



# **NOAA's Habitat Blueprint**

## ***RUSSIAN RIVER HABITAT FOCUS AREA***

### ***"SUMMIT TO SEA"***

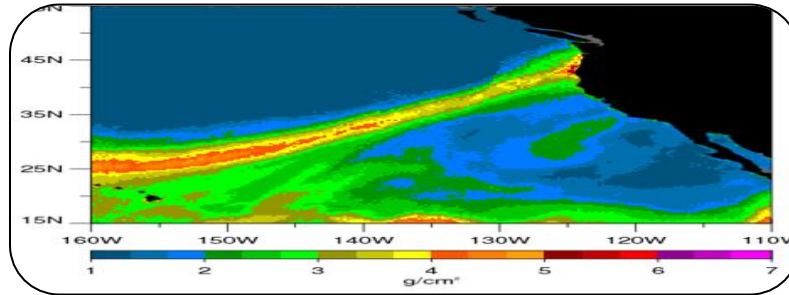


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***NOAA's National Marine Fisheries Service***  
***Water Education Foundation***  
***Russian River Tour***  
***October 2014***



# OBJECTIVES: RUSSIAN RIVER HABITAT FOCUS AREA

- Rebuilding endangered coho salmon and threatened Chinook salmon and steelhead stocks to sustainable levels through habitat protection and restoration.
- Improving frost, rainfall, and river forecasts in the Russian River watershed through improved data collection and modeling.
- Increasing community and ecosystem resiliency to flooding and drought through improved planning and water management strategies.



CCC Coho Salmon



CC Chinook Salmon



CCC Steelhead Trout

# 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)



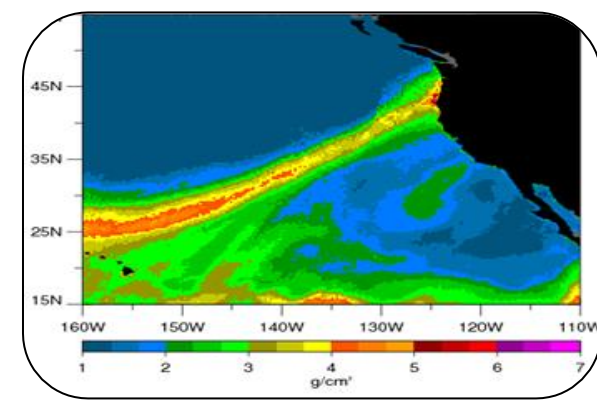
### Social Science and Strategy

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

# NOAA COLLABORATIVE PROJECTS: Improve Precipitation and River Flow Forecasting to Maximize Water Capture for Reservoirs and Fisheries

***Collaborators:*** NOAA (OAR, NWS, NMFS), SCWA, USACE, Scripps, USGS, DWR, Mendocino Flood & Water, IRWSS

***Objective:*** Apply advanced forecasting techniques to atmospheric rivers- a long line of rain storms that stream in from the Pacific Ocean that often causes flooding. These advanced techniques will potentially support forecast informed reservoir operations and allow for improved water management. The project also aims to provide better flood control and water storage reliability that supports stream flow for Russian River salmonid populations.



# NOAA COLLABORATIVE PROJECTS: Russian River Tributary Hydrologic Study – High Resolution Characterization of Historical, Current and Future Conditions

***Collaborators: NOAA (OAR, NMFS, SeaGrant), USGS, SCWA, local stakeholders, etc.***

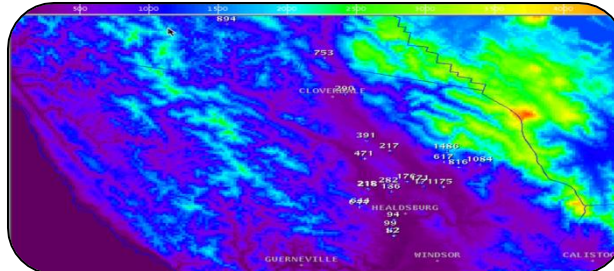
***Objective: Investigate and understand the complexities of Russian River tributary stream flow patterns from a historical, current, and future stream perspective; including, associated water demands and availability, and the needs of salmonids at various life stages during critical flow periods. Ultimately, we hope to improve water management by reducing uncertainties in water availability, identify high priority restoration stream reaches, and develop progressive solutions while assisting with salmon and steelhead recovery.***



