



BOARD OF GOVERNORS MEETING
JANUARY 20, 2017



TABLE OF CONTENTS
BOARD OF GOVERNORS BOOK
JANUARY 2017

SECTION ONE – AGENDA & MINUTES

Board of Governors Meeting Agenda January 20, 2017
Minutes of December 8, 2015 Board of Governors Meeting

SECTION TWO – WRP OVERVIEW

Southern California Wetlands Recovery Project Overview
Board of Governors Roster 2016
WRP Organizational Chart

SECTION THREE – WORK PLAN REPORT

WRP Work Plan Report 2016
Project Evaluation Criteria

SECTION FOUR – FUNDING THE WORK PLAN

In-Lieu Fee Program *Draft* Instrument
Proposition 1 Funding Coordination for WRP

SECTION FIVE – WRP REGIONAL STRATEGY UPDATE

Regional Strategy Vision, Mission, Goals, and Guiding Principles
Regional Strategy Quantitative Objectives under Goal 1
Intermittently Open Estuaries September 28, 2016 Workshop Summary

SECTION SIX – WRP PROJECT HIGHLIGHT

North Campus Open Space Project Summary



**SOUTHERN CALIFORNIA WETLANDS RECOVERY PROJECT
BOARD OF GOVERNORS MEETING**

AGENDA

January 20, 2017

10:15 a.m. – 2:00 p.m.

10:15 WELCOME, INTRODUCTIONS and ANNOUNCEMENTS, AGENDA PREVIEW

John Laird, Chair, Board of Governors

Secretary Natural Resources Agency

Recommended Actions:

Approve Meeting Minutes from December 8, 2015

Direct Wetlands Managers Group to Prepare a 2017 Request for Proposals

10:25 WETLANDS RECOVERY PROJECT WORK PLAN REPORT and ACCOMPLISHMENTS

Chris Potter, Vice Chair, Wetlands Managers Group

Coastal Grants and Wetlands Coordinator, Natural Resources Agency

Recommended Action:

Approve 2017 Work Plan

FUNDING THE WRP & WORKPLAN PROJECTS

10:40 Wetlands Recovery Project In-Lieu Fee Program Progress Report

Julia Elkin, Project Manager, Coastal Conservancy

10:55 San Diego Regional Water Quality Control Board Supplemental Environmental Projects

Dave Gibson, Board of Governors Member

Executive Officer, San Diego Regional Water Quality Control Board

11:05 Coordinating Proposition 1 Funding

Megan Cooper, WRP Co-manager

Deputy Regional Manager, Coastal Conservancy

11:20 State Water Board Once-through Cooling Interim Mitigation

Sam Schuchat, Executive Officer, Coastal Conservancy

WRP REGIONAL STRATEGY UPDATE

11:30 Vision, Mission, Goals and Guiding Principles

Carolyn Lieberman, Wetland Managers Group Member

Coastal Program Coordinator for Southern California, U.S. Fish and Wildlife Service

Recommended Action:

Approve Vision, Mission, Goals and Guiding Principles

11:50 Science-Based Quantitative Regional Wetland Restoration Objectives

Eric Stein, Science Advisory Panel Member

Principal Scientist, Southern California Coastal Water Research Project

12:15 LUNCH

WRP REGIONAL STRATEGY UPDATE CONTINUED...

1:00 INTERMITTENTLY OPEN ESTUARIES MANAGEMENT GUIDANCE RECOMMENDATIONS

Jeff Crooks, Chair of the Science Advisory Panel

Research Coordinator, Tijuana Estuary National Estuarine Research Reserve

1:15 CALIFORNIA WETLAND MONITORING WORKGROUP

Melissa Scianni, Chair, Wetland Managers Group

U.S. Environmental Protection Agency

1:25 WORK PLAN PROJECT HIGHLIGHT, North Campus Open Space Project

Lisa Stratton, Wetland Advisory Group Member

Director of Ecosystem Management, UC Santa Barbara, CCBER

1:45 PUBLIC COMMENT (Each speaker is limited to 3 minutes.)

2:00 ADJOURN



**SOUTHERN CALIFORNIA WETLANDS RECOVERY PROJECT
BOARD OF GOVERNORS MEETING**

AGENDA

December 8, 2015

10:00 a.m. – 2:30 p.m.

10:00

WELCOME, INTRODUCTIONS and ANNOUNCEMENTS, AGENDA PREVIEW

Bryan Cash, Chair

Deputy Assistant Secretary for Natural Resources

Introduction of present Board of Governors members included:

Bryan Cash (Natural Resources Agency), Sam Schuchat (State Coastal Conservancy), Ed Pert (California Department of Fish and Wildlife Service), John Donnelly (Wildlife Conservation Board), Susan Hansch (California Coastal Commission), Jennifer Lucchesi (State Lands Commission), Debbie Smith (Los Angeles Regional Water Quality Control Board), John Kemmerer (US Environmental Protection Agency), Mendel Stewart (US Fish and Wildlife Service), David Gibson (San Diego RWQCB), Heather Schlosser (US Army Corps of Engineers), Cori Farrar (US Army Corps of Engineers), Chris Yates (NOAA National Marine Fisheries), Matt Wells (California Department of Fish and Wildlife Service), Jon Bishop (State Water Quality Control Board), Kurt Berchtold (Santa Ana RWQCB), Wanda Cross (Santa Ana RWQCB), and Jae Lee (National Resource Conservation Service).

Announcements from Board of Governors members included:

Sam Schuchat, State Coastal Conservancy thanked the Southern California Coastal Water Research Project for providing the meeting space. Mr. Schuchat also announced that the first round of Proposition 1-funded projects have been reviewed and will be announced by the Coastal Conservancy soon. He also announced that the Request for Proposals for the second round of Conservancy Proposition 1 funding has been released and proposals are due December 31, 2015. The second round of funding is focused on anadromous fish recovery projects.

Susan Hansch, California Coastal Commission announced that the Commission has released its Sea Level Rise Policy Guidance document and it is available on the Commission's web site.

There were no other announcements.

Recommended Action:

Approve Meeting Minutes from November 20, 2014

Minutes from the 2014 BOG meeting were approved.

10:20

WETLANDS RECOVERY PROJECT ACCOMPLISHMENTS

2015 WRP Work Plan Report

Carolyn Lieberman, Chair of the Wetland Managers Group

Coastal Program Coordinator for Southern California, U.S. Fish and Wildlife Service

Carolyn Lieberman, Chair of the Wetlands Manager Group and Coastal Program Coordinator for Southern California, U.S. Fish and Wildlife Service presented a summary of the 2015 WRP Work Plan. The presentation included an overview of acres acquired and restored to date, an overview of the kinds of projects the WRP is engaged in, a summary of newly funded projects and the projects completed since the last Board of Governors meeting. Over the past 15 years WRP projects have acquired 8,247 acres of wetlands and associated habitat and restored more than 4,900 acres. More than \$633 million dollars has been spent on WRP projects. This includes 98 completed Work Plan projects and \$2,690,000 spent on 129 Community Wetland Restoration Grant Program projects. The State of California has contributed more than half of that funding.

No Request for Proposals was released in 2015 and three projects were recommended for an out-of-cycle addition to the Work Plan. The 2016 Work Plan is comprised 53 priority projects including 8 acquisition, 22 restoration and 23 planning projects.

Recommended Action:

Approve 2016 Work Plan

The name of the Mission Bay Gateway Conceptual Plan should be changed to Mission Bay Wetlands Conceptual Plan and the project acreage should be corrected . With those changes made, the BOG approved the 2015-2016 Work Plan.

10:40

FUNDING THE WRP & WORKPLAN PROJECTS

Wetlands Recovery Project In-Lieu Fee Program Progress Report (15 minutes)

James Prine, AECOM

The consultant team (AECOM) hired by the Coastal Conservancy to write the legal document (i.e. instrument) required to develop the Wetlands Recovery Project In-Lieu Fee Program presented the progress made to-date. They have developed an Interagency Review Team (IRT) containing staff from the various Wetlands Managers Group agencies and lead by the U.S. Army Corp of Engineers (USACE). The Southern California Bight will be divided into subregions which will function similar to their own program since the funds are kept separate, but management of the program will be cohesive and lead by the Coastal Conservancy. A complete draft of the framework and instrument will be done in January 2016 and then finalized after stakeholder input is incorporated in spring of 2016. Several agencies, including the Los Angeles RWQCB, expressed the need to review the document longer than one month in order to become a signatory.

The consultant team laid out next steps for development of the ILF Program as follows:

- 1) Signatory discussion
- 2) Completed draft of instrument in January 2016

- 3) Public outreach
- 4) Finalize draft instrument
- 5) End user meeting (credit purchasers)
- 6) Submit to IRT for approval

Board Discussion:

Identifying In-Lieu Fee Program Signatories

The Coastal Commission, California Department of Fish and Wildlife, State Water Quality Control Board, and the San Diego Region Water Quality Control Board all expressed interest in becoming signatories to the In-Lieu Fee Program, but need to see the completed draft of the instrument before committing to a signature.

Board of Governors members shared the following specific comments:

- The Coastal Commission shared that it can't pre-approve regulatory actions and that would be one focus of their review of the draft instrument.
- USACE said the program will be more effective if all permitting agencies can be signatories. They added that it is even better if non-regulatory WRP member agencies can endorse the ILF Program, but that does not mean they are given regulatory authority. USACE also pointed out that there are projects that have been waiting for years for an appropriate mitigation opportunity (e.g. eelgrass restoration projects.)
- The State Water Board asked how a decision as to where to include the Channel Islands will be made. They also pointed out that end users will need to be added to the program after it is up and running (not all are identified yet.)
- California Department of Fish and Wildlife expressed appreciation that the ILF Program is designed to not compete with mitigation banking programs. They stated that development of the Program is an opportunity for better mitigation projects for the WRP region.
- National Marine Fisheries Service pointed out the need for an analysis of the economic feasibility of the identified subregions. The consultant team confirmed such analysis was part of the instrument development process.
- The Coastal Conservancy pointed out the "signing on does not mean you have to do things you don't want to do."

Board of Governors members were directed to inform Megan Cooper about who in their agency needs to review the draft instrument.

Cap and Trade Program/Carbon Funding Potential (15 minutes)

Matt Wells, Watershed Restoration Grants Branch, California Department of Fish and Wildlife

Matt Wells presented the current state of the carbon market in relation to tidal wetland restoration in Southern California. He explained the differences in the voluntary and regulatory carbon markets which require carbon quantification protocols to develop projects. He also outlined the Department of Fish and Wildlife's Greenhouse Gas Reduction Grant Program (GGRGP) that is funded by Greenhouse Gas Reduction Fund which does not require a protocol. The first round of this grant program did not require a protocol or

methodology as one did not exist for tidal wetlands at that point; however the next grant round will require projects to use the Air Resources Board's methodology.

Mr. Wells highlighted two projects within the WRP geographic region that have received GGRGP funding: Devereux Slough Restoration Project in Santa Barbara County, and Seal Beach Sediment Augmentation Project.

Proposition 1 Funding Coordination (30 minutes)

Mary Small, Deputy Executive Officer, State Coastal Conservancy

Mary Small asked the BOG how all of the WRP agencies who received Proposition 1 money could coordinate funds using the existing structure of the WRP.

Recommended Action:

Identify Ways to Coordinate Proposition 1 Funding for WRP Projects

The Department of Fish and Wildlife (CDFW) expressed interest in coordinating with SCC which could be done either by updating priorities in upcoming Request for Proposals (RFP) to include projects on the WRP Work Plan or even releasing a WRP-focused RFP. At the very least, CDFW will ensure that WMG staff representatives can provide input in the project selection process. The Wildlife Conservation Board expressed interest in updating their score sheets to include points for projects aligned with WRP priorities or on the Work Plan itself.

11:40

WRP REGIONAL STRATEGY UPDATE

Shelley Luce, Chair of the Science Advisory Panel
Executive Director, Environment Now

Shelley Luce presented the latest draft products and proposed analysis the Science Advisory Panel (SAP) will embark on to develop quantifiable restoration objectives for the WRP region. The BOG expressed interest in providing more input on draft products throughout the *Regional Strategy* Update (RSU) process and directed staff to have the next BOG meeting focus on such product review. Sam Schuchat also directed staff to consider how newsworthy the final RSU report will be and to plan media outreach.

12:00

LUNCH (Provided for \$10)

12:45

WETLANDS ADVISORY GROUP UPDATE

John Mack, Wetlands Advisory Group Member
Chief Conservation & Education Officer, Catalina Island Conservancy

John Mack reviewed the work the Wetlands Advisory Group (WAG) has been doing over the past year including the development of the Guiding Principles intended to guide the RSU process. Interested BOG

members will send any commentary on the Guiding Principles to Greg Gauthier following the meeting via email.

1:00

WRAMP INTEGRATION PROGRESS REPORT

Josh Collins, San Francisco Estuary Institute

A representative from the California Wetlands Monitoring Workgroup (CWMW), Josh Collins, presented the latest progress on various agency efforts to incorporate the state-wide monitoring program for wetlands, the Wetland and Riparian Area Monitoring Plan (WRAMP). He explained how WRAMP is driven by various agency needs and is still under development; if a need is identified or a question needs to be answered, the capacity exists to incorporate that into the WRAMP framework. He outlined the existing WRAMP tools for all three levels of the Environmental Protection Agency's levels of monitoring (Level 1, 2, & 3) that are available for agency use now. Of the WRP member agencies, the USACE, State Water Quality Control Board, and SCC are currently developing mechanisms to incorporate WRAMP tools into their permitting and grant requirements. Mr. Collins shared that funding for developing the WRAMP Business Plan has just come through so CWMW will now work on developing the plan.

Board Discussion:

Expanding Incorporation of WRAMP Framework into Agency Practices and Policies

The discussion focused on the capacity of the various agencies to incorporate WRAMP. Sam Schuchat described how SCC realized that not much staff time would have to be committed to WRAMP; that the grantee would actually be required to do most of the work. The BOG decided that it would be best if some staff from WRP member agencies could attend CWMW meetings to understand the WRAMP program better.

1:30

INTERMITTENTLY OPEN ESTUARIES MANAGEMENT GUIDANCE RECOMMENDATIONS

Eric Stein, Science Advisory Panel Member

Principal Scientist, Southern California Coastal Water Research Project

A representative from the Science Advisory Panel, Eric Stein, presented work the SAP has done since the last BOG meeting to inform the management of Intermittently Open Estuaries (IOEs). At the last meeting, the BOG directed the SAP to produce a guidance document to help inform IOE managers to better manage IOE inlets. Since then, the SAP has identified a draft set of broad management suggestions and data needs in order to understand these dynamic systems better. The SAP will now pursue outside funding to fill these data gaps and finalize the guidance document before the next BOG meeting.

The discussion focused on the financial need for answering the remaining data gaps and finalizing the guidance document. The University of California Davis approximated this cost to be around \$200,000.

1:50

STATE WATER BOARDS' AND REGIONAL WATER QUALITY CONTROL BOARDS' WETLAND INITIATIVES

Dave Gibson, Board of Governors Member
Executive Officer, San Diego Regional Water Quality Control Board

The Executive Officer of the San Diego Regional Water Quality Control Board (SDRWQCB) presented the State Water Board and Regional Board's new initiative of moving beyond the policy of "no net loss" of wetlands to a "meaningful net gain" of wetlands. To that end, the SDRWQCB has changed their regional policy, increased outreach and incentives, and developed better monitoring of wetland function. The SDRWQCB is also using the WRP Work Plan to prioritize wetland restoration projects, including their recent authorizations to support two projects from the Work Plan: The Mission Bay Wetlands Restoration Plan and the San Juan Creek Estuary Restoration project.

2:15

PUBLIC COMMENT (Each speaker is limited to 3 minutes.)

Gary Strawn of the San Diego River Park Foundation urged the BOG to take into consideration how wetland restoration projects are maintained to ensure they don't become homeless camps or fill with trash as many wetland restoration projects in San Diego County have in the past.

Shawn Kelly of the Wetlands Recovery Project updated the BOG on the UCSB Bren School Master's Group project on valuing ecosystem services from southern California wetlands. This project was pursued following comments and interest expressed at last year's BOG meeting. The project is underway and an update on the project was outlined in a 1-page handout and placed in the BOG binders.

2:30 ADJOURN



Working together to protect and restore Southern California's coastal resources

"Over the past 15 years, the Wetlands Recovery Project has acquired more than 8,200 acres and restored nearly 5,000 acres of wetlands throughout coastal Southern California... I'm grateful for the contributions this group makes to the environment and look forward to its continued success."

-The Honorable Dianne Feinstein, US Senator for California

What We Do

The Wetlands Recovery Project (WRP) is a partnership of state and federal resource agencies working cooperatively to fund projects that acquire, restore, and enhance wetland habitat.

Our vision is to re-establish the **quality, quantity and connectivity** of wetlands in Southern California, in order to support wetland species and provide human refuges within the urban landscape.

Over the past 15 years, the WRP has coordinated more than \$631 million to fund over 200 wetlands projects in the region.

Why We're Successful

It's our **collaborative spirit** and **member agencies** that make the WRP so successful—we're optimistic that we can work together to address the current and future challenges facing coastal Southern California—we've already been doing it for 15 years!

- Our efforts are guided by a group of leading wetland scientists
- We bring policymakers to the table
- Local stewards are with us every step of the way
- We have the support of legislators and politicians

Our Programs

[Work Plan](#)

The WRP Work Plan is a living document that prioritizes the most important and relevant wetland projects in Southern California. Each year, the Work Plan is adopted by our Governing Board.

[Community Wetland Restoration Grant Program](#)

Our community-focused grant program provides annual funding to projects that promote local community involvement in wetlands restoration and foster education about wetland ecosystems.

[Regional Wetlands Restoration Strategy](#)

In 2015, we embarked on a journey to update our regional strategy to include guidance about climate change adaptation. During this three year collaborative process, we are renewing our goals to create a collective impact on our connected, coastal landscape.

State Members

California Natural Resources Agency, Chair
John Laird, Secretary
(Janelle Beland, Undersecretary)

Coastal Conservancy
Sam Schuchat, Executive Officer

California Coastal Commission
Susan Hansch, Deputy Director

California Department of Fish & Wildlife
Charlton Bonham, Director
(Ed Pert, South Coast Region Manager)

California Department of Parks & Recreation
Lisa Mangat, Director

State Lands Commission
Jennifer Lucchesi, Executive Officer

Wildlife Conservation Board
John Donnelly, Executive Director

California Environmental Protection Agency
Matt Rodriguez, Secretary

State Water Resources Control Board
Jon Bishop, Chief Deputy Director

Central Coast Regional Water Quality Control Board

Los Angeles Regional Water Quality Control Board
Fran Diamond, Board Member

Santa Ana Regional Water Quality Control Board
William von Blasingame, Board Member
Kurt Berchtold, Executive Officer

San Diego Regional Water Quality Control Board
Henry Abarbanel, Board Chair
David Gibson, Executive Officer

Federal Members

U.S. Environmental Protection Agency
Jason Brush, Water Division Associate Director

National Marine Fisheries Service
Chris Yates, Assistant Regional Administrator
(Penny Ruvelas, Branch Chief, Long Beach)

National Resource Conservation Service
Carlos Suarez, State Conservationist
(Jae Lee, Asst. State Conservationist)

U.S. Army Corps of Engineers
Colonel Kirk E. Gibbs
(Eduard Demesa, Chief Planning)
(David Castanon, Chief Regulatory)

U.S. Fish and Wildlife Service
Ren Lohofener, Regional Director
(Mendel Stewart, Field Office Supervisor)

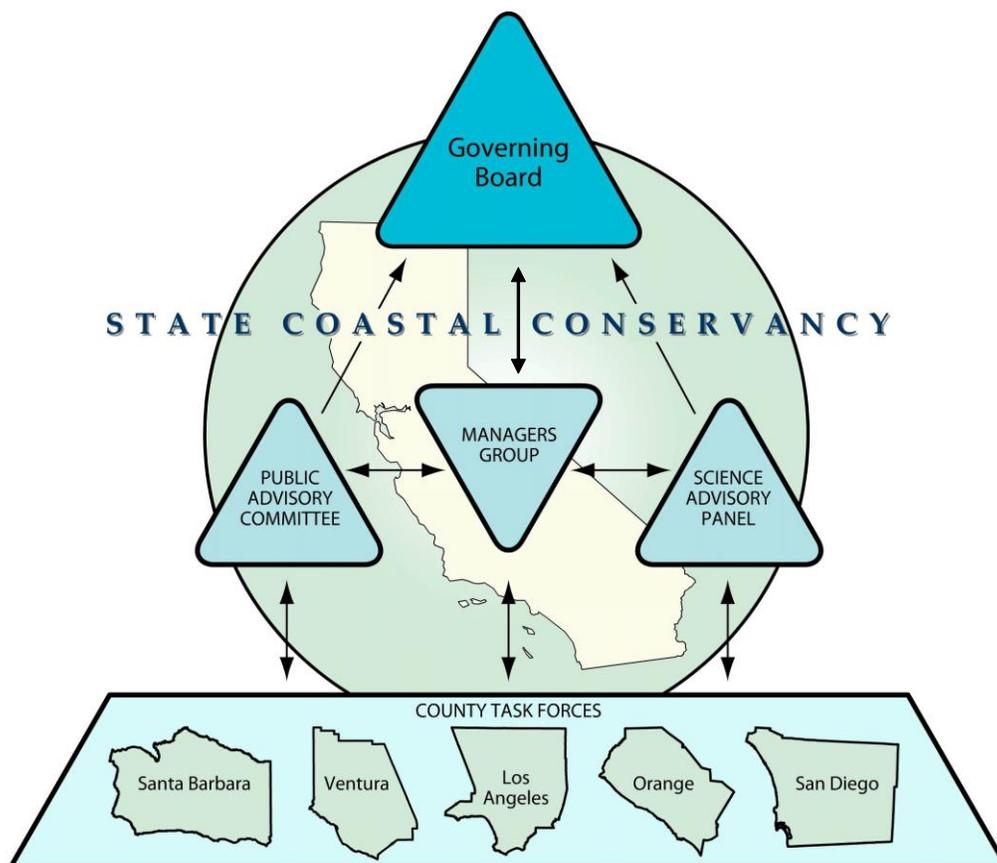
Ex-Officio Members

Science Advisory Panel Chair
*Jeff Crooks, Tijuana Estuary National Estuarine
Research Reserve*

Wetlands Advisory Group Representative
Doug Gibson, San Elijo Lagoon Conservancy



ORGANIZATIONAL CHART



Governing Board

Top officials of 18 state and federal member agencies oversee and carry out the regional wetlands acquisition and restoration strategy.

Wetlands Managers Group

Staff of member agencies propose and track Work Plan projects and identify issues for Governing Board attention.

Public Advisory Committee

Local government, business, environmental and educational leaders generate support and funding for wetlands recovery.

Science Advisory Panel

Leading wetlands scientists identify key scientific questions, develop position papers and work with managers to ensure decisions based in sound science.

County Task Forces

Local stakeholders and practitioners, such as the Wetlands Advisory Group (WAG), help to identify on-the-ground issues, promote wetlands education and implement projects.



**BOARD OF GOVERNORS MEETING
WORK PLAN REPORT
January 20, 2017**

OVERVIEW

At every Board of Governors meeting of the Southern California Wetlands Recovery Project (WRP) the board adopts a Work Plan that lists priority wetland acquisition, restoration, and enhancement projects for Southern California coastal wetlands and watersheds. Annually, this Work Plan is updated to include community-based restoration projects of the WRP Community Wetland Restoration Grant Program (CWRGP). The adopted Work Plan is a valuable tool for communicating regional priorities and funding needs and for facilitating WRP partner agency collaboration.

The Board of Governors at its last meeting, held on December 6, 2015, adopted 3 new projects for addition to the Work Plan. Members of the Wetlands Manager Group had reviewed these projects' applications and selected them based on the WRP Project Evaluation Criteria (see *WRP Project Evaluation Criteria*) for out-of-cycle addition to the Work Plan.

Additionally, since the last Board of Governors meeting, 8 projects have been completed.

UPDATE:

Over the past 16 years WRP projects have acquired 8,250 acres of wetlands and associated habitat and restored more than 5,000 acres. This includes 100 completed Work Plan projects and 135 CWRGP projects.

THE WORK PLAN

The Board of Governors has adopted each of the previous Work Plans. The WRP Wetlands Managers Group is submitting this 2017 Work Plan to the WRP Board of Governors for adoption.

Projects on the Work Plan were chosen to help achieve the WRP's six Regional Goals:*

1. Preserve and restore coastal wetland ecosystems
2. Preserve and restore stream corridors and wetland ecosystems in coastal watersheds
3. Recover native habitat and species diversity
4. Integrate wetlands recovery with other public objectives
5. Promote education and compatible access related to coastal wetlands and watersheds
6. Advance the science of wetlands restoration and management in Southern California

*Note the Regional Goals are in the process of being updated as part of the Regional Strategy update due to be completed in the fall of 2017.

SOUTHERN CALIFORNIA WETLANDS RECOVERY PROJECT
2017 WORK PLAN REPORT

The Work Plan is not a grant program. However, it is used by some agencies to guide project funding decisions. The Coastal Conservancy, Wildlife Conservation Board and other WRP partner agencies use the Work Plan to identify priority projects for funding within the region.

Table 1 shows new projects that are recommended for out-of-cycle addition to the Work Plan. Newly funded projects, and projects completed or removed from the Work Plan are presented in Table 2 and Table 3 below.

