

Introduction

Mandate for the SWAP 2015 Update

In 2000, Congress enacted the State Wildlife Grants Program to support state programs that broadly benefit wildlife and habitats but particularly “species of greatest conservation need.” As a requirement for receiving funding under this program, state wildlife agencies were required to submit a Wildlife Action Plan (a comprehensive wildlife conservation strategy) to the U.S. Fish and Wildlife Service (USFWS) no later than October 2005. The California Department of Fish and Wildlife (CDFW), working in partnership with the Plan development team at the University of California, Davis, directed the development of the 2005 report, *California Wildlife: Conservation Challenges* (Bunn et al 2005), and associated Web publications. The report was directed at answering three primary questions:

- What are the species and habitats of greatest conservation need?
- What are the major stressors affecting California’s native wildlife and habitats?
- What are the actions needed to restore and conserve California’s wildlife, thereby reducing the likelihood that more species will approach the condition of threatened or endangered?

Since approval of SWAP2005, several new initiatives have or will be completed in California affecting strategies and priorities for managing the State’s natural resources. These initiatives include but are not limited to the following:

- California Natural Resources Agency’s 2009 Climate Change Adaptation Strategies;
- California Natural Resources Agency 2014 Safeguarding California report
- USFWS 2012 National Fish, Wildlife and Plant Climate Adaptation Strategy;
- CDFW and Caltrans 2011 California Essential Habitat Connectivity Project;
- CDFW 2011 Areas of Conservation Emphasis Mapping Model Phase II (ACE-II);
- CDFW Species of Special Concern (SSC) documents for birds, mammals, reptiles, amphibians, and freshwater fish;
- Implementation of the Marine Life Protection Act;
- Development of a large-scale conservation planning effort in the Sacramento-San Joaquin Rivers Delta (Bay Delta Conservation Plan),
- Development of a large-scale conservation planning effort in the southern California deserts region (Desert Renewable Energy Conservation Plan);
- The California Fish and Wildlife Strategic Vision Plan; and
- Adoption of the Department’s Policy for Quality in Science and Key Elements of Scientific Work.

Initiatives by other agencies and nonprofit organizations equally provide potential benefits and guidance for management of natural resources statewide including the California State Water Plan Update 2009, and the California Forest and Rangelands: 2010 Assessment. Significant recent changes to the environment have also been documented resulting from climate change including sea level rise, animal and vegetative community shifts, increased prevalence of invasive species, increased duration and intensity of wild fire, and prolonged drought. These climate-induced stresses to wildlife, in combination with previously known threats, have the potential to

greatly affect management strategies for wildlife species and habitats.

Purpose and Need

Each state must have a Wildlife Action Plan, approved by the USFWS Director, for the conservation of fish and wildlife. Each Wildlife Action Plan must consider the broad range of fish and wildlife and associated habitats, with priority on those species with the greatest conservation need, and take into consideration the relative level of funding available for the conservation of those species. The states must review and, if necessary, revise their Wildlife Action Plan by October 1, 2015, and every ten years afterwards, unless completed more frequently at each state's discretion. Revisions to state Wildlife Action Plans must follow the guidance issued in the July 12, 2007 letter from the Service's Director and the President of the Association of Fish and Wildlife Agencies.

Vision for the 2015 Update Process

Through the California State Wildlife Action Plan, the Department of Fish and Game seeks to conserve the resources in the nation's most biologically diverse state. We seek to create a flexible but scientific process to respond to changing challenges, including population growth, the need for renewable energy, and global climate change. The Department seeks to make best use of limited resources while developing lasting partnerships and increasing public participation in the conservation and management of California's valued natural resources.

Goal: The update will be prepared by our most knowledgeable experts to address the highest priorities of California's aquatic, marine and terrestrial resources. The update will use an ecosystem approach to manage California's diverse habitat and species creating a blueprint for conservation actions, and a flexible process for responding to the highest priorities. Most importantly, the update will identify initiatives needed to conserve species and habitats on an ecoregional basis with effective actions. While many of these actions will be direct on-the-ground activities, priorities for enhancing partnerships and increasing public awareness and involvement are a significant part of the plan.

Preparing the update for California is a demanding task. Conflicting interests and priorities among diverse stakeholders, coupled with the complexity of our biological resources demands a collaboration that invites involvement of all interested parties. CDFW is committed to developing a plan that serves the needs of the people of California to maintain its rich and diverse natural resource base.

