

Executive Summary

1: Introduction

The CALFED Program was established to reduce conflicts in the Bay-Delta system by solving problems in ecosystem quality, water quality, water supply reliability, and levee system integrity. Implementing these actions will have a complex range of effects, including impacts to plants and animals listed under the Federal Endangered Species Act (ESA) and the California Endangered Species Act (CESA) and other sensitive species. This Multi-species Conservation Strategy (MSCS) builds on the Ecosystem Restoration Program (ERP) to provide a framework for compliance with the ESA, CESA, and a second California law also dealing with listed species, the Natural Community Conservation Planning Act (NCCPA).

Most measures described in the MSCS will be implemented in the MSCS focus area (the legally defined Delta, Suisun Bay and Marsh, the Sacramento and San Joaquin rivers and their tributaries downstream of major dams, and the potential locations of reservoirs). Other areas discussed in the MSCS include the Watershed Program area (areas within the watershed of the San Joaquin/Sacramento system, but located outside the MSCS focus area) and the CALFED Service Area (all of the areas that receive water from the State Water Project or the Central Valley Project). The species covered by the MSCS are those that will be adequately conserved under the CALFED Program.

The purpose for the MSCS is to identify the habitats and species that could be affected by CALFED actions, analyze how the CALFED Program actions will affect them, identify CALFED's conservation goals for the affected habitats and species, propose conservation measures to achieve those goals, and describe adaptive management for responding to new information. Although this MSCS provides a process for complying with the laws covering protected species and their habitats, it does so programmatically. Additional, site-specific details are required for legal compliance when implementing specific CALFED Program actions or groups of actions.

2: Species and Natural Communities Addressed in the MSCS

The ERP and this MSCS provide for the conservation of natural communities and the species that depend on them. The MSCS serves as the NCCP for 20 natural communities, encompassing 18 habitat types and 2 ecologically based fish groups. The 18 habitat types are broad habitat categories, developed using scientifically accepted habitat nomenclature and maintaining consistency with the ERP. The 18 habitat types covered under the MSCS are: tidal perennial aquatic, valley riverine aquatic, montane riverine aquatic, lacustrine, saline emergent, tidal freshwater emergent, nontidal freshwater permanent emergent, natural seasonal wetlands, managed seasonal wetlands, valley/foothill riparian, montane riparian, grassland, inland dune scrub, upland dune scrub, valley/foothill woodland and forest, montane woodland and forest, upland cropland and seasonally flooded agricultural land. These 18 habitat types are mutually exclusive in that they can be mapped geographically without overlap in the units identified. The classification emphasizes habitats that are more affected by CALFED actions and provides less detail for habitats that are not a primary focus of CALFED actions.

Fish habitat is not easily identified using terrestrial habitat classifications because fish habitat is dependent on dynamic factors primarily related to water flow. Therefore, two fish groups, based on ecological behavior of the included fish species, are evaluated in the MSCS: anadromous fish and estuarine fish. The 18 NCCP habitat types completely encompass the habitats used by these fish species.

Special-status species in the context of the MSCS were defined as any species listed as threatened or endangered, proposed for listing or candidates for listing under the ESA and the CESA, and California fully protected species, plus rare plants listed under the California Native Plant Protection Act and those on California Native Plant Society (CNPS) Lists 1A, 1B, 2 or 3 that may be present in the MSCS focus area shown on Figure 1-1. Over 400 special-status species were identified as known or with the potential to occur within the focus area. From that comprehensive list, a refined subset of 242 species was selected for evaluation in the MSCS, based on their overall status and the potential CALFED impacts on them. Important factors were whether CALFED could affect a substantial portion of the species' range and CALFED having the stated goal of maintaining the species or contributing to its recovery. Covered species are evaluated species which will be adequately conserved by implementation of the MSCS and the ERP.

Many of the species that are not explicitly evaluated in the MSCS will nevertheless benefit from the ERP actions and MSCS measures through the resulting enhancement of their habitats.

