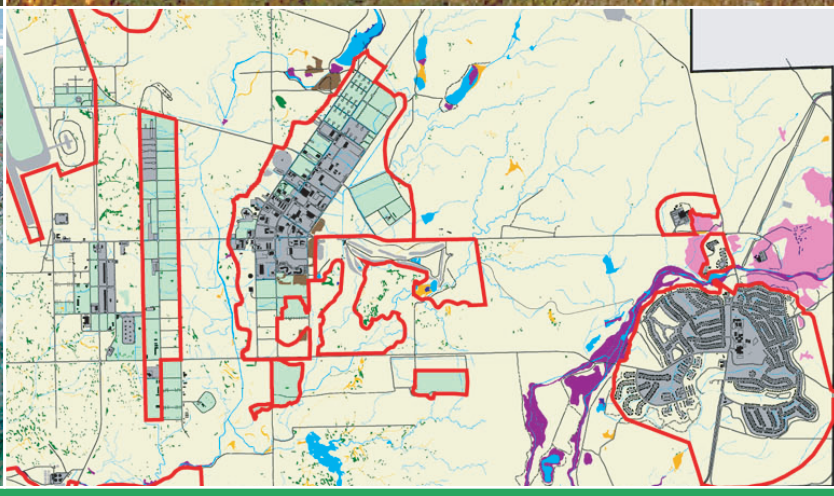
Understanding the Habitat Conservation Planning Process in California

A Guidebook for Project and Regional Conservation Planning

Biology • Consensus Building • Planning • Economics • Regulatory Compliance



Paul Cylinder, Ph.D.,
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Table of Contents

Chapter I

Introduction

California's climate, topography, and geology make it one of the richest biological regions of the world outside the tropics. California has more threatened and endangered species protected under the federal Endangered Species Act (federal ESA)[1] than any other state except Hawaii. In addition, California has one of the strongest state endangered species laws in the United States. The California Endangered Species Act (California ESA)[2] protects many species of wildlife and plants that are not protected under its federal counterpart. California's great biological diversity, strong conservation laws, and rapid growth create a recipe for conflict. This conflict is often resolved through the planning processes of the federal and California Endangered Species Acts.

This guidebook provides an overview of federal and California laws that protect threatened and endangered species. The authors provide recommended approaches to both project planning and regional conservation planning where these species could be adversely affected by private, local agency, and state agency actions.

[1] 16 U.S.C. §§ 1531 and following.

[2] Cal. Fish & Game Code §§ 2050 and following.

The purpose of this guide is to provide those who are involved in projects or planning efforts an understanding of the regulations and issues affecting protected species, focusing on the requirements for habitat conservation plans, and advice and recommendations regarding best approaches to project planning and regional conservation planning for protected species.

ENDANGERED SPECIES: A TALE OF TWO PLANNING PROCESSES

Federal and state laws that protect threatened and endangered species each provide planning procedures for the protection of these species. The federal ESA offers Habitat Conservation Plans (HCPs).[3] The California Natural Community Conservation Planning Act (NCCPA) provides for Natural Community Conservation Plans (NCCPs) that include compliance with the California ESA.[4]

Habitat Conservation Plans

HCPs are the federal mechanism for resolving conflict between development and the protection of threatened and endangered species. In many areas of California, development of land for housing and other needs adversely affects wildlife and fish protected by the federal ESA. Proponents of development projects can address this concern by preparing a Habitat Conservation Plan.

HCPs spell out the measures to be taken that will protect endangered species affected by the project. When an HCP receives the approval of a federal wildlife agency (either the U.S. Fish and Wildlife Service or NOAA Fisheries[5]), the project proponent receives a

[3] 16 U.S.C. § 1539(a).

[4] Cal. Fish & Game Code §§ 2800 – 2840.

[5] NOAA Fisheries = National Oceanic and Atmospheric Administration National Marine Fisheries Service.

permit that allows the resulting impacts on threatened or endangered species. By encouraging development projects to include measures to reduce the impact on endangered species, habitat conservation planning reconciles the goals of species protection and economic development.[6]

The federal ESA was enacted in 1973 in response to concerns that previous efforts to protect endangered species did not address the need to protect the ecosystems on which these species depend. The federal ESA prohibits the "taking" of endangered species of fish or wildlife.[7] A "take" is defined to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."[8] The definition of "harm" has an important impact on land use decisions. Harm is defined under federal law as "significant habitat modification or degradation" that results in death or injury to wildlife by "significantly impairing essential behavioral patterns, including breeding, feeding or sheltering."[9] Habitat modification that harms an endangered species constitutes a prohibited take.

Prior to 1982, only federal agencies could obtain an exemption for projects that resulted in the taking of a threatened or endangered species. Private landowners and local agencies risked violating the federal ESA if a project resulted in the take of a federally listed species. This statutory inflexibility led Congress to amend the federal ESA in 1982. The amendment authorized the issuance of an "Incidental Take Permit" (often referred to as an ITP)[10] to non-federal project proponents upon completion of an approved "conservation plan." Conservation plans later became known as Habitat Conservation Plans or HCPs.[11] The San Bruno Mountain Habitat Conservation Plan in San Mateo County, California, was the first HCP authorized under this new provision.

The intention of the 1982 amendment was to protect endangered species on non-federal land by requiring permit applicants to minimize and mitigate their impacts on endangered species. In exchange, they received a permit documenting compliance with the federal ESA. However, the cost and uncertainty associated with developing an HCP discouraged many private landowners from seeking Incidental Take Permits. Between 1982 and 1992, only 14 Incidental Take Permits associated with Habitat Conservation Plans were approved.[12]

After 1992, new regulations, policies, and guidelines were adopted that provided additional protective assurances to landowners. As a result, the number of approved HCPs nationwide increased to more than 290 by 1999. As of July 2003, 427 Habitat Conservation Plans have been approved nationwide, covering more than 30 million acres and 200 threatened and endangered species. In California, 127 HCPs and subsequent amendments (adding species or land to an existing Habitat Conservation Plan) have been approved. Hundreds of other HCPs are in development nationwide.

[6] Daniel Pollack, *The Future of Habitat Conservation: The NCCP Experience in Southern California* at 6, (2001).

[7] 16 U.S.C. § 1538(a)(1).

[8] 16 U.S.C. § 1532(19).

[9] 50 C.F.R. § 17.3. See *Babbitt v. Sweet Home*, 515 U.S. 687 (1995) (interpreting this regulation as prohibiting habitat modification which will actually kill or injure a particular member of an endangered species where such harm is proximate and foreseeable).

[10] Section 10(a)(1)(B) of the federal ESA authorizes the federal wildlife agencies to issue permits for the taking of endangered wildlife or fish if it is "incidental" to other lawful activities. 16 U.S.C. § 1539(a)(1)(B).

[11] U.S. Department of the Interior, *Habitat Conservation Planning and Incidental Take Permit Processing Handbook* at 1-2 (1996).

[12] Daniel Pollack, *Natural Community Conservation Planning (NCCP): The Origins of an Ambitious Experiment to Protect Ecosystems* 10 (2001).

Habitat Conservation Plans have evolved to address a wide range of development activities. Their scope encompasses small housing developments as well as forestry and regional development activities covering millions of acres. Some project HCPs address a single species on less than 1 acre. Regional HCPs may address dozens of species on thousands or millions of acres, requiring multiple partners in their development and implementation.

Natural Community Conservation Plans

In the late 1980s, rapid urban development and declining wildlife populations in Southern California put urban development and the federal and California Endangered Species Acts on a collision course. At the center of the conflict was the fate of more than 340,000 acres of coastal sage scrub occupied by the coastal California gnatcatcher, a small songbird whose range extends across San Diego, Orange, Riverside, San Bernardino, and Los Angeles Counties.[13] Environmentalists petitioned state and federal wildlife agencies to designate the gnatcatcher as endangered, against the opposition of the development community.

To address this conflict, the California Legislature passed the Natural Community Conservation Planning Act in 1991. The Act provided for a regional planning process focused on protecting biological communities rather than single species. The goal of the Act was to conserve species before they became endangered. The plans developed under the Act are called Natural Community Conservation Plans (or NCCPs).

The first significant effort to use this new species protection tool occurred in the mid-1990s in Southern California when state wildlife officials opted to use the Natural Community Conservation Planning Act to protect the gnatcatcher. Federal wildlife officials designated the California gnatcatcher as a threatened species in 1993, meaning that it was likely to become endangered in the foreseeable future.[14] They also adopted a special rule that allowed the Natural Community Conservation Planning Act to provide the plan for conservation of the gnatcatcher.

In 1996, the first two Natural Community Conservation Plans were approved: the Central/Coastal Orange County Natural Community Conservation Plan and the San Diego Multiple Species Conservation Program (covering most of western San Diego County). By the end of the 1990s, nine NCCPs were under way in San Diego, Orange, Riverside, Los Angeles, and San Bernardino Counties. In August 2000, an NCCP was approved for the massive CALFED Bay–Delta Program covering water infrastructure and habitat restoration projects throughout the Sacramento-San Joaquin Delta, San Francisco Bay, and Central Valley.

A new Natural Community Conservation Planning Act became effective on January 1, 2003. The new NCCPA codifies many of the elements used to develop the early NCCPs. Under the Natural Community Conservation Planning Act, the California Department of Fish and Game may authorize take for species that may become protected under the California ESA in the future.

The Natural Community Conservation Planning Act addresses the need for broad-based planning to accommodate conflicting demands for wildlife conservation and urban development. The Act's conservation requirements go beyond state and federal requirements for mitigation of impacts by requiring plan preparers to contribute to the recovery of threatened and endangered species and their habitat.

[13] *Id.* at 6.

[14] *See* 16 U.S.C. § 1532(6) and (20).

THE ROLE OF LOCAL AGENCIES

Endangered species live in habitats that are not confined by property lines and city and county limits. Agricultural and urban development has pushed many species to the brink of extinction. Several California species have already gone extinct. As California continues to grow, pressure on endangered and threatened species will increase. Federal agencies; state agencies; and local, state, and national conservation organizations are actively acquiring and managing land for conservation in California. Local agencies can complement these efforts through regional Habitat Conservation Plans and Natural Community Conservation Plans, which provide an alternative to project-by-project mitigation. Regional conservation planning at the local level can help relieve the pressure of urban development before California loses more of its natural heritage. Many land use planners consider regional conservation planning to be one element of the emerging planning techniques known as "Smart Growth."

Federal and state wildlife conservation laws supplement local agencies' land use authority with legal and planning tools that can be combined to achieve effective species protection and habitat conservation. Local agencies that adopt a proactive approach to habitat conservation planning can grow more efficiently and create more livable communities. For example, residents in many jurisdictions in California are demanding more open space and access to natural areas in which to experience nature. Regional conservation planning can help to achieve these goals. Some local jurisdictions are beginning to combine regional federal and state conservation plans with more traditional regional planning tools. By integrating general plans, specific plans, open space plans, and transportation plans, local agencies can create a comprehensive regional planning process. For example, Riverside County is engaged in an ambitious effort to combine a general plan update, transportation plan, and Habitat Conservation Plan/Natural Community Conservation Plan into a single planning process for the western County; this undertaking is known as the Riverside County Integrated Project.

WHAT IS COVERED IN THIS GUIDE?

Individual project Habitat Conservation Plans and California ESA compliance differ in many ways from regional HCPs and NCCPs. Federal and California laws and regulations applicable to project planning and regional conservation planning are summarized in Chapters II and III. Chapter II outlines the requirements of the federal ESA and specifically addresses the regulatory requirements for Habitat Conservation Plan preparation and permitting. Chapter III describes the California laws protecting threatened and endangered species, including the California ESA, Natural Community Conservation Planning Act, and other relevant sections of the California Fish and Game Code.

Chapter IV provides a recommended approach to project planning for compliance with the federal ESA and the California ESA. Chapters V and VI provide recommendations for preparing a regional conservation plan in compliance with the federal ESA and the California Natural Community Conservation Planning Act. Chapter V provides a recommended approach to initiating and conducting the planning process. Chapter VI provides a description of the elements of a joint regional Habitat Conservation Plan/Natural Community Conservation Plan.

Extensive appendices provide useful information for preparation of Habitat Conservation Plans, California ESA compliance, and Natural Community Conservation Plans. The full texts of the federal ESA, the California ESA, and the Natural Community Conservation Planning Act are provided in Appendices A, B, and C, respectively. Important federal guidance and regulations regarding Habitat Conservation

Plan preparation and permit processing are provided in Appendices D and E. Appendices F and G provide lists of Web sites useful in preparing conservation plans. Appendix H includes the permit application used by federal wildlife agencies. Appendix I includes lists of animal and plant species in California that are protected by California and federal law.

Chapter II

The Federal Endangered Species Act

The purpose of the federal ESA is to conserve the ecosystems on which protected species depend.[1] The Secretary of the Interior and the Secretary of Commerce share responsibility for administration of the federal ESA. In turn, they have delegated this responsibility to their respective wildlife agencies, the U.S. Fish and Wildlife Service and NOAA Fisheries (formerly known as the National Marine Fisheries Service). The U.S. Fish and Wildlife Service has jurisdiction and permitting authority over terrestrial wildlife, freshwater fish, and some marine species. NOAA Fisheries' authority is limited to marine species, which include anadromous[2] species of fish such as salmon and steelhead.

Although the focus of this guidebook is non-federal activities that require the preparation of a Habitat Conservation Plan and issuance of an Incidental Take Permit, it is useful to understand how the federal ESA is organized. There are four main elements to the Act.

- ***Section 4: Species Listing, Critical Habitat Designation, and Recovery Planning.*** Species are listed as endangered or threatened by one of the federal wildlife agencies on their own or in response to a citizen petition. Critical habitat is then designated for each species unless such designation is determined not to be prudent. Once a species is listed, a recovery plan[3] is required to be developed for the conservation and survival of the species. The goal of a recovery plan is to improve the status of the species to the point where it can be delisted. The level of protection of species listed as threatened is determined at the time of listing under what are called "Section 4(d) Rules".

- ***Section 7: Federal Consultation Requirement***. Federal agencies must not undertake actions that are likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat. Whenever a federal agency proposes to authorize, fund, or otherwise carry out a discretionary action that may affect a listed species or critical habitat, that agency must consult with either the U.S. Fish and Wildlife Service or NOAA Fisheries.

- ***Section 9: Prohibition on Take.*** This section provides the major substantive prohibition of the federal ESA, which prohibits any person or entity from, among other things, the take, possession, transport, delivery, and sale of any endangered fish or wildlife species. Take is defined broadly to include actions such as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect. Endangered plants are protected from transport and sale and from removal, damage, or destruction in areas under federal jurisdiction.

[1] *See* Appendix A for the complete text of the federal ESA.

[2] Anadromous fish are species that live part of the lifecycle in the ocean and part in fresh water.

[3] Recovery plans are guidance documents and have no legal force.

- ***Section 10: Exceptions to the Take Prohibition***. Any non-federal entity can obtain a permit for the "incidental take" of a listed species upon submission and approval of an Incidental Take Permit application and a Habitat Conservation Plan. This chapter focuses on the requirements for permitting under Section 10.

INCIDENTAL TAKE PERMITS AND HABITAT CONSERVATION PLANS

Incidental Take Permits are required for any activity that could result in take of a threatened or endangered species by an individual, corporation, local agency, state agency, or other non-federal entity.[4] "Incidental take" means the take of protected species "that is incidental to, but not the purpose of, otherwise lawful activities."[5] The federal ESA requires Incidental Take Permits for the take of protected wildlife and fish species. Listed plants are protected only where there is a federal action; hence, Incidental Take Permits do not apply to plants. In practice, however, listed plants are often included in Habitat Conservation Plans to satisfy the requirement for the U.S. Fish and Wildlife Service to assess the affects of its actions. For more information on federal laws pertaining to plants, see "Phase 2: Permit Processing."

To receive an Incidental Take Permit, the non-federal entity must prepare a Habitat Conservation Plan regardless of project size or the number of species it affects. The HCP is required to describe the expected impact of the take, the impact minimization and mitigation measures that will be employed, how implementation of the plan will be funded, and alternatives considered. The size and complexity of an HCP depends on the number of species it covers, the amount of take involved, and the number and type of activities proposed by the applicant for permitting. Chapter IV of this guidebook provides recommendations for compliance with the federal ESA for single projects. Chapters V and VI provide recommendations for preparation of regional HCPs that cover multiple species in large planning areas.

The Incidental Take Permit allows just that; the "take" of species that will not put the long-term survival and recovery of protected species at risk. Each HCP must include conservation measures that avoid, minimize, and mitigate take. The required standard for mitigation in a Habitat Conservation Plan is "to the maximum extent practicable, minimize and mitigate the impacts of [incidental take]" as long as "the taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild."[6]

A Habitat Conservation Plan is not typically required to contribute to recovery of a species. However, it is required to avoid interfering with successful implementation of a Recovery Plan. For a species with a limited range or a species with a range that falls mostly or entirely within a planning area, a Habitat Conservation Plan may be required to meet a recovery standard.

HCPs may also include conservation measures for species that are not presently listed as threatened or endangered. Including these non-listed species in the HCP can avoid the need to amend the plan in the event that they become listed before completion of the permit holders' activities.

The federal ESA and the regulations that implement it offer little practical guidance for Incidental Take Permit applicants, and the federal wildlife agencies themselves had

[4] *See* Federal Endangered Species Act Section 10, 16 U.S.C. 1539. The text of U.S. Fish and Wildlife Service Section 10 regulations (50 C.F.R. 17) and NOAA Fisheries Section 10 regulations (50 C.F.R.222) are provided in Appendix E.

[5] *See* 50 C.F.R. 17.22.

[6] U.S.C. 1539(a)(2)(a)

little guidance on the standards they were expected to enforce. In 1996, the U.S. Fish and Wildlife Service and NOAA Fisheries addressed this problem by publishing the *Habitat Conservation Planning and Incidental Take Permit Processing Handbook* (*Handbook*). The *Handbook* can be found at the U.S. Fish and Wildlife Service's Web site. The *Handbook* explains the basic program policies and procedures. An amendment to the *Handbook* was published in 2000 to provide additional guidance on five areas: (1) biological goals and objectives, (2) permit duration, (3) monitoring, (4) adaptive management, and (5) public participation. This amendment is known as the "Five-Point Policy" (Appendix D).

THE THREE PHASES OF THE INCIDENTAL TAKE PERMIT PROCESS

The Incidental Take Permit process can be divided into three phases: (1) preparation of the HCP and application materials, (2) application processing by U.S. Fish and Wildlife Service or NOAA Fisheries, and (3) HCP implementation and oversight.

