



Habitat Expansion Agreement

for

Central Valley Spring-Run Chinook Salmon and California Central Valley Steelhead



Welcome

Preliminary List of Viable Actions

August 12, 2009



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- **Introductions**
- **Meeting Objectives**
 - To review the revised approach for applying the Habitat Expansion Agreement (HEA) Criteria
 - To present the Ranked Preliminary List of Viable Actions



Agenda

- **Overview of the HEA Process**
- **Previous Meeting with Signatories**
- **Activities Since Last Meeting**
- **Responses to Comments**
- **Revised Approach for Applying the HEA Criteria**
- **Next Steps**
- **Quantification Methods**
- **Closing Remarks**

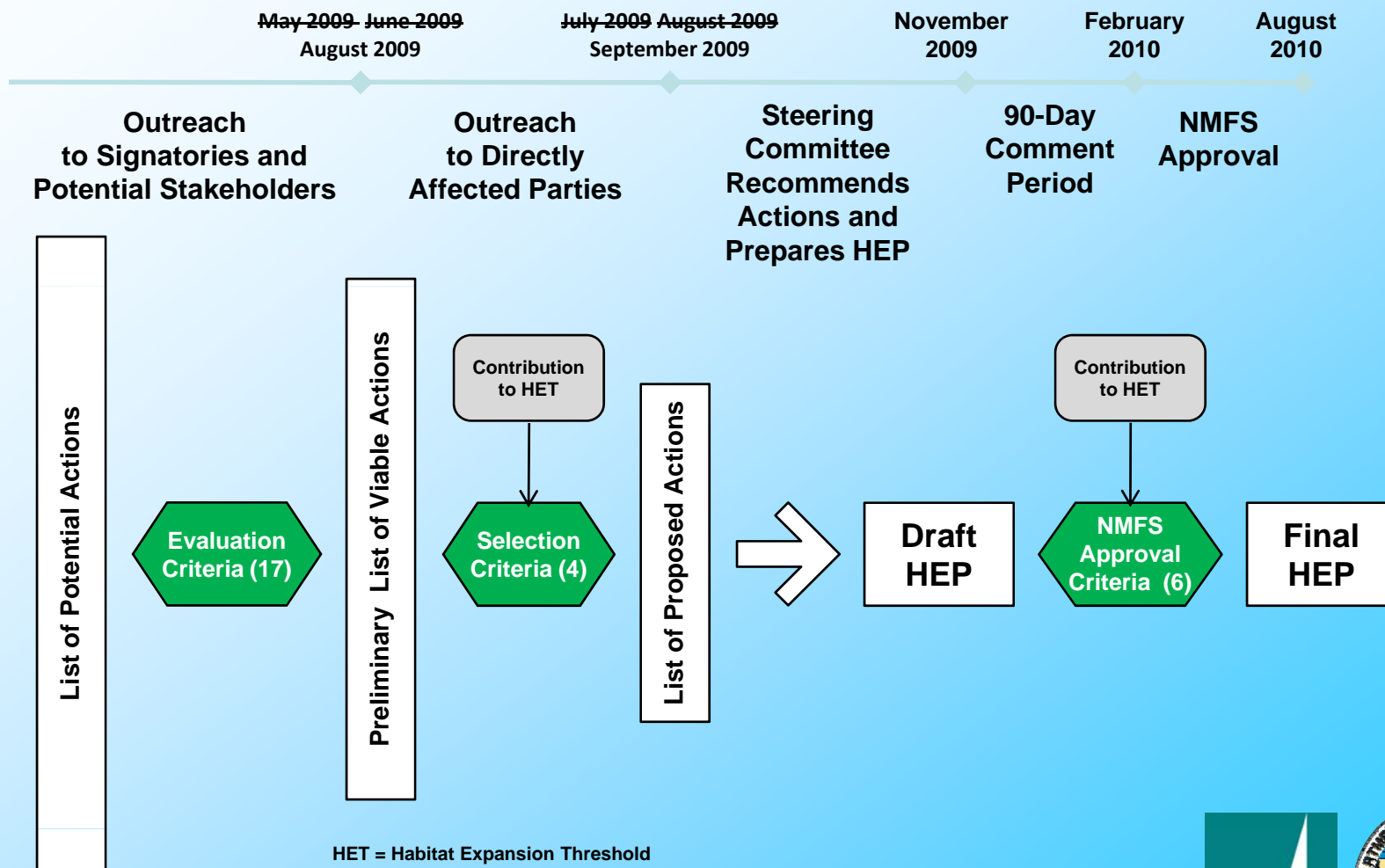


Overview of HEA Process

- **Steering Committee goals**
 - Keep HEA signatories and stakeholders informed
 - Meet the requirements of the HEA
 - Submit a draft HEP by November 20, 2009
- **Upcoming outreach**
 - Communicating with directly affected stakeholders
 - Present methodology used to arrive at the proposed habitat expansion action(s) in late September