Intended Audience

The SWAP 2015 is intended to be used by natural resource managers and practitioners working towards the shared goal of keeping common species common through strategic conservation planning. Recognizing that conserving wildlife in California requires the efforts of law enforcement, biologists, land managers, research scientists, water resource experts, city and county planners, landowners, developers, educators, policy-

makers, and many others, the SWAP 2015 will be based on science but not written in a scientific or highly technical fashion. SWAP 2015 will however provide more specific and technical information in companion plans specifically focused on activities conducted by public and private entities that have compatible benefits for fish, wildlife and habitats. Companion plans will be developed for land use management, agriculture, forests and rangelands, water use and management, transportation, tribal lands, renewable energy, consumptive and non-consumptive uses. Much of the SWAP update is a description of biological or ecological information and issues. An effort will be made to present the issues concisely using common terminology for a general audience. Where technical terms or concepts are used, they will be defined.

SWAP 2015 Conservation Units

State and federal wildlife and land-management agencies have divided the state into practical management jurisdictions based roughly on distribution of biological resources but also on the necessity of creating manageable areas. For the SWAP-2005, the plan development team took an approach similar to that of the Biodiversity Council, which designated nine regions based on multi-agency management jurisdictions combined with ecological features of the landscape.

For the SWAP 2015, Conservation units were identified using three separate sets of geographic units to identify priority conservation targets (species, habitats, ecosystems that are the focus of conservation strategies), to assess threats to those targets, and develop strategies to conserve those targets. The three unit layers are USDA ecoregions which will be used as the biogeographic units to assess threats and develop strategies for the terrestrial targets of the SWAP 2015; the National Hydrography Dataset (NHD), at the HUC 4 scale will be used for aquatic targets; and CDFW's Marine Life Protection Act study regions will be used for the marine targets (Figure 1).

The SWAP 2015 Update process will also need to address cross-boundary issues that may not be captured within the individual ecoregional or watershed planning unit or the state boundary, (e.g., issues such as cross-coordination across boundaries on strategies). In addition there may be other issues that require coordination among teams to ensure similar outputs, for example addressing anadromy or single species targets that use multiple habitat types, or different habitat types during different life-stages either within or across ecoregions/HUCs or state and addressing habitat or species targets that may shift across ecoregional/HUC or state boundaries as a result

Figure 1. California SWAP 2015 Conservation Units

SWAP 2015 Conservation Units



Hydrologic Units (HUC)

Code	Name
1503	Lower Colorado
1604	Black Rock Desert - Humboldt
1605	Central Lahontan
1606	Central Nevada Desert Basins
1710	Oregon - Washington Coastal
1712	Oregon Closed Basins
1801	Klamath - Northern California Coastal
1802	Sacramento
1803	Tulare - Buena Vista Lakes
1804	San Joaquin
1805	San Francisco Bay
1806	Central California Coastal
1807	Southern California Coastal
1808	North Lahontan
1809	Northern Mojave - Mono Lake
1810	Southern Mojave - Salton Sea

California Ecoregions

Code	Name
261A	Central California Coast
261B	Southern California Coast
262A	Great Valley
263A	Northern California Coast
322A	Mojave Desert
322B	Sonoran Desert
322C	Colorado Desert
341D	Mono
341F	Southeastern Great Basin
342B	Northwestern Basin and Range
M261A	Klamath Mountains
M261B	Northern California Coast Ranges
M261C	Northern California Interior Coast Ranges
M261D	Southern Cascades
M261E	Sierra Nevada
M261F	Sierra Nevada Foothills
M261G	Modoc Plateau
M262A	Central California Coast Ranges
M262B	Southern California Mountain and Valley

Legend

- San Francisco Bay-Delta unit (with 1m sea-level rise adjustment)
- Marine Conservation Units**
- North Coast
- North Central Coast
- Central Coast
- South Coast
- California Ecoregions

of climate change. Therefore there will be coordination between ecoregional/HUC teams as they progress through the steps in the process (e.g. assess threats, develop strategies), especially for species and habitats that currently cross or may cross state and/or ecoregional boundaries in the future in response to climate change.

Update Process

The SWAP 2015 update will be accomplished in 3 phases.

Activities for Phase I:

- A. Develop and update the data needed to support the informational needs of the plan update;
- B. Conduct a state-wide assessment of SGCN vulnerability to climate change;
- C. Train and engage Department staff and key partners in the assessing threats and developing strategies for priority habitats using the Open Standards for the Practice of Conservation and Miradi (see "Planning Approach" below) to be included in the update;
- D. Conduct the initial public outreach and scoping.

