

## CHAPTER 12. INDEPENDENT SCIENCE ADVISORY PROCESS

### 12.1 BACKGROUND AND REGULATORY REQUIREMENTS

The habitat conservation planning process, as described by the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS), provides flexibility in resolving conflicts between species conservation and economic development. USFWS and NMFS published a *Handbook for Habitat Conservation Planning and Incidental Take Permitting Process* in 1996 (HCP Handbook) as a guide for their staff in processing incidental take permit applications and participating in associated habitat conservation planning efforts. In 2000, USFWS and NMFS published an addendum to the HCP Handbook to provide additional guidance on habitat conservation plans (HCPs); it is known as the Five-Point Policy.<sup>1</sup> In the Five-Point Policy, USFWS and NMFS encourage the use of independent science input to help inform the development of HCPs.

In addition, the California Natural Community Conservation Planning Act (NCCPA) calls for incorporation of independent scientific input in the development of natural community conservations plans (NCCPs), requiring such input to provide technical scientific recommendations on specific topics such as conservation strategies, reserve design principles, management principles, monitoring, adaptive management, and data gaps to support NCCP development.

Engagement of independent scientists in development of the Butte Regional Conservation Plan (BRCP) was managed through a neutral facilitation team established specifically for this purpose, as described in more detail below. Advice and recommendations from independent scientists were captured in Independent Science Advisor reports prepared by the BRCP Independent Science Advisors and provided to the BRCP Steering and Stakeholder Committees. All advice provided by the Independent Science Advisors was given serious consideration by the Steering and Stakeholder Committees in the development of the BRCP. The following sections provide more details on the independent science advisory process, the recommendations that were provided, and how these recommendations were incorporated into the BRCP. Examples of recommendations that were not incorporated into the BRCP and rationale for those decisions are also provided in this chapter.

### 12.2 INDEPENDENT SCIENCE ADVISORY PROCESS

An Independent Science Advisors panel was assembled to support the BRCP. The panel was composed of recognized experts in technical fields relevant to the biological resources addressed by the Plan. Their charge was to clarify the current state of technical knowledge available for the

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<sup>1</sup> 65 *Federal Register* (FR) 35242 (June 1, 2000).

conservation planning process. The panel operated independently of the Steering Committee, Stakeholder Committee, Permittees, and consultants. The facilitator of the Independent Science Advisors was selected by the BRCP Steering Committee and was approved by the California Department of Fish and Game (DFG)<sup>2</sup>, USFWS, and NMFS. The Science Facilitator worked with the Butte County Association of Governments (BCAG), Steering Committee representatives, DFG, and USFWS to develop a “long list” of potential candidates for the Independent Science Advisors panel.

The Facilitator developed a prioritized list of candidates based on their expertise, experience, proven ability to work well with groups, and ability to contribute useful information on schedule. This prioritization process resulted in a “short list” of science advisor candidates that were agreed upon by the Facilitator and BCAG, Steering Committee representatives, DFG, and USFWS. The short list identified preferred and alternate candidates for each pertinent area of expertise (e.g., experts on plant ecology, vernal pool ecology, aquatic ecology, the natural communities present, and species experts) with enough redundancy to allow that some candidates might not be available or interested in serving on the panel. Final selections of the Independent Science Advisors panel members and potential alternates from the short list were made by the Science Facilitator, without the influence of BCAG, Steering Committee, Stakeholder Committee or consultants.

Once the selection of panel members was made, the Science Facilitator ensured that all science advisors understood their roles pursuant to the NCCPA. The Science Facilitator served as a point of contact between the Independent Science Advisors and entities working on the Plan. To ensure the independence of the science advisors, all questions to or from the Independent Science Advisors were communicated through the Facilitator. The Science Facilitator coordinated the panel’s review of and recommendations for the Conservation Strategy and was ultimately responsible for the scheduled delivery of these reviews and recommendations; however, the Science Facilitator was generally not involved in the writing or producing of Independent Science Advisors reports.