Phase 1: Preparing the Permit Application

Preparing the Habitat Conservation Plan is the most important part of applying for an Incidental Take Permit. At a minimum, a HCP must provide the following information:

- impacts likely to result from the proposed taking;
- steps to monitor, minimize, and mitigate these impacts;
- funding assurances for conservation measures;
- procedures for handling unforeseen circumstances;
- why alternative actions that would avoid take were not implemented; and
- any additional measures the federal wildlife agency requires[7].

A draft Implementation Agreement (IA; also known as an Implementing Agreement) is often submitted with the application. An IA is a contract that describes the roles and responsibilities of the permit holder, the federal wildlife agency, and any other parties responsible for implementing the Habitat Conservation Plan. The federal wildlife agencies require an IA for large regional HCPs. An Implementation Agreement is optional for smaller, single-project HCPs.

Habitat Conservation Plans and NEPA

Since the issuance of an Incidental Take Permit is a discretionary federal action that may significantly affect the human environment, the federal wildlife agencies are required to comply with the National Environmental Policy Act (NEPA). NEPA is similar in form to the California Environmental Quality Act (CEQA) and is applied to federal governmental actions. NEPA requires federal agencies to evaluate the impact of their actions on the environment as a whole.[8] The federal wildlife agencies cannot issue an Incidental Take Permit without evaluating its impact on the environment. The evaluation must consider all aspects of the human environment, not just the impacts on protected species.

If the federal wildlife agencies do not consider the project to be "categorically excluded," then, at a minimum, approval of an Incidental Take Permit application requires preparation of an Environmental Assessment and a Finding of No Significant Impact. If the environmental impact of the Incidental Take Permit is significant, an Environmental Impact Statement and

[7] See federal wildlife agency regulations at 50 C.F.R. 17 (U.S. Fish and Wildlife Service) or 50 C.F.R. 222 (NOAA Fisheries).

[8] 42 U.S.C. §§ 4321 and following.

Record of Decision must be prepared. The Record of Decision documents the final agency action.

Preparation of an Environmental Assessment or Environmental Impact Statement makes the Habitat Conservation Plan subject to public notice and comment. The federal wildlife agencies publish notice of an Incidental Take Permit application in the Federal Register.[9] The federal wildlife agencies consider public comments on the Habitat Conservation Plan before they approve the Incidental Take Permit application. They also review public comment on the Environmental Assessment or the Environmental Impact Statement.

The federal wildlife agencies have a special category for Habitat Conservation Plans that are limited to very low effects on protected species. "Low-effect" HCPs involve only "minor or negligible" effects on species and other environmental resources. Such Plans have a less than significant effect on the environment. Therefore they qualify for a categorical exclusion from the requirement to prepare an Environmental Assessment or Environmental Impact Statement.

Low-effect HCPs require notice in the Federal Register and a 30-day period for public comment. However, the federal wildlife agencies need not respond to public comments or prepare an Environmental Assessment or Environmental Impact Statement. The federal wildlife agencies must prepare documentary support for the decision to exclude issuance of the Permit from environmental review. They must also issue an Environmental Action Memorandum that serves as a record of compliance with NEPA. This approach to NEPA compliance is not usually recommended. Categorical exclusions should not be used where there is a potential for any significant effect on the human

5TH AMENDMENT "REGULATORY TAKINGS" CLAIMS RARE FOR HCPs AND NCCPs

ESA restrictions are sometimes alleged to infringe on the private property rights under the Fifth Amendment to the United States Constitution. These "taking" issues often arise through restrictions on the use of property through Section 9's prohibition against take and Section 7's consultation responsibilities for federal agencies (requiring special restrictions to minimize effects on listed species and avoid jeopardy or destruction of critical habitat). However, these claims rarely arise with the Section 10 process.

Typically, conservation plans involve landowners voluntarily seeking authorization for activities that would otherwise be prohibited under Section 9. Because the process is applicant-driven, there are fewer complaints from private landowners regarding governmental actions that could be interpreted as a "taking of property" warranting compensation.

But the takings issue may arise in some cases, when a local agency imposes a moratorium, designates certain lands as avoidance areas in Habitat Conservation Plans, or denies development applications because of potential species impacts. In addition, an applicant for take authorization could allege a regulatory taking when unacceptable mitigation fees or land dedications for habitat are imposed or when the application for take is denied.

These claims will need to be judged on a case-by-case basis. In most cases, the land will retain some underlying use and value, and it will be difficult for the landowner to sustain a successful claim. In any case, its usually a good idea to take such concerns into account at the beginning of a regulatory process, because even successfully defending against such a claim can be expensive and time consuming.

For more information about takings, see www.ilsg.org/takings.

[9] 16 U.S.C. 1539(c)

environment (e.g., traffic, noise, air quality, cultural resources). Very few HCPs are determined to be "low effect."

All other Habitat Conservation Plans are subject to evaluation and public comment under NEPA. Before preparing an Environmental Impact Statement, the federal wildlife agencies publish a Notice of Intent in the Federal Register. They must allow the public to comment either at a public hearing or in writing. As a result of a federal court decision (see sidebar "Court Invalidates the Natomas Basin HCP" in Chapter 7), the U.S. Fish and Wildlife Service requires that an Environmental Impact Statement be prepared for all large, complex, or controversial Habitat Conservation Plans in California.

Phase 2: Permit Processing

A complete permit application package includes a permit application form (provided in Appendix H), a $25 application fee, a draft Habitat Conservation Plan, a draft NEPA document, and an optional Implementation Agreement.

Incidental Take Permit applications submitted to the U.S. Fish and Wildlife Service are sent to the Regional Director. Applications submitted to NOAA Fisheries are sent to the Assistant Administrator. The permit-processing phase begins with:

- review of the permit application by the appropriate federal wildlife agency;
- publication of a notice in the Federal Register stating that the permit application, draft Habitat Conservation Plan, and draft National Environmental Policy Act document are available for public review; and
- initiation of internal consultation within the appropriate federal wildlife agencies concerning their compliance with federal ESA requirements.

The Federal Register notice initiates the NEPA public review process. For large regional HCPs, the federal wildlife agencies encourage public participation to be initiated well before this time. Since regional HCPs require an Environmental Impact Statement, the public becomes involved early in the process.

With few exceptions, the federal wildlife agencies require a 60-day public comment period on draft HCPs with Environmental Assessments and a 90-day public comment period for draft HCPs with Environmental Impact Statements.

Before issuing an Incidental Take Permit, the federal wildlife agencies must make the following findings:[10]

- the taking is incidental to an otherwise lawful activity;
- impacts are monitored, minimized, and mitigated to the maximum extent practicable;
- procedures are provided to deal with unforeseen circumstances;
- adequate funds exist to implement the Habitat Conservation Plan; and
- the taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild.

In addition, the federal wildlife agencies must determine whether issuing an Incidental Take Permit could jeopardize the continued existence of the species. This determination includes an analysis of direct, indirect, and cumulative effects on threatened and endangered fish, wildlife, plants, and critical habitat pursuant to Section 7 of the federal ESA. This process is often called an internal Section 7 consultation because the wildlife agencies consult with themselves. The federal wildlife agencies will not grant an Incidental Take Permit if the issuance of the permit will jeopardize a threatened or endangered species or adversely modify critical habitat. Although Incidental Take Permits are not

[10] 16 U.S.C. § 1539(2)(2)(B).

required to include listed plants (because the prohibitions of the federal ESA do not apply to plants where there is no federal land, funding, or authorization), in practice Habitat Conservation Plans often include plants because listed plants must be considered in the internal Section 7 consultation.

If the federal wildlife agencies find that the Habitat Conservation Plan does not comply with the issuance criteria under the federal ESA or other federal regulations, the permit will be denied. Applicants are notified in writing of the reasons for the denial, and may request reconsideration of the permit issuance by the Deputy Regional Director. If the request for reconsideration is denied, applicants can appeal to the Regional Director.

The federal ESA has no timelines for permit processing. The *Habitat Conservation Planning Handbook* outlines informal permit processing timelines. These timelines were amended in the Five-Point Policy. Permit processing times are defined as the period from receipt of an application to the issuance of the Incidental Take Permit. The timelines include required Federal Register notifications and public comment periods. The time required to process the permit varies according to the number of species, the size of the planning area, and the level of impact resulting from the proposed activities. Another variable on permit processing time is the availability of federal wildlife agency staff.

According to the *Handbook* and the Five-Point Policy, permit processing time for a low-effect HCP is less than 3 months. For a Habitat Conservation Plan requiring the preparation of an Environmental Assessment and Finding of No Significant Impact, the target time frame is 4–6 months. For a Habitat Conservation Plan requiring an Environmental Impact Statement and Record of Decision, the target time frame is less than 12 months. Large regional HCPs with Environmental Impact Statements often take more than 12 months to process. These timelines do not include the time it takes to develop the public draft HCP.

The permit-processing phase ends with the following documents:

- Biological Opinion;
- Federal ESA-required findings;
- Finding of No Significant Impact or Record of Decision
- Implementation Agreement (if necessary); and
- Incidental Take Permit.

Phase 3: Implementation and the Post-Permit-Issuance Phase

The federal wildlife agencies publish a notice of the decision to issue an Incidental Take Permit in the Federal Register. The applicant is then responsible for implementing the Habitat Conservation Plan. This responsibility includes monitoring the levels of take, funding the HCP, and implementing and complying with all measures identified in the HCP, permit conditions, and Implementation Agreement. The federal wildlife agencies are responsible for monitoring compliance with the permit conditions.

For small project HCPs, the post-permit-issuance phase may take no longer than the time necessary to construct the project and install mitigation measures. Mitigation measure may include habitat replacement. For large regional HCPs, the post-permit-issuance phase may extend for the life of a multi-year or multi-decade permit. If conservation areas are established, they typically must be managed in perpetuity.

NO SURPRISES RULE

The "no surprises rule" is a great advantage to Incidental Take Permit holders.[11] The rule

[11] 63 Fed. Reg. 35 (1998) (amending 50 C.F.R. 17.22(b)(5), 17.32(b)(5), and 222.307(g)).

states that, unless the actions by the permit holder would result in jeopardy (see below), permit holders are not required to provide remedial mitigation measures beyond those already identified in the Habitat Conservation Plan to address "unforeseen circumstances." Remedial measures are required, however, for "changed circumstances" identified in the plan.

Changed circumstances are defined as changes affecting the species or geographic area covered in a Habitat Conservation Plan that can be reasonably anticipated by plan proponents and the federal wildlife agencies. Examples include new species listings, fire, flood, or other foreseeable natural catastrophic event. In the event of "unforeseen circumstances," permit holders are not required to provide remedial measures that would require commitment of additional land, water or financial compensation or restrictions on the use of land, water or other natural resources. However, if unforeseen circumstances would result in jeopardy, the permit could be revoked (see below).

Unforeseen circumstances are defined as changes affecting species or geographic area covered in a Habitat Conservation Plan that could not have been reasonably anticipated by plan developers and the federal wildlife agencies and that result in substantial adverse change in the status of a covered species. The federal wildlife agencies have the burden of demonstrating that unforeseen circumstances exist.

The Habitat Conservation Plan's adaptive management program addresses changed circumstances and remedial measures for which the permit holder is responsible. The permit holder is not responsible for implementing remedial measures to address changed circumstances that are not described in the Habitat Conservation Plan (these are treated as unforeseen circumstances). This assurance and the ability to include non-listed species in a Habitat Conservation Plan come from the no surprises rule. However, the federal wildlife agencies have reserved the right to amend or revoke any Incidental Take Permit under the "permit revocation rule" if the permitted activity would be inconsistent with the no jeopardy issuance criteria.

In December 2003, a federal judge remanded the no surprises rule and vacated and remanded the permit revocation rule (see discussion in "Update: Courts weigh in on no surprises assurances" sidebar on the following page).

UPDATE: COURTS WEIGH IN ON NO SURPRISES ASSURANCES

In 1998, environmental groups—led by the Spirit of the Sage Council—filed suit alleging that the "No Surprises Rule" precluded the federal wildlife agencies from making changes to incidental take permits that may be necessary to ensure the survival or recovery of listed species. The lawsuit also claimed that the wildlife agencies inadequately considered or responded to public comments during rulemaking. This lawsuit was later amended to include an additional challenge to the Permit Revocation Rule, which was released without public review in June 1999. The Permit Revocation Rule amended No Surprises and clarified when incidental take permits could be revoked.

In December 2003, the federal district found in favor of the environmental group plaintiffs. The judge vacated the Permit Revocation Rule, finding that the rule "…was promulgated in violation of the [Administrative Procedures Act]'s notice and comment requirements…" The federal wildlife agencies were required to reconsider the rule in the public arena and "…truly begin anew the APA mandated notice and comment procedures, with the open mind required by the governing authorities." The judge also found that the No Surprises rule is "intertwined" with the Permit Revocation Rule, so the federal wildlife agencies must also go through formal rulemaking again for No Surprises.

Unlike the Permit Revocation Rule, however, the No Surprises Rule remains in effects while this new rulemaking occurs. With a 9-year track record (No Surprises was first issued as policy in 1994), No Surprises is expected to generate much more public interest now than it did in 1997 when public comment first occurred. The federal wildlife agencies will likely begin this new rulemaking procedure in 2004. It is unclear what affect, if any, the procedure will have on the substance of the No Surprises policy.

In January 2004, the Director of the U.S. Fish and Wildlife Service released a memorandum stating that the incidental take permits would continue to be issued with assurances under the existing No Surprises Rule pending the release of new regulations.

Chapter III

California Endangered Species Laws

The California Fish and Game Code contains a number of laws that provide protection for rare, threatened, and endangered species. The California ESA is the primary state law that protects threatened and endangered species (the entire text of this Act is provided in Appendix B). The Native Plant Protection Act[1] (NPPA) provides additional protection of plant species not listed under the California ESA. In addition, the Natural Community Conservation Planning Act[2] provides a method for conserving species on a large geographic scale and obtaining take authorization (the entire text of the NCCPA is provided in Appendix C). Various other sections of the California Fish and Game Code provide protection for specific species of wildlife, including some designated as "fully protected species."

CALIFORNIA ENDANGERED SPECIES ACT

The California ESA generally parallels the federal ESA in providing protection to state-listed threatened or endangered species. It has provisions for listing species, prohibitions against take, and means for authorizing take of protected species. However, each component of the California ESA differs from the federal ESA in important ways. Under the California ESA, it is the policy of the State to conserve, protect, restore, and enhance threatened and endangered species and their habitat.

As of October 2003, there were a total of 149 state- and federally listed threatened and endangered fish and wildlife species in California. Of these, 72 species are listed only under the federal ESA, 29 are listed only under the California ESA, and 48 are listed under both. There are 215 state- and federally listed plant species in California. Of these, 62 are listed only under the federal ESA, 30 are listed only under the California ESA, and 123 are listed under both. There are an additional 67 plant species listed as rare under the NPPA. The names of animals and plant that are listed as endangered, threatened, and rare in California are provided in Appendix I.

Definition of Take

The California ESA prohibits the take of endangered, threatened, and candidate species without specific authorization from the California Department of Fish and Game. The California definition of "take" differs from the federal definition. Under the California ESA, take "means hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."[3]

Unlike the federal ESA, this definition does not include the terms "harass" and "harm." The federal ESA uses "harm" to include habitat modification in the definition of take. In general, the California definition of take includes only acts that cause the death of a protected species. The definition does not include indirect harm or harassment. In some cases, habitat modification may be considered take under the federal ESA, but not under the California ESA. Table III-1 provides a general comparison of the California and federal ESAs.

[1] Cal. Fish & Game Code §§ 1900 and following.

[2] Cal. Fish & Game Code §§ 2800 and following.

[3] Cal. Fish & Game Code § 86.

Incidental Take Permits

The California ESA authorizes the Department of Fish and Game to issue permits for the incidental take of listed species. These are sometimes referred to as Section 2081 permits after the authorizing section of the statute.[4] California's Incidental Take Permits are similar to those issued under the federal ESA. To obtain take authorization, the permit applicant must submit a detailed project description defining the geographic scope, proposed project actions, and potential effects of the action on state-listed species. The Department of Fish and Game must make the following findings before issuing an Incidental Take Permit.

- Take is incidental to otherwise lawful activities.
- Impacts of take on species have been minimized and fully mitigated.
- The permit is consistent with Department of Fish and Game recovery programs.
- The permit applicant has ensured adequate funding to implement the mitigation and monitoring measures.
- The actions taken under the permit will not jeopardize the continued existence of the species.

The mitigation measures required to meet the standard of the Incidental Take Permit must be roughly proportional to the authorized impacts on affected species.[5] These measures must maintain the permit applicant's project objectives to the greatest extent possible. The requirement that the impacts of take be "fully" mitigated differs from the federal ESA's requirement that impacts be minimized and mitigated to the "maximum extent practicable."

California Environmental Quality Act

As a discretionary action by a state agency, a Section 2081 permit requires compliance with CEQA. CEQA requires public agencies to analyze and minimize the effects of their actions on the environment. The Department of Fish and Game must comply with CEQA when it issues and oversees implementation of an Incidental Take Permit, because such issuance is a discretionary action by a state agency. CEQA requires a lead agency to complete an Initial Study and prepare either a mitigated negative declaration or Environmental Impact Report, in coordination with all responsible agencies.

Under Department of Fish and Game regulations, there are two pathways for CEQA compliance when obtaining an Incidental Take Permit (Figure III-1). When the Department of Fish and Game is the lead agency, the Incidental Take Permit process has been certified by the California Resources Agency as equivalent to an Environmental Impact Report. Therefore, the typical CEQA process is incorporated into the Incidental Take Permit process and separate CEQA documentation is not required.

When another state or local agency is the lead agency, the Department of Fish and Game is a "responsible agency" under CEQA. In this instance, the Department of Fish and Game will not issue an Incidental Take Permit unless the lead agency prepares a CEQA compliance document for the project.

Jointly Protected Species

For proposed projects that may result in take of species that are protected by both the federal ESA and the California ESA, compliance with the California ESA can be achieved through the federal Formal

[4] Cal. Fish & Game Code § 2081(b).

[5] Cal. Fish & Game Code § 2081.

