



Overview of CA LCC Projects and Accomplishments



Rebecca Fris, Science Coordinator
Deanne DiPietro, CA LCC Data Manager
Zhahai Stewart, CA LCC Data Manager

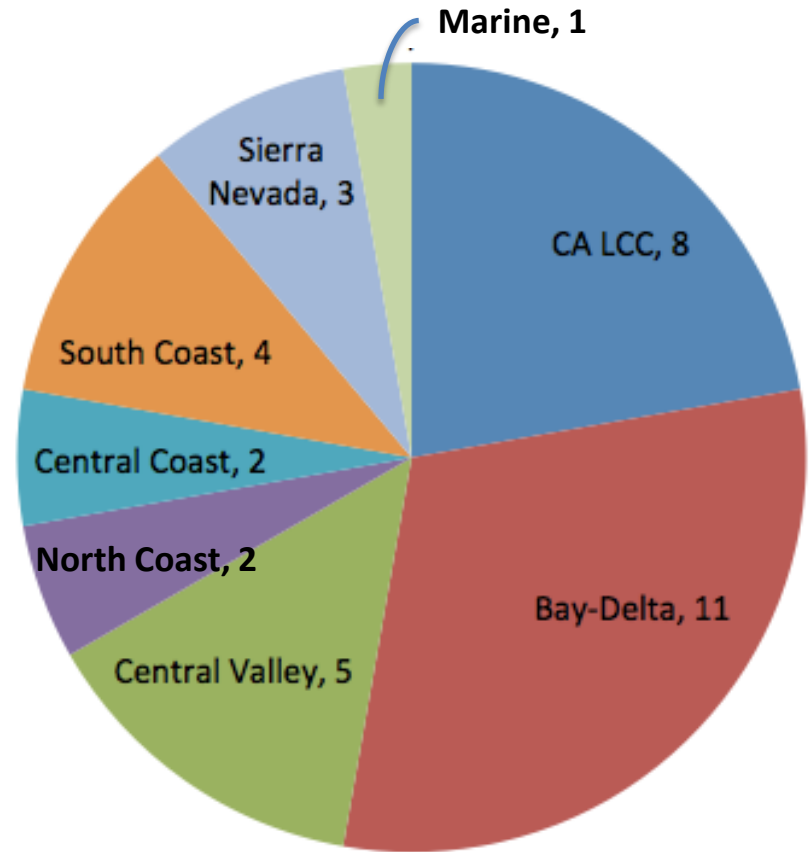


Projects Overview

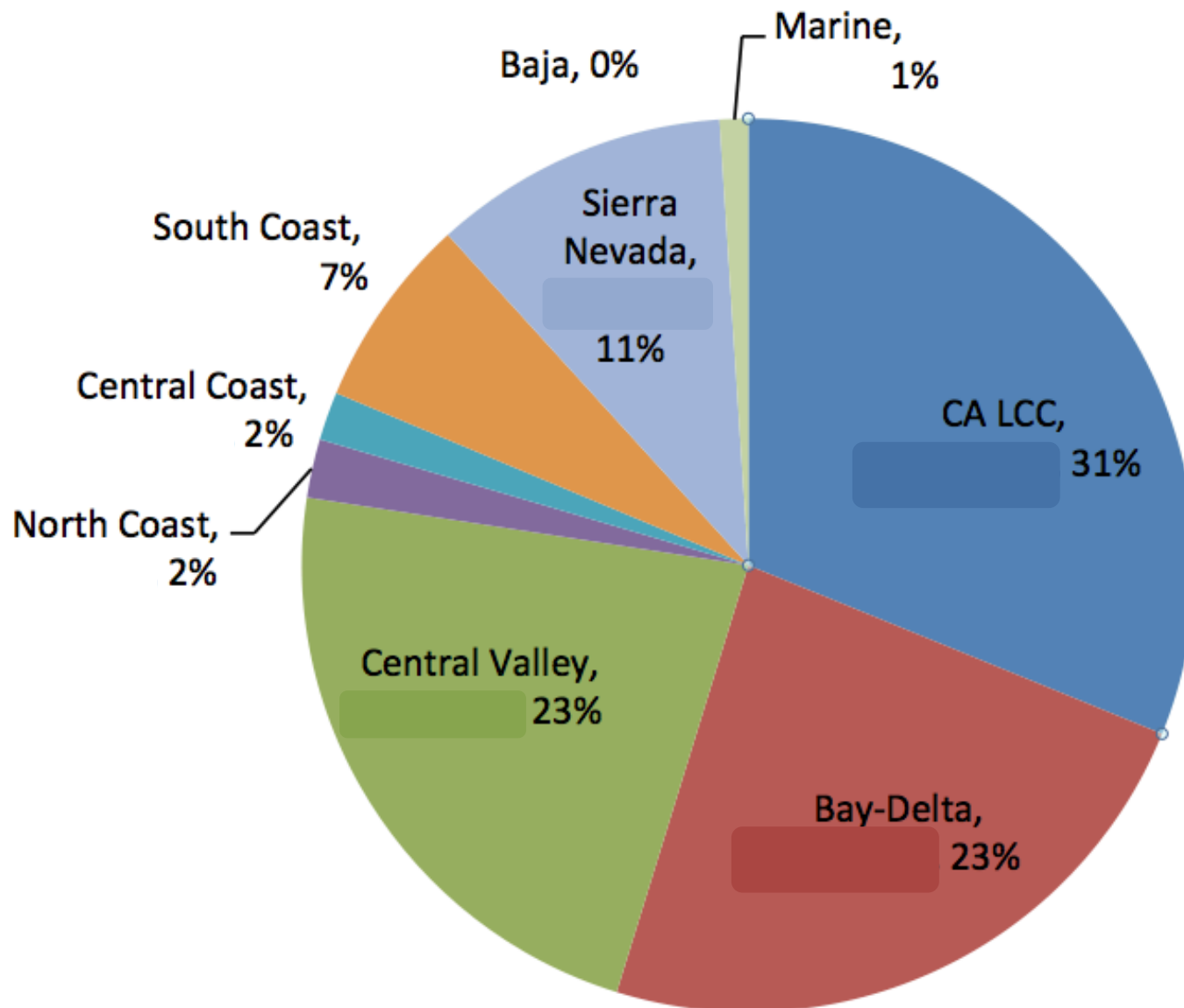
Science Delivery

- **Funded 27 projects since 2010**
- **9 completed, 18 ongoing**
- **Total awards = \$3.5 million (FWS funds)**
- **With matching contributions, over \$6 million for science-management work**
- **In 2013, 8 ongoing projects supported to enhance Science Delivery**

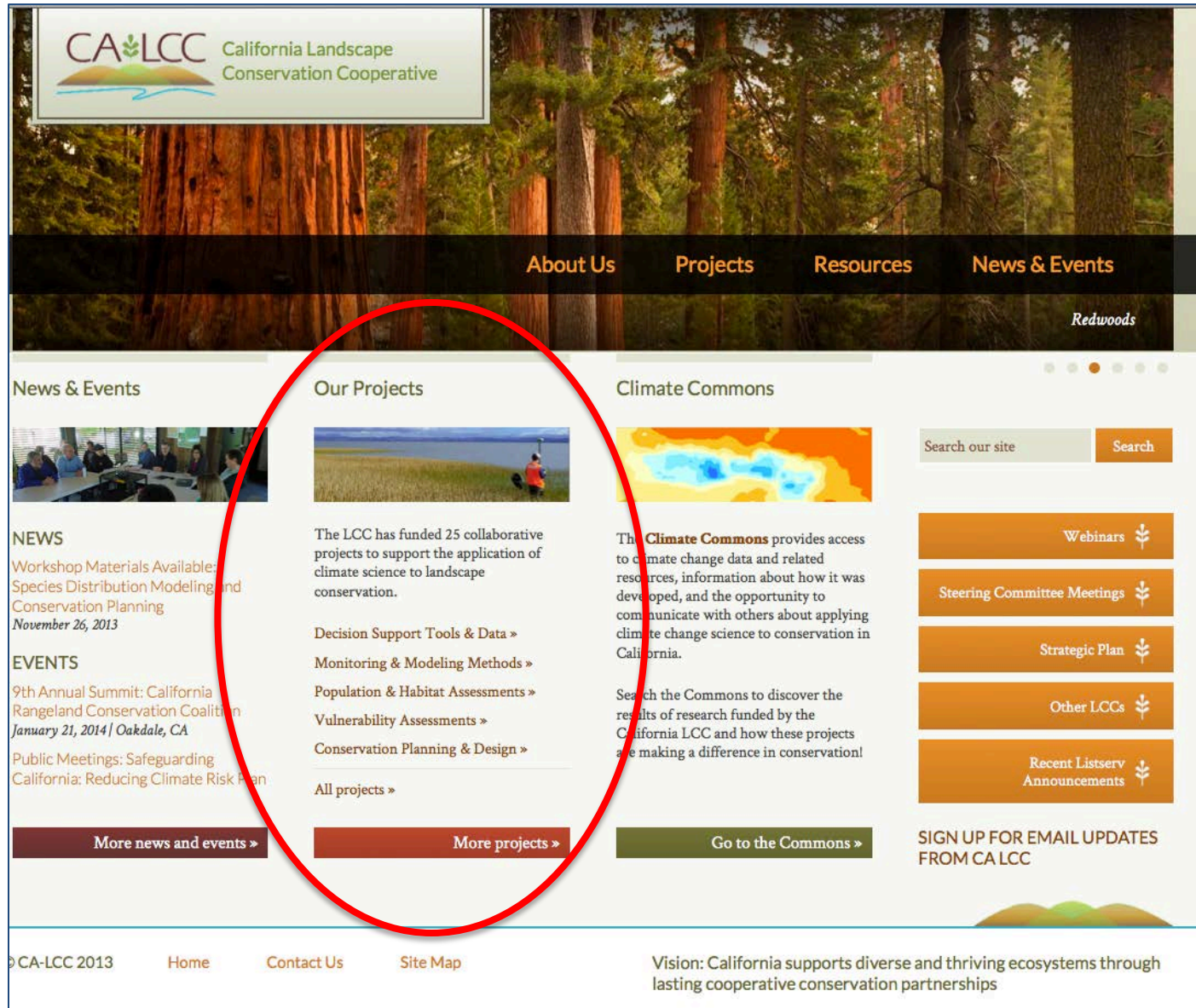
Projects by Ecoregion



Approximate Fund Distribution by EcoRegion



California LCC Website



The screenshot shows the California LCC Website. At the top is a header with the CA LCC logo and the text "California Landscape Conservation Cooperative". Below the header is a navigation bar with links: "About Us", "Projects", "Resources", and "News & Events". The main content area is divided into three columns: "News & Events", "Our Projects", and "Climate Commons". The "Our Projects" column is circled in red. On the right side, there is a search bar and a list of links: "Webinars", "Steering Committee Meetings", "Strategic Plan", "Other LCCs", and "Recent Listserv Announcements". At the bottom, there is a footer with links: "CA-LCC 2013", "Home", "Contact Us", and "Site Map". A vision statement is also present: "Vision: California supports diverse and thriving ecosystems through lasting cooperative conservation partnerships".

