW. 2007. Coachella Valley Multiple Species Habitat Conservation Plan. https://www.wildlife.ca.gov/Conservation/Planning/NCCP/Plans/Coachella-Valley.

---. 2007. East Contra Costa County NCCP/HCP. https://www.wildlife.ca.gov/Conservation/Planning/NCCP/Plans/East-Contra-Costa.

CDFW. 2008. Yolo Bypass Wildlife Area Land Management Plan. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=84924&inline.

CDFW. 2009. Mendocino Redwood Company NCCP/HCP. https://www.wildlife.ca.gov/Conservation/Planning/NCCP/Plans/Mendocino.

CDFW. 2011. San Diego County Water Authority NCCP/HCP. https://www.wildlife.ca.gov/Conservation/Planning/NCCP/Plans/San-Diego-WA.

CDFW. 2012. Yuba Sutter Regional Conservation Plan. https://www.wildlife.ca.gov/Conservation/Planning/NCCP/Plans/Yuba-Sutter.

CDFW. 2014. Orange County Transportation Authority NCCP/HCP. https://www.wildlife.ca.gov/Conservation/Planning/NCCP/Plans/OCTA.

CDFW and California Department of Transportation (Caltrans). 2010. California Essential Habitat Connectivity Project: A Strategy for Conserving a Connected California. https://www.wildlife.ca.gov/Conservation/Planning/Connectivity/CEHC.

California Department of Forestry and Fire Protection (CAL FIRE). 2010. California's Forests and Rangelands: 2010 Strategy Report. http://frap.fire.ca.gov/data/assessment2010/pdfs/strategyreport7-157final.pdf.

California Department of Water Resources (CDWR). 2012. Regional Flood Management Planning. Web. 29. Apr. 2015. http://www.water.ca.gov/cvfmp/regionalplan/regionalatlas.cfm.

CDWR. 2014. Final California Water Plan Update 2013. http://www.waterplan.water.ca.gov/cwpu2013/final/.

CDWR. 2015. DRAFT Central Valley Flood System Conservation Strategy. http://www.water.ca.gov/conservationstrategy/cs_new.cfm.

California Landscape Conservation Cooperative (LCC). 2013. 5-Year Strategic Plan. http://www.californialcc.org/sites/default/files/basic/Strategic%20Plan.pdf.

LCC. 2015a. Conservation Plans in the Central Valley. Web. 23 Apr. 2015. http://climate.calcommons.org/article/conservation-plans-central-valley.

LCC. 2015b. Decision Support for Climate Change Adaptation and Fire Management Strategies for At Risk Species in Southern California. Web. 23 Apr. 2015. http://climate.calcommons.org/project/decision-support-climate-change-adaptation-and-fire-management-strategies-risk-species.

California Natural Resources Agency (CNRA). 2014. California Water Action Plan. http://resources.ca.gov/docs/california_water_action_plan/Final_California_Water_Action_Plan.pdf.

California State Water Resources Control Board. 2011. Water Quality Control Plan for the Sacramento and San Joaquin River Basins. http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/.

CalWeedMapper. 2015. CalWeedMapper Beta. Web. 23 Apr. 2015. http://calweedmapper.cal-ipc.org/regions/.

Central Valley Joint Venture. 2006.Central Valley Joint Venture Implementation Plan. http://www.centralvalleyjointventure.org/science.

Data Basin. 2014. Determining Landscape Connectivity and Climate Change Refugia Across the Sierra Nevada. Web. 23 Apr. 2015. http://databasin.org/galleries/a0a67d951a1c4cf186ee7b8d03e61953.

EcoAdapt. 2014. Climate Change Vulnerability Assessment for Focal Resources of the Sierra Nevada. Web. 23 Apr. 2015. http://ecoadapt.org/programs/adaptation-consultations/calcc-va.

Geos Institute. 2011. Integrated Strategies for a Vibrant and Sustainable Fresno County. www.geosinstitute.org/images/stories/pdfs/Publications/ClimateWise/FresnoClimateWiseFinal.pdf.

