7 Integration and Implementation

Integration of SWAP 2015 into California's ecologically, socio-economically, and politically intricate landscape is a complex but needed task. The state's ecology is influenced by natural conditions, both physical and biological, and by human demands. Any effort that attempts to influence this dynamic will require an appreciation of the complexities inherent in balancing the needs of wildlife with the needs of society. This will require an open-minded and innovative approach to explore the full range of potential opportunities beyond those that have been tried in the past.

The SWAP 2015 integration process includes developing more detailed SWAP companion plans, systematically pursuing resources necessary for implementation of conservation strategies, effectively coordinating with CDFW partners, adaptively responding to emerging issues, and rigorously reviewing and revising the plan, as needed over time (the latter of which is required Element 6 of the SWAP). In addition, public participation is an essential part of implementing a successful plan (Element 8).

CDFW has established a SWAP program that uses Miradi and Miradi Share to dynamically adapt the plan as new information becomes available. California's SWAP is not seen as an every-10-year effort. Instead, systems have been put into place for teams to add priority targets, identify stresses and pressures, update strategies and actions, monitor and evaluate target conditions, and share lessons in real time (Element 7).

Federal funding, through the State and Tribal Wildlife Grants (SWG) Program, is provided to states and territories to plan and implement proactive conservation actions to prevent the nation's fish and wildlife from becoming endangered. By preparing and implementing SWAP 2015, California will be eligible for SWG funding for CDFW and conservation partners to restore and actively manage declining wildlife and to prevent species from becoming listed under the state and/or federal Endangered Species Acts. This chapter describes important integration and implementation approaches for SWAP 2015. Monitoring the effectiveness of the conservation strategies is described in the Chapter 8.

7.1 Integration with Other CDFW and Resource Agency Programs

Effectively implementing SWAP 2015 involves integrating recommendations from the SWAP 2005 Evaluation Report (see Section 8.2) and conservation strategies presented in Chapter 5 and Chapter 6, into the spectrum of other conservation programs administered by CDFW and the relevant efforts of other state and federal resource agencies.

The stakeholder-driven process to prepare a Strategic Vision for CDFW based on 2010 legislation (AB 2376, Huffman) requires, among other things, that CDFW and the Fish and Game Commission 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. Also, CDFW and the Fish and Game Commission are to participate in interagency coordination processes that facilitate consistency and efficiency in review of projects requiring multiple permits. Interagency coordination will include, but not necessarily be limited to, joint state, federal, and local permit review teams that enable early consultation with project applicants and improved sharing of data, information, tools, and science to achieve better alignment of planning, policies, and regulations across agencies.

7.1.1 Integrating SWAP 2015 with Other CDFW Programs and Tools

CDFW conducts habitat management and conservation activities in a wide variety of programs. Integrating the implementation of the SWAP conservation strategies with these existing programs can help achieve successful conservation and management of wildlife. These programs include managing CDFW lands and associated water resources, conservation planning for special-status species and their habitats, mapping and database administration, invasive species control programs, fish hatchery operations, habitat restoration projects, Delta programs, marine protection programs, toxic spill prevention and response, environmental review and permitting, and administration of grants. SWAP 2015 must work with each of these existing programs in implementing statewide wildlife conservation.

Among the most important areas for integration will be preparing, approving, and implementing regional- and landscape-level conservation plans. These include Natural Community Conservation Plans (NCCPs), Habitat Connectivity Planning, the Master Plan for Marine Protected Areas, and individual species management plans. These programs and potential opportunities for SWAP integration are noted below and are also discussed in Chapter 3. Development of coordinated regional conservation strategies, such as NCCPs and habitat linkage planning, is important for preserving ecological integrity of ecosystems. The plans must be well coordinated and implemented by local and regional participants.

- The NCCP program takes a long-term, broad-based, ecosystem approach to planning for the protection and perpetuation of biological diversity, which is completely consistent with the goals of the SWAP. An NCCP identifies and provides for the regional protection of plants, animals, and their habitats, while allowing compatible and appropriate economic activities. The NCCP program is a cooperative effort to protect ecosystems as a whole under the Natural Community Conservation Planning Act of 2003. Early plans were adopted in San Diego County, Orange County, and the Inland Empire counties. Planning efforts are also underway in Butte, Santa Clara, Placer, Yolo, Sutter, and Yuba Counties. There are 23 active NCCPs covering more than 11 million acres in California.
- The California Essential Habitat Connectivity Project, commissioned by CDFW and Caltrans, is intended to guide development of a functional network of connected wildlands essential to the continued support of California's diverse natural communities in the face of development and climate change (CDFG and Caltrans 2010). The project report includes three primary products that are useful to support SWAP wildlife conservation strategies: (1) a statewide Essential Habitat Connectivity Map, (2) information characterizing areas delineated on the map, and (3) guidance for mitigating the fragmenting effects of roads and for developing and implementing local and regional connectivity plans.
- The Master Plan for Marine Protected Areas is a document designed to guide the adoption, implementation, and monitoring of marine protected areas (MPAs; CDFG 2008). In accordance with the Marine Life Protection Act (MLPA), the Master Plan provides guidance on: context for implementing the MLPA goals and objectives; background information on California's marine resources and policies; description of the process for designing alternative MPA proposals; and overviews on the design, management, enforcement, monitoring, and funding of California's MPAs. The Master Plan has been approved by the Fish and Game Commission and is being revised by CDFW in 2015. All study region plans have been completed and implemented. The SWAP 2015 marine conservation strategies will be integrated with the implementation process for the Master Plan, where feasible and appropriate. As a living document, regional updates have been made for each study region after Master Plan completion. Regional updates are located in the appendices and provide more extensive information about specific MPAs, regional management plans, lessons learned, and scientific methodologies for monitoring and evaluation.
- CDFW's Wildlife Investigations Lab (WIL) investigates, monitors, and manages population health issues in California's wildlife. WIL provides expertise, service, training and resources to assist CDFW personnel in assessing wildlife populations, wildlife mortality response, biological sampling, wildlife captures, wildlife rehabilitation, study design, and analyses. WIL's responsibilities have increased to include the statewide investigation of all wildlife mortality events, studies and surveillance of diseases (enzootic and epizootic), wildlife health and condition monitoring, prevention of zoonotic diseases, wildlife rehabilitation, injured and nuisance wildlife, safety training, and investigations of public safety wildlife, such as mountain lions, black bears, coyotes, large non-native carnivores, and deer.

- CDFW implements recovery actions for species, such as captive breeding, population reintroductions, and translocations to re-establish lost populations. (Reintroduction refers to the intentional movement of captive-reared animals into a species' historic range to augment or reestablish wild populations.)

Another critical point of integration for SWAP is in the management of scientific data in resource management databases, maps, and internet sources. Using the *Open Standards for the Practice of Conservation* and the Miradi and Miradi Share software framework, the underlying data supporting the assessment of resource conditions, threats, stresses, and conservation needs are available at the SWAP webpage. These data also need to be integrated with other CDFW geo-referenced databases and mapping. For instance, the website for the Biogeographic Information and Observation System (BIOS) is managed by CDFW (http://bios.dfg.ca.gov) as an interactive, web-based system that allows users to download, print, combine, comment on, or otherwise use the maps, data layers, and other information. In addition, CDFW's Biogeographic Data Branch administers a number of programs involving systematic data collection, analysis, and integration: Conservation Analysis Units (i.e., Areas of Conservation Emphasis, Climate Change Vulnerability Analysis, and California Wildlife Habitat Relationships); California Natural Diversity Database (CNDDB); and Vegetation Classification and Mapping Program (VegCAMP). Sound, integrated management of scientific data will be a key aspect of SWAP implementation.

CDFW's role as a regulatory authority provides it with up-to-date information on the pressures and stresses placed on conservation targets. This role also provides CDFW with the opportunity to integrate, when appropriate, SWAP 2015 goals and strategies into comments on environmental documents and permit terms and conditions. One requirement for the issuance of California Endangered Species Act (CESA) incidental take permits, pursuant to Fish and Game Code (FGC) section 2081, is that the impacts of the taking of state-listed candidate, threatened, or endangered species be fully mitigated. All listed and proposed threatened or endangered species are also Species of Greatest Conservation Need (SGCN); therefore, development of permit conditions of approval and mitigation requirements to meet the full mitigation standard will include consideration of SWAP goals and strategies.

Lake and Streambed Alteration (LSA) Agreements, pursuant to FGC section 1600 et seq., include measures to protect existing fish and wildlife resources when the notified activities may substantially affect these resources. SWAP strategies for relevant resource-related conservation targets will help guide the development of fish and wildlife protection actions in the LSA Agreement process.

