

## 2014-2016 CCMP REVISION

CCMP Revision  
LIVING RESOURCES Subcommittee Meeting #2  
December 2, 2014

### MEETING PACKET

Living Resources Subcommittee Members,

Enclosed are the following meeting materials for your review to prepare for the second meeting of the Living Resources Subcommittee:

1. **Draft Living Resources Objectives.** The draft objectives were prepared by SFEP staff for your use as a starting point for discussion. Please note that under each draft objective are examples of possible action topics that might fall under that objective. The examples are included for illustrative purposes only, in an effort to help explain the types of actions that may fall under a particular objective. Our discussion at the meeting will focus on the objective level.
2. **Appendix A.** A description of the process SFEP staff undertook to develop the draft objectives.
3. **Appendix B.** The objectives and actions prioritization process approved by the Steering Committee and the SFEP Implementation Committee.

To help structure our initial high level discussion on objectives, please focus on whether the draft objectives accomplish the following:

- Support the Living Resources Topic Area working goal (Appendix A)
- Reflect/support the sources (Appendix A)
- Increase the resilience of the Estuary in the face of the anticipated impacts as the result of climate change and population growth
- Meet the prioritization criteria (Appendix B)
- Support potential actions that you consider are the “game changers”
- Support potential actions that you feel should be the priorities for the next five years

**CCMP Revision**  
**DRAFT LIVING RESOURCES OBJECTIVES**  
**12/02/14**

The following are draft objectives, as a starting point for discussion by the Living Resources Subcommittee. Under each draft objective are examples of possible action topics. The examples are included for illustrative purposes only, in an effort to help explain the types of actions that may fall under a particular objective.

**DRAFT OBJECTIVES**

- 1. Maintain and enhance native wildlife populations to ensure viable, resilient, stable population sizes in the face of changing conditions and increased stressors.**

*HOW (EXAMPLES of possible action topics for illustrative purposes)*

- Predator control
- Seasonal closures, protected areas for sensitive species
- Translocation/Assisted migration of species
- Implement recovery plans for listed threatened and endangered species
- Species-specific habitat management measures such as fish screen diversions

- 2. Conserve biodiversity by maintaining and enhancing the abundance and distribution of native species in the face of changing conditions.**

*HOW (EXAMPLES of possible action topics for illustrative purposes)*

- Develop support tools for determining when and where to focus conservation activities
- Biodiversity monitoring to detect climate impacts and inform responses
- Protect and increase a diversity of resilient habitat types
- Design and manage recreation and public access to increase awareness and stewardship while minimizing disturbance

- 3. Prevent, control or eliminate undesirable non-native species to reduce competition with native species for resources.**

*HOW (EXAMPLES of possible action topics for illustrative purposes)*

- Eradicate Spartina
- Contain perennial pepperweed
- Ballast water, trade, other vectors
- Early detection
- Education/outreach

# **APPENDIX A**

## **2014-16 CCMP REVISION: BACKGROUND ON PROCESS FOR DEVELOPING DRAFT LIVING RESOURCES OBJECTIVES**

### **Background**

The Living Resources Subcommittee met for the first time on September 12, 2014. At that meeting, the Subcommittee brainstormed on living resources in the San Francisco Bay Estuary, both in terms of current stressors and future desired conditions. In addition, the Subcommittee developed the following working goal statement for the Living Resources Topic Area:

*Sustain and improve the natural communities of the Bay-Delta Estuary,  
including its tributary watersheds and surrounding wetlands*

The Subcommittee further agreed that additional discussion regarding the definition and/or use of the term “natural communities” will be needed as the process moves forward.

The next two meetings of the Living Resources Subcommittee will be focused on drafting objectives for the revised CCMP.

### **Process for Developing Draft Objectives**

To prepare for the second meeting of the Living Resources Subcommittee, SFEP staff drew from a variety of sources to craft a set of draft objectives for discussion by the Subcommittee.

The *primary sources* were:

1. The 2007 CCMP objectives
2. The results of the brainstorm from the initial Living Resources Subcommittee meeting
3. The benchmarks of health described in the 2011 State of the Bay Report

In addition, SFEP staff reviewed many additional key regional policy or management documents and pulled materials from those that were particularly relevant for the objectives discussion as *secondary sources*.