# NOAA COLLABORATIVE PROJECTS: Improving Frost Predictions and Protection Methods for vineyards

***Collaborators: NOAA (NMFS, OAR, SeaGrant), NRCS, RCDs, Farm Bureaus, SCWA, Farm Ecology, stakeholders, etc.***

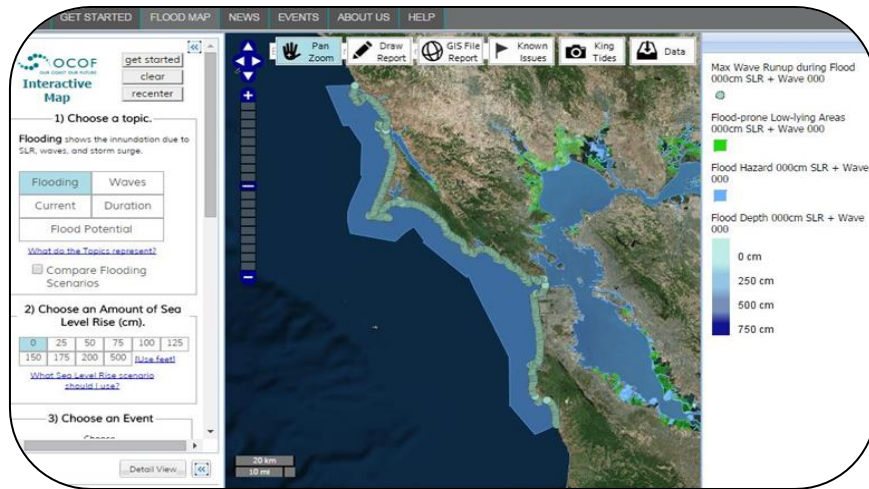
***Objective: Improve frost forecasting using digital systems and augmenting the number of temperature inversion towers with real time data accessible to vineyard managers. With advanced notice, growers will be able to adequately predict the timing of frost events and use less water or rely on other methods, such as fans, to combat frost.***



# NOAA COLLABORATIVE PROJECTS: Russian River Estuary – Climate Change and Sea Level Rise

***Collaborators:*** NOAA (NOS, NWS, NMFS), SCWA, Sonoma County PRM, USGS

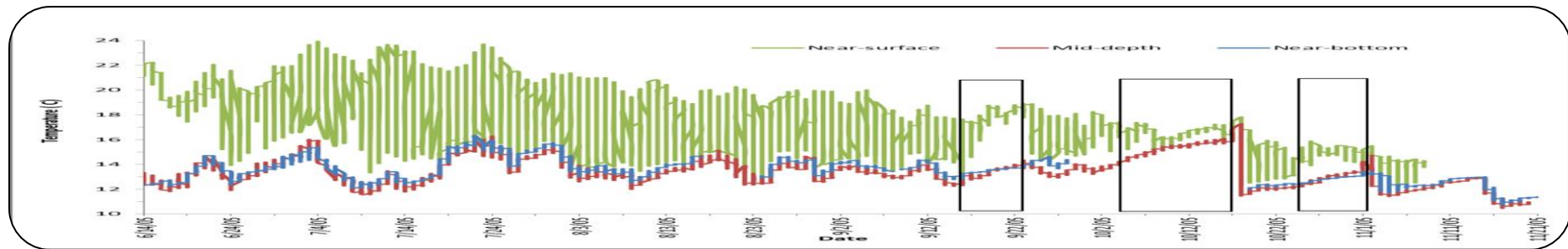
***Objective:*** Develop a high resolution estuary model leverage existing data and models on sea level rise projections, future wave climatology, barrier beach and river mouth sedimentations regimes, and Russian River main stem and tributary flows into an integrated model to increase our understanding of the connection between coastal and watershed processes. This integrated model and associated data will be useful for management of estuary resources, guide habitat restoration and inform coastal planning.