Activities for Phase II:

- A. Create a vision for wildlife and habitat conservation in California that is scientific, appealing, and relevant to the people of California in terms of how it will benefit them;
- B. Assess how the SWAP 2005 has been used since creation, i.e. provide a framework for State Wildlife Grant (SWG) grants including a description of what grants have been received since 2006, provide an accounting on what has been accomplished to date and, lessons learned implementing the SWAP 2005;
- C. Review and revise relevant sections of the SWAP 2005 based on the new information and initiatives developed since 2005. This includes a stratified assessment of threats for priority habitats by Conservation Unit;
- D. Provide climate and other projections based on the best scientific information available and incorporate climate change effects and adaptation strategies into ecoregional and statewide analyses for assessing threats and developing climate adaptation strategies;
- E. Develop and integrate a list of species that present management challenges in the face of climate change and other stressors;
- F. Integrate statewide conservation strategies from individual Conservation Units goals and actions;
- G. Develop conservation actions consistent with relevant planning documents developed by other natural resource agencies that may affect fish and wildlife and their habitats by applying the principles of Integrated Resource Management. Identify priorities and methods for monitoring conservation actions and describe adaptive management strategies;
- H. Describe the public participation process followed in the development of the SWAP 2015. There will be two public scoping opportunities; the first will invite input from the public and stakeholders on the draft strategies developed for individual conservation units. The second will provide the public with the

opportunity to provide input on the draft document itself, prior to its final publishing.

Activities for Phase III

- A. Develop companion plans specifically focused on activities conducted by public and private land managers that have compatible benefits for fish and wildlife. Companion plans will be developed for land use management, agriculture, forests and rangelands, water use and management, transportation, tribal lands, renewable energy, consumptive and non-consumptive uses).

Planning Approach for the Update

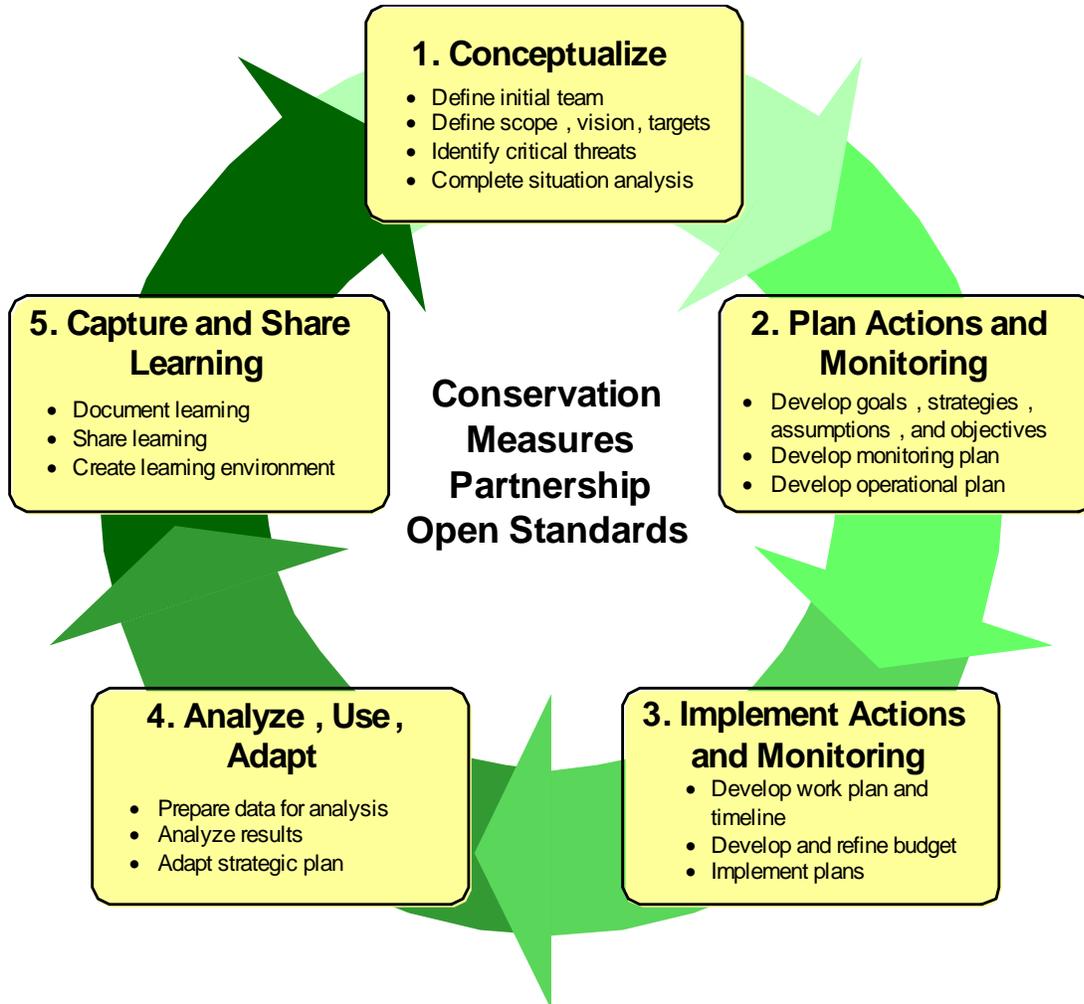
The planning approach that will be used for updating the SWAP 2015 is the *Open Standards for the Practice of Conservation* (www.conservationmeasures.org) developed by the Conservation Measure Partnership. The Conservation Measures Partnership developed the *Open Standards* in order to provide conservation practitioners with the steps and general guidance necessary for the successful implementation of conservation projects. The *Open Standards* is a widely accepted conservation planning framework that brings together common concepts, approaches, and terminology in conservation project design, management, and monitoring in order to help practitioners improve the practice of conservation. The *Open Standards* propose an adaptive management approach that helps conservation practitioners systematically plan their conservation strategies, determine if their strategies are on track, why they are on track or not, and what adjustments they need to make. The five steps that comprise the project management cycle are: 1) Conceptualizing the project vision and context; 2) Planning actions and monitoring; 3) Implementing actions and monitoring; 4) Analyzing data, using the results, and adapting the project; and 5) Capturing and sharing what's been learn (Figure 2).

