



# Habitat Expansion Agreement for Central Valley Spring-Run Chinook Salmon and California Central Valley Steelhead

**Annual Status Report**

November 20, 2007 – November 19, 2008



**Prepared for**  
California Department of Water Resources  
and  
Pacific Gas and Electric Company

**Prepared by**  
ICF Jones & Stokes

**Habitat Expansion Agreement  
for  
Central Valley Spring-Run Chinook Salmon  
and California Central Valley Steelhead**

**Annual Status Report  
November 20, 2007 through November 19, 2008**

*Prepared for:*

California Department of Water Resources  
P.O. Box 942836  
West Sacramento, CA 94236-0001  
Contact: Heidi Rooks, Branch Chief  
916/376-9704

*and*

Pacific Gas and Electric Company  
P.O. Box 770000, Mail Code: N11C  
San Francisco, CA 94177-0001  
Contact: Liv Imset, Senior License Coordinator  
415/973-1066

*Prepared by:*

ICF Jones & Stokes  
630 K Street, Suite 400  
Sacramento, CA 95814  
Contact: Colleen Lingappaiah, Project Manager  
916/737-3000

January 20, 2009

Cover photo: West Branch of the Feather River, California. Courtesy of the California Department of Water Resources.

ICF Jones & Stokes. 2009. *Habitat Expansion Agreement for Central Valley Spring-Run Chinook Salmon and California Central Valley Steelhead Annual Status Report – November 20, 2007 through November 19, 2008*. January 20, 2009. (ICF J&S 00854.08.) Sacramento, CA. Prepared for: California Department of Water Resources and Pacific Gas and Electric Company.

# Contents

	<b>Page</b>
Introduction .....	1
Objective of the Annual Status Report.....	1
Habitat Expansion Agreement .....	1
Habitat Expansion Plan .....	5
Administrative Accomplishments .....	5
Habitat Expansion Coordination Agreement.....	6
Steering Committee .....	6
Tracking Log .....	7
Draft Communications Plan .....	7
Work Plan Outline .....	8
Habitat Expansion Plan Timeline.....	8
Consultant to Assist with Phase 1 Tasks .....	8
HEA Website .....	9
Outreach to Other Parties to the HEA .....	9
Technical Accomplishments .....	11
Draft Definitions of HEA Evaluation and Selection	
Criteria and NMFS Approval Criteria .....	11
Draft Process for Evaluating and Selecting Potential	
Habitat Expansion Actions .....	12
Preliminary List of Potential Habitat Expansion Actions .....	12
GIS Database for Potential Actions .....	13
Draft Background Status Report.....	14
Questionnaire for Identifying Potential Actions .....	14
Next Steps .....	15
GIS Database for Potential Actions .....	16
Draft Background Status Report.....	16
List of Potential Habitat Expansion Actions .....	16
Outreach with Local Stakeholders .....	16
Final Definitions of HEA Evaluation and Selection	
Criteria and NMFS Approval Criteria .....	17
Final Process for Evaluating and Selecting Potential	
Habitat Expansion Actions .....	17
List of Proposed Actions .....	17
Draft Habitat Expansion Plan.....	17
Consultant to Assist with Plan Development .....	18

# Acronyms and Abbreviations

Background Status Report	<i>Background Report on the Status of Spring-Run Chinook Salmon and Central Valley Steelhead in the Sacramento River Basin</i>
DEMs	Digital Elevation Models
DFG	California Department of Fish and Game
DPS	distinct population segment
DWR	California Department of Water Resources
ESU	evolutionarily significant unit
FERC	Federal Energy Regulatory Commission
FPA	Federal Power Act
FPC	Federal Power Commission
GIS	geographic information system
HEA	Habitat Expansion Agreement for Central Valley Spring-Run Chinook Salmon and California Central Valley Steelhead
HECA	Habitat Expansion Coordination Agreement
NMFS	National Marine Fisheries Service
NMFS Draft Recovery Plan	<i>NMFS Draft Recovery Plan for the Evolutionarily Significant Units of Sacramento River Winter-Run Chinook Salmon and Central Valley Spring-Run Chinook Salmon and the Distinct Population Segment of Central Valley Steelhead</i>
Oroville	Oroville Facilities, FERC Project No. 2100
PG&E	Pacific Gas and Electric Company
Poe	Poe Hydroelectric Project, FERC Project No. 2107
Rock Creek-Cresta	Rock Creek-Cresta Hydroelectric Project, FERC Project No. 1962
Upper North Fork Feather River	Upper North Fork Feather River Hydroelectric Project, FERC Project No. 2105
USFWS	U.S. Fish and Wildlife Service

# Habitat Expansion Agreement for Central Valley Spring-Run Chinook Salmon and California Central Valley Steelhead

## Annual Status Report

Period of Performance: November 20, 2007 through  
November 19, 2008

## Introduction

### Objective of the Annual Status Report

The objective of this Annual Status Report is to document milestones reached and progress achieved in implementing habitat expansion actions under the Habitat Expansion Agreement for Central Valley Spring-Run Chinook Salmon and California Central Valley Steelhead (HEA). This Annual Status Report summarizes the accomplishments achieved within the first year of the effective date of the HEA: November 20, 2007, through November 19, 2008.