The Independent Science Advisors were charged with the following tasks as per the NCCPA:

1. Recommend scientifically sound conservation strategies for species and natural communities proposed to be covered by the Plan.
2. Recommend a set of reserve design principles that addresses the needs of species, landscapes, ecosystems, and ecological processes in the planning area proposed to be addressed by the Plan.
3. Recommend management principles and conservation goals that can be used in developing a framework for the monitoring and adaptive management component of the Plan.

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<sup>2</sup> Currently the California Department of Fish and Wildlife.

4. Identify data gaps and uncertainties so that risk factors can be evaluated.<sup>3</sup>

Consistent with the requirements of the NCCPA and the policy directives of the Five-Point Policy,<sup>4</sup> the BRCP Steering Committee directed the Science Facilitator to convene meetings of the Independent Science Advisors at several key stages of the BRCP planning process. Each of the independent science efforts is summarized in Section 12.3, *Independent Science Reviews*, and includes a brief summary of major findings and information regarding how recommendations were incorporated into the overall planning process. The Independent Science Advisors produced recommendations on a range of relevant topics, including approaches to conservation planning for aquatic and terrestrial species in the Plan Area and development of the adaptive management and monitoring programs.<sup>5</sup> Reports prepared by the Independent Science Advisors for the BRCP are provided in Appendix G, *Independent Science Advisors Reports*.

## 12.3 INDEPENDENT SCIENCE REVIEWS

### 12.3.1 November 2007 Independent Science Advisors Report on Overall Guidance

The Independent Science Advisors held a two-day workshop on June 11–12, 2007 to review information gathered for the BRCP planning process, hear the concerns of Plan participants, tour portions of the Plan Area, and begin formulating recommendations for Plan development and implementation. Specific questions the Independent Science Advisors were asked to address included the following topics:

- Sufficiency of the proposed covered species list.
- Effective ways of grouping species to assist in designing, managing, or monitoring a reserve.
- Conceptual or analytical models that could be used to address information gaps, assess plan effects, or otherwise inform Plan development and implementation.
- Suggestions on models to use or not use in the formation of the Plan.
- Identification of ecological processes most critical to maintaining ecosystem and species viability, and incorporation of these processes into ecosystem reserve design.
- Specific monitoring protocols to detect changes in species populations or processes.
- Adaptive management and monitoring considerations.

The Independent Science Advisors published the Report of Independent Science Advisors for Butte County Habitat Conservation Plan / Natural Community Conservation Plan (HCP/NCCP) on November 30, 2007 (Appendix G). This report provided recommendations on various issues

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<sup>3</sup> Fish and Game Code § 2810(b)(5).

<sup>4</sup> 65 FR 35242.

regarding plan development. Examples of recommendations that were implemented in BRCP development include the following.

- Supplement the list of covered species with planning species to help guide Plan development. The BRCP adopted the American badger, black-tailed deer, and white-fronted goose as planning species to guide the development of minimum patch size requirements for the protection of grassland, oak woodland and savanna, and agricultural land cover types, respectively. These species require large patches of habitat to meet their life requirements and providing sufficient patch size for these species encompasses the patch size requirements for all other associated native species that use smaller patches of habitat.
- Treat vernal pools as a separate natural community/habitat. The BRCP includes separate biological goals and objectives, conservation measures, and analyses for vernal swale complex, vernal pool, and altered vernal pool habitats from the larger grassland natural community. Vernal swale complex and associated vernal pools are addressed as an integrated terrain unit, grassland with vernal swale complex.
- Reserve design principles. The Independent Science Advisors report provided numerous recommendations regarding reserve design principles (e.g., protect large patches of habitat, protect mosaics of habitat) and these design principles were incorporated into the BRCP conservation land assembly principles described in Section 8.7.1.6, *Conservation Land Assembly Principles*.

