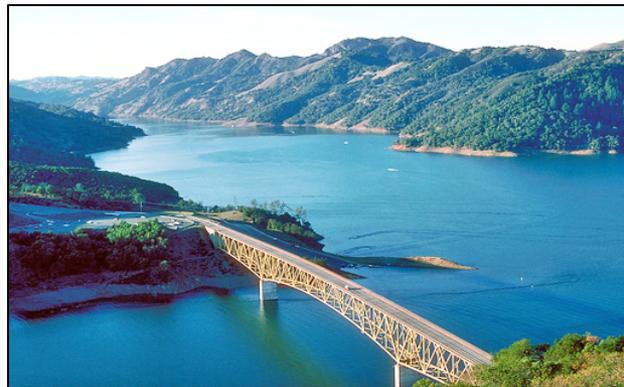




# NOAA's Habitat Blueprint and the Resilient Lands and Waters Initiative: Managing Our Natural and Water Resources from “Sea to Summit to Sea,” an example from the Russian River Habitat Focus Area



*Natalie Cosentino-Manning  
2016 Ocean Climate Summit  
San Francisco, California  
May 17, 2016*

# NOAA'S HABITAT BLUEPRINT AND THE RESILIENT LAND AND WATERS INITIATIVE



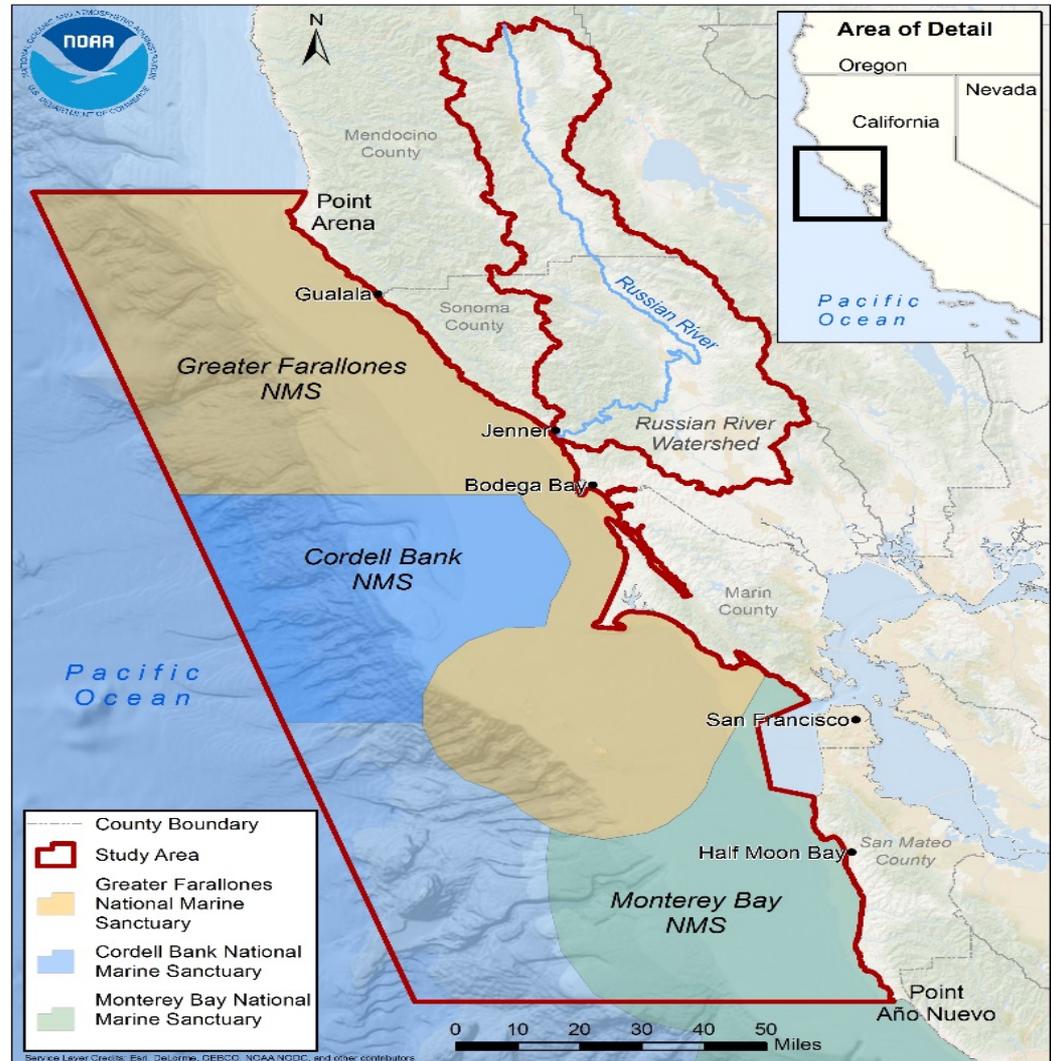
- The **Habitat Blueprint** is NOAA's strategy to integrate habitat conservation throughout the agency, focus efforts in priority areas (**Habitat Focus Area – HFA**) *Improving the way we do business !*
- The **Resilient Lands and Waters Initiative** is Administration's ***Priority Agenda for Enhancing the Climate Resilience of America's Natural Resources***, and demonstrate the feasibility, practice, and benefits of landscape-scale management approaches toward building climate resilience through the use of existing, cooperative, inter-agency institutions and partnerships. *A national spotlight on landscape scale efforts to address climate impacts that respect no jurisdictional boundaries!*