Finally, SFEP staff and the Subcommittee members recognize that climate change and population growth are key drivers of change for the San Francisco Bay Delta. With the 2016 CCMP, the agencies and organizations of the San Francisco Estuary Partnership are striving to prepare a guide for Estuary managers that will be of great practical benefit in responding to these unprecedented new challenges as we take a longer-term view of these changing environmental conditions which will become more severe as decades unfold.

Population growth in the Bay Area will result in potential increased stressors for living resources as they are forced to compete with human populations for space and food, resulting in loss of habitat, increased pollution. In addition, living resources may be impacted by climate change in a variety of

ways. Increased air and water temperatures and changes in salinity may result in loss of habitat, and mismatches in timing of migration, breeding, pollination, and food availability. Climate change may increase extinction risks, favoring some species while disadvantaging others. Ranges may shift upwards and northward or be reduced for species that are unable to shift. Impacts on few species may result in changes in food webs and ecological processes may occur, resulting in large scale changes. Given these significant drivers of change as increased stressors to the living resources of the Bay, the draft objectives were crafted as a direct response to these drivers of change.

The following figure (Figure 1) shows the process for developing draft objectives to bring to the Subcommittee for consideration and discussion.

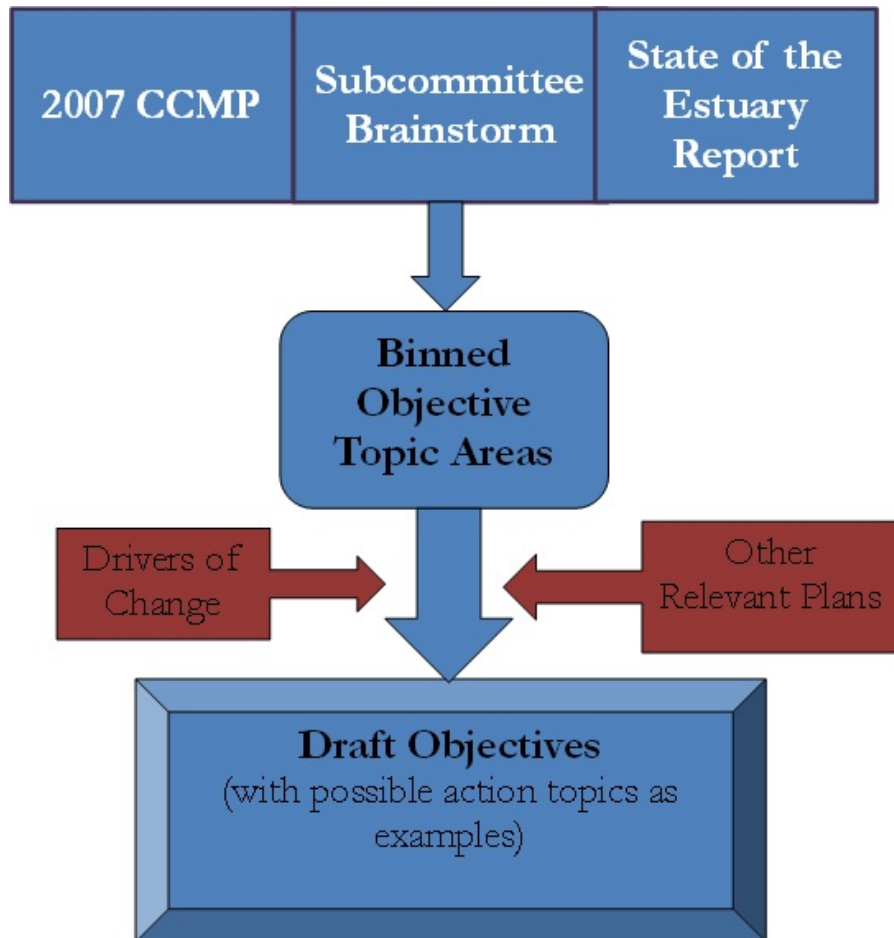


Figure1. Process for Developing Draft CCMP Objectives

Content from the primary and secondary sources was collected and sorted by common topic area, or “objective bins” (Table A). Potential objectives were drafted based on the binned content, in direct response to the key drivers of change.