# NOAA COLLABORATIVE PROJECTS: Russian River Water Quality Modeling to Inform Time-Dependent Availability of Estuarine Habitat for Salmonids

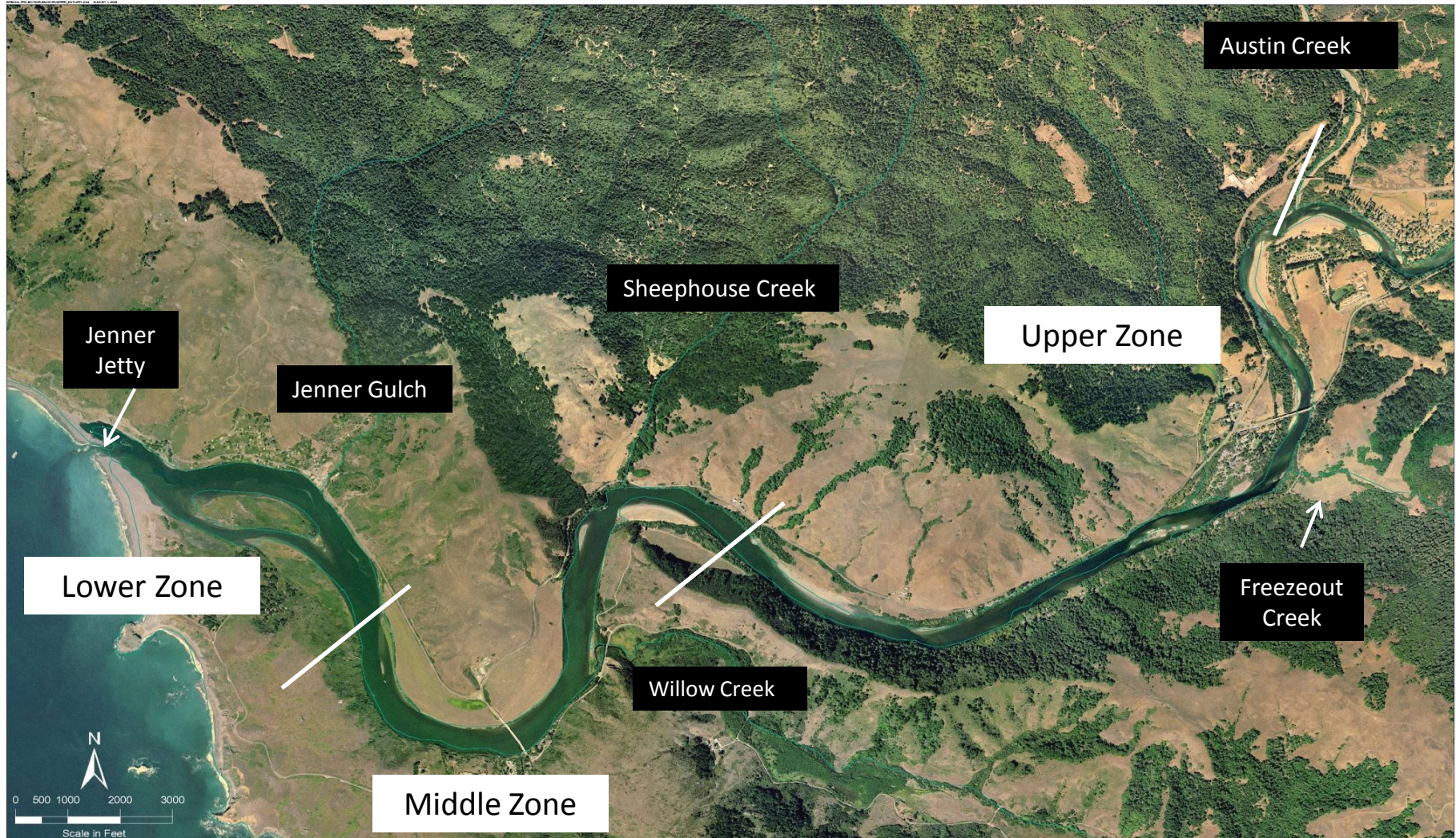
**Collaborators:** NOAA (NMFS, SeaGrant, OAR, NOS), SCWA, PWA, BBML

**Objective:** Estuaries are recognized as critical juvenile rearing habitat for many species of salmonids. Estuaries exhibit a high degree of variability, in both abiotic parameters and food availability – responding to natural seasonal changes as well as anthropogenic effects and management. A quantitative measure of time-dependent habitat availability is needed to identify key factors and desirable management options. This habitat metric can be used as a management decision-support tool for the assessment of past conditions, and as a basis for future management scenarios.