## Habitat Expansion Agreement

### Purpose

Effective November 20, 2007, the Pacific Gas and Electric Company (PG&E) and the California Department of Water Resources (DWR) entered into the HEA with the following parties: American Rivers, Arthur G. Baggett, Jr.<sup>1</sup>; California Department of Fish and Game (DFG); U.S. Department of Agriculture Forest Service; National Marine Fisheries Service (NMFS); the U.S. Fish and Wildlife Service (USFWS); and State Water Contractors, Inc. Under this agreement, PG&E and DWR have 2 years to jointly identify, evaluate, and select the most promising and cost-effective action(s) to expand spawning, rearing, and adult holding habitat for spring-run Chinook salmon and steelhead in the Sacramento River Basin, as an alternative to the resource agencies and other parties seeking project-specific fish passage prescriptions or license conditions in the new

---

<sup>1</sup> Mr. Baggett signed the HEA as a recommendation to the California State Water Resources Control Board (State Water Board), not as a Party to the HEA. Mr. Baggett will not be participating in the State Water Board's consideration of any petition for water quality certification for any Habitat Expansion Plan pursuant to Section 401 of the federal Clean Water Act.

Federal Energy Regulatory Commission (FERC) licenses for PG&E's Upper North Fork Feather River Hydroelectric Project and Poe Hydroelectric Project and for DWR's Oroville Facilities Project (all of which are located in the Feather River system).

## **Background on the Habitat Expansion Agreement**

### **FERC Relicensing for Feather River Projects**

DWR constructed and operates the Oroville Facilities, FERC Project No. 2100 (Oroville), on the lower Feather River. Oroville was developed as part of the California State Water Project, a water storage and delivery system of reservoirs, aqueducts, power plants, and pumping plants. The State Water Project makes deliveries of supplemental water to two-thirds of California's population and over 750,000 acres of agricultural lands. Oroville is also operated to provide power generation, improve water quality in the Sacramento and San Joaquin Delta, manage Feather River floodwaters, provide recreation, and enhance habitat for fish and wildlife.

Oroville operates under a license originally issued by the Federal Power Commission (FPC) on February 11, 1957, for a term of 50 years. The current license for Oroville expired on January 31, 2007. Under the requirements of the Federal Power Act (FPA) and FERC regulations, DWR filed a timely application for a new license on January 26, 2005. This application is currently still pending before FERC.

PG&E owns and operates the Poe Hydroelectric Project, FERC Project No. 2107 (Poe) on the North Fork Feather River under a license issued by the FPC on October 26, 1953, for a term of 50 years. Under the requirements of the FPA and FERC regulations, PG&E filed an application for a new license for Poe on October 2, 2001. This application is currently still pending before FERC. The original license for Poe expired on September 30, 2003; since that time, the project has been operating under annual licenses pursuant to Section 15 of the FPA.

PG&E owns and operates the Upper North Fork Feather River Hydroelectric Project, FERC Project No. 2105 (Upper North Fork Feather River) under a license issued by the FPC on January 24, 1955, for a term of 50 years. Under the requirements of the FPA and FERC regulations, PG&E filed an application for a new license for the Upper North Fork Feather River on October 23, 2002, which is currently still pending before FERC. The original license for the Upper North Fork Feather River expired on October 31, 2004; since that time, the project has been operating under annual licenses pursuant to Section 15 of the FPA.

PG&E also owns and operates a third project on the North Fork Feather River, the Rock Creek-Cresta Hydroelectric Project, FERC Project No. 1962 (Rock Creek-Cresta), under a license issued by FERC on October 24, 2001, which expires on September 30, 2034.

## **Habitat Expansion Agreement Negotiated as an Alternative to Prescribed Fish Passage**

NMFS has a prescriptive right for fish passage that they exercised in the FERC relicensing proceedings for the Oroville and Upper North Fork Feather River Projects for DWR and PG&E, respectively. NMFS believed a trap-and-haul program for spring-run Chinook salmon in the Feather River system would meet its fish passage objectives. The trap-and-haul program would involve trapping adult fish below the Oroville Dam, hauling them upstream, and placing them in the upper North Fork Feather River. The program also would require collecting downstream migrants above Oroville Dam in the upper North Fork Feather River and hauling them back downstream below the dam. NMFS prescribed the upper end of the trap-and-haul program in the Upper North Fork Feather River relicensing proceeding and intended to prescribe the lower end of the trap-and-haul program in the Oroville relicensing proceeding.