TABLE III-1. COMPARISON OF CALIFORNIA AND FEDERAL ESA		
	CALIFORNIA ESA	FEDERAL ESA
Scope of Take Prohibition	Hunting, pursuing, catching, capturing, and killing individuals (and attempts to do so).	Harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, and collecting individuals (and attempts to do so)
Habitat Protection	Habitat not necessarily protected. Habitat removal prohibited if it is proximate cause of death.	Habitat protected under "harm" definition if death or injury results. Harassment prohibited under "take" definition where significant disruption of normal behavioral patterns results in injury.
Threatened Species	Same prohibitions for threatened and endangered species.	All endangered species protected. Section 4(d) rules allow for modified prohibitions for threatened species.
Candidate Species	Protection of candidate species.	No protection of proposed species
Take Authorization	Section 2081 incidental take permit or Section 2080.1, species also federally listed and federal authorization is received.	Section 10 incidental take permit for non-federal entities and Section 7 incidental take statement for federal agencies.
Governmental Compliance	No separate state agency consultation process.	Federal agency consultation process under Section 7.
Plants	Plants somewhat protected under NPPA/CESA. Rare plants protected under NPPA. Specific protection and exemptions under NPPA and CESA unclear for threatened and endangered plants.	Plants protected only where federal action involved or a violation of state law occurs.
Responsible Agency	DFG authority over wildlife, fish, and plants.	U.S. Fish and Wildlife Service authority over wildlife (except some marine mammals), freshwater fish, and plants. NOAA Fisheries authority over marine species.
Environmental Review	Section 2081 permit decision triggers need to comply with CEQA. Section 2081 permitting is a "CEQA equivalent" program if DFG is lead agency.	Section 10 permit decision triggers need to comply with NEPA. U.S. Fish and Wildlife Service or NOAA Fisheries is lead agency.

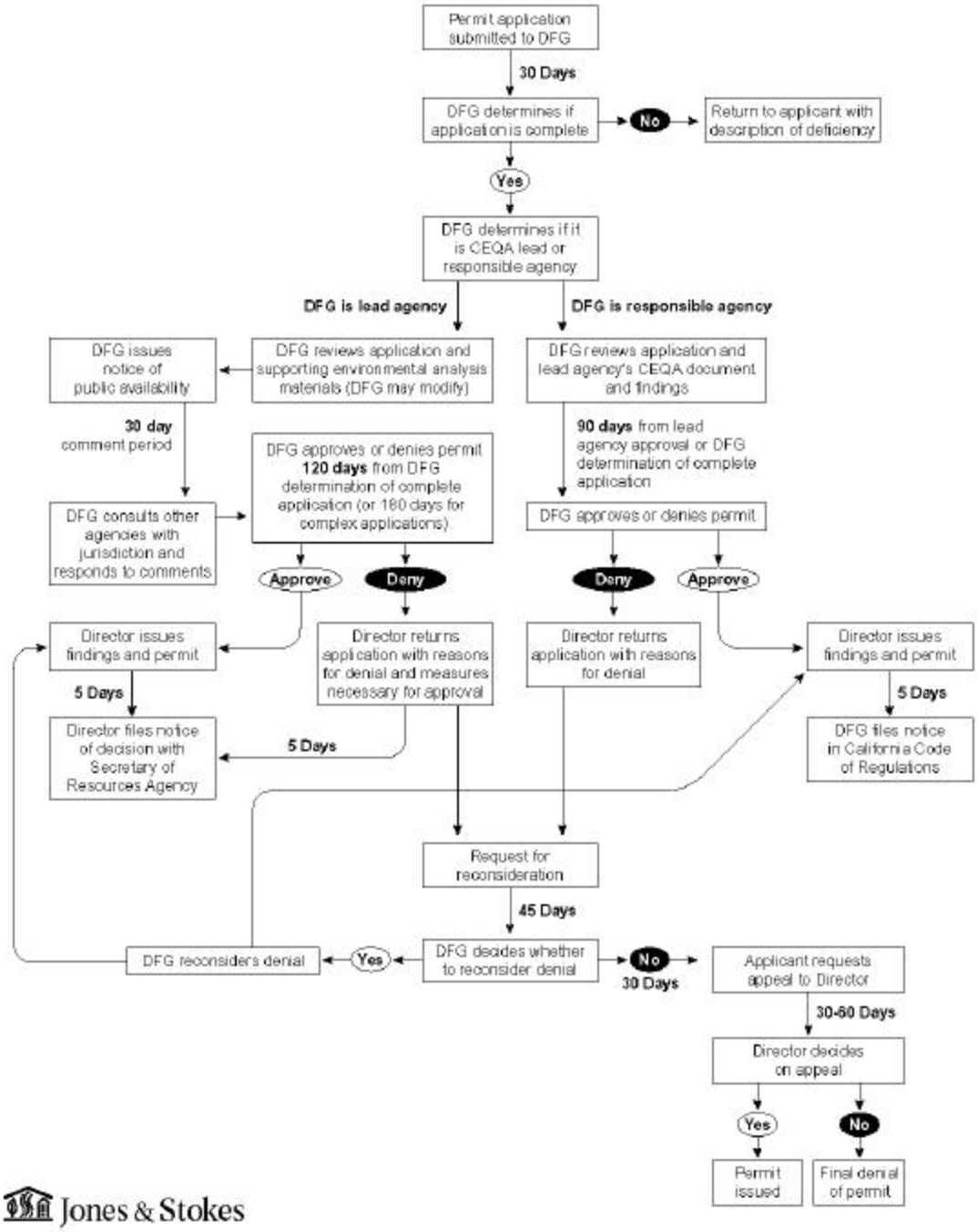
Consultation or Incidental Take Permit (Sections 7 or 10) process.[6] This approach requires the applicant to consult with Department of Fish and Game staff during the development of the Habitat Conservation Plan (or Section 7 biological assessment) about appropriate mitigation and minimization measures.

Once the federal wildlife agencies and the Department of Fish and Game agree on mitigation measures, the applicant submits a draft Habitat Conservation Plan to the Department of Fish and Game accompanied by a letter asking the Department of Fish and Game to concur with the final decision of the reviewing federal wildlife agency (usually the U.S. Fish and Wildlife Service or, in certain cases, NOAA Fisheries).

Once the Department of Fish and Game concurs, the applicant finalizes the HCP and provides the Department of Fish and Game with a copy of the federal Incidental Take Permit. The Department of Fish and Game publishes a notice in the California

[6] See Cal. Fish & Game Code § 2080.1

Figure III-1. CESA Section 2081 Incidental Take Permit Process



Jones & Stokes

Regulatory Notice Register. The notice announces the applicant's intent to use federal take authorization for jointly protected species. The Department of Fish and Game makes a final determination on the consistency of the Habitat Conservation Plan with the California ESA within 30 days. Upon receiving Department of Fish and Game approval, the applicant receives state authorization for the incidental take of the jointly protected species.

NATIVE PLANT PROTECTION ACT

The Native Plant Protection Act, passed in 1977, protects plants that are designated as rare or endangered. With the passage of the California ESA in 1984, endangered plants protected under the NPPA were "grandfathered" into the California ESA and thus treated as any other endangered plant species. Plants listed as "rare" under the Native Plant Protection Act, however, receive no protection under the California ESA.

Plants are no longer proposed for listing under the NPPA. However, it continues to protect 67 plant species designated as "rare" prior to 1984 (five of these rare plants have subsequently been listed as either threatened or endangered under the California ESA). Although the NPPA includes a provision that prohibits take of protected plants, it contains so many exceptions that it is unclear what protection, if any, is actually afforded to plants listed as rare.

FULLY PROTECTED SPECIES AND OTHER PROTECTED WILDLIFE

In addition to the protection of species listed as endangered, threatened, and rare, California also includes specific protections for a variety of other species. For example, unless authorized by the Department of Fish and Game, it is unlawful to take the nest or eggs of any bird; it is unlawful to take any birds of prey (i.e., eagles, hawks, falcons, vultures, and owls); and it is unlawful to take several "specified birds" (osprey and any species of egret).[7]

California also identifies 37 species of mammals, birds, reptiles, amphibians, and fish as "fully protected."[8] Take of these species is prohibited and may not be authorized by the Department of Fish and Game except for scientific purposes. No permits may be issued to take any fully protected species. The same definition of "take" that is used under the California ESA applies here. Therefore, if a proposed project may result in the take (hunt, pursue, catch, capture, or kill) of any fully protected species, there is no procedure for which to receive take authorization. All but four of the fully protected species are also listed under the California ESA. (A list of all fully protected species is provided in Table III-2).

While many species have been fully protected for more than 30 years, the Department of Fish and Game did not usually recognize the stringency of these provisions until the mid-1990s. Since that time, however, fully protected species statutes have received a great deal of attention and withstood several Legislative proposals to revise or repeal the designation.

The presence of fully protected species in a project area requires additional coordination with the Department of Fish and Game beyond compliance with the California ESA. Such coordination includes identifying measures that will ensure that no take (as defined under California law)[9] of fully protected species results from the proposed project, even if the federal wildlife agencies would otherwise permit an incidental take under the federal ESA. The slight difference between federal and state definitions of "take" may allow the federal wildlife agencies to authorize take for harassment or harm under the federal ESA, while take as

[7] Cal. Fish & Game §§ 3503, 3503.5, 3505

[8] Cal. Fish & Game Code §§ 3511, 4700, 5050 and 5515.

[9] CFGC § 86

defined under the California Fish and Game Code is avoided.

Measures to avoid take may include monitoring construction in habitat of fully protected species, keeping all construction activities out of the habitat, and avoiding construction activities during certain times (for example, nesting periods). While this coordination does not result in the issuance of a formal authorization or permit from the Department of Fish and Game, the measures are binding because take of fully protected species cannot be authorized.

In addition to fully protected species, there are other species specifically identified and protected in the California Fish and Game Code. These species include mountain lion[10] and white shark.[11] Take of these species is allowed only in very specific instances.

NATURAL COMMUNITY CONSERVATION PLANNING ACT

The NCCPA became effective in 2003, replacing the original law passed and signed by Governor Wilson in 1991. Like the old law, the new law recognizes the need for voluntary, broad-based planning to provide effective protection of wildlife resources. The key components for compliance with the NCCPA include a Planning Agreement, public involvement, independent scientific input, a Natural Community Conservation Plan document, an Implementation Agreement, a Department of Fish and Game determination (findings), and CEQA compliance.

Planning Agreement

Prior to development of the NCCP, plan participants and the Department of Fish and Game must develop a Planning Agreement. The agreement commits the parties to specific actions in the development of the NCCP. Required components of the Planning Agreement are listed below.

- Identification of geographic scope of the planning area.
- Potential covered species.
- Preliminary conservation objectives.
- Process for independent scientific input.
- Means for coordination with federal wildlife agencies.
- Encouragement of concurrent wetlands planning.
- Interim process for project review during plan development.
- Process for public participation.

The Planning Agreement is a contract. The draft Planning Agreement must be made available for a 21-day public review period.

Public Participation

The Natural Community Conservation Planning Act requires that the Department of Fish and Game and plan participants establish a public participation process. All draft documents must be made available to the public for at least 60 days prior to their adoption. All documents must be made available at least 10 working days prior to public hearings. These include preliminary plans, maps, species lists, and other documents.

The NCCP public participation process may proceed concurrently with the CEQA public review process. The public participation process must include an outreach program that provides access to information for all persons interested in the plan.

[10] Cal. Fish & Game Code § 4800.

[11] Cal. Fish & Game Code §§ 5517 and 8599.

TABLE III-2. FULLY PROTECTED SPECIES UNDER THE CALIFORNIA FISH AND GAME CODE	
Birds (Section 3511)	• American peregrine falcon (*Falco peregrinus anatum*) • Brown pelican (*Pelecanus occidentalis*) • California black rail (*Laterallus jamaicensis coturniculus*) • California clapper rail (*Rallus longirostris obsoletus*) • California condor (*Gymnogyps californianus*) • California least tern (*Sterna albifrons browni*) • Golden eagle (*Aquila chrysaetos*) • Greater sandhill crane (*Grus canadensis tabida*) • Light-footed clapper rail (*Rallus longirostris levipes*) • Southern bald eagle (*Haliaeetus leucocephalus leucocephalus*) • Trumpeter swan (*Cygnus buccinator*) • White-tailed kite (*Elanus leucurus*) • Yuma clapper rail (*Rallus longirostris yumanensis*)
Mammals (Section 4700)	• Morro Bay kangaroo rat (*Dipodomys heermanni morroensis*). • Bighorn sheep (*Ovis canadensis*), (except Nelson bighorn sheep subspecies *Ovis canadensis nelsoni*) • Northern elephant seal (*Mirounga angustirostris*). • Guadalupe fur seal (*Arctocephalus townsendi*). • Ring-tailed cat (genus *Bassariscus*). • Pacific right whale (*Eubalaena sieboldi*). • Salt-marsh harvest mouse (*Reithrodontomys raviventris*). • Southern sea otter (*Enhydra lutris nereis*) • Wolverine (*Gulo luscus*).
Reptiles and Amphibians (Section 5050)	• Blunt-nosed leopard lizard (*Crotaphytus wislizenii silus*) • San Francisco garter snake (*Thamnophis sirtalis tetrataenia*) • Santa Cruz long-toed salamander (*Ambystoma macrodactylum croceum*) • Limestone salamander (*Hydromantes brunus*) • Black toad (*Bufo boreas exsul*)
Fish (Section 5515)	• Colorado River squawfish [Colorado pikeminnow] (*Ptychocheilus lucius*) • Thicktail chub (*Gila crassicauda*) • Mohave chub (*Gila mohavensis*) • Lost River sucker (*Catostomus luxatus*) • Modoc sucker (*Catostomus microps*) • Shortnose sucker (*Chasmistes brevirostris*) • Humpback sucker [Razorback sucker] (*Xyrauchen texanus*) • Owens River pupfish (*Cyprinoden radiosus*) • Unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*) • Rough sculpin (*Cottus asperrimus*)

Department of Fish and Game Findings

To approve a Natural Community Conservation Plan, the Department of Fish and Game must find that the Plan:

- is consistent with the planning agreement;
- protects habitat, natural communities, and species diversity on a landscape or ecosystem level (through creation of habitat reserves or "measures that provide equivalent conservation of covered species");
- includes a reserve system and conservation measures that will:
  - conserve ecological integrity of large habitat blocks, ecosystem functions, and biological diversity;
  - provide conservation of covered species in the plan area and linkages among reserves and with outside areas;
  - support sustainable populations of covered species;
  - provide a range of environmental gradients and habitat diversity to support shifting species distribution;
  - sustain movement of species among reserves;
- identifies activities allowed within reserves;
- includes specific conservation measures for covered species;
- includes a monitoring program;
- includes an adaptive management program;
- includes a plan implementation schedule and landowner and participant obligations if schedule is not met; and
- includes provisions to ensure adequate funding to implement conservation measures.

The Department of Fish and Game must establish a list of species authorized for take and make specific findings identifying the ecological rationale for including species in the plan.

Implementation Agreement

The NCCPA also requires preparation of an Implementation Agreement, a contract that identifies the roles and responsibilities of all parties during implementation of the Plan and Permit. This IA must include:

- provisions for defining species coverage and conditions of coverage;
- provisions for establishing reserves or other conservation measures;
- specific terms and conditions that, if violated, would result in permit revocation;[12]
- plan amendment procedures;
- provisions to ensure monitoring and adaptive management are implemented;
- provisions for oversight of plan implementation;
- provisions for periodic reporting to wildlife agencies and the public;
- adequate funding; and
- provisions to ensure that mitigation is roughly proportional in timing and extent to impacts on habitat and covered species.

Section 2835 Take Authorization

Under the NCCPA, the Department of Fish and Game may provide take authorization for the state-listed threatened and endangered species and other species that are not listed for which conservation and management is provided for in the Natural Community Conservation Plan. These

[12] These terms must include failure to provide adequate funding, failure to mitigate impacts on species or habitat, changes in plan or projects without prior approval, and excessive take beyond that permitted.

permits are often referred to as Section 2835 Take Permits. Under the California ESA, the terms "conserve," "conserving," and "conservation" are defined to mean the use of all methods and procedures necessary to bring endangered or threatened species to the point at which the measures provided under the California ESA are no longer necessary. In other words, the requirement to conserve species means that a Natural Community Conservation Plan must contribute to the recovery of covered species. Where the range of a covered species is wholly or mostly included within the planning area, then recovery of the species would be a required Plan goal.

Permit Revocation

The NCCPA requires mandatory revocation of a Section 2835 Take Permit if the plan participants do not maintain proportionality between take and mitigation and do not, within 45 days, remedy this condition or develop a plan with the Department of Fish and Game to provide remedy. The Department of Fish and Game must also revoke a Section 2835 Take Permit if continued take would result in jeopardy to a species.

Assurances

Under the NCCPA, the Department of Fish and Game may provide assurances to plan participants, but the level of these assurances must be tied to consideration of the level of knowledge and data on covered species and natural communities and the size and duration of the Plan.

The NCCPA provides a no surprises assurance in the case of unforeseen circumstances, which include changes "that could not reasonably have been anticipated at the time of plan development, and that would result in a substantial adverse change in the status of one or more covered species."[13] Additional "land, water, or financial compensation or additional restrictions on use of land, water, or other natural resources shall not be required without the consent of plan participants" in cases of unforeseen circumstances.[14] These assurances are not available under California ESA Section 2081 permits.

NCCP AND HCP COMPARISON

There are substantial similarities between the federally required Habitat Conservation Plan and the state required Natural Community Conservation Plan. Many of the definitions of terms are similar or identical, and many of the required elements of the Plans are the same. Indeed, joint Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) documents are encouraged. Natural Community Conservation Plans, however, have several additional requirements that are not required for Habitat Conservation Plans.

NCCPs must contribute to the recovery of covered species. HCPs must meet the somewhat lesser standard of minimizing and mitigating impacts to the maximum extent practicable. Section 2081 Incidental Take Permits under California ESA require that impacts on protected species be fully mitigated; permit holders need not contribute to recovery. In cases where a Habitat Conservation Plan covers all or most of a species' range, the federal wildlife agencies may require a recovery standard.

NCCPs must provide for the conservation of natural communities, in addition to conservation of species and their specific habitat. Moreover, the Plan must conserve the ecological integrity of large habitat blocks, ecosystem functions, and biological diversity. In many instances, meeting these requirements will require more habitat conservation than is necessary to meet the standards for species mitigation under a Habitat Conservation Plan or a California ESA Section 2081 permit.

[13] Cal. Fish & Game Code § 2805(j).

[14] Cal. Fish & Game Code § 2820(f)(2).

The terms "ecological integrity," "ecosystem function," and "biological diversity" are not defined in the Natural Community Conservation Planning Act. These terms are ecological terms with various definitions in the scientific community. Since the terms remain undefined, it is likely that each new NCCP will need to define them and develop methods for the measurement of the ecological parameters they represent, in accordance with the ecological conditions of the specific planning area.

The NCCPA requires a planning agreement prior to development of the Natural Community Plan. HCPs are not subject to such a requirement.