NEW PROJECTS TO BE ADDED THE WORK PLAN IN 2015

Table 1: Recommended projects to add to the Work Plan

| Project Name | Description | Estimated Cost | County | Project Type | Habitat Type | Project Lead |
|--|---|----------------|-------------|--------------|--------------|---|
| Trancas Creek Lagoon Restoration Planning Project | This project will complete additional studies and develop an implementation plan (final design, construction ready plans and environmental permitting documents) for restoration of Trancas Lagoon. | \$1,300,000 | Los Angeles | Planning | Estuarine | Santa Monica Mountains Resource Conservation District |
| Trancas Creek Flood Control Channel Restoration Planning Project | This project will complete hydrologic modeling studies to develop construction, CEQA and permitting documents for restoring fish passage through the flood control channels identified as the keystone barrier for Trancas Creek. | \$910,000 | Los Angeles | Planning | Riparian | Santa Monica Mountains Resource Conservation District |
| Los Peñasquitos Lagoon Restoration Planning | This project will develop a 50% design concept to complete and EIR and CEQA for lagoon restoration. | \$770,000 | San Diego | Planning | Estuarine | Los Peñasquitos Lagoon Foundation |

WORK PLAN ACCOMPLISHMENTS

WRP Newly Funded Projects

The table below provides a summary of those projects newly funded since November 2014.

Table 2: Newly funded projects

SOUTHERN CALIFORNIA WETLANDS RECOVERY PROJECT
2017 WORK PLAN REPORT

| Project Name | Description | Estimated Cost | Funder | County | Project Classification |
|--|--|---|--|---------------|------------------------|
| San Jose Creek Fish Passage Improvements – Dos Arroyos Ranch | This project will conduct biological surveys and prepare information needed for permit applications and environmental review for removal of three fish passage barriers at the Dos Arroyos Ranch along San Jose Creek. | \$115,000 Fully funded and in progress | SCC National Fish and Wildlife Foundation | Santa Barbara | Fish Passage |
| Ormond Beach Wetlands Restoration Plan | Prepare a restoration and public access plan for the 900-acre Ormond Beach wetlands area. | \$410,000 Fully funded and in progress | SCC | Ventura | Planning |
| Ormond Beach Wetlands: Acquisition, Part 2 | Acquire the 561 acre Southland Sod Farm for inclusion in the Ormond Beach wetlands. | \$62 million Partially funded (\$5 million) and in progress. | SCC | Ventura | Acquisition |
| Newland Marsh Acquisition | Acquisition of 44 acres for future restoration of degraded coastal saltmarsh presently owned by CalTrans. | 2,600,000 | USFWS \$1 million \$1,600,00 TBD | Orange | Acquisition |
| Santa Margarita River Fish Passage Project | This project will complete design plans and environmental review to remove two key steelhead passage barriers on Santa Margarita River. | \$605,395 | CDFW \$163,395 \$442,000 Pending SCC approval Feb 2017 | San Diego | Planning |
| Tijuana Estuary Tidal Restoration Planning and Design | This project will develop construction ready design specifications and plans. | \$1,095,000 | WCB \$895,000 NOAA \$200,000 | San Diego | Planning |
| Fox Canyon Barranca and Stewart Canyon Creeks Fish Barrier Removal and Restoration | This project will remove 8 concrete structures along two creeks in the Ventura River watershed. | \$30,000 | Earth Island Institute | Ventura | Restoration |

SOUTHERN CALIFORNIA WETLANDS RECOVERY PROJECT
2017 WORK PLAN REPORT

| | | | | | |
|---|---|----------|------------------------|-------------|-------------|
| Potrero Creek Restoration | Volunteers will assist in a 24 acre restoration project on Potrero Creek in the Calleguas Creek watershed by planting native plant species. | \$14,800 | Earth Island Institute | Ventura | Restoration |
| Lower Topanga Riparian Oak Restoration | This project will reforest historic riparian oak woodland in Lower Topanga Creek and engage student and community volunteers in riparian corridor ecology, restoration, and stewardship. | \$13,800 | Earth Island Institute | Los Angeles | Restoration |
| Santa Margarita River Habitat Improvement | This project will improve steelhead habitat in the Santa Margarita Ecological Reserve through invasive vegetation and non-native aquatic species removal and localized sediment reduction within a three-mile section of the Santa Margarita River. | \$29,900 | Earth Island Institute | San Diego | Restoration |
| Fairbanks Ranch Invasive Plant Removal and Stream Enhancement | This project will restore and enhance approximately 100 acres of wetland/riparian habitat along 2.5 miles of the San Dieguito River through Fairbanks Ranch. | \$23,900 | Earth Island Institute | San Diego | Restoration |

CDFW: CA Department of Fish and Wildlife, NFWF: National Fish and Wildlife Foundation, SCC: State Coastal Conservancy, USFWS: U.S. Fish and Wildlife Service, WCB: Wildlife Conservation Board

WRP Completed Projects

A total of 8 WRP projects were completed since the last Board of Governors meeting in December 2015. Table 3 below lists those projects completed during this time period.

Table 3: Completed WRP Work Plan and CWRGP Projects

SOUTHERN CALIFORNIA WETLANDS RECOVERY PROJECT
2017 WORK PLAN REPORT

December 2015 - December 2016

| Project Name | Description | Cost | County | Type of Project |
|---|---|-------------|---------------|-----------------|
| Maria Ygnacio Aijian Barrier Removal | Remove a concrete stream crossing that acts as a barrier to the upstream migration of steelhead trout | \$773,000 | Santa Barbara | Fish Passage |
| MacHutchin Property Acquisition | Acquire the 3.54 acre MacHutchin property at the Buena Vista Lagoon. | \$1,550,000 | San Diego | Acquisition |
| South Bay Restoration Program | Low-income youth and families from National City in San Diego County were engaged to restore six acres of wetland, upland, and riverine habitats in the San Diego Bay National Wildlife Refuge. | \$28,000 | San Diego | CWRGP |
| Emma Wood State Beach Estuary Enhancement and Education Project | Invasive vegetation was removed from the Ventura River during monthly community volunteer events to restore habitat and ecological function in the Ventura River estuary. Underprivileged students were educated on wetland science in classroom presentations and on field trips in the estuary. | \$28,900 | Ventura | CWRGP |
| Community Restoration of Kendall Frost Marsh Preserve | Invasive plants were removed on just under one acre of wetland and adjacent upland habitat and hundreds of native plants planted during 16 volunteer events. | \$19,500 | San Diego | CWRGP |
| Andre Clark Bird Refuge Wetland Margin Enhancement Project | Invasive trees and plants were removed along the margin of the Andre Clark Bird Refuge Wetland and replaced with native plants and trees over multiple volunteer events. | \$29,900 | Santa Barbara | CWRGP |
| Topanga Lagoon Filter Strip Restoration Project | Staff and volunteers focused on removing invasive species and planting drought-tolerant, California natives along a one acre riparian zone to aid in restoring Topanga Creek's floodplain. | \$10,900 | Los Angeles | CWRGP |

SOUTHERN CALIFORNIA WETLANDS RECOVERY PROJECT
2017 WORK PLAN REPORT

| Project Name | Description | Cost | County | Type of Project |
|--|---|----------|-------------|-----------------|
| Ballona Wetlands Restoration through Community Partnership | Community members and students manually removed invasive vegetation from wetland habitats at the Ballona Wetlands over the course of multiple restoration events. | \$28,000 | Los Angeles | CWRGP |

CWRGP: Community Wetland Restoration Grant Program

Projects Removed from the WRP Work Plan

The following projects were removed from the WRP Work Plan. Removal was based to a variety of factors which included: requested removal by the project proponent; change in project focus or scope requiring a new project proposal; and multiple-years lack of project progress or readiness to proceed.

- Arroyo Burro Creek Restoration at Las Positas
- Arroyo Burro Creek Arundo Removal
- Mission Lagoon and Laguna Creek Restoration
- Ventura River Parkway
- Santa Clara River Parkway Acquisitions
- Santa Clara River Estuary McGrath State Beach
- Solstice Canyon Acquisition
- Malibu Creek Comprehensive Restoration
- Cold Creek Riparian Acquisitions: Part 2
- Sepulveda Basin Plan
- Orange Coast River Park
- Santiago Creek Arundo Control
- Serrano Creek Stabilization and Restoration Project
- Santa Ana River Featherly Regional Park Restoration

SUMMARY OF WRP WORK PLAN 2017

Upon its adoption by the Board of Governors, the 2017 WRP Work Plan will comprise 39 priority projects. These include 4 acquisition, 18 restoration and 17 planning projects. Full project descriptions and details are available at www.scwrp.org

Table 4: WRP Work Plan 2017

| Project Name | Description | Estimated Cost | County | Project classification | Habitat/ project type |
|--------------|-------------|----------------|--------|------------------------|-----------------------|
|--------------|-------------|----------------|--------|------------------------|-----------------------|

SOUTHERN CALIFORNIA WETLANDS RECOVERY PROJECT
2017 WORK PLAN REPORT

| | | | | | |
|---|--|---|---------------|--------------------------|------------------|
| Gaviota State Park Watershed Restoration and Enhancement Plan | This project will realign the entry road and restore the natural flood plain at the entrance to Gaviota State Park. Includes planning for a new vehicle stream crossing and sediment berm removal. | \$13,000,000 Ready to implement – not funded | Santa Barbara | Planning and Restoration | Riparian |
| San Jose Creek Fish Passage Improvements – Dos Arroyos Ranch | This project will conduct biological surveys and prepare information needed for permit applications and environmental review for removal of three fish passage barriers at the Dos Arroyos Ranch along San Jose Creek. | \$115,000 Fully funded and in progress | Santa Barbara | Restoration | Riparian |
| Atascadero and Maria Ygnacio Steelhead Restoration Design | Develop engineering designs for six major fish passage barriers along Maria Ygnacio Creek. | \$371,000 Fully funded In progress | Santa Barbara | Planning | Fish Passage |
| Devereux Slough: UCSB North Campus Open Space Restoration | Land acquisition and restoration planning are complete. Restoration of 120 acres is scheduled to begin January 2017. | \$18,000,000 Partially funded (\$15.5 million) and in progress | Santa Barbara | Restoration | Coastal Wetlands |
| Matilija Dam Removal: Engineering and Design and Acquisition | Preliminary engineering and design for the removal of Matilija Dam on the Ventura River. Next step is to complete 65% design and permitting. | \$3.5 million Fully funded and in progress. | Ventura | Planning | Fish Passage |
| Stewart Canyon Creek | Restore the riparian ecosystem of the lower Stewart Canyon Creek, starting at Fox Canyon Barranca to its confluence with San Antonio Creek | \$588,000 Ready to implement – not funded | Ventura | Restoration | Riparian |
| Ormond Beach Wetlands: Acquisition, Part 2 | Acquire the 561 acre Southland Sod Farm for inclusion in the Ormond Beach wetlands. | \$62,000,000 Partially funded (\$5 million) and in progress. | Ventura | Acquisition | Coastal Wetlands |

SOUTHERN CALIFORNIA WETLANDS RECOVERY PROJECT
2017 WORK PLAN REPORT

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|--|---|---|-------------|-------------|-------------------------|
| Ormond Beach Wetlands Restoration Plan | Prepare a restoration and public access plan for the 900-acre Ormond Beach wetlands area. | \$410,000 Fully funded and in progress | Ventura | Planning | Coastal Wetlands |
| Upper Los Angeles River Watershed Arundo Eradication Program | Remove <i>Arundo donax</i> from 30 acres in a variety of canyons that drain to the Los Angeles River. | \$1,070,000 Partially funded (\$101,500) and in progress | Los Angeles | Restoration | Invasives |
| Trancas Creek Lagoon Restoration Planning Project | This project will complete studies and develop an implementation plan for restoration of Trancas Lagoon. | \$1,300,000 Ready to implement – not funded | Los Angeles | Planning | Coastal Wetlands |
| Trancas Creek Flood Control Channel Restoration Planning Project | This project will complete hydrologic modeling studies to develop construction, CEQA and permitting documents for restoring fish passage through the flood control channels in Trancas Creek. | \$910,000 Ready to implement – not funded | Los Angeles | Planning | Fish Passage |
| Upper Malibu Creek Feasibility Study (Rindge Dam) | Complete an EIR/EIS for Rindge Dam removal. EIR/EIS to be completed in 2018. | \$3,900,000 Fully funded and in progress | Los Angeles | Planning | Fish Passage |
| Topanga Lagoon Restoration Facilities Management Plan | Develop a Facilities and Lagoon Management Plan and complete CEQA/NEPA. | \$500,000 Partially funded (\$80,000) and ready to proceed if funded | Los Angeles | Planning | Fish Passage & Riparian |
| Los Angeles River Taylor Yard Acquisition | Acquire and restore the 35 acre Taylor Yard property adjacent to the Los Angeles River in the City of Los Angeles for the purpose of ecological restoration. | \$252,000,000 Partially funded (\$60 million) and in progress | Los Angeles | Acquisition | Riparian & Wetlands |
| Ballona Wetlands Restoration Planning | Complete an EIR/EIS for a project to restore tidal wetlands, adjacent habitat and wetland functions at the Ballona Wetlands Ecological Reserve. | \$7,500,000 Fully funded and in progress | Los Angeles | Planning | Coastal Wetlands |

SOUTHERN CALIFORNIA WETLANDS RECOVERY PROJECT
2017 WORK PLAN REPORT

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| Deforest Wetlands Restoration | Development of a two-mile long 39 acre riverfront park with wetlands, upland habitat, interpretive displays and public access trails. | \$6,791,000 Funded status unconfirmed | Los Angeles | Construction | Riparian & Wetlands |
| Rio Honda and Upper San Gabriel River Arundo Eradication Program | Remove 102 acres of <i>Arundo donax</i> from the San Gabriel River and Rio Hondo at Whittier Narrows. | \$2,400,000 Ready to proceed if funded – can be partially funded | Los Angeles | Restoration | Invasives |
| Los Cerritos Wetlands Conceptual Restoration Plan | Prepare a conceptual restoration plan for the 565 acre Los Cerritos Wetlands. | \$750,000 Fully funded and in progress | Los Angeles | Planning | Coastal Wetlands |
| Los Cerritos Wetlands – Bryant Acquisition | Acquire 100 acres of the Hellman property in Seal Beach for the purpose of wetland restoration. | \$14 million Fully funded and in progress | Los Angeles | Acquisition | Coastal Wetlands |
| Riparian Enhancement at Audubon Starr Ranch Sanctuary | Removal of 11 acres of non-native periwinkle and 125 acres of non-native olive trees along Bell Creek | \$140,000 Partially funded and in progress | Orange | Restoration | Invasives Riparian |
| Newland Marsh Acquisition | Acquisition of 44 acres for future restoration of degraded coastal saltmarsh presently owned by CalTrans. | \$2.6 million Partially funded (\$1 million) and in progress | Orange | Acquisition | Coastal Wetlands |
| Newport Valley Habitat Restoration | Volunteers with this project will restore 15 acres of riparian and coastal sage scrub habitat in a drainage that flows directly into the Upper Newport Bay. | \$601,000 Fully funded and in progress | Orange | Restoration | Invasives |
| Aliso Creek Estuary Restoration | Develop a conceptual restoration plan to restore coastal wetland habitats at Aliso Creek Estuary | \$330,000 Fully funded and in progress | Orange | Planning | Coastal Wetlands |
| San Joaquin Marsh Enhancement - Phase II Implementation | Enhance approximately 120 acres of perennial marsh. | \$3,700,000 Not funded and ready to proceed | Orange | Restoration | Coastal Wetlands |

SOUTHERN CALIFORNIA WETLANDS RECOVERY PROJECT
2017 WORK PLAN REPORT

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|---|---|---|-----------|-------------|--|
| Aliso Creek Mainstem Riparian Restoration | Ecosystem restoration in a seven-mile reach of Aliso Creek and 1,000 feet of the Wood Canyon tributary. | \$63,000,000 Partially funded (\$47,250,000) stalled until April 2018 | Orange | Restoration | Riparian |
| San Juan and Trabuco Creek Watershed Steelhead Recovery Plan | Implement the San Juan and Trabuco Creeks Steelhead Recovery Plan | \$25,000,000 | Orange | Restoration | Fish Passage & Riparian & Coastal Wetlands |
| Trabuco Creek Fish Passage Project | Planning and design of a fish ladder under Highway 15 along Trabuco Creek. | \$384,000 Fully funded and in progress | Orange | Planning | Fish Passage |
| Buena Vista Lagoon Restoration Plan - Preliminary Engineering and EIR/S | Prepare a joint CEQA/NEPA document for restoration of Buena Vista Lagoon and preliminary engineering plans for the restoration. | \$1,200,000 Fully funded and in progress. | San Diego | Planning | Coastal Wetlands |
| Batiquitos Lagoon Exotics Removal and Revegetation | Remove exotics and revegetate approximately 20 acres of wetland and upland habitat adjacent to Batiquitos Lagoon. | \$550,000 Partially funded (\$200,000) and waiting for full funding to proceed | San Diego | Restoration | Coastal Wetlands & Invasives |
| San Elijo Lagoon Restoration Planning and Engineering | Restoration of 456 acres of tidal and freshwater wetlands at San Elijo Lagoon. | \$80,000,000 Fully funded and in progress | San Diego | Planning | Coastal Wetlands |
| Los Peñasquitos Lagoon Restoration Planning | This project will develop a 50% design concept to complete and EIR and CEQA for lagoon restoration. | \$770,000 | San Diego | Planning | Coastal Wetlands |
| San Diego Canyon Wetlands Restoration Project | Produce Canyon Enhancement Action Plans for 1,234 canyon acres (wetlands and upland slopes) and 15.6 miles of stream corridor in 9 urban canyons. | \$348,000 Fully funded and in progress | San Diego | Planning | Coastal Wetlands Riparian |

SOUTHERN CALIFORNIA WETLANDS RECOVERY PROJECT
2017 WORK PLAN REPORT

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| Re-Wild Mission Bay Conceptual Plan | Develop conceptual plans to protect and improve core functions of 170 acres of existing tidal wetland habitat in the Kendall Frost/Northern Wildlife Preserve. | \$485,000 Fully funded and in progress | San Diego | Planning | Coastal Wetlands |
| San Dieguito Watershed Invasive Species Control and Re-vegetation | Restore 874 acres of riparian and marsh habitat in the San Dieguito Watershed in northern San Diego County. | \$4,766,000 Funded status unconfirmed | San Diego | Restoration | Invasives & Coastal Wetlands |
| Rose Creek Watershed Opportunities Assessment Implementation | Implement recommendations of the Rose Creek Watershed Opportunities Assessment, including completing a watershed-wide hydrologic study; planning for creation of wetlands at the mouth of Rose Creek; and designing trail linkages. | \$1,165,000 Funded status unconfirmed | San Diego | Restoration | Riparian |
| San Diego River Watershed Riparian Restoration Program | Implement a watershed-based invasive, non-native plant control program in the San Diego River Watershed. | \$5,000,000 Funded status unconfirmed | San Diego | Restoration | Riparian |
| Tijuana Estuary Tidal Restoration Program | Final design, engineering and permitting for the Tijuana Estuary Tidal Restoration Program | \$1,095,000 Fully funded and in progress | San Diego | Planning | Coastal Wetlands |
| Santa Margarita River Fish Passage Project | 65% design plans to remove two key steelhead passage barriers on Santa Margarita River (an abandoned Sandia Creek river crossing and bridge that cross the Santa Margarita River) | \$605,395 Fully funded and in progress | San Diego | Restoration | Riparian |

SOUTHERN CALIFORNIA WETLANDS RECOVERY PROJECT
2017 WORK PLAN REPORT

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|--|--|----------|----------|-------------|---------------------------------------|
| WRP Community Wetland Restoration Grants Program | Provide grants up to \$30,000 for restoration and enhancement projects consistent with the goals of the Wetlands Recovery Project. | Numerous | Regional | Restoration | Riparian, Invasives, Coastal Wetlands |
|--|--|----------|----------|-------------|---------------------------------------|



BOARD OF GOVERNORS MEETING

PROJECT EVALUATION CRITERIA

December 8, 2015

Project Evaluation Criteria

The Wetlands Recovery Project Managers Group utilizes project evaluation criteria when considering new projects for addition to the WRP Work Plan. These criteria were developed by the Wetlands Managers Group with support from the WRP Science Advisory Panel. The criteria include ecological, policy and feasibility factors and help evaluate which projects most directly support the WRP's six Regional Goals.

WRP Regional Goals

1. Preserve and restore coastal wetland ecosystems.
2. Preserve and restore stream corridors and wetland ecosystems in coastal watersheds.
3. Recover native habitat and species diversity.
4. Integrate wetlands recovery with other public objectives.
5. Promote education and compatible access related to coastal wetlands and watersheds.
6. Advance the science of wetlands restoration and management in Southern California.

Project Evaluation Criteria

Ecological Criteria

• Restoration potential/functional gain

- How much potential is there to increase the ecological function and/or value of a site, including the amount and quality of habitat or potential habitat for sensitive and important wetland-dependent species?
- To what extent will the project restore functioning of natural processes (e.g., hydrology, sediment transport)?
- Will the project result in an increase in wetland acreage?

• Connection to transitional/upland areas

- To what extent is the wetland site physically and ecologically connected to transitional/upland areas?

• Connection to coastal resources

- To what extent is the site ecologically or hydrologically connected to coastal resources, including coastal wetlands and nearshore waters?
- To what extent will the project benefit marine and intertidal resources?

• Self-sustainability

- Will potential restoration improvements be sustainable through natural wetland functioning?

**SOUTHERN CALIFORNIA WETLANDS RECOVERY PROJECT
PROJECT EVALUATION CRITERIA**

- What is the likelihood of future degradation after restoration has occurred? What level of ongoing site management and/or maintenance will be required?

• **Habitat Diversity**

- Will the project preserve or restore a diversity of a habitat types on site? Will the project contribute significantly to regional diversity?
- What species of concern are known to use the site, or would potentially use the site if restored?
- Will the project remove exotic species and re-establish native species?
- Will the project restore habitat linkages and wildlife corridors?

• **Regional linkage**

- What is the site's function and value from a regional perspective, including sensitive species habitat, use by migratory birds, fisheries support, and biodiversity?

Policy Criteria

• **Threat of future degradation/loss**

- Could future loss or degradation of the wetland or stream corridor be prevented through Wetlands Recovery Project involvement?
- How imminent is the threat?

• **Multiple objectives**

- What additional public objectives will the project achieve?
- Is wetlands recovery the primary objective of the project or a secondary objective?

• **Education/access value**

- Does the project include an education/interpretive element?
- Will the project provide public access that is compatible with the habitat and functional objectives?
- Are there education or interpretive programs onsite or nearby that will complement the project?

• **Research value**

- Is wetlands research incorporated into the project?
- What research questions will the project address?

Feasibility Criteria

• **Site availability**

- Is the owner willing to sell the land or participate in a restoration project?

• **Cost/cost effectiveness**

- What is the total cost, unit cost, and relative cost effectiveness?