The trap-and-haul program generated concern because of its high estimated cost and the potentially low likelihood for success. Ultimately, DWR and PG&E, together with other participants in the relicensing proceedings, came together to discuss alternatives to trap and haul for expanding habitat for anadromous fish. As a result of this collaborative effort, the parties negotiated the HEA to establish an approach for identifying, evaluating, selecting, and implementing the most promising and cost-effective action(s) to expand spawning, rearing, and adult holding habitat in the Sacramento River Basin in lieu of the resource agencies or other parties seeking fish passage on the Feather River or its tributaries in the relicensing of the Oroville, Poe, and Upper North Fork Feather River Projects, or through amendment of the license for the Rock Creek-Cresta Project.

As stated under Section 1.2 of the HEA, Purpose of Agreement, the HEA will:

- fully mitigate for any presently unmitigated impacts due to the blockage of fish passage of all fish species caused by the Feather River Hydroelectric Projects; and
- resolve among the parties to the HEA, during the term of the HEA, issues related to regulatory conditions for fish passage associated with or related to any of the Feather River Hydroelectric Projects in excess of the actions contemplated under the HEA.

## Goal of the HEA and the Habitat Expansion Threshold

The overall goal of the HEA is to expand the amount of habitat with physical characteristics necessary to support spawning, rearing, and adult holding of spring-run Chinook salmon and steelhead in the Sacramento River Basin as a contribution to the conservation and recovery of these species. Habitat expansion would be accomplished through enhancements to existing accessible habitat, improving access to habitat, or other action(s) and is intended to fully mitigate for any presently unmitigated impacts due to the blockage of fish passage of all fish species caused by the Feather River Hydroelectric Projects.

The specific Habitat Expansion Threshold of the HEA is to expand spawning, rearing, and adult holding habitat sufficiently to accommodate an estimated net increase of 2,000 to 3,000 spring-run Chinook salmon for spawning in the Sacramento River Basin, as compared to the habitat available under any relevant existing requirements or commitments (i.e., actions expected to occur in a timeframe comparable to implementation of habitat expansion action[s] under the HEA). The Habitat Expansion Threshold is focused on spring-run Chinook salmon as the priority species, as expansion of habitat for spring-run typically accommodates steelhead as well.

## Potential Habitat Expansion Actions

The HEA states that habitat expansion actions may include (Section 3.1, Scope of Eligible Habitat Expansion Actions), among other things:

- dam removals or dam re-operation,
- creation or enhancement of fishways,
- water temperature or flow improvements, or
- other physical habitat enhancements.

Potential actions to expand spring-run and steelhead spawning, rearing, and adult holding habitat will be identified, evaluated, selected, and implemented using criteria identified in the HEA, including:

- seventeen non-prioritized Evaluation Criteria (Section 4.1.1) that DWR and PG&E will use to screen potential habitat expansion actions and develop a preliminary list of viable actions,
- four Selection Criteria (Section 4.1.2) that DWR and PG&E will use in selecting recommended habitat expansion actions for implementation, and
- six NMFS Approval Criteria (Section 4.2.3) that NMFS will use in deciding whether to approve the final Habitat Expansion Plan.

## Habitat Expansion Plan

The effective date of the HEA, which is the date when the HEA was executed by all parties to the HEA and approved by the California Department of Finance, is November 20, 2007. This date sets the deadline for completing the final Habitat Expansion Plan as May 2010. Within 2 years of the effective date (i.e., by November 20, 2009), DWR and PG&E are to complete the identification, evaluation, and recommendation of habitat expansion actions—in consultation with the other parties to the HEA and directly affected third parties—and prepare a Draft Habitat Expansion Plan.

As described under Section 4.1.3 of the HEA, Draft Habitat Expansion Plan, the Draft Habitat Expansion Plan will include a description of:

- the recommended action(s), including any functional start-up testing and future operation and maintenance;
- the rationale for their selection based on the evaluation criteria and the selection criteria;
- a preliminary schedule for each of the remaining phases in Section 4 of the HEA, Planning and Implementation of Habitat Expansion Action(s), including provisions for anticipated schedule uncertainties;
- the responsibilities of each Licensee for implementing the action(s);
- the estimated contribution of the action(s) to the Habitat Expansion Threshold; and
- a pre-feasibility-level cost estimate for implementing the action(s).