Geos Institute. 2014. Draft Redwoods Workshop Summary. GEOS Institute. https://nplcc.blob.core.windows.net/media/Default/2013_Documents/Managing_Coast_Redwood/WorkshopSummary.pdf.

Partners in Flight. 2004. The Riparian Bird Conservation Plan. http://www.prbo.org/calpif/pdfs/riparian_v-2.pdf.

Placer County. 2006. Pleasant Grove and Curry Creek Ecosystem Restoration Plan. http://www.placer.ca.gov/departments/communitydevelopment/planning/placerlegacy/watershedplanning/pgcc.

Sacramento County. 2009. Draft Climate Action Plan. http://www.ca-ilg.org/sites/main/files/file-attachments/sac_024271.pdf.

San Francisco Bay Joint Venture. 2001. Restoring the Estuary: Implementation Strategy of the San Francisco Bay Joint Venture -- A Strategic Plan for the Restoration of Wetlands and Wildlife in the San Francisco Bay Area. Print. http://www.sfbayjv.org/pdf/SFBJV_Executive_Summary.pdf.

San Francisco Bay Subtidal Habitat Goals Project (in partnership with California State Coastal Conservancy and Ocean Protection Council, NOAA National Marine Fisheries Service and Restoration Center, San Francisco Bay Conservation and Development Commission, San Francisco Estuary Partnership. 2010. Subtidal Habitat Goals Report. http://www.sfbaysubtidal.org/report.html.

San Francisco Estuary Project. 2007. Comprehensive Conservation and Management Plan. http://sfep.sfei.org/wp-content/uploads/2012/12/2007-CCMP.pdf.

Smith, T. B., S. Riley, K. S. Delaney, R. Harrigan, and H. Thomassen. 2014. Maximizing Evolutionary Potential Under Climate Change in Southern California Protected Areas. http://climate.calcommons.org//sites/default/files/reports/Smith-LCC-Final%20Report.pdf.

South Bay Salt Pond Restoration Program. 2015. Track Our Progress - South Bay Restoration-Home. Web. 23 Apr. 2015. http://www.southbayrestoration.org/.

Tejon Ranch Conservancy. 2013. Ranch-wide Management Plan - Conservation Activities and Best Management Practices. http://www.tejonconservancy.org/index_htm_files/Vol.%202_RWMP_final.pdf.

The Tricolored Blackbird Working Group. 2009. Conservation Plan for the Tricolored Blackbird (Agelaius tricolor) - Update. 2009. http://tricolor.ice.ucdavis.edu/files/trbl/Conservation%20Plan%20MOA%202009%202.0%20update.pdf.

Tulare Basin Wildlife Partners. 2013. Creating Opportunities for Nature and People. Web. 29 Apr. 2015. http://www.tularebasinwildlifepartners.org/.

U.S. Army Corps of Engineers (USACE). 2008. Beale Air Force Base Habitat Conservation and Management Plan. http://www.dodbiodiversity.org/case_studies/ch_5_3.html.

U.S. Department of Agriculture (USDA). 2015. Agricultural Conservation Easement Program. Natural Resources Conservation Service (NRCS). Web. 12 May 2015. http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/easements/acep/#.

---. 2015. Wetlands Reserve Program (WRP). NRCS. Web. 12 May 2015. http://www.nrcs.usda.gov/Internet/NRCS_RCA/reports/fb08_cp_wrp.html.

U.S. Department of the Interior (DOI). 2015. Grants.gov. Web. 12 May 2015. http://www.grants.gov/search-grants.html?agencies%3DDOI%7CDepartment%20of%20the%20Interior.

U.S. Environmental Protection Agency (USEPA). 2011. Region 9 San Joaquin Valley Strategic Plan. http://www.epa.gov/region9/strategicplan/EPA-r9-SJV-strategicplan.pdf.

U.S. Fish & Wildlife Service (USFWS). 2010. Rising to the Urgent Challenge, Strategic Plan for Responding to Accelerating Climate Change. http://www.fws.gov/home/climatechange/pdf/CCStrategicPlan.pdf.