3: Species and Habitat Goals

The MSCS conservation goals for evaluated species fall into three categories: "recovery," "contribute to recovery," and "maintain." The species in the recovery category have a range which falls largely within the problem area of the ERP. Accordingly, CALFED plans to take most of the actions needed for the recovery of those species. In this context, "recovery" means ensuring long-term survival leading to the delisting of the species. For CALFED, this goal may not be feasible for some species, mainly anadromous fish, threats to which extend beyond the scope of the CALFED Program. Nineteen species (1 mammal, 2 birds, 8 fish, 2 insects and 6 plants) are currently in the "recovery" category. The CALFED Program only affects a limited portion of the range, or has only a limited effect on, the species in the "contribute to recovery" category. To the extent practical and reasonable, this means implementing some of actions within the recovery plan for those species where a plan exists, or else taking actions which will benefit the species. Twenty-five species (4 mammals, 1 reptile, 10 birds, 1 fish, 1 insect and 8 plants) are currently in the "contribute to recovery" category. The 198 species in the "maintain" category, will only be minimally affected by the CALFED Program. For these, CALFED will ensure that it will not contribute to the decline of any species, listed or unlisted, and will endeavor to benefit them to the extent practical.

The CALFED species goals, and the measures to achieve them, are based on existing recovery plans to the extent possible. They are outlined in the Ecological Restoration Program Plan (ERPP) and the ERP Strategic Plan. However, the long duration of the CALFED Program (at least 30 years) requires that its conservation plans be periodically reviewed, and revised as appropriate, to reflect actual experience, and to ensure they are adapted to optimally meet their objectives. These objectives amount to restoring and maintaining natural species habitats, primarily in the Delta, relying largely on ecological processes.

CALFED habitat goals developed for the ERP provide the basis for the MSCS goals, which build on the ERP goals by looking at the needs of evaluated species. For habitats, the goals include acreage targets for habitat creation and enhancement.

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Goals and objectives both for species and habitats may be modified over time as portions of the program are implemented and monitoring reveals changes in the conditions of species populations and habitats. A formal adaptive management program will be used to formulate the necessary changes.

4: CALFED Program Actions

The purpose of the CALFED Program is to develop and implement a long-term comprehensive plan that will restore ecological health and improve water management for beneficial uses of the Bay-Delta system. To do so, CALFED will focus on four critical resource categories: ecosystem health; water quality; water supply reliability; and levee system integrity. Important linkages exist between the problems and possible solutions in each of these categories. Accordingly, all four categories must be addressed concurrently: problems in one resource category cannot be pursued without addressing problems in the other resource categories.

In resolving these problems, CALFED is guided by six "solution principles": (1) reduce conflicts in the system, (2) be equitable, (3) be affordable, (4) be durable, (5) be implementable and (6) pose no significant redirected impacts. The preferred solutions embodied in the CALFED Program are based on these principles. However, the CALFED Program will operate over at least a 30-year time span and must accommodate unforeseen developments. Accordingly, it uses adaptive management, based on continuous monitoring, assessment, and research, to provide continuous review and refinement as the CALFED Program proceeds.

The CALFED Program uses eight interrelated elements to address the four underlying problem areas. These are Levee System Integrity, Water Quality, Ecosystem Restoration, Water Use Efficiency, Water Transfers, Watershed Programs, Storage Facilities (ground and surface water) and Through-Delta Conveyance Actions. The first of these proposes a five-part program to improve and then maintain levee system integrity. The second, water quality, aims to reduce levels of salinity, turbidity, inorganic and organic contaminants in drinking and agricultural water supplies, and to raise dissolved oxygen in flowing waters. The third, ecosystem restoration, seeks to improve and increase the natural habitats, to sustain and enhance the environments of their natural and human inhabitants. Particular attention will be given to the beneficial management of the Bay-Delta floodplains, and to preserving threatened fish populations. The fourth, water use efficiency, reflects mandates for reasonable and efficient use of water, including

specific actions to promote conservation and water recycling. The fifth, water transfers, will facilitate water transfers to ensure that water literally flows to its most valuable uses. Mechanisms to protect against third-party impacts are incorporated, including those affecting natural flows. The sixth, watershed programs, supports local watershed enhancement programs which also benefit the Bay-Delta system. Like the CALFED Program itself, these actions will emphasize adaptive management. The seventh, storage facilities, will be highly selective and will use ground water as well as expanded surface storage and power system reoperation. The eighth, through-Delta conveyance actions, will combine new intakes, diversions and operable barriers, and operational changes, all predicated on protection of fish populations in the Delta.