CDFW serves as a trustee agency under the California Environmental Quality Act (CEQA) with jurisdiction over the fish and wildlife of the state and, in this role, comments on projects potentially affecting fish and wildlife resources. As such, CDFW often comments and makes recommendations regarding fish and wildlife conservation to CEQA lead agencies and project proponents. Achievement of SWAP conservation outcomes will be considered when developing

and providing comments during CEQA reviews of projects affecting conservation targets that are proposed by other lead agencies. In addition, SWAP will be added as a statewide or regional plan to consider when conducting CEQA review of CDFW's own projects.

7.1.2 Integrating SWAP 2015 with Conservation Programs of Other Agencies

Many conservation programs in California are managed by other state and federal agencies. Because SWAP 2015 is a comprehensive plan for wildlife conservation, its integration as input to other agencies' programs creates the opportunity to better coordinate activities for achieving conservation outcomes more efficiently and effectively. Although the full array of relevant conservation programs is too extensive to capture here, this section notes some of the most important ones and the potential role SWAP integration can play.

Wildlife Conservation Board

The Wildlife Conservation Board (WCB) was created by state legislation in 1947 to operate a capital outlay program for wildlife conservation and wildlife-related public recreation; it has since been tasked to also administer other state conservation programs. WCB is an independent board with authority and funding to carry out land acquisition and project development for wildlife conservation (FGC section 1300 et seq.). WCB and CDFW work cooperatively to implement mutual conservation efforts. About one-half of the WCB funding is derived from California bonds authorized by public vote with the remainder coming from other state funds, local matching funds, partner donations, and federal money (WCB 2012).

The primary responsibilities of WCB are to select, authorize, and allocate funds for the purchase of land and waters suitable for recreation purposes and the preservation, protection and restoration of fish and wildlife habitat. WCB can also authorize the construction of facilities for fish and wildlife-related recreational purposes. WCB's functions are carried out through its programs: Land Acquisition, Public Access, Habitat Enhancement and Restoration, Inland Wetlands Conservation, California Riparian Habitat Conservation, Natural Heritage Preservation Tax Credit, Oak Woodland Conservation, Rangeland and Grassland Protection, Forest Conservation, and Ecosystem Restoration on Agricultural Lands (WCB 2014). Because the statutory purpose of the WCB includes conservation of fish and wildlife habitat, and WCB and CDFW work together, SWAP 2015 will continue to inform and guide WCB in its decisions regarding funding of land and water acquisition and habitat enhancement and restoration. SWAP 2015 includes numerous strategies calling for fee title acquisition of lands, acquisition of conservation easements on working landscapes, and acquiring water rights to maintain native fish populations. CDFW will work closely with WCB to implement these strategies.

In 2014, WCB approved approximately $38.5 million in total projects to help protect and restore over 23,955 acres of natural resource lands:

- WCB allocated $26.6 million to complete fee title acquisitions and conservation easement projects on approximately 22,645 acres of land throughout the state.
- Just under $7 million was allocated to enhance or restore 1,310 acres of wildlife habitat including wetlands, riparian, and instream fish habitat.
- Approximately $4.9 million was allocated for the purposes of infrastructure development related to providing wildlife-oriented recreation opportunities and also to upgrade facilities located at several University of California reserves.
- The largest single investment in the first half of 2014 was a $4.5 million allocation for a cooperative project with the State Coastal Conservancy and the County of Los Angeles to acquire 703 acres of land for the protection and restoration of coastal wetlands and watersheds located in Southern California.

In 2013, WCB approved approximately $50.2 million in total projects to help protect and restore over 17,220 acres of natural resource lands:

- The largest single investment was a $5 million allocation for the restoration of 955 acres of coastal wetlands for the Sears Point Wetland Restoration project in Sonoma County, in cooperation with other government and non-government entities. In addition, WCB allocated a supplemental $9.8 million to restore and enhance an additional 2,901 acres statewide.
- WCB allocated $27.8 million in fee title acquisitions and conservation easement projects on approximately 13,355 acres of land throughout the state.
- Approximately $7.5 million was allocated for the purposes of infrastructure development related to providing wildlife-oriented recreation opportunities and also to upgrade facilities located at several University of California Reserves throughout California.
- The largest single investment in the first quarter of 2013 was a $1.4 million allocation for a cooperative public access improvement project with the San Joaquin River Conservancy at the Lost Lake Park Campground in Fresno County. In addition, WCB allocated an additional $9.2 million to restore and enhance an additional 2,219 acres statewide.
- WCB allocated $16.8 million in fee title acquisitions and conservation easement projects on approximately 13,367 acres of land throughout the state.
- Approximately $2.6 million was allocated for the purposes of infrastructure development related to providing wildlife oriented recreation opportunities and also to upgrade facilities located at several University of California Reserves throughout California.

In the first quarter of 2012, the WCB approved approximately $17 million in total projects to help protect and restore more than 6,700 acres of natural resource lands. In 2011, WCB approved approximately $144 million to help match and assist in funding nearly $320 million in total projects to help protect and restore 160,000 acres of natural resource lands.

WCB serves and works with many partners, including other state agencies, federal agencies and NGOs, including private nonprofit conservation groups and private landowners. WCB recently completed its Strategic Plan (2014) which states that priority projects for funding will be based on, amongst other criteria, project alignment with conservation actions in the Wildlife Action Plan. The plan recognizes and identifies approaches to integrate larger landscape scale conservation efforts into WCB's activities, including climate change adaption; infrastructure mitigation; and integration with federal, local agency, and non-profit conservation initiatives. The Strategic Plan outlines strategies that adhere to legal mandates, but also ensure a transparent, integrated process for ranking and selecting projects across program areas and establishing metrics for measuring, monitoring, and reporting the activities and progress of WCB program areas.

Regional Advance Mitigation Planning

Regional Advance Mitigation Planning (RAMP) was initiated in 2008 by the California Department of Water Resources (DWR) and Caltrans, along with a coalition of resource agencies (including CDFW), nongovernmental organizations, and universities. Although primarily conceptual in nature, it is intended to provide a more comprehensive approach to mitigating biological resource impacts caused by large state infrastructure projects, such as roads and flood control levees. One of the goals will be to implement natural resources protection or restoration as compensatory mitigation before infrastructure projects are constructed, often years in advance. RAMP will enable federal, state, regional, and local representatives to jointly evaluate potential natural resource impacts from infrastructure projects proposed for a region, and at the same time define and implement planned mitigation for those impacts in a manner that contributes to regional conservation priorities. The advance time frame allows strategic mitigation to be implemented and made functional before an infrastructure project's unavoidable impacts occur. Mitigating in advance is intended to allow for more efficient and coordinated project approvals, more certainty to cost estimates, and more effective conservation actions before important land is lost to conversion. SWAP 2015 will be an important source of regional conservation strategies to inform the development of RAMP mitigation actions.

California Water Plan

The California Water Plan, prepared by DWR, provides a collaborative framework for elected officials, agencies, tribes, water and resource managers, businesses, universities, organizations, and the public to make informed decisions about California's water resources. The Water Plan must be updated every five years; the current plan was completed in 2013 (DWR 2013a). It presents the status and trends of California's water-dependent natural resources; water supplies; and agricultural, urban, and environmental water demands. The Water Plan evaluates different combinations of resource management strategies to reduce water demand, increase water supply, reduce flood risk, improve water quality, and enhance environmental and resource stewardship. SWAP 2015 will provide guidance to future Water Plan updates related to conserving freshwater and anadromous fishes, as well as their habitats and the aquatic, wetland, and riparian habitats associated with California's water resources upon which California wildlife also depend.

California Water Action Plan

The California Water Action Plan, released by the Governor in January 2014, is a roadmap for the first five years of the state's journey toward sustainable water management. Implementation during the first year was marked by passage of historic groundwater legislation that will provide much needed tools, financial assistance and technical support to assist regions across the state in achieving sustainable groundwater management at the local level. Additionally, 2014 brought a renewed focus on the importance of reinvesting in our water management systems and watersheds to address the ongoing drought challenges and prepare for future uncertainties. In addition, Proposition 1, the Water Quality, Supply, and Infrastructure Improvement Act of 2014, includes $2.7 billion for public benefits of water storage projects that provide measurable benefits to the Delta ecosystem or its tributaries. The California Water Commission (Commission), through the Water Storage Investment Program, will fund the public benefits of eligible water storage projects. Eligible project types include:

- Groundwater storage projects and groundwater contamination prevention or remediation projects that provide storage benefits.
- Local and regional surface storage projects that improve the operation of water systems in the state and provide public benefits.

SWAP 2015 includes three strategies that describe native fisheries that are in serious peril due to declines in lake water levels that restrict fish movement between lake and stream breeding areas, and increased water temperatures.