The *Open Standards* have served as the framework for the development of the Miradi Adaptive Management Software Program that walks practitioners through the conceptualization and planning steps (Steps 1 and 2) in the adaptive management cycle. This software will be used by the ecoregional teams to capture the information necessary to develop the SWAP. The information will then be used to compare information across the state and region, and then aggregate and report it in various forms to interested audiences and users.

The outputs of each step of the *Open Standards* process are consistent with those needed to fulfill the eight elements required by the USFWS for State Wildlife Action Plans (see below) and the framework proposed by Association of Fish and Wildlife Agencies' (AFWA) Teaming With Wildlife Committee for measuring the effectiveness of State Wildlife Grants (AFWA 2011). Because of the severe economic constraints that the State is currently facing, it may seem like the wrong time to implement an effectiveness measures framework. However, increased scrutiny on budgets and growing expectations by the public require that we be as efficient and effective as possible or risk losing hard fought and much needed funding. By developing an

appropriate set of effectiveness measures, the state will be better able to articulate the value of the State Wildlife Grants we receive to USFWS and taxpayers, but most importantly better ensure positive conservation impacts (AFWA 2011).

Figure 2. CMP Open Standards Project Management Cycle Version 2.0



USFWS Required Elements and Guidance for the SWAP 2015 Update

The USFWS and the AFWA have provided guidance on the development, approval, implementation and revision of Wildlife Action Plans and the expenditure of State Wildlife Grant funds to assist states in carrying out this mandate. The most recent guidance was a letter by the Director of the USFWS and the President of the AFWA regarding requirements for plan revision (FWS/ AFWA Revision Guidance, 2007). Consistent with the 2005 SWAP, the update will need to address the eight required elements and sub-elements (as described in the NAAT Review Reference Guide). In each of the sections below, the eight required elements are highlighted with a description of how they will be addressed in the SWAP 2015 update process.

USFWS Required Element 1: Information on the distribution and abundance of species of wildlife, including low and declining populations as the state fish and wildlife agency deems appropriate, that are indicative of the diversity and health of the state's wildlife.

Guidance: According to the AFWA Guiding Principles White Paper (2002), Wildlife Action Plans should address the broad range of wildlife and associated habitats, as well as combine landscape/ecosystem/habitat-based approaches and smaller-scale approaches (e.g. focal, keystone, and/or indicator species; guilds; species of special concern) for planning and implementation. The AFWA Guidance Binder (2003) provides specific criteria for the evaluation of species for inclusion as a species in greatest need of conservation. Many of those criteria may need to be reevaluated in the context of climate change, including criteria for the following categories: globally rare species; declining species; endemic species; disjunct species; vulnerable species; small, localized populations; species with limited dispersal; species with fragmented or isolated populations; species of special conservation concern; focal species; keystone species; wide-ranging species; species with specific needs; indicator species; responsibility species (i.e. species that have their center of range within a state) and species that rely on concentration areas (e.g. migratory stopover sites, bat roosts/maternity sites). The evaluation should describe how and why a state's species in greatest conservation need (SGCN) list priorities will change as a result of the evaluation (AFWA 2009).

SWAP update process: CDFW relied on a designated Special Animals List, also referred to as "species at risk" or "special status species" in the SWAP 2005 to identify the species in greatest conservation need (SGCN). This list includes approximately 800 species, representing marine, aquatic, and terrestrial habitats, and includes birds, mammals, reptiles, amphibians, fish, and invertebrates. It focuses on threatened and endangered species and species of special concern, as well as species that are rare or declining in numbers.

The CDFW is in the process of updating its reports on species of special concern for birds, mammals, reptiles and amphibians, and fish, and which includes new or updated species range maps and climate change vulnerability assessments. A Species of Special Concern (SSC) is a species, subspecies, or distinct population of an animal*

native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria:

- is extirpated from the State or, in the case of birds, in its primary seasonal or breeding role;
- is listed as Federally-, but not State-, threatened or endangered;
- meets the State definition of threatened or endangered but has not formally been listed;
- is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status;
- has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status.

The Wildlife Action Plan technical team has determined the list of SGCN for the SWAP 2015 will consist of all State and Federal listed and candidate species, all species of special concern (all taxa), and species identified as being highly vulnerable to the effects of climate change.