CA LCC California Landscape Conservation Cooperative

[About Us](#) [Projects](#) [Resources](#) [News & Events](#)

Redwoods

News & Events

Our Projects

Climate Commons

NEWS
Workshop Materials Available: Species Distribution Modeling and Conservation Planning
November 26, 2013

EVENTS
9th Annual Summit: California Rangeland Conservation Coalition
January 21, 2014 | Oakdale, CA
Public Meetings: Safeguarding California: Reducing Climate Risk Plan

The LCC has funded 25 collaborative projects to support the application of climate science to landscape conservation.

Decision Support Tools & Data »
Monitoring & Modeling Methods »
Population & Habitat Assessments »
Vulnerability Assessments »
Conservation Planning & Design »
All projects »

The **Climate Commons** provides access to climate change data and related resources, information about how it was developed, and the opportunity to communicate with others about applying climate change science to conservation in California.

Search the Commons to discover the results of research funded by the California LCC and how these projects are making a difference in conservation!

Search our site

[Webinars](#) 
[Steering Committee Meetings](#) 
[Strategic Plan](#) 
[Other LCCs](#) 
[Recent Listserv Announcements](#) 

[More news and events »](#) [More projects »](#) [Go to the Commons »](#)

SIGN UP FOR EMAIL UPDATES FROM CA LCC

CA-LCC 2013 [Home](#) [Contact Us](#) [Site Map](#)

Vision: California supports diverse and thriving ecosystems through lasting cooperative conservation partnerships

California LCC Website



California Landscape Conservation Cooperative

About Us Projects Resources News

Home » Project Topics » Vulnerability Assessments

Search our site

Decision Support Tools & Data

Monitoring & Modeling Methods

Population & Habitat Assessments

Vulnerability Assessments

Conservation Planning & Design

All projects »

Vulnerability Assessments

A Monitoring Protocol to Assess the Vulnerability of Shorebirds to Climate Change

Phase 1 & 2 (2010, 2012): This project will design a monitoring protocol to assess the vulnerability of shorebirds in the Central Valley and in the San Francisco Bay Tidal Marshes. Phase II of this project are: 1) Complete the sampling design and monitoring protocol for the Central Valley and 2) Complete the sampling design and monitoring protocol for the San Francisco Bay Tidal Marshes.

Read more

Projects by Year

Funded 2010
Funded 2011
Funded 2012
Funded 2013

Projects may have been funded in more than one year, and thus may show up in more than one of these lists.

Vulnerability Analysis and Monitoring Protocol for San Francisco Bay Tidal Marshes

This project will design a monitoring protocol to assess the vulnerability of shorebirds in the Central Valley and in the San Francisco Bay Tidal Marshes. Phase II of this project are: 1) Complete the sampling design and monitoring protocol for the Central Valley and 2) Complete the sampling design and monitoring protocol for the San Francisco Bay Tidal Marshes.

Read more

This project is in categories:

Monitoring & Modeling Methods

Vulnerability Assessments

Sea-level rise modeling across the California salt marsh gradient

PROPOSAL TITLE:
Phase 1 (2011): Sea-level rise modeling across the California salt marsh gradient for resource managers: evaluation of methodology.

Science Delivery Phase (2013): Science communication and delivery of nearshore climate change impacts to natural resource managers in support of decision-making.

PROJECT SUMMARY:
Phase 1 (2011): This project uses bottom-up modeling at a parcel scale to measure the effects of sea-level rise (SLR) on coastal ecosystems and tidal salt marshes. At selected tidal marshes, the project team will measure several parameters that will be incorporated into ArcGIS models creating comparable datasets across the Pacific coast tidal gradient with a focus on 2-4 sites in the California LCC (e.g. San Diego, San Francisco Bay Refuges). The ultimate goal is to provide science support tools for local adaptation planning from the bottom-up that may be implemented under a structured decision-making framework.

Science Delivery Phase (2013): The objectives are to: (1) Disseminate site-specific baseline data and modeling results, reveal coast-wide trends, and identify data gaps; (2) Identify how local climate science results may be incorporated into habitat conservation, planning, and adaptation strategies; and (3) Recruit stakeholder involvement in developing a decision-making tool (Envision). Workshops will be held in each of the 3-6 areas to present study results and solicit visits with managers over 2-3 days. In addition, stakeholder involvement will be recruited at 1-3 areas to develop a decision-making tool that incorporates climate change projections in management alternatives.

Funded 2010
Funded 2011
Funded 2012
Funded 2013

Projects may have been funded in more than one year, and thus may show up in more than one of these lists.

View Project Deliverables on the Climate Commons »

Project Lead:
John Takekawa, Research Wildlife Biologist, USGS Western Ecological Research Center

Funding:
\$145,000

Partners:
North Pacific LCC
FWS Inventory and Monitoring Program, R8 and R1
NOAA National Estuary Research Reserves, Pacific coast
San Diego National Wildlife Refuge

Incorporating the Geography of Climate Change into Conservation Planning

CA LCC website links to the Project Pages on the Commons

This project is in categories:

 Monitoring & Modeling Methods

 Vulnerability Assessments

Projects by Year

Funded 2010
Funded 2011
Funded 2012
Funded 2013

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North Pacific LCC
FWS Inventory and Monitoring Program, R8 and R1
NOAA National Estuary Research Reserves, Pacific coast
San Diego National Wildlife Refuges

[View Project Deliverables on the Climate Commons »](#)

Sea-level rise modeling across the California salt marsh gradient

Project Information

[View this project on the CA LCC website »](#)

Full Proposal Title:

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End Users or Target Audience:

USFWS National Wildlife Refuges, FWS Inventory and Monitoring, NOAA National Estuary Reserves, San Francisco Bay Joint Venture, South Bay Salt Pond Restoration Project.