Salton Sea Restoration Program

Salton Sea Restoration Program/Species Conservation Habitat Project is led by the California Natural Resources Agency (CNRA). Funding for the project has been appropriated by the California Legislature from Proposition 84. Additional funding is also being sought from WCB. The project is intended to serve as a proof of concept for the restoration of shallow water habitat that currently supports fish and wildlife dependent upon the Salton Sea; this habitat is being lost due to salinity increases and the declining sea elevation. Currently, available funding is approximately $28 million. This is sufficient to fund the construction of 640 acres of the total evaluated and permitted area of the preferred alternative in the Environmental Impact Report/Environmental Impact Statement. CDFW is working cooperatively with local entities to implement the project. The Imperial Irrigation District is providing Construction Management services which include developing the construction bid package and managing the construction. Construction is expected to begin soon after the fall of 2015. Once the project is constructed, CDFW will launch a Monitoring and Adaptive Management program that will help determine if the project is meeting its biological performance goals. Program staff is currently finalizing the draft Monitoring and Adaptive Management Plan. SWAP 2015 will support SWG funding to further our understanding of this complex and threatened habitat.

Central Valley Flood System Conservation Strategy

The Draft Central Valley Flood System Conservation Strategy, prepared by DWR, is an integral part of the Central Valley Flood Protection Plan (CVFPP). It supports the attainment of all CVFPP goals, but focuses on the integration and improvement of ecosystem functions with flood risk reduction projects where feasible. The Conservation Strategy describes the basis for recommending various conservation actions and setting long-term objectives for the Central Valley flood management system as a whole. The purpose of this Conservation Strategy is to provide: (1) a comprehensive, long-term approach for improving riverine and floodplain ecosystems through multi-benefit projects that provide ecological benefits while protecting public safety; (2) a regional programmatic framework for increasing the predictability and cost-effectiveness of permitting, while resulting in more effective and less costly conservation outcomes; and (3) contextual information and tools for use in planning and permitting processes. The integration of specific environmental restoration features with DWR's proposed flood management system improvements is one of the goals of the CVFPP and will also be described further in the 2017 CVFPP update (DWR 2015). Conservation strategies for the Central Valley and Sierra Nevada Province in SWAP 2015 have taken into account the conservation recommendations of the Central Valley Flood System Conservation Strategy by crafting a strategy that addresses common themes with the CVFPP such as enhancement and restoration of ecosystems and habitats, species protection, and habitat management on natural and working landscapes.

California Transportation Plan

The California Transportation Plan (CTP) provides a long-range policy framework to meet our future mobility needs and reduce climate change. The CTP defines goals, performance-based policies, and strategies to achieve our collective vision for California's future statewide, integrated, multimodal transportation system. The plan envisions a sustainable system that improves mobility and enhances our quality of life. The CTP defines performance-based goals, policies, and strategies to achieve our collective vision for California's future statewide, integrated, multimodal transportation system. The CTP is prepared in response to federal and state requirements and is updated every five years. CTP 2025 was approved in 2006 and updated by a 2030 Addendum in 2007. CTP 2040 was initiated in early 2010 with the development of the California Interregional Blueprint (CIB) in response to Senate Bill 391 (Liu 2009).

The CIB is a state-level transportation blueprint that articulates the State's vision for an integrated multimodal transportation system that complements regional transportation plans and land use visions. The CIB provides the foundation for CTP 2040, which will conclude with plan approval by the Secretary of the California State Transportation Agency (CalSTA) in December 2015.The vision of CTP 2040 is a fully integrated, multimodal, sustainable transportation system that supports the three outcomes that define quality of life: prosperous economy, human and environmental health, and social equity.

The CTP 2040 is scheduled for approval by the California State Transportation Agency in December 2015. The Public Draft CTP 2014 was prepared with extensive input and collaboration between Caltrans, its regional partners, and the public. The CTP 2040 references the California Essential Habitat Connectivity Project and Regional Advance Mitigation Planning as a statewide planning tools available to align transportation development with regional wildlife connectivity planning. The CTP 2040 identifies strategies and recommendations to preserve and enhance natural resources with the early integration of environmental considerations into system planning and project scoping (Caltrans 2015).

Fire and Resource Assessment Program

CAL FIRE's Fire and Resource Assessment Program (FRAP) is required by the California legislature to produce periodic assessments of the forests and rangelands of California. These reports have been published every five years since the 1970s. In 2008, the U.S. Farm Bill directed the U.S. Forest Service (USFS) to coordinate with states on forest and rangelands assessments. The first coordinated report for California was completed in 2010 between CAL FIRE and USFS Region 5 (CAL FIRE and USFS 2010). CAL FIRE and USFS Region 5 are preparing the 2015 assessment. Working together with CAL FIRE, CDFW has continued to increase the capacity and effectiveness of its Timberland Conservation Program (TCP) to help conserve forest ecosystems by hiring additional new staff members (currently 33 environmental scientists, managers and administrative staff members), acquiring equipment, providing training, strengthening interagency coordination and reaching out to stakeholders. Under the leadership of the CNRA, CDFW contributed to a framework for developing ecological performance measures to monitor trends in forest ecosystem resilience and recovery from cumulative effects of past forest practices. TCP established a Forest Assessment Technical Working Group to compile and share techniques to evaluate proposed timber operations and potential impacts to public trust values. SWAP 2015 will offer information to the FRAP process, both for the 2015 update and future assessments, for effectively integrating fish and wildlife conservation strategies into forest and rangeland management planning.

California Land Conservancies

California land conservancies have been established through legislation, each with mandates to acquire land and conduct other programs with various conservation missions. For instance, the California Coastal Conservancy was created in 1976 to complement the coastal zone regulatory agencies by working to permanently protect coastal resources and to improve public access. Its jurisdiction spans the entire coastline, coastal watersheds, and the entire nine-county San Francisco Bay encompassing one third of the state and 75 percent of the state's population. The Coastal Conservancy's land conservation work involves land acquisition, restoration and development of regional and site specific restoration and conservation plans. Over the last decade, the Coastal Conservancy expended over $650 million and worked in partnership with others to protect over 400,000 acres of lands and restore 35,000 acres of habitat. The California Tahoe Conservancy was established in 1984 to restore and sustain a balance between the

natural and the human environment and between public and private uses at Lake Tahoe. The Sierra Nevada Conservancy, established in 2004, initiates, encourages, and supports efforts that improve the environmental, economic, and social well-being of the Sierra Nevada Region. The Santa Monica Mountains Conservancy was established in 1980 with the mission to strategically buy back, preserve, protect, restore, and enhance treasured pieces of Southern California to form an interlinking system of river parks, open space, and wildlife habitats. Each conservancy is governed by its own mission, mandate, and board. Funding is primarily from voter-approved bond acts and other legislatively authorized budgets. SWAP 2015 provides information, assessments, and strategies that can be instrumental in guiding grant solicitations and awards from these organizations and helping coordinate the land acquisition and resource management efforts of the many state conservancies with the broader CDFW conservation priorities for benefiting the state's fish and wildlife.

Central Valley Project Improvement Act

The 1992 Central Valley Project Improvement Act (CVPIA) amended previous authorizations of the California Central Valley Project (CVP) to include fish and wildlife protection, restoration, enhancement, and mitigation as project purposes having equal priority with irrigations and domestic water supply uses, and power generation. The purpose of the CVPIA is to protect, restore, and enhance fish, wildlife, and associated habitats in the Central Valley and Trinity River basins; to address impacts of the CVP on fish, wildlife, and associated habitats; to improve CVP operational flexibility; to increase water-related benefits provided by the CVP to the state; to contribute to the state's interim and long-term efforts to protect the San Francisco Bay/Sacramento-San Joaquin Delta Estuary; and to achieve a balance among competing demands for use of CVP water. SWAP 2015 has developed strategies in Chapter 5for native fish assemblages and in Chapter 6 for anadromous fish that will help inform fisheries restoration and enhancement projects undertaken through the CVPIA.

National Forest Planning Rule

USFS adopted the 2012 Planning Rule for land management planning for the National Forest System (USFS 2012). The rule was published in the Federal Register on April 9, 2012, and it became effective 30 days following the publication date on May 9, 2012. The USFS has released proposed planning directives as guidance documents that direct implementation of the 2012 planning rule, which include provisions for coordination with state resource agencies (USFS 2013). USFS is seeking to implement an adaptive land management planning process that is inclusive, efficient, collaborative and science-based to promote healthy, resilient, diverse and productive National Forests. The Inyo, Sequoia, and Sierra National Forests in the Sierra Nevada are the three "early adopter" national forests in the Pacific Southwest Region revising their Forest Plans using the 2012 Planning Rule. The revision process involves three stages: assessment of forest resource condition and trends, development of a revised plan, and monitoring the implementation and effectiveness of the plan. Other National Forests in

California will take up revision of their Forest Plans in the future. SWAP 2015 assessment information and conservation strategies will be valuable for National Forests in California to use when updating their Forest Plans in accordance with the Planning Rule, and efforts to coordinate use of common indicators has been a key component of SWAP 2015 integration planning.