Overview of Process for Developing the Habitat Expansion Plan for Central Valley Spring-Run Chinook Salmon and Steelhead



HET = Habitat Expansion Threshold
(habitat sufficient to increase spring-run
Chinook salmon spawning in the Sacramento
River Basin by 2,000 – 3,000 adults)

HEP = Habitat Expansion Plan



Previous Meeting with Signatories

- **Requested input from HEA signatories on draft work products**
 - Draft Working Definitions of HEA Evaluation, Selection, and Approval Criteria
 - Draft Approach to Applying HEA Criteria
 - 10 Significant Factors



Activities Since Last Meeting

- **Received comments from U.S. Fish and Wildlife Service and American Rivers**
- **Modified approach**
 - Simpler
 - More closely aligned with HEA
 - Focused on meeting Habitat Expansion Threshold (HET)
- **Completed Preliminary List of Viable Actions**



Response to Comments from U.S. Fish and Wildlife Service and American Rivers

▪ **Working definitions of HEA Criteria**

- Most of the suggested edits were incorporated
- Working definitions are meant to assist in communication, not replace the definitions given in the HEA
- Revised Working Definitions of HEA Criteria, posted to the website



Response to Comments (cont.)

▪ Roles of Licensees

- The Licensees propose the action and justify how the action meets the HEA Evaluation and Selection Criteria
- The Steering Committee, formed by the Licensees, maintains:
 - Ongoing consultation with the National Marine Fisheries Service (NMFS)
 - Outreach with HEA signatories and stakeholders



Response to Comments (cont.)

■ Roles of NMFS

- NMFS conducts pre-approval consultation with HEA signatories and stakeholders (Section 4.2.2) after the draft Habitat Expansion Plan (HEP) is submitted
- NMFS approves the final HEP (Section 4.2.3)



Response to Comments (cont.)

- **NMFS Biological Opinions (BOs) raise eligibility questions for some actions**
 - Operations Criteria and Plan (OCAP) BO
 - Battle Creek
 - Clear Creek
 - Folsom Dam
 - Shasta Dam
 - Corps Yuba BO
 - Lower Yuba River



Response to Comments (cont.)

- **Section 3.1 of the HEA states:**
 - “Actions identified in other venues, including unfunded actions, are acceptable for consideration, provided that implementation of this Agreement results in a net expansion of habitat over any Existing Requirements and Commitments...”.



Response to Comments (cont.)

- **Section 3.2 of the HEA states:**
 - “...The term ‘Existing Requirements and Commitments’ is intended to encompass actions expected ***to occur in a timeframe comparable to implementation*** of habitat expansion action(s) under the Agreement.”
 - “Existing Requirements and Commitments may include... (d) reasonable and prudent alternatives, reasonable and prudent measures, and terms and conditions of any final Biological Opinion that has been issued at the time NMFS approves the habitat expansion actions.”



Response to Comments (cont.)

Enhancement versus Expansion: Expansion Includes Enhancement

- **Section 2.1 of the HEA states:**

- “...Expansion shall be accomplished through enhancements to existing accessible habitat, improving access to habitat, or other action(s)...”.

- **Section 3.1 of the HEA states:**

- “Habitat expansion actions may include, among other things, dam removals, dam re-operation, creation or enhancement of fishways, water temperature/flow improvements or other physical habitat enhancements...”.