By November 20, 2009, DWR and PG&E will distribute the Draft Habitat Expansion Plan to the other parties to the HEA and directly affected third parties for a 90-day review and comment period. Within 90 days after the close of this review and comment period (i.e., by May 2010), DWR and PG&E will prepare and submit a Final Habitat Expansion Plan for approval by NMFS.

## Administrative Accomplishments

Administrative actions that were accomplished during the first year following the HEA's effective date include:

- developing a coordination agreement between DWR and PG&E,
- establishing a Steering Committee,
- developing a tracking log,
- preparing a draft Communications Plan,
- preparing a Work Plan outline,
- developing a Habitat Expansion Plan timeline,

- retaining a consultant to assist with some tasks identified in the HEA,
- establishing an HEA website, and
- initiating outreach to other Parties to the HEA.

Each action is further described in the sections below.

## Habitat Expansion Coordination Agreement

DWR and PG&E entered into a coordination agreement effective November 20, 2007, the Habitat Expansion Coordination Agreement (HECA), to ensure that DWR and PG&E coordinate their decision making and implementation of actions to achieve the goals of the HEA, as well as share costs incurred during the planning through implementation of habitat expansion actions. The HECA, which defines the roles and responsibilities of DWR and PG&E for implementing the HEA, ensures that DWR and PG&E fulfill their obligations under the HEA and achieve the habitat expansion goals of the HEA in an efficient and cost-effective manner.

### Coordination and Decision Making

As stated under Article 2 of the HECA, Coordination and Decision Making, DWR and PG&E are committed to closely coordinating their decision making activities and their implementation of actions to achieve the goals of the HEA. Decisions are made by following the coordinated decision making process described in Section 2.3 of the HECA, Coordinated Decision Making Process, which includes the establishment of a joint DWR and PG&E Steering Committee, as described below.

### Cost Sharing

As stated under Article 3 of the HECA, Cost Sharing, PG&E and DWR are each obligated to pay one-half of the eligible costs associated with performing their obligations under the HEA. Eligible costs include reasonable costs incurred by PG&E and DWR to implement the HEA pursuant to decisions made by the Steering Committee.

### Steering Committee

As required under Section 2.3 of the HECA, Coordinated Decision Making Process, DWR and PG&E established an HEA Steering Committee comprised of one representative and one alternate each from DWR and PG&E. Each representative and alternate is known as the Authorized Representative. The

Steering Committee has been meeting regularly (approximately every 2 weeks) since February 2008 to work toward fulfilling the HEA requirements. Members of the Steering Committee include:

- Liv Imset, Senior License Coordinator, PG&E;
- Paul Kubicek, Aquatic Biology Consulting Scientist, PG&E;
- Heidi Rooks, Environmental Program Manager, DWR; and
- Chris Wilkinson, Senior Environmental Scientist, DWR.

Detailed notes are taken to document each Steering Committee meeting. In addition, the Steering Committee members prepare a separate executive summary for each meeting to summarize the main discussion topics and decisions made during the meetings. The Steering Committee met 18 times between November 20, 2007, and November 19, 2008. Executive summaries for each meeting are maintained on the private HEA website; however, the summaries are also available upon request.

## Tracking Log

The Steering Committee developed a tracking log for recommendations, decisions, and eligible costs associated with implementing the HEA. The purpose of the tracking log is to formalize the process for documenting:

- recommendations made by the Steering Committee to DWR and PG&E management,
- decisions made by the Steering Committee and approved by DWR and PG&E management, and
- eligible (i.e., shared) costs pursuant to decisions made by the Steering Committee.

This tracking log is updated following each Steering Committee meeting and accompanies the meeting notes prepared for each meeting. The tracking log is maintained on the private HEA website; however, a copy of the tracking log is available upon request.

## Draft Communications Plan

In August 2008, the Steering Committee prepared a Draft Communications Plan to outline roles, responsibilities, protocols, and procedures regarding internal and external communications made by the Steering Committee for implementation of the HEA and for the HECA. Section 7.3(b) of the HECA, Government Communications, specifically calls for DWR and PG&E “to cooperate in good faith to develop a mutually acceptable communications plan...and to cooperate to implement such a plan.” Additionally, the Draft Communications Plan

documents procedures adopted by the Steering Committee for its meetings and for the submission of its recommendations to each Licensee's management for approval as called for in Section 2.3 of the HECA, Coordinated Decision Making Process. The Communications Plan is maintained on the private HEA website; however, a copy of the Communications Plan is available upon request.