# Geographic Extent

## *North-Central Coast and Russian River Watershed Focus Area*

**North-Central Coast:** 4,581 square miles of protected open ocean, nearshore tidal flats, rocky intertidal areas, estuarine wetlands, subtidal reefs, and coastal beaches

**Russian River Watershed:** 1,500 square miles of forests, agricultural and urban lands in Mendocino and Sonoma Counties.



# NOAA LINE OFFICES INVOLVED

## Office of Atmospheric Research (OAR)



### Climate Adaptation and Mitigation

*An informed society anticipating and responding to climate and its impacts*

## National Weather Service (NWS)



### Weather Ready Nation

*Society is prepared for and responds to weather-related events*

## National Marine Fisheries Service (NMFS)



### Healthy Habitats and Fisheries

*Marine fisheries, habitats, and biodiversity sustained within healthy and productive ecosystems*

## National Ocean Service (NOS)



### Resilient Coastal Communities and Economies

*Coastal and Great Lakes communities that are environmentally and economically sustainable*

## Program Planning and Integration (PPI)



### Social Science and Strategy

*Strategic planning, social and economic impacts, stakeholders and environmental policy*

# COMPLEMENTARY INITIATIVES AND PARTNERS

***The Russian River Habitat Blueprint and Resilient Lands and Waters Initiatives integrate partnerships that will provide leverage, strengthen the outcomes, and produce sustainable results.***

## **Complementary Initiatives**

The Integrated Water Resources Science and Services (IWRSS), National Integrated Drought Information System (NIDIS), California Landscape Conservation Cooperatives (LCC), National Fish and Wildlife Foundation – Keystone initiative (NFWF)

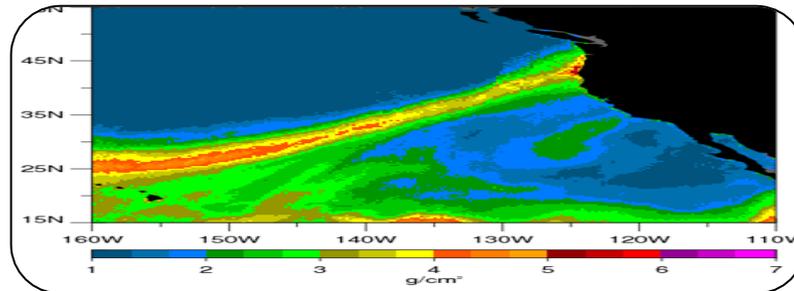
## **List of Partners**

Bay Area Ecosystems Climate Change Consortium  
Bureau of Land Management  
California Department of Fish and Wildlife  
California Department of Parks and Recreation  
California State Coastal Conservancy  
Center for Ecosystem Management and Restoration  
EcoAdapt  
Farm Ecology  
Farallones Marine Sanctuary Association  
Gold Ridge Resource Conservation District  
Golden Gate National Recreation Area  
Mendocino Resource Conservation District  
National Fish and Wildlife Foundation  
National Park Service  
Point Blue Conservation Science  
Point Reyes National Seashore  
SCRIPPS Institute for Oceanography  
Sonoma County Water Agency  
Sonoma County Wine Grape Commission

Sonoma and Mendocino County Farm Bureaus  
Sonoma Resource Conservation District  
Terraspace  
Trout Unlimited  
The Nature Conservancy  
University of California (UC) Berkeley  
UC Davis, Bodega Marine Laboratory  
UC Cooperative Extension (Sonoma and Mendocino)  
United States (U.S.) Army Corps of Engineers  
U.S. Geological Survey  
U.S. Fish and Wildlife Service  
Russian Riverkeeper  
Russian River flood Control Water Conservation Improvement District

# OBJECTIVES: NORTH-CENTRAL COAST AND RUSSIAN RIVER HABITAT FOCUS AREA

- Develop California's first comprehensive, prioritized adaptation implementation plan for the coast and ocean. <http://sanctuaries.noaa.gov/science/conservation/vulnerability-assessment-gfnms.html>
- Rebuild endangered coho salmon and threatened Chinook salmon and steelhead stocks to sustainable levels through habitat protection and restoration.
- Improve frost, rainfall, and river forecasts in the Russian River watershed through improved data collection and modeling.
- Increase community and ecosystem resiliency to flooding and drought through improved planning and water management strategies.