The focus of the SWAP 2015 will continue to be the conservation of habitats and ecosystems that sustain the State's wildlife (see Required Element 2 below). Obviously, plants and plant communities are integral components of habitats and ecosystems. However, it is beyond the scope of the SWAP to review individual plants or plant communities. Plants or plant communities will continue to be integral to topics about threats such as invasive plants and as affected habitats that are important for maintaining wildlife diversity. Habitat descriptions will also include mention of important dominant or characteristic plants.

Initially, there will be a limited number of conservation targets (i.e. the species, habitats, and ecosystem that are the focus of conservation strategies) addressed by each team for a particular Conservation unit. Additional conservation targets and strategies will be added as others are completed.

Required Element 2. Descriptions of locations and relative condition of key habitats and community types essential to conservation of species at risk.

Guidance: Revision of Element 2 for climate change should address the broad range of habitats associated with SGCN. Both landscape and smaller scale approaches should be considered (AFWA Guiding Principles White Paper, 2002). Spatially explicit information such as GIS-produced maps can be a useful tool for describing habitat conditions and location and can be used by the agency and partners to guide conservation work and inform land-use decision making (AFWA Guiding Principles White Paper, 2002). If possible, the revision process should consider habitats/ biotic communities that serve as “umbrellas” for species assemblages. A habitat/vegetation approach can improve efficiency in managing for multiple species and serve as a way to

conserve all species, including common and game species (AFWA Guidance Binder, 2003). Climate change revisions should consider the scale required for effective conservation of habitats in the face of a changing climate and suggest coordination processes for conservation at effective scales (NAAT One Year Out Guidance, 2004).

SWAP 2015 update process: The SWAP 2015 update will approach conservation issues and needs from an ecoregional, watershed, and marine study region scale (collectively referred to as Conservation Units). This is consistent with the above guidance and current conservation biology science and recommendations of conservation practitioners. For example, in California, since the early 1990s, federal, state, and local agencies have collaborated to develop Natural Community Conservation Plans (NCCPs) that protect habitat areas important to numerous species within a region.) In 2000, California enacted amendments to the NCCP statutes, reconfirming the state's endorsement of broad regional-scale approaches to wildlife conservation. Nongovernmental conservation organizations, such as The Nature Conservancy, are encouraging broad approaches to conservation, developing projects that benefit, not just individual species, but the full complement of species that make up ecological communities.

The CDFW has an ongoing program to collect habitat distribution and condition information for priority habitats and regions. The Vegetation Classification and Mapping Program conducts many of the habitat surveys and produces the habitat and condition maps for priority conservation regions or areas. (See the Vegetation Classification and Mapping Program on the Web at <http://www.CDFW.ca.gov/bdb/html/vegcamp.html> .)

Detailed habitat information is typically compiled as part of major conservation planning efforts such as development of a NCCP or CDFW's high mountain lakes program. Habitat location and condition studies will continue as part of these kinds of large-scale regional conservation efforts.

Habitat location and condition information is also collected with species sighting records for the Natural Diversity Database. Additionally, available habitat location and condition information is imported into the California Wildlife Habitat Relationships System for use by biologists and conservation practitioners. (See http://www.CDFW.ca.gov/bdb/html/wildlife_habitats.html .)

Numerous ongoing efforts in California gather information on vegetation and habitat condition. The most detailed habitat condition analyses are done in conjunction with regional habitat conservation planning efforts. Among many other regional habitat analyses efforts, the following are examples of California projects or programs that have compiled detailed habitat information:

- Natural Community Conservation Programs in Southern California
- The San Francisco Bay Area Wetlands Ecosystem Habitat Goals Project
- The CalFed Ecosystem Restoration Program
- CDFW's High Mountain Lakes Surveys
- The North Coast Watershed Assessment Program

- Habitat Joint Ventures (there are five Joint Ventures in California)
- The Sierra Nevada Ecosystem Project (completed in 1996)

The species, habitats, and ecosystems that are the focus of strategies identified in the SWAP (i.e. conservation targets) will be identified through a data driven scientific process that will strive to be time-bonded, actionable, transparent, repeatable, and measurable. The conservation targets will be identified at a scale relevant to geographic scope (i.e. ecoregions, watersheds, and marine protection study regions) where it occurs.

Required Element 3. Descriptions of problems and threats that may adversely affect species at risk or their habitats, and priority research and survey efforts needed to identify factors which may assist in restoration and improved conservation of these species and their habitats.