USFWS. 2011. Conserving the Future: Wildlife Refuges and the Next Generation. https://www.fws.gov/refuges/pdfs/FinalDocumentConservingTheFuture.pdf.

USFWS. 2012. Conservation Partnerships Program. Web. 12 May 2015. http://www.fws.gov/cno/conservation/index.cfm.

---. 2012. Conservation Planning. Web. 23 Apr. 2015. http://www.fws.gov/cno/es/conplan.html.

USFWS. 2013. Invasive Species. Web. 12 May 2015. http://www.fws.gov/invasives/partnerships.html.

USFWS. 2014. Planning for Climate Change on the National Wildlife Refuge System. http://www.fws.gov/refuges/vision/pdfs/PlanningforClimateChangeontheNWRS.pdf.

---. 2014. Recovery Plan for Tidal Marsh Ecosystems in Northern and Central California. http://www.fws.gov/sfbaydelta/documents/tidal_marsh_recovery_plan_v1.pdf.

USFWS. 2015. Regional Species Recovery Plans.
http://ecos.fws.gov/tess_public/pub/speciesRecovery.jsp?sort=1.

---. 2015. Endangered Species - Species Recovery Plans. Web. 29 Apr. 2015.
http://www.fws.gov/endangered/species/recovery-plans.html.

---. 2015. Land Conservation Planning. Web. 23 Apr. 2015.
http://www.fws.gov/cno/refuges/planning/lcp.cfm.

---. 2015. National Wildlife Refuge Comprehensive Conservation Plans. Web. 23 Apr. 2015.
http://www.fws.gov/cno/refuges/planning/ccp.cfm. (Note: Individual Plans available for 21 Refuges in California).

---. 2015. Partners for Fish and Wildlife Program. Web. 23 Apr. 2015.
http://www.fws.gov/cno/conservation/Partners.html.

U.S. Navy. 2012. Integrated Natural Resources Management Plan.
http://www.denix.osd.mil/nr/upload/inrmps-2.pdf.

USGS Western Ecological Research Center. 2014. Coastal Ecosystem Response to Climate Change.
http://www.werc.usgs.gov/project.aspx?projectid=222.

Appendix C: Land Use Planning Companion Plan Development Team Members and Affiliations

Affiliation	Participant
California Association of Resource Conservation Districts	Chris Gardner Karen Buhr
California Coastal Conservancy	Sam Schuchat
California Council of Land Trusts	Darla Guenzler
California Department of Fish and Wildlife	Kari Lewis Mark Wheetley
California Natural Resources Agency	Chris Potter
California Office of Planning and Research	Louise Bedsworth Michael McCormick
California State Association of Counties	Cara Martinson
California Strategic Growth Council	Denny Grossman
Defenders of Wildlife	Kim Delfino
Gordon and Betty Moore Foundation	Dan Winterson
The Nature Conservancy	Elizabeth O'Donoghue
U.S. Fish and Wildlife Service	Sandy Osborn Victoria Touchstone Winnie Chan
U.S. Fish and Wildlife Service - Land Conservation Cooperatives	Andrea Graffis Rebecca Fris

Appendix D: Potential Partners for Collaboration

Please note that the following table does not provide an exhaustive list of potential partners. The organizations listed here were identified through the sector discussions, but the listing does not imply that they have agreed to partner or to implement SWAP 2015.Also note that the table was completed to the best of the team's knowledge. Where specific organizational efforts or orientations were unknown to the team, corresponding cells were left blank. An asterisk (*) indicates a new opportunity added by CDFW after the team discussions; therefore it was not addressed by the sector team.