## **Work Plan Outline**

In August 2008, the Steering Committee prepared a Work Plan outline for the identification, evaluation, and selection of potential habitat expansion actions. The purpose of the Work Plan is to provide a description of steps that the Steering Committee will take to identify, evaluate, and select potential habitat expansion actions for submittal to NMFS. Although the Steering Committee intended for this document to be expanded and further developed to better define the steps that will be taken and the evaluation tools that will be used, the Habitat Expansion Plan timeline is at least partially serving the same purpose (see below). The Work Plan will be further developed under Phase 2 of the HEA and will be included as a component of the Habitat Expansion Plan. The Work Plan outline is maintained on the private HEA website; however, a copy of the Work Plan is available upon request.

## **Habitat Expansion Plan Timeline**

In September 2008, the Steering Committee developed a timeline to assist with the development of the Habitat Expansion Plan. The timeline documents milestones that must be reached for completing the first annual report, preparing and mailing a status letter to the other parties to the HEA, completing the list of potential actions to be considered for the Habitat Expansion Plan, completing a list of viable actions to be considered for the Habitat Expansion Plan, preparing an engineering feasibility study, and preparing and submitting the Draft Habitat Expansion Plan to NMFS. The timeline for developing the Habitat Expansion Plan is available on the public HEA website.

## **Consultant to Assist with Phase 1 Tasks**

During the first year following the effective date of the HEA, PG&E and DWR concluded that it would be beneficial to retain a consultant to conduct a variety of administrative and technical tasks that would assist the Steering Committee in fulfilling the requirements of the HEA. Administrative tasks may include attending Steering Committee meetings, facilitating agency meetings, preparing notes for Steering Committee and agency meetings, planning and scheduling work activities, preparing a Final Communications Plan, preparing a Work Plan, and preparing an Annual Status Report. Technical tasks may include preparing written definitions for the evaluation, selection, and agency approval criteria

listed in the HEA; and developing a conceptual framework for applying the evaluation and selection criteria.

On September 30, 2008, the Steering Committee selected the consultant ICF Jones & Stokes to assist with the tasks identified above. ICF Jones & Stokes was retained on October 9, 2008, and attended its first Steering Committee meeting with DWR and PG&E on October 14, 2008.

## HEA Website

The Steering Committee established a website that is available to share information related to the HEA with the public. Additionally, a password-protected or private website enables the Steering Committee to share working documents among themselves and store background reports. The public HEA website is available at <http://www.sac-basin-hea.com>.

## Outreach to Other Parties to the HEA

The Steering Committee has been actively reaching out to the other parties to the HEA and informing the public about the HEA. Some outreach activities that the Steering Committee took part in during the past year are described below.

### Salmonid Restoration Federation's Spring-Run Chinook Salmon Symposium

On July 10, 2008, members of the Steering Committee presented a PowerPoint presentation and participated in a panel discussion on the HEA at the *Salmonid Restoration Federation's Spring-Run Chinook Salmon Symposium* held in Nevada City, California. The presentation can be found at the HEA website identified above.

### Consultation with NMFS

The Steering Committee met with NMFS twice to discuss the HEA. Meetings included a conference call with NMFS held on April 30, 2008, and a face-to-face meeting with NMFS on August 20, 2008.

On April 30, 2008, the Steering Committee participated in a conference call with representatives from NMFS to:

- provide NMFS with an update on the Steering Committee's efforts on implementing the HEA;

- identify which branch from NMFS would be signing off on the selected project(s) as having met the NMFS approval criteria identified in the HEA;
- obtain feedback from NMFS on the idea of soliciting proposals as a means of identifying potential projects;
- receive feedback from NMFS on the completion of the PG&E/CalTrout effort to prioritize Central Valley anadromous salmonid recovery actions (described below) and how this process could be integrated with the *NMFS Draft Recovery Plan for the Evolutionarily Significant Units of Sacramento River Winter-Run Chinook Salmon and Central Valley Spring-Run Chinook Salmon and the Distinct Population Segment of Central Valley Steelhead* (NMFS Draft Recovery Plan); and
- obtain input on how the Steering Committee could integrate the HEA process with other recovery planning efforts, such as the USFWS Anadromous Fish Restoration Program and the CALFED Ecosystem Restoration Program.

On August 20, 2008, the Steering Committee met with NMFS and discussed the following topics:

- presentation at the July 10, 2008, Spring-Run Chinook Salmon Symposium,
- Draft Work Plan and efforts to date,
- application of the HEA criteria to the PG&E/CalTrout Project database,
- availability and use of the NMFS Draft Recovery Plan,
- quantification methodologies for project contribution to the HEA threshold, and
- engaging other parties to the HEA using a similar agenda.

The Steering Committee continues to consult with NMFS on implementation of the HEA.