Project Lead: John Takekawa, john.takekawa@usgs.gov

Lead Organization: United States Geological Survey Western Ecological Research Center

Partner Organizations: North Pacific LCC FWS Inventory and Monitoring Program R8 and R1 NOAA National Estuary Research Reserves Pacific coast San Diego National Wildlife Refuges San Francisco Bay National Wildlife Refuges San Francisco Bay Joint Venture South Bay Salt Pond Restoration Project University of California Davis

Status: Ongoing

Starting Date: 2011-07

Ending Date: 2015-12

Fiscal Years of Allocations: 2011, 2013

Total LCC Funding: 145000

LCC funding by year and source: \$95,000, 2011, CA LCC; \$50,000, 2013, CA LCC

Total Matching or In-Kind Funds: 226059

Matching and In-Kind Funding Breakdown:
\$20,000, 2011, USFWS; \$206,059, 2011, USGS; \$46,900, 2013, USGS

Indexing

Primary Category: Population & Habitat Evaluation/Projection

Another Category: Decision Support

Another Category: Vulnerability Assessment

Main Deliverable: Map

Another Deliverable: Datasets/Database

Another Deliverable: Applications and Tools

Geographic Keywords: Coastal California

CA LCC Ecoregions: Bay-Delta Central Coast Marine South Coast

Attachments

Proposals:  2011 Proposal \$95,000

 2013 Proposal \$50,000

Reports:

 Poster 2012: Effects of sea-level rise and storms on salt marshes and endemic wildlife of San Francisco Bay

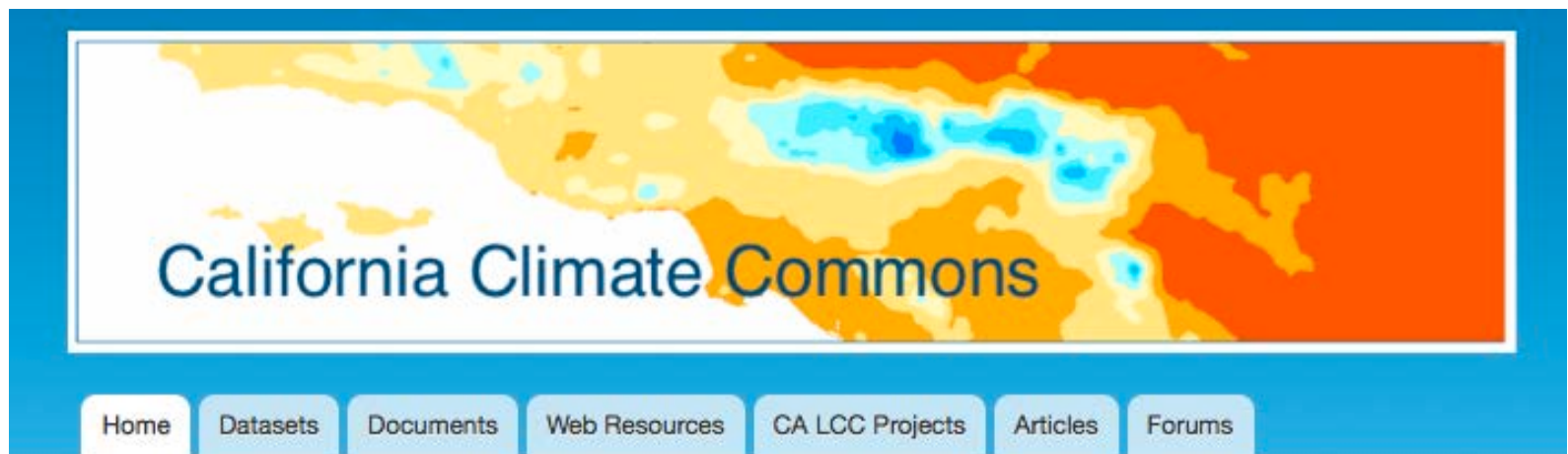
 Poster 2012: Evaluating the Effects of Projected Sea-level Rise on Tidal Marsh Habitats

 Progress Map, Humboldt June 2012

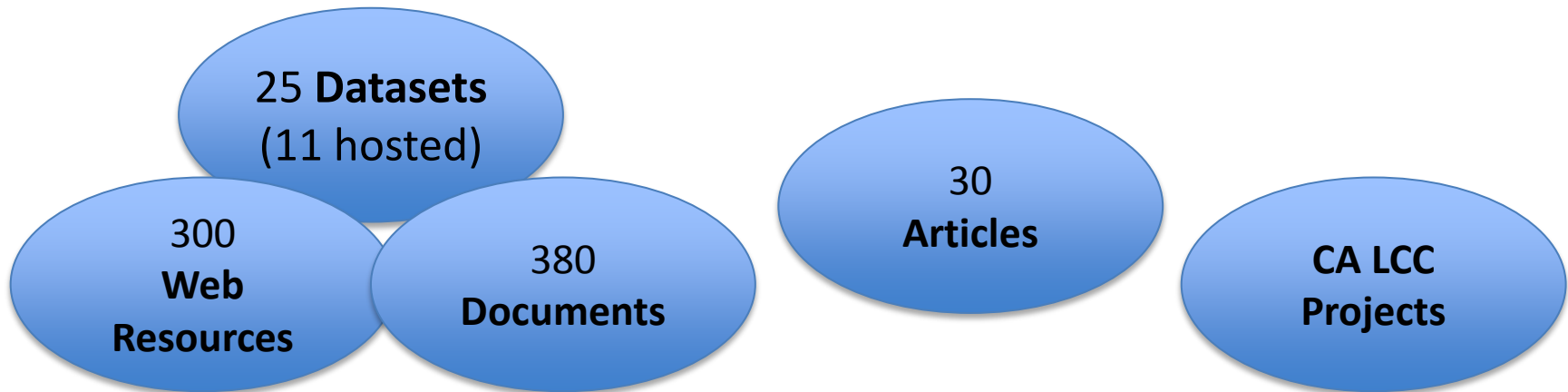
 Final Report for Sea-level Rise Response Modeling for San Francisco Bay Estuary Tidal Marshes

Data Management Plan

[View this project's Data Management Plan](#)



... a comprehensive library of information resources about climate change important for conservation for California.