• **Funding**

**SOUTHERN CALIFORNIA WETLANDS RECOVERY PROJECT
PROJECT EVALUATION CRITERIA**

- What funding is available for the project?
- **Near-term potential**
 - How quickly could a project be undertaken?
- **Restoration/enhancement plan**
 - Is there an existing restoration/enhancement plan that is consistent with the Wetlands Recovery project's objectives and science-based criteria?
 - Does it include a monitoring plan?
 - Has the plan undergone environmental review?
- **Technical practicability**
 - Are the planned restoration activities technically and biologically feasible and practicable?
- **Future management**
 - Is an appropriate future owner and/or manager available for the site?
 - Are sufficient funds available for long-term site management

**Southern California Wetlands Recovery Project
In-Lieu Fee Program Enabling Instrument
November 2016**

Draft

TABLE OF CONTENTS

| | |
|---|----|
| RECITALS | 5 |
| SECTION 1: PURPOSE AND AUTHORITIES | 7 |
| 1.1 Purpose | 7 |
| 1.2 Authorities | 7 |
| 1.2.1 Federal Authorities..... | 7 |
| 1.2.2 California Authorities..... | 7 |
| SECTION 2: OBJECTIVES | 8 |
| 2.1 Objectives for Regional Habitat Recovery..... | 8 |
| 2.2 Objectives for the In-Lieu Fee Program..... | 8 |
| SECTION 3: DEFINITIONS | 9 |
| SECTION 4: STIPULATIONS AND EXHIBITS | 14 |
| 4.1 Disclaimer | 14 |
| 4.2 Exhibits..... | 14 |
| SECTION 5: PROGRAM STRUCTURE | 14 |
| 5.1 Framework..... | 14 |
| 5.2 Geographic Service Areas | 15 |
| 5.3 Program Account..... | 15 |
| 5.4 Program Establishment Date | 16 |
| 5.5 ILF Projects | 17 |
| 5.6 Establishment and Use of Credits | 17 |
| SECTION 6: PROGRAM ESTABLISHMENT AND OPERATION | 17 |
| 6.1 Establishment | 17 |
| 6.1.1 Project Identification and Selection | 17 |
| 6.1.2 Instrument Modifications | 18 |
| 6.1.3 Permits..... | 18 |

| | | |
|--|--|-------------------------------------|
| 6.1.4 | Financial Assurances..... | 18 |
| 6.2 | Operation..... | 19 |
| 6.2.1 | Development Plans..... | 19 |
| 6.2.2 | Interim Management and Monitoring..... | 20 |
| 6.2.3 | Long-term Management and Monitoring..... | 20 |
| 6.2.4 | Long-term Management and Maintenance Fund..... | 21 |
| 6.2.5 | Remedial Action Plan..... | 22 |
| 6.2.6 | Long-term Ownership and Protection..... | 23 |
| 6.3 | Accounting Procedures..... | 23 |
| 6.3.1 | Program Account Tracking..... | 23 |
| 6.3.2 | Initial Allocation of Advance Credits and Credit Release Schedule..... | Error! |
| | Bookmark not defined. | |
| 6.3.3 | Initial Fee Schedule..... | 27 |
| 6.4 | Legal Responsibility for Providing Compensatory Mitigation..... | 28 |
| 6.5 | Performance Standards..... | 30 |
| 6.6 | Program Reporting..... | 32 |
| 6.7 | Program Signatory Review Schedule for ILF Project Development Plans..... | 34 |
| 6.8 | Program Default and Closure Procedures..... | 34 |
| 6.8.1 | Program Default and Dispute Resolution..... | 34 |
| 6.8.2 | Modification, Amendment, and Termination of Instrument..... | 36 |
| SECTION 7: OTHER PROVISIONS..... | | 36 |
| SECTION 8: SIGNATURES AND EXECUTION..... | | 41 |
| Part I. Elements of the Compensation Planning FrameworkError! Bookmark not defined. | | |
| A. | <i>Geographic Service Area.....</i> | Error! Bookmark not defined. |
| 1. | Sub-service Area..... | Error! Bookmark not defined. |
| B. | <i>Analysis of HistoricAquatic Resource Loss.....</i> | Error! Bookmark not defined. |
| 1. | Water ResourceDevelopment/Hydromodification..... | Error! Bookmark not defined. |
| 2. | Agricultural Cnversion and Irrigation/Ranching..... | Error! Bookmark not defined. |
| 3. | Urban and Cmmunity Development..... | Error! Bookmark not defined. |
| 4. | Flood Protection/Levee Construction..... | Error! Bookmark not defined. |
| 5. | Roads and Trails..... | Error! Bookmark not defined. |
| C. | <i>Aquatic Resource Threats, Current Conditions, and Goals and Objectives.....</i> | Error! |
| | Bookmark not defined. | |
| 1. | Water Resource Development/Hydromodification..... | Error! Bookmark not defined. |
| 2. | Agricultural Conversion and Irrigation..... | Error! Bookmark not defined. |
| 3. | Urban and Community Development..... | Error! Bookmark not defined. |
| 4. | Flood Protection/Levee Construction..... | Error! Bookmark not defined. |

| | |
|---|-------------------------------------|
| 5. Climate Change..... | Error! Bookmark not defined. |
| 6. Roads and Trails | Error! Bookmark not defined. |
| <i>D. Additional Current Condition Information for Aquatic Resource Sub-service Areas</i> | Error! Bookmark not defined. |
| | Bookmark not defined. |
| 1. Land Cover Type | Error! Bookmark not defined. |
| 2. Impaired Waterways | Error! Bookmark not defined. |
| 3. Wetland Type and Extent..... | Error! Bookmark not defined. |
| <i>E. Prioritization Strategy and Criteria</i> | Error! Bookmark not defined. |
| 1. SCWRP Objectives for Regional Habitat Recovery..... | Error! Bookmark not defined. |
| 2. Mitigation Projects – Identification, Selection, and Plan Preparation | Error! Bookmark not defined. |
| | not defined. |
| <i>F. Satisfying Criteria for Use of Preservation</i> | Error! Bookmark not defined. |
| <i>G. Partner Engagement</i> | Error! Bookmark not defined. |
| <i>H. Long-Term Protection and Management Strategies</i> | Error! Bookmark not defined. |
| <i>I. Periodic Evaluation and Reporting</i> | Error! Bookmark not defined. |
| <i>J. GIS Database</i> | Error! Bookmark not defined. |
| Part II. Description of Individual Sub-service Areas | Error! Bookmark not defined. |
| <i>A. San Diego Regional Sub-service Area</i> | Error! Bookmark not defined. |
| 1. Historic Impacts | Error! Bookmark not defined. |
| 2. Current Impacts and Attribute Status..... | Error! Bookmark not defined. |
| 3. Prioritization | Error! Bookmark not defined. |
| <i>B. Los Angeles Regional Sub-service Area</i> | Error! Bookmark not defined. |
| 1. Historic Impacts | Error! Bookmark not defined. |
| 2. Current Impacts and Attribute Status..... | Error! Bookmark not defined. |
| 3. Prioritization | Error! Bookmark not defined. |
| <i>C. Ventura Regional Sub-service Area</i> | Error! Bookmark not defined. |
| 1. Historic Impacts | Error! Bookmark not defined. |
| 2. Current Impacts and Attribute Status..... | Error! Bookmark not defined. |
| 3. Prioritization | Error! Bookmark not defined. |
| Conclusion | Error! Bookmark not defined. |
| References | Error! Bookmark not defined. |

EXHIBITS ¹

Exhibit A – Maps

Exhibit B – Credit Establishment and Tracking

¹ Corps note Add Exhibit I: Property Assessment Form; Exhibit J: Credit Ledger Report Form

Exhibit C – Compensation Planning Framework ²
Exhibit D – Instrument Modification Procedure
Exhibit E – Fee Schedule
Exhibit F – Real Estate Instrument (template)
Exhibit G – ILF Closure Plan (template)
Exhibit H – ILF Project Development³

² Currently reworking using WRP Regional Strategy Update as core content

³ Reword to ‘ILF Project Mitigation Plan’

USACE has Long Term Management template we can use;
SCWRP ILF needs to create Project Development Plan and Interim Management Plan templates

SOUTHERN CALIFORNIA WETLANDS RECOVERY PROJECT IN-LIEU FEE PROGRAM ENABLING INSTRUMENT

This In-Lieu Fee Enabling Instrument (“Instrument”), dated this ____ day of _____, 2016 (“Execution Date”), is made by and between the State of California Coastal Conservancy (“Program Sponsor” or “Conservancy”), the Los Angeles District of the U.S. Army Corps of Engineers (“USACE”) and Region IX of the U.S. Environmental Protection Agency (“USEPA”), the National Oceanic and Atmospheric Administration’s National Marine Fisheries Service (“NMFS”), the U.S. Fish and Wildlife Service (“USFWS”), the California Coastal Commission (“CCC”), the California Department of Fish and Wildlife (“CDFW”), the State Water Resources Control Board (“State Water Board”), the Los Angeles Regional Water Quality Control Board (“Los Angeles Water Board”), the Santa Ana Regional Water Quality Control Board (“Santa Ana Water Board”), and the San Diego Regional Water Quality Control Board (“San Diego Water Board”). The USACE, USEPA, NMFS, USFWS, CCC, CDFW, State Water Board, Los Angeles Water Board, Santa Ana Water Board, and San Diego Water Board compose and are referred to jointly as, the Interagency Review Team (“IRT”). The Program Sponsor and the IRT Members who have agreed to sign this Instrument are hereinafter referred to jointly as the “Parties.” This Instrument sets forth the agreement of the Parties regarding the continued use, operation, and maintenance of the Southern California Wetlands Recovery Project (“SCWRP”) In-Lieu Fee Program (the “Program”).

RECITALS

- A. The Program Sponsor has elected to develop and implement the Program and will be responsible for establishing and operating the Program in accordance with the terms of this Instrument.
- B. USACE and USEPA have jurisdiction over Waters of the U.S. pursuant to the Clean Water Act, 33 U.S.C. § 1251 *et seq.* Waters of the U.S. include jurisdictional wetlands.
- C. NMFS promotes the conservation of listed species under its jurisdiction and the habitats upon which they depend under the Endangered Species Act, 16 U.S. Code (U.S.C.) § 1531 *et seq.*, the conservation and enhancement of fishery resources and the protection of Essential Fish Habitat under the Magnuson-Stevens Fishery Conservation and Management Act, 16 U.S.C. § 1801 *et seq.*, and the conservation of wildlife resources under the Fish and Wildlife Coordination Act, 16 U.S.C. § 661-666c.
- D. USFWS, an agency within the U.S. Department of the Interior, has jurisdiction over the conservation, protection, restoration, and management of fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of these species within the United States pursuant to the federal Endangered Species Act, 16 U.S.C. § 1531, *et seq.*, the Fish and Wildlife Coordination Act, 16 U.S.C. § 661-666c, the Fish and Wildlife Act of 1956, 16 U.S.C. § 742(f), *et seq.*, and other provisions of federal law.

- E. CDFW has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of these species pursuant to California Fish and Game Code § 1802.
- F. CCC has jurisdiction over development in the California coastal zone pursuant to the California Coastal Act § 30000 *et seq.*
- G. The State Water Board, Los Angeles Water Board, Santa Ana Water Board, and San Diego Water Board, within their respective areas of jurisdiction, are responsible for protecting and regulating the quality of Waters of the State, as hereinafter defined, under the Porter-Cologne Water Quality Control Act, Cal. Water Code § 13000 *et seq.*, and regulating the discharge of pollutants into the Waters of the U.S. under the Clean Water Act, 33 U.S.C. § 1251 *et seq.*
- H. The IRT is the interagency group that oversees the establishment, use, operation, and maintenance of the Program.
- I. The Program Signatories consist of members of the IRT that formally approve, enable, and implement the Program.
- J. The primary goal of the Program is to provide effective Compensatory Mitigation for the Functions and Services of Waters of the U.S. and/or State lost through authorized Impacts.
- K. The objectives of the Program are (1) to provide an alternative to permittee-responsible Compensatory Mitigation by implementing In-Lieu Fee (“ILF”) Projects adequate to meet current and expected demand for Credits in the Service Area; (2) create a Program that has a level of accountability commensurate with mitigation banks as specified in 33 Code of Federal Regulations (C.F.R.) Part 332; (3) provide ILF Projects that meet current and expected demand for Credits; (4) achieve ecological success on a watershed-basis by siting ILF Projects using the best available decision support tools, and by integrating ILF Projects with ongoing conservation activities being undertaken within the region; and (5) operate a technically, operationally, and financially feasible and accountable Program that meets the requirements of the 2008 Final Rule on Compensatory Mitigation for Losses of Aquatic Resources (33 CFR Parts 325 and 332; 40 CFR Part 230) (“2008 Rule”).
- L. The Mitigation Plan, as referenced in 33 CFR 332.4 and containing the requirements in paragraphs c2–c14 of that section, will be addressed in each proposed ILF Project by submissions required in Exhibit H of this Instrument (Development Plan, Interim Management Plan, Long-term Management Plan).

AGREEMENT

NOW, THEREFORE, in consideration of the foregoing Recitals and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties hereby agree as follows:

SECTION 1: PURPOSE AND AUTHORITIES

1.1 Purpose

The purpose of this Instrument is to establish guidelines, responsibilities, and standards for the use, operation, and maintenance of the Program. The Program will be used for Compensatory Mitigation for (1) unavoidable impacts to Waters of the U.S. that result from activities authorized under sections 401 and 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act; (2) unavoidable impacts to Waters of the State that result from activities authorized under the Porter-Cologne Water Quality Control Act and/or Section 1600-1616 of California Fish and Game Code; (3) unavoidable impacts to certain fish and wildlife species and their habitats that result from state or federal actions under applicable laws or that are authorized by or otherwise addressed by state or federal wildlife agencies under applicable laws; (4) unavoidable impacts to coastal resources, including wetlands and environmentally sensitive habitat areas (ESHA), that result from activities authorized under the Coastal Act; (5) unavoidable impacts to essential fish habitat resulting from activities authorized under the Magnuson-Stevens Fisheries Conservation and Management Act; and (6) completed enforcement actions under the Clean Water Act, the Rivers and Harbors Act, the Porter-Cologne Water Quality Control Act, the Coastal Act, California Fish and Game Code, and other applicable laws.

1.2 Authorities

The establishment, use, operation, and maintenance of the Program will be carried out in accordance with the following authorities:

1.2.1 Federal Authorities

- a. Clean Water Act (33 U.S.C. § 1251 *et seq.*);
- b. National Environmental Policy Act (42 U.S.C. § 4321 *et seq.*);
- c. Endangered Species Act (16 U.S.C. § 1531 *et seq.*);
- d. Fish and Wildlife Coordination Act (16 U.S.C. § 661 *et seq.*);
- e. National Historic Preservation Act (16 U.S.C. § 470);
- f. Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1855(b))
- f. Regulatory Program of the USACE (33 CFR Parts 320-332); and
- g. Guidelines for Specification of Disposal Sites for Dredged and Fill Material (40 CFR Part 230).

1.2.2 California Authorities

- a. Porter-Cologne Water Quality Control Act (Cal. Water Code § 13000 *et seq.*);

- b. California Water Board Regulations (Cal. Code Regs., tit. 23, divs. 3-5);
- c. Lake and Streambed Alteration Program (Fish and Wildlife Protection and Conservation, Fish and Game Code § 1600 *et seq.*);
- d. California Endangered Species Act (Fish and Game Code § 2050 *et seq.*); and
- e. California Coastal Act § 30000 *et seq.*

SECTION 2: OBJECTIVES

2.1 Objectives for Regional Habitat Recovery

The mission of the SCWRP is to acquire, restore, and expand coastal wetlands and watersheds throughout Southern California. The SCWRP seeks to reestablish a mosaic of functioning wetland and riparian systems that supports a diversity of native species within the urban landscape.

The SCWRP's regional prioritization plan is its Regional Strategy, which lays out the following six goals:

1. Preserve and restore coastal wetland ecosystems
2. Preserve and restore stream corridors and wetland ecosystems in coastal watersheds
3. Recover native habitat and species diversity
4. Integrate wetlands recovery with other public objectives
5. Promote education and compatible access related to coastal wetlands and watersheds
6. Advance the science of wetlands restoration and management in Southern California

Implementation of the proposed Program will provide a potential funding source to implement projects that fulfill these goals, thereby generating substantial ecological benefits within the Program's Service Area, while also providing a cooperative mechanism for Compensatory Mitigation that addresses the needs of multiple federal, state, and local agencies.

2.2 Objectives for the In-Lieu Fee Program

The SCWRP has the following objectives in creating this ILF Program:

1. Provide an in-lieu fee option for Compensatory Mitigation for Impacts to Aquatic Resources authorized under individual, nationwide, and programmatic permits, after-the-fact permits, enforcement actions, certifications, and other approvals or authorizations, including large-scale regional planning and/or permitting (e.g., Habitat Conservation Plans, Natural Community Conservation Plans) and large-scale and linear infrastructure projects (e.g., levees, roads, pipelines, transmission lines);
2. Provide an opportunity for consolidated Compensatory Mitigation projects that have greater ecological functions and benefits than small, geographically separated projects;
3. Achieve ecological success on a watershed basis by (a) siting ILF Projects, as hereinafter defined, using the best available decision support tools and full scientific and

technical expertise established through the SCWRP; (b) aligning Compensatory Mitigation with Sub-service Area conservation priorities; and (c) engaging various partners, such as non-profit conservation organizations, private entities, federal, state, tribal, and local aquatic resource management and regulatory authorities, and others with knowledge of aquatic resource needs within the Sub-service Areas;

4. Reduce uncertainty over Compensatory Mitigation project success by creating a Program that has a level of responsibility comparable to mitigation banks, as specified in 33 CFR Part 332, and provides an alternative to permittee-responsible Compensatory Mitigation; and
5. Operate a technically, operationally, and financially feasible and accountable Program that meets the requirements of the 2008 Rule.

SECTION 3: DEFINITIONS

The initially capitalized terms used and not defined elsewhere in this Instrument are defined as set forth below.

1. “2008 Rule” means the USACE and USEPA’s 2008 Final Rule on Compensatory Mitigation for Losses of Aquatic Resources (33 CFR Parts 325 and 332; 40 CFR Part 230), which sets forth requirements governing the establishment, use, operation, and maintenance of in-lieu fee programs as a means of providing Compensatory Mitigation for unavoidable Impacts to wetlands, streams, and other aquatic resources authorized by Clean Water Action section 404.
2. “Adaptive Management” means an approach to natural resource management that incorporates changes to management practices, including corrective actions as determined to be appropriate by the Program Signatories in discussion with the Program Sponsor based upon annual report results and Program Signatories review of overall Program performance and compliance.
3. “Advance Credits” means any Credits of the Program that are available for sale prior to being fulfilled in accordance with an approved Development Plan.
4. “Buffer” means an upland, wetland, and/or riparian area that protects and/or enhances aquatic resource functions associated with wetlands, rivers, streams, lakes, marine and estuarine systems from disturbances associated with adjacent land uses.
5. “Catastrophic Event” means an unforeseen event, such as the impact of a vehicle or falling aircraft, which has a material and detrimental impact on the ILF Project site(s), and over which the Program Sponsor has no control.
6. “Closure” means termination of the Program, as provided under this Instrument.

7. “Compensatory Mitigation” means the restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.
8. “Conservation Easement” means a perpetual conservation easement, as defined by California Civil Code § 815.1, substantially in the form of Exhibit G.
9. “CRAM” means the California Rapid Assessment Method for wetlands. CRAM is a rapid assessment tool that requires collecting Level 2 (coarse data) for monitoring wetland conditions. CRAM is designed to collect a coarse assessment of a wetland’s ambient condition but can also be used to measure progress toward meeting Performance Standards established for aquatic function/condition.
10. “Credit” is a unit of measure (e.g., a functional or areal measure or other suitable metric) representing the accrual or attainment of aquatic functions at a compensatory mitigation site. The measure of aquatic functions is based on the resources restored, established, enhanced, or preserved.
11. “Credit Release” means an action by the applicable Program Signatories to make specified Credits available for Transfer pursuant to this Instrument.
12. “Default” means a failure by the Program Sponsor to provide required Compensatory Mitigation in accordance with the terms of this Instrument that would permit any of the Program Signatories to exercise enforcement authority or other remedies against the Program Sponsor for failure of performance under this Instrument.
13. “Development Plan” is one of the (3) phases of a “Mitigation Plan”, and is the document that formally establishes each ILF Project and stipulates the terms and conditions of its construction and mitigation activities required to be conducted on each ILF Project site to establish Credits. Each Development Plan will be bound by the terms and conditions of the Instrument by reference.
14. “Enhance” or “Enhancement” means the manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource Function(s). Enhancement results in the gain of selected aquatic resource Function(s), but may also lead to a decline in other aquatic resource Function(s). Enhancement does not result in a gain in aquatic resource area.
15. “Establish” or “Establishment” means the manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area and Functions.

16. “Force Majeure” means war, insurrection, riot or other civil disorder, flood, drought, lightning, earthquake, fire, landslide, disease, effects of climate change on habitat or hydrology, condemnation or other taking by governmental body. Other conditions beyond the Program Sponsor’s control will include interference by third parties; change in applicable law, regulation, rule, ordinance, or permit condition, or the interpretation or enforcement thereof; any order, judgment, action or determination of any federal, state or local court, administrative agency or governmental body; and/or suspension or interruption of any permit, license, consent, authorization or approval.
17. “Fulfill” or “Fulfillment” means the Sponsor’s matching of a Released Credit with an Advance Credit, as notified in writing to the Program Signatories, which results in the fulfillment of the Sponsor’s obligation and liability to provide Compensatory Mitigation with respect to such Advance Credit under this Instrument.
18. “Fulfilled Credit” means an Advance Credit for which the obligation to provide Compensatory Mitigation has been achieved through the pairing of it with a Released Credit from an ILF Project.
19. “Functions” mean the physical, chemical, or biological processes that occur in ecosystems.
20. “ILF Project” means Compensatory Mitigation implemented by the Program Sponsor under the Program.
21. “Impacts” mean adverse effects.
22. “Interagency Review Team” or “IRT” means the USACE, USEPA, NMFS, USFWS, CCC, CDFW, State Water Board, Los Angeles Water Board, Santa Ana Water Board, and San Diego Water Board, who together are responsible for overseeing the establishment, use, operation, and maintenance of the Program.
23. “IRT Member” means an individual agency that is a member of the Interagency Review Team. This term refers to the agency itself and not a specific staff person representing the agency on the IRT.
24. “Interim Management Period” for a given ILF Project means the period from the start of implementation for that ILF Project until all of the Performance Standards in the Project’s Development Plan have been met.
25. “Interim Management Plan” is one of the (3) phases of a “Mitigation Plan”, and is the document that describes the management, monitoring, adaptive management, reporting, and other activities to be implemented by the Program Sponsor or its authorized partner(s) during the Interim Management Period. Each Interim Management Plan will be bound by the terms and conditions of the Instrument by reference.

26. “Long-Term Management and Maintenance Fund” or “LTMM Fund” means a financial account established by the Program Sponsor dedicated to funding the long-term, perpetual management, maintenance, and monitoring of a specific ILF Project site, consistent with the Long-term Management Plan for that specific site.
27. “Long-Term Management Plan” is one of the (3) phases of a “Mitigation Plan”, and is the document that identifies specific land management activities that are required to be performed at each of the ILF Project sites, including, but not necessarily limited to, biological monitoring, improvements to biological carrying capacity, enforcement measures, and other actions designed to protect or improve the habitat values of the ILF Project site. Each Long-term Management Plan will be bound by the terms and conditions of the Instrument by reference. “Mitigation Plan,” as referenced in 33 CFR 332.4, includes the requirements in paragraphs c2-c14 of that section, which are met in Exhibit H of this instrument (Development Plan, Interim Management Plan, Long-term Management Plan).
28. “Performance Standards” means the observable or measurable physical (including hydrological), chemical, and/or biological attributes set forth in the Project Development Plan for a specific ILF Project, which are used to determine whether that ILF Project has met its objectives necessary to achieve a Credit Release.
29. “Phase I Environmental Site Assessment” is an assessment of the environmental condition of the Property performed in accordance with the American Society of Testing and Materials (ASTM) Standard E1527-05 “Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process,” or any successor to such ASTM Standard that is active at the time of the assessment.
30. “Preservation” means the protection of existing, ecologically important wildlife, habitat, or other ecosystem resources in perpetuity. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.
31. “Program Account” means an account established by the Program Sponsor at an institution that is a member of the Federal Deposit Insurance Corporation and that is used by the Program Sponsor for the purpose of receiving, managing, and administering funds received from Credit sales to provide Compensatory Mitigation pursuant to this Program.
32. “Program Establishment Date” is the date determined pursuant to Section 5.4., when the Program is considered effective and Transfer of Advance Credits may begin.
33. “Program Signatories” are the members of the IRT that formally approve, enable, and implement the Program. “Program Signatory” refers to an individual agency and not a specific staff person representing the agency.

34. "Property Assessment" means the written ILF Project site evaluation signed by the Program Sponsor, using the form attached in Exhibit H.
35. "Remedial Action" means any corrective measures that the Program Sponsor is required to take to ameliorate any injury or adverse Impact to an ILF Project site as a result of a failure to achieve the Performance Standards.
36. "Re-establishment" means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area, functions and services.
37. "Rehabilitation" means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic Functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.
38. "Released Credits" means the credits that have been produced by the Program Sponsor's implementation of a specific ILF Project, and have been authorized for Transfer by the Program Signatories in accordance with the credit release schedule included as part of the ILF Project's Development Plan.
39. "Restore" or "Restoration" means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic Functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: Re-establishment and Rehabilitation.
40. "RIBITS" means the Regulatory In-Lieu Fee and Bank Information Tracking System.
41. "Services" mean the benefits that human populations receive from Functions that occur in ecosystems.
42. "Service Area" and "Sub-service Area" mean each geographic area specified in this Instrument, within which Impacts to Waters of the U.S. and/or State that occur may be compensated through Credits from the Program.
43. "Subordination Agreement" means a written, recorded agreement in which the holder of an interest in, or lien or encumbrance on, the ILF Project site makes the lien or encumbrance subject to and of lower priority than the Conservation Easement or equivalent protection mechanism, even though the lien or encumbrance was recorded before the Conservation Easement or equivalent protection mechanism.
44. "Transfer" means the use, sale, or conveyance of Credits by the Program Sponsor.

45. “Unlawful Act” means the unlawful act of any person or entity and will include an event or series of events, such as the intentional release within the ILF Project site(s), or any connected watercourse, of any Hazardous Substance, or the discharge of such a substance in violation of a statute, ordinance, regulation, or permit, which an event or series of events have a material and detrimental impact on the ILF Project site.
46. “Waters of the State” means any surface water or groundwater, including saline waters, within the boundaries of the State of California.
47. “Waters of the U.S.” means all waters and wetlands over which the USACE and the USEPA is granted jurisdiction in the Clean Water Act, 33 U.S.C. § 1251, *et seq.* (2006), and the River and Harbor Act, 33 U.S.C. § 401, *et seq.* (2006). This definition encompasses both the term “waters of the United States”, as defined in 33 CFR Part 328 (2006), and “navigable waters”, as defined in 33 CFR Part 329 (2006).

SECTION 4: STIPULATIONS AND EXHIBITS

4.1 Disclaimer

This Instrument does not in any manner affect the statutory authorities and responsibilities of the Parties.

4.2 Exhibits

The following Exhibits are attached to and incorporated by this reference into this Instrument:

- Exhibit A – Maps
- Exhibit B – Credit Establishment and Tracking
- Exhibit C – Compensation Planning Framework
- Exhibit D – Instrument Modification Procedure
- Exhibit E – Fee Schedule
- Exhibit F – Real Estate Instrument (template)
- Exhibit G – ILF Closure Plan (template)
- Exhibit H – ILF Project Development (template)

SECTION 5: PROGRAM STRUCTURE

5.1 Framework

This Instrument sets the framework under which Program-sponsored ILF Projects will be identified, funded, planned, implemented, maintained, and managed. The Instrument provides the authorization for the Program to provide Credits to be used as Compensatory Mitigation for permitted Impacts to wetlands, other Waters of the U.S. and Waters of the State, aquatic resource buffer areas, and non-buffer upland habitats. This Instrument establishes multiple geographic Sub-service Areas to effectively compensate for permitted Impacts to these resources.