## **Letter to Other Parties to the HEA**

On October 28, 2008, DWR and PG&E sent a letter to the other parties to the HEA to provide them with an update on implementation by DWR and PG&E of the HEA and to initiate contact with staff from the various HEA parties in order to obtain additional information on potential habitat expansion actions.

## **Meetings with Other Parties to the HEA**

The Steering Committee has scheduled to meet with staff for the other HEA parties in January 2009 to solicit information on potential actions, identify contact persons for additional follow-up on potential actions, facilitate the receipt of completed questionnaires requesting additional information on potential actions (see discussion below), and obtain a common understanding of the HEA

criteria. Three meetings, which are divided by watersheds of the Sacramento River Basin, are scheduled to take place on:

- January 14, 2009, in Chico, California, focusing on potential projects from the central Sacramento River Basin watersheds;
- January 21, 2009, in Red Bluff, California, focusing on potential projects from the northern Sacramento River Basin watersheds; and
- January 28, 2009, in Sacramento, California, focusing on potential projects from the southern Sacramento River Basin watersheds.

## Technical Accomplishments

Technical actions that were initiated or accomplished during the first year following the HEA's effective date include:

- further defining HEA evaluation and selection criteria and NMFS approval criteria,
- developing the process for evaluating and selecting potential habitat expansion actions,
- developing a preliminary list of potential actions,
- developing a geographic information system (GIS) database for the actions identified in the PG&E/CalTrout list of prioritized actions and in NMFS Draft Recovery Plan actions,
- preparing a Draft Background Status Report for spring-run Chinook salmon in the Sacramento River Basin, and
- preparing a questionnaire to collect information on potential habitat expansion actions from the other parties to the HEA.

Each action is further described in the sections below.

## Draft Definitions of HEA Evaluation and Selection Criteria and NMFS Approval Criteria

Section 4.1 of the HEA, Identification, Evaluation, and Recommendation of Habitat Expansion Action(s), identifies several criteria for identifying, evaluating, and recommending habitat expansion actions, including:

- HEA Evaluation Criteria (see Section 4.1.1 of the HEA),
- HEA Selection Criteria (see Section 4.1.2 of the HEA), and
- NMFS Approval Criteria (see Section 4.2.3 of the HEA).

The Steering Committee began the process of developing definitions of the various HEA criteria. The Steering Committee plans to work in coordination with NMFS and other parties to the HEA to further develop written definitions so that the criteria can be better utilized when identifying, evaluating, and recommending habitat expansion actions. Once the definitions have been developed, they will be made available on the public HEA website.

## **Draft Process for Evaluating and Selecting Potential Habitat Expansion Actions**

The Steering Committee has started to develop the process for evaluating and selecting potential habitat expansion actions. This process involves the following steps: development of a list of potential actions using the PG&E/CalTrout list of prioritized actions, NMFS Draft Recovery Plan actions, and the HEA outreach questionnaire process; application of the HEA evaluation criteria to the list of potential actions in order to develop a preliminary list of viable actions; application of the HEA selection criteria to the preliminary list of viable actions in order to create a list of recommended actions; determination of the contribution of each recommended action to meeting the HEA threshold (i.e., 2,000–3,000 spring-run Chinook salmon); conducting an engineering feasibility study for each recommended action; and final selection of the recommended action(s) to be submitted to NMFS.

## **Preliminary List of Potential Habitat Expansion Actions**

The Steering Committee developed a preliminary list of potential habitat expansion actions to be considered for inclusion in the Habitat Expansion Plan. This preliminary list was primarily obtained from the results of a separate PG&E/CalTrout effort to develop a list of prioritized actions that could contribute to salmon and steelhead recovery, and recovery actions identified in the NMFS Draft Recovery Plan. This preliminary list is a work in progress and will continue to change over time until habitat expansion actions have been selected for the Habitat Expansion Plan. A working list of potential habitat expansion actions will be provided at the January 2009 meetings with the other parties to the HEA.

## **PG&E and CalTrout List of Prioritized Actions**

PG&E and CalTrout initiated a project in late 2005 known as *Prioritized Actions Contributing to Salmon and Steelhead Recovery*, with the participation of a broad set of public and private stakeholders that included NMFS, USFWS, DFG, and the Association of California Water Agencies. The purpose of this collaborative effort was to develop a prioritized list of recovery opportunities for Central

Valley salmon and steelhead listed under the Endangered Species Act that are independent of, and complementary to, ongoing recovery efforts undertaken by federal and state agencies. More than 200 potential recovery actions were identified and evaluated as part of this process. In addition, a prioritization tool was developed and applied to many of the actions. The Steering Committee has used this list as a starting point for developing the preliminary list of potential actions that could be included in the Habitat Expansion Plan.