Climate Commons homepage

California Climate Commons

Home Datasets Documents Web Resources CA LCC Projects Articles Forums

Search the Commons

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Password *

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[Request new password](#)

Log in

Welcome to the California Climate Commons

The Climate Commons offers a starting point for discovery of climate change data and related resources, information about the science that produced it, and the opportunity to communicate with others about applying climate change science to conservation in California.

Search the Commons Catalogs:

Datasets Documents Web Resources

CA LCC Projects Featured Articles Tools

Next By Subject

Featured Project: Pacific Flyway Shorebird Survey

This project helps answer the question: "How do changes in habitat management and climate effect shorebird populations at local, regional, and hemispheric scales?".

A project of the California Landscape Conservation Cooperative

CA LCC

This Week's Highlights

Sea Level Rise: What the Experts Expect

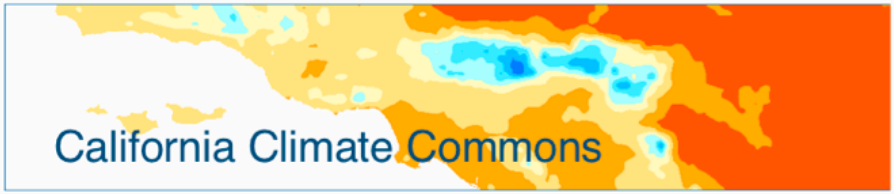
Learn what surveyed experts think about sea level rise.

Featured CA LCC Workshop: Species Distribution Modeling and Conservation Planning

Stay Current with Climate Change with these Newsletters, Listservs, and Updates

See Resources Most Recently Added to the Climate Commons Catalogs

CA LCC Project Catalog



California Climate Commons

- Home
- Datasets
- Documents
- Web Resources
- CA LCC Projects
- Articles
- Forums

Home

Search the Commons

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Password *

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- Request new password

Log in

California LCC Projects

These projects have been funded by the California LCC.

You can also view [projects by ecoregion](#).

Project Name ^	Project Lead / Contact	Lead Organization	Status / Dates	Proposals
A Climate Change Adaptation Strategy for Sierra Nevada Birds	Rodney Siegel, rsiegel@birdpop.org Contact: Rodney Siegel	The Institute for Bird Populations	Ongoing July 2011 - September 2012	2011 Proposal \$82,390
A Monitoring Protocol to Assess Wintering Shorebird Population Trends	Matthew E. Reiter, mreiter@prbo.org Contact: Matthew Reiter	Point Blue Conservation Science (formerly PRBO)	Phase 2 Ongoing September 2010 - May 2014	2010 Proposal \$50,000 2011 Proposal \$90,000 2013 Proposal \$24,560
Assessing and Mapping Rare Plant Species Vulnerability to Climate Change	Steve Schoenig, sschoenig@dfg.ca.gov ; Brian Anacker, blanacker@ucdavis.edu Contact: Steve Schoenig	California Department of Fish and Game Biogeographic Data Branch	Completed August 2010 - September 2012	2010 Proposal \$103,099 Revised Project Description
Avian demographic response to climate change	Josh Ackerman, jackerman@usgs.gov ; Mark Herzog, mherzog@usgs.gov Contact: Josh Ackerman	United States Geological Survey Western Ecological Research Center	Completed August 2010 - June 2011	2010 Proposal \$99,925

Projects by EcoRegion

California LCC Projects by Ecoregion

Click on the map or on the name of an ecoregion in the table below for a listing of CA LCC Projects associated with that region. (*CA LCC-wide projects are listed only once under that tag*)

North Coast	CA LCC-wide	Central Coast
Bay-Delta	Marine	Sierra Nevada
Central Valley	Baja	South Coast



Sierra Nevada

Content tagged with this term

Type	Title
Project	A Climate Change Adaptation Strategy for Sierra Nevada Birds
Project	Determining Landscape Connectivity and Climate Change Refugia Across the Sierra Nevada
Project	Vulnerability Assessment and Adaptation Strategies for Focal Resources of the Sierra Nevada

CA LCC-wide

Content tagged with this term

Type	Title
Project	Assessing and Mapping Rare Plant Species Vulnerability to Climate Change
Project	California Climate Commons
Project	Confronting uncertainty in species distribution projections
Project	Effects of Climate Change on Inland Fishes of California
Project	Incorporating the geography of climate change into conservation planning
Project	Setting Regional Strategies for Invasive Plant Management
Project	The Environmental Change Network
Project	Training Curriculum to Support Improved Plant and Animal Conservation

Sea-level rise modeling across the California salt marsh gradient

View

Edit

Project Information

[View this project on the CA LCC website](#)

Full Proposal Title:

Phase 1 (2011): Sea-level rise modeling across the California salt marsh gradient for resource managers: evaluation of methodology. Science Delivery Phase (2013): Science communication and delivery of nearshore climate change impacts to natural resource managers in support of decision-making.

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Science Delivery Phase and modeling results climate science results strategies; and (3) Re Workshops will be held managers over 2-3 d develop a decision-making alternatives.