These CALFED Program actions will all conform to the adaptive management concepts being applied to the entire CALFED Program. A staged implementation policy will enable each part of this Program to be evaluated, and modified as necessary, to ensure that it is consistent in practice with the goals of the overall CALFED Program.

5: Effects of CALFED Actions and Conservation Measures

The MSCS analyzes the potential benefits and adverse effects of implementing proposed CALFED Program actions and conservation measures on NCCP communities and evaluated species within the MSCS focus area. The approach to analyzing potential CALFED Program impacts and then developing conservation measures included: identifying the proposed Program actions and their impacts; establishing the appropriate goals for habitats and evaluated species; measuring progress toward goals; formulating conservation measures; evaluating the overall effect of CALFED Program actions and conservation measures; and summarizing the effect of implementing Program actions and conservation measures throughout the focus area.

The MSCS provides a programmatic-level of analysis of potential beneficial and adverse effects, both direct and indirect, of proposed CALFED Program actions. Potential impacts of implementing proposed CALFED Program actions were determined by analyzing activities that could cause a direct or indirect adverse effect on an NCCP habitat or result in harm or mortality to individual species. The MSCS analyzes potential CALFED Program effects on each NCCP habitat, but not for individual species. The impact on individual species is inferred from the impacts to its habitat. The analysis assumes that summary outcomes on NCCP habitats represent the range of effects, both beneficial and adverse, on habitat quality and habitat quantity on the species associated with each NCCP habitat.

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Several extensive tables in this chapter present the impact analysis; one presents a summary of the ERP habitat enhancement and restoration targets by CALFED region. Another table summarizes the effects on NCCP communities from implementation of the CALFED Program and conservation measures proposed in the MSCS. Implementation of proposed CALFED Program actions would result in conversion of existing natural (non-agricultural) habitat types to other natural habitat types; some loss of natural habitat, and implementation of take avoidance measures and conservation measures that compensate for habitat loss.

Conservation measures were developed under the MSCS to avoid, minimize, or compensate for CALFED Program impacts on NCCP habitats, fish groups, and evaluated species. The scope, location, and timing of a particular CALFED Program action or group of actions, as well as the current status, distribution, and needs of the affected species, will determine which conservation measures apply. NCCP habitat conservation measures are primarily directed at conserving the quality and quantity of natural habitats. Conservation measures to address potential CALFED Program impacts on evaluated species fall into two categories: 1) measures that avoid, minimize, and compensate for direct and indirect impacts on evaluated species; and 2) measures required in addition to proposed ERP actions to achieve species recovery prescriptions for evaluated species with "R" and "r" goals.

6: Relationship of the Conservation Strategy to Non-CALFED Programs

The CALFED Program and MSCS have been developed against a backdrop of existing and ongoing federal, state, and local efforts intended to conserve listed and other sensitive species within the MSCS focus area. The CALFED Program will be consistent and synergistic with existing wildlife protection and recovery programs within its area of application. Existing efforts include Habitat Conservation Plans (HCPs) approved or under development; other conservation agreements; numerous biological opinions (programmatic and specific) addressing diverse actions within the area; and more than 20 Federal Energy Regulatory Commission (FERC) hydropower relicensing projects. In addition, the Central Valley Project Improvement Act (CVPIA) of 1992 provides for a broad range of habitat enhancement and species protection, much of it within the MSCS focus area. A further effort has been proceeding under SB 1086 to develop a management plan for the Sacramento River system, some of it already funded through CALFED. The CALFED Program must be consistent with all these existing efforts, and will endeavor, through its actions, to enhance their benefits to wildlife. CALFED may

also impact other HCPs covering outside the MSCS focus area, through the effects of CALFED water deliveries or other actions. CALFED may have to make conservation efforts relating to these wider impacts.