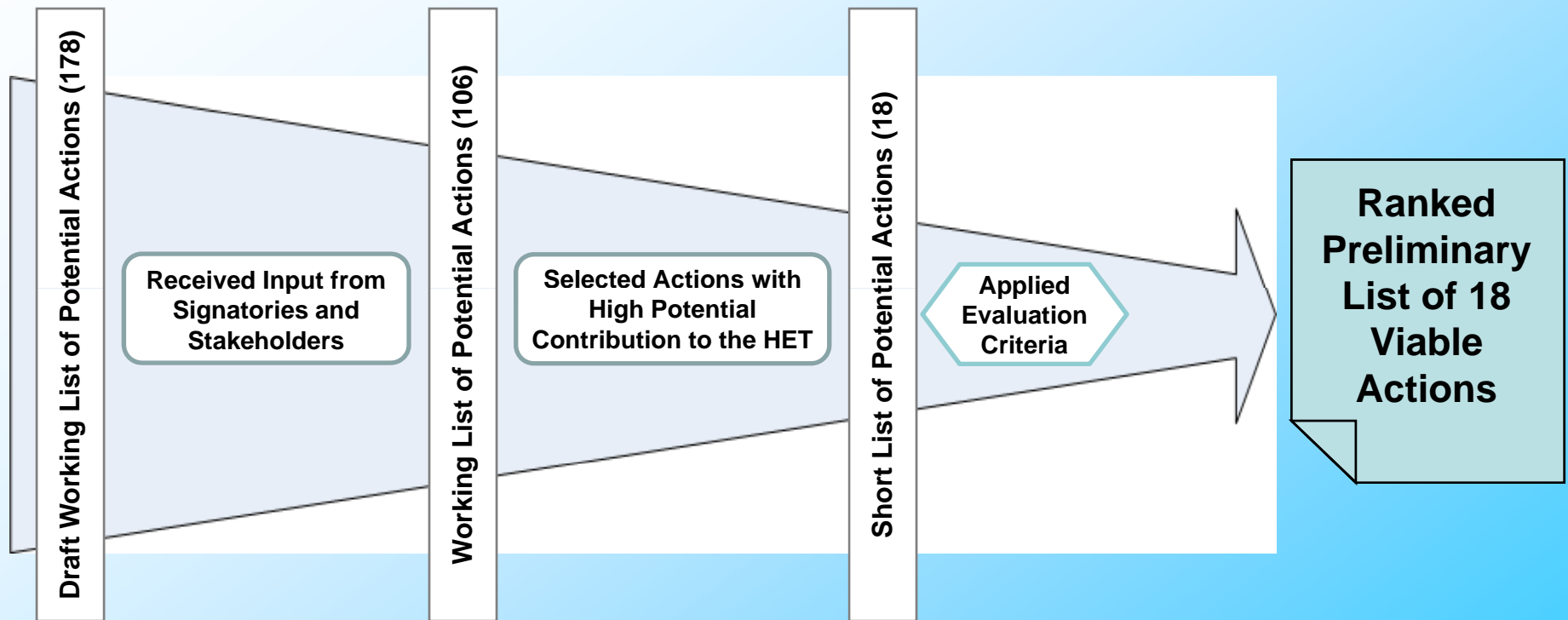


Summary of Revised Approach

- **Working List of Potential Actions (LPA)**
- **Short LPA**
 - Applied only two significant factors: removed deal killers and kept only actions with high contribution to HET
 - No filters or modifiers
 - Applied HEA Evaluation Criteria
- **Ranked Preliminary List of Viable Actions**



Revised Approach to Applying the HEA Evaluation Criteria and Developing the Preliminary List of Viable Actions



- Received questionnaires
- Removed “Deal Killers”
- Grouped actions

- Professional judgment
- Habitat to support ≥ 500 fish
- Individual and grouped actions

- Scored each action for 17 Evaluation Criteria
- Ranked by resulting score

HET = Habitat Expansion Threshold (habitat sufficient to increase spring-run Chinook salmon spawning in the Sacramento River Basin by 2,000 – 3,000 adults)



Working List of Potential Actions

- **Draft Working LPA (178 actions)**
 - Based on all reference documents, including PG&E/CalTrout's list of actions, NMFS' Draft Recovery Plan, and Anadromous Fish Restoration Program



Working List of Potential Actions (cont.)

- **Working LPA (178 → 106 actions)**
 - Collected input from HEA signatories and stakeholders
 - Removed completed projects
 - Added new projects (questionnaires)
 - Removed deal killers
 - Grouped actions within watersheds where applicable



Short List of Potential Actions

- **Short LPA (106 → 18 actions)**
 - Identified those (single and grouped) actions with high contribution to HET
 - Used professional judgment regarding projects likely to add habitat to support at least 500 spring-run Chinook salmon, as well as steelhead



Ranked Preliminary List of Viable Actions

- **Using the Short LPA (18 actions)**
 - Scored each action (1 to 5) according to 17 “non-exclusive and non-prioritized” Evaluation Criteria (Section 4.1.1)
 - Ranked potential actions by resulting score (high score equals a more favorable action)
- **Resulted in Ranked Preliminary List of Viable Actions (18 actions)**



Ranked Preliminary List of Viable Actions (cont.)