CCC Coho Salmon



CC Chinook Salmon



CCC Steelhead Trout

# THE RUSSIAN RIVER



More than 600,000 residents in portions of Sonoma and Marin counties rely on the water released from storage and then delivered from the Russian River by the Sonoma County Water Agency. Wildlife—including endangered and threatened species such as coho and Chinook salmon and steelhead—recreational interests, and agricultural crops also rely on this water to thrive.

The Russian River originates in central Mendocino County, draining 1,485 square miles, including much of Sonoma and Mendocino counties, with a main channel 110 miles long. Two major reservoirs maintain water supply and provide flood protection for the Russian River watershed: Lake Mendocino and Lake Sonoma. Releases from both reservoirs provide water for municipal and industrial uses, in addition to maintaining the minimum stream flows required by the State Water Resources Control Board. These minimum flows provide for recreation as well as fish passage for salmon and steelhead.

Realizing the importance of protecting and preserving water resources for future generations, the Sonoma County Water Agency has taken a proactive role in implementing an array of water supply, conservation, and fisheries enhancement programs. To learn more about these programs and the Russian River, visit [www.sonomacountywater.org](http://www.sonomacountywater.org).



**#1 - Forecast Informed Reservoir Operations (Lake Mendocino)**

**#2 - Westminster Woods Water Conservation Tank**

**#3 Coastal Storms and Sea Level Rise Modeling**

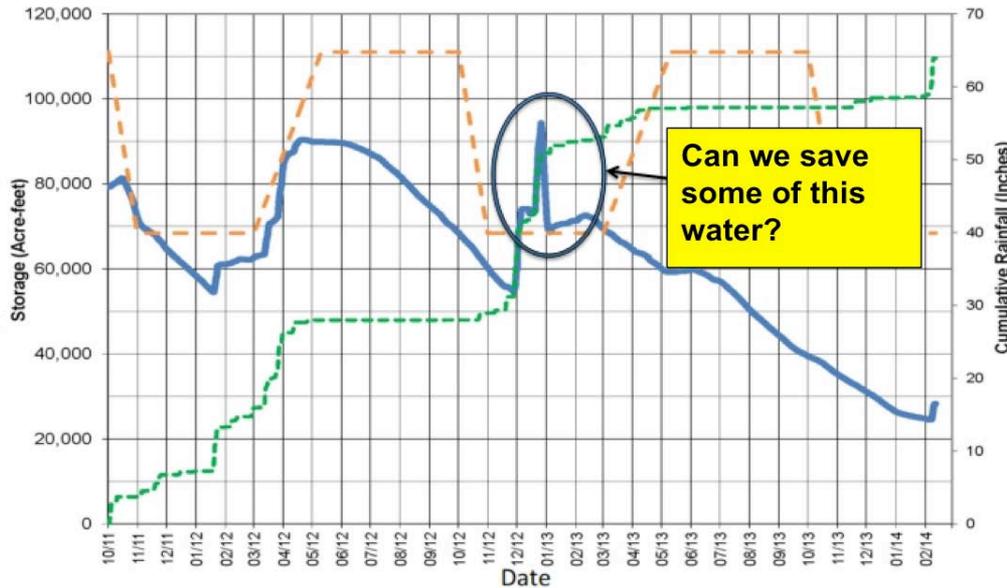
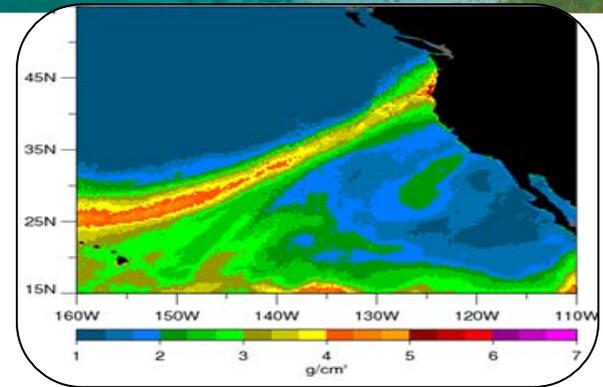


# #1 - Forecast Informed RESERVOIR OPERATIONS (FIRO) - LAKE MENDOCINO

**Collaborators:** NOAA (OAR, NWS, NMFS), SCWA, USACE, Scripps, USGS, DWR, Russian River flood Control Water Conservation Improvement District

**Objective:** Improve Precipitation and River Flow Forecasting to Maximize Water Capture for Reservoirs and Fisheries

FIRO is a proposed management strategy that uses data from watershed monitoring and modern weather and water forecasting to help water managers selectively retain or release water from reservoirs in a manner that reflects current and forecasted conditions. <http://cw3e.ucsd.edu/FIRO/>



# #2 Westminster Woods Water Conservation Tank

***Collaborators:*** NOAA (NMFS, UC Sea Grant), Gold Ridge and Sonoma RCD's, CEMAR, Trout Unlimited and Occidental Arts and Ecology Center. Additional funding was provided by the RRCWRP through the National Fish and Wildlife Foundation (NFWF), the Sonoma County Water Agency and the California Department of Fish and Wildlife.