Guidance: Revision of Element 3 will require that states examine the full range of issues, including non-wildlife factors that have substantial impact on wildlife conservation (AFWA Guiding Principles White Paper, 2002). Wildlife Action Plans should address issues at the state level and coordinate with parallel efforts in other states and countries (AFWA Guiding Principles White Paper, 2002). Threats analyses (or other comparable methodology) should be used to set goals and priorities and should identify knowledge gaps for future study (AFWA Guiding Principles White Paper, 2002). States should consider acquiring information on how habitats and communities are likely to change as a result of climate change (i.e. use scenario-building processes); how climate change will affect the future abundance and distribution of habitat types as well as changes in structure and physical characteristics; and the implications of the appearance of novel (no-analog) communities as vegetation responds to changing climate; and should consider using vulnerability assessments as a tool for identifying and describing the impacts of climate change on key habitats. (AFWA 2009).

SWAP 2015 update process: The SWAP update will assess how human-induced threats negatively affect wildlife species and habitats. This is inherently a negative topic. There are many positive examples of private organizations, landowners, and public agencies working to solve problems affecting wildlife and to restore degraded habitats. But the SWAP update will specifically focus the threats affecting wildlife habitat and what additional actions are needed to maintain wildlife diversity in the future. The issues will be presented in a straightforward style, describing effects of a threat on habitats, ecosystems, or species. For example, the plan will be direct about how growth and development are replacing and fragmenting wildlife habitats. The directness of the description of threats should not be interpreted as a lack of appreciation for the legitimacy and benefits of activities and projects that also affect wildlife. Residential and commercial development, agricultural operations, diversions of state waters, and recreational activities are all necessary and important. However, the plan will recommend changes in human activities, such as improving conservation planning, to reduce the impact of development on important habitats.

Teams of stakeholders for each of the Conservation units (described above) will conduct the assessment of threats, including impacts from climate change, at regional workshops, consultations with resource experts in each Conservation unit, and through review of major conservation planning documents. The assessment of threats will then be presented at the regional public scoping meetings. If the threat is not within the jurisdiction of or likely to be affected by the work of wildlife- and natural resources management agencies or organizations, the plan update may not address it. For example, air pollution is certainly a threat affecting soils in the Mojave Desert and forest ecosystems in the Sierra Nevada, but solutions to air pollution will most likely be motivated by human health considerations in urban areas rather than any management consideration regarding wildlife resources. Thus, this report will not highlight air pollution as a major threat to wildlife.

As part of the SWAP 2015 threat assessment, CDFW and partners will conduct a climate vulnerability assessment for each habitat target, in which they will evaluate the sensitivity of the habitat to the projected exposures to climate changes and the potential resulting ecological consequences. The update process will consider climate change as a new problem for species and habitats, including potential direct and indirect exposures to climate changes (e.g. increased temperatures, precipitation changes, sea level rise, invasive species, disease, snowpack extent and duration and increased number and severity of floods, droughts and wildfires). The update process will review current human-induced threats through a climate lens using tools such as Cal-adapt (<http://cal-adapt.org/>), and treat climate change as both a new and exacerbating threat.

Required Element 4. Descriptions of conservation actions determined to be necessary to conserve the identified species and habitats, and priorities for implementing such actions.

Guidance: Revision of Element 4 will require that states describe the conservation actions needed to address the high priority threats to SGCN and their habitats identified in Element 3. Identification and prioritization of actions should involve all relevant partners and consider various approaches at appropriate state, regional and national scales (AFWA Guiding Principles White Paper, 2002). Actions should make full use of existing information, identify knowledge gaps and incorporate techniques such as vulnerability assessments to set priorities (AFWA Guiding Principles White Paper, 2002). Wildlife Action Plans should be a driving force in guiding activities under diverse wildlife and habitat conservation initiatives and should include all needed actions regardless of funding source or state wildlife agency capacity (AFWA Guiding Principles White Paper, 2002; NAAT OneYear-Out Guidance, 2004). Conservation actions should be described sufficiently to guide implementation of those actions through development and execution of specific projects and programs. States should identify actions that specifically address the direct and indirect impacts of climate change on species and their habitats over a wide range of likely future climate conditions, and conservation actions should be prioritized in consideration of multiple threats and increased uncertainty (AFWA 2009).

SWAP 2015 update process: The SWAP update is a state-wide plan rather than a CDFW plan and therefore it will continue to include actions currently or to be implemented by relevant partners in the future, not only CDFW, as noted in the guidance. The conservation actions that are currently addressing or that are needed to address the major threats will be identified by the teams, including stakeholders, for each target within the Conservation units at the regional (web-ex) workshops, through expert consultations and document reviews. The proposed actions will then be presented and reviewed at the regional public scoping meetings.

Actions will be identified that specifically address the direct and indirect impacts of climate change on species and their habitats over a wide range of likely future climate conditions. The conservation actions will be prioritized in consideration of multiple threats, feasibility, benefits, and increased uncertainty.

The conservation actions identified for the plan update will be the major efforts, often involving multiple agencies and partners. The conservation actions will identify the most appropriate agencies or partners likely to take the lead in the implementation of the actions. The actions will be described with enough detail to be clear but in broad enough terms to accommodate flexibility in how they may be implemented.