**Table A. Sources for Draft Living Resources Objectives**

SOURCE	OBJECTIVE BINS		
	Native Species	Biodiversity/Beneficial Uses	Undesirable Non-Native Species
<b>PRIMARY SOURCES</b>			
2007 CCMP OBJECTIVES	<ul style="list-style-type: none"> <li>• Develop and implement species-specific management actions for the Estuary to assist in the recovery and maintenance of sustainable fish populations...(AR-2)</li> <li>• Implement recovery actions for all listed and candidate threatened and endangered species (AR-3)</li> <li>• Implement management measures necessary to ensure survival and recovery of listed and candidate species, as well as special status species (WL-4)</li> <li>• Develop predator control programs to decrease the impact of introduced species on listed and candidate species, as well as special status species (WL-3)</li> <li>• Protect native wildlife populations wherever possible (WL-7)</li> </ul>	<ul style="list-style-type: none"> <li>• Create and restore habitats critical to the survival of plant and animal populations and enhance the biodiversity of the Estuary (WL-1)</li> <li>• Provide public access opportunities to, along and on the Estuary that avoid or minimize adverse impacts to Bay resources and wildlife while facilitating Bay-related education and recreation (WL-5)</li> </ul>	<ul style="list-style-type: none"> <li>• Develop and implement species-specific management actions for the Estuary to ...control or eliminate undesirable non-native invasive species (AR-2)</li> </ul>
SUBCOMMITTEE BRAINSTORM	<ul style="list-style-type: none"> <li>• Living resources should be in viable &amp; (resilient adaptable and stable) population sizes</li> <li>• Endangered/listed species are recovered</li> <li>• Native species flourish</li> <li>• Seasonal closers or protected areas for sensitive species or high densities of species</li> <li>• Supporting cats indoors program</li> </ul>	<ul style="list-style-type: none"> <li>• No loss of biodiversity</li> <li>• Provided basic habitat needs</li> <li>• Living resources should be inspirational, source of happiness, and sense of well being</li> <li>• Ecosystem services are functional and recognized</li> <li>• Eatable fish, rid of toxins</li> <li>• Considered in development decisions</li> </ul>	

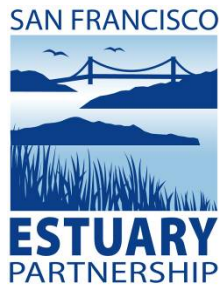
	<ul style="list-style-type: none"> <li>• Don't give up on species</li> <li>• Funded through ongoing revenue means</li> </ul>	<ul style="list-style-type: none"> <li>• A delta that functions as a delta</li> <li>• Natural flow regime</li> </ul>	
STATE OF THE ESTUARY REPORT	<ul style="list-style-type: none"> <li>• Abundance and distribution of fish and inverts pops as average for comparable data from 1980-89, 85% native species</li> <li>• 0.93 birds per acre for tidal marsh birds</li> <li>• nest success of 20% for tidal marsh birds</li> <li>• heron/egret nest density</li> <li>• abundance of winter waterfowl</li> </ul>	<ul style="list-style-type: none"> <li>• Abundance and distribution of fish and inverts pops as average for comparable data from 1980-89, 85% native species</li> <li>• 0.93 birds per acre for tidal marsh birds</li> <li>• nest success of 20% for tidal marsh birds</li> <li>• heron/egret nest density</li> <li>• abundance of winter waterfowl</li> </ul>	
<b>SECONDARY SOURCES</b>			
ERP <i>Conservation Strategy for Restoration of the Sacramento-San Joaquin Delta, Sacramento Valley and San Joaquin Valley Regions – 2014</i>	<p>Goal 1: Recover endangered and other at-risk species and native biotic communities</p> <ul style="list-style-type: none"> <li>○ Priority 1: Achieve recovery of at-risk native species dependent on Delta, Suisun Bay and Suisun Marsh</li> <li>○ Priority 2: Contribute to the recovery of other at-risk species</li> <li>○ Priority 3: Enhance and/or conserve native biotic communities and their abundance and distribution</li> <li>○ Priority 4: Maintain and enhance the abundance and distribution of native species</li> <li>○ Priority 5: Establish and maintain operations at water diversions that minimize entrainment of at-risk fish species</li> <li>○ Priority 6: Remove physical barriers that impede access for at-risk fish and wildlife species</li> <li>○ Priority 7; Study the effectiveness of physical and nonphysical barriers in controlling fish movements</li> <li>○ Priority 8: Screen unscreened diversions</li> <li>○ Priority 9: Improve hatchery</li> </ul>		<p>Goal 5: Prevent/Control nonnative invasive species</p> <ul style="list-style-type: none"> <li>○ Priority 1: Improve coordination and collaboration among local, state, federal, and non-governmental agencies and entities regarding NIS prevention and control activities</li> <li>○ Priority 2: Develop, implement, manage and maintain long-term programs to minimize and prevent the introduction and spread of NIS into and throughout the focus area</li> <li>○ Priority 3: Develop, implement, manage and maintain long-term programs to monitor early detection of new NIS as well as existing NIS</li> <li>○ Priority 4: Develop, implement, manage, and maintain long-term programs for rapid response, control, and eradication of NIS</li> <li>○ Priority 5: Develop, implement, manage, and maintain long-term programs to measure the effects and minimize the long-term impacts of NIS on native species and their habitats,</li> </ul>