Potential Partners	Data Collection and Analysis	Economic Incentives	Land Acquisition, Easement, and Lease	Management Planning	Training and Technical Assistance
Association of Bay Area Governments					
Biodiversity Council					
Bureau of Land Management (BLM)	✓				
CA Building Industry Association (CBIA)				✓	
CA Coastal Commission (CCC)				✓	
CA Council of Land Trusts					✓
CA Department of Fish and Wildlife (CDFW)	✓	✓	✓	✓	✓
CA Department of Fish and Wildlife (CDFW) • **Permanent Wetland Easement Program**	✓		✓	✓	
CA Department of Water Resources (DWR)		✓	✓		
CA Landscape Conservation Cooperative (LCC)	✓		✓	✓	✓
CA Ocean Protection Council (OPC)				✓	
CA State Coastal Conservancy (SCC)	✓	✓	✓	✓	✓
CA State Conservancies			✓	✓	
CA Water Quality Monitoring Council	✓	✓	✓	✓	✓
Central Valley Joint Venture	✓				
City and County Governments • **Planning Departments**	✓	✓	✓	✓	✓
Civic Spark Program				✓	
Delta Conservancy			✓	✓	
Delta Protection Commission				✓	
Delta Stewardship Council					✓
Ducks Unlimited				✓	
Freshwater Trust		✓			
Gordon & Betty Moore Foundation – San Francisco Bay Area Program			✓		
Governor's Office of Planning and Research					
Great Valley Center			✓		
GreenInfo Network	✓				
Land Trusts			✓	✓	

Potential Partners	Data Collection and Analysis	Economic Incentives	Land Acquisition, Easement, and Lease	Management Planning	Training and Technical Assistance
• Land Trust for Santa Barbara County					
Landowners	✓	✓	✓	✓	✓
Local Land Use Authorities	✓	✓	✓	✓	✓
Migratory Bird Joint Ventures • Central Valley • Intermountain West • Pacific Coast	✓		✓	✓	
National Conservation Training Center (NCTC)					✓
Natural Resources Conservation Service (NRCS) • Agricultural Conservation Easement Program • Wetlands Reserve Program (WRP)	✓	✓			✓
NatureVest		✓			
Resource Conservation Districts (RCDs)	✓				✓
Rivers and Mountains Conservancy		✓		✓	
San Diego Association of Governments (SANDAG)					
San Diego Climate Science Alliance					
San Joaquin River Conservancy		✓	✓	✓	
Santa Cruz Puma Project	✓				
Sonoma County Agricultural Preservation and Open Space District (SCAPOSD)	✓				
Southern CA Wetlands Recovery Project (SCWRP)			✓	✓	
State Coastal Conservancy San Francisco Bay Program			✓	✓	
State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards	✓			✓	✓
State Universities (e.g., UC Santa Cruz, UC Berkeley, UC Davis)	✓				
Strategic Growth Council					
Terrestrial Biodiversity and Climate Change Collaborative (TBC3)	✓				
The Nature Conservancy (TNC)				✓	✓
U.S. Department of Agriculture (USDA) • Conservation Reserve Program • Conservation Technical Assistance Program • Watershed Surveys and Planning Program • Watershed and Flood Prevention Operations Program					✓

Potential Partners	Data Collection and Analysis	Economic Incentives	Land Acquisition, Easement, and Lease	Management Planning	Training and Technical Assistance
U.S. Department of the Interior (DOI)					
U.S. Environmental Protection Agency (USEPA)	✓				✓
U.S. Fish & Wildlife Service (USFWS) • **Conservation Easement Program** • **Partners for Fish & Wildlife Program**	✓	✓	✓	✓	✓
U.S. Forest Service (USFS)	✓				
University of CA Cooperative Extension (UCCE)	✓				
University of CA, Berkeley	✓				
University of CA, Davis	✓				
University of CA, Santa Cruz	✓				