HCPs are required for federal authorization of take, regardless of the size of the project or level of take. They may be developed for very small projects or regional multi-species programs. Natural Community Conservation Plans are prepared to encompass landscapes or ecosystems. Where a project is too small, the California ESA Section 2081 Incidental Take Permit is the appropriate mechanism for compliance with state law. The Department of Fish and Game has not identified a minimum size for Natural Community Conservation Plans. The scale of natural communities and ecological processes is a determining factor, but no precedent has been set for minimum size criteria.

Chapter IV

Project Planning and Compliance under the Federal and California Endangered Species Acts

Obtaining incidental take authorization under both the federal (Section 10) and California (Section 2081) Endangered Species Acts requires development of mitigation measures for impacts on listed species that would result from projects proposed by state agencies, local agencies, and private individuals and organizations. Because of the complexity of the regulations and the options available for compliance, it is important for project proponents to develop a clear regulatory compliance strategy. Projects should be planned around this strategy.

This chapter provides recommendations on best approaches to project planning and regulatory compliance for endangered species under the federal and California ESAs for individual projects of small or moderate size with single applicants. The recommended approach to large project planning and regional Habitat Conservation Plans is examined in Chapters V and VI.

GENERAL RECOMMENDATIONS

Whatever the proposed project, permit applicants should start early in the planning process to identify potential endangered species issues. If a property has not already been purchased, planning should begin at the project site selection stage. Project proponents should be proactive and anticipate endangered species issues and needs.

Do not expect the federal wildlife agencies or the California Department of Fish and Game to resolve your problems. The job of these agencies is to provide the applicant with an understanding of regulatory requirements, recommend mitigation measures, and review the permit application. Agency staff, however, are not motivated nor do they have the time to specifically address the applicant's project issues. Despite the chronic staff shortage at the federal and state wildlife agencies, project proponents should make every effort to maintain continuous coordination with these agencies. All agreements made with the wildlife agencies during development of the permit application should be documented in writing, especially since staff turnover at the wildlife agencies may be frequent. In all instances, project applicants should be honest and forthright in addressing endangered species issues and compliance. Negotiations with wildlife agencies are expected, but these should always be conducted professionally and in good faith.

KEY STEPS IN PROJECT PLANNING

Permit applicants should clearly articulate their project goals and objectives, such that alternative approaches can be identified and assessed. Potential endangered species issues should be identified for all potential project sites based on existing information and preliminary surveys. Listed species that may be affected by the project should be identified and an opportunities and constraints analysis conducted.

Once a project site is selected from site alternatives, onsite alternatives should be developed on the basis of the opportunities and constraints analysis. The appropriate wildlife agency staff should be contacted

early in the process for their input. Project applicants should assess their regulatory requirements and look for opportunities to avoid take and hence to avoid the need for federal or state permits. If take is not avoidable, those species requiring permits should be identified, and specific biological goals and objectives and mitigation measures should be developed for each species.

STRATEGY FOR COMPLIANCE

Permit applicants should develop their regulatory strategy early. In some instances, especially for larger projects, there may be multiple regulations affording protection to species that should be considered in project planning. Applicants should consider addressing all species, in addition to state- and federally listed threatened and endangered species, that could be protected by laws such as:

- California Native Plant Protection Act,
- California Fish and Game Code (various sections),
- Fish and Wildlife Coordination Act,
- Migratory Bird Treaty Act,
- National Environmental Policy Act,
- California Environmental Quality Act, and
- Local ordinances

Applicants should consider the following types of special-status wildlife species that could be protected under one or more laws.

- Federal ESA–listed threatened and endangered.
- California ESA–listed threatened and endangered.
- Federal ESA proposed and candidates for listing.
- California ESA candidates.
- California species of special concern (Department of Fish and Game).
- Species that meet the definition of rare, threatened, or endangered in the State CEQA Guidelines.
- Fully protected species under the California Fish and Game Code.
- Migratory birds.

Applicants should consider the following types of special-status plant species that could be protected under one or more laws.

- Federal ESA–listed threatened and endangered.
- California ESA–listed threatened and endangered.
- Federal ESA proposed and candidates for listing.
- California ESA candidates.
- Native Plant Protection Act listed rare.
- Species that meet the definition of rare, threatened, or endangered in the State CEQA Guidelines (often identified as plants on the California Native Plant Society's Lists 1A, 1B, and 2 and, in some cases, on Lists 3 and 4)

Local and state agencies will likely be involved in a CEQA process when endangered species issues arise under both the federal and California ESAs. CEQA lead agencies must incorporate the California ESA into the CEQA process; it is also recommended that preparation of a Habitat Conservation Plan under the federal ESA be conducted in parallel with CEQA document preparation. In cases where the project proponent is a private entity, that private entity is responsible for obtaining Incidental Take Permits. In cases where there is a joint CEQA/NEPA process with a federal lead agency (other than the U.S. Fish and Wildlife Service), federal ESA compliance will be accomplished through the Section 7 federal consultation process between the

federal lead agency and the federal wildlife agency.

Private individuals and corporations may have federal and California ESA issues without any other authorizations triggering NEPA or CEQA. In these instances the private entity negotiates directly with the federal wildlife agency, and the federal wildlife agency is the lead NEPA agency. For the California ESA, the Department of Fish and Game will be the lead CEQA agency on issuance of the 2081 permit if a local or other state agency does not have a broader role or authority over the project.

In cases in which all species potentially affected by the project are jointly listed under both the federal and California ESAs, the project proponent should investigate with the Department of Fish and Game the possibility of using the California ESA Section 2080.1 process for take authorization (see discussion in Chapter III).

SPECIES SURVEY CONSIDERATIONS

Prior to conducting a detailed and labor-intensive species survey, project proponents should conduct reconnaissance-level surveys for occurrences of listed species and their habitat, at least at locations that may support suitable habitat. A great deal of information can be gained at much lower cost with these types of surveys. Constraint and opportunity maps can be prepared and analyses conducted using these data to determine potential project sites and project configuration on the selected site. Minor design flaws or fatal flaws may be identified at this stage, prior to the commitment of large amounts of funds for project design.

Many species are only present or identifiable at certain times of year (for example, migratory wildlife, annual plants) and have very specific survey timing requirements. Project applicants need to plan for these surveys well ahead of time; otherwise, opportunities may be missed and the project planning process delayed for a year or more.

For many species, the federal wildlife agencies and California Department of Fish and Game have detailed survey protocols that may require special timing, special equipment, repeated site visits, and specially permitted biologists.

Take may be required in order to conduct protocol-level surveys for some listed wildlife species. For example, trapping for small mammals (i.e., trapping), calling for birds (i.e., harassment), and dip-netting for fairy shrimp (i.e., capture) are survey methods that require take. To conduct these types of surveys, biologists must hold Scientific Take Permits under the federal ESA[1] and the California ESA[2] that authorize take of the specific listed species for scientific purposes. To conduct surveys under a scientific take permit, biologists are typically required to report their findings to the federal wildlife agencies and the Department of Fish and Game.

Many of California's rare plants are annual species, appearing only for short periods of the year. These plant species spend the remainder of the year as dormant seeds, when their presence cannot be determined. During drought years they may not appear at all. In such years it may not be possible to determine that these species are absent, where suitable habitat is present.

In some instances, it is prudent to assume that listed species are present in or would use suitable habitat identified at a project site. Assuming species' presence can save money and time, that would otherwise be spent conducting detailed species surveys, and hence may allow the project to be constructed sooner and sometimes at less cost. In many cases where suitable habitat is present at a project site that is within the species' range, the wildlife agencies will require species surveys or will assume that impacts on this habitat would result in take

[1] Under federal ESA Section 10(a)(1)(A).

[2] Under California ESA Section 2081(a).

of the species regardless of the results of species surveys.

Project proponents should coordinate with the federal wildlife agencies and the Department of Fish and Game to reach agreement on the validity of survey methods and final determination on presence/absence of species and habitat.

Project Alternatives

Based on the results of species and habitat surveys, alternative project designs should be investigated to avoid and minimize impacts on listed species. The federal ESA requires that at least one alternative should avoid all take of listed species and that the project proponent identify why this alternative is not practicable. Cost may be used as a criterion for practicability.

It is recommended that alternatives developed for the NEPA and CEQA process include alternatives that address ESA requirements. Coordination with the federal wildlife agencies and the Department of Fish and Game is recommended at this stage to ensure that the range of alternatives included in the analysis is sufficient to meet endangered species issues.

IMPACT ANALYSIS

Once a proposed project design has been developed, potential impacts on species can be assessed. An impact assessment methodology and method for quantifying take should be developed and reviewed by the federal wildlife agencies and the Department of Fish and Game for appropriateness. The project impacts assessment should include evaluation of direct, indirect, and cumulative impacts on each species. While federal ESA Section 10 does not specifically require that direct and cumulative impacts be addressed in a Habitat Conservation Plan, the internal Section 7 consultation by the federal wildlife agency must address such impacts (see discussion in Chapter II). Hence, it is recommended that indirect and cumulative impacts be addressed in Habitat Conservation Plans.

Considerations for Impacts on Wildlife

Wildlife species have specific ecological requirements that need to be considered in impact analyses. Examples of some such considerations are listed below.

- Large territories or home ranges, requiring large habitat areas.
- Need for different habitats during different life stages.
- Special movement routes for dispersal or migration.
- High susceptibility to indirect effects from such things as lighting or noise.

Mechanisms for direct impacts on wildlife include:

- direct mortality;
- harassment; and
- removal of important habitat (e.g., for nesting, denning, foraging, movement, hibernating, aestivating, cover).

Indirect impacts reduce survival or reproduction and happen later in time, often well after the project is completed. Examples of mechanisms for indirect impacts on wildlife include:

- noise;
- lighting;
- human activities;
- degradation of habitat;
- predation by pets;
- poisoning;
- population isolation; and
- competition, predation, and parasitism by introduced species.

Considerations for Impacts on Plants

Impact analyses for plants need to consider population fluctuations. Annual plant species populations may expand and contract from year to year due to climate patterns. The locations of plant populations in the survey year may not be representative of where populations have occurred in the past or will occur in the future.

Plants may be associated with animal pollinators and seed dispersers. The ecological requirements and impacts on these animal species need to be considered in impact assessments. Introduced species of animals may result in adverse affects on endangered plants through browsing and grazing, and introduced plants may adversely affect endangered plants through competition for light, water, nutrients, and space.

Mechanisms for direct impacts on plants include:

- removal of plants or habitat by clearing, filling, excavation, etc., within the "footprint" of the project; and
- construction or postconstruction "spillover activities" (e.g., vehicle traffic, vehicle parking, storage sites, access roads, foot traffic, offsite dumping) that result in removal or crushing of plants and habitat.

Examples of mechanisms for indirect impacts on plants include:

- increased erosion that undermines plant roots and reduces soil fertility;
- increased sedimentation that buries plant shoots;
- herbicide or fertilizer runoff;
- changes in hydrologic conditions that result in more or less water than the plant can tolerate or a change in the timing of water availability;
- increased weed invasion;
- increased human contact (e.g., trampling either of plants or near plants that compacts the soil and reduces water infiltration and soil aeration); and
- population isolation.

Cumulative Impacts

Cumulative impacts on wildlife and plants result from the concurrent and continued loss of populations and habitat from other projects and actions within the species' range. In addition, increasing isolation of populations from each other and from other areas of suitable habitat is an adverse cumulative impact. Note that the federal ESA definition of cumulative impacts differs from the NEPA and CEQA definitions. Under federal ESA Section 7, cumulative impacts are those effects that result only from other non-federal actions.

MITIGATION PLANNING

Every effort should be made to revise the project design to avoid all impacts on listed species and eliminate the need for a Section 10 or Section 2081 Incidental Take Permit. For many wildlife species, modification of the timing of construction and other project activities (such as avoiding nesting periods or migration periods) can avoid harassment of wildlife in adjacent areas.

Planning for mitigation of impacts should be based on the best available scientific and commercial information. For many species, little is known about the effectiveness of conservation measures. In these cases, an adaptive management approach will be necessary.

For impacts that cannot be avoided, compensatory mitigation will most often be required. Compensatory mitigation typically involves the acquisition, enhancement and restoration of habitat, or some combination thereof. Population enhancement actions or

translocation of individuals[3] may also be conducted. Depending on the size and suitability of the project site, the compensatory mitigation may be conducted on or off site. Decisions on the method of compensatory mitigation require coordination with the federal wildlife agencies and the Department of Fish and Game. If the project site is within the service area of a mitigation or conservation bank for the affected species, such banks may be used for compensatory mitigation.

In all but the smallest projects a monitoring program will be necessary. Monitoring may be needed to determine that mitigation measures have been implemented, that the project's effect on species (the amount of take) was as predicted in the Habitat Conservation Plan, and that mitigation measures have been effective.

PREPARATION OF ENVIRONMENTAL DOCUMENTS

Project proponents must ensure that all necessary documents are prepared and that the documents are adequate to meet federal and California ESA requirements. At a minimum, the Section 10 permit application/Habitat Conservation Plan and the Section 2081 permit application/species mitigation plan (typically the biological resources section of a CEQA Environmental Impact Report) must include the following.

- Assessment of impacts (level of take).
- Mitigation measures.
- Monitoring program (if necessary).
- Assurance of funding (e.g., letter of credit, bond, etc.).
- Analysis of alternatives to take considered and reasons for rejection.
- Assurance that the project will not jeopardize the continued existence of any listed species.

In most cases, NEPA and CEQA documents will be necessary to comply with both the federal and California ESAs. It is recommended that, when possible, mitigation measures for state- and federally listed species be integrated with measures to comply with other laws such as Section 404 of the Clean Water Act (protecting wetlands, streams, ponds, and lakes); Section 1602 of the California Fish and Game Code (protecting streams and lakes); and the Migratory Bird Treaty Act (protecting migratory birds). The biological resources protected under these laws often overlap, so coordinating mitigation planning among these resources and laws will typically increase the efficiency of all of compliance processes and reduce the cost of compliance.

Implementation Agreement

For projects with substantial effects on species, an implementation agreement may be required. The IA is a legal contract between the permit holder, the federal wildlife agencies, and the Department of Fish and Game that identifies the roles and responsibilities of each party in implementing the Habitat Conservation Plan.

IMPLEMENTATION OF PROJECT, MITIGATION, AND MONITORING

Once an incidental take permit is issued by the federal wildlife agencies and the Department of Fish and Game, the permit holder may begin to implement the HCP, California ESA mitigation, and the project as conditioned in the permit(s). Actual levels of take that result should be documented using the methods specified in the permit. If construction occurs over a prolonged period, progress reports should be submitted (annually or more frequently) to the federal wildlife agencies and the Department of Fish

[3] The translocation of plant populations is generally not accepted by federal and state wildlife agencies as a mitigation measure because of the high failure rate of this technique.

and Game regarding impacts, mitigation measures, and changes in approach developed through adaptive management. A final report should be provided that describes the outcome for affected species relative to species goals set in the Habitat Conservation Plan.

Chapter V

Regional Habitat Conservation Planning:

Components of the Planning Process

The early 1990s saw the beginning of regional habitat conservation planning as an alternative to project-by-project permit battles. Regional habitat planning balances species conservation with economic growth over a large geographic area (usually tens or hundreds of thousands of acres). Regional plans can address objectives beyond protection of threatened and endangered species. These plans can also be used for the conservation of non-listed sensitive species, wetlands, biodiversity, watersheds, and ecosystems. This form of proactive planning is in contrast to project-specific permitting that takes place "reactively" for proposed projects as described in Chapter IV. Many regional plans have been completed or are in preparation in California (Figure V-1).

This chapter provides an overview of the key components involved in developing regional Habitat Conservation Plans and Natural Community Conservation Plans. This chapter focuses on process; Chapter VI provides detail on the specific elements to be included in these planning documents.

THE COMPONENTS OF REGIONAL HABITAT CONSERVATION PLANNING

Successful regional habitat conservation planning generally requires attention to the following five key components.

- Biological science.
- Land and water use planning.
- Regulatory compliance.
- Economic analysis.
- Public involvement.

For such planning processes to succeed, each component must receive ample attention during preparation of the Habitat Conservation Plan/Natural Community Conservation Plan. (Figure V-2).

BIOLOGICAL SCIENCE

Regional plans should rely on the best scientific and commercial[1] information available. Physical and biological information is used to identify resources, establish goals and objectives, analyze impacts, and develop conservation measures. To support plan development, the scientific disciplines of conservation biology, wildlife and fisheries ecology, plant ecology, hydrology, soil science, geology, and others are combined with the applied sciences of ecosystem restoration and habitat management.

The principles of conservation biology provide the basis for design of an interconnected system of conservation areas. These areas support the conservation of individual species, species diversity, and overall ecosystem function. Conservation areas are those lands used specifically to achieve conservation goals. They may

[1] Commercial information typically applies only to species (e.g., fish) that are harvested for commercial purposes.