The Instrument also establishes a framework for the sale of these Credits; receipt and accounting of funds from Credit sales within each Sub-service Area; and a decision-making process for the deployment of such funds for ILF Projects involving project identification, prioritization, development, selection, and execution. As an ILF Project is identified, the Program Sponsor will submit a site-specific Mitigation Plan consisting of a Development Plan, Interim Management Plan, and Long-term Management Plan, to the Program Signatories for review and approval, as outlined in Exhibit H.

5.2 Geographic Service Areas

This Instrument establishes multiple geographic "Sub-service Areas" within the overall Program Service Area. Specifically, it includes three Aquatic Resource Sub-service Areas, spanning seven counties and 12,576 square miles: the Ventura Regional Sub-service Area, Los Angeles Regional Sub-service Area, and the San Diego Regional Sub-service Area. Detailed descriptions and maps of the Program Service Area and Sub-service Areas are included in Exhibit A and in the Compensation Planning Framework (Exhibit C).

In the three Sub-service Areas, Credits are available for permitted Impacts to wetlands, other Waters of the U.S. and/or Waters of the State ("Tidally Influenced Aquatic Resource Credits"; "Non-tidally Influenced Aquatic Resource Credits") and aquatic resource buffers ("Aquatic Resource Buffer Credits"). "Threatened and Endangered Species Credits", and "Unique Aquatic Resource Credits" may also be made available within the Sub-service Areas.

The Program will use the USACE's method for determining aquatic resource buffers to determine the number of aquatic resource buffer credits that the Program may offer, based on the active and planned ILF Projects in each Sub-service Area.⁴

5.3 Program Account

Upon the Instrument being fully executed by all of the Parties and prior to accepting any fees from federal and/or state permittees, the Program Sponsor will establish a Program Account. The Program Account will be maintained in an interest-bearing or investment account at a financial institution that is a member of the Federal Deposit Insurance Corporation (FDIC).

The Program Account will collect deposits from the sale of Credits and will be used only for the comprehensive costs associated with site selection, design, acquisition, implementation, and management of ILF Projects. Although only one Program Account will be established, funds collected within each Sub-service Area will be managed separately in three Sub-service area specific subaccounts. Each ILF Project will be tracked separately, as will contingency funds (financial assurances), long-term management funds, and program administration funds. The Program Account will be used to track the funds generated by each Credit sale and allocate them to the appropriate Credit type and Sub-service Area. A percentage of funds received from the Transfer of Advance Credits will be assessed and collected by the Program Sponsor as an administrative and program management fee in administering the Program. The Administrative

⁴ Rework clause; Corps no longer dictates a method for determining aquatic resource buffers (outdated language)

Fee ranges from 15% to 20% of the Base Price, subject to a minimum floor of ten thousand dollars (\$10,000). The percentage of funds to be assessed and collected by the Program Sponsor from the Transfer of each Advance Credit is set forth in Exhibit E. All interest and earnings from the Program Account will remain in that account for the purpose of providing Compensatory Mitigation for unavoidable Impacts to Waters of the U.S. and/or Waters of the State.

Per 33 CFR 332.8(i)(2), the Program Sponsor is required to note that the USACE District Engineer has the authority to direct funds to alternative Compensatory Mitigation projects in cases where the Program Sponsor does not provide Compensatory Mitigation in accordance with the specified time frame (see Section 6.3.2).

Annual accounting reports will be presented by September 30 of each year for approval by the Program Signatories. Reports will include detailed summaries of Program Account deposits and disbursements for each ILF Project made over the previous state fiscal year (July 1 through June 30) (Section 6.6). The Program Signatories may review Program Account records with 14 days' written notice. When so requested, the Program Sponsor will provide all books, accounts, reports, files, and other records relating to the Program Account.

The Program Account is separate and apart from any Long-term Management and Maintenance Funds ("LTMM Funds") established for the long-term management and maintenance of ILF Project sites. LTMM Funds will be held in an LTMM Account the Program Sponsor will establish in accordance with Section 6.2.4 of this Instrument.

Disbursements for ILF Projects

- a. Each ILF Project will be developed and implemented in accordance with a Development Plan, which will include a detailed budget, to be approved by the applicable Program Signatories.
- b. The Program Sponsor may enter into contracts or agreements with approved land management partners for the development, implementation, and/or long-term stewardship of individual ILF Projects. Third parties performing work to implement ILF Projects will be paid with funds earmarked for each specific ILF Project, in accordance with approved Development Plans and associated budgets. The Program Sponsor will pay land management partners for implementation of ILF Projects in accordance with the terms of the contracts or other agreements governing such performance. Any proposed increase in the budget for an ILF Project in excess of 10% from the Program Signatory-approved budget for such ILF Project will require approval of the Program Signatories before such increase will become effective.

5.4 Program Establishment Date

The Program Establishment Date will occur and Transfer of Advance Credits may begin only after (1) the Instrument has been fully executed by all of the Parties and (2) the Program Account has been established. Within 30 days of the Program Establishment Date, the Program Sponsor

will upload the final, signed Instrument, including all of its Exhibits, to RIBITS and provide an electronic copy to each of the Program Signatories.

5.5 ILF Projects

Projects on the WRP Work Plan that are consistent with the purposes set forth in this instrument may submit a⁵Mitigation Plan consisting of a Development Plan (including a project budget), Interim Management Plan, and Long-term Management Plan (Exhibit H) to the Program Signatories along with a written request from the Program Sponsor for an Instrument Modification (Exhibit D). The Program Sponsor or its approved land management partner(s) will implement the ILF Projects upon approval and report annually to the Program Signatories (Section 6.6).

5.6 Establishment and Use of Credits

In accordance with the provisions of this Instrument and upon satisfaction of the Credit Release schedule described in Development Plans (contained herein as subparts of Exhibit H) and in Section 6.3.2, Credits are available for Transfer as Compensatory Mitigation in accordance with all applicable requirements for permits issued under sections 404 and 401 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, the Porter-Cologne Water Quality Control Act, Section 1600-1616 of California Fish and Game Code, the California Coastal Act, the federal and California Endangered Species Acts, and other applicable laws. The USACE, based on recommendations of the Program Signatories, will determine the number of Credits available for each ILF Project based upon the approved design and the resulting habitats achieved, in accordance with the terms and conditions contained herein.

SECTION 6: PROGRAM ESTABLISHMENT AND OPERATION

This section identifies the general framework in which individual ILF Projects will be established and operated. Each ILF Project will be approved individually, as detailed herein, and the specific requirements for its operation, monitoring, and management will meet the USACE standard operating procedures at the time of its approval⁶. The Program Sponsor will provide for access to the ILF Project site by the Program Signatories or their agents or designees at reasonable times as necessary to conduct inspections and compliance monitoring with respect to the requirements of this Instrument. Inspecting parties will not unreasonably disrupt or disturb activities on the ILF Project site, and will provide written notice within reasonable time prior to the inspection.

6.1 Establishment

6.1.1 Project Identification and Selection

All individual ILF Projects will be located within the Program's Service Area. The Program Sponsor will seek ILF Projects based on the prioritization and Compensation Planning

⁵ Deleted text: The Program Sponsor will identify potential ILF Projects consistent with the Instrument and submit a

⁶ CCC comment: What does this entail?

Framework outlined in Exhibit C. An assessment of funds collected in the Program Account and the Advance Credit obligation will be a primary consideration in the sizing of ILF Project(s) in each Sub-service Area, to ensure a sufficient number of Released Credits are generated by Sub-service Area. As funds become available within each Sub-service Area, the Program Sponsor will identify potential ILF Project(s) within that Sub-service Area from the SCWRP Work Plan. The Work Plan contains proposed ILF Projects that will further the goals identified in the SCWRP's Regional Strategy. Projects are evaluated per ecological, policy, and feasibility criteria that are based on the regional goals, and are vetted by the 18 member agencies that compose the Wetland Managers Group, including the Program Signatories.

Once a project has been identified from the Work Plan and sufficient funds have been collected within the Sub-service Area to fully implement the ILF Project, the Program Sponsor will present the ILF Project to the Program Signatories for review and approval. Selecting projects from the Work Plan will streamline this process by ensuring that they have already been vetted by the Program Signatories and are a high regional priority in regard to desired target habitat, species, functions, and benefits.

An Initial Project Prospectus will be presented to the Program Signatories detailing the site selection process and general site characteristics. Upon Program Signatory approval of the Initial Project Prospectus, the Program Sponsor or its approved land management partner(s) will prepare a Project Development Plan for the ILF Project (including a project budget), Interim Management Plan, Long-term Management Plan, Conservation Easement, and financial securities. These documents will be submitted to the Program Signatories for review and approval. The SCWRP working groups (e.g., the Wetland Managers Group) will help inform and guide development of these documents.

6.1.2 Instrument Modifications

As ILF Projects are identified, the Program Sponsor or its approved land management partner(s) will prepare a Development Plan (including a project budget), Interim Management Plan, and Long-term Management Plan, and submit a written request to the Program Signatories to modify the Instrument. This process is outlined in Exhibit D.

6.1.3 Permits

The Program Sponsor or its approved land management partner(s) will obtain all applicable permits and authorizations needed to construct and maintain the ILF Project(s). This Instrument does not constitute or substitute for any such approval.

6.1.4 Financial Assurances

Financial assurances will be provided for each ILF Project and also for the overall Program's operations. These will include:

- Financial assurances (e.g., contractor bonds, letters of credit, endowments) related to each ILF Project; and/or

- ILF Program operational assurances (e.g., Program-level contingency funding as determined in a project’s Development Plan)

Notwithstanding any other provision of this Instrument, the Program Sponsor’s financial obligation for the Program will be limited to funds in the Program Account. The Program Sponsor will take the following actions to ensure funds are available to meet mitigation requirements for Credits Transferred:

- ILF Projects will not be undertaken until all funding has been secured to complete construction and monitoring of the ILF Project. ⁷Funds held in the Program Account for an approved ILF Project, as set forth in the ILF Project budget, will be obligated to the ILF Project and disbursed as work is accomplished to operate and monitor the ILF Project.
- Funds outlined in approved ILF Project budgets will be earmarked, held in the Program Account, and disbursed as work is accomplished to operate and monitor the individual ILF Projects.
- Funds outlined in approved ILF Project budgets will be earmarked and held in the Program Account to manage the individual ILF Projects, including contingency and Remedial Actions.
- Funds outlined in the approved ILF Project budgets will be earmarked and held in the LTMM Fund to provide for maintenance and management of the individual ILF Projects once the Interim Management Period has ended.
- A financial assurance will be provided for each ILF Project in accordance with 33 CFR 332.3(n). Each approved ILF Project will have an identified schedule for the release of the financial assurances as that ILF Project meets its approved Performance Standards.
- ILF Program operational assurances will be secured with funding from the Program Contingency Sub-Account.

6.2 Operation

6.2.1 Development Plans

The Program Sponsor or its approved land management partner(s) will be responsible for preparing Development Plans in accordance with Exhibit H. The Development Plans will outline measurable objectives, project-specific Performance Standards, and monitoring requirements. Pre- and post-ILF Project implementation jurisdictional determination and delineations (as appropriate) and functional assessments will be completed using USACE-approved techniques, such as CRAM. Development Plans must include a survey or other document acceptable to the

⁷ Discuss with IRT whether maintain this approach or establish a funding ‘threshold’ whereby a phase of a project may begin once sufficient funds for that phase are collected

USACE and Program Signatories, completed by a professional land surveyor or other qualified person or entity, defining the ILF Project site, and a Property Assessment using the form in Exhibit H. Upon approval of the Development Plan by the Program Signatories, the Program Sponsor or its approved land management partner(s) will be responsible for implementing the plan.

6.2.2 Interim Management and Monitoring

The Program Sponsor or its approved land management partner(s) will be responsible for preparing Interim Management Plans in accordance with Exhibit H. Upon approval of the Interim Management Plan by the Program Signatories, the Program Sponsor or its approved land management partner(s) will be responsible for conducting management and monitoring activities according to the Interim Management Plan until completion of the Interim Management Period. The Program Sponsor or its approved Land Manager will be obligated to monitor the ILF Project for a minimum of 5 years or the period determined sufficient to demonstrate Performance Standards have been met.

6.2.3 Long-term Management and Monitoring

ILF Projects will be designed, to the maximum extent practicable, to be self-sustaining once Performance Standards have been achieved. The Program Sponsor will be responsible for preparing Long-term Management Plans in accordance with Exhibit H. Once the Interim Management Period is completed, the Program Sponsor or its approved Land Manager will implement long-term management and monitoring of the ILF Project sites according to the Long-term Management Plan. The Program Sponsor or its approved Land Manager will be obligated to manage the ILF Project site in perpetuity to preserve its habitat and conservation values in accordance with this Instrument, the real estate instrument (e.g., Conservation Easement, Exhibit F), and the Long-term Management Plan. Such activities will be funded through the Long Term Management and Maintenance Fund including, but not limited to, the potential transfer of long-term management funds to be managed by the approved Land Manager in a separate endowment account pursuant to 33 CFR § 332.8(u)(3).

In general, the Program Sponsor does not plan on performing long-term management activities for the ILF Project sites; therefore, the Program Sponsor will contract with or otherwise transfer the responsibilities for the long-term management and monitoring of that ILF Project site to appropriate and experienced land management and monitoring partners. Such partners may consist of nonprofit organizations, private entities, governmental entities, and others with experience in the ILF Project site community who are willing to own the ILF Project sites, and/or hold Conservation Easements on them, and/or perform the required long-term management activities. The transfer agreement must be approved by the Program Signatories and may require the Program Signatories to be third-party beneficiaries, as appropriate.

The Program Sponsor and the Program Signatories will meet and confer, upon the request of any one of them, to consider revisions to the Long-term Management Plan that may be necessary or appropriate to better conserve the habitat and conservation values of the ILF Project site(s). During the Long-term Management Period, the Program Sponsor or approved Land Manager

will be responsible for submitting annual reports to each Program Signatory in accordance with Section 6.6 of this Instrument. The Program Sponsor will upload annual reports into RIBITS.

6.2.4 Long-term Management and Maintenance Fund

The Program Sponsor will establish an LTMM Fund for each ILF Project for the long-term management and maintenance of the ILF Project site. The Program Sponsor or another entity approved by the Program Signatories may be the holder/administrator of an LTMM Fund for an ILF Project. If appropriate, this other entity may be the same as the approved Land Manager for a particular ILF Project. LTMM Funds will be held in an LTMM Account, that, pursuant to 33 CFR § 332.8(u)(3), will be separate and independent from the Program Account.

In circumstances where the Program Sponsor is the holder/administrator of an LTMM Fund for an ILF Project, the Program Sponsor will invest the funds in accordance with its then-prevailing Investment Policy Statement for the Program Accounts held by the Program Sponsor. If different from the Program Sponsor, the entity receiving funds to perform long-term land management activities will have no right or responsibility with respect to the investment or financial management of the LTMM Fund under this Instrument or otherwise.

The Program Sponsor's Investment Policy Statement for LTMM Funds will be generated and implemented with the objective of achieving an investment return sufficient to fund the annual stewardship activities, as adjusted annually by inflation, as well as an annual fee of 1% ("LTMM Fund Annual Fee") of the LTMM Fund's balance for the annual administration, operation, reporting, and accounting of the LTMM Fund. The Program Sponsor as holder/administrator of the LTMM Fund will assess and collect the LTMM Fund Annual Fee either quarterly or annually, at the Program Sponsor's election, during each year in which the LTMM Fund is in existence. The Annual Fee will be deducted from the balance of the LTMM Fund.

- a. The Program Sponsor will disburse funds from the LTMM Fund to the approved Land Manager for its performance of the long-term maintenance and management activities on the ILF Project site, upon the terms and conditions set forth in a contract or agreement between the Program Sponsor and the approved Land Manager.
- b. The Program Sponsor will have a duty of loyalty to the approved Land Manager with respect to the LTMM Fund, and will not use or borrow against funds in the LTMM Fund for its own benefit, except for assessment and collection of the fees due to the Program Sponsor or its financial institutions, or as otherwise approved, permitted, or directed by the Program Signatories.
- c. The Program Sponsor will not be liable to the Program Signatories, the land management partner, or any other entities or persons for losses arising from investment of funds in the LTMM Fund that is consistent with applicable law and this Instrument.
- d. The Program Sponsor will submit to the Program Signatories a financial activity report for each LTMM Fund it holds/administers by September 30 of each calendar year the LTMM Fund is in existence. In each activity report, the Program Sponsor will report on

the balance of the LTMM Fund at the beginning of the calendar year: deposits; disbursements; fees; earnings, gains, losses and other investment activity accruing to the LTMM Fund during the previous calendar year; administrative and program management expenses; and the balance of the LTMM Fund at the end of the calendar year.

6.2.5 Remedial Action Plan

Prior to Program closure, if any Party discovers any failure to achieve the Performance Standards or any injury or adverse impact to the ILF Project site as Preserved, Established, Restored, or Enhanced, the Party making the discovery will notify the other Parties. Subject to the limitations on any duty of the Program Sponsor to remediate outlined in Section 7, the USACE, in consultation with the Program Signatories, may require the Program Sponsor to develop and implement a Remedial Action plan to correct such condition, as described below. The annual report required under Section 6.6 will identify and describe any Remedial Action proposed, approved, or performed and, if the Remedial Action has been completed, evaluate its effectiveness.

- a. Within 60 days of the date of written notice from a Program Signatory, the Program Sponsor will develop a Remedial Action plan and submit it to such Program Signatory for approval. The Remedial Action plan must identify and describe proposed actions to achieve the Performance Standards or ameliorate injury or adverse impact to the ILF Project site and set forth a schedule within which the Program Sponsor will implement those actions. Should the Program Sponsor and Program Signatory agree that it is physically or financially unviable to complete Remedial Actions on the ILF Project site, the Program Sponsor must propose an alternative site or mechanism to replace the acreage or habitat values that were impacted or did not achieve the described Performance Standards, to the extent funds for such alternative site or mechanism are available in the Program Account. The Program Sponsor will implement the necessary and appropriate Remedial Action in accordance with the Remedial Action plan approved by the Program Signatory. In the event the Program Sponsor fails to submit a Remedial Action plan to the Program Signatory in accordance with this section, the Program Signatory will notify the Program Sponsor that the Program Sponsor is in default and may identify Remedial Action the Program Signatory deems necessary. If (a) the Program Sponsor fails to develop a Remedial Action plan or to implement Remedial Action identified by the Program Signatory in accordance with this section, or (b) conditions have not improved or continue to deteriorate two years after the date that the Program Signatory approved a Remedial Action plan or notified the Program Sponsor of Remedial Actions the Program Signatory deemed necessary, then the Program Signatory may direct funds from the Program Account to undertake Remedial Action on the ILF Project site.
- b. If the USACE determines, in consultation with the Program Signatories, that the Program is operating at a Credit deficit (i.e., that Credit Transfers made exceed the Credits authorized for release, as adjusted in accordance with this Instrument), then the USACE will notify the Program Sponsor. Upon the USACE giving such notice, the

Program Sponsor will immediately cease Transfer of Credits. The USACE, in consultation with the Program Signatories, will determine what Remedial Action is necessary to correct the Credit deficit, and the Program Sponsor will implement such Remedial Action, in accordance with this Section 6.2.5. Upon correction of the deficit, as verified by the USACE, Transfer of Credits may resume.

6.2.6 Long-term Ownership and Protection

ILF Projects will be undertaken on land that is permanently protected via public ownership, conservation easements, deed restrictions, or other appropriate real estate instruments. The Program Sponsor will be responsible for ensuring long-term protection of each ILF Project through the use of real estate instruments in accordance with 33 CFR 332.7(a). The Program Sponsor will ensure that the real estate instrument is in place prior to ILF Project implementation, as stipulated in each Development Plan. The draft real estate instrument (see example in Exhibit F), will be submitted to the Program Signatories for review and approval. The real estate instrument will include, but will not be limited to, assigning long-term management responsibility for the ILF Project and will, to the extent practicable, prohibit incompatible uses that might otherwise jeopardize the objectives of the ILF Project. A copy of the recorded real estate instrument will be furnished to the Parties and become part of the official Program record. If any action is taken to void or modify an ILF Project real estate instrument, the Program Sponsor must notify the Program Signatories in writing.

6.3 Accounting Procedures

6.3.1 Program Account Tracking

In conjunction with the establishment of the Program Account, the Program Sponsor will establish and maintain a system to track Credit production, Credit transactions, and financial transactions between the Program Sponsor and permittees. Tracking will be conducted by Sub-service Area (number of Credits available per Sub-service Area, amount of funds accepted by the Program per Sub-service Area, amount of funds expended by the Program per Sub-service Area) and on an individual ILF Project basis (number of Credits generated, number of Credits released, amount of funds accepted, amount of funds expended; this tracking will take into account habitat type and project type). Additional details regarding the Program Account establishment are discussed in Section 5.3.

6.3.2 Initial Allocation of Advance Credits and Credit Release Schedule

The primary unit of measure used to quantify the Compensatory Mitigation offered by the ILF Program will be the mitigation Credit. The ILF Program will offer a specific number and type of Credits, based on current and planned mitigation opportunities presented by the ILF Projects. The range of Credit types to be offered by the ILF Program and the Credit determination process are described in Exhibit B.

Advance Credits

On the Program Establishment Date, this Instrument will operate to automatically grant the Program Sponsor xxx⁸ Advance Credits allocated across the Program's three Sub-service Areas as detailed in Exhibit B.

The number of Advance Credits approved for Transfer was developed in coordination with the IRT and was based on (1) identification and prioritization of projects and mitigation opportunities within each Sub-service Area using the SCWRP Work Plan and project selection criteria detailed in this Instrument's Compensation Planning Framework in Exhibit C; (2) the Program Sponsor's past performance for implementing Establishment, Re-establishment, Rehabilitation, Enhancement, and/or Preservation activities within the Sub-service Areas; and (3) the projected financing necessary to begin planning and implementation of ILF Projects.

Advance Credit pricing has been modeled to adequately fund the Program Administration and full completion of initial ILF Project(s) within each Sub-service Area including any required financial assurances. Funds generated by the sale of Advance Credits will be held in the appropriate subaccount of the Program Account and the portion of those funds dedicated to Long Term Management and Maintenance will be held in the LTMM subaccount within the Coastal Trust Fund.

Advance Credits are made available for Transfer *prior to* review of Project(s) Project Development Plan, Interim Management Plan, and Long Term Management and Management Plan by the Program Signatories. Therefore, any Project(s) selected for implementation using Advance Credit funds must be reviewed by the Program Signatories and obtain their approval before implementation may commence. Since funds cannot sit in the Program Account longer than three years, there is a three-year maximum time lag between sale of the first Advance Credit and completion of initial biological and physical improvements on a Project.

Once the Program Sponsor has sold all of its Advance Credits in a Sub-service Area, no additional Advance Credits may be sold for that Sub-service Area until Released Credits have been generated through implementation of ILF projects. Unless otherwise negotiated with the Program Signatories, Advance Credit release will follow the schedule detailed in section 6.3.2 of the Program Instrument. Each Released Credit will offset the mitigation obligation of an Advance Credit; as the mitigation obligation of Advance Credits has been fulfilled, an equivalent number of Advance Credits may be made available for Transfer.

Unless agreed otherwise by the Program Signatories, the Program Sponsor will complete land acquisition and initial physical and biological improvements with respect to an ILF Project by the third full growing season (generally defined as the period between October 15 and May 15) after the Transfer of Advance Credits. The timing obligation for completion of physical improvements referenced in 33 CFR 332.8(n) is achieved once the initial physical and biological improvements proposed in the Project Development Plan for such ILF Project are implemented, as verified by as-built drawings approved by the Program Signatories or field visit attended by the Program Signatories. Development of Released Credits to fulfill the mitigation obligation of the Advance Credits occurs through achieving the performance standards in the Development

⁸ Number of Advance Credits that will be approved for Transfer still being developed by the Conservancy for review by the IRT

Plan, according to the Credit Release schedule described below. If the Program Sponsor fails to meet these deadlines, the applicable Program Signatory may make a determination that more time is needed to plan and implement the applicable ILF Project, or, if doing so would not be in the public interest, direct the Program Sponsor to disburse funds from the Program Account to provide alternative Compensatory Mitigation to fulfill those compensation obligations.

Generation of Credits

Each approved ILF Project Development Plan will include the method for determining the Credits generated by the individual ILF Project. A discussion of the process for Credit determination is included in Exhibit B.

Credit Release

Each ILF Project Development Plan approved by the Program Signatories will include a Credit Release schedule linked to the achievement of Performance Standards. As milestones in an individual ILF Project's Credit Release schedule are reached, the ILF Project will be deemed (as confirmed in writing by the applicable Program Signatories) to have generated Released Credits. Generation of Released Credits will require (1) the applicable Program Signatories' approval of the Development Plan for the ILF Project site; (2) achievement of the applicable milestone(s) in the Credit Release schedule; (3) submittal of a request for Credit Release to the applicable Program Signatories, along with documentation substantiating achievement of the criteria for release to occur; and (4) written confirmation of Credit Release from the applicable Program Signatories. If the ILF Project does not achieve the performance-based milestones, the applicable Program Signatories will coordinate with the Program Sponsor to modify the Credit Release schedule and provide written notice of such modification to the Program Sponsor.