## NMFS Draft Recovery Plan

NMFS is currently working on a Recovery Plan for listed Central Valley salmon and steelhead, and issued a co-managers review draft in May 2008. NMFS has stated that implementation of the Recovery Plan for the Sacramento River winter-run Chinook salmon evolutionarily significant unit (ESU), Central Valley spring-run Chinook salmon ESU, and Central Valley steelhead distinct population segment (DPS) is vital to the continued persistence and recovery of these species. This plan serves as a guideline for achieving recovery goals by describing the steps that must be taken to achieve viable ESUs/DPS. Although the plan is still in development, the Steering Committee obtained permission to use the NMFS Draft Recovery Plan to identify recovery actions for spring-run Chinook salmon and steelhead that could supplement the PG&E/CalTrout list of potential actions and be included in the Habitat Expansion Plan. The Steering Committee is integrating the NMFS Draft Recovery Plan actions into the working list of potential HEA actions. The NMFS Draft Recovery Plan is currently not available to the public.

## GIS Database for Potential Actions

Under the direction of the Steering Committee, DWR staff has started to develop a GIS project compiling appropriate data for various watersheds in the Upper Sacramento River Basin to support the identification and evaluation of potential habitat expansion actions. The GIS project is focused on the following watersheds: Clear, Cow, Bear, Cottonwood, Beegum, Battle, Antelope, Thomes, Mill, Deer, Butte, Stony, and Big Chico Creeks; and the Sacramento, Feather, Yuba, and American Rivers. The database is being developed for internal use to assist with the selection of potential habitat expansion actions and is not available to the public.

The types of data that are being incorporated into the GIS project include base information (e.g., roads, towns, cities, public lands, and county boundaries); water features (e.g., rivers, streams lakes, ponds, and reservoirs); watershed boundaries; Digital Elevation Models (DEMs); 1:24K U.S. Geological Survey topographic maps; aerial photographs; satellite imagery; land use data; current and historical distribution of anadromous fish; designated critical habitat for spring-run Chinook salmon and Central Valley steelhead; dams, water

diversions, and other potential fish passage barriers; ongoing and completed watershed restoration projects; and available data on salmonid habitat.

## Draft Background Status Report

Under the direction of the Steering Committee, DWR staff is in the process of preparing a *Background Report on the Status of Spring-Run Chinook Salmon and Central Valley Steelhead in the Sacramento River Basin* (Background Status Report). Once the Background Status Report has been finalized, it will be made available to the public on the HEA website. The purpose of this report is to provide background information on the status of spring-run Chinook salmon and Central Valley steelhead populations throughout watersheds in the Sacramento River Basin in order to support the Steering Committee in the identification, evaluation, and selection of potential habitat expansion actions, in fulfillment of obligations under the HEA.

The report includes two main sections, addressing (1) the general life history of spring-run Chinook salmon and steelhead in the Sacramento River Basin; and (2) the status of populations in individual tributaries of the Upper Sacramento River Basin.

The first part of the report covering general life history will include information about (1) basic life history characteristics of the species; (2) their historical and current distribution; and (3) results of the Population Viability Assessment done in support of NMFS recovery planning for the species.

The second part of the report will address the following tributary watersheds: Clear, Cow, Bear, Cottonwood, Beegum, Battle, Antelope, Thomes, Mill, Deer, Butte, Stony, and Big Chico Creeks; and the Yuba and American Rivers. Specific topics that will be addressed for each tributary watershed include (1) an evaluation of available watershed assessment data, including potential spawning, summer holding, and rearing habitat, as well as known limiting factors for spring-run Chinook salmon and steelhead populations; (2) historical and current adult monitoring activities; (3) completed, ongoing, and other identified restoration activities; (4) limitations for restoration; and (5) potential benefits of restoration.

## Questionnaire for Identifying Potential Actions

The Steering Committee and ICF Jones & Stokes began preparing a questionnaire to obtain information on potential habitat expansion actions from the other parties to the HEA. The questionnaire is designed to solicit ideas for projects that could contribute to the expansion of anadromous fish habitat in the Sacramento River Basin and be considered for inclusion in the Habitat Expansion Plan. The type of information to be requested in the questionnaire includes:

- action (project) contact information,
- project description,
- species limiting factors,
- environmental objectives (i.e., how the project is intended to change the environment in order to achieve the biological objective),
- biological objectives (i.e., the anticipated biological response from the project),
- cost,
- schedule,
- feasibility,
- support, and
- supporting documents.

This questionnaire will be submitted to the other parties to the HEA in advance of the meetings scheduled for January 2009.