Figure V-1. Regional HCPs and NCCPs in California Approved and in Development 2004

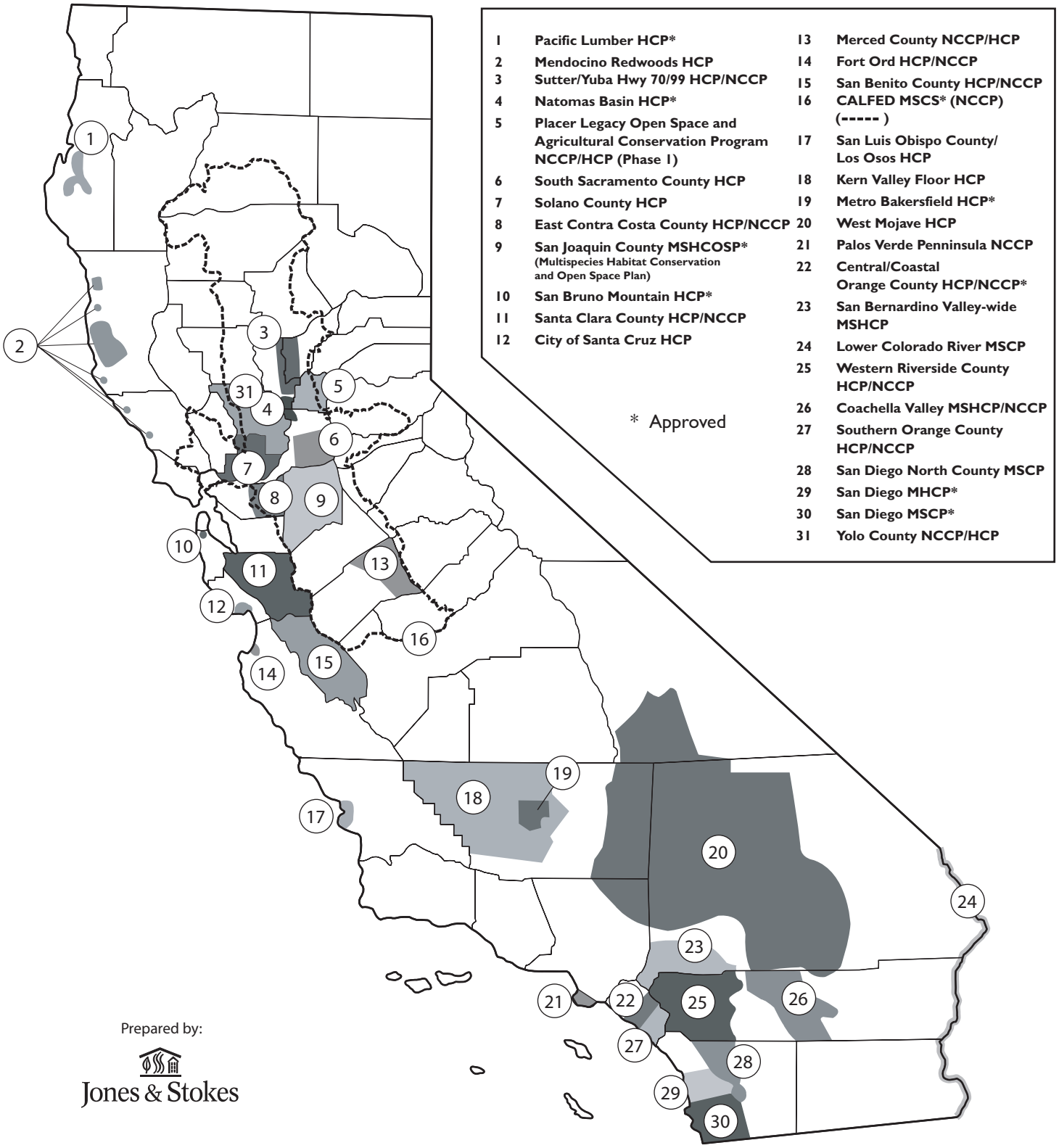
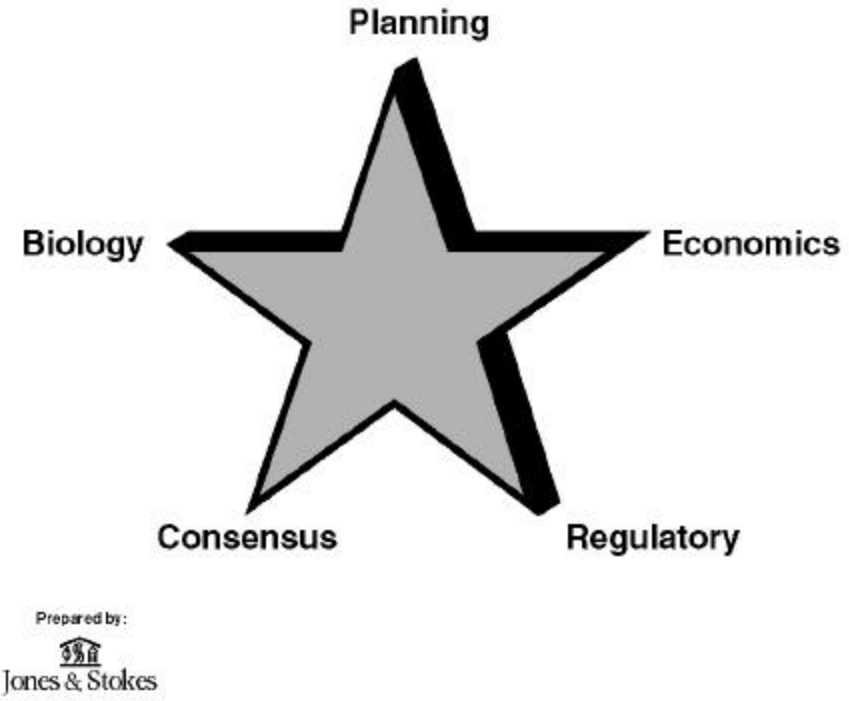


Figure V-2. Key Components of the Habitat Conservation Planning Process



include lands for the protection of existing habitat, restoration of new habitat, and management of habitat for particular species requirements.

The design of each conservation area must take into account:

- *Size*. The size of conservation areas is determined by biological goals. These goals are usually based on the size of the species' range, the area necessary to support ecological functions and maintain species diversity, or a combination of these factors.

- *Shape*. The shape of conservation areas determines the ratio of perimeter to area.

- The optimum shape limits contact with incompatible land uses on the perimeter and maximizes undisturbed internal habitat area.

- *Edge Effects*. Edge effects are the effects of adjacent land uses (e.g., agricultural land, urban development, or rural development) on the conservation area. The need for "buffer" zones to reduce those effects must be addressed.

- *Spatial Relationships*. The design of the conservation areas must address the spatial relationships among conservation areas. Biological connectivity (for species movement, migration, and gene flow) among conservation areas is necessary to ensure that species will survive in the long term.

ADVANTAGES AND DISADVANTAGES OF REGIONAL HABITAT CONSERVATION PLANS

Regional habitat conservation planning is typically a proactive effort to combine the conservation of species and their habitats with land use planning for growth and development. The existing project-by-project permitting process typically remains an option within regional plan areas. There are advantages and disadvantages to the regional approach compared to the project-by-project approach.

Advantages

- More effective conservation of species, habitat, natural communities, and ecosystem processes.
- Greater flexibility in determining location of conservation areas.
- Better integration with local land use planning processes.
- Completed plan adds predictability to development process and expedites approvals.
- Creates economies of scale: less costly per acre of development and per acre of habitat preserved.
- Greater benefits when integrated with other state and federal requirements, such as wetland, stream, watershed conservation.

Disadvantages

- Complex process that requires significant knowledge, foresight, and time.
- Requires broad stakeholder participation and consensus.
- Requires strong, unbroken political support from elected officials.
- Large up-front costs.
- Benefits unrealized for years because of long time needed to develop plan and process permits.
- Difficult to maintain momentum, consensus, and funding through completion of the plan.

Effective conservation planning treats each species as unique and recognizes that knowledge of all species is incomplete. Ecologists developing conservation plans are often hampered by limited data on covered species. They must often depend on knowledge of similar species to develop criteria for covered species with the expectation that adaptive management during plan implementation will address these uncertainties (see "Adaptive Management Plan" in Chapter VI).

Species-Specific Requirements

The conservation area system design should be based on the ecological requirements of species covered by the regional habitat plan. Criteria used in establishing these requirements include the following.

- *Specific Habitat Requirements*. Specific habitat requirements are different for every species. For example, plans for terrestrial wildlife usually address breeding, foraging and resting habitat; movement and migration routes; and interactions with predators, competitors, parasites, and diseases. Plans for fish species, on the other hand, often address feeding, spawning, and rearing habitat; specific conditions of water temperature, volume, and flow dynamics; movement and migration routes; three-dimensional physical structure (submerged logs and rocks and shaded aquatic habitat); and

interactions with predators, competitors, parasites, and diseases. For plant species these requirements may include water, temperature, and soil requirements; slope, aspect, and elevation; flood scour, fire, and wind-throw; beneficial interactions with other species (e.g., pollinators, root fungi); and adverse interactions with other species (e.g., grazers and browsers, competing plant species, insect herbivores, diseases).

- *Movement Capabilities*. The movement of species must be considered in conservation area design. The survival of some species depends on preservation of their migration routes. The extent to which conservation areas must be physically connected depends on the ability of species to overcome barriers. Barriers for some species are not barriers for others. For example, a two-lane road may impair the movement of reptiles, amphibians, and small mammals, but not birds. For long-distance flyers like ducks and geese, whole cities may not pose obstacles to movement between habitat patches.

- *Population Dynamics and Demographics*. Population dynamics and demographics include the natural fluctuations of populations in size and location and the make-up of populations with regard to individuals' ages, sizes, and gender. Conservation area design must take into account the natural fluctuations that are expected in species populations resulting from varying annual precipitation and temperature conditions, long-term climatic variations, minor and catastrophic disturbance events, predator and prey population fluctuations, disease outbreaks, and other causes.

- *Population Genetics and Gene Flow*. Population genetics and gene flow include the genetic variation within and among populations of the species and the natural pathways or restrictions to the movement of genes over generations. Maintaining genetic variation, the patterns of variation and the pathways for gene flow within a species is an important goal for conservation plans.

A key concept in conservation planning is that of the *metapopulation*. A metapopulation is a collection of discrete local breeding populations connected by migration and gene flow. While individual populations within a metapopulation may die out, individuals from other populations in the metapopulation may recolonize vacated areas and reestablish these populations. Thus, the metapopulation will persist over time, though populations within it may come and go. The movement of individuals and genes among populations within a metapopulation and the viability of the metapopulation are important parameters to consider in conservation planning.

The use of independent scientific review committees to ensure the quality of biological data and analysis in the HCP/NCCP is discussed below under "Scientific Review".

LAND AND WATER USE PLANNING

Regional HCPs must account for growth and probable development. They may also incorporate elements of watershed or floodplain management plans.

Local government land use authority combines land use planning with habitat conservation planning. General plans and specific plans are excellent long-range land use planning tools to combine with regional HCPs. Parallel development of the conservation and open space element of the general plan with a regional conservation plan is an excellent means for integrating local land use and transportation planning with regional conservation planning. See the sidebar on the *Western Riverside County*

Multi-Species Habitat Conservation Plan for an example of this approach.

Some of the planning tools available for local governments to use in implementing conservation plans include:

- special districts (e.g., conservation districts, landscape and lighting districts);
- urban growth boundaries (or urban services/limit boundaries);
- impact fees;
- open space fees;
- zoning ordinances;
- conservation ordinances;
- transfer of development rights or densities;
- mitigation and conservation banks; and
- land swaps among private, local, state, and federal agencies.

Agencies with responsibility for water supply and flood control play an important role in wetlands and watershed conservation planning and habitat conservation planning. Operations and maintenance of control structures such as dams and levees, maintenance of flood control channels and conveyance canals, and operations of water diversions can be integrated with HCPs for species that use rivers and streams and associated wetland and riparian habitats. Some water management tools that can be used for implementing HCPs include:

- operations management (e.g., dams, pumps, diversions);
- water banking;
- water transfers;
- environmental water accounts;
- fish passage structures; and
- fish screens.

WESTERN RIVERSIDE COUNTY MULTI-SPECIES HCP

Riverside County is near the end of an ambitious planning process in which the County has concurrently developed a general plan update, a regional transportation plan, and a multispecies HCP. These three projects combined are called the *Riverside County Integrated Project*.

The HCP focuses on the western third of the County, where much of the future growth will occur. The Western Riverside County Multi-Species Habitat Conservation Plan is also a Natural Community Conservation Plan; it is the largest such plan within the Southern California Coastal Sage Scrub Natural Community Conservation Plan Program.

The Western Riverside County Plan followed 10 years of different planning attempts. Regional conservation planning under the federal ESA began after the listing in 1988 of Stephen's kangaroo rat, which is found only in western Riverside County and adjacent San Diego County. In response, the County and several cities prepared first a short-term and then a long-term HCP focused just on this species.

The expense and time required to prepare the plans convinced the County to take a multispecies approach. The first attempt at multispecies conservation planning failed because the countywide study area was too large and because a critical bond measure was rejected by the voters. The current effort, however, has been more successful because of its more manageable size and because of a stronger commitment to the process by County and city governments and the state and federal wildlife agencies.

The HCP began in 1999 and covers 1.26 million acres within the County and 14 cities. The HCP will cover 146 species, including arroyo southwestern toad, mountain yellow-legged frog, coastal California gnatcatcher, southwestern willow flycatcher, and Stephen's kangaroo rat. Strong baseline data were generated by scientists at the University of California, Riverside, and made available on the Internet early in the planning process to ensure transparency.

According to the Draft Plan released for public review in May 2003, the HCP will preserve an additional 56,000 acres of land and manage 152,000 acres at a cost of $1.54 billion over the 75-year permit term. The HCP will be jointly implemented by local, state, and federal governments.

REGULATORY COMPLIANCE

No matter what the goals of a regional conservation plan, the process followed and documents produced must comply with the requirements of Section 10 of the federal ESA and either Section 2081 of the California ESA or the Natural Community Conservation Planning Act. Regional HCPs can address resources protected by various other natural resources laws and regulations; accordingly, a regulatory compliance strategy should be developed early in the planning process.

Integrating compliance with other regulations achieves two major goals: "regulatory streamlining" and "one-stop-shopping." Regulatory streamlining involves the simplification of a given permit process, usually involving reducing regulatory redundancy and processing complexity. Typically, the federal wildlife agencies and the Department of Fish and Game delegate some responsibility for the federal and state ESA permit processes to local agencies in the plan area.

One-stop-shopping involves the combining of two or more regulatory approvals into a single approval process administered by a single agency under the regional plan. For example, the regional conservation plan can include not only sufficient conservation measures to support federal ESA Section 10 and California Section 2835 permits, but

also to support regional compliance with various other environmental regulations, including:

- Section 404 of the Clean Water Act permitting for placement of dredge or fill material into waters of the United States, including wetlands;
- Section 401 of the Clean Water Act water quality certification;
- watershed plans in compliance with Section 303 of the Clean Water Act addressing total maximum daily load (TMDL) development and approval;
- Section 1602 of the California Fish and Game Code through a master stream/lake bed alteration agreement;
- local coastal program land use plans under the California Coastal Act and federal Coastal Zone Management Act;
- regional programmatic CEQA and NEPA compliance for biological resources impacts; and
- local agency development approvals.

Compliance with multiple environmental laws will likely require an increased level of conservation (for example, commitments to conserve a wider range of resources, such as wetlands, streams, and ponds that may not be habitat for listed species) under the HCP/NCCP. But this commitment to provide conservation sufficient for compliance with multiple regulations will typically be more efficient and cost effective than addressing each regulation independently.

ECONOMIC ANALYSIS

Even if they are developed using the best biological science and land use planning principles, regional conservation plans are not viable if they are not affordable. A key component of conservation planning is determining the cost of plan implementation and deciding how the plan will be funded.

The cost of plan implementation must be calculated for the life of the plan. A determination should be made early in the planning process what conservation measures are affordable and who will pay for them. Determining how costs will be spread among those who benefit from the plan is an important economic and political decision. See discussion of cost estimating and funding mechanisms in Chapter VI under "Implementation Costs and Funding Mechanisms."

The economic impact of the plan on the local economy should be assessed in the plan or the accompanying CEQA/NEPA document. A plan that burdens the local economy may not be viable. Remedies for economic impacts include infusion of funds from outside sources (e.g., state or federal agencies, special federal or state legislation) or in-lieu funding to replace the loss to the local tax base.

PUBLIC INVOLVEMENT

Public support is essential for the successful implementation of any regional habitat plan. The planning process should include public outreach and education, public involvement, and stakeholder consensus. Public involvement should begin early and continue through plan implementation.

Public outreach and education involves active publicity of the HCP/NCCP process through such vehicles as:

- newsletters, brochures, and videos;
- press releases;
- a Web site providing educational information, meeting and workshop announcements, and draft documents for public review; and
- radio and television announcements of hearings and workshops.

Public involvement is achieved through:

- open meetings of committees and decision-making bodies,
- broad involvement of interest groups in a stakeholder or steering committee;
- public hearings and workshops where public comments are received, and
- receipt of written comments via mail or e-mail solicited on early drafts of the plan and through the CEQA/NEPA comment process.

Interested stakeholders typically have a great deal of influence on such conservation plans. Stakeholder consensus is crucial to the success of a regional conservation planning process. Stakeholders who become alienated from the process may use their influence to derail the planning process. Key stakeholders typically include:

- landowners;
- economic development interests (e.g., land developers, business owners, chambers of commerce);
- water suppliers and users;
- environmental groups (local, statewide, and national);
- agricultural interests (often represented by the local Farm Bureau and Cattleman's Association);
- resource user interests (e.g., timber, commercial fisheries, mining);
- recreational interests;, and
- federal, state, and local regulatory and resource agencies other than the wildlife agencies and permit applicants.

Every effort should be made to include these stakeholders in the decision-making process.

DECISION MAKING

Steering committees often guide decisions regarding the approach and content of regional conservation plans. A county board of supervisors, city council, water district board, or other local agency may appoint a steering committee. Several local agencies may also decide to form a joint powers authority (JPA) to serve as or appoint the steering committee.

Membership in the steering committee may include only representatives of decision-making agencies or be open to a wider range of members. Non-agency stakeholders may be included on the steering committee or may be organized in a separate committee (a "stakeholder committee") that provides advice and recommendations. A professional facilitator may be necessary to help the stakeholder committee function and reach consensus.

In addition, technical subcommittees are often created by the steering committee to focus on a specific aspect of the plan. These subcommittees may include:

- biological subcommittee,
- economics/implementation subcommittee, and
- compliance subcommittee.

Stakeholder committees have the benefit of providing a more open discussion, with greater focus on group consensus. However, stakeholders representing interest groups may have difficulty reaching agreement on key decisions. The use of a steering committee of agency staff and an advisory stakeholder committee can serve as a compromise that allows both open discussions and stakeholder input and efficient decision making.

SAN JOAQUIN COUNTY MULTI-SPECIES HABITAT CONSERVATION AND OPEN SPACE PLAN

One of the largest Habitat Conservation Plans approved to date is the 896,000-acre *San Joaquin County Multi-Species Habitat Conservation and Open Space Plan*. The plan covers 24 species and encompasses all of San Joaquin County, including seven cities and six state and local water and transportation agencies. The covered species include Swainson's hawk, giant garter snake, valley elderberry longhorn beetle, vernal pool fairy shrimp, vernal pool tadpole shrimp, and western burrowing owl.

An additional 73 species were included in the plan to provide CEQA "coverage". Inclusion of these non-listed species in the plan simplifies future CEQA compliance for projects within the permit area. Coverage of these non-listed species in the plan simplifies future CEQA compliance for projects within the permit area. If a project proponent complies with the terms of the plan, there is no need to address them in a project environmental impact report (unless circumstances have changed since the Plan was signed. No surprises assurances cannot be provided under CEQA).

As a combined habitat conservation and open space plan, the San Joaquin plan provides mitigation for the loss of habitat for covered species and for other open space that does not provide habitat for covered species. Nearly two-thirds of the cost of implementing the plan is borne by development fees that range from $750 to $8,000 per acre of open space developed. The amount assessed depends on the habitat value of the impact area. This system allows local agencies to spread the cost of implementation among all new construction projects in the County and cities, not just development that occurs in habitat for covered species.