Desert Renewable Energy Conservation Plan

The Desert Renewable Energy Conservation Plan (DRECP) is an innovative, landscape-scale renewable energy and conservation planning effort covering more than 22 million acres in the California desert. The DRECP planning area covers private, state, and federal lands in seven counties--Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino and San Diego. The multi-phase plan identifies conservation areas, sensitive plant and wildlife species, and a strategy for their management into the future. The DRECP planning process is a unprecedented collaborative effort between the California Energy Commission (CEC), CDFW, the U.S. Bureau of Land Management (BLM), and the U.S. Fish and Wildlife Service (USFWS) also known as the Renewable Energy Action Team.

Landscape Conservation Cooperatives

Landscape Conservation Cooperatives (LCCs) are applied conservation science partnerships coordinated by the U.S. Department of the Interior to better integrate science and management to address climate change and other landscape scale issues. Across the country, 22 LCCs operate in a specific geographic area and form a national network that serves as a management-science partnership. LCCs have two main functions: the first is to provide the science and technical expertise needed to support conservation planning at landscape scales – beyond the reach or resources of any one organization. Through the efforts of in-house staff and science-oriented partners, LCCs are generating the tools, methods, and data managers need to design and deliver conservation using the Strategic Habitat Conservation (SHC) approach. The second function of LCCs is to promote collaboration among their members in defining shared conservation goals. With these goals in mind, partners can identify where and how they will take action, within their own authorities and organizational priorities, to best contribute to the larger conservation effort. Within California, there are five LCCs: the California LCC, which covers the Central Valley, Central Coast, and south coast areas; the North Pacific LCC, which covers the North Coast, Klamath, and Cascade regions; the Great Basin LCC, which covers the Sierra Nevada and Modoc Plateau; and the Desert LCC, which covers the desert areas. SWAP 2015 has been working with LCCs to develop conservation strategies focused on shared priority species and habitats and to share data.

Joint Ventures and Fish Habitat Partnerships

USFWS established policy and provides guidance for the establishment and organization of joint ventures receiving administrative funding. A joint venture is a self-directed partnership of agencies, organizations, corporations, tribes, or individuals that has formally accepted the

responsibility of implementing national or international bird conservation plans within a specific geographic area or for a specific taxonomic group, and has received general acceptance in the bird conservation community for such responsibility.

Five Habitat Joint Ventures have been established that overlap California. They are the Central Valley, Intermountain West, Pacific Bird, San Francisco Bay, and Sonoran Joint Ventures. Joint Ventures contribute to conservation of migratory waterfowl and shorebirds in California by funding habitat restoration projects and research.

Similarly, the mission of the National Fish Habitat Action Plan is to protect, restore and enhance the nation's fish and aquatic communities through partnerships that foster fish habitat conservation and improve the quality of life for the American people with the stated goals to protect and maintain intact and healthy aquatic systems; prevent further degradation of fish habitats that have been adversely affected; reverse declines in the quality and quantity of aquatic habitats to improve the overall health of fish and other aquatic organisms; and increase the quality and quantity of fish habitats that support a broad natural diversity of fish and other aquatic species.

Three partnerships have been created that overlap California and include the California Fish Passage Forum, the Pacific Marine and Estuarine Fish Habitat Partnership, and the Desert Fish Habitat Partnership. Chapter 6 describes inter-agency outreach and information sharing between CDFW and these partnerships.

7.2 Companion Plans

In the last phase of SWAP 2015 update process, CDFW is developing nine companion plans that elaborate on shared sector-specific conservation priorities identified between SWAP 2015 and partners involved in companion plan development. Companion plans focus on conservation strategies and activities that can be better undertaken in collaboration with other state and federal agencies, organizations, private landowners and other partners. These prioritized, shared conservation strategies and activities complement SWAP 2015 and expand implementation of conservation strategies beyond CDFW. The benefit of preparing the companion plans is to better leverage limited resources, more effectively achieve conservation outcomes through increased coordination, improve resource and data sharing, and better align planning and policies as a desired outcome of the process. The companion plans are organized by the following focal sectors:

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

Because of the cooperation and teamwork used for their development, companion plans are fostering greater engagement with stakeholders and partners from key sectors for SWAP 2015

implementation. The companion plans are critical for prioritizing effective conservation strategies and activities for the species and habitats addressed in SWAP 2015 and identifying human and financial resources to support implementation. Together, SWAP 2015 and associated companion plans set a context and strategic direction of integrated planning and management efforts that will improve California's habitat and wildlife conservation.

The two main cross-cutting themes coming to light during development of the companion plans are integrated regional planning and climate change.. The three recurring priority strategy categories common among at least five companion plans are data collection and analysis, management planning, and partner engagement. The companion plans will be posted on the California SWAP website (https://www.wildlife.ca.gov/SWAP) when they are available.

7.3 Resources Needed For Conservation Actions

Currently, the conservation actions described in the SWAP are carried out by many CDFW programs. While historically these activities were not specifically implementing the SWAP, the activities can now be considered part of this greater and more comprehensive effort. Additionally, CDFW receives and uses California's annual allocation of SWG funds to accomplish resource assessment and direct management actions for SGCN and their habitat. CDFW staff submit project proposals for review and scoring by a Technical Advisory Committee (TAC) composed of researchers and species experts throughout CDFW. The proposals are scored on a number of factors, including relevance to implementation of SWAP and technical merit. A Management Advisory Committee composed of program managers throughout CDFW reviews TAC results and recommends which projects should be submitted to USFWS for funding consideration.

7.3.1 Funding for Wildlife Conservation

Existing conservation programs and many of the conservation actions recommended in this plan require additional funding. Halting the slide of species toward endangered species status will require new research, expanded conservation planning and management, greatly increased species assessment and monitoring, and major habitat restoration projects. Success or failure to conserve California's wildlife may well hinge on the level of funding dedicated to wildlife conservation and restoration programs over the next few decades.

Increased Demands on Conservation Agencies by Growth and Development

Rapid growth and development, water diversions from creeks and rivers, invasions of non-native species, growth in off-road vehicle recreation, and numerous other activities that affect wildlife have demanded additional efforts of wildlife scientists and conservation managers.

With expanding development, California's unique habitats are shrinking. Maintaining healthy populations of species on fragmented and smaller areas of habitat requires more intensive management, environmental review, conservation planning, monitoring, mitigation project design, and habitat restoration work. Accompanying growth and development is an increasing demand by the public for recreational access to public land, waterways, and ocean resources and greater pressure to develop wildlands that now provide key wildlife habitat, all of which involves more work for state wildlife managers.

Expanding Responsibilities and Demands for Wildlife Conservation

CDFW is the state agency charged with conserving and restoring wildlife and ecosystems, responsibilities that have expanded and become more complex over the last several decades. Responding to the increasing problems affecting species and habitats, state policy-makers have enacted new wildlife conservation and environmental protection mandates. Without a broad-based reliable funding mechanism, CDFW is hard-pressed to implement many of these conservation programs, even at modest levels. Resource assessment, conservation planning, and dozens of tasks necessary to conserve wildlife species at risk are severely underfunded.

The problem of inadequate funding for wildlife conservation has been 40 years in the making. In light of the growing stresses on wildlife, CDFW has appropriately evolved from primarily managing fishing and hunting programs to serving as the public trust steward for all wildlife, habitat, and ecosystems, while continuing to manage fishing and hunting programs. With the enactment of more than 20 conservation programs since 1968, CDFW's wildlife and wildlands stewardship role has expanded dramatically above its statutory and regulatory responsibilities. Many of these measures have mandated major new workloads for CDFW without providing new or sufficient funding and staffing. Lack of funding to perform the required mandates was recognized as one of seven key findings from the SWAP 2005 implementation report (Appendix I).