- a. Establishment, Re-establishment, Rehabilitation, Enhancement Credits. In general, Released Credits for ILF Projects implementing these mitigation activities are generated according to the following schedule:
 - i. Fifteen percent of the total Credits expected to be created by the ILF Project will be generated as Released Credits upon Program Signatory approval of the ILF Project's Development Plan and the securing of appropriate property rights with respect to the physical site of the ILF Project (such as recordation of a Conservation Easement for the purpose of implementing an ILF Project).
 - ii. Twenty-five percent of the total Credits expected to be created by the ILF Project will be generated as Released Credits upon Program Signatory approval of the as-built drawings (which drawings will describe in detail any deviation from the Development Plan).
 - iii. Fifteen percent of the total Credits expected to be created by the ILF Project will be generated as Released Credits upon attainment of the applicable year-two Performance Standards for such ILF Project.

- iv. Fifteen percent of the total Credits expected to be created by the ILF Project will be generated as Released Credits upon attainment of the applicable year-three Performance Standards for such ILF Project and, if appropriate, a verified jurisdictional determination.
- v. Fifteen percent of the total Credits expected to be created by the ILF Project will be generated as Released Credits upon attainment of the applicable year-four Performance Standards for such ILF Project.
- vi. All remaining Credits will be generated upon attainment of the applicable year-five Performance Standards for the ILF Project and, if appropriate, a verified jurisdictional determination.

This credit release schedule may be modified in an ILF Project's approved Mitigation Plan to accommodate those projects requiring more than five years to meet Performance Standards (ex. aquatic resources with slow development rates such as forested wetlands).

- b. Preservation Credits. In general, because Preservation does not involve meeting short term Performance Standards, 100% of the Credits expected to be created by an ILF Project implementing Preservation will be deemed to be generated as Released Credits upon acquisition and full legal protection of the real property to be Preserved and the achievement of the applicable milestone for funding of the LTMM Fund for such real property.
- c. Buffer Credits. Credits associated with the implementation by the Program Sponsor of Aquatic Resource Buffer areas, through either preservation or restoration of applicable acreage, will be defined and calculated in the Development Plan, and will follow the Credit Release schedule described above for Restoration or Preservation, as the case may be.

Transfer of Credits

- a. All activities regulated under section 404 and 401 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, the Porter-Cologne Water Quality Control Act, Section 1600-1616 of California Fish and Game Code, the California Coastal Act, the Endangered Species Act, and other applicable laws may be eligible to use the Program as Compensatory Mitigation for unavoidable Impacts permitted or otherwise authorized or addressed by one or more Program Signatory.
- b. Credits Transferred may only be used in conjunction with a permit, certification, or other authorization or approval issued by one or more of the Program Signatories, or in conjunction with an enforcement action by one or more of the Program Signatories, in either case involving Impacts to aquatic resources under the jurisdiction of such Program Signatories.

- c. Proceeds from Transfers of Advance Credits will be deposited into the Program Account.
- d. Each Program Signatory will make its own respective decisions about the most appropriate Compensatory Mitigation on a case-by-case basis, during evaluation of the permit application for a proposed project. This Instrument does not guarantee that any of these Parties will accept the use of Program Credits for a specific permitted activity, and authority for approving use of the Program for Compensatory Mitigation lies with these Parties, each in its sole discretion, respectively, for Impacts subject to the jurisdiction of each such Party.
- e. The responsibility to provide Compensatory Mitigation remains with the permittee/project proponent unless and until Credits are Transferred from the Program. If the applicable Program Signatories determine that the purchase of Credits from the Program is appropriate, the permittee/project proponent may contact the Program Sponsor to secure the necessary amount and resource type of Credits, as set forth in project applicant's permit conditions. The sale of a Credit will include all benefits assigned, whether required or not, so that no unrequired benefits may be retained by the ILF Project and sold at a later date. Upon Transfer of Credits, the Program Sponsor will enter the pertinent Transfer information into RIBITS as provided elsewhere in this Instrument.
- f. Additional information pertaining to Transfers of Credits will be reflected in annual accounting reports as provided elsewhere in this Instrument.
- g. Subject to the limitations on any obligation on the part of the Program Sponsor to remediate as provided in Section 6.1.4, if an ILF Project site is damaged after the Program Establishment Date, and such damage materially impairs Waters of the U.S., Waters of the State, or habitat values on such ILF Project site, then the applicable Program Signatories may, at its/their discretion, suspend further releases of Released Credits from such ILF Project site unless and until the Program Sponsor has reasonably restored such damaged area, if required, pursuant to a Remedial Action plan approved by the applicable Program Signatories.

6.3.3 Initial Fee Schedule

Per the requirements of 33 CFR 332.8(o)(5)(ii) and Chapter 7.9, Sections 1797–1799.1 of the CDFW's Conservation and Mitigation Banking Guidelines, the cost per unit of Credit will be based on all expected costs associated with the Enhancement, Rehabilitation, Re-establishment, Establishment, and Preservation of Aquatic Resources and Aquatic Resource buffers within the ILF Program Sub-service Areas. These costs will be based on full cost accounting and include, as appropriate:

- Project delivery expenses such as land acquisition (including, without limitation, options to purchase), project planning and design, project permitting and environmental

document approvals, construction, plant materials, labor, administrative costs (costs to the sponsor), and legal fees

- Interim and Long-term Management, Monitoring, and Reporting on a project-level basis
- Remediation or Adaptive Management activities
- Contingency costs appropriate to the stage of project planning, including uncertainties in construction and real estate expenses
- Financial assurances
- Overall Program administration costs equal to approximately 15 to 20% of each Credit sale

This list is not meant to be exhaustive and may include other categories, as appropriate, as determined by the Program Sponsor on a project-by-project basis. Costs of mitigation Credits determined during a particular timeframe are subject to change as project cost factors, administrative costs, and market conditions change. As listed above, the cost per unit of Credit must take into account various contingency allocations. These contingency costs may vary depending on the type of ILF Projects that are in progress during a particular timeframe. The cost per unit of Credit must also take into account the Interim and Long-Term Management and Maintenance (IMM and LTMM) funds necessary for the interim and long-term management and protection of the Program in perpetuity, and enforcement of the necessary protection mechanism. In addition, the cost per Credit must include financial assurances that are essential in ensuring successful completion of ILF Projects in progress during a particular timeframe. These fees will be reviewed at least annually and updated as appropriate.

Funds for planning and implementation of specific ILF Projects may be obtained from other sources (such as loans) and repaid to the funding entity as Credits are sold. This provision is envisioned as analogous to the allowance of the sale of Advance Credits; use of any “advance” outside funds for this purpose will be specifically tracked and reflected in the Program’s accounting and reporting.⁹

In general, fees for each Credit type (Enhancement, Rehabilitation, Re-establishment, Establishment, and Preservation) for aquatic resources and aquatic resource buffers will be determined for each Sub-service Area based on the active ILF Projects within that Sub-service Area and the types of resources supported by these projects. The Fee Schedule by Sub-service Area and Credit type is provided in Exhibit E.

6.4 Legal Responsibility for Providing Compensatory Mitigation

Under the Program, the responsibility to provide Compensatory Mitigation remains with a permittee unless and until the appropriate number and type of Credits are purchased by such

⁹ The Program Sponsor currently has a USEPA grant for Program development. This grant is accounted for separately from funds for ILF Project planning and implementation. No funds generated from credit sales will be used to repay the Program development that was funded by USEPA.

permittee from the Program through a Credit Transfer. Once a permittee purchases Credits from the Program through a Credit Transfer, the legal responsibility for providing Compensatory Mitigation with respect to those Credits in accordance with this Instrument transfers to the Program Sponsor.

1. The transfer of legal responsibility from a permittee to the Program Sponsor hereunder is established when all of the following have occurred:
 - a. The Instrument has been executed by the Parties;
 - b. Written authorization or confirmation from the applicable Program Signatories that the permittee is eligible to fulfill its Compensatory Mitigation obligation through purchase of Credits from the Program, along with written indication of the specific type and number of Credits the permittee must purchase for those purposes; and
 - c. Delivery to the applicable Program Signatories of a Credit Transfer Agreement (Exhibit B) signed by both the Program Sponsor and the permittee.
2. The satisfaction of the Program Sponsor's legal responsibility for providing the required Compensatory Mitigation is established through the generation of Released Credits in an amount equal to or greater to the number of transferred Advance Credits, thereby fulfilling its obligations as set forth in this Instrument.
3. The Program Sponsor will retain responsibility for required Compensatory Mitigation for which Credit(s) are sold from the Program until one of the following has occurred:
 - a. The Advance Credits associated with the Compensatory Mitigation have been fulfilled through application of Released Credits, and the long-term management obligations of the ILF Project site associated with applied Released Credits have been transferred to a Program Signatory-approved entity; or
 - b. The Compensatory Mitigation obligation has been transferred to a Program Signatory-approved third party (i.e., purchase of credits from a mitigation bank); or
 - c. The Program is Closed in accordance with this Instrument.
4. Notwithstanding any other provision of this Instrument, to the maximum extent permitted by law, the Program Sponsor's maximum financial obligation and liability for the Program, including providing Compensatory Mitigation thereunder, is at all times limited to the funds in the Program Account.
5. Either Party to a Credit Transfer Agreement may terminate the agreement within 60 days of written notification to the other party. If the Program Sponsor elects to terminate the agreement and receipt of funding, it must provide written notification to the applicable

Program Signatories. Without written approval from the Program Signatories, the Program Sponsor will not be relieved of its obligations under this agreement to complete and maintain Compensatory Mitigation sites at which planning, Establishment, Re-establishment, Rehabilitation, and/or Enhancement, has been initiated or for which some monies have already been expended. If the Program Sponsor or Program Signatories cancel the agreement, any unused Program monies received by the Program Sponsor, but not encumbered under contract or expended, will be returned to the Program Signatories or other entity approved in writing by the Program Signatories, and will be used for implementation of aquatic resource planning, Establishment, Re-establishment, Rehabilitation, and/or Enhancement, in the appropriate Sub-service Area.

6.5 Performance Standards

Performance Standards will be identified and defined in each ILF Project Development Plan on a case-by-case basis. At the end of each ILF Project's Interim Management Period, the Program Sponsor will independently verify whether the Performance Standards have been met, providing the expected functions and generating the anticipated functional lift. It is expected that performance standards for each ILF Project that will enhance, restore, or create habitat will align with the Integrated Regional Wetlands Assessment Program (IRWAP) for Southern California, the Wetland Regional Assessment Program (WRAMP) for the State, and the USACE Uniform Performance Standards.

Performance Standards will be based on standard measurements and assessments using the best scientific data available. Standards will be based on measured changes in functions as described in each ILF Project Development Plan. These individual plans will identify the specific measurements of physical, hydrologic, chemical, and biological attributes of the site's aquatic resources through comparisons to reference aquatic resources on similar sites (Reference sites) in the vicinity of each ILF Project site.

Reference Sites

Reference sites will be identified in each ILF Project's Development Plan and used to develop Performance Standards for each ILF Project. Performance Standards based on hydrologic measurements must consider the hydrologic variability exhibited by reference aquatic resources, especially wetlands. Performance Standards will consider the expected stages of the aquatic resource development process in order to allow early identification of potential problems and appropriate adaptive management if necessary (33 CFR 332.5(a) and (b)). In addition, any performance standards based on desired functional lift will take into account the pre-activity functions and conditions of an ILF Project site and the mitigation action(s) being implemented. Standards for a given ILF Project will ultimately depend on the type, scale, and scope of that ILF Project and will be outlined in detail in the ILF Project Development Plan. The individual Development Plans and ILF Projects will be reviewed and approved in advance by the Program Sponsor and applicable Program Signatories prior to their inclusion in the Program and implementation.

Performance Standard Components

Performance Standards for individual ILF Projects will include the following components, at a minimum:

1. List of Attributes. This list must identify which specific attributes will be observed and measured during the life of the ILF Project based on an identified Reference site or sites.
2. List of Indicators. This list identifies which specific indicators of each of the attributes will be monitored. Examples might include presence/absence of woody vegetation, invasive species, wetland acreage, or water regimes.
3. Anticipated Functional Lift and/or Success Criteria.¹⁰The Performance Standards will identify the degree of change, the desired functional lift level, or interim or final success criteria¹¹ that the attribute should achieve, along with any other anticipated success criteria that have been discussed in the individual ILF Project Development Plans, such as recruitment by Listed Species or other factors.
4. Schedule. The Performance Standards must identify an anticipated schedule with milestones and a target date of completion to be achieved within a given time-frame. The Standards will include the construction period, the Interim Management Period, and the Long-term Management Period.

The following list contains examples of parameters that may be used to establish Performance Standards for a specific ILF Project.

- Hydroperiod and hydrology
- Soil characteristics and/or development of hydric soils
- Area of desired resource type, e.g., hydrogeomorphic (HGM) classes/subclasses, Cowardin classes, aquatic area types, and/or upland community types
- Native species cover, richness, and abundance
- Presence of target native plant and/or wildlife species
- Vegetation composition and structure
- Maximum percent cover (threshold) of nonnative and invasive vegetation species
- Specific target functions or physical characteristics
- Water quality measures

In general, parameters relating to target vegetation development and area of desired resource type will be used for all ILF Projects, and parameters related to hydrology and soil development will be established for ILF Projects involving aquatic resources. Water quality measures will

¹⁰ CCC addition

¹¹ CCC addition

only be used for ILF Projects that include specific goals and requirements relating to water quality. Standards related to the presence of target species will only be established for ILF Projects with goals related to habitat establishment or improvement for specific special-status plant and/or wildlife species.

Observable, measurable performance criteria will be established for each parameter to be assessed for a specific ILF Project. Each performance criterion will also specify the method(s) by which it will be assessed and the frequency of assessment. All ILF Projects will include interim performance standards to be assessed annually or biannually to determine if adaptive management measures (remedial actions) are needed during site development to ensure that sites are on track to meet final performance standards.

Methods of Assessing ILF Project Performance

Methods for assessing an ILF Project's performance will be closely tied to the performance standards themselves and will include both qualitative and quantitative approaches that are statistically valid.

CRAM (or other acceptable functional assessment methodologies that may be developed in the future) will be used to quantify anticipated functional benefits (i.e., "lift") from implementation of those ILF Projects that include resource types for which a CRAM module has been developed. This assessment will be used to develop performance standards tied to functional lift for these projects. In all cases, the use of CRAM will be coupled with a site-specific level 3 (fine scale) analysis and associated performance standards. Habitats for which CRAM is not applicable will be assessed using alternative assessment methods approved by the Program Signatories. Examples of appropriate level 3 and alternative functional assessment methods are listed below:

- HGM approach
- Jurisdictional wetland delineation
- Vegetation surveys (transects, quadrats, Relevé)
- Focused species protocol surveys
- Water quality testing

6.6 Program Reporting

A. Annual Report

The Program Sponsor will upload an annual report to RIBITS and furnish a copy to each of the Program Signatories, in hard copy and in editable electronic format, on or before September 30 of each year following the Program Establishment Date. Each annual report will cover the period from July 1 of the preceding year (or if earlier, the Program Establishment Date for the first annual report) through June 30 of the current year (the "Reporting Period"). The annual report will address the following:

1. ILF Project Development

The annual report will document the degree to which each ILF Project site in the Program is meeting its Performance Standards. The annual report will describe any deficiencies in attaining and maintaining Performance Standards and any Remedial Action proposed, approved, or performed. If Remedial Action has been completed, the annual report will also evaluate the effectiveness of that action.

2. Interim Management and Long-term Management

The annual report will contain an itemized account of the management tasks conducted during the reporting period in accordance with the Interim Management or Long-term Management Plan for each ILF Project site, including the following:

- a. The time period covered, i.e., the dates “from” and “to”;
- b. A description of each management task conducted, the dollar amount expended, and time required; and
- c. The total dollar amount expended for management tasks conducted during the reporting period.

3. Credit Ledger Report

The annual report will include an updated Credit Transfer Ledger (Exhibit B) for each Sub-service Area showing the beginning and end balance of available Credits and permitted impacts for each resource type, all additions and subtractions of Credits, and any other changes in Credit availability (e.g., additional Credits released, Credit sales suspended).

4. Program Account

The Annual Report will include a financial activity report for the Program Account, including all Sub-Accounts within the Program Account (if applicable). The financial report will include (1) all income received from Transfers of Advance Credits and investment earnings accrued by the Program Account; (2) a description of in-lieu fee program disbursements and expenditures from the Program Account, such as the costs of land acquisition, planning, construction, monitoring, maintenance, contingencies, Adaptive Management, and administration; and (3) a long-term funding report summarizing the status of the funds (e.g., endowments) for long-term management of completed ILF Projects.

5. Compensatory Mitigation Tracking

The Annual Report will include a listing and summary for each Sub-service Area of (1) all permits for which funds from Transfers of Credits were accepted (including applicable permit numbers); (2) the amount of authorized Impacts giving rise to such Transfers of Credits; (3) the amount of required Compensatory Mitigation; (4) the amount paid to the Program for Transfers of

Advance Credits, (5) the date(s) the funds were received from applicable permittees for such Credits; and (6) the amount of corresponding compensation generated through ILF Projects within the Sub-service Area.

6. Geographic Information System Data

The Annual Report will include a geographic information system (GIS) database showing (1) the location of each permitted Impact giving rise to a Credit Transfer, and (2) each ILF Project location, size, and acres Enhanced, Rehabilitated, Re-established, Established, and/or Preserved. The database will be updated no less frequently than quarterly. Relevant information for the GIS database and updated data layers will be made available to the Program Signatories upon request.

B. Credit Transfer Reporting

Upon the Transfer of each and every Credit, the Program Sponsor will enter the Credit Transfer into RIBITS and submit to each Program Signatory:

1. A copy of the certification in the form provided in Exhibit B that identifies the permit number, and provides a statement indicating the number and resource type of Credits that have been secured from the Program Sponsor, and that legal responsibility has transferred from the permittee to the Program Sponsor; and
2. An updated Credit Transfer Ledger, in hard copy and in editable electronic format in the form provided in Exhibit B.

6.7 Program Signatory Review Schedule for ILF Project Development Plans

Schedule to be negotiated with the Program Signatories

6.8 Program Default and Closure Procedures

6.8.1 Program Default and Dispute Resolution

1. Notice of Violation

In the event that the Program Sponsor is in violation of the terms of this Instrument or that a violation is threatened, any Program Signatory may demand the cure of such violation. In such a case, the Program Signatory will issue a written notice to the Program Sponsor (hereinafter “Notice of Violation”) informing the Program Sponsor of the actual or threatened violations and demanding cure of such violations.

2. Time to Cure

The Program Sponsor will cure the noticed violation within thirty (30) days of receipt of said written Notice of Violation. If said cure reasonably requires more than thirty (30) days, the Program Sponsor will, within the thirty (30) day period, submit to the Program Signatories for

review and approval a plan and time schedule to diligently complete a cure. The Program Sponsor will complete such cure in accordance with the approved plan. If the Program Sponsor disputes the notice of violation, it will issue a written notice of such dispute (hereinafter “Notice of Dispute”) to the Program Signatories within thirty (30) days of receipt of written Notice of Violation.

3. Failure to Cure

If the Program Sponsor fails to cure the violation within the time period(s) described above, the USACE may take appropriate action. Such actions may include, but are not limited to, suspending Credit sales, Adaptive Management, decreasing available Credits, directing funds to alternate locations, taking enforcement actions, or terminating the Instrument. The USACE or Program Signatories cannot directly accept, retain, or draw upon funds in the Program Account in the event of a default. Any delay or failure of the Program Sponsor to comply with the terms of this Instrument or an approved Development Plan will not constitute default if and to the extent that such delay or failure is primarily caused by any Force Majeure or other conditions beyond the Program Sponsor’s reasonable control and significantly adversely affects its ability to perform its obligations hereunder. The Program Sponsor will give written notice to the Program Signatories if the performance of its ILF Project is affected by any such event in accordance with Section 7.

4. Notice of Dispute.

- a. If the Program Sponsor provides the Program Signatories with a Notice of Dispute, as provided herein, the Program Signatories will meet and confer with the Program Sponsor at a mutually agreeable place and time, not to exceed thirty (30) days from the date that the Program Signatories receive the Notice of Dispute. The Program Signatories will consider all relevant information concerning the disputed violation provided by the Program Sponsor and will determine whether a violation has in fact occurred and, if so, whether the Notice of Violation and demand for cure is appropriate in light of the violation.
- b. If, after reviewing the Program Sponsor’s Notice of Dispute, conferring with the Program Sponsor, and considering all relevant information related to the violation, the Program Signatories determine that a violation has occurred, the Program Signatories will give the Program Sponsor notice of such determination in writing. Upon receipt of such determination, the Program Sponsor will have fifteen (15) days to cure the violation. If said cure reasonably requires more than fifteen (15) days, the Program Sponsor will, within the fifteen (15) day period, submit to the Program Signatories for review and approval a plan and time schedule to diligently complete a cure. The Program Sponsor will complete such cure in accordance with the approved plan.

5. Dispute Resolution

Resolution of disputes concerning the Program Signatories’ compliance with this Instrument will be in accordance with those stated in 33 CFR 332.8. Disputes related to satisfaction of

Performance Standards may be referred to independent review from government agencies or academia that are not part of the Program Signatories. The Parties will evaluate any such input and determine whether the Performance Standards have been met.

6.8.2 Modification, Amendment, and Termination of Instrument

1. Modification and Amendment

This Instrument, including its Exhibits, may be amended or modified only with the written approval of the Program Signatories. Instrument modifications, including the addition or expansion of ILF Projects, will follow the process outlined in Exhibit D. The Program Signatories may use a streamlined modification review process for changes reflecting Adaptive Management of an ILF Project site, Credit Releases, changes in Credit Releases and Credit Release schedules, and changes that the USACE and Program Signatories¹² determines are not significant.

2. Termination/Program Closure

Any Party to this Instrument may terminate its participation in this Instrument by giving 60 days written notice to the other Parties. In the event that the Program operated by the Program Sponsor is terminated (i.e., closed), the Program Sponsor is responsible for fulfilling any remaining ILF Project obligations, including the successful completion of ongoing ILF Projects, relevant maintenance, monitoring, reporting, and long-term management requirements. The Program Sponsor will remain responsible for fulfilling these obligations until such time as the long-term financing obligations have been met and the long-term ownership of all mitigation lands has been transferred to the party responsible for ownership and all long-term management of the ILF Project(s). Funds remaining in the Program Accounts after these obligations are satisfied must continue to be used for the Establishment, Re-establishment, Rehabilitation, Enhancement, and/or Preservation of aquatic resources within the applicable Subservice Areas. The Program Signatories will direct the Program Sponsor to use these funds to secure Credits from another source of third-party mitigation, such as another in-lieu fee program, mitigation bank, or another entity such as a governmental or non-profit natural resource management entity willing to undertake the compensation activities. The funds should be used, to the maximum extent practicable, to provide compensation for the amount and type of aquatic resource for which the fees were collected.

SECTION 7: OTHER PROVISIONS

A. Force Majeure

1. The Program Sponsor will be responsible to maintain the ILF Project site and perform Remedial Action except for damage or non-compliance caused by Catastrophic Events, events of Force Majeure, or Unlawful Acts. For such exception to apply, the Program Sponsor will bear the burden of demonstrating all of the following:

¹² CCC addition

- a. That the damage or non-compliance was caused by circumstances beyond the control of the Program Sponsor and any person or entity under the direction or control of the Program Sponsor, including its employees, agents, contractors, and consultants;
 - b. That neither the Program Sponsor, nor any person or entity under the direction or control of the Program Sponsor, including its employees, agents, contractors, and consultants, could have reasonably foreseen and prevented such damage or noncompliance; and
 - c. The period of damage or non-compliance was a direct result of such circumstances.
2. The Program Sponsor will cease Transfer of Credits and notify the Program Signatories within seventy-two (72) hours of occurrence of a Catastrophic Event, event of Force Majeure, or Unlawful Act. As promptly as reasonably possible thereafter, the Program Sponsor and the Program Signatories will meet to discuss the course of action in response to such occurrence. In the meantime, the Program Sponsor will continue to manage and maintain the ILF Project to the full extent practicable.

B. Controlling Language

The Parties intend the provisions of this Instrument and each of the documents incorporated by reference in it to be consistent with each other, and for each document to be binding in accordance with its terms. To the fullest extent possible, these documents will be interpreted in a manner that avoids or limits any conflict between or among them. However, if and to the extent that specific language in this Instrument conflicts with specific language in any document that is incorporated into this Instrument by reference, the specific language within the Instrument will be controlling. The captions and headings of this Instrument are for convenient reference only, and will not define or limit any of its terms or provisions.

C. Entire Agreement

This Instrument, and all exhibits, appendices, schedules, and agreements referred to in this Instrument, constitute the final, complete, and exclusive statement of the terms of the agreement between and among the Parties pertaining to the Program, and supersede all prior and contemporaneous discussions, negotiations, understandings, or agreements of the Parties. No other agreement, statement, or promise made by the Parties, or to any employee, officer, or agent of the Parties, which is not contained in this Instrument, will be binding or valid. No alteration or variation of this instrument will be valid or binding unless contained in a written amendment in accordance with Section 6.8.2. Each of the Parties acknowledges that no representation, inducement, promise, or agreement, oral or otherwise, has been made by any of the other Parties or anyone acting on behalf of any of the Parties unless the same has been embodied herein.