Appendix E: Potential Financial Resources

Potential Financial Resources *(Note: this information is intended to serve as a starting point for outreach and potential engagement, and does not represent a comprehensive list of all the potential funding sources)*	Data Collection and Analysis	Economic Incentives	Land Acquisition, Easement, and Lease	Management Planning	Training and Technical Assistance
AB 32 cap and trade	✓				
CA Coastal Commission (CCC)				✓	
CA Department of Fish and Wildlife (CDFW)	✓				
CA State Coastal Conservancy (SCC)	✓				
Gordon & Betty Moore Foundation		✓	✓		
Land Conservation (Williamson Act) Program		✓			
Land & Water Conservation Fund			✓		
Land Trusts • **Land Trust for Santa Barbara County**				✓	
Migratory Bird Act • **Central Valley** • **Intermountain West** • **Pacific Coast**			✓		
Natural Resources Conservation Service (NRCS) • **Conservation Stewardship Program**	✓	✓			
NatureVest		✓			
Ocean Protection Council				✓	
Proposition 1	✓				
Resource Conservation Districts (RCDs)					✓
State Coastal Conservancy				✓	
State Universities (e.g., UC Santa Cruz)	✓				
The Nature Conservancy (TNC)					✓
U.S. Department of the Interior (DOI)					
U.S. Environmental Protection Agency (USEPA) – Clean Water Act 104(b) grants	✓			✓	✓
U.S. Fish & Wildlife Service (USFWS) • **Conservation Easement Program** • **Partners for Fish & Wildlife Program** • **Wildlife and Sport Fish Restoration (WSFR) grants**	✓	✓			

Funding sources available to multiple strategy categories:
USEPA - Clean Water Act Section 104(b) Wetland Development Grants
USFWS • **Partners of Fish & Wildlife Program** • **USFWS Coastal Grant Program**
CDFW – cap-and-trade funds for carbon sequestration and wetland restoration
County/Region - financial resources (some grant based)
OPC- bonds and grants (mainly Proposition 1 funds)
SCC - bonds and grants (mainly Proposition 1 funds)
SWRCB - Wetland and Riparian Area Monitoring Program (WRAMP)
Gordon & Betty Moore Foundation Bay Area Program
TNC • **"Water Flows for Nature" project incentives** • **Nature Vest - innovative financing solutions**

Appendix F: Companion Plan Management Team

Name	Title
Armand Gonzales	**SWAP 2015 Project Lead, CDFW**
Junko Hoshi	**SWAP 2015 Assistant Project Lead, CDFW**
Kurt Malchow	**SWAP 2015 Companion Plan Development Lead, CDFW**
Tegan Hoffman	**Project Director and Facilitator, Blue Earth Consultants**
Sarah Eminhizer	**Project Manager and Facilitator, Blue Earth Consultants**
Jennifer Lam	**Associate, Blue Earth Consultants**
Diana Pietri	**Associate, Blue Earth Consultants**

Appendix G: Glossary

The definitions found here are referenced from SWAP 2015, and are mostly adopted from the glossary in the Conservation Measures Partnership's (CMP) Open Standards for the Practice of Conservation (Version 2.0). Some terms have been added or refined to clarify their use by CDFW.

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.

climate change vulnerability: refers to the degree to which an ecological system, habitat, or individual species is likely to be negatively affected as a result of changes in climate and often dependent on factors such as exposure, sensitivity, and adaptive capacity.

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.

estuary: an area in which salt water from the ocean mixes with flowing fresh water, usually at the wide mouth of a river.

evaluation: an assessment of a project or program in relation to its own previously stated goals and objectives.

geographic information system (GIS): an organized assembly of people, data, techniques, computers, and programs for acquiring, analyzing, storing, retrieving, and displaying spatial information about the real world.

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.

landscape: the traits, patterns, and structure of a specific geographic area, including its biological composition, its physical environment, and its anthropogenic or social patterns. An area where interacting ecosystems are grouped and repeated in similar form.

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.

monitoring: the periodic collection and evaluation of data relative to stated project goals and objectives. Many people often also refer to this process as monitoring and evaluation (abbreviated M&E).

native: naturally occurring in a specified geographic region.

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.

private land: lands not publicly owned, including private conservancy lands.

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.

riparian: relating to rivers or streams.

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).

upland: referring to species, habitats, or vegetation types in non-flooded or non-saturated areas.

wetland: a general term referring to the transitional zone between aquatic and upland areas. Some wetlands are flooded or saturated only during certain seasons of the year. Vernal pools are one example of a seasonal wetland.

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