CDFW's ongoing statutory and regulatory responsibilities include, but are not limited to:

- enforcing and promoting voluntary compliance of fish and game regulations;
- providing hunting and fishing opportunities based on sound science;
- operating 23 hatcheries, stocking almost four million pounds salmon, steelhead, and trout;
- conducting scientific assessments of our fish and wildlife populations;
- developing and implementing strategies to manage wildlife disease and responding to potential outbreaks of disease (e.g., adenovirus, duck viral enteritis, botulism, chronic wasting disease);
- evaluating lands considered for acquisition for benefit of wildlife and fish resources;
- directly managing more than a million acres as wildlife and ecological reserves;
- working with public agencies, landowners and other private interests to develop NCCPs;
- developing and managing numerous partnerships that will establish a comprehensive approach to managing the recently completed network of MPAs under the MLPA;

- protecting vulnerable species through project review, CESA listing and permitting, CEQA, Timber Harvest Plan Review, Mitigation Banking, Climate Change Initiatives (such as Drought Response), and Cap & Trade Carbon Sequestration programs, and LSA Agreements;
- working to control and prevent invasive species infestations;
- managing and restoring wetlands;
- coordinating and integrating CDFW's activities related to water rights, water quality, Federal Energy Regulatory Commission hydroelectric permitting, in-stream flow, Central Valley water operations, and the California Water Plan;
- responding as Lead agency for pollution spill prevention and response through both CDFW's Office of Spill Prevention and Response (OSPR) and inland pollution response;
- advising local governments, various commissions, and working groups regarding biological, technical, and conservation issues;
- working with individuals and government agencies to resolve depredation problems and other wildlife conflicts, an increasing challenge due to growth and development in rural communities and natural areas and expansion of agricultural activities;
- educating the public on fish and wildlife conservation and wildlife public safety issues;
- serving as the principal public contact for wildlife issues in the state; and
- issuing permits and licenses along with public information and education materials.

In addition to ongoing CDFW conservation responsibilities, in recent years, dozens of major new projects and programs have increased demands on CDFW. They include:

- The CDFW Ecosystem Restoration Program (ERP), in coordination with USFWS and National Marine Fisheries Service (NMFS), has finalized a Conservation Strategy for restoration of the Sacramento-San Joaquin Delta, Sacramento Valley and San Joaquin Valley regions. The Conservation Strategy describes ERP goals and conservation priorities for restoration and provides the rationale for potential restoration actions. ERP staff is coordinating with the Delta Science Program, Delta Conservancy, DWR, and other agency staff to ensure consistency of their respective adaptive management efforts with the Delta Plan, and in the development of coordinated Delta-wide restoration monitoring plans, performance measures, and evaluation and reporting programs.
- In 2009, the California Legislature passed the Delta Reform Act, which set in motion new planning efforts to achieve the co-equal goals of water supply reliability and a healthy Delta ecosystem and created two new state agencies, the Delta Stewardship Council (DSC), and the Sacramento-San Joaquin Delta Conservancy (Conservancy). The DSC finalized its comprehensive management plan for the Delta (Delta Plan) on May 17, 2013. The DSC convened its Implementation Committee, made up of state and federal agency directors and regional administrators to foster agency coordination in implementing the Delta Plan. The Final Delta Science Plan was accepted by the DSC on October 25, 2013. CDFW is working closely with the Delta Science Program in developing its Science Action Agenda for the

coming year. The Action Agenda will identify and prioritize science needs to support actions to achieve the co-equal goals of the Delta Plan. The Delta Independent Science Board (ISB) is charged with providing oversight of the scientific research, monitoring and assessment programs that support adaptive management of the Delta through periodic reviews of each of those programs. The ISB is reviewing documents and providing comments to CDFW and the DSC.

- CDFW is engaged in habitat restoration in the Delta in coordination with DWR through the Fish Restoration Program Agreement (FRPA). This program will restore 8,000 acres of intertidal and associated subtidal habitat for Delta smelt and Chinook salmon, including 800 acres of mesohaline habitat for longfin smelt. These restoration actions address restoration specific Reasonable and Prudent Alternatives from the Operation Criteria and Plan Biological Opinions from USFWS and NMFS for State Water Project (SWP) and CVP operations, and CDFW's Longfin Smelt Incidental Take Permit for State Water Project Delta Operations. Restoration projects conducted under FRPA may also be counted as early implementation of BDCP should it be adopted. Two major projects totaling 2000 acres are currently nearing finalization. CDFW and partners are working on a science program to assess the effectiveness of these restoration projects in achieving their objectives of providing habitat and foodweb support for Delta and longfin smelt and Chinook salmon.
- As a primary participant in the Interagency Ecological Program (IEP) for the San Francisco Estuary in partnership with the Delta Science Program, CDFW continues to collaborate with the nine member agencies to conduct extensive research and monitoring to inform real-time decisions on water exports to maintain compliance with ESA and water quality requirements and to identify status and trends and inform long-range export planning. The current drought along with the Biological Opinion Remand process, discussed below, has resulted in additional research and monitoring focused on improving water management decision making. The Management, Analysis and Synthesis Team (MAST) continues to evaluate the latest information collected over the previous year, synthesize it for broader understanding, and make recommendations to the agency directors on focusing the coming year's studies to address key data gaps. This synthesis process is a key component of the Delta Science Plan. This program improves the translation of data into useable information consistent with the recommendations of independent scientists convened by the National Research Council and the Delta Science Program. The MAST's efforts this year have focused on analyzing and synthesizing this data to understand the role of fall habitat in supporting Delta smelt, test and update related conceptual models and support adaptive management options by the U.S. Bureau of Reclamation and others. IEP is finalizing its strategic planning process to establish a clear process for identifying research and monitoring studies that are responsive to management needs and allows for more effective engagement with a broader array of stakeholders in a more inclusive process that draws on a wider range of scientists to help focus the central questions addressed by its research and monitoring program and seek new insights which are integrated with the Delta Science Plan and the Action Agenda.

- The SWP and CVP water operations under existing endangered species authorizations have generally reduced listed species take at the water export facilities. Additionally, over the last several years monitoring of sensitive fish populations in the Delta has shown slight increases for some species. However, despite Delta smelt and longfin smelt both having responded strongly to high Delta flow conditions throughout 2011, producing the highest fall abundance indices in recent years, their abundance has once again shown a decline in 2012 and 2013 to historic lows. The ongoing drought resulting in low river flows and Delta outflow will likely result in continued low abundance levels for native fishes dependent on the Delta and its tributaries. Substantial emphasis continues to be focused on predation as a major stressor in the Delta. Predation is being in part addressed through research, monitoring, outreach to stakeholders and policy development. As part of its settlement of litigation over the effects of striped bass regulations on endangered fish species, the Department and litigants have convened a science team to identify needed research to better understand the effect of predators on salmonids and Delta and longfin smelt in the Delta. One million dollars is available to fund such studies. The 2013 Predation Workshop final report will be used to guide ongoing research.
- CDFW is participating in several phases of the State Water Resources Control Board's (SWRCB) review and update of its Bay-Delta Water Quality Control Plan (Bay-Delta Plan) including making recommendations to (1) revise San Joaquin River flow standards entering the south Delta; (2) revise water quality, flow and Delta operations objectives in the Delta itself; and (3) providing instream flow recommendations for Delta tributary streams. CDFW is recommending improved flow conditions on the San Joaquin River and higher inflows and outflows in the Delta to sustain aquatic species. The SWRCB staff is in the process of revising the substitute environmental document for San Joaquin River flow standards and plan for a release to the public in the fall of 2015. The latest version of San Joaquin River flow standards included a recommendation of 35 percent with the potential to increase to 45 percent with adaptive management. CDFW, other agencies, and NGOs are recommending a higher percentage than the SWRCB staff recommendation and have been participating in meetings with SWRCB staff regarding potential changes to the adaptive management implementation including utilizing biocriteria to aid in decision making. The SWRCB is expected to make a final decision on San Joaquin River flow standards in 2016, at the earliest.
- In addition to San Joaquin River flows, the SWRCB has initiated the Phase 2 of the update to the Bay-Delta Plan. Phase 2 will focused on the following issues: (1) Delta outflow objectives; (2) export/inflow ratio; (3) Delta Cross Channel Gates closures objectives; (4) Suisun Marsh objectives; (5) reverse flow objectives for Old and Middle rivers; (6) floodplain habitat flow objectives; (7) monitoring and special studies; and (8) changes to the program of implementation. The Delta Science Program held two workshops in support of the SWRCB's effort to revise water quality, flow and Delta operations objectives in the Delta. The first workshop was specific to Delta outflows and related stressors and was held in February 2014. The second workshop was specific to interior Delta flows and related stressors and was

held in April 2014. The SWRCB is expected to make a final decision on Phase 2 Delta flow standards and associated objectives in 2016.