Some Independent Science Advisors recommendations were not implemented because they were not deemed practicable at this time (e.g., were better suited to be addressed during Plan implementation), sufficient information or appropriate tools were not available to address the underlying issue intended by the recommendation, or the recommendations did not meet the regulatory purposes of the BRCP. For example, an Independent Science Advisors report included recommendations to add covered species to the BRCP that were not likely to become federally or California listed, and such species were not incorporated into the BRCP (the BRCP incidental take authorizations only need to provide for species that are currently listed or that become listed over the term of the BRCP). BRCP conservation measures for ecosystem functions and natural communities, however, will benefit the species recommended for addition by the panel.

### **12.3.2 July 2011 Independent Science Advisors Review of Draft Conservation Strategy**

The Independent Science Advisors were requested to review the BRCP Draft Conservation Strategy (BRCP Chapter 5, *Conservation Strategy*) and to respond to specific questions regarding the proposed approach for conserving the covered species and natural communities. The Independent Science Advisors published the *Report of Independent Science Advisors for Butte County Habitat Conservation Plan / Natural Community Conservation Plan (HCP/NCCP)*

in July 2011 (Appendix G). This report provided recommendations for improving the Conservation Strategy and provided responses to specific questions regarding assumptions and uncertainties associated with the proposed conservation measures. Examples of recommendations that were implemented in BRCP development include the following.

- Recognize the importance of managed grazing as a habitat management tool. The Conservation Strategy was revised to emphasize the use of managed grazing on BRCP conservation lands, particularly within protected oak woodland and savanna, grassland, and grassland with vernal swale complex natural communities, to maintain and improve habitat conditions for covered and other native species (e.g., vegetation structure, cover, and composition).
- Update land cover type mapping for vernal pool and other sensitive habitats. The BRCP Geographic Information Systems (GIS) land cover type data base was revised to reflect more recent conversions of sensitive land cover types to other uses (e.g., new development and cultivated land) since the original land cover type mapping was completed by Leidos in 2007. In addition, an analysis of existing on-ground wetland delineations was used to assess the average density of vernal pools and other seasonal wetlands in different grassland landscape settings.
- Give priority to application of the most important conservation land assembly principles. The Conservation Strategy was revised to indicate the physical and biological attributes embodied in the land assembly principles that should be given the highest priority for consideration by the Implementing Entity during the conservation land acquisition evaluation process.
- Add the establishment of a wildlife corridor along the Sacramento River. The Conservation Strategy was revised to add an ecological corridor along the Sacramento River in the Sacramento River Conservation Acquisition Zone (CAZ) and Northern Orchards CAZ. This additional corridor is designed to be developed within the existing mosaic of riparian forest and scrub, orchard, and croplands in these CAZs.
- The Conservation Strategy should address road mortality on amphibians and reptiles. A conservation measure was added to the Conservation Strategy directing the Implementing Entity to coordinate with transportation agencies (e.g., California Department of Transportation [Caltrans], Federal Highway Administration [FHWA]), USFWS, and DFG to identify areas of high road mortality within the BRCP conservation lands system and to work with responsible agencies for modifying road corridors to reduce road fatalities.

The BRCP was also revised to address recommended technical clarifications and new information identified by the Independent Science Advisors for the Conservation Strategy and Appendix A, *Covered Species Accounts*.

The Independent Science Advisors, in their responses to the questions regarding key assumptions used and uncertainties considered in the development of the Conservation Strategy, generally concurred with the overall conservation approach, with the caveats described in Appendix G. Important areas of general concurrence include:

- Establishment of the Chico Butte County Meadowfoam Preserve and actions for protecting and managing Butte County meadowfoam occurrences and habitat on other lands under the BRCP for the purpose of conserving this species.
- The appropriateness of the proposed habitat enhancement and management actions for covered species.
- The adequacy of the proposed conservation measures for addressing the major environmental stressors, under the control of the BRCP, on covered species and that are known or believed to be suppressing covered species populations.
- The conservation land assembly principles as revised to reflect priorities for selection of conservation lands.