End Users or Target

USFWS National Wildlife Reserves, San Francisco

Project Lead: John Takekawa

Lead Organization: United States Geological Survey Western Ecological Research Center

Partner Organizations: North Pacific LCC FWS Inventory and Monitoring Program R8 and R1 NOAA National Estuary Research Reserves Pacific coast San Diego National Wildlife Refuges San Francisco Bay National Wildlife Refuges San Francisco Bay Joint Venture South Bay Salt Pond Restoration Project University of California Davis

Status: Ongoing

Starting Date: 2011-07

Ending Date: 2015-12

Project Page on the Commons

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Project Lead: John Takekawa, john_takekawa@usgs.gov

Lead Organization: [United States Geological Survey Western Ecological Research Center](#)

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Sea-level rise modeling across the California salt marsh gradient

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Science Delivery Phase (2013): The objectives are to (1) synthesize and model results, reveal coast-wide trends, and (2) communicate climate science results to managers; and (3) Recruit stakeholder involvement. Workshops will be held in each of the 3-6 areas to managers over 2-3 days. In addition, stakeholder develop a decision-making tool that incorporates alternatives.

End Users or Target Audience:

USFWS National Wildlife Refuges, FWS Inventory Reserves, San Francisco Bay Joint Venture, South

Project Lead: John Takekawa, john_takekawa@us

Lead Organization: United States Geological Sur

Partner Organizations: North Pacific LCC FWS

R1 NOAA National Estuary Research Reserves P

Refuges San Francisco Bay National Wildlife Re

Bay Salt Pond Restoration Project University of

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Indexing

Primary Category: Population & Habitat Evaluati

Another Category: Decision Support

Another Category: Vulnerability Assessment

Main Deliverable: Map

Another Deliverable: Datasets/Database

Another Deliverable: Application

Geographic Key: Coastal California

CA LCC Regions: Bay-Delta Central Coast

Attachments

Proposals:  2011 Proposal \$95,000

 2013 Proposal \$50,000

Reports:

 Poster 2012: Effects of sea-level rise and storms on salt marshes and endemic wildlife of San Francisco Bay

 Poster 2012: Evaluating the Effects of Projected Sea-level Rise on Tidal Marsh Habitats

 Progress Map, Humboldt June 2012

 Final Report for Sea-level Rise Response Modeling for San Francisco Bay Estuary Tidal Marshes

Data Management Plan

[View this project's Data Management Plan](#)

Interim Products, Data Management Plan

Attachments

Proposals:  2011 Proposal \$95,000

 2013 Proposal \$50,000

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Data Management Plan

[View this project's Data Management Plan](#)

Project Data Management Plan

Tells about all of the planned products and how they will be shared, prepares for cataloging and hosting.

Data Management Plan for the [California LCC](#) project:

Sea-level rise modeling across the California salt marsh gradient

Table of Contents

Data Input - New Collections

- 1 [Marsh Elevation](#)
- 2 [Vegetation](#)
- 3 [Water level, salinity, and temperature](#)
- 4 [Bed sediment flux](#)
- 5 [Marsh Accretion](#)

Data Input - Existing Collections

- 1 [Local Weather Station Data](#)
- 2 [Wildlife Surveys](#)

Data Output - Product or Deliverables

- 1 [Stakeholder workshops](#)
- 2 [Continuous Digital Elevation Models \(DEMs\)](#)
- 3 [Sediment Transport Models](#)
- 4 [Habitat Response Models](#)
- 5 [Paleo-accretion Information](#)
- 6 [SLR response model](#)

6	SLR response model
Description	Refined SLR response model with distribution dataset
Format	Access database, shapefile (vector) and geotiff (raster); Publication in peer-reviewed journal
Quality Checks	USGS and journal peer review
Metadata	FGDC
Backup and Storage	Backed up on USGS Western Ecological Research Center Server
Access and Sharing	Read
Exclusive Use Embargo	Project data will be made publically available concomitant with publication of results in peer-reviewed journal
Restrictions	Data will be fully available for reports and plans. We require that permission be requested to use the data
Contact	John Y. Takekawa, john_takekawa@usgs.gov , 707-562-2000

Project

The Environmental Change Network

View

Edit

Project Information

View this project on the CA LCC

Full Proposal Title:

How do we monitor the ecological change in the California Environmental Change Network in the California

Description:

This project will develop a foundation for understanding and what to monitor in order to develop however a framework will be developed to monitor and environmental attributes. Phase 1: a Business Plan that will 1) refine the framework, 2) analyses of sites (or clusters of sites) and develop a committee, Joint Ventures, and 3) develop and/or add estimates/variable/station, and 4) develop a framework for

Project results may be found at:

End Users or Target Audience:

Central Valley Joint Venture, San Joaquin River Delta Wildlife, The Nature Conservancy, Audubon California, USGS, academic institutions, Observation, River Partners, Butte County, etc.

Project Lead:

Sam Veloz, sveloz@ucdavis.edu

Lead Organization:

Point Blue Conservation Science

Partner Organizations:

Central Valley Joint Venture, California Department of Fish and Wildlife, The Nature Conservancy, United States Fish and Wildlife Service, Ornithology, United States Geological Survey, etc.