- The SWRCB utilized the Delta Science Program to complete an evaluation of methods to develop flow criteria for the Sacramento River and tributaries. The SWRCB plans to release a strategy for establishing flow criteria for Delta tributaries in fall 2015. In addition, CDFW and the SWRCB are coordinating on priority streams that are tributaries to the Delta and have begun the studies for determining the necessary flows. Currently, CDFW is conducting flow studies on lower Butte, Deer, and Mill creeks, all tributaries to the Sacramento River that have habitat for listed anadromous salmonids including spring-run Chinook salmon and steelhead. The studies will result in flow recommendations that CDFW will submit to the SWRCB.
- Marine Protected Area Monitoring and Management: CDFW is responsible for managing California's redesigned MPA network which includes 124 MPAs and 15 special closures, covering approximately 16 percent of the state waters (over nine percent of which is in no-take MPAs). CDFW collaborates with key partners to provide oversight on all aspects of MPA monitoring to inform adaptive management, including developing monitoring plans to apply the statewide MPA monitoring framework, regional baseline monitoring programs, five-year monitoring and management reviews and cost-effective continued monitoring programs based on results from baseline programs. CDFW continues to explore MPA effects on California's fisheries, maintains an interactive spatial marine and coastal data viewer called MarineBIOS and conducts field investigations such as remotely operated vehicle projects. CDFW MPA Outreach Coordination Project continues efforts to enhance public awareness and understanding of California's coastal network of MPAs. These efforts include:
  - collaboration with the California Department of Parks and Recreation (California State Parks) to develop an MPA component for three existing Parks On-line Resources for Teachers and Students (PORTS) programs. PORTS uses video-conference technology and downloadable lesson plans to teach academic content standards. Through this collaboration, CDFW will educate between 10,000-20,000 California K-12 grade-school students about MPAs in the 2014-15 academic year;
  - redesigned and updated guides and brochures for all four of California's regions;
  - collaboration with a variety of partners;
  - participation in the MPA Community Collaboratives; and
  - statewide MPA signage project.

  For additional information on MPAs, please visit http://www.dfg.ca.gov/marine/mpa/; for regional guides and brochures visit http://www.dfg.ca.gov/marine/mpa/mpa_summary.asp.

- Conservation and Mitigation Banking: In January 2013, the Conservation and Mitigation Banking program was established. New FGC sections 1797-1799 authorize CDFW to charge fees to cover reasonable costs for reviewing and approving bank-related documents. The fees support program staffing and contribute to the establishment of conservation and mitigation banks that protect critical fish and wildlife resources while enhancing partnerships

with bank sponsors, stakeholders and other federal, state, and local agency partners. With funding and staffing, CDFW is re-engaging in its commitments memorialized in the eight-agency MOU with partner federal and local agencies. https://www.wildlife.ca.gov/Conservation/Planning/Banking.

- Natural Community Conservation Planning: In August, 2013, CDFW issued a NCCP Permit, pursuant to the NCCP Act of 2003 (FGC sections 2800-2835), for the Santa Clara Valley Habitat Plan. An NCCP is a comprehensive, multi-jurisdictional plan that provides for regional habitat and species conservation at an ecosystem level while allowing local land use authorities to better manage growth and development. Upon issuing the NCCP Permit, CDFW can authorize take of certain state listed species and other species of concern, subject to the terms of coverage under the NCCP. The Santa Clara Valley Habitat Plan covers 18 species -- three of which are state listed as threatened or endangered, five of which are California Species of Special Concern, and nine of which are California Rare Plants -- for a 50 year permit term. The plan will permanently conserve 33,205 new acres of land for a Reserve System that will total 46,496 acres. https://www.wildlife.ca.gov/Conservation/Planning/NCCP.
- Enhanced Quagga Mussel Prevention Program: In September 2012, Governor Brown signed AB 2443 into law, which added a new fee to boater registration. The new fee, the Quagga and Zebra Mussel Infestation Prevention Fee, will be used to fund local assistance grants for local water agencies to implement quagga and zebra mussel prevention programs at reservoirs open to the public. This new law directs the California State Parks, Division of Boating and Waterways (DBW) to develop and implement the new local assistance grant program. CDFW has been collaborating with DBW since AB 2443 was first introduced during the 2011/2012 bill cycle and will continue to coordinate with DBW on the development and implementation of the new program.
- Science Institute: CDFW's Science Institute (SI), codified with the passage of AB 2402 in California's 2012 legislative session, continues to work on expanding scientific capacity. In late 2012, the SI procured access to an online scientific literature database, addressing at least in part a longstanding unmet need of departmental technical staff. The SI team is also working on the development of policies and practices required by AB 2402, including adoption or formalization of peer review and adaptive management practices and a scientific integrity policy. Future planned efforts of the SI include an updated website to improve availability of current scientific work of the department, data management/stewardship guidelines, a web-based database of technical staff and their skills and program areas, and an internal scientific summit.
- The San Joaquin River Restoration Program (SJRRP) implemented in 2006 with CDFW supporting spring-run Chinook salmon reintroduction as outlined in the NMFS 10(a)1(A), permit application for the Reintroduction of Central Valley spring-run Chinook salmon into the San Joaquin River. DFG carried out monitoring activities and the second year of study on survival rates of juvenile Chinook salmon migrating from Friant dam to the mouth of the Merced River. The Interim Conservation Hatchery facility continues development at the

proposed Conservation Hatchery site at the San Joaquin Fish Hatchery to support salmon experiments and fish reintroduction. The SJRRP received a 2011 Partners in Conservation Award from the U.S. Secretary of the Interior for outstanding conservation, collaboration, cooperation and communication achievements.

Resources Needed for Regional Planning

Constant conflicts between development projects and protection of endangered species have led conservation scientists, stakeholders, and CDFW to recognize the value of regional planning for habitat conservation and protecting biodiversity. The goals of these broader proactive approaches to conservation are to identify and protect key habitats and designate areas more appropriate for development well in advance of planning for individual projects in a region. CDFW serves numerous important functions in these broader conservation efforts, providing:

- biological data on individual species, which is then used to develop multispecies conservation plans, recovery programs, and restoration projects;
- habitat quality and resource assessments, used to identify the most important lands for supporting multiple species;
- planning and design expertise for conservation planning projects;
- design of appropriate mitigation measures for effects of development on natural resources;
- facilitation in bringing diverse stakeholders to the table and assisting them in developing conservation strategies at the local government level; and
- monitoring implementation of conservation plans and mitigation projects to assess the effect and effectiveness of the implementation.

These responsibilities are not in lieu of work at the species level. It is the species-level research and management, and particularly implementation of CESA, which trigger efforts that evolve into the broader conservation planning efforts.

Wildlife Conservation Funding Crisis—Recognized but Not Solved

The fiscal difficulties of CDFW have been repeatedly acknowledged by the Legislature but not solved. The Legislature described the problem in statute in 1978, 1990, and 1992, as noted in the FGC sections below. In addition, FGC sections 711(a) and 711.4 describe funding for nongame fish and wildlife programs, managing lands, and defraying the costs of managing and protecting fish and wildlife trust resources.

FGC Section 710

The Legislature finds and declares that the department has in the past not been properly funded. This lack of funding has prevented proper planning and manpower allocation. The lack of funding has required the department to restrict warden enforcement and to defer essential repairs to fish hatcheries and other facilities. The lack of secure funding for fish and wildlife

activities other than sport and commercial fishing and hunting activities has resulted in inadequate non-game fish and wildlife protection programs. (Added to statutes in 1978.)

FGC Section 710.5

The Legislature finds and declares that the department continues to not be properly funded. While revenues have been declining, the department's responsibilities have been expanding into numerous new areas. The existing limitations on the expenditure of department revenues have resulted in its inability to effectively provide all of the programs and activities required under this code and to manage the wildlife resources held in trust by the department for the people of the state. (Added to statutes in 1990.)

FGC Section 710.7

The department continues to face serious funding instability due to revenue declines from traditional user fees and taxes and the addition of new program responsibilities. (Added to statutes in 1992.) The fiscal situation has worsened in recent years. Since 2001, the state budget crisis has compounded the funding challenges at CDFW. Wildlife and marine conservation programs, which are the primary beneficiaries of the limited General Fund dollars, have suffered dramatic budget cuts. General Fund support for CDFW dropped substantially during the recent budget crisis and has just recovered in 2015 to pre-crisis levels although workload and unfunded mandates have increased over this same period of time without concomitant budget augmentations.

FGC Section 711(a)

It is the intent of the Legislature to ensure adequate funding from appropriate sources for the department. To this end, the Legislature finds and declares that:

(1) The costs of nongame fish and wildlife programs shall be provided annually in the Budget Act by appropriating money from the General Fund, through nongame user fees, and sources other than the Fish and Game Preservation Fund to the department for these purposes.

(2) The costs of commercial fishing programs shall be provided out of revenues from commercial fishing taxes, license fees, and other revenues, from reimbursements and federal funds received for commercial fishing programs, and other funds appropriated by the Legislature for this purpose.

(3) The costs of hunting and sportfishing programs shall be provided out of hunting and sportfishing revenues and reimbursements and federal funds received for hunting and sportfishing programs, and other funds appropriated by the Legislature for this purpose. These revenues, reimbursements, and federal funds shall not be used to support commercial fishing programs, free hunting and fishing license programs, or nongame fish and wildlife programs.