Only priority actions will be presented in the SWAP 2015. Prioritization of conservation actions will continue as the SWAP and its recommended actions are discussed further with agencies and partners that are likely to be involved in implementation.

Required Element 5. *Descriptions of the proposed plans for monitoring species at risk and their habitats for monitoring the effectiveness of the conservation actions proposed in Element 4 and for adapting these conservation actions to respond appropriately to new information or changing conditions.*

Guidance: Revision of Element 5 will require that states identify proposed monitoring plans. When developing or adapting monitoring efforts for incorporation of climate change, states should base their Wildlife Action Plans in the principles of “best science,” “best management practices,” and “adaptive management,” with measurable goals, objectives, strategies, approaches and activities that are complete, realistic, feasible, logical and achievable (AFWA’s Guiding Principles White Paper, 2002). Wildlife Action Plans should describe the proposed plans for monitoring species and their habitats and the effectiveness of the conservation actions taken, with attention given to adapting conservation actions to new information and changing conditions (AFWA Guidance Binder, 2003). States should consider how existing monitoring plans can or should be modified to address climate change or if climate change monitoring should be considered independently (AFWA 2009).

SWAP 2015 update process: CDFW and numerous federal, state, and local agencies and private organizations are engaged in various levels of monitoring of species and natural communities throughout the state. For the SWAP 2005, CDFW’s Resource Assessment Program conducted a survey of the wildlife and ecosystem monitoring

efforts throughout the state in order to build upon existing efforts and to improve the usefulness of monitoring results from various institutions.

The SWAP 2005 took the approach that defining specific performance measures and monitoring for conservation actions would best be designed by those organizations engaged in implementing the conservation action, and that it would not be practical to monitor all species at risk and their habitats. Many of the conservation actions recommended in the SWAP 2005 were developed further through workshops and public processes, and implementation plans for those actions included monitoring and adaptive management plans as needed. For example, the SWAP 2005 recommended the completion and implementation of some regional conservation planning efforts, such as the West Mojave Plan. Plans for the monitoring of species and habitats and for monitoring the effectiveness of conservation actions, including procedures for adaptive management, are incorporated into such regional conservation plans.

The update process will consider increasing monitoring efforts to better evaluate the effectiveness of conservation actions and inform adaptive management, which is of increased importance in responding to climate change. Teams, including stakeholders, in regional workshops, with experts, and document review, will identify specific goals for targets, based on their existing condition. Teams will also define performance objectives, indicators, and metrics for measuring the effectiveness of conservation actions towards accomplishing the goals for the targets. The update process will consider new collaborations with other states, NGO's, citizen scientist organizations etc., to improve species and habitat monitoring across entire ranges and regions. Monitoring plans will be presented and reviewed at regional public scoping meetings.

Required Element 6. Descriptions of procedures to review the strategy at intervals not to exceed 10 years.

Guidance: Revision of Element 6 will require that states identify the timeframe for future plan revisions. The AFWA Guiding Principles White Paper (2002) recommended that Wildlife Action Plans include review procedures that ensure the plans are dynamic and can be improved and updated efficiently as new information is obtained. The NAAT One Year Out Guidance (2004) states that additions and changes to Wildlife Action Plans should be identified as part of the "element guide" and where appropriate demonstrates the linkages between changes in the elements. For example, a change in the SGCN list (Element 1) might require reprioritization of the actions necessary to conserve species and/or their habitats (Element 2). According to the FWS/AFWA Revision Guidance Letter (2007) all states should review/revise their Action Plans by October 1, 2015, or by the date specified in their approved Action Plan. Many states are currently revising their Wildlife Action Plan or may be doing so in the future to better incorporate climate change. The FWS/AFWA Revision Guidance Letter (2007) instructs that states contact their Wildlife and Sport Fish Restoration State Wildlife Grant Specialist in their USFWS regional office for guidance at the outset of their revision process. If a state included only a brief mention of climate change, then the state may make a request of the

Service to include climate change as an emerging issue. The request should be made as a letter to the U.S. Fish and Wildlife Service describing the emerging issue and committing the state to a thorough discussion of the climate change in the next scheduled revision of their Wildlife Action Plan. States planning to revise their Wildlife Action Plans to more fully incorporate climate change should refer to the FWS/AFWA Revision Guidance Letter (2007) to determine if a revision will be considered “major” or “minor” and to ensure the proper steps are followed.

SWAP update process: CDFW envisions that the SWAP 2015 update will provide goals, objectives, and actions that can be implemented on a state-wide or local scale to intervene on threats and stresses affecting conservation targets for all Conservation units. As new information is developed, new research is completed or new issue emerge, it will be necessary to update the plan periodically to address these new issues. The SWAP 2015 is planned to be a dynamic online resource, which can be efficiently and frequently updated as needed. In addition the timeframe for assessment of threats to conservation targets and the strategies and actions to address these threats will be from 1 year to 50 years to take into account the effects of climate change and the need for a long view towards climate change adaptation. As such, monitoring and evaluation of progress towards goals and objectives will need to take place over a long timeframe to allow for adaptive management as we gain more understanding regarding the effects of climate and learn from our experience.