D. Reasonableness and Good Faith

Except as specifically limited elsewhere in this Instrument, whenever this Instrument requires a Party to give its consent or approval to any action on the part of the other, such consent or approval will not be unreasonably withheld or delayed. If a Party disagrees with any determination covered by this provision and reasonably requests the reasons for that determination, the determining Party will furnish its reasons in writing and in reasonable detail within 30 days following the request.

E. Successors and Assigns

This Instrument and each of its covenants and conditions will be binding on and will inure to the benefit of the Parties and their respective successors and assigns subject to the limitations on transfer set forth in this Instrument.

F. Partial Invalidity

If a court of competent jurisdiction holds any term or provision of this Instrument to be invalid or unenforceable, in whole or in part, for any reason, the validity and enforceability of the remaining terms and provisions, or portions of them, will not be affected unless an essential purpose of this Instrument would be defeated by loss of the invalid or unenforceable provision.

G. Notices

1. Any notice, demand, approval, request, or other communication permitted or required by this Instrument will be in writing and deemed given when delivered personally, sent by facsimile or electronic mail, or sent by recognized overnight delivery service, addressed as set forth below, or five days after deposit in the U.S. mail, postage prepaid, and addressed as set forth below.
2. Notice by any Party to any other Party will be given to all Parties. Such notice will not be effective until it is deemed to have been received by all Parties.
3. Addresses for purposes of giving notice are set forth below. Any Party may change its notice address by giving notice of change of address to the other Parties in the manner specified in this Section 7.

Program Sponsor:

California State Coastal Conservancy
1330 Broadway
Oakland, CA 94612
Attn: Southern California Wetlands Recovery Project In-Lieu Program
Telephone: (510) 286-4172
Fax: (510) 286 0470

Program Signatories:

U.S. Army Corps of Engineers
Los Angeles District
915 Wilshire Blvd.
Los Angeles, CA 90017
Attn: Chief, Regulatory Division
Telephone: (213) 452-3406
Fax: (213) 452-4196

U.S. Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, CA 94105
Attn: Director, Water Division
Telephone: 415-947-8707
Fax: (415) 947-3549

National Marine Fisheries Service
TBD

U.S. Fish and Wildlife Service
TBD

California Coastal Commission
TBD

California Department of Fish and Wildlife
TBD

State Water Resources Control Board
1001 I Street, 15th Floor
Sacramento, CA 95814
Attn: Executive Director
Telephone: (916) 341-5615
Fax: (916) 341-5620

Los Angeles Regional Water Quality Control Board
TBD

Santa Ana Regional Water Quality Control Board
TBD

San Diego Regional Water Quality Control Board
TBD

H. Counterparts

This Instrument may be executed in multiple counterparts, each of which will be deemed an original and all of which together will constitute a single executed agreement.

I. No Third Party Beneficiaries

Except to the extent expressly stated herein, this Instrument will not create any third-party beneficiary hereto, nor will it authorize anyone not a Party hereto to maintain any action, suit, or other proceeding, including without limitation, for personal injuries, property damage, or enforcement pursuant to the provisions of this Instrument. The duties, obligations, and responsibilities of the Parties to this Instrument with respect to third parties will remain as otherwise provided by law in the event this Instrument had never been executed.

J. Availability of Funds

Implementation of this Instrument by the Parties is subject to the requirements of the Anti-Deficiency Act, 31 U.S.C. § 1341, and the availability of appropriated funds. Nothing in this Instrument may be construed to require the obligation, appropriation, or expenditure of any money from the U.S. Treasury or the California State Treasury. No Parties are required under this Instrument to expend any appropriated funds unless and until an authorized official affirmatively acts to commit to such expenditures as evidenced in writing.

K. No Partnerships

This Instrument will not make or be deemed to make any Party to this Instrument an agent for or the partner or joint venturer of any other Party.

L. Governing Law

This Instrument will be governed by and construed in accordance with the Clean Water Act, 33 U.S.C. § 1251 *et seq.*, and other applicable federal and state laws and regulations.

M. Headings and Captions

Any paragraph heading or captions contained in this Instrument will be for convenience of reference only and will not affect the construction or interpretation of any provisions of this Instrument.

N. Right to Refuse Service

Program Signatory approval of Transfer of Credits from the Program does not signify the Program Sponsor's acceptance or confirmation of the Program Sponsor's offer to Transfer. The Program Sponsor reserves the right to refuse to Transfer Credits from the Program for any reason.

O. No Contract

Any federal agency participation in and approval of the Instrument is in furtherance of its regulatory obligations under applicable federal laws and regulations. Any state agency participation in and approval of this Instrument is in furtherance of its regulatory obligations under applicable state laws and regulations. As such, the Instrument is not a “contract” between or among the Parties. Rather, the Instrument is the legal document for the establishment, operation, and use of the Program pursuant to 33 CFR Part 332. Any dispute arising under this Instrument will be resolved pursuant to the dispute resolution provisions herein, and will not give rise to any claim by any Party for monetary damages or other relief for alleged “breach of contract.”

SECTION 8: SIGNATURES AND EXECUTION

Each of the undersigned certifies that he or she has full authority to bind the Party that he or she represents for purposes of entering into this Instrument. This Instrument will be deemed executed on the date of the last signature by the Parties.

IN WITNESS WHEREOF, the Parties have executed this Instrument as follows:

Program Sponsor
California State Coastal Conservancy

[TBD]
South Coast Program Manager

Date

U.S. Army Corps of Engineers, Los Angeles District

[TBD]
Chief, Regulatory Division

Date

U.S. Environmental Protection Agency, Region IX

[TBD]
Director, Water Division

Date

National Marine Fisheries Service, West Coast Region

[TBD]
Regional Administrator

Date

U.S. Fish and Wildlife Service

[TBD]

Date

California Coastal Commission

| _____
[TBD]

Date

California Department of Fish and Wildlife

| _____
[TBD]

Date

State Water Resources Control Board

| _____
[TBD]
Executive Director

Date

Los Angeles Regional Water Quality Control Board

| _____
[TBD]

Date

Santa Ana Regional Water Quality Control Board

| _____
[TBD]

Date

San Diego Regional Water Quality Control Board

| _____
[TBD]

Date

PROPOSITION 1 FUNDING COORDINATION FOR WRP

| WRP Work Plan | | | | | | | |
|---|--------------------|--------------------|--------------------|----------|--------------------|--------------------|---------------------|
| Project Name | SCC | CDFW | OPC | SMMC | RMC | SDRC | WCB |
| Cottonwood Canyon Acquisition Project, Pasadena | | \$507,000 | | | | | |
| Fish Passage Design at Interstate 5 Bridge Array on Trabuco Creek | | \$383,890 | | | | | |
| Los Angeles River Taylor Yard Acquisition and Restoration | \$2,000,000 | | | | | | |
| Los Cerritos Wetlands Restoration Planning and Acquisition | \$500,000 | | | | \$1,350,000 | | |
| Los Penasquitos Lagoon Restoration - Design and Feasibility | \$183,320 | | | | | | |
| Madrona Marsh Vernal Pool Watershed Restoration | \$469,900 | | | | | | |
| Matilija Dam Removal | | \$3,300,504 | | | | | |
| North Campus Open Space Wetland Transition | \$1,053,126 | \$997,095 | \$1,000,000 | | | | |
| Ormond Beach Aquisition - Southland Sod Farm | \$1,024,393 | | | | | | |
| Pecten Reef Habitat Restoration and Enhancement | \$677,400 | | | | | | |
| San Diego Canyons Wetlands Restoration | \$300,000 | | | | | \$462,753 | |
| San Diego River Watershed Riparian Habitat Restoration | | | | | | \$1,771,700 | |
| Santa Margarita River Fish Passage Design | \$332,544 | | | | | | |
| TOTAL | \$6,540,683 | \$5,188,489 | \$1,000,000 | - | \$1,350,000 | \$2,234,453 | - |
| | | | | | | GRAND TOTAL | \$16,313,625 |

PROPOSITION 1 FUNDING COORDINATION FOR WRP

| Potential WRP Work Plan | | | | | | | |
|---|-----------|----------|-------------|-------------|-------------|-----------|-----|
| Project Name | SCC | CDFW | OPC | SMMC | RMC | SDRC | WCB |
| Acquisition of Cheseboro Meadow, Agoura Hills | | | | \$2,570,000 | | | |
| Acquisition of Cottonwood Canyon parcels, Pasadena | | | | \$345,000 | | | |
| Acquisition of Liberty Canyon tributary, Agoura Hills | | | | \$50,000 | | | |
| Acquisition of 3 or more parcels in Carbon Canyon Creek, Malibu | | | | \$275,000 | | | |
| Acquisition of 10 parcels in Dry Creek Canyon, Calabasas | | | | \$1,112,000 | | | |
| Acquisition of Robin's nest (Upper Santa Clara River) | | | | \$1,000,000 | | | |
| Acquisition of Woolsey Canyon Creek property, LA | | | | \$355,000 | | | |
| Arroyo Sequit Watershed Project Planning and Design | | | | \$250,000 | | | |
| Beach Erosion Authority for Clean Oceans and Nourishment (BEACON): Santa Barbara County | | | \$539,000 | | | | |
| Cardiff Beach Living Shoreline Project | \$322,000 | | \$2,195,932 | | | | |
| Caballero Creek Park | \$500,000 | | | | | | |
| Conservation easement Curson Canyon tributary (Ballona Creek Watershed) | | | | \$700,000 | | | |
| El Monte Valley (Lakeside, CA) Land acquisition | | | | | | \$540,000 | |
| Emerald Necklace Rio Hondo & Peck Water Conservation | | | | | \$617,385 | | |
| Harvey Diversion Fish Passage Restoration Project | \$170,008 | | | | | | |
| Laurel Canyon Spring Acquisition Project, LA | | | | \$595,000 | | | |
| Lynwood Park Infiltration, Restoration, and Water Quality Improvement Project | | | | | \$1,692,575 | | |
| Native Trout Preservation in the Santa Ana Watershed | | \$44,093 | | | | | |
| Ocean Connectors Bird and Habitat Study | \$25,000 | | | | | | |
| Parkway Basin Water Quality Improvement Project | | | | | \$2,685,000 | | |
| Rancho Simi Recreation and Park District-Alamos Canyon, Ventura Co. | | | | \$530,000 | | | |
| Restoration of 1.5miles Las Virgenes Creek, Calabases | | | | \$980,500 | | | |

PROPOSITION 1 FUNDING COORDINATION FOR WRP

| Potential WRP Work Plan | | | | | | | |
|--|--------------------|------------------|--------------------|--------------------|--------------------|--------------------|---------------------|
| Project Name | SCC | CDFW | OPC | SMMC | RMC | SDRC | WCB |
| River Wilderness Park Arroyos Development | | | | | \$1,000,000 | | |
| San Diego Bay Native Oyster Restoration & Living Shoreline | \$313,953 | | | | | | |
| San Diego River Mast Park | | | | | | \$1,233,000 | |
| San Gabriel Watershed Restoration Program | | \$65,000 | | | | | |
| San Gabriel River and Wilderness Park Restoration Project | | | | | \$1,660,000 | | |
| San Luis Rey River Habitat Protection Project | \$102,500 | | | | | | |
| San Diego River Trash Removal & Water Quality Enhancement | | | | | | \$686,900 | |
| Rancho Simi Recreation and Park District-Simi Hills-Joncich Acquisition project, Ventura Co. | | | | \$500,000 | | | |
| Temescal Creek (Julian, CA) Land acquisition | | | | | | \$355,000 | |
| Walker Preserve Habitat Restoration and Erosion Control | | | | | | \$256,665 | |
| TOTAL | \$1,433,461 | \$109,093 | \$2,195,932 | \$3,305,500 | \$7,654,960 | \$3,071,565 | - |
| GRAND TOTAL | | | | | | | \$17,770,511 |

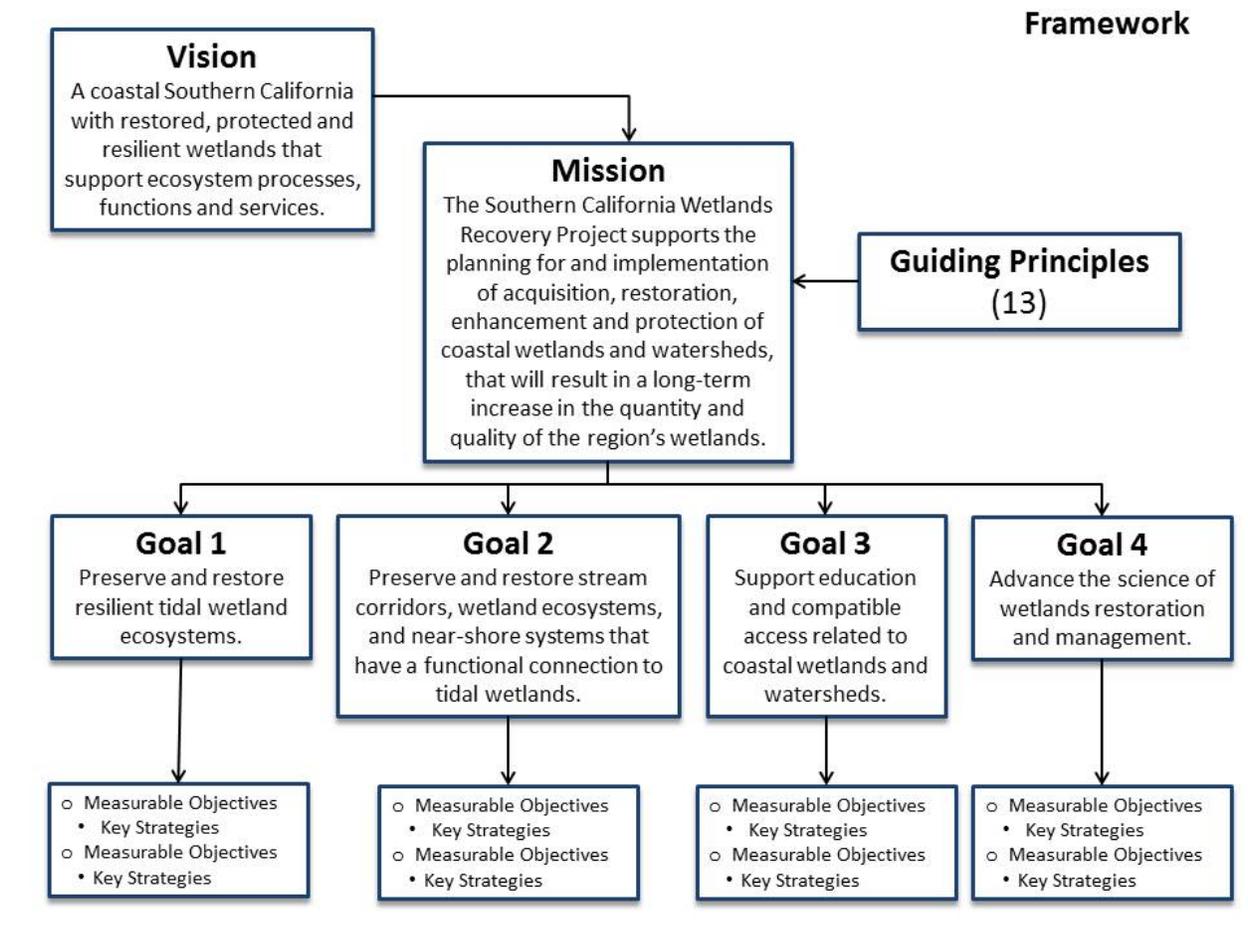
| Other Potential WRP Projects | | | | | | | |
|------------------------------|-------------|------|-----|-------------|--------------|-------------|---------------------|
| | SCC | CDFW | OPC | SMMC | RMC | SDRC | WCB |
| | \$7,781,007 | - | - | \$1,250,000 | \$15,365,679 | \$1,847,381 | \$836,221 |
| GRAND TOTAL | | | | | | | \$27,080,288 |

Wetland Recovery Project

Structure for its Vision, Mission, Goals and Guiding Principles

Wetland Managers Group, December 7, 2016

The Wetland Managers Group (WMG) of the Southern California Wetlands Recovery Project (WRP) came to consensus on the Vision, Mission, Goals, and Guiding Principles as well as a framework for how these and other concepts (i.e. Measurable Objectives, Key Strategies) relate to each other as part of the WRP Regional Strategy. The graphic below shows the result of these efforts as well as feedback from the Wetland Advisory Group and the Science Advisory Panel. The Guiding Principles are listed on the subsequent page.



Guiding Principles for the Wetland Recovery Project

1. Actions to protect and restore wetland ecosystems and adjacent habitat types support a mosaic of functional wetlands and provide habitat connectivity among wetlands within watersheds and along the Pacific Flyway.
2. Actions that influence the distribution of wetland archetypes* consider the historic, current, and possible future extent, diversity and relative proportion of wetland types.
3. Projects have clear environmental goals that include quantifiable measures of success, and are based on scientific evaluation of feasible alternatives.
4. Projects restore and preserve ecological and physical processes to maximize ecosystem benefits based on the best available evidence of historical, present, and future conditions.
5. Projects preserve and restore the suite of locally appropriate native wetland habitats and associated species communities, including special status species.
6. Restoration and adaptive management result in wetland systems that are resilient to climate change and other stressors.
7. Restoration of wetlands minimizes the scale, frequency and cost of maintenance and long-term management.
8. Projects demonstrate incorporation and application of best-available science including an explicit evaluation of ecological and financial costs and benefits, and lessons learned from past and present projects.
9. Monitoring of projects include consistent protocols that assess project success and regional progress, allow for analysis and a statewide comparison of monitoring results, and may be used to test predictions and prescribe subsequent actions as part of an adaptive management strategy.
10. Projects support wetland associated ecosystem services.
11. The Wetland Recovery Project and associated projects share information, engage stakeholders and community members and provide opportunity for participation.
12. Projects include public access, recreation and education opportunities, and public communication where appropriate to complement preservation of wetlands.
13. The Wetland Recovery Project actively engages, as appropriate, in development of funding strategies, planning, and policies that promote the Wetland Recovery Project's Vision.

*Usage of term 'archetype' may change if another term is adopted by the SAP.

REGIONAL AND SUBREGIONAL OBJECTIVES

The mission of the Southern California Wetlands Recovery Project (SCWRP) is to:

Support the acquisition, restoration, enhancement and protection of Southern California's coastal wetlands and watersheds, which will result in a long-term increase in the quantity and quality of the region's wetlands.

To help fulfill this mission, the SCWRP is updating its regional strategy around four key goals:

1. Preserve and restore resilient coastal tidal wetland ecosystems.
2. Preserve and restore stream corridors and freshwater wetland ecosystems in coastal watersheds that have a functional connection to tidal wetlands.
3. Support education and compatible access related to coastal wetlands and watersheds.
4. Advance the science of wetland restoration and management in Southern California.

Each of the four goals will be supported by a series of quantitative objectives that provide measurable targets against which the SCWRP can evaluate its progress toward achieving its goals. These quantitative objectives will be used to guide the design of individual projects and to aid in prioritization of projects for inclusion in the SCWRP work plan.

The first goal of the Regional Strategy Update (RSU) is to *preserve and restore resilient coastal tidal wetland ecosystems* (Goal #1). The Science Advisory Panel (SAP) has developed eight objectives to support Goal #1 aided by a series of guiding principles developed by the SCWRP's Wetland Managers Group (WMG). These objectives address the abundance of estuarine wetlands, their system characteristics and their connectivity to promote resiliency to climate change and other stressors. Along with a set of management recommendations, the eight objectives are intended to help ensure that future SCWRP projects will support achievement of Goal #1.

The objectives were developed based on an examination of historical losses and projected changes due to sea level rise. A number of assumptions have been made in their development:

- These objectives are intended to be applied at the regional scale (i.e. desirable regional endpoints) and may not be appropriate for every individual system.
- The objectives are interrelated so it may be difficult to accomplish any one objective in isolation from the others and without consideration of other factors such as water quality, flood risk management, erosion, etc.
- Accomplishing these objectives will likely require management of the overall estuary-watershed system, i.e. managing water, sediment and constituent inputs from the watershed, as well as inputs from the ocean.
- These objectives are aspirational and may result in considerations of retrofitting, removing or modifying structures previously created as part of earlier restoration actions.
- Estuarine wetlands are defined as unvegetated tidal flats (which include salt flats) and vegetated tidal marshes.

- The potential abundance of wetlands is based on 0.6 m of sea level rise in the near term based on the California Coastal Commission’s *Sea Level Rise Policy Guidance (2015)* report. There is a strong likelihood that rates of sea level rise will be higher. There are distinct benefits of expanding the upland transition zone, beyond the acreages outlined in the objectives, to account for these higher rates.
- The desired characteristics and connectivity of the wetland systems are guided by historical mapping.

The eight objectives are summarized in Table 1 below:

Table 1. A summary of the eight objectives that comprise Goal #1 of the RSU

| Type | Objective | Description |
|------------------------|--|--|
| Abundance | 1. Estuarine Area | Maintain 2,980 ha and restore 2,910 ha to realize 5,890 ha of tidal flats and marshes. |
| | 2. System Size | Increase individual system sizes to approximate the historical size distributions in each subregion |
| System Characteristics | 3. Archetype Distribution | Maintain and restore the historical distribution of archetypes in each subregion. |
| | 4. Habitat Diversity | Restore or maintain the habitat composition represented by the historical archetype habitat profiles in at least 50% of the systems within a given archetype. |
| | 5. Transition Zone | A. Maintain existing natural upland transition zones. B. Preserve transition zone areas in 0.6 m band for at least 40% of the perimeter of the wetland. C. Maintain upstream transition zones along river corridors. |
| Connectivity | 6. System Coherence | Ensure that 100% of river-associated estuaries are hydrologically connected with their associated watersheds and with the ocean at periodicities and magnitudes similar to appropriate reference systems conditions. |
| | 7. System Fragmentation | Fully restore and maintain connectivity for currently fragmented systems, including Santa Clara River, Ballona, Santa Ana River Mouth, Mission Bay and Lower San Diego River. |
| | 8. Physical and Hydrological Processes | A. Restore tidal characteristics to be comparable with historic levels for all systems. B. Manage water and sediment inflow to maintain elevation capital with 0.6 m of estimated sea level rise. |

SCWRP cannot achieve its mission to preserve and restore resilient wetland ecosystems without consideration of habitat diversity, landscape connectivity, and system processes. Thus, objectives #2 to #8 were developed to improve the resiliency and function of the coastal wetlands that are restored to achieve objective #1.

A detailed description of each objective follows. For each objective the same structure is used:

- the objective;
- a rationale for the objective;
- a cross-reference to the WMG Guiding Principle on which it is based; and
- the methodology used to calculate the objectives.

Objectives that apply equally to all the subregions are summarized at the regional scale; specific objectives for individual subregions are detailed as appropriate.

Objective #1: Estuarine Area

Objective #1:

- A. Realize a total of 5,890 ha of estuarine wetlands (tidal flats and marshes) in the region by maintaining the present 2,980 ha and restoring a potential 2,910 ha.
- B. Maintain the present wetland area and restore additional areas in each subregion as indicated in Table 2 below.

Table 2. Present and potentially restorable estuarine wetland area by subregion.

| Subregion | Tidal Flats and Marshes | | |
|-------------------------|-------------------------|---------------|-------------|
| | Present, ha | Potential, ha | Total, ha |
| Gaviota Coast | 130 | 160 | 290 |
| Ventura Coast | 740 | 1480 | 2220 |
| Santa Monica Bay | 60 | 100 | 160 |
| San Pedro Bay | 330 | 700 | 1030 |
| San Diego Coast | 1720 | 470 | 2190 |
| Total* | 2980 | 2910 | 5890 |

* excludes all present-day harbors, ports and marinas.

Rationale:

The area of estuarine wetlands throughout the Region has decreased due to development and will continue to decrease with sea level rise if no actions are taken to restore or protect potential restoration areas. It is desirable to expand the overall area of estuarine wetlands given the substantial ecosystem functions and services provided by these ecosystems.

Based on WMG Guiding Principles:

Guiding Principle #1: *“Protecting and restoring wetland ecosystems and adjacent habitat types supports a mosaic of functional wetlands and provides habitat connectivity within watersheds and along the Pacific Flyway.”*

Guiding Principle #2: *“Actions that influence the distribution of wetland archetypes consider the historical, current, and possible future extent, diversity and relative proportion of wetland types.”*

Methodology to Calculate Objectives:

The historic, existing and future estuarine wetland areas are shown in Figure 1. Three areas were calculated:

1. Historic - historical estuarine wetland area;

2. Present - existing estuarine wetland area;
3. Future - existing estuarine area plus the potential restorable area (the undeveloped area that will be tidally inundated after 0.6m of sea level rise, assuming hydraulic connectivity is restored).