(4) The costs of managing lands managed by the department and the costs of wildlife management programs shall be supplemented out of revenues in the Native Species Conservation and Enhancement Account in the Fish and Game Preservation Fund.

(5) Hunting, sportfishing, and sport ocean fishing license fees shall be adjusted annually to an amount equal to that computed pursuant to Section 713. However, a substantial increase in the aggregate of hunting and sportfishing programs shall be reflected by appropriate amendments to the sections of this code that establish the base sport license fee levels. The inflationary index provided in Section 713 may not be used to accommodate a substantial increase in the aggregate of hunting and sportfishing programs.

FGC Section 711.4

(a) The department shall impose and collect a filing fee in the amount prescribed in subdivision (d) to defray the costs of managing and protecting fish and wildlife trust resources, including, but not limited to, consulting with other public agencies, reviewing environmental documents, recommending mitigation measures, developing monitoring requirements for purposes of the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code), consulting pursuant to Section 21104.2 of the Public Resources Code, and other activities protecting those trust resources identified in the review pursuant to the California Environmental Quality Act.

7.3.2 Wildlife Conservation Program Needs

Fishing and hunting programs and related conservation efforts have specific dedicated funding derived from licenses, fees, and taxes on outdoor equipment. The public-trust duties of CDFW and its conservation programs that broadly benefit species, habitats, and ecosystems warrant funding from all Californians. Conservation-related activities that should be supported by broad-based funding may be described within the following four categories:

Science and Planning

- Managing and conducting resource assessment
- Implementing ecological research that supports conservation and management
- Developing regional conservation plans

Wildlife Conservation and Habitat Restoration

- Implementing conservation and recovery plans and projects.
- Designing, implementing, and monitoring habitat restoration projects
- Developing conservation and recovery strategies and plans

Enforcement for Wildlife, Wildlands, and Marine Resources

- Expanding wildlife and marine enforcement staff, salaries, and resources
- Developing an investigator class of wildlife enforcement staff

Wildlife Conservation Education and Service

- Educating the public on wildlife conservation issues
- Providing interpretive information and public services related to outdoor activities

7.3.3 Wildlife Lands Management Needs

State and federal wildlife and land management agencies and some state policy-makers have expressed great concern for the lack of resources for wildlife conservation, restoration, and enforcement on public lands. The needs for operation and maintenance of lands managed by CDFW are discussed below. USFWS, BLM, USFS, the National Park Service, and California State Parks have similar challenges to fund the restoration and management of wildlife areas, parks, and other wildlands. CDFW manages wildlife areas, ecological reserves, and wildlands specifically for the benefit of wildlife and important habitats. These lands are a cross section of California's remarkable natural diversity of animals, plants, habitat types, and ecosystems. Some of the state's finest-quality wildlife habitats are represented in these holdings. But acreage of lands managed by CDFW has quadrupled in the last 35 years, from 250,000 acres in 1980 to over 1.1 million acres today, and funding to manage these lands has not kept pace. Major bond acts and some appropriations have funded acquisition of new lands for wildlife, but there is not a corresponding source of funding to maintain, restore, and manage these lands. Land management entails providing site security, managing public health and safety on the lands, managing wildlife and natural resources, maintaining infrastructure, and managing recreation and other uses.

The consequences of neglecting lands are many:

- An area that is not secure or regularly inspected invites trespass by individuals and livestock and encroachment by such adjoining land uses as agricultural operations and off-road vehicles. Trespassing often involves vandalism and dumping. The result is degradation of the land, and the state is seen as a bad neighbor.
- Without management, wildlife values of the lands are also compromised. The habitat is degraded if invasive species are not controlled, fire is not managed, and ecosystems functions are not maintained.
- Lacking restoration efforts and/or management, many acquired lands do not meet the habitat goals for which they were purchased.
- Many lands have major public-use and education potential that cannot be realized without staff resources.

State wildlife lands have been acquired for specific conservation or recreation goals. Managing lands for their intended purpose requires staff and resources. Depending on the intended purposes of the land and the habitat values, CDFW's Lands and Facilities Branch Program estimates annual land operating management costs for many wildlife areas to range from $16 to $100 per acre. Local agencies estimate land operating and management costs to be significantly

higher. In 2005, maintenance, restoration, and management of CDFW's wildlife areas and ecological reserves were supported, on average, at the level of $13 per acre and one staff person per 10,000 acres. Many lands were operated at $1 per acre, with no dedicated staff (CDFW Lands and Facilities Information Sheet).

7.3.4 New Funding Options

California is not unique in its difficulties with establishing an adequate and reliable revenue source for its wildlife conservation department. Numerous other state wildlife departments that have also evolved from fishing and hunting management organizations to expanded conservation organizations are also struggling to secure additional and more reliable funding.

Federal funding accounts for about 12 percent of CDFW's budget. Federal funds are provided through several programs, including the USFWS's programs pursuant to Section 6 of the ESA, the federal SWG Program, programs pursuant to the Sport Fish and Wildlife Restoration Acts, wetlands grant programs of the U.S. Environmental Protection Agency (EPA) and USFWS, and grant programs provided pursuant to the Clean Water Act.

Most state wildlife departments, in addition to receiving federal funding, are funded by a combination of user fees; a few tap into general sales-tax revenues. State wildlife department funding mechanisms include non-consumptive user fees, state lottery revenue, general sales tax, vehicle license plate fees, real estate transfer fees, tax check-offs, and natural resource extraction surcharges.

California's Environmental License Plate Fund Program generates funds for environmental and natural resources departments; however, these funds are usually appropriated to CDFW in lieu of General Fund dollars rather than to augment the base budget. In California, some of the better-funded resource departments and water agencies have funded a CDFW position to ensure certain wildlife-related services are provided. This funding source has been declining in recent years.

The 2014-2015 budget bill was signed on June 20, 2014. CDFW saw an increase of $1.5 million to regulate and enforce unauthorized water diversions and pollution to surface and groundwater as a result of marijuana cultivation. There is also the expansion of an existing per barrel fee on oil to account for crude oil entering in the state via rail, pipeline, and other modes that will fund a program for inland spill prevention and response. California has seen a significant shift in crude oil imports coming in over land rather than by sea. This fee will be collected at the refinery, making the fee equitable across various methods of importation. Currently, OSPR fund sources cover tidally influenced waters only, and cannot be used on inland spills. The budget contains an appropriation of $38.8 million for drought response actions, consistent with State of Emergency proclamations issued by the Governor in January and April. The budget also includes $25 million from Cap-and-Trade Program funds from the California Air Resources Board to implement wetland projects that reduce greenhouse gas emissions.

Arkansas and Missouri have two of the better-funded state wildlife programs. Both of these states have constitutional mandates that devote a percentage of general sales tax dollars to wildlife conservation. In 1976, Missouri enacted a constitutional amendment that raised the sales tax by one-eighth of a cent, generating about $70 million annually for wildlife management and conservation projects. In 1996, Arkansas enacted a similar constitutional amendment, which yields about $20 million annually for wildlife programs.

In 1991, the California Legislative Analyst's Office identified several user or impact fees that have a connection to wildlife and might be assessed to fund CDFW. They are:

- Motor-vehicle and highway impact fees—Vehicles and the highways affect wildlife in several significant ways. Road kills account for substantial mortality of many species, including deer, owls, and snakes. More deer are killed by collisions with vehicles than by hunting. Habitat is eliminated and fragmented by roads and highways. Oil and other chemicals from roads pollute aquatic ecosystems. And invasive species are often introduced along highways. Impact fees could be assessed as an increase in sales tax on vehicles sales, or a flat-rate surcharge could be attached to vehicle registration fees. Assessing an additional $1 per vehicle registration would generate approximately $26 million. Another option is a surtax on vehicle fuels. The California Constitution allows gasoline tax dollars to be used for environmental mitigation related to construction and operation of roads and highways.
- Nonpoint source discharge fees—Pollution from diverse sources runs off into wetlands and aquatic ecosystems. Those who create nonpoint source discharges could be assessed a fee to mitigate wildlife conservation impacts.
- Water use fees—Water diversions from rivers, streams, and the Delta significantly affect fish, amphibians, and aquatic life. To mitigate these effects, the Legislature could impose a water use fee on each acre-foot of water to fund wildlife conservation. A penny per acre-foot would generate about $220,000.
- Wastewater discharge fees—Pollution from industrial point sources degrades fish and aquatic life. Dischargers currently pay a fee that funds the SWRCB's water quality regulatory program.
- Recreational fees or taxes—Currently, only hunting and fishing recreational users pay annual fees for a license. Additional user fees could be assessed for other wildlife-related user activities, including birding, diving, and whale-watching.
- Mining fees—Gravel and open pit mining affects wildlife. For example, gravel mining from streambeds degrades salmon spawning grounds and degrades aquatic habitat. To fund wildlife conservation mitigation, a fee could be charged per volume of material removed. Broad-based fees or taxes, such as a flat-tax surcharge on annual state income tax, a parcel tax or parcel transfer fee, or a percent of sales tax, are in line with the policy that wildlife is a public trust resource and the responsibility of all Californians. If California followed the Missouri and Arkansas examples and enacted a one-eighth of a percent surcharge on sales tax, it would generate about $650 million for wildlife conservation and management of natural resources.