The SWAP update process will be an iterative, adaptive management process, where information gaps, uncertainties, and planning and research needs will be recognized and incorporated.

Required Element 7. Description of the plans for coordinating, to the extent feasible, the development, implementation, review, and revision of the strategy with federal, state, and local agencies and Indian tribes that manage significant land and water areas within the state or administer programs that significantly affect the conservation of identified species and habitats.

Revision of Element 7 will require that states describe how they will coordinate with partner organizations. Coordination is encouraged, especially for border states and states where such coordination is needed for successful conservation of SGCN (NAAT One Year Out Guidance, 2004). Many efforts are underway by state agencies, federal agencies and private conservation organizations to plan for climate change. In addition, there is rapid growth in the volume of information becoming available about climate change including vulnerability assessment, wildlife adaptation and research and monitoring. Coordination with partners will help ensure that state fish and wildlife agencies can use and distribute information on climate change in an efficient and effective manner (AFWA 2009).

SWAP update process: Coordinating implementation of the SWAP and revisions will involve meetings and workshops with involved agencies and partners. Much of the interagency coordination will occur through the CDFW’s participation in four Landscape

Conservation Cooperatives that overlap California including the California, Desert, North Pacific and Great Basin LCs. Also the CDFW is collaborating with the U.S. Forest Service, Department of Water Resources, Calfire, and the California Biodiversity Council to develop a plan for integrated resource management. Through this process common goals for the conservation of natural resources can be coordinated amongst the agencies providing efficiencies and reduce conflicts.

Required Element 8. Description of the necessary public participation in the development, revision, and implementation of the strategy.

AFWA's Guiding Principles White Paper (2002) made a number of recommendations related to public participation including the importance of documenting decision points, involving partners early in the process and using traditional (e.g. public meetings) and technological innovations (e.g. internet polling) to engage the public. The Plan Revision Guidance Letter (2007) stated that "a major revision of a Wildlife Action Plan will require that states address element eight and provide an up to date public review process." The letter also stated that "states are encouraged to post an electronic version of their most recent Action Plan on the web along with the summary of significant changes and "road map." The AFWA Guidance Binder (2003), made the following suggestions related to public participation. Agency capacity for leading a public participation process should be assessed and those leading the process should be experienced and well trained. Where capacity is lacking, professionals outside the agency should be utilized. Objectives for public involvement should be determined during the early stages of planning and be based on agency and public needs or requirements. Existing conservation efforts should be acknowledged and the voluntary nature of the plan should be emphasized. States should recognize that there are a variety of positions on climate change even among those who value wildlife. Controversy associated with policies to reduce greenhouse gasses (e.g. cap and trade protocol) should be separated from the necessity to immediately address the impacts of climate change to wildlife (AFWA 2009)

SWAP 2015 update process: Public participation is a major consideration in the development of SWAP 2015. There will be numerous opportunities for the public to be informed and become involved in the update process. A series of 13 public scoping meeting are planned throughout the state after the draft conservation actions have been developed and prior to producing the first draft of the SWAP 2015. The public will have access to the SWAP 2015 web-site (www.CDFW.ca.gov/SWAP_2015/Update) for information regarding meeting locations, schedule, meeting materials, and all SWAP 2015 related documents and links. A monthly newsletter will keep the public informed of activities and timeline. Comments will be received by mail or email, and directly in writing from the public at the scoping meetings. All comments received will be acknowledged and posted to the SWAP 2015 webpage.

Members of the public and stakeholders will also be encouraged to participate in the development of the various companion plans. The companion plans will offer the opportunity for the public and stakeholders to provide direct input into conservation strategies that were developed for individual Conservation units.

References

AFWA, Measuring the Effectiveness of State Wildlife Grants (2011)
Congressional Legislation – Required 8 Elements (2000)
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AFWA Voluntary Guidance for States to Incorporate Climate Change into State Wildlife Action Plans & Other Management Plans (2009) http://www.fishwildlife.org/files/AFWA-Voluntary-Guidance-Incorporating-Climate-Change_SWAP.pdf

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Coordinated effort between the United States Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS), the United States Geological Survey (USGS), and the Environmental Protection Agency (EPA). The Watershed Boundary Dataset (WBD) was created from a variety of sources from each state and aggregated into a standard national layer for use in strategic planning and accountability. Watershed Boundary Dataset for {county, state, or HUC#}, State [Online WWW]. Available URL: "http://datagateway.nrcs.usda.gov" [Accessed DD/MM/YYYY].