***Objective:*** To eliminate a dry season diversion on the main stem of Dutch Bill creek by implementing water conservation measures and constructing off-channel water storage.

- Christian and summer camp
- **750,000 to 1.15M gallons (2-4 acre-feet!) of water** from the creek each year.
- Situated on prime Coho habitat (spawning and rearing)

- Spring water to be stored in tanks with a total capacity of approximately 220,000 gallons (four months' irrigation water supply) for summer use.
- Water returned to instream flow



Coho Salmon



Coho Salmon Smolt Imprinting Tank



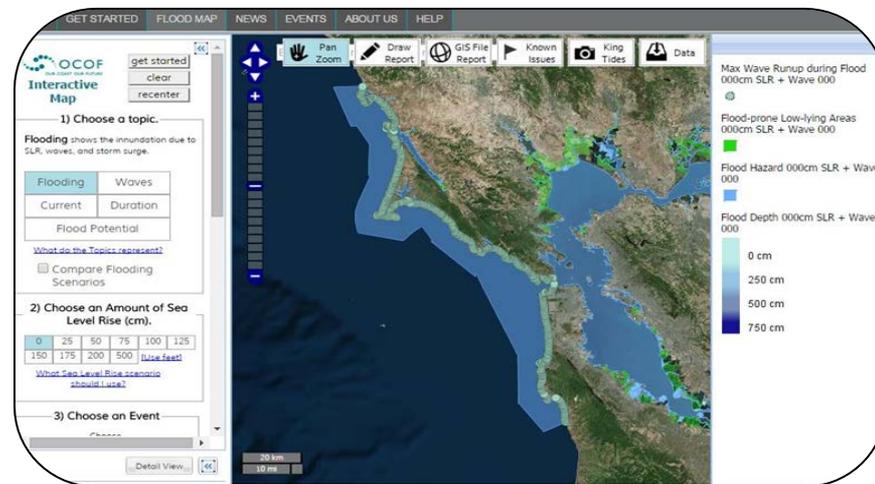
# #3 Russian River Estuary and Outer Coast Coastal Storms and Sea Level Rise

**Collaborators:** NOAA (NOS, NWS, NMFS, OAR), SCWA, USGS, Point Blue, Sonoma County Permit and Resource Management District.

**Objective:** Develop a high resolution Coastal Storm Modeling System (CoSMoS) for the Russian River estuary and for the outer coast from Bodega to Pt Arena. This model which will leverage existing data and models on sea level rise projections, future wave climatology, barrier beach and river mouth sedimentations regimes. This integrated model and associated data will added to the Our Coast Our Future data platform and will be useful for management of estuary resources, guide habitat restoration and inform coastal planning.

## CoSMoS Model Sonoma Extension

- Bodega Head to Point Arena
- Particular emphasis on the Russian River mouth and Jenner
- Integrate coupling with RDHM
- Eventually simulate all 40 scenarios
  - (SLR from 0 m to 2m at 0.25m increments + 5m)
  - Storms: 1yr, 20 yr, 100yr & background



# ADDITIONAL COLLABORATIVE PROJECTS

- **Improving Frost Prediction and Protection Methods for Vineyards and Fisheries (OAR, NWS, NMFS, )** *Upper watershed*
- **Russian River Sub-Basin Hydrologic Study (OAR, NMFS, NOAA (CA) Sea Grant)** *Tributaries*
- **Water Quality Modeling to Inform Time-Dependent Availability of Estuarine Habitat for Salmonids (NMFS, OAR, NWS)** *Estuary*



Coastal Management

ISSN: 0892-0753 (Print) 1521-0421 (Online) Journal homepage: <http://www.tandfonline.com/loi/ucmg20>

Thinking Big: Lessons Learned from a Landscape- Scale Approach to Coastal Habitat Conservation

Helen Chabot, Dan Farrow, Dawn York, Janine Harris, Natalie Cosentino- Manning, Lani Watson, Kim Hum & Chad Wiggins

To link to this article: <http://dx.doi.org/10.1080/08920753.2016.1160202>

Published online: 06 May 2016.

Questions ?



[www.noaa.gov/habitatblueprint](http://www.noaa.gov/habitatblueprint)

<http://www.noaanews.noaa.gov/stories2015/20150624>

www.noaa.gov