7: ESA, CESA, and NCCP Compliance for CALFED Program Actions

CALFED will comply with ESA for adoption of the CALFED Program through a programmatic Section 7 consultation with the USFWS and NMFS. The MSCS will serve as the biological assessment of the CALFED Program in support of the programmatic Section 7 consultation. The USFWS and NMFS will use the MSCS biological information and analysis to prepare programmatic Biological Opinions. The MSCS will also be submitted to CDFG for approval as a programmatic NCCP. The programmatic biological opinions and CDFG's NCCPA determination will be completed at the time of the CALFED Record of Decision (ROD). Neither the programmatic biological opinions nor the programmatic NCCPA determination will authorize take of the species covered in the MSCS. Instead, take authorization for Program actions will follow through a streamlined, action-specific consultation process that tiers from both the MSCS and the programmatic consultations.

For each specific action or group of actions, the operation of the streamlined consultation process will establish its compliance with the ESA, CESA and the NCCPA on the basis of the analysis in the programmatic MSCS or programmatic biological opinions. If such compliance is demonstrated and the proposed action is described in sufficient detail, biological data are adequate and appropriate conservation measures are incorporated, a highly streamlined consultation can be granted (defined as a Type 1 action). If the proposed action is generally described in the MSCS, but not in sufficient detail to allow for take authorization under ESA Section 7 or the NCCPA, a less streamlined consultation will be granted (a Type 2 action). Some additional information will be required for the necessary regulatory analysis, including assurance that the proposed action is consistent with other aspects of the MSCS. In cases where relatively little site- and action-specific information has been included in the MSCS and the programmatic consultations, a still less streamlined consultation will be offered (a Type 3 action). In Type 3 actions, information is lacking on the action itself or biological data on covered species is inadequate. When the required information has been furnished, take authorization will be provided to the implementing entity.

8: Monitoring

Monitoring for the CALFED Program serves not only to facilitate compliance and gauge

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the effectiveness of CALFED actions, but also informs choices under adaptive management. Monitoring needs for the CALFED Program are being developed through CMARP. Specific monitoring needs of the MSCS include: (1) monitoring success in attaining CALFED's species and habitats goals, and (2) monitoring compliance with those measures required in the MSCS for ESA/CESA compliance and specified in any subsequent Section 7 consultation, Section 10(a)(1)(B) permit, NCCP, and/or Section 2081 authorization.

Monitoring will document compliance with ESA/CESA requirements, becoming part of the CALFED permitting process. Subsequent monitoring of the outcome of these required actions will be an essential input to CALFED's adaptive management process.

Monitoring to determine the success of the CALFED Program in attaining the species and habitat goals will be incorporated as part of the CMARP habitats and species monitoring element. That monitoring program is being developed for: (1) evaluation of habitat restoration and connectivity and (2) assessing the capability of existing and restored habitat to support the covered species, and other native biota. The CALFED Program also will provide focused monitoring of population dynamics and behavior of particular species to detect their response to management actions.

Progress towards goals for MSCS covered species will be measured primarily through monitoring the distribution and abundance of habitat types over time. This will involve use of a GIS and periodic capture of remotely sensed data. CMARP will be addressing these issues in the first stage of implementation. The requirements for monitoring in support of the MSCS will significantly affect the scope and substance of CMARP. While on-going monitoring should adequately address MSCS needs for fish and most other R and r species, additional effort will be required for invertebrates and some other covered species.

9: Adaptive Management

Adaptive management is a key component of the CALFED Program. Data from monitoring programs will allow CALFED to determine whether its implementation of the MSCS for NCCP communities and evaluated species is meeting the CALFED Program goals. CALFED will then have an opportunity to adapt its management prescriptions as needed. Adaptive management for CALFED will include assessing

management prescriptions embedded in the CALFED Program, implementing revised management strategies as needed and conducting additional research. Thus, while CALFED Program goals for NCCP communities and evaluated species are expected to remain unchanged, the means used to achieve them can be revised based on the experience gained.

The MSCS will require periodic modification in response to new information. Modifications will reflect changes in project scope, effects of the MSCS itself, species responses to the CALFED Program, CALFED Program impacts on non-covered species, and actual take.

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