In April 2015, the Governor provided a new dual approach to improving water conveyance and ecosystem health in the Sacramento-San Joaquin Delta through two projects – California WaterFix and California EcoRestore. Habitat restoration actions (30,000 acres of restoration over a five-year period) to support the long-term health of the Sacramento-San Joaquin Delta's native fish and wildlife will be funded by the following:

- Floodplain and tidal/sub-tidal habitat restoration required by existing regulatory frameworks will be funded by state and federal water contractors;
- Wetlands restored for subsidence reversal and carbon management will be supported by the AB 32 Greenhouse Gas Reduction Fund and other sources;
- Various aquatic, riparian, and upland restoration and multi-benefit flood management projects will be supported by Proposition 1 and 1E; and
- Additional projects will be supported by various local and federal partners.

7.4 Coordination with Partners

Effective fish and wildlife conservation necessarily involves collaborative efforts among many partners, including other state agencies, federal agencies, tribes, nongovernmental organizations, local government, universities, landowners, and the private sector. Element 7 of the Eight Required Elements of a SWAP includes "coordinating, to the extent feasible, the development, implementation, review, and revision of the Action Plan 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." Ongoing coordination will be a key component of SWAP 2015 implementation.

Key state and federal agencies that have been and/or are expected to be potential partners are listed below.

Key California Agencies with Natural Resource Responsibilities

- California Natural Resources Agency
- Department of Water Resources
- State Water Resources Control Board
- Wildlife Conservation Board
- Department of Forestry and Fire Protection
- Department of Parks and Recreation
- California Energy Commission
- Department of Transportation
- California Environmental Protection Agency
- California Coastal Commission
- State Conservancies (various)

Key Federal Agencies with Natural Resource Responsibilities

- U.S. Fish and Wildlife Service
- Landscape Conservation Cooperative
- National Marine Fisheries Service
- U.S. Forest Service
- Bureau of Land Management
- Bureau of Reclamation
- U.S. Geologic Survey
- Natural Resources Conservation Service
- National Park Service
- Minerals Management Service

7.5 Public Outreach Strategies

Element 8 of the Required Elements of a SWAP requires: "provisions to ensure public participation in the development, revision, and implementation of projects and programs. Congress has affirmed that broad public participation is an essential element of this process." During the preparation of the draft SWAP 2015, thirteen public scoping meetings were held throughout the state between October and December 2013. Over 500 people attended the meetings. Public input was sought to ensure that SWAP 2015 is adequately identifying major conservation issues in California and that the draft conservation strategies are appropriately addressing those impacts. Each meeting highlighted different regional habitats. Outreach materials discussing the various habitats included a PowerPoint presentation, a Fact Sheet handout, and a detailed wall poster for each region describing the conservation goals, sensitive species, environmental stresses, human pressures, and preliminary strategies and activities. The overview PowerPoint and a sample of a regional fact sheet and poster are provided in Appendix J. The matrix of public comments submitted during the scoping process and public review of the draft SWAP 2015 will be posted for public availability on the California SWAP website at https://www.wildlife.ca.gov/SWAP.

7.6 Adaptive Response to Emerging Issues

Natural communities, ecosystems, species population dynamics, and the effects of pressures and stresses on the environment are inherently complex. Wildlife and resource managers often are called upon to implement conservation strategies or actions based upon limited scientific information and considerable uncertainties. Conservation issues may emerge that were not anticipated during or following the preparation of SWAP 2015, or ecosystem and species outcomes may not materialize as expected.

Adaptive management is a key element of implementing effective conservation programs to address emerging issues and unexpected outcomes. CDFW's approach to adaptive management is codified in FGC section 13.5. It reads: "'Adaptive management,' unless otherwise specified in

this code, means management that improves the management of biological resources over time by using new information gathered through monitoring, evaluation, and other credible sources as they become available, and adjusts management strategies and practices to assist in meeting conservation and management goals. Under adaptive management, program actions are viewed as tools for learning to inform future actions." Many of the conservation strategies presented in Chapters 4 and 5 include adaptive management procedures embedded in the approach.

As new information becomes available on the status of conservation targets and the effectiveness of conservation strategies, SWAP information will be updated. As described in Chapter 1, the *Open Standards for the Practice of Conservation* was used as the framework for designing strategies for conservation targets. The data supporting SWAP 2015 have been captured using the internet-based *Miradi* and *Miradi Share* software. The intent of this database and internet accessibility is to facilitate the ongoing update and sharing of the SWAP program data, including tracking progress on goals and objectives. A portal to the SWAP 2015 database has been posted at the California SWAP webpage (https://www.wildlife.ca.gov/SWAP).

Conservation actions recommended in SWAP 2015 will be assessed with monitoring to determine the outcome of implementation of the strategies, as described in Chapter 8. In some cases, monitoring of a few environmental variables will be sufficient. In other cases, such as a regional multispecies conservation effort, a major long-term comprehensive monitoring program will be needed. Chapter 8 summarizes current monitoring programs and addresses the steps and considerations needed to design a monitoring program in an adaptive management context. Chapter 8 also provides a process for establishing the monitoring program assessing the effectiveness of each recommended conservation strategy implemented under the SWAP.

7.7 Review and Revision

Element 6 of the SWAP elements required by USFWS directs each state to comprehensively review its plan at least every 10 years. In July 2007, the USFWS and Association of Fish and Wildlife Agencies (AFWA) distributed guidance on the requirements for the review (AFWA and USFWS 2007). AFWA also provided guidance for review and revision in their Best Practices report, including the definition of a comprehensive, major, or minor revision (AFWA 2012). All states must comprehensively review and revise, as needed, their original 2005 SWAPs by October 1, 2015 (or the date specified in their approved plans) and send the updated version and summary documentation to the USFWS.

SWAP 2015 is the required comprehensive review and update of SWAP 2005. The next comprehensive review and update will need to be completed no later than 2025, in accordance with Public Law 106-553 (U. S. Congress 2000). CDFW will continue to follow the USFWS/AFWA 2007 guidance and the 2012 AFWA Best Practices information, unless new information becomes

available. Table 1 in the AFWA Best Practices report provides guidance regarding actions that would be helpful when conducting a review and revision to the SWAP (AFWA 2012).

Future comprehensive updates will include the summary documentation that will demonstrate the SWAP was examined and that all of the USFWS required elements are met, including an up-to-date public review process specified in Elements 7 and 8. If no changes are made, CDFW will document and explain why no changes were necessary and what process was used to make that determination. If changes are made, CDFW will provide a summary of the key revisions to USFWS and the public. Public participation will be a key element of future comprehensive reviews and revisions. A comprehensively reviewed SWAP will be republished in its entirety at the time it is submitted to USFWS, and it will be posted on the CDFW SWAP webpage with explanations about the review process and the summaries of key revisions.

In addition to the statutorily required comprehensive review and update every 10 years, ongoing reviews and revisions are part of the cyclical life of any long-term resources management plan and can enhance its relevancy and implementation. Although ongoing review and revision may burden staff resources and conservation partnerships, important changing environmental conditions or resource policies, or the evolution of best management practices, can warrant continuing review and revision as part of adaptive management.

If during the course of implementing SWAP 2015, a significant change occurs that requires revision of two or more elements of the plan, then CDFW will initiate a major revision to the SWAP. For instance, the addition of an SGCN would be a major revision, because it would require the state to substantially address multiple elements (e.g., habitats, threats, and strategies). Similarly, a revision of threat assessments conservation targets (e.g., vegetation types or watersheds) that are essential to conservation of the SGCN would be a major change, because it would likely result in modification and prioritization of conservation strategies. Major revisions do not "restart" the 10-year comprehensive review timeframe. CDFW will include public participation in a major revision process and will document any revisions for both submittal to USFWS and public posting on the CDFW SWAP webpage.

A minor revision, which is defined as changes to a single element, can also be undertaken at any time in coordination with USFWS. CDFW will send USFWS a letter describing the minor revision and post the letter on the CDFW SWAP webpage. Minor revisions are expected to involve narrow changes to the SWAP, such as technical clarifications, elaborations of existing conservation strategies, or the incorporation of new information that does not lead to substantial changes to SGCN, conservation targets, stresses, pressures, or conservation strategies. Because the revisions would be minor, a public participation process would not be needed.