A wide range of interest groups supported the plan because it provides open space for recreational activities and for habitat preserves within which recreation is restricted or limited.

A common concern about HCPs is that they will infringe on private property rights. The San Joaquin County Habitat Conservation Plan addressed this issue in several ways. The development of a purely process-based rather than map-based plan meant that the goals of the plan could be accomplished by a variety of preserve configurations, reassuring landowners of the voluntary nature of the plan and its dependence on land acquisition from willing sellers. The plan also includes a neighboring landowner agreement. Landowners were concerned that new endangered species might be attracted to the habitat preserves enhanced under the plan and that these species might wander into neighboring private lands, restricting agricultural and other activities. The plan includes a provision that landowners within 0.5 mile of new preserves are exempt from species take prohibitions during the term of the regional permit. For Swainson's hawk, a wide-ranging species, the exemption is extended to 10 miles from preserves. These and other components of the plan ultimately convinced the majority of local landowners and agricultural interests to support it; this broad-based support was critical to its success.

SCIENTIFIC INPUT

Independent scientific committees or advisory panels can enhance the quality of the scientific information used to develop the regional plan. Independent scientific input is recommended for Habitat Conservation Plans and is required for Natural Community Conservation Plans.

Independent scientific input lends credibility to the plan and can enhance public support. Scientific panels should include experts on covered species, local ecosystems, and conservation biology. These experts may be drawn from local colleges, universities, government resource agencies, nonprofit organizations, and private consulting firms. A typical panel will need 6–12 individuals to provide sufficient expertise in the range of biological resources required.

Independent scientific input should be initiated early in the development of the conservation plan and should be included in the development of the following components.

- Covered species list.
- Species status information and ecological profiles.
- Data collection and analysis.
- Impact assessment.
- Conservation strategy and specific conservation measures.
- Monitoring plan.
- Adaptive management plan.

Scientific advice should be solicited often; however, scientific panels should be limited to commenting on the scientific aspects of the plan rather than policy or economic issues. Scientific panels often need strong facilitation to keep them focused on answering specific questions. Facilitators who are scientists may be more successful at keeping a panel on track than a facilitator with no scientific background.

ROLE OF THE CONSULTANT

Regional HCP/NCCP documents are usually prepared by professional environmental consultants with expertise in conservation planning, ecology, regulatory compliance, economic analysis, public involvement programs, group facilitation, land use planning, and the specific biological resources addressed by the plan. The consultant's role includes the following.

- Providing expert advice on policy and regulatory options to decision makers.
- Using the best scientific information and approach practicable to achieve the plan's goals.
- Developing a fact-based, unbiased estimate of implementation cost and analysis of funding mechanisms.
- Recommending alternative approaches to the conservation strategy.
- Providing group facilitation for meetings and workshops and implementing a public involvement program.
- Preparing the joint Habitat Conservation Plan/Natural Community Conservation Plan document and joint Environmental Impact Statement/Environmental Impact Report.

The U.S. Fish and Wildlife Service and NOAA Fisheries may require a separation of the consultant teams preparing the HCP from those preparing the NEPA document. These teams may be from different firms or they comprise separate staff within the same firm. The federal wildlife agencies may require the consultant teams to sign agreements prior to starting work that formalize the team separation and establish ground rules for the preparation of the wildlife agency's Environmental Impact Statement.

EAST CONTRA COSTA COUNTY HCP/NCCP

The East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan is the first regional conservation plan of its kind in the San Francisco Bay Area. The plan is under development and will primarily cover urban development in the fast-growing cities of Pittsburg, Clayton, Brentwood, and Oakley.

The U.S. Fish and Wildlife Service required that the Plan be prepared in order to address the growth-inducing impacts of increased water deliveries to the region by Contra Costa Water District. A Joint Powers Authority of the participating cities, Contra Costa County, the Contra Costa Water District, and the East Bay Regional Park District are leading the Plan. The Joint Powers Authority is governed by a board of elected officials from each member agency. A committee of senior planning staff from each member agency manages day-to-day activities of the planning process. The Authority has been working since 2001 with a consultant team and a group of stakeholders to develop the plan.

The plan proposes to cover 26 listed and nonlisted species including San Joaquin kit fox, Alameda whipsnake, California red-legged frog, California tiger salamander, and Mount Diablo manzanita. Stakeholders include environmental groups, developers, landowners, and agricultural interest groups. A stakeholder group meets regularly to reach consensus on key issues and advise the elected officials regarding policy.

The primary conservation strategy will be the creation of a 20,000- to 30,000-acre Preserve System that builds on a larger existing network of protected park and open space lands within the 175,000-acre planning area. Preserve lands will be acquired in fee title or through conservation easements. To address landowner and wildlife agency concerns, the plan is a hybrid of process-based and map-based approaches. The plan will include maps of subareas in which land acquisition will be concentrated, but flexibility will be built into the plan to allow preserve assembly based on the availability of willing sellers.

Chapter VI

Regional Habitat Conservation Planning:

Elements of the Plan

The previous chapter identified key issues and components of the regional habitat conservation planning process, including decision making, public involvement, and scientific input. This chapter describes the specific elements that should be included in a joint regional Habitat Conservation Plan/Natural Community Conservation Plan document. The key elements that must be addressed are listed below.

- Geographic scope.
- Covered species.
- Goals and objectives.
- Permit duration.
- Covered activities.
- Data collection and existing conditions.
- Impact analysis.
- Conservation strategy and conservation measures.
- Expected outcome.
- Adaptive management plan.
- Monitoring plan.
- Implementation costs and funding mechanisms.
- Changed circumstances and remedial measures.
- Assurances requested.
- Permit amendment process.
- Procedure for addressing unforeseen circumstances.
- Alternatives analysis.

Each of these plan elements is discussed in this chapter.

GEOGRAPHIC SCOPE

Settling on the geographic scope and defining the planning area boundaries for a regional HCP is an important early decision. The planning area boundary is typically based on a combination of political boundaries, land ownership boundaries, and habitat boundaries. In many cases, the use of watershed boundaries for defining the planning area provides an ecologically meaningful boundary—especially for plans that involve aquatic species. Using political (e.g., city and county jurisdictions) and ownership boundaries provides for the simplest regulatory conditions. The larger the geographic scope, the greater will be the complexity of the planning process because of the greater diversity of species and natural communities that will likely need to be covered by the plan, as well as the larger number of jurisdictions, landowners, and other stakeholders involved. Larger planning areas may increase planning and implementation efficiency by increasing the funding base and reducing the per-acre cost of land management. The advantages and disadvantages of different planning area boundaries should be carefully considered before beginning a planning effort. It is often expensive to change the planning area boundary significantly once the plan is underway.

The planning area need not necessarily be the same as the permit area. The permit area is the area in which incidental take of covered species is authorized. HCP/NCCP

SAN DIEGO MULTIPLE SPECIES CONSERVATION PROGRAM

California's Natural Community Conservation Planning program began in 1991 in an effort to protect southern California's coastal sage scrub natural community. Because the program spanned five counties (San Diego, Orange, Riverside, San Bernardino, and Los Angeles), it was divided into eleven "sub-regions," each of which was expected to develop a sub-regional plan. Three of the eleven sub-regional plans have been approved, the largest of which is the southwestern San Diego County Multiple Species Conservation Program.

San Diego County took a unique approach to developing its plan. The County developed a programmatic NCCP for one of the sub-regions. Within the sub-region, smaller "sub-area" NCCPs are developed. The sub-area plans describe how the sub-regional plan will be implemented within the sub-area.

Because NCCPs tend to be large, complicated projects, San Diego County has used this tiered approach to simplify the process; tailor implementation (e.g., management responsibilities, funding sources, legal guarantees) to each local jurisdiction; and provide an opportunity to adjust plan boundaries after the sub-regional plan is approved.

Each sub-area plan served as an implementation agreement for the sub-regional NCCP. A major challenge of this sub-regional approach is ensuring consistency among many jurisdictions in land management and in the details of species conservation and monitoring.

The southwestern San Diego County Multiple Species Conservation Program encompasses a 582,000-acre planning area that includes portions of San Diego County, all of the City of San Diego, 10 other cities, and several special districts. This sub-regional plan covers 85 species and 23 natural communities, called vegetation types. This sub-regional plan is divided into eleven subareas, four of which have approved sub-area NCCPs that are being implemented.

Key species included in the San Diego County plan are coastal California gnatcatcher, arroyo southwestern toad, orange-throated whiptail, San Diego horned lizard, southwestern willow flycatcher, least Bell's vireo, and light-footed clapper rail. The plan employs a primarily map-based strategy. Potential reserves are identified on maps, and all or most of the land within the designated reserves is being acquired to assemble the reserve system.

planning areas may cover large regions, with only a portion of the planning area defined as the permit area. Permit areas are often defined by planning boundaries such as spheres of influence, urban services boundaries, or urban limit boundaries.

Conservation areas may be identified throughout the planning area or only outside the permit area. If necessary to meet specific plan goals, an HCP/NCCP may include conservation measures for acquisition of specific types of conservation lands located outside the planning area. Allowing acquisition of some habitat outside the planning area can reduce the potential for extremely high conservation land costs within the planning area near the end of the conservation land acquisition process.

The geographic scope of the plan must be sufficiently large to encompass natural communities within a region. The Department of Fish and Game has not defined a minimum size for a Natural Community Conservation Plan. Each proposed NCCP planning area is assessed on a case-by-case basis. Presumably any county in California is large enough to qualify for a Natural Community Conservation Plan. To date, the smallest Natural Community Conservation Plans under development are the Palos Verde Peninsula Natural Community Conservation Plan and the former Fort Ord lands Natural Community Conservation Plan.

COVERED SPECIES

Another early step in the planning process is the identification of species that the plan will cover. The covered species list may include both listed and non-listed species (and both listed and non-listed species can receive "no surprises" assurances). Non-listed species that are covered under the plan should be treated as though they were listed.

Key criteria used to develop a covered species list typically include the following.

- The species occur or have the potential to occur within the planning area and are likely to be affected by covered activities.
- The species are state- or federally listed as threatened or endangered, or may become listed during the term of the permit.
- Sufficient information is available about the species to assess impacts and develop conservation measures.

Lead agencies or steering committees may decide to include other species for local reasons or to address other laws.

Plans that are developed to have a broader purpose than compliance with endangered species law may include other sensitive species in the plan that are not included in the state and federal endangered species permit applications. A local agency may decide that the regional conservation plan will address all CEQA biological resources issues and provide for a programmatic approach to mitigation of impacts for future projects in the planning area, streamlining future CEQA biological resources compliance for individual projects. For example, the San Joaquin County Mulit-Species Habitat Conservation Plan included a much longer list of species covered for regional CEQA compliance than were covered for federal ESA compliance on the approved incidental take permit.

THE COVERED SPECIES "LIST DILEMMA"

Plan participants often misunderstand the purpose of the covered species list. The resulting confusion can result in a "list dilemma." Early in plan development, environmental interests typically want to include many species on the covered species list because they view the purpose of the plan as wholly beneficial to species. In contrast, development interests often want to keep the list short because they see each additional species adding to the cost and timeline of plan development and implementation.

These views often switch later in the planning process as the discussion of covered species turns to permitting and the authorization of incidental take.

Environmental interests begin to fear having too many species authorized for take, especially where ecological information regarding some species is limited. Development interests, however, begin to see the benefit of having a long list of covered species that provides a much higher level of certainty to their projects.

The list dilemma can result in much wasted time modifying the covered species list during the plan development process. To avoid such extra efforts, the purpose of the covered species list should be made clear early in the process, and specific criteria for inclusion on the list should be adopted and adhered to.

GOALS AND OBJECTIVES

The regional HCP/NCCP should include a statement of goals and objectives. Goals fall into two categories. Overall goals address issues of economic growth and conservation for the region. Biological goals address the conservation of the species covered by the plan.

Overall Goals

Overall goals for a regional plan are the guiding principles of the plan. These goals typically address more than biological issues. They may include benefits to economic growth and development, property rights protection, agricultural land preservation, open space protection, and regulatory streamlining. Overall goals should be developed early in the planning process, discussed widely with stakeholders, and made available to the public.

The following are some examples of overall goals.

- Protect, enhance, and restore ecosystem integrity and processes, natural biological communities, biodiversity, and populations and habitat of threatened and endangered species in the planning area through a comprehensive biological resources conservation planning and implementation process.
- Protect natural and agricultural open space lands and achieve a balance of open space and urban areas to meet the needs of local residents now and in the future.
- Respect and protect the rights of private property owners throughout the planning area and provide for a voluntary process and clearly stated assurances for property owners in the implementation of the conservation plan.
- Accommodate reasonable economic growth and development within the planning area in accordance with local land use plans.
- Provide the basis for take authorization pursuant to the federal Endangered Species Act and the California Natural Community Conservation Planning Act.
- Reduce conflicts between protecting threatened and endangered species and the conduct of economic development activities by integrating land use planning and land management with species and habitat conservation.

Biological goals

Measurable biological goals should be identified and quantified as early as possible. Biological goals may include the anticipated extent of protected and restored habitat and the population size and distribution of the covered species within the planning area when the plan is fully implemented.

At a minimum, the biological goals must meet the requirements of federal and state law. The federal ESA standard is that impacts on federally listed species be minimized and mitigated to the maximum extent practicable and that their continued existence and recovery not be jeopardized by the plan. The federal wildlife agencies define biological goals in the Five Point Policy as "broad, guiding principles for the operating conservation program of the HCP." Biological objectives can be used in larger, more complex plans to further define expected outcomes. Ideally, objectives should be quantified. Biological goals and objectives need not be the same as recovery goals, but HCP goals should support recovery goals. The standard for NCCPs is that species be conserved. Because the California ESA defines *conserved* to mean contributing to recovery, the Natural Community Conservation Planning Act standard for listed species is higher than the federal ESA standard. Moreover, NCCPs are required to conserve ecological integrity, ecosystem function, and species diversity within the planning area.

A common unit of measure for species populations and habitat should be developed and used consistently throughout the planning process for defining goals, describing existing conditions, assessing impacts, describing conservation measures, and developing performance standards and monitoring methods. Determining species population by counting individuals may be costly and impractical. Habitat is often used as the unit in regional plans to track impacts and conservation. Habitat is typically measured by acreage, but numeric models may also be developed to score habitat functions.

NCCP goals and objectives should also include goals for covered natural communities. These goals may be based on extent or on models that score ecosystem functions. NCCPs require a means for defining and measuring ecological integrity and species diversity in covered natural communities.

PERMIT DURATION

Any incidental take permit—whether granted by state or federal wildlife agencies—authorizes the take of covered species for a set period of time. Under the Five Point Policy, the federal wildlife agencies expect applicants to identify and justify the requested duration of the permit. The duration of the permit is negotiated between the applicants and permitting agencies. The duration of the permit is usually determined by the following criteria.

- The length of time necessary to complete covered activities (e.g., build-out under a city or county general plan).
- The response time of the species populations and habitats affected by covered activities and conservation measures (e.g., time necessary for populations or habitat affected by covered activities to recover full function).
- The amount and adequacy of scientific information on covered species.

The duration of most permits is likely to be 30 years or less. Some timber harvest HCPs have been permitted for as long as 100 years, but the federal wildlife agencies not likely to offer such long-term permits in the future. Predicting changes in species status beyond a 25- or 30-year horizon is highly speculative.

COVERED ACTIVITIES

Regional HCP/NCCPs must identify the activities covered by the plan that could result in take of species in the plan area. There are two ways of identifying covered activities in regional plans.

- A detailed list and specific descriptions of activities.
- A general description of the types of activities to take place within a defined permit area.

Plans may identify covered activities in both ways. They may also identify activities or specific projects that the permits will not cover.

Detailed lists of specific activities provide greater certainty to the extent that specific impacts and mitigation measures are known. General descriptions allow plans to address future growth and development that cannot be identified at the time of plan/permit approval. However, listing activities in general terms may require a case-by-case interpretation of the scope of the permit during implementation.

DATA COLLECTION AND EXISTING CONDITIONS

Good regional planning processes are based on good data. The most valuable data for a regional conservation plan are the locations of species and habitats. Most regional planning areas are too large to conduct intensive surveys for covered species. Instead, maps of suitable habitat, species survey data, and historic occurrence records are typically used to develop conservation

plans. Habitat models based on known vegetation, soil, and topographic conditions may also be used to predict where species will be found.

A geographic information system (GIS) is typically used to collect, store, and analyze relevant biological and physical data. GIS allows for spatial and temporal analysis of various alternative approaches to covered activities and conservation strategies. Such information should be collected and organized with these purposes in mind. GIS databases can also track impacts, accomplishments, and the achievement of goals during plan implementation. Examples of biological and physical data are listed below.

- Species occurrences.
- Vegetation and other land-cover types.
- Species habitat.
- Streams, ponds, and other water bodies.
- Topography, slope, and aspect.
- Watershed boundaries.

Land use planning data should also be developed in a GIS database and used in the conservation plan development process. Examples of planning data are listed below.

- Land use designations.
- Planning boundaries such as spheres of influence and urban limit lines/urban services boundaries.
- Political boundaries such as city, county, and special district boundaries.
- Existing public lands and lands managed for conservation purposes (such as lands with existing conservation easements).
- Information on specific proposed projects.

Habitat Conservation Plans and Natural Community Conservation Plans that address river and stream ecosystems require the development and analysis of watershed, flow, and groundwater information.

IMPACT ANALYSIS

Regional HCP/NCCPs must assess the impacts on covered species and identify the level of species take that will be permitted. As discussed in "Goals and Objectives" above, a common unit of measurement should be used for impact assessment. The amount of take may be measured using individuals, populations, or habitat.

In many cases, the habitat area will be the most efficient measurement. Detailed information on the location of individuals and populations is typically not available and, if it were, it would only represent a snapshot in time of species distribution. Moreover, implementation of covered activities and impacts on species typically occur over many years. Accordingly, habitat is more commonly used to measure take in Regional HCP/NCCPS.

For many species, however, using habitat loss as a measure of take is not appropriate, especially for species that are not habitat limited. Population counts/estimates or other methods must be used instead.

The plan may assume take based on habitat or may require monitoring prior to implementation of each covered activity to directly measure take. The assumption of take may result in mitigation for sites that do not support covered species, but use of this approach may be preferable to the time and expense necessary for conducting surveys to determine the specific effects of each covered activity throughout the planning area.

The take amount identified in the plan and the take limit in the permit should be sufficient such that development and other activities covered by the plan can be accomplished. The level of take should be set at an amount sufficient to allow all covered activities to proceed within the term

of the permit. Otherwise, future amendments to the plan/permit may be necessary.