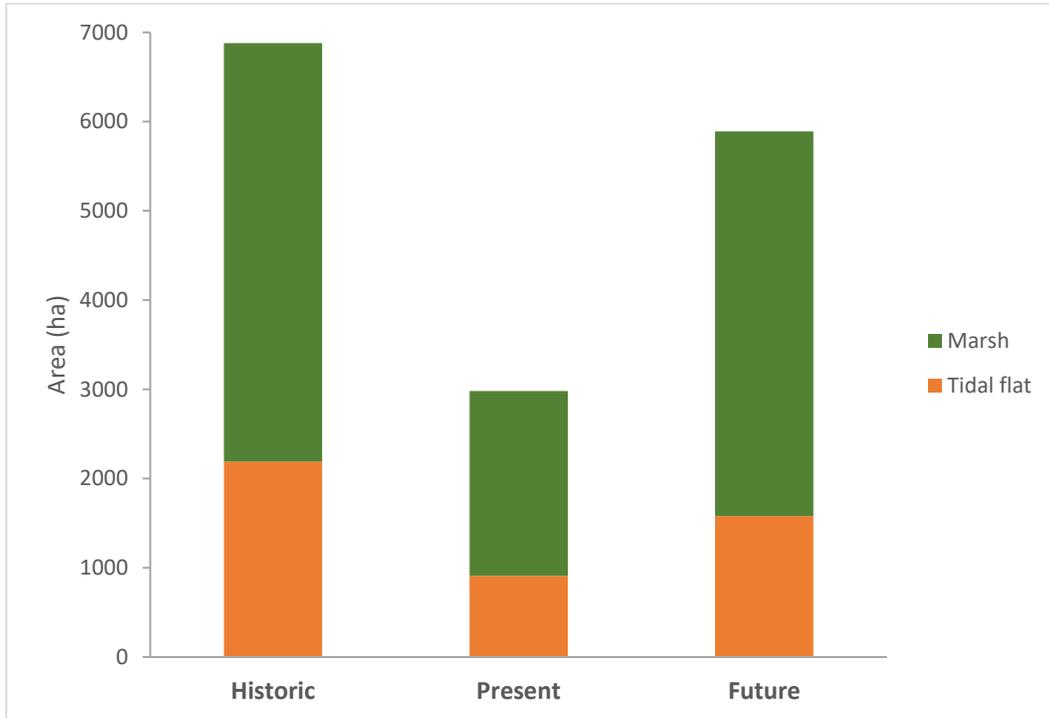


Figure 1. Historic, present and future estuarine wetland area with 0.6m of sea level rise.

Objective #2: System Size

Objective #2:

Increase individual system sizes to approximate the historical size distributions in each subregion as shown in Figure 2 below.

Rationale:

The size of individual systems is important in supporting a diversity of estuarine dependent flora and fauna. Larger systems have greater biodiversity and are more resilient to disturbances. The average size of the wetland systems in each of the subregions has decreased over time. The desire is to increase individual system sizes to approximate the historical size distributions in each subregion.

Based on WMG Guiding Principles:

Guiding Principle #1: *“Protecting and restoring wetland ecosystems and adjacent habitat types supports a mosaic of functional wetlands and provides habitat connectivity within watersheds and along the Pacific Flyway.”*

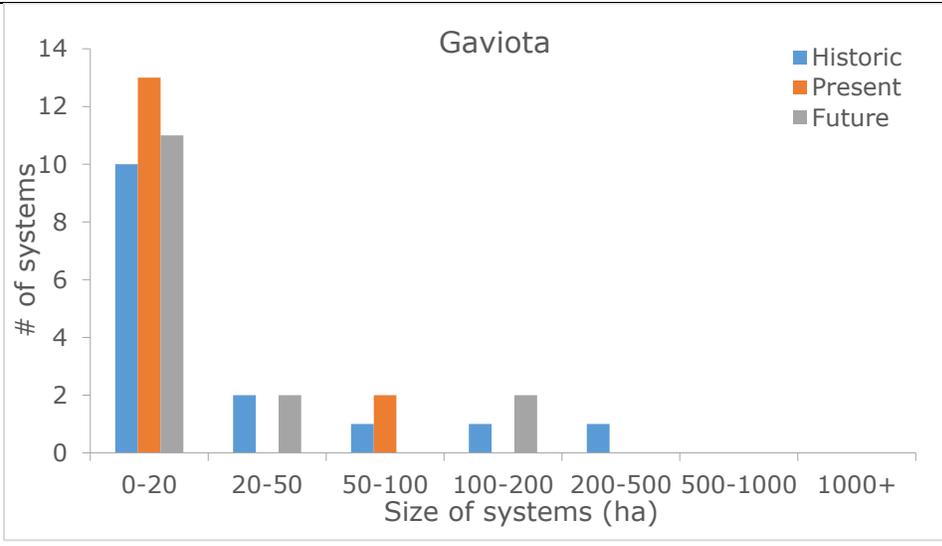
Guiding Principle #2: *“Actions that influence the distribution of wetland archetypes consider the historic, current, and possible future extent, diversity and relative proportion of wetland types.”*

Guiding Principle #6: *“Restoration and adaptive management result in wetland systems that are resilient to climate change and other stressors.”*

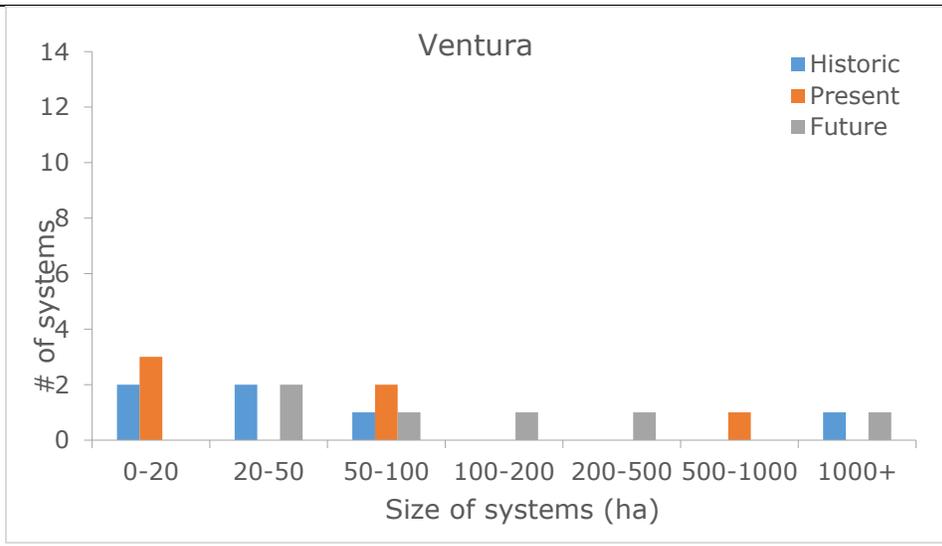
Methodology to Calculate Objectives:

Figure 2 shows the size distributions of estuarine systems in each of the subregions. Three areas were calculated for each system or system fragment:

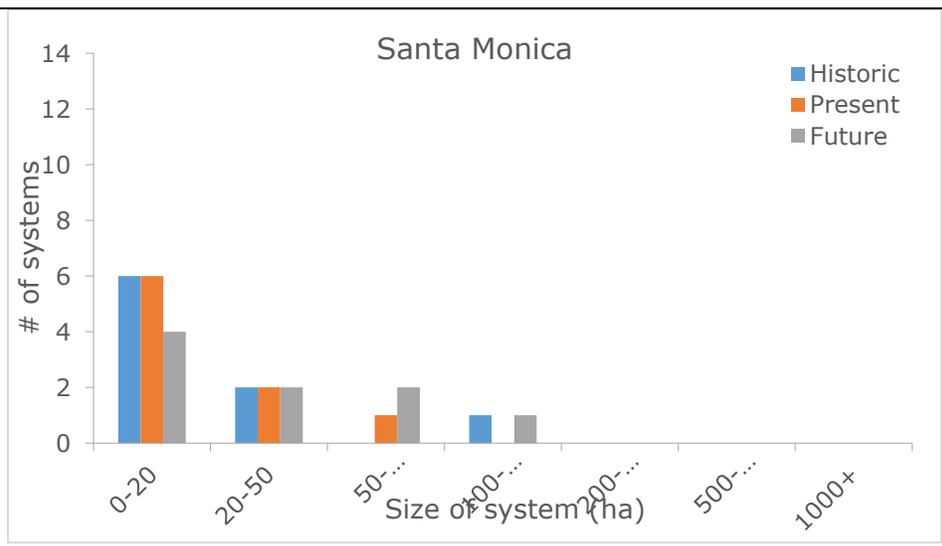
4. Historic - historical estuarine wetland area;
5. Present - existing estuarine wetland area;
6. Future - existing estuarine area plus the potential restorable area (the undeveloped area that will be tidally inundated after 0.6m of sea level rise, assuming hydraulic connectivity is restored).



Increase system sizes in the Gaviota subregion above 20 ha.



Increase system sizes in the Ventura subregion above 20 ha.



Increase system sizes in the Santa Monica subregion above 80 ha.

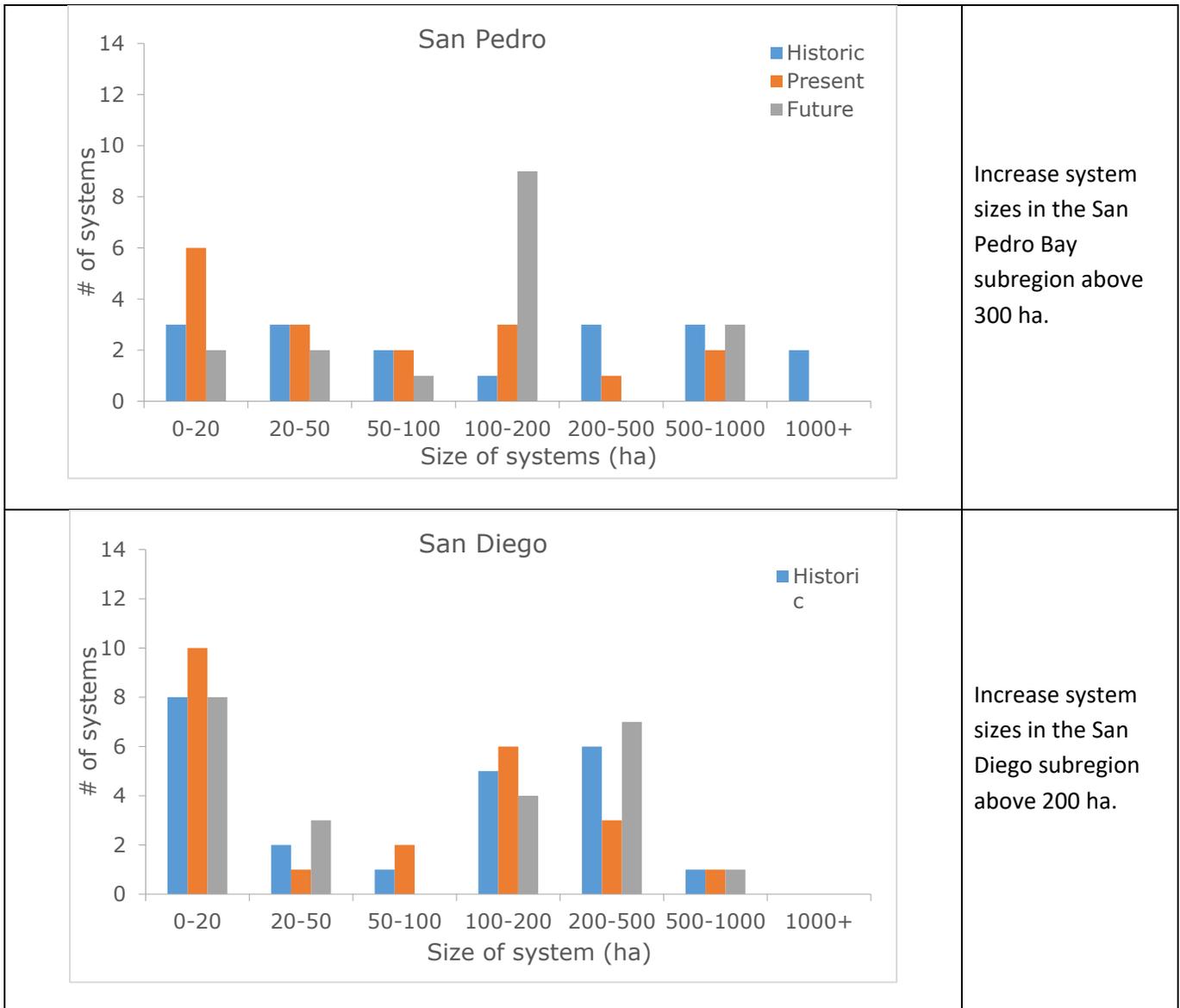


Figure 2. Historic, present and future system sizes in each subregion with 0.6m of sea level rise.

Objective #3: Archetype Distribution

Objective #3.

Maintain and restore the historical distribution of archetypes in each subregion as presented in Table 4, below.

Table 3. Distribution of historical archetypes by subregion (see also Figure 3).

| Subregion | Historic Archetype | Systems |
|-------------------------|-------------------------------|---|
| Gaviota Coast | Small creeks | |
| | Large river valley estuary | Goleta Slough |
| | Large perennially-open lagoon | Devereux Lagoon, UCSB Lagoon, Arroyo Burro Creek and Carpinteria Salt Marsh |
| | Intermittently open estuary | Gaviota |
| Ventura Coast | Small creeks | |
| | Large river valley estuary | Ventura River* and Santa Clara River |
| | Large perennially-open lagoon | Ormond Beach and Mugu Lagoon |
| Santa Monica Bay | Small creeks | |
| | Large river valley estuary | Ballona Creek* |
| | Intermittently open estuary | Malibu Creek |
| San Pedro Bay | Small creeks | |
| | Large river valley estuary | Alamitos Bay* |
| | Large perennially-open lagoon | Seal Beach, Bolsa Chica*, Santa Ana River Mouth* and Newport Bay* |
| San Diego Coast | Small creeks | |
| | Large river valley estuary | Santa Margarita, San Elijo, San Dieguito, Los Penasquitos, San Diego River/Mission Bay*, Sweetwater, Otay, and Tijuana. |
| | Large perennially-open lagoon | French Lagoon, Buena Vista Lagoon, Agua Hedionda, and Batiquitos Lagoon |
| | Intermittently open estuary | San Juan Creek, San Mateo Lagoon, San Onofre Creek and San Luis Rey Estuary |

* Systems with a present archetype that differs from its historical archetype.

Rationale:

The rationale of Objective #3 is to realize a distribution of archetypes comparable to historical conditions in their appropriate locations within the subregion. Each archetype provides different combinations of habitats and benefits. Archetypes are related to their hydrology and geomorphology and so are appropriate to particular regions and locations (see Chapter X). Managing systems in a manner appropriate to their archetype and maintaining a diversity of archetypes should make them more resilient to climate change. This objective may include restoring systems that have been previously converted or fragmented.

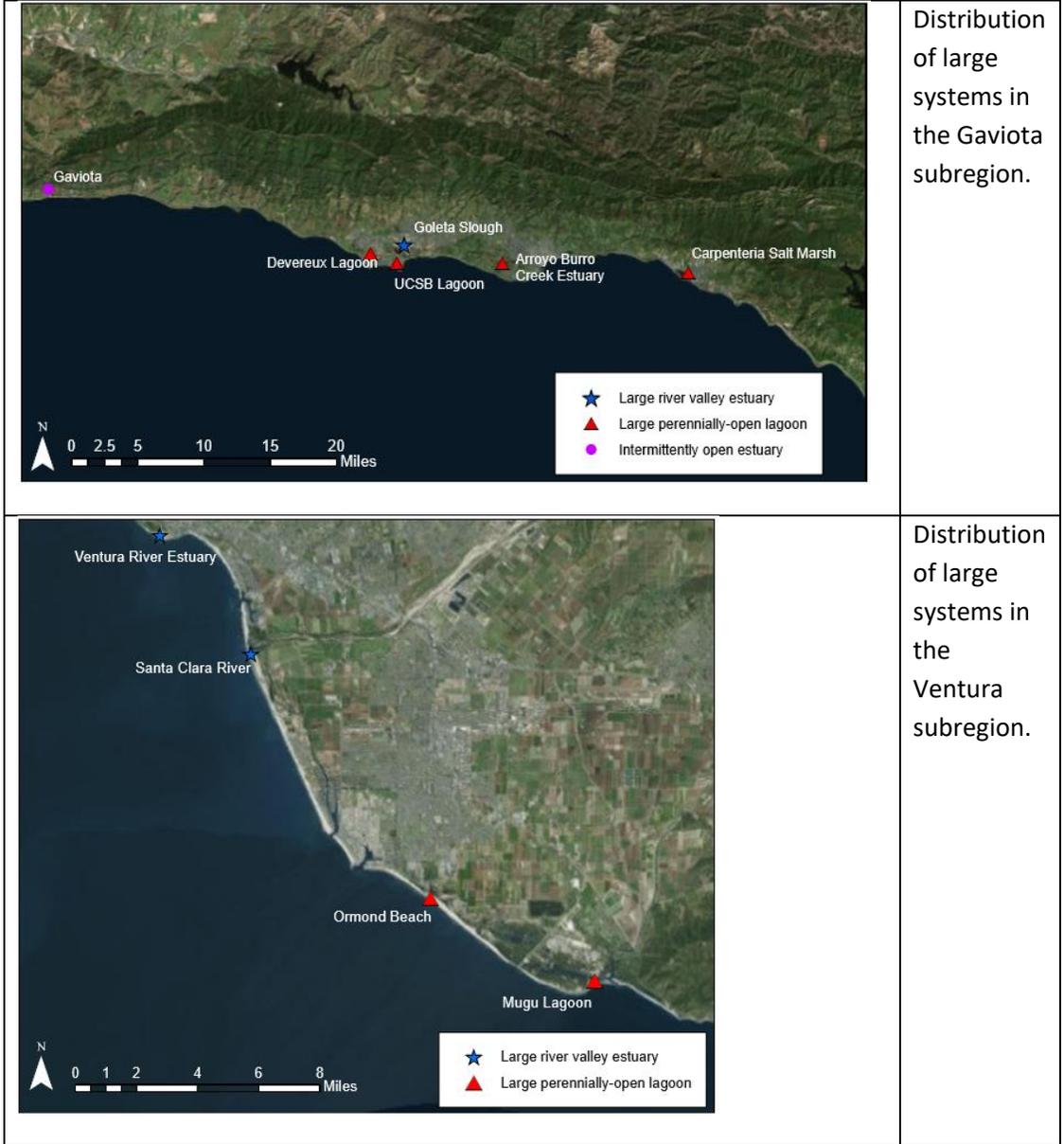
Based on WMG Guiding Principles:

Guiding Principle #2: *“Actions that influence the distribution of wetland archetypes consider the historical, current, and possible future extent, diversity and relative proportion of wetland types.”*

Guiding Principle #6: *“Restoration and adaptive management result in wetland systems that are resilient to climate change and other stressors.”*

Methodology to Calculate Objectives:

Historically there were six main estuarine archetypes in the region: small creeks, open bays, small lagoons, intermittently open estuaries, large perennially open lagoons, and large river valley estuaries. The location and historical archetype of each estuarine system in the region was identified from aerial photographs and historical mapping. The locations of the systems are shown in Figure 3 below.



| | |
|--|---|
| | <p>Distribution of small creeks and large systems in the Santa Monica subregion.</p> |
| | <p>Distribution of small creeks and large systems in the San Pedro Bay subregion.</p> |



Distribution of large systems in the San Diego subregion.

Figure 3. Location and historic archetype of systems in each subregion.

Objective #4: Habitat Diversity

Objective #4:

A. Restore or maintain the habitat composition represented by the historical archetype habitat profiles in at least 50% of the systems within a given archetype. See Table 5 below.

B. As an interim objective, protect 100% of existing salt flats and their supporting hydrological regime, including artificial salt flats where it can be demonstrated they have value that other habitats within the system cannot support, while research is carried out on their value and functioning within each archetype.

C. As an interim objective, protect 100% of existing shallow subtidal habitats associated with tidal marshes, such as eelgrass and native oysters. The SCWRP should pursue the development of quantitative restoration objectives for these habitat types in a future phase of the RSU.

Table 4. Historical habitat profiles by subregion and archetype.

| Subregion | Archetype | Tidal Flat | Marsh |
|-------------------------|-------------------------------|-------------------|--------------|
| Gaviota Coast | Intermittently Open Estuary | 17% | 83% |
| | Large Perennially Open Lagoon | 30% | 70% |
| | Large River Valleys | 47% | 53% |
| Ventura Coast | Large Perennially Open Lagoon | 26% | 74% |
| | Large River Valleys | 53% | 47% |
| Santa Monica Bay | Intermittently Open Estuary | 62% | 38% |
| | Large River Valleys | 28% | 72% |
| San Pedro Bay | Large Perennially Open Lagoon | 31% | 69% |
| | Large River Valleys | 47% | 53% |
| San Diego Coast | Intermittently Open Estuary | 13% | 87% |
| | Large Perennial | 73% | 27% |
| | Large River Valleys | 35% | 65% |

Rationale:

The rationale of Objective #4 is to approximate the historical diversity of habitat types and provide redundancy of habitat types across systems in the region. Historically there were six main archetypes in the region: small creeks, open bays, small lagoons, intermittently open estuaries, large perennially open lagoons, and large river valley estuaries. Historical habitat profiles were developed for each archetype present in each subregion. Small creeks and small lagoons have not been included in this objective as they are highly variable in their diversity.

Based on WMG Guiding Principles:

Guiding Principle #2: *“Actions that influence the distribution of wetland archetypes consider the historical, current, and possible future extent, diversity and relative proportion of wetland types.”*

Guiding Principle #5: *“Projects preserve and restore the suite of locally appropriate native wetland habitats and associated species communities, including special status species.”*

Methodology to Calculate Objectives:

The habitat profile is based upon historical mapping. The proportion of tidal flats and marsh was calculated for the larger systems from an analysis of the historical mapping recorded in T-sheets (Figure 4). Tidal flats included all unvegetated flats, including salt flats and salt pannes, as well as mud and sand flats. Habitat profiles were averaged by subregion and archetype for the archetypes historically present in each subregion. Small creeks and small lagoons were not analyzed as the snapshot provided by historical mapping shows them to be highly variable in their habitat diversity.



Figure 4. This map shows the historical distribution of subtidal (blue), intertidal flat (brown) and marsh (green) from the T-sheet of Ballona Lagoon.

Objective #5: Transition Zones

Objective #5:

- A. Maintain all existing natural upland transition zones with natural habitat and minimal structures that impede wetland migration.
- B. Ensure that all lagoon and river valley estuaries (i.e. all archetypes except small creek mouths) have marsh migration zone areas preserved within a 0.6 m elevation band for at least 40% of the perimeter of the wetland.
- C. Ensure that all upstream transition zones are maintained with the river corridor for river-associated estuaries (e.g. small creek mouth estuaries and larger river valley estuaries), for the full estimated tidal extent under 0.6 m of sea level rise. Includes protection and restoration of floodplain areas that may currently be non-tidal but could become tidal in the future.

Rationale:

Maintain and extend natural upland transition zone adjacent to existing wetland that enhances connectivity with upland habitats. The land above the current tide range provides habitat and wave reduction from coastal flooding, and the widening of the lower river corridors provides considerable addition of flow conveyance areas in the fluvial floodplains. This has the effect of lowering the flood water surface elevation and this benefit translates further upstream, lowering flood levels outside of the restoration zone. Over time, this area (and potentially additional areas) within the 0.6 m sea level rise elevation band should be made available and accessible for marsh migration. There is a strong likelihood that rates of sea level rise will be higher. There are distinct benefits of expanding the upland transition zone beyond 0.6 m to account for these higher rates.

Based on WMG Guiding Principles:

Guiding Principle #6: *“Restoration and adaptive management result in wetland systems that are resilient to climate change and other stressors.”*

Methodology to Calculate Objectives:

Opportunities to restore and create upland transition zones were identified by overlaying maps of topography, wetland habitat and development. Areas adjacent to existing wetlands that were above tidal inundation and undeveloped have been considered as potential transition zone. The length of perimeter along which existing wetlands were adjacent to existing or potential transition zones were estimated from aerial imagery.

Objective #6: System Coherence

Objective #6:

Ensure that 100% of river-associated estuaries are hydrologically connected with their associated watersheds and with the ocean at periodicities and magnitudes similar to appropriate reference systems conditions. This includes management for increased or decreased watershed inputs, and addresses both water and sediment inputs.

Rationale:

Maintain coherence of existing systems that are still relatively well connected hydrologically and ecologically, including connectivity between estuaries and their associated watersheds. Improve coherence of currently disconnected or fragmented systems.

Based on WMG Guiding Principles:

Guiding Principle #2: *“Actions that influence the distribution of wetland archetypes consider the historical, current, and possible future extent, diversity and relative proportion of wetland types.”*

Guiding Principle #4: *“Projects restore and preserve ecological and physical processes to maximize ecosystem benefits based on the best available evidence of historical, present, and future conditions.”*

Methodology to Calculate Objectives:

The habitat profile of the fragmented system is based on its historical archetype. The hydrologic connectivity will be defined by:

- Inundation regime based on historical tidal characteristics (range, extent and residence time) and mouth closure frequency;
- Water and sediment inflow based on the present day tidal wetland areas and future demand of sediment to match sea level rise.

Objective #7: System Fragmentation

Objective #7:

Fully restore and maintain connectivity for currently fragmented systems as presented in Table 6 below.

Table 5. Currently fragmented systems with potential for reconnection (see also Figure 5).

| Subregion | Restore hydrologic connectivity of the components of: |
|-------------------------|--|
| Gaviota Coast | None |
| Ventura Coast | Santa Clara River Mouth system including Santa Clara River and Ventura Harbor |
| Santa Monica Bay | Ballona system including Ballona Creek, Ballona Wetlands, Del Rey Lagoon and Marina Del Rey |
| San Pedro Bay | Santa Ana River Mouth system including include Santa Ana River, Santa Ana River Wetlands and Talbert Marsh |
| San Diego Coast | Mission Bay/San Diego system including Kendall Frost Marsh, Lower San Diego River and Famosa Slough |

Rationale:

Some of the historical systems have been significantly fragmented by development, resulting in isolated parcels of wetland. Fragmentation has, in some cases, resulted in a change of archetype. Reconnecting currently fragmented systems that were historically components of a larger, more coherent system based on the historical archetype should improve their present functioning and future resilience.