	<p>management</p> <ul style="list-style-type: none"> <li>○ Priority 10: Minimize impact of harvest management on at-risk native species</li> </ul> <p>Goal 3: enhance/maintain harvested species</p> <ul style="list-style-type: none"> <li>○ Priority 1: Enhance, to the extent consistent with ERP goals, populations of fish, waterfowl, and upland game for harvest by hunting and for non-consumptive recreation</li> </ul>		<p>including reduction of non-native predation</p> <ul style="list-style-type: none"> <li>○ Priority 6: Develop, implement, manage, and maintain long-term programs to provide education and outreach regarding NIS to the general public as well as public and private agencies and entities to ensure awareness of NIS threats and management priorities</li> <li>○ Priority 7: Develop, implement, manage, and maintain long-term research programs to obtain a better understanding of the biology of NIS; the ecological and economic impacts of NIS invasions; and control, treatment, and eradication options to improve long-term management of NIS</li> <li>○ Priority 8: Review state laws and regulations to ensure they promote the long-term prevention and management of NIS introductions</li> </ul>
<p>BAY AREA REGIONAL INTEGRATED WATER MANAGEMENT PLAN – 2013 Updated</p>	<ul style="list-style-type: none"> <li>● Protect and recover fisheries (natural habitat and harvesting) (<i>Number of species delisted; number of listed species addressed; creek miles of increased spawning habitat for fish; number of projects that improve passage</i>)</li> </ul>	<ul style="list-style-type: none"> <li>● Protect, restore, and rehabilitate habitat for species protection (<i>Acres of habitat protected, restored and/or rehabilitated for species protection; number of at-risk species addressed; miles of wildlife corridors protected; acres of upland, riparian and bayland habitat restored and/or protected</i>)</li> <li>● Enhance wildlife populations and biodiversity (species richness) (<i>Number of species delisted; number of species addressed; population numbers targeted and/or improved; acres of expanded and/or enhanced habitat; number of species re-introduced</i>)</li> </ul>	<ul style="list-style-type: none"> <li>● Reduce geographic extent and spread of pests and invasive species (<i>Acres of invasive species cover; invasive species numbers and/or targets reached; number of projects that map or monitor invasive species; acres of reduced impact from presence of pests and invasive species</i>)</li> </ul>