In addition to impacts on species, Natural Community Conservation Plans must identify impacts on natural communities covered by the plan, including the effects on ecosystem integrity, ecosystem functions, and species diversity. Assessment of these types of impacts requires the development of special definitions and units of measure for the natural communities covered by the plan and for ecosystem functions and integrity. Each Natural Community Conservation Plan is likely to be unique in its approach to measuring these ecological parameters, because of the great variety of ecosystems and natural communities in California.

CONSERVATION STRATEGY AND CONSERVATION MEASURES

The heart of a regional conservation plan is the conservation strategy. Depending on the size and scope of the plan, the strategy may include a broad-based set of policies, specific conservation measures, or a combination of both. The conservation strategy must include an approach that meets the mitigation requirements of the U.S. Fish and Wildlife Service and the Department of Fish and Game to first avoid, second minimize, and third compensate for impacts on covered species.

The conservation strategy must include an approach that meets the California ESA requirement of fully mitigating all impacts, the Natural Community Conservation Planning Act requirement for conserving species, and the federal ESA requirement of minimizing and mitigating impacts to the maximum extent practicable. There are as many approaches to conservation strategies as there are plans. The conservation strategy typically includes measures to preserve populations and habitat, to enhance and restore populations and habitat and to preserve and restore ecosystem processes.

Plans may include conservation measures at a range of spatial scales.

- *Landscape-level measures* address overall conservation area design, including size, shape, composition, and buffers.
- *Community-level measures* include approaches to enhancing and restoring natural communities to improve ecological functions, species habitat, and biodiversity.
- *Species-specific measures* address means to increase species populations or genetic diversity through more direct means. These measures may include predator control, competitor control, weed removal, population augmentation, artificial habitat structures (e.g., nest boxes), and relocation of individuals.

Regional conservation plans vary greatly in their use of maps to identify the boundaries of conservation areas. At one extreme, a conservation plan may identify on a map the specific boundaries of conservation areas to be established (a *map-based plan*). At the other extreme, the plan may describe a process, without identifying specific locations, by which the system of conservation areas will be assembled during plan implementation (a *process-based plan*). To achieve conservation goals, process-based plans typically rely on mitigation ratios (amount of restoration or preservation required for each unit of habitat affected) based on habitat acreage or an ecosystem function scoring system. Map-based and process-based approaches may be combined in the same plan. The advantages and disadvantages of map-based and process-based plans are summarized in Table VI-1.

COURT INVALIDATES THE NATOMAS BASIN HCP

On August 15, 2000, the U.S. District Court for the Eastern District of California ruled on standards for Habitat Conservation Plan preparation in a landmark case with implications for the scientific, environmental compliance, and financial aspects of HCPs throughout the nation (*National Wildlife Federation v. Bruce Babbitt*, 128 F.Supp.2d 1274 [E.D. Cal 2000]). Judge David Levi invalidated the HCP, Section 10 Incidental Take Permit, and NEPA document associated with conversion of more than 17,500 acres of natural habitat and agriculture to residential, commercial, and industrial development in the Natomas Basin, located in the northeast portion of the City of Sacramento.

A court invalidated the U.S. Fish and Wildlife Service's approval of an HCP for the City of Sacramento. The plan at issue addressed the conservation of 26 covered species present mainly on agricultural lands in the northern area of the city. The U.S. Fish and Wildlife Service completed its NEPA review for the issuance of the permit with an Environmental Assessment supporting a Finding of No Significant Impact. Six local, state, and national conservation groups brought suit against the U.S. Fish and Wildlife Service, claiming that the Natomas Basin HCP failed to meet many of the criteria necessary for approval under the federal ESA and that NEPA compliance required the completion of an Environmental Impact Statement, a more comprehensive documentation of environmental affects than an Environmental Assessment. The plaintiffs argued that substantial uncertainty remained regarding the extent and effectiveness of the proposed habitat reserves, the scientific information used in the HCP, and the funding sources for the proposed mitigation plan. The court agreed with most of the plaintiffs' arguments, holding that approval of an HCP is dependent on the following criteria.

- HCPs that are dependent on mitigation across multiple jurisdictions (in this instance, portions of Sacramento and Sutter Counties were included in the plan) must involve a multi-jurisdictional regional planning effort, and permits must be issued to all jurisdictions involved in preparing the plan, not just one (in this instance, a permit was issued only to the City of Sacramento).
- A regional cumulative effects analysis is necessary to evaluate the habitat value of lands being destroyed and conserved so that lands of equal habitat value are exchanged.
- An alternative involving mitigation must be analyzed that supports the conclusion that the proposed plan minimizes and mitigates impacts to "the maximum extent practicable," with explicit findings as to why certain mitigation is infeasible.
- The permit applicant must make a clear showing of a reliable funding source for the mitigation proposed, as well as identify a responsible party in the event of a funding gap. The court noted that the threat of permit revocation by the U.S. Fish and Wildlife Service is not a strong enough mechanism to serve to ensure funding.
- The permit applicant must agree to adaptive management provisions that attach financial responsibility for their success to either the applicant or a third party.
- An Environmental Impact Statement under NEPA is required for regional HCPs in almost all cases. In this case, there were several factors that pointed to a need for an Environmental Impact Statement, including substantial controversy and uncertainty regarding the effects on listed species and their habitats.

The court ruled that it was acceptable to estimate the level of take based on the extent of suitable habitat rather than the number of individuals, and the adaptive management plan was adequate in the face of scientific uncertainty.

One year after the lawsuit, an interim settlement agreement was approved that allowed development in certain areas of the HCP in exchange for acquisition of prime habitat, an increase in the developer's fees (from $2,240 to $3,941 per acre), and an agreement by the applicant to provide funding in the event of a funding gap. Over the following 2 years, an EIS and a new HCP with a regional approach were developed to address the court's concerns. The new HCP included land in Sutter County in addition to the land in the City of Sacramento that was in the original plan. The new HCP more than doubled the impact fee to $10,000 per acre to account for increased land prices. The U.S. Fish and Wildlife Service approved the new plan in July 2003. New lawsuits by environmental interests have already been filed.

TABLE VI-1. COMPARISON OF MAP- AND PROCESS-BASED PLANS

	Map-Based Plan	Process-Based Plan
Definition	Identifies specific boundaries of conservation areas to be established.	Describes a process for assembling a system of conservation areas without identifying specific locations.
Advantages	Clearly designates areas for conservation and development; easier to apply principles of conservation biology; easier to monitor; typically does not require preproject surveys to measure impacts and determine mitigation.	Avoids controversy of identifying specific areas for conservation; easier to develop mitigation ratios rather than to plan conservation area system; more flexibility in assembling conservation areas; less likely to be reliant on specific or key parcels.
Disadvantages	Landowner concerns about effects on property values; requires collection of a greater amount of habitat and species data during the plan development process so that impacts and conservation measures can be assessed; more difficult to adapt conservation area system design to new information derived from monitoring and research; reliant on specific areas or parcels for plan success.	Reliant on process and guidelines to develop ultimate conservation areas; less certainty as to conservation area system design and eventual function; may result in a patchwork of conservation areas; typically requires future expenditures for project-specific surveys to determine impacts, so that mitigation requirements can be determined.
Examples	Central/Coastal Orange County Natural Community Conservation Plan and San Diego Multi-Species Conservation Plan	Natomas Basin Habitat Conservation Plan and San Joaquin County Multi-Species Habitat Conservation and Open Space Plan

Among approved conservation plans, the central/coastal Orange County Natural Community Conservation Plan and San Diego Multi-Species Conservation Plan in southern California are primarily map-based approaches. The Natomas Basin Habitat Conservation Plan and San Joaquin County Habitat Conservation Plan are primarily process-based approaches. The proposed Kern Valley Floor Habitat Conservation Plan is a hybrid of map- and process-based approaches that includes mapped geographic zones in which impact assessment and mitigation measures follow different processes. The proposed Western Riverside County Natural Community Conservation Plan and East Contra Costa County Natural Community Conservation Plan are hybrid map-based/process-based plans that include mapped zones for land acquisition within which property would be purchased from willing sellers.

EXPECTED OUTCOMES

Once impacts have been assessed and conservation measures developed, it is recommended that the regional conservation plan clearly describe the expected outcomes for covered species resulting from the combined effects of impacts of covered activities and implementation of conservation measures. Are all goals expected to be achieved? What will be the contribution to species recovery? Often to

achieve habitat goals for one species, other species are provided incidental benefit; the stated goals for these other species may be exceeded by plan implementation.

ADAPTIVE MANAGEMENT PLAN

There is great complexity in ecological processes and species interactions in even the simplest ecosystems and natural communities. Scientists and resource managers have always recognized that uncertainty is an unavoidable component of managing natural systems. Resource managers must therefore recognize and prepare for the uncertainty that underlies resource management. Adaptive management is an approach for addressing this uncertainty.

Under the Five-Point Policy (Appendix D), the federal wildlife agencies define adaptive management rather broadly as "a method for examining alternative strategies for meeting measurable biological goals and objectives, and then, if necessary, adjusting future conservation management actions according to what is learned."[1].

Regional HCP/NCCPs must include an adaptive management plan. With an adaptive management approach there should be continuing improvement in techniques for habitat restoration and enhancement, habitat management, population management measures, and ecological systems management over the implementation period of the plan. Adaptive management, because it can entail a continual change in conservation approach, may result in conflicts with no surprises assurances and the permit amendment process (see "Assurances Requested" and "Permit Amendment Process"). When adaptive management identifies the need for substantial changes in conservation measures or in the overall conservation strategy, permit amendments or a new permit may be required.

In larger plans, adaptive management may include a formal structure of decision making during plan implementation. A scientific advisory panel may be included to help interpret information gathered during management and monitoring and to develop improved conservation measures.

MONITORING PLAN

Monitoring involves the gathering of information during implementation of a conservation plan. Monitoring is a mandatory element of HCPs under federal ESA regulations[2]; monitoring requirements are described in the Five Point Policy.[3] Monitoring is also a mandatory element of NCCPs.[4] Monitoring can be divided into three main types: compliance monitoring, effects monitoring, and effectiveness monitoring.

Compliance monitoring is used to confirm that actions specified in the plan and permit have been conducted as specified. For example, compliance monitoring may confirm that habitat acquisition has been accomplished in the amount and locations required in the plan and that habitat restoration has been conducted using the methods and to the extent specified in the plan.

Effects monitoring involves the assessment of the actual impacts that covered activities have on covered species populations and habitat and ecological processes. The expected effects of covered activities on species must be identified in the HCP/NCCP, but the actual effects may

[1] 65 FR 106:35242-35257

[2] 50 CFR 17.22, 17.32, and 222.307

[3] 65 FR 106:35242-35257

[4] Cal. Fish & Game Code §§ 2820(a)(7).

LEGAL CHALLENGES TO HABITAT CONSERVATION PLANS

Habitat Conservation Plans may be challenged by environmental and conservation groups as not complying with federal ESA or NEPA requirements. There are specific procedural and substantive requirements set out in the law and regulations regarding federal ESA and NEPA that must be complied with. In all cases the administrative record must have substantial evidence to support the federal wildlife agency's decision to issue the Incidental Take Permit. Challenge to the HCP could focus on the following issues.

- Public notice and comment procedures of ESA and NEPA.

- Findings of the wildlife agency, supported by substantial evidence, regarding whether:
  - the taking is incidental to an otherwise lawful activity;
  - impacts of incidental take are minimized and mitigated to the maximum extent practicable;
  - the mitigation and monitoring program is sufficient and adequately funded;
  - other commitments in the HCP are adequately funded;
  - procedures are provided to deal with unforeseen circumstances;
  - the incidental taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild.

- Requirements of NEPA, including preparation of an Environmental Impact Statement where the proposed action significantly affects the quality of the human environment. NEPA issues relate to adequacy of:
  - project description and interrelated/interconnected actions;
  - range of alternatives;
  - baseline for determining environmental impacts;
  - methodology for determining environmental impacts; and
  - description of mitigation measures.

When investigating new techniques regarding mitigation (e.g., mitigation banks) the federal wildlife agencies should ensure the success of off-site mitigation and analyze the relative importance of habitats to be removed and conserved. In addition, the wildlife agencies must have documentation that they have analyzed the economic practicalities of securing greater mitigation. The wildlife agencies must have information that there is a reliable funding source for the mitigation and should provide a guaranteed backup funding mechanism, if appropriate.

One of the few examples of a successful lawsuit against an approved Habitat Conservation Plan involved the Natomas Basin Habitat Conservation Plan in Sacramento. See the sidebar for a description of this legal challenge and its important implications for future plans.

differ from predicted effects, especially in instances in which the effect of an activity or the biology of a species is not well known. As covered activities progress and the conservation plan is implemented, effects monitoring is necessary for long-term, regional plans in order to determine if the conservation strategy is adequate to address the impacts.

Effectiveness monitoring addresses the expected outcome of conservation measures. The plan provides predictions of specific outcomes of conservation measures, such as maintenance of ecosystem functions in protected habitat that results in stable population levels of covered species, and increased ecosystem functions in enhanced and restored habitat that results in increased population levels of covered species. Effectiveness monitoring is conducted to determine if these expectations have been met and hence if conservation measures have been successful. Effectiveness monitoring encompasses mitigation performance monitoring as well as additional information gathered to support adaptive management.

Regional conservation plans may need to combine direct and indirect monitoring to measure plan success. Direct monitoring involves the site-specific compliance, effects, and effectiveness monitoring of impact and conservation areas. Indirect monitoring involves the gathering of regional or ecosystem-wide data (in many cases through remote sensing methods) to determine trends in habitat extent and function over time. For example, implementation of a regional conservation plan may involve a complete mapping of habitats in the planning area periodically to determine the overall trends of habitat losses and gains from all causes. Periodic species sampling surveys across the plan area may be conducted to ascertain species population trends.

The frequency and intensity of monitoring must be determined in light of regulatory requirements, ecological necessity, scientific requirements, and practicability. Regulatory requirements address the need for monitoring to be sufficient to prove the plan is operating successfully. Ecological necessity addresses the need to monitor different types of natural communities and species in different ways, at different times of year and with different intensity and frequency. Scientific requirements address the need for statistically and ecologically valid monitoring methods and appropriate experimental design. Practicability addresses the need to conduct monitoring that is logistically feasible and affordable.

As mentioned above under "Adaptive Management Plan," a properly designed monitoring plan is crucial to adaptive management. Without appropriate monitoring data, the learning processes necessary for adaptive management cannot proceed effectively.

IMPLEMENTATION COSTS AND FUNDING MECHANISMS

The cost of implementing a regional conservation plan must be estimated and the source of funding for implementation determined. The federal and California ESAs and the NCCPA all require that the applicant ensure adequate funding for implementing the conservation plan. Estimating the total cost of a regional plan can be difficult. Implementation costs typically include:

- program administration (establishment of an implementing entity, either newly created or as a new function of an existing organization);
- land acquisition through fee title, conservation easement, or land exchanges;
- habitat restoration and enhancement (including design, engineering, and construction);
- species population and habitat management;
- management and maintenance of conservation areas (e.g., fencing, roads, fire breaks, irrigation systems, utilities);
- acquisition of equipment and construction of facilities (e.g., management offices and equipment storage facilities at conservation areas);
- adaptive management program;
- monitoring program; and
- contingency for remedial measures.

There are many ways to fund implementation of a regional HCP/NCCP. Public receptivity to different funding mechanisms varies by location and political climate.

Examples of funding sources are:

- impact fees on development;
- special assessment districts (open space or conservation districts can be established, or existing landscape and lighting districts can be used);

- open space fees (where a conservation plan is also an open space plan);
- sales taxes or other new taxes;
- federal, state, or private grants;
- specific federal or state legislation to fund plan implementation; and
- land exchanges among private, local, state and federal entities.

Habitat conservation typically provides benefits to a wide range of stakeholders. It is, therefore, best to spread implementation funding among several sources in order that no one segment of the community bears the full cost.

The Natomas Basin HCP in Sacramento, for example, is funded primarily through impact fees. The San Joaquin County HCP is funded primarily through impact fees and open space fees. In November 2000, Placer County placed separate local measures on the ballot requesting the voters to decide if they supported planning for open space preservation and if they supported a quarter-cent sales tax to pay for open space acquisition under the Placer County Legacy HCP/NCCP currently in development (see sidebar). The voters approved the concept of planning for open space preservation, but rejected the funding of open space acquisition through a sales tax. The San Diego Multi-Species Conservation Plan has received substantial funding from state and federal sources, including legislation and bond measures.

CHANGED CIRCUMSTANCES AND REMEDIAL MEASURES

Under the "no surprises rule," HCPs must describe potential changed circumstances (e.g, flood, fire, or failed restoration) and how the implementing entity will address them (see section "No Surprises Rule" in Chapter II and the sidebar "Courts Weigh in on No Surprises Assurances").[5] Remedial measures should be described that address changed circumstance. For example, if a flood were to remove a riparian forest restoration site, the conservation plan might state that the site would be replanted using the same methods as the original restoration.

PLACER COUNTY'S PLAN

The Placer Legacy Habitat Conservation Plan and Natural Community Conservation Plan has been under development in Placer County since 2000. Placer County supports a wide range of elevations and high ecological diversity, so the County decided to conduct planning in three phases to keep the plan manageable. The first phase will address the conservation needs of the western portion of the County in the Central Valley and Sierra Nevada foothills. Phase 2 will address the upper foothills of the Sierra and the urbanizing areas east of the Sierra crest. Phase 3 will address the conservation needs of public and private timberlands in the Sierra Nevada.

Placer County is taking a unique approach to the planning process by spending several years collecting extensive baseline data on biological resources. This data collection will allow the County to determine impacts and conservation measures with greater certainty than has been achieved in preparation of many other HCPs. In addition, fewer biological surveys during plan implementation are likely to be required. There are 35 species currently proposed for coverage in Phase 1 of the Plan. Major species include vernal pool invertebrates, steelhead trout, Swainson's hawk, and bald eagle. Placer County has expanded its plan beyond simple habitat protection to include open space acquisition and agricultural conservation. The County hopes that the broad goals of the plan will increase support and create opportunities for a broad base of funding for plan implementation.

[5] 63 Fed. Reg. 35 (1998) (amending 50 C.F.R. 17.22(b)(5), 17.32(b)(5) and 222.307(g)).

Because the no surprises rule requires that changed circumstances be described in the HCP, or the permit holder is not responsible for remedial actions, the federal wildlife agencies are likely to require an exhaustive list of potential changed circumstances and remedial measures to ensure that all possible events are addressed.

ASSURANCES REQUESTED

In addition to the no surprises provisions under both the federal ESA and the NCCPA that cover new species listings and unforeseen circumstances (protecting the permit holder from having to provide additional money, land, or water), applicants can request other assurances from the federal wildlife services and the Department of Fish and Game.