Area Early Detection Network

Status:

Phase 2 Ongoing

Starting Date:

2010-09

Ending Date:

2012-10

Fiscal Years of Allocation:

2010-2011

Total LCC Funding:

\$186,065

LCC funding by year and source:

2010: \$13,746; 2011: \$172,319

Total Matching or In-Kind Funding:

\$13,746

Matching and In-Kind Funding:

2010: \$13,746; 2011: \$172,319

Donor:

\$10,000, 2010, CALFED; \$40,000, 2011, Department of Defense; \$40,000, 2011, California Department of Fish and Wildlife; \$20,000, 2011, Anonymous Donor; \$20,000, 2011, PBO

Indexing

Primary Category:

Conservation Planning

Another Category:

Data Acquisition and Development

Another Category:

Monitoring

Main Deliverable:

Datasets/Database

Another Deliverable:

Conservation Plan/Design/Framework

Another Deliverable:

Website

Geographic Keywords:

California

CA LCC Ecoregions:

CA LCC

Attachments

Proposals:

2010 Proposal \$86,065

2011 Proposal \$100,000

Data Management Plan

View this project's Data Management Plan

For Data Management Plan maintainers:

Overview and Help with California LCC Data Management Plan

The Data Management Plan has a section for each document in the project's Data Management Plan

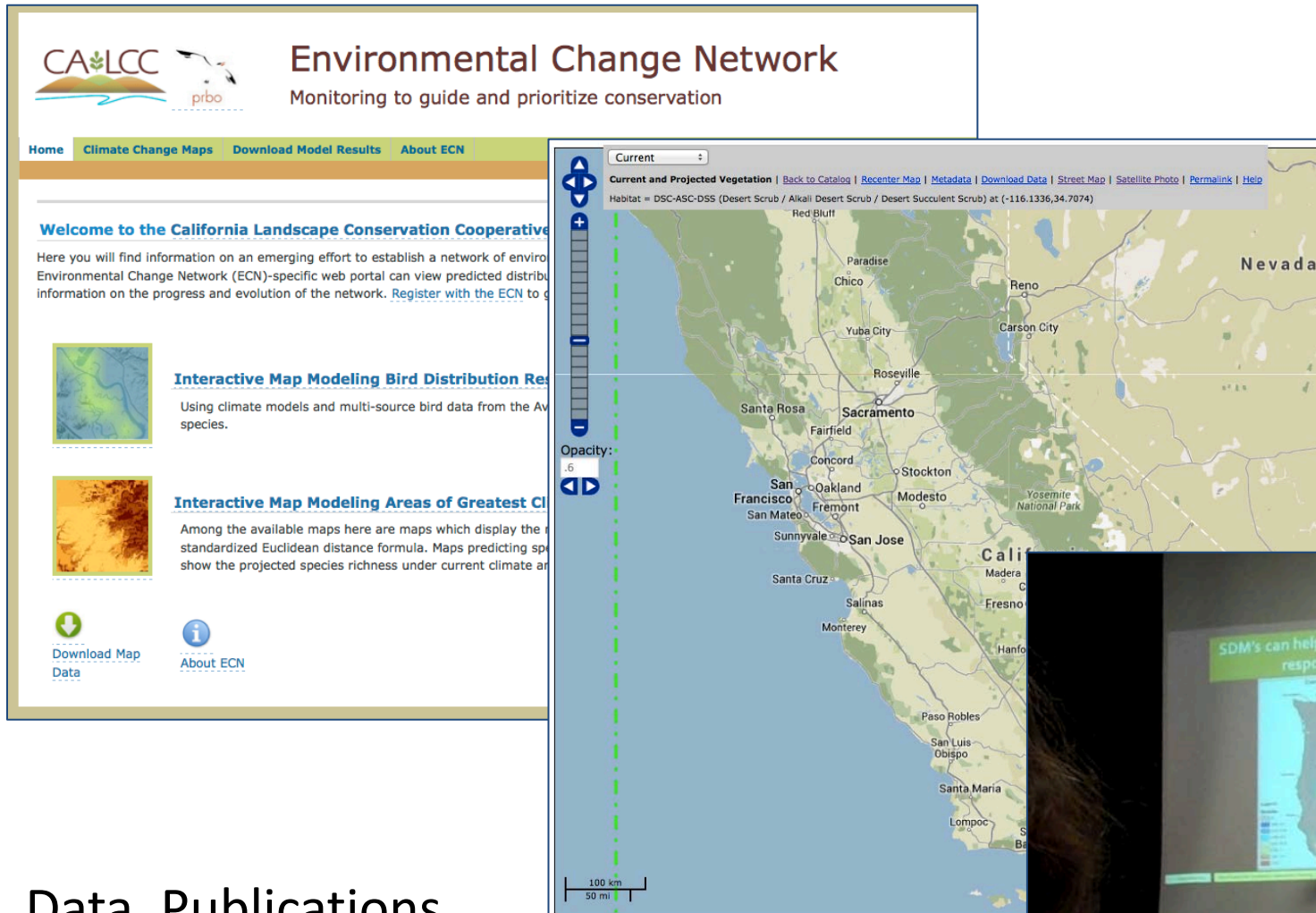
Add new section to project's Data Management Plan

Products of this project

Resource Type	Title
Dataset	Bird Community Turnover
Dataset	Current and Projected Vegetation
Dataset	Bird Species Richness Response to Climate Change
Dataset	Bird Distribution Responses to Climate Change
Dataset	Magnitude of Climate Change
Dataset	Conservation Prioritization for California Landbirds
Web Resource	California Environmental Change Network

Resource Type ▲	Title
Dataset	Bird Community Turnover
Dataset	Current and Projected Vegetation
Dataset	Bird Species Richness Response to Climate Change
Dataset	Bird Distribution Responses to Climate Change
Dataset	Magnitude of Climate Change
Dataset	Conservation Prioritization for California Landbirds
Web Resource	California Environmental Change Network

Products



Data, Publications,
Tools, Workshops



Articles

Article

Featured Project: Modeling Sea-Level Rise in San Francisco Bay Estuary

This research investigated site-specific projected sea level rise and storm impacts at a level of detail meaningful for protecting salt-marsh species-- detail on the order of the length of a wading-bird's legs.