Refer to “Ranked Preliminary List of Viable Actions”

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Decision Matrix for Preliminary List of Viable Actions

Reference Number	Description of Action	Deal Effect (Yes/No/Maybe)	Estimated BEP Contribution	References	EVALUATION CRITERIA																	Summary			
					(a) Feasibility Score	(b) State Score	(c) Sustainability Score	(d) Cost Effectiveness Score	(e) Minimal Interference Score	(f) Separation Credits Score	(g) Separation Categories Score	(h) Time of Implementation Score	(i) Local Political Support Score	(j) VFD/ESA Consistency Score	(k) Balance of Benefits Score	(l) Resource Consistency Score	(m) Avoidable Impacts Score	(n) Action Clarity Score	(o) Other PS Score	(p) Adverse Effects app. Score	(q) Adverse Effects sub. Score	Total Score	Norm. Total (100)		
B-2	Phase 2 of the Battle Creek Restoration Project	Maybe	1250-2000	See & Associates 2006	5	5	4	4	4	4	5	4	4	4	5	5	4	4	2	4	5	5	73	151.59	
NE 5, NE 77, NE 74, NE 72, NE 105, NE 10	Papaya Crossing, Supplemental Flow, Edwards Dam, Yuba River, Valley Floor Channel Project, modify all diversions to provide passage and reduce maintenance	No	> 2000	DPC - Historical	5	4	4	4	4	4	2	3	5	4	5	5	4	4	4	4	5	4	70	97.72	
NE 44, NE 45, NE 46, NE 47	Adult & juvenile habitat of Sacramento River, Yuba River, spawning habitat w/ segregation w/ farmstead, farmstead and riparian/subglacial habitat, Deer Creek Habitat, Dryden Co Project	Maybe	> 2000	Questionnaire	5	5	4	4	4	4	5	5	3	3	5	4	4	4	4	4	3	5	5	72	100.00
NE 14	Iron Canyon Fish Ladder Rehabilitation Project	No	1,000	DPC - Historical	5	4	4	5	4	4	2	5	5	3	4	5	4	2	2	5	5	69	94.44		
NE 64B	Rehabilitate Yuba River, spawning habitat with segregation w/ farmstead	Maybe	> 2000	Questionnaire	5	4	3	4	3	5	5	4	3	4	4	4	4	4	3	5	5	69	95.63		
MPCC-6, NWCC-25	Clear, grade, and revegetate, providing fallage and restoring floodplain habitat	Maybe	5,244	Questionnaire	5	4	3	4	2	4	5	4	4	4	4	5	4	3	3	4	5	67	93.06		
NE 47C	Upper Yuba River Habitat Restoration (w/ no passage to other dams)	Maybe	500 (MGA) 2000 (Team)	01/02 Team	5	3	4	3	4	4	5	2	3	4	5	3	4	3	2	5	5	64	88.89		
NE 55	Shenley and Canal, Orange Cove water right purchase, Lower M2 Creek Watershed, Restoration Project	No	1,000	Questionnaire	5	3	3	3	4	3	1	4	4	3	4	4	5	3	4	4	5	62	86.11		

5/4/2009



Next Steps

Section 4.1.2 Selection Criteria

“After developing a preliminary list of viable habitat expansion action(s) using the Evaluation Criteria set forth in Section 4.1.1 above, the Licensees shall use the following non-prioritized Selection Criteria to select recommended habitat expansion action(s) for implementation:

- (a) Contribution to achieving the Habitat Expansion Threshold;**
- (b) Most cost-effective compared to other potential habitat expansion actions;**
- (c) Feasibility (action(s) can reasonably be accomplished); and**
- (d) Timing (action(s) can be accomplished in a reasonable period of time).”**



Next Steps (cont.)

Section 4.2.3 NMFS Approval Criteria

“In determining whether to approve the Final HEP, NMFS shall ... consider the extent to which the habitat expansion action(s) recommended in the Plan meet the following... :

- (a) estimated to meet the Habitat Expansion Threshold;*
- (b) assures necessary testing, operation and maintenance;*
- (c) supports establishing a geographically separate, self-sustaining population of Spring-Run;
- (d) supports segregating Spring-Run habitat from Central Valley fall-run Chinook salmon;
- (e) meets the requirements for eligible habitat expansion action(s) pursuant to Section 3 of this Agreement; and*
- (f) expected to be implemented within a reasonable period of time.”*



Next Steps (cont.)

- **Clarify eligibility of actions under Section 3.2 of the HEA**
- **Select and apply quantification method to determine the contribution to achieving the HET**
- **Work down Ranked Preliminary List of Viable Actions until HET is achieved**



Quantification Methods

- **Varies by action(s) selected**
 - Professional judgment
 - Quantitative approach
 - General conceptual model (limiting factors, weights and restoration potential)
 - Relate actions to limiting factors
 - Score contribution of actions
 - Quantitative model (e.g., EDT, RIPPLE, SHIRAZ)
 - Limited by time





Closing Remarks

- Your comments and feedback are welcome
 - Revised approach for applying the HEA Evaluation Criteria
 - Ranked Preliminary List of Viable Actions
- Next signatory meeting will be scheduled for late September 2009