The protection of landowners that fear additional regulation of their land because it is near conservation areas may be addressed by a "neighboring landowner agreement." Such an agreement can extend some amount of incidental take authorization to neighboring landowners who meet certain requirements set forth in the permit. Agricultural interests are often concerned about new conservation areas with restored habitat and the potential movement of new or greater numbers of listed species to their property from the conservation area, fearing that such movement may result in curbs on their use of pesticides and herbicides at the interface of their property and the conservation area. The San Joaquin County HCP includes a well-developed neighboring landowner assurance process.

PERMIT AMENDMENT PROCESS

The regional conservation plan should clearly describe a process for minor modifications and amendments of the permit. For instance, certain changes in conservation measures or covered activities may be considered minor modifications and not require a formal permit amendment. Other more substantial changes may require a permit amendment, but not a new permit. Beyond a certain threshold a change in the plan would exceed the amendment process and trigger the need for a new permit and hence a new HCP. It may be beneficial to identify in the conservation plan or the implementation agreement the triggers and thresholds for minor plan modifications, permit amendments, and new permits.

PROCEDURE FOR ADDRESSING UNFORESEEN CIRCUMSTANCES

HCPs are required to identify a procedure for addressing unforeseen circumstances (see discussion of "No Surprises Rule" in Chapter II).[6] While the no surprises rule protects permit holders from having to provide any additional money, land, or water, a process must be identified for the permit holder to follow in the event of unforeseen circumstances.

ALTERNATIVES ANALYSIS

Regional Habitat Conservation Plans must describe alternatives to the proposed conservation plan. The federal wildlife agencies must comply with NEPA and its requirement to analyze alternatives. Under the federal ESA, this analysis must also include an alternative to take. Natural Community Conservation Plans must be accompanied by a CEQA document and address the requirement under CEQA to analyze alternatives to the proposed project.

The following alternatives should be addressed in the EIR/EIS for a Habitat Conservation Plan/Natural Community Conservation Plan:

- No-take alternative (covered activities avoid all take): Requires no action by the federal wildlife services or the Department of Fish and Game (no need to issue Section 10 or Section 2835 permits). Usually not practicable for

[6] 63 Fed. Reg. 35 (1998) (amending 50 C.F.R. 17.22(b)(1), 17.32(b)(1) and 222.307(b)).

regional conservation plans because of the large scale of activities addressed.

- No-permit alternative: What would happen in the region under the standard project-by-project federal ESA Section 10 permitting and California ESA Section 2081 permitting if there were no regional HCP/NCCP and no regional Section 10 and Section 2835 permits issued?
- No-project alternative: No future development or other covered activities implemented. This is usually not practicable for regional conservation plans for which covered activities are reason for the plan.
- Greater level of conservation alternative: To demonstrate that an HCP meets the requirement that the impacts are minimized and mitigated to the maximum extent practicable, at least one alternative should be assessed that provides a greater level of benefit to covered species than the proposed plan.

Additional types of alternatives that can also be included.

- Different permit areas or types of covered activities.
- Different covered species (e.g., only listed species rather than both listed and non-listed species).
- Different approaches to protection and restoration of species and habitat.
- Different amounts of protection and restoration of habitat.
- Different conservation area system designs (for map-based plans) or criteria (for process-based plans).

IMPLEMENTING AGREEMENT

The implementing agreement is a legal document, signed by all parties, that identifies roles and responsibilities of all parties, including permit holder(s), the federal wildlife agencies, and the Department of Fish and Game (see Chapters II and III for discussion of the implementing agreement). The agreement typically incorporates actions from the conservation plan that are contractually agreed to by all parties. All covered species must be listed in the implementation agreement.

PACIFIC LUMBER COMPANY HCP

The 1999 Pacific Lumber Company Habitat Conservation Plan covers 211,700 acres of timberland in Humboldt County. The plan arose from an earlier agreement between the federal and state governments to purchase the Headwaters Grove of old-growth redwoods from the Company for $380 million.

The agreement committed Pacific Lumber Company to developing an HCP on its remaining lands for its timber harvesting and related activities. The HCP was combined with a sustained yield plan required by the California Department of Forestry and Fire Protection because many of the requirements overlapped. The HCP also served as the mitigation plan for a streambed alteration agreement under Section 1603 of the California Fish and Game Code.

The HCP includes a two-tiered approach to species protection. The first includes terrestrial and aquatic conservation measures for six *focus species*: northern spotted owl, marbled murrelet, coho salmon, Chinook salmon, cutthroat trout, and steelhead. The second tier includes measures addressing ecological requirements of the remaining 11 covered species.

Private timber companies, including Pacific Lumber Company, have the benefit of years of baseline data from timber operations. This wealth of site-specific data can greatly strengthen a plan and result in much shorter development and approval times. This is one reason that the Company was able to obtain their incidental take permit in only two and a half years after starting their planning process.

Appendix A

Federal Endangered Species Act

Source: **http://endangered.fws.gov/esa.html**

Appendix B

California Endangered Species Act

Source: http://ceres.ca.gov/env_law/cesa/stat/ or http://www.dfg.ca.gov/hcpb/ceqacesa/cesa/incidental/cesa_policy_law.shtml

Appendix C

Natural Community Conservation Planning Act

Source: http://www.dfg.ca.gov/nccp/displaycode.html

Appendix D

Five-Point Policy for Habitat Conservation Plans

Source: http://www.epa.gov/EPA-IMPACT/2000/June/Day-01/i13553.htm

Appendix E

Federal Section 10 ESA Incidental Take Permit Regulations

U.S. Fish and Wildlife Service Regulations (50 CFR 17)

Source: http://endangered.fws.gov/esa.html#Lnk10

NOAA Fisheries Regulations (50 CFR 222)

Source: http://www.nmfs.noaa.gov/prot_res/readingrm/Permit_regs/50cfr222.pdf

Appendix F

Environmental Web Sites

Appendix F. Environmental Web Sites

Audubon Society	http://www.audubon.org/
California State Assembly	http://www.assembly.ca.gov
California Attorney General	http://caag.state.ca.us/index.html
California Attorney General Opinions	http://caag.state.ca.us/opinions/
California Biodiversity Council	http://ceres.ca.gov/biodiv/
California Coastal Commission	http://ceres.ca.gov/coastalcomm/web
California Code of Regulations	http://ccr.oal.ca.gov/
California Codes	http://www.leginfo.ca.gov/calaw.html
California Department of Water Resources	http://wwwdwr.water.ca.gov
California Department of Conservation	http://www.consrv.ca.gov/
California Department of Fish & Game	http://www.dfg.ca.gov
California Ecological Restoration Projects Inventory	http://endeavor.des.ucdavis.edu/cerpi/default.htm
California Endangered Species Act	http://ceres.ca.gov/topic/env_law/cesa/stat/
California Environmental Resources Evaluation System	http://ceres.ca.gov
California Fish and Game Code	http://www.leginfo.ca.gov/cgi-bin/calawquery?codesection=fgc&codebody=&hits=20
California Legislative Counsel	http://www.leginfo.ca.gov/legcnsl.html
California Legislative Information	http://www.leginfo.ca.gov
California Native Plant Society	http://www.cnps.org
California Office of Permit Assistance	http://commerce.ca.gov/index.html

California Resources Agency	http://ceres.ca.gov/cra
California Senate and Assembly Bill Information	http://www.leginfo.ca.gov/bilinfo.html
California Senate	http://www.sen.ca.gov
California State Bills Search	http://info.sen.ca.gov/cgi-bin/pagequery?type=sen_bilinfo&site=sen&title=Bill+Information
California State Environmental Law, Regulation, and Policy	http://www.ceres.ca.gov/elaw/
California State Lands Commission	http://www.slc.ca.gov/
California State Home Page	http://www.ca.gov/state/portal/myca_homepage.jsp
California Supreme Court and Court of Appeals	http://www.courtinfo.ca.gov/opinions
California Water Resources Control Board	http://www.swrcb.ca.gov
California Wetlands Permitting Information	http://www.ceres.ca.gov/wetlands/permitting.html
Caltrans	http://www.dot.ca.gov
CEQ's NEPAnet	http://ceq.eh.doe.gov/nepa/nepanet.htm
CEQA Guidelines	http://ceres.ca.gov/topic/env_law/ceqa/guidelines/
CERES Environmental Conservation	http://ceres.ca.gov/theme/conservation.html
CERES Wetlands	http://ceres.ca.gov/wetlands/index.html
Code of Federal Regulations	http://www.access.gpo.gov/nara/cfr/index.html
Center for International Earth Science Information Network	http://www.ciesin.org
County Superior Courts California	http://www.courtinfo.ca.gov/otherwebsites

Endangered and Threatened Animals of California	http://www.dfg.ca.gov/whdab/TEAnimals.pdf
Endangered Species	http://eelink.net/EndSpp/
Endangered Species	http://ceres.ca.gov/topic/rare.html
Endangered Species in National Parks	http://www.aqd.nps.gov/wv/es.htm
Envirolink Network	http://envirolink.netforchange.com/
Environmental Documents	http://elib.cs.berkeley.edu/docs
Environmental Policy Task Force	http://www.nationalcenter.org/eptf.html
Environmental Protection Agency	http://www.epa.gov
Environmental Science Resources	http://info.er.usgs.gov/network/science/earth/index.html
Environmental Web Directory	http://www.webdirectory.com
Federal Emergency Management Agency	http://www.fema.gov
Federal Environmental Law	http://ceres.ca.gov/env_law/federal.html
Federal Register	http://ssdc.ucsd.edu/gpo OR
Galaxy	http://www.einet.net/galaxy/Community/Environment.html
InfoMine Search Engine	http://infomine.ucr.edu/
Information Center for the Environment	http://ice.ucdavis.edu/
Library of Congress	http://lcweb.loc.gov
Migratory Birds Treaty Act List of Birds	http://migratorybirds.fws.gov/intrnltr/mbta/mbtintro.html
National Biological Information Infrastructure	http://www.nbii.gov/

National Library for the Environment from CNIE	http://www.cnie.org/nle/
National Marine Fisheries Service	http://www.nmfs.noaa.gov/
Lady Bird Johnson Wildflower Center (formerly the National Wildflower Research Center	http://www.wildflower.org/
Natural Community Conservation Planning	http://ceres.ca.gov/cra/NCCP/
Natural Heritage (Association for Biodiversity Information)	http://www.abi.org/
Natural Resources Conservation Service	http://www.nrcs.usda.gov/
California Natural Diversity Database	http://www.dfg.ca.gov/whdab/html/cnddb.html
NEPA Guidelines	http://www.law.indiana.edu/envdec/a.html
NEPA Network	http://www.eh.doe.gov/nepa
NOAA Fisheries	http://www.nmfs.noaa.gov//
NMFS Office of Protected Resources	http://www.nmfs.noaa.gov/prot_res/prot_res.html
Planning and Conservation League	http://www.pcl.org/
Society for Ecological Restoration	http://www.ser.org/
Society for Ecological Restoration California	http://www.sercal.org/
Thomas Legislative Information	http://thomas.loc.gov
Urban Ecosystems/Wildlife Newsgroup	URBWLF-L listserver@uriacc.uri.edu
US Army Corps of Engineers	http://www.usace.army.mil
US Army Corps of Engineers Sacramento District	http://www.spk.usace.army.mil/
US Bureau of Land Management	http://www.blm.gov/nhp/index.htm

US Code 16 Chapter 35	http://www.law.cornell.edu/uscode/16/ch35.html#s1531
US Code	http://www.gpo.gov/congress/cong013.html
US Congressional Bills	http://thomas.loc.gov AND http://www.access.gpo.gov/congress/cong009.html
US Congressional Hearing reports	http://www.access.gpo.gov/congress/cong017.html
US Constitution Federal Bills	http://www.law.cornell.edu/statutes.html
US Department of the Interior	http://www.doi.gov
US EPA region 9 Homepage	http://www.epa.gov/region9/
US Fish & Wildlife Service	http://www.fws.gov
US Fish & Wildlife Service Endangered Species	http://endangered.fws.gov/
US Forest Service	http://www.fs.fed.us
US Government Printing Office	http://www.gpo.ucop.edu
US House of Representatives	http://www.house.gov
US Senate	http://www.senate.gov
US Supreme Court Opinions	http://www.law.cornell.edu/opinions.html

Appendix G

Regional Habitat Conservation Plans Available on the Internet

Appendix G. Selected Regional HCPs and Large Project HCPs Available on the Internet (January 2004)

HCP	State	County	Status	Web Address
Roosevelt HCP (Salt River Project)	AZ	Maricopa, Gila	Approved	http://arizonaes.fws.gov/HCPs.htm
San Bruno Mountain HCP	CA	San Mateo	Approved	http://www.traenviro.com/sanbruno/sbmhcp.htm
Pacific Lumber Company (PALCO) Headwaters SYP/HCP	CA	Humboldt	Approved	http://www.palco.com/commitment_hcp.cfm
City of San Diego MSCP	CA	San Diego	Approved	http://www.sannet.gov/mscp/index.shtml
San Diego County MHCP	CA	San Diego	Approved	http://www.sandag.org/index.asp?projectid=97&fuseaction=projects.detail
San Joaquin County MSCP	CA	San Joaquin	Approved	http://www.sjcog.org/sections/habitat/index.php
Western Riverside County MSCP	CA	Riverside	Approved	http://www.rcip.org/conservation.htm
Natomas Basin HCP	CA	Sacramento Sutter	Approved	http://www.sacto.org/planning/environmental/documents/hcp/index.html
Volusia County Sea Turtle Protection Plan (HCP)	FL	Volusia	Approved	http://volusia.org/environmental/natural_resources/seaturtles/hcp.htm
Clark County MSHCP	NV	Clark	Approved	http://www.co.clark.nv.us/comprehensive_planning/Environmental/MultipleSpecies/MultipleSpeciesHabitatConservationPlan.htm
Balcones Canyonlands Conservation Plan (HCP)	TX	Travis	Approved	http://www.ci.austin.tx.us/preserves/bcp.htm OR http://www.co.travis.tx.us/tnr/bccp/default.asp
Cedar River Watershed HCP	WA	King	Approved	http://www.cityofseattle.net/util/CedarRiverHCP/
Tacoma Water HCP	WA	Pierce	Approved	http://www.ci.tacoma.wa.us/water/WaterSystem/habitat.htm
Plum Creek Native Fish HCP	WA, ID, MT	Many	Approved	http://www.plumcreek.com/environment/fish.cfm

HCP	State	County	Status	Web Address
Wisconsin Statewide Karner Blue Butterfly HCP	WI	23 Counties	Approved	http://www.dnr.state.wi.us/org/land/er/invertebrates/karner.htm
Sonoran Desert Conservation Plan (HCP)	AZ	Pima	In Process	http://www.co.pima.az.us/cmo/sdcp/
East Contra Costa County HCP/NCCP	CA	Contra Costa	In Process	www.cocohcp.org
Yolo County HCP	CA	Yolo	In Process	www.yolocounty.org/HCP/hcp.htm
Placer Legacy (NCCP)	CA	Placer	In Process	http://www.placer.ca.gov/planning/legacy/legacy-hcp-nccp.htm
Coachella Valley MSHCP	CA	Riverside	In Process	http://www.cvmshcp.org/
Southern Orange County NCCP/HCP	CA	Orange	In Process	http://pdsd.oc.ca.gov/soccpp/
Medocino Redwood Company HCP/NCCP	CA	Sonoma, Mendocino	In Process	http://www.mrc.com/habitat_conservplan.html
Merced County NCCP/HCP	CA	Merced	In Process	http://www.mercednccp-hcp.net/
San Diego North County MSCP	CA	San Diego	In Process	http://cosda103.co.san-diego.ca.us/portal/page?_pageid=341,1&_dad=portal&_schema=PORTAL
Solano Water Agency HCP	CA	Solano	In Process	http://www.scwa2.com/HCP/index.html
West Mojave HCP	CA	Inyo, Kern, San Bernardino, Los Angeles	In Process	http://www.ca.blm.gov/cdd/wemo.html
Lower Colorado River MSCP	CA, NV, AZ	Many	In Process	http://www.lcrmscp.org/
Etowah Watershed Regional Aquatic HCP	GA	Many	In Process	http://www.etowahhcp.org/index.html
Montana DNRC Forested Trust Lands HCP	MT	Many	In Process	http://www.dnrc.state.mt.us/hcp.htm

HCP	State	County	Status	Web Address
King County Wastewater Treatment HCP	WA	King	In Process	http://dnr.metrokc.gov/wtd/hcp/index.htm
Washington DNR HCP	WA	Many	In Process	http://www.dnr.wa.gov/htdocs/agency/federalassurances/eis_hcp.html

Also see http://www.ncedr.org/casestudies/summaries.htm for summaries of many large HCPs.

Appendix H

Section 10 Permit Application Form

Source:
http://www.nmfs.noaa.gov/prot_res/PR3/Permits/ESAPermit.html

Appendix I

Federal- and State-Listed Species in California

Source: http://www.dfg.ca.gov/whdab/pdfs/TEPlants.pdf (plants) and

http://www.dfg.ca.gov/whdab/pdfs/TEAnimals.pdf (animals)

Understanding the Habitat Conservation Planning Process in California: a Guidebook for Project and Regional Conservation Planning

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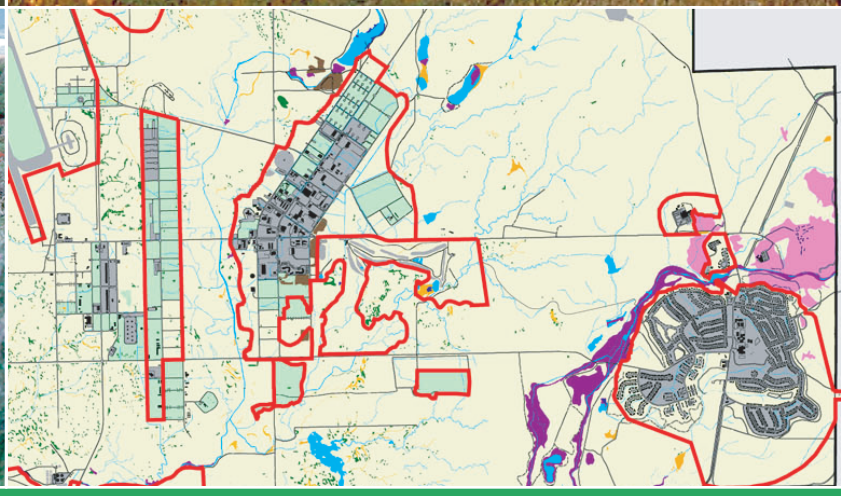

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