## Next Steps

The Steering Committee anticipates completing the following list of actions, or next steps, before the next anniversary of the HEA effective date (i.e., November 20, 2009):

- complete a GIS database for potential actions,
- complete the Background Status Report on the status of spring-run Chinook salmon and steelhead throughout the Sacramento River Basin,
- complete a list of potential habitat expansion actions,
- communicate with local stakeholders directly affected by potential habitat expansion actions,
- finalize the development of written definitions of HEA evaluation and selection criteria and NMFS approval criteria,
- finalize the process for evaluating and selecting potential habitat expansion actions,
- develop a list of proposed actions to be included in a Draft Habitat Expansion Plan,
- prepare a Draft Habitat Expansion Plan, and
- retain a consultant to assist with additional tasks identified in the HEA.

Each of these actions is further described in the following sections.

## **GIS Database for Potential Actions**

After initial development of the GIS project, DWR staff will create templates and facilitate the production of maps that can be incorporated into documents such as the Background Status Report and Draft Habitat Expansion Plan. The maps may also be used for discussions with the HEA parties and other stakeholders.

Following completion of the list of viable actions, locations of potential habitat expansion actions included in the list will be entered into a GIS database and incorporated into the GIS project.

## **Draft Background Status Report**

When completed, the Draft Background Status Report will be circulated to the directly affected third parties and other HEA parties for a 90-day review and comment period. Information in the report will be used in the identification, evaluation, and selection of potential habitat expansion actions.

## **List of Potential Habitat Expansion Actions**

The Steering Committee anticipates completing by April 2009 a list of potential actions that could be considered for the Habitat Expansion Plan. The process to complete this list will include conducting three individual meetings in January 2009 with the other HEA parties to obtain information on potential habitat expansion actions found in the northern, central, and southern Sacramento River Basin watersheds. The information will be combined with the Steering Committee's working list of potential actions to create a master list of potential actions to be evaluated against the criteria in the HEA.

## **Outreach with Local Stakeholders**

Soon after the January 2009 meetings are complete, the Steering Committee plans to begin developing a Communication Outreach Plan to describe the best approach for informing local stakeholders about potential HEA actions. The intent is to reach out to the stakeholders that could be affected by potential habitat expansion actions as early in the process as possible, maintain open communication with these stakeholders about the possible selection of viable habitat expansion actions, and receive feedback from the stakeholders regarding their interest in implementing these actions.

## **Final Definitions of HEA Evaluation and Selection Criteria and NMFS Approval Criteria**

As discussed above, the Steering Committee has been working on the development of written definitions of the HEA evaluation and selection criteria and NMFS approval criteria for identifying, evaluating, and recommending habitat expansion actions. The Steering Committee anticipates finalizing these definitions by March 2009.

## **Final Process for Evaluating and Selecting Potential Habitat Expansion Actions**

As discussed above, the Steering Committee has begun the process for evaluating and selecting potential habitat expansion actions. This process is anticipated to be completed by June 2009, so that the Steering Committee can proceed with completing a list of proposed actions that would eventually be incorporated into the Habitat Expansion Plan.

## **List of Proposed Actions**

The Steering Committee will prepare a list of proposed actions to be included in the Draft Habitat Expansion Plan by:

- applying evaluation criteria to the list of potential actions to develop a preliminary list of viable actions,
- applying selection criteria to the preliminary list of viable actions,
- determining the contribution of each action to the Habitat Expansion Threshold,
- conducting additional meetings to reach out to local stakeholders who may be interested in or affected by the preliminary list of actions, and
- developing a final list of proposed actions.

Once the final list of proposed actions has been developed, these actions will be incorporated into the Draft Habitat Expansion Plan.

## **Draft Habitat Expansion Plan**

After the evaluation and selection process has been completed, local stakeholders have been contacted, and a list of proposed actions has been developed, the Steering Committee will prepare a Draft Habitat Expansion Plan, which is anticipated to be completed by November 20, 2009. The Draft Habitat

Expansion Plan will be distributed to the other parties to the HEA and directly affected third parties for a 90-day review and comment period. Comments received on the Draft Habitat Expansion Plan will be taken into consideration when preparing the Final Habitat Expansion Plan. The Final Habitat Expansion Plan will be submitted to NMFS for approval.

## **Consultant to Assist with Plan Development**

The Steering Committee anticipates retaining a contractor by March 2009 to assist with additional tasks identified in the HEA. Additional tasks may include finalizing the development of written definitions of HEA evaluation and selection criteria and NMFS approval criteria, finalizing a process for evaluating and selecting potential habitat expansion actions, supporting stakeholder outreach completing a list of proposed actions, and preparing the Draft Habitat Expansion Plan.