<p>Safeguarding California Plan 2014</p>		<p>ACTIONS NEEDED TO SAFEGUARD BIODIVERSITY AND HABITATS</p> <ul style="list-style-type: none"> <li>• Develop management practices to help safeguard species and ecosystems from climate risks <ul style="list-style-type: none"> <li>○ Implement adaptive management studies to refine approaches for conserving biodiversity, especially for species and communities vulnerable to climate change</li> </ul> </li> <li>• Enhance biodiversity monitoring in California to detect climate impacts and inform responses</li> <li>• Support environmental stewardship across sectors <ul style="list-style-type: none"> <li>○ Create, maintain and support tools that help resource managers determine when and where to focus conservation activities that will help protect biodiversity in the face of climate risks.</li> </ul> </li> <li>• Improve understanding of climate risks to biodiversity and habitats</li> </ul>	
<p>Coastal Conservancy Strategic Plan 2013-2018</p>			<ul style="list-style-type: none"> <li>• Objective 11G: Develop plans to eradicate non-native invasive species that threaten important habitats in the San Francisco Bay Area.</li> <li>• Objective 11H: Eradicate non-native invasive species that threaten important habitats in the San Francisco Bay Area</li> </ul>
<p>Subtidal Habitat Goals Report</p>	<ul style="list-style-type: none"> <li>• Protect SF Bay from both acute and chronic oil spills</li> <li>• Understand the factors controlling the development and persistence of oyster and other shellfish beds</li> </ul>	<ul style="list-style-type: none"> <li>• Understand the ecosystem services the shellfish beds support, and in what quantities, in their current state and after restoration</li> </ul>	<ul style="list-style-type: none"> <li>• Minimize the impacts of aquatic invasive species on native subtidal habitats <ul style="list-style-type: none"> <li>○ Eradicate four species of existing aquatic invasive species – spartina.</li> </ul> </li> </ul>



	<ul style="list-style-type: none"> <li>• Develop the most effective ways of restoring and protecting oyster beds</li> <li>• Protect native shellfish habitats through no net loss of existing habitat</li> <li>• Protect areas with potential for future shellfish expansion, restoration or creation</li> <li>• Increase native oyster populations within 8,000 acres of potential suitable subtidal area over a 50-year time frame through a phased approach conducted within a framework of adaptive management.</li> </ul>		<p>Wakame, knotted wrack weed, exotic oysters.</p> <ul style="list-style-type: none"> <li>○ Prevent the introduction or establishment of aquatic invasive species</li> </ul>
Draft Baylands Ecosystem Habitat Goals Update	<p>Regional Action:</p> <p>Actively recover, conserve, and monitor wildlife populations to avoid bottlenecks and buffer population sizes against extreme events</p>	<p>Regional Action:</p> <p>Actively recover, conserve, and monitor wildlife populations to avoid bottlenecks and buffer population sizes against extreme events</p>	



## APPENDIX B

### CCMP 2016 Revision

#### CRITERIA FOR SETTING OBJECTIVES/ACTIONS

##### Background

A primary goal for the revised CCMP is to be strategic and focused. While the goals will be centered on where the Estuary should be in 2050, the actions should be measurable against objectives and achievable within five years. To assist with the process of considering possible objectives and actions, the IC CCMP Revision Steering Committee agreed to use a prioritization process with specific criteria and a framework for how to use the criteria.

##### Criteria

The following are the agreed upon criteria for prioritizing objectives and actions:

- **Makes progress towards goal(s)**
- **Measurable results within a 5 year timeframe**
- High probability of success/high level of feasibility
- High level of expected benefit
- High level of importance/urgency
- Strengthens Partnerships/Promotes Leveraging
- Related to other actions/interdependency
- Linked to federal/state/local funding priorities
- Considers climate change

##### Framework for Applying Criteria

A potential objective or action does not need to meet *all* the criteria above to be considered for inclusion in the CCMP, but must meet the *majority*.

However, the following criteria are considered *mandatory* and must be met by all objectives and actions:

- Makes progress towards goal(s)
- Measurable results within a 5 year time frame

Every potential objective or action should be assessed by evaluating each of the criteria as they apply to that objective or action as High (3), Medium (2), Low (1), or none (0). Relative scoring of the objectives and actions will be used to prioritize inclusion in the 2016 CCMP.