Based on WMG Guiding Principles:

Guiding Principle #2: *“Actions that influence the distribution of wetland archetypes consider the historical, current, and possible future extent, diversity and relative proportion of wetland types.”*

Guiding Principle #4: *“Projects restore and preserve ecological and physical processes to maximize ecosystem benefits based on the best available evidence of historical, present, and future conditions.”*

Methodology to Calculate Objectives:

The habitat profile of the fragmented system is based on its historical archetype. The hydrologic connectivity will be defined by:

- Inundation regime based on historical tidal characteristics (range, extent and residence time) and mouth closure frequency;
- Water and sediment inflow based on the present day tidal wetland areas and future demand of sediment to match sea level rise.

Historic Santa Clara River Mouth system.



Current fragments of the Santa Clara River Mouth system include Santa Clara River and Ventura Harbor.



Historic Ballona system.



Current fragments include Ballona Creek, Ballona Wetlands, Del Rey Lagoon and Marina Del Rey.



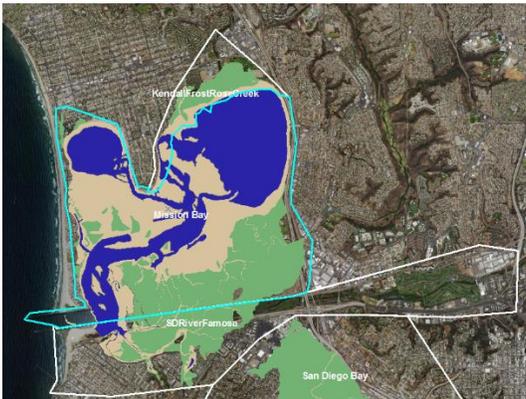
Historic Santa Ana River Mouth system



Current fragments include Santa Ana River, Santa Ana River Wetlands and Talbert Marsh.



Historic Mission Bay system



Current fragments of the Mission Bay system include Kendall Frost Marsh, Lower San Diego River and Famosa Slough.



Figure 5. Historic systems with opportunities for reconnecting fragments.

Objective #8: Physical and Hydrological Processes

Objective #8:

A. Restore tidal characteristics (range, extent and residence time) to be comparable with historic levels for all systems. Tidal characteristics should be within ranges of historical values sufficient to support habitat composition and internal structures indicated in other objectives.

B. Manage water and sediment inflow in the estuary (for archetypes that are associated with a river or stream input) to maintain elevation capital sufficient to accommodate 0.6 m of estimated sea level rise. Inputs should be assessed based on total annual volume and magnitude of peak inputs.

Rationale:

The physical and hydrologic process objectives are intended to help preserve and restore fundamental processes that support the internal structure and habitats described in the preceding objectives. Wetland structure and morphology will reflect the physical and hydrologic processes that are maintained. In general, systems should include structural elements that were present under historical conditions for a given archetype.

Based on WMG Guiding Principles:

Guiding Principle #4: *“Projects restore and preserve ecological and physical processes to maximize ecosystem benefits based on the best available evidence of historical, present, and future conditions.”*

Guiding Principle #6: *“Restoration and adaptive management result in wetland systems that are resilient to climate change and other stressors.”*

Methodology to Calculate Objectives:

The habitat profile of the fragmented system is based on its historical archetype. The hydrologic connectivity will be defined by:

- Inundation regime based on historical tidal characteristics (range, extent and residence time) and mouth closure frequency;
- Water and sediment inflow based on the present day tidal wetland areas and future demand of sediment to match sea level rise.



Intermittently Open Estuaries: Science & Management Perspectives

Workshop Notes: DRAFT - January 2017

September 28, 2016 | 9:30am - 3pm

*Southern California Coastal Water Research Project
Costa Mesa, CA 92626*



Agenda

Objectives

Increase our common understanding of:

- Mouth dynamics and their relationship to estuarine conditions;
- Existing management approaches regarding mouth management;
- Data and knowledge gaps; and
- Trade-offs associated with mouth state and management.

Workshop discussions will inform: (1) ongoing and future data analyses; (2) regional objectives; and (3) the development of guidance to be given to the Board of Governors.

| | |
|--------------|---|
| 9:30 – 10:00 | Registration & Refreshments |
| 10:00-10:15 | Welcome & Introductions <i>Jeff Crooks, Tijuana River National Estuarine Research Reserve</i> |
| 10:15-10:25 | Framing the Discussion <i>Megan Cooper, State Coastal Conservancy</i> |
| 10:25-10:50 | Science Background of Mouth Dynamics <i>John Largier, UC Davis</i> |
| 10:50-11:05 | Bar-Built Estuary Monitoring and Management of Habitats <i>Ross Clark, Moss Landing</i> |
| 11:05-11:15 | Break |
| 11:15-11:30 | Fisheries Management & Mouth Dynamics <i>Mark Capelli, National Marine Fisheries Service (NMFS)</i> |
| 11:30-11:45 | Water Quality & Mouth Dynamics <i>Martha Sutula, SCCWRP</i> |
| 11:45-12:00 | San Diego Case Histories: Data and Management <i>Jeff Crooks, Tijuana River National Estuarine Research Reserve</i> |
| 12:00-1:00 | Lunch |
| 1:00-1:50 | Breakout I: Ecosystem Services & Mouth Dynamics <i>Objective: Brainstorm a list of ecosystem services within the context of mouth dynamics.</i> |
| 1:50-2:45 | Breakout II: Key Management Issues & Mouth Dynamics <i>Objective: Brainstorm a list of key management considerations for multiple management issues within the context of mouth dynamics.</i> |
| 2:45-3:00 | Wrap-Up & Next Steps <i>Jeff Crooks, Tijuana River National Estuarine Research Reserve</i> |

Breakout I:

Ecosystem Services & Mouth Dynamics

Objective: Given then background information from the morning, brainstorm a list of ecosystem services within the context of mouth dynamics.

Instructions: List the ability of each estuary type to provide different ecosystem services or attributes: open vs. closing / opening.

Guiding Questions

- What attributes does an open vs. a closed system have?
- Are there ecosystem services that a particular state (open vs. closed) increases?
- Are there ecosystem services that a particular state (open vs. closed) inhibits or lessens?

This is a brainstorming session. It is simply to advance the dialogue around important aspects of open vs. closing systems, and is not intended to be comprehensive or to prioritize.

Participants were provided with the list of ecosystem services (first column) and asked to fill in their thoughts in columns two (open) and three (opening/ closing).

| Ecosystem Services | Estuary Type | |
|---|---|---|
| | Open | Closing / Opening |
| Waste Treatment & Water Purification: <ul style="list-style-type: none"> • Nutrient breakdown & sequestration • Water purification • Contaminant dilution | <ul style="list-style-type: none"> • Less pollution contained within estuary, but more transport to open coast • Dilution of contaminants with tidal influence | <ul style="list-style-type: none"> • Less transport to ocean, but concentration of pollutants within estuary. • Some breakdown and sequestration of pollutants possible during closed state • System more easily overwhelmed with closure |
| Human Health & Biological Control: <ul style="list-style-type: none"> • Limit pathogens or disease vectors • Control of agricultural or livestock pests | <ul style="list-style-type: none"> • Disease-bearing mosquitos inhibited in salt water • Open conditions favor some pathogens / diseases associated with more saline conditions (e.g. <i>Vibrio cholerae</i> and swimmer's itch) • Open systems allow pathogens / diseases to enter coastal waters | <ul style="list-style-type: none"> • Increased risk of diseases associated with freshwater mosquitos • Decreased risk of pathogens associated with marine systems • Ponding water increases risk associated with water contact • Breaching of closed systems with poor water quality can impact human health on beaches |

| | | |
|---|--|---|
| <p>Climate Regulation:</p> <ul style="list-style-type: none"> • Carbon storage / sequestration • Effects on temperature, wind, rainfall ... • Air quality improvement | <ul style="list-style-type: none"> • Tidal wetlands very effective at carbon sequestration • Less methane production in saline waters | <ul style="list-style-type: none"> • Increasing freshwater influence offers less carbon sequestration • More methane production in lower salinities • Potential for trapped sediments in closed systems to bury carbon |
| <p>Water Regulation:</p> <ul style="list-style-type: none"> • Groundwater recharge • Water supply for humans, livestock, & agriculture | <ul style="list-style-type: none"> • Higher salinities preclude use as a direct water supply • Lower groundwater recharge in tidal systems • Saltier groundwater limits use in agriculture | <ul style="list-style-type: none"> • Poned freshwater increases possibility as direct water supply • More groundwater recharge when closed • Less saltwater intrusion into groundwater |
| <p>Hazard & Erosion Control:</p> <ul style="list-style-type: none"> • Flood amelioration • Shoreline & bank stabilization • Storm damage reduction • Sediment retention | <ul style="list-style-type: none"> • Decreased flood risk with tidal connection • Salt marsh provides living shorelines than stabilize banks and reduces storm damage • Less sediment retention (especially fines) within system, increased export to coastline | <ul style="list-style-type: none"> • Less water storage capacity and increased risk of flooding (during closed state) • Less bank stabilization and storm damage reduction associated with increased areas without marsh vegetation • Closure mitigates wave erosion • Increased sediment retention and potential availability for resupply |
| <p>Food & Raw Materials:</p> <ul style="list-style-type: none"> • Support for edible species • Provision of wood, fibers, and fuel • Support for pollinators | <ul style="list-style-type: none"> • Edible species available - more marine • Probably less favorable to pollinators | <ul style="list-style-type: none"> • Edible species available - range of species • More favorable to pollinators |
| <p>Biochemical & Ornamental Resources:</p> <ul style="list-style-type: none"> • Biochemical resources or natural medicines • Genetic resources • Ornamental resources (shells, drift wood, ...) | <ul style="list-style-type: none"> • Marine natural products, including bryostatin drug (anti-cancer and neurological treatment) from estuarine bryozoans • Potential for salt-tolerance genes for agricultural crops | <ul style="list-style-type: none"> • Potential prospects for biochemical / genetic resources in freshwater, brackish, and marine species |

| | | |
|--|--|---|
| <p>Biodiversity – Support of Native Species:</p> | <ul style="list-style-type: none"> • Favors marine and tidal marsh species: Ridgway’s Rail , Belding’s Savannah Sparrow, flatfish, and elasmobranchs • Nursery for ocean-going fish • Could inhibit steelhead and tidewater gobies | <ul style="list-style-type: none"> • Higher biodiversity over time (integrates over open and closed states) • Favors anadromous fish (steelhead), tidewater gobies, waterfowl, and some migratory birds |
| <p>Biodiversity – Control of Undesirable Invasives:</p> | <ul style="list-style-type: none"> • Many marine invaders, including problematic species such as <i>Caulerpa</i> (eradicated), shipworms, and creek bank-destroying crustaceans • Susceptible to invasions from ballast water, aquaculture, biofouling • Less issue with problematic plants (fewer invasive halophytes) | <ul style="list-style-type: none"> • High diversity of invaders, including marine and freshwater • Higher prevalence of problematic plants in aquatic and transitional habitats |
| <p>Cultural:</p> <ul style="list-style-type: none"> ◆ Nature observation ◆ Outdoor recreation ◆ Aesthetics ◆ Scientific and education opportunities | <ul style="list-style-type: none"> • Eye of the beholder • Recreational fishing • Kayaking / boating • Surfing | <ul style="list-style-type: none"> • Eye of the beholder • Potential for algal blooms, fish kills, and nuisance conditions (odor) • Lake-ish recreation |

Breakout II:

Key Management Issues & Mouth Dynamics

Objective: Brainstorm a list of management considerations for key issues within the context of mouth dynamics.

Instructions: Shift focus to management actions. Each group is an agency that has a specific management focus:

- **Hazards:** Flooding, storms
- **Species- fish:** Individual species, habitat support
- **Species- birds:** Individual species, habitat support
- **Water quality:** Eutrophication, pollution, anoxia
- **Climate change:** Blue carbon, management implications

Take the same two systems you just discussed in the first breakout group exercise: open and closing / opening, and given your assigned management topic, how can you best manage each system? This is a brainstorming session. It is simply to advance the dialogue around the importance of mouth states, and is not intended to be comprehensive or to prioritize.

Discussion Notes

Hazards: Group 1

- Increased flood hazards within closing systems (from exercise above).
 - Opening mouth is most direct action to lessen flood risk, but can compromise other services (as listed above).
 - Other approaches to lessen flood risk in closing systems include:
 - Increasing flood storage by improving hydrologic connectivity and reclaiming floodplains
 - Managed retreat and raising structures (which will also help address sea-level rise)
 - Partial mouth opening / notching to decrease water levels but not drain system
- Creation of living shorelines (beach / dunes, oysters, eelgrass, marsh) important hazard reduction in all systems
- Monitoring of water levels important for all systems

Species - Fish: Group 2

- For tidewater gobies and steelhead in closing systems:
 - Avoid extreme (off-season) flushing
 - Restore / maintain refugia for gobies
- Create refugia for tidewater gobies open systems (above tide zone)
- Consider programmatic breaching permits to allow breaching when needed
- Develop alternatives to breaching (i.e., levees; see also above)

Species - Birds: Group 3

- Hard to find consensus, even with a taxon as well studied as birds; not sure of even basic habitat requirements
- Open river mouth - favors Belding's Savannah Sparrows, Ridgway's Rails, and other marsh birds
 - Less species, but less issues
 - Create more diverse elevations and habitats
- Closing / opening systems support more species due to spatio-temporal complexity, and favors migratory birds, waterfowl, some endemics
 - High seasonality
 - Create high elevations (e.g. platforms) for nesting (systems flooding during high water periods, especially due to urban drool)
 - Capture / reduce freshwater to alleviate flooding issues
 - Protect some unvegetated areas (salt flat and pannes, dunes)
 - Protect transitional habitat

Water Quality: Group 4

- Opening a closed system definitely can help, but what else can be done?:
 - Mimic historic hydrograph – urban drool into naturally low-flow systems (especially summer)
 - Remove historic accumulation of sediment and other materials (many were former sewage dumps)
 - Capture water upstream & bypass most water
 - Restoration of channels / reconnection to floodplain (remove fills and berms)
 - LID, BMP retrofits in watershed
 - Fix infrastructure
- Develop monitoring programs for all systems – continuous / real-time measurements

Climate change: Group 5

- Focused on potential, but highly uncertain, effects of climate change
- Possibility for increased frequency of closure with elevated sea levels and coastal storms (i.e. large waves) pushing sediment into estuary mouths
- Less fluvial inputs due to changing rainfall would also tend to increase possibility of closure
- Saline waters will push further upstream with sea level rise
- El Niños can be a preview of sea level rise and wave impacts
- Need to better learn to manage for change
 - Make more intact systems
 - Change expectations for what a “healthy” system is
 - Manage with the system, not against it

Research Needs

Objective: Brainstorm a list of research needs throughout the day's discussions.

- How to describe and classify these systems
- Response of these systems to climate change and sea level rise
- Better understanding of blue carbon
- Need for new water quality objectives (ocean vs estuarine)
 - Biological focus (shift from chemistry to biology)
 - Risk assessment for Fecal Indicator Bacteria (reasonable to assume no risk on beach?)
 - Flow criteria? - Flushing vs containment
- Cost / Benefit Analyses: species & natural processes / people
- How to support species characteristic of closing systems in open systems; vice-versa
- Other species issues
 - Research on pollinators
 - Larval stages when system is being breached
 - How to provide nursery support for fish when it's closed (other than anadromous & tidewater gobies)
 - Effect of notching on tidewater goby
- Habitats
 - Salt flat / panne - functions & conditions
 - Role of non-tidal salt marsh
- Model plume movement in systems with open river mouth
- Understand synergy between eutrophication & Fecal Indicator Bacteria
- Efficacy of living shorelines for SLR & wave/ storm protection
- Improved and consistent monitoring
 - Early-warning / rapid response
 - Set baselines (take the "vital signs" of the estuary)
 - Track changes to forcing factors and management interventions
 - Inform adaptive management

Conclusions / Next Steps

Overall, this workshop identified progress in understanding the complex estuarine systems of Southern California, articulated attributes of different systems with respect to mouth state, explored management considerations related to key issues, and identified how much we have yet to learn.

Some considerations that emerge from continued work on this topic include:

- The Mediterranean climate estuarine ecosystems of southern California represent a broad range of conditions with respect to their mouth condition, from permanently open to natural cycling of opening and closure on different time scales
- Human influence has had dramatic and varied effects on the structure and function of these systems. In many instances, factors such as decreased tidal prism, filling of wetlands, creation of infrastructure that limits natural mouth movement, and increased sediment loading have led to increasing frequency of mouth closure and decreasing ability of systems to naturally open after closure
- The potential negative impacts occurring within closed systems, such as increased flood risk, eutrophication, pollution, and human health concerns, have been more readily apparent than the services provided by systems that are allowed to open and close, including maintenance of high biodiversity, support for sensitive and rare species (such as steelhead and tidewater gobies), and groundwater recharge.

- The increased frequency of closure coupled with the negative consequences associated with closed conditions have led to various management strategies, ranging from permanently fixing mouths in the open state to mechanically opening mouths after closure. This has compromised some services and functions that should be more fully represented in the region.
- Approaches that distinguish between mouth closures *per se* and the conditions associated with mouth closure, both of which are strongly influenced by human activity, are needed to maintain and restore the rich coastal wetlands of Southern California.
- More study is needed on these systems, including their basic physics, chemistry, and ecology, as well as how they will respond to climate change.
- Long-term monitoring programs are needed. These will set baselines, track trends, allow events such as El Niños to serve as windows into the future, and support data-driven management.
- Effective management of systems with respect to mouth condition will require more than just managing the mouth. In the short-term, it will require carefully considering tradeoffs associated with management action or inaction, and creatively working to enhance desired functions and services across system types. In the long-term, it will require addressing the coastal, estuarine, and watershed processes that shape these systems now and into the future.

One of the primary aims of this workshop was to help advance the work of the Wetlands Recovery Project and its Regional Strategy Update. Under Goal 1 of the RSU, there will be measurable objectives relating to managing systems subject to intermittent opening and closures. These objectives include:

- Maintaining and restoring the historical distribution of archetypes
- Restoring tidal prism and residence times to be comparable with historic levels
- Restoring hydrologic and fluvial connections with associated watersheds at natural periodicities and magnitudes.

These objectives are meant to be regional and non-prescriptive in order to provide local land managers flexibility in managing a specific system with specific constraints and opportunities. Once the NOAA Ecological Effects of Sea Level Rise project has provided a better understanding of how intermittently open estuaries (IOE) will function in the face of sea level rise, the Science Advisory Panel will develop an addendum (anticipated in Fall 2020) to the Regional Strategy with more specific IOE objectives and management recommendations.

North Campus Open Space Project: Restoration of the upper arms of Devereux Slough

“Restoring a golf course back to wetlands”

The North Campus Open Space Project was spearheaded by the University of California, Santa Barbara (UCSB) in collaboration with multiple entities, with the aim to restore the larger ecological functioning of the upper Devereux Slough.

The project's ecosystem restoration goals are to:

- Restore and enhance wetland and associated upland habitats characteristic of the Devereux Slough ecosystem
- Improve hydrological connectivity
- Control invasive non-native species and plant native species
- Enhance habitat for threatened and endangered species
- Improve the resiliency of ecosystem structure and function.

The project's social goals are to:

- Maintain open space
- Develop opportunities for passive recreation, research and educational use that are compatible with the environmentally sensitive resources of the area.

Background and Funding: The project site was historically a part of Devereux Slough. In 1965 the upper portion was filled and graded to create the former Ocean Meadows Golf Course (see Figure 1, 1871 topo map and projection of wetland on project site).

In 2013 under the leadership of the Trust for Public Land, the Ocean Meadows Golf Course (64 ac) was purchased and donated to UCSB with the goal of implementing a larger restoration project. Funding to achieve this goal were derived from local, state and federal sources between 2010 and 2013: Goleta Valley Land Trust, County Resource Enhancement Funds, Wildlife Conservation Board, California Natural Resources Agency, State Coastal Conservancy, USFWS National Coastal Wetland and Section 6 grants.

Between 2013 and 2016 UCSB conducted internal and public vetting of the project components including public access and restoration goals under the leadership of the Science Advisory Board. An additional \$14 million dollars was raised to plan and implement the project from a variety of local, state and federal sources which include: UCSB, County and City of Santa Barbara, CalTrans, California Natural Resources Agency, California Department of Fish and Wildlife, California Department of Water Resources, Wildlife Conservation Board, State Coastal Conservancy, Ocean Protection Council, and the USFWS.

Additional funds are currently being sought to facilitate restoration of the non-graded portions of the project, supplement public amenities, and provide for long-term management and monitoring support.

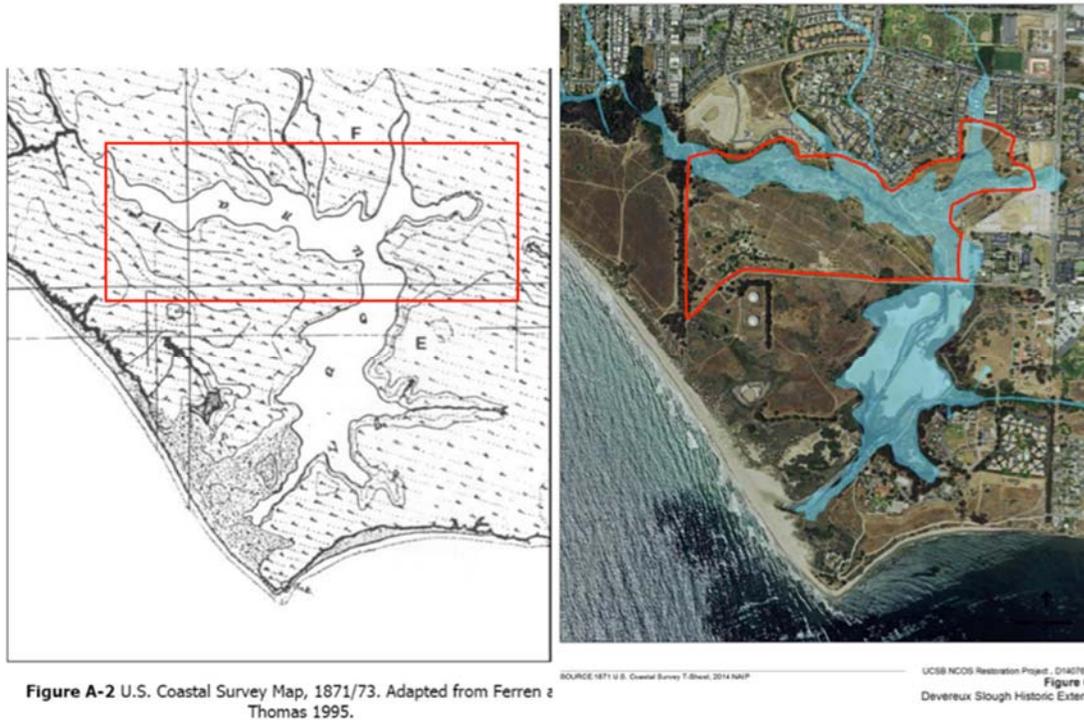


Figure 1. left: 1871 T-sheet showing historic extent of Devereux Slough with general project outline in red; right: aerial photo with projection of historic wetland footprint (blue) with project outline in red.

Project Description:

The North Campus Open Space Project covers 136 acres and includes two campus properties, South Parcel (68 ac) and Whittier Parcel (3.7 ac), and the former Ocean Meadows Golf Course (64 ac). The primary goals of the project are to restore hydrologic connectivity with the remnant Devereux Slough while supporting a mosaic of wetland and upland habitats. These habitats include subtidal, flood plain mud flats, salt marsh, high marsh transitional habitat, brackish wetlands, coastal sage scrub, native perennial grassland and a variety of seasonal wetlands and zones with low growing sparse annuals on sand and clay substrates (Figure 2). The array of wetlands and habitats (seasonal wetlands, tidal wetlands and gradual transition zones) are designed to support a large diversity of migratory and resident birds.

The project is designed to achieve the following specific ecological goals:

- Restore hydrologic connectivity and tidal connection to Devereux Slough, an intermittently tidal estuarine system that has supported the endangered tidewater goby

- Provide for adaptation to sea level rise through provision of transgression space for salt marsh habitats and inland nesting habitat for the threatened western snowy plover
- Reduce flood elevations by 1.5 to 2 feet and support natural flood plain dynamics that will be resilient to storms

In addition, the project will provide public access through trails, bridges and boardwalks. These structures will support the hydrological and habitat goals of the project and provide protection for wildlife on site.

In total, 350,000 cubic yards of fill will be excavated from the former estuary. This fill will be placed on the borrow site in a manner that minimizes impacts to existing habitats. The borrow site will further provide cost effective restoration of historic coastal mesa and upland habitats.

Project Status:

Funding for construction and the majority of restoration objectives has been secured. Environmental compliance (CEQA, NEPA and permits) has been completed. Construction is anticipated to begin in February 2017 for the grading portion and May 2017 for the public access components. Restoration will be on-going as grading is completed between June 2017 and December 2019. Monitoring of vegetation, hydrology and basic water quality parameters is anticipated as well as bird and tidewater goby monitoring.



Figure 2. North Campus Open Space Habitat Restoration Plan showing diversity of habitats and post-project topography.