# Russian River Estuary

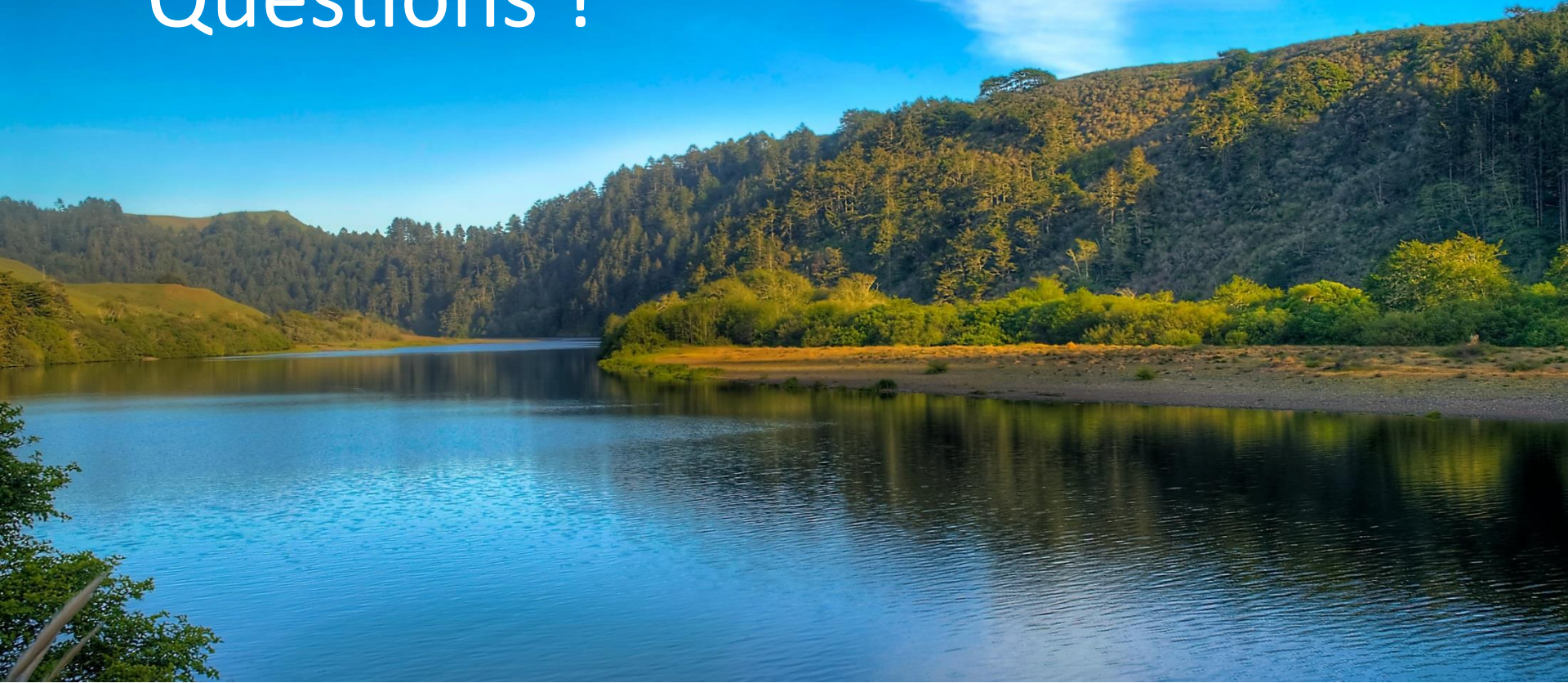


# Why is Russian River Estuary/Lagoon Important to Salmonids?

1. *Highly productive ecosystem - offers exceptional growth and rearing opportunities*
2. *Transitional area from freshwater to saltwater*
3. *Harbors all three ESA-listed species (Chinook, steelhead, coho)*



# Questions ?



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