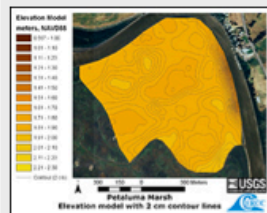


The [Project's Website](#) at the USGS Western Ecological Research Center offers access to a wealth of information for each of the 12 marshes: a detailed, graphics-rich description of the marsh's current and projected elevations, tidal inundation patterns, and vegetation communities; a time-lapse animation of the projected changes in elevation and habitat type; and all the spatial data and maps packaged for download.

This research has been supported by multiple agencies, including the [USGS National Climate Change and Wildlife Science Center](#), the [CA LCC](#), and the U.S. Fish & Wildlife Service Inventory & Monitoring Program. Scientists are working closely with resource managers from the USFWS, CA Department of Fish & Wildlife, NOAA NERR, and local agencies to inform management decisions in light of projected sea-level rise. The work is now being expanded along the Pacific coast with partners that include the North Pacific LCC, California LCC, NW and SW USGS Climate Science Centers, and three joint ventures.

The project conducted intensive on-the-ground field data collection and innovative predictive modeling that incorporates local tidal conditions, marsh accretion rates, and habitat response to project possible future outcomes for critical marsh habitat at [12 sites surrounding San Francisco Bay estuary](#) for sea-level rise. From these results resource managers can learn about the timing and locations of projected habitat change from sea-level rise and how this may impact the habitats for many tidal marsh species, including the federally endangered California clapper rail and salt marsh harvest mouse.

At left, one of the project study sites by Karen Thorne.



Above: 2 cm resolution map of elevation at Petaluma Marsh. Click the map for an animation of projected sea level rise at this location.

Get the Report

[Executive Summary and Full Report](#)

Explore the Study Sites

[Access the detailed data, animations, maps, and summary reports for each of the 12 project study sites](#)

Find the Project in the Climate Commons

[Project catalog record with related resources](#)

Coming Soon: Watch a Video

Lead Scientist John Takekawa talks about the significance of the results for resource managers

Related Resources

Article

[Sea Level Rise](#)

Article

The Pacific Flyway Shorebird Survey

Contributors to this article

[Deanne DiPietro](#)
[Matthew Reiter](#)

Subjects: [birds](#) [bird conservation](#) [migration](#) [monitoring](#)



Photo by Stuart MacKay

The Pacific Flyway Shorebird Survey is a coordinated multi-partner research and monitoring program led by Point Blue Conservation Science designed to guide the management and conservation of wintering shorebirds in the Pacific Flyway, a migration corridor stretching from Alaska to Chile. The first phase of the effort has focused on California's Central Valley, San Francisco Bay Area, and the coastal regions of California and northern Baja California, Mexico. These regions provide critical habitat for large populations of migrating and wintering shorebirds in the Pacific Flyway.

This project helps answer the question: "How do changes in habitat management and climate effect shorebird populations at local, regional and hemispheric scales?" by tying together many existing monitoring efforts, establishing new ones to fill gaps, and providing the decision support tools to see the "Big Picture" of shorebird populations in the Pacific Flyway. The overall goal is to improve our understanding of trends in species populations and in the availability of the habitats they depend upon and put this information to work in real-time to manage shorebird habitats adaptively, learning more about what works and what does not each season. The result is climate-smart conservation and management that can respond and adapt actions on a year-to-year basis, to maximize effectiveness for shorebird populations despite rapid environmental change and uncertainty.

Results of the project to date include:

- (1) [Shorebird monitoring plans for Coastal California and Northern Baja Mexico, the Central Valley, and San Francisco Bay](#)
- (2) [A Shorebird Data Entry Portal](#) in the California Avian Data Center (CADC) provides a single point of entry for data from programs monitoring coastal estuaries, managed wetlands, and agricultural land (enter "demo:shorebird" to test-drive the portal).
- (3) [Interactive tools](#) that provide summaries of shorebird monitoring data at the scale of an individual estuary, marsh, or preserve (www.pbc.org/pfas/exploredata).
- (4) [Analytical capacity to iteratively use annual monitoring data in an adaptive management framework.](#)
- (5) [Workshops and trainings](#) for monitoring programs throughout western North America (Canada to Mexico).
- (6) [Implemented surveys in 10 countries in collaboration with more than 30 partner organizations.](#) During the first 3 years of the project over 2 million shorebird observations have been entered into CADC, including almost 1 million from the San Francisco Bay survey alone.

Future Work

Point Blue Conservation Science plans to conduct workshops with the Central Valley Joint Venture and San Francisco Bay Joint Venture to evaluate the shorebird monitoring program, habitat modeling framework, and data summary applications. Specifically Point Blue will work with the Joint Ventures to assess how the Pacific Flyway Shorebird Survey and resulting data summary capacity can support their decision making processes. Workshops will also be held in the Sacramento and San Joaquin Valleys to engage wetland habitat managers in making the data summary and decision support products from this project work best for them. The Pacific Flyway Shorebird Survey is beginning to expand internationally under the [Migratory Shorebird Project](#), broadening our knowledge of shorebird populations across the Western Hemisphere. For more information, contact [Matt Reiter](#) at Point Blue.

You can get involved!

Citizen scientists and partner biologists are helping figure out how large-scale environmental changes, like urbanization, extreme weather, climate variation as well as agricultural flooding, wetland restoration and management, are affecting shorebirds and their habitats throughout the Pacific Flyway. See the [Pacific Flyway Shorebird Survey website](#) to learn how to be part of this exciting project.



Photo by Frankie Frost

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