Update on Green Valley Creek fish populations

University of California

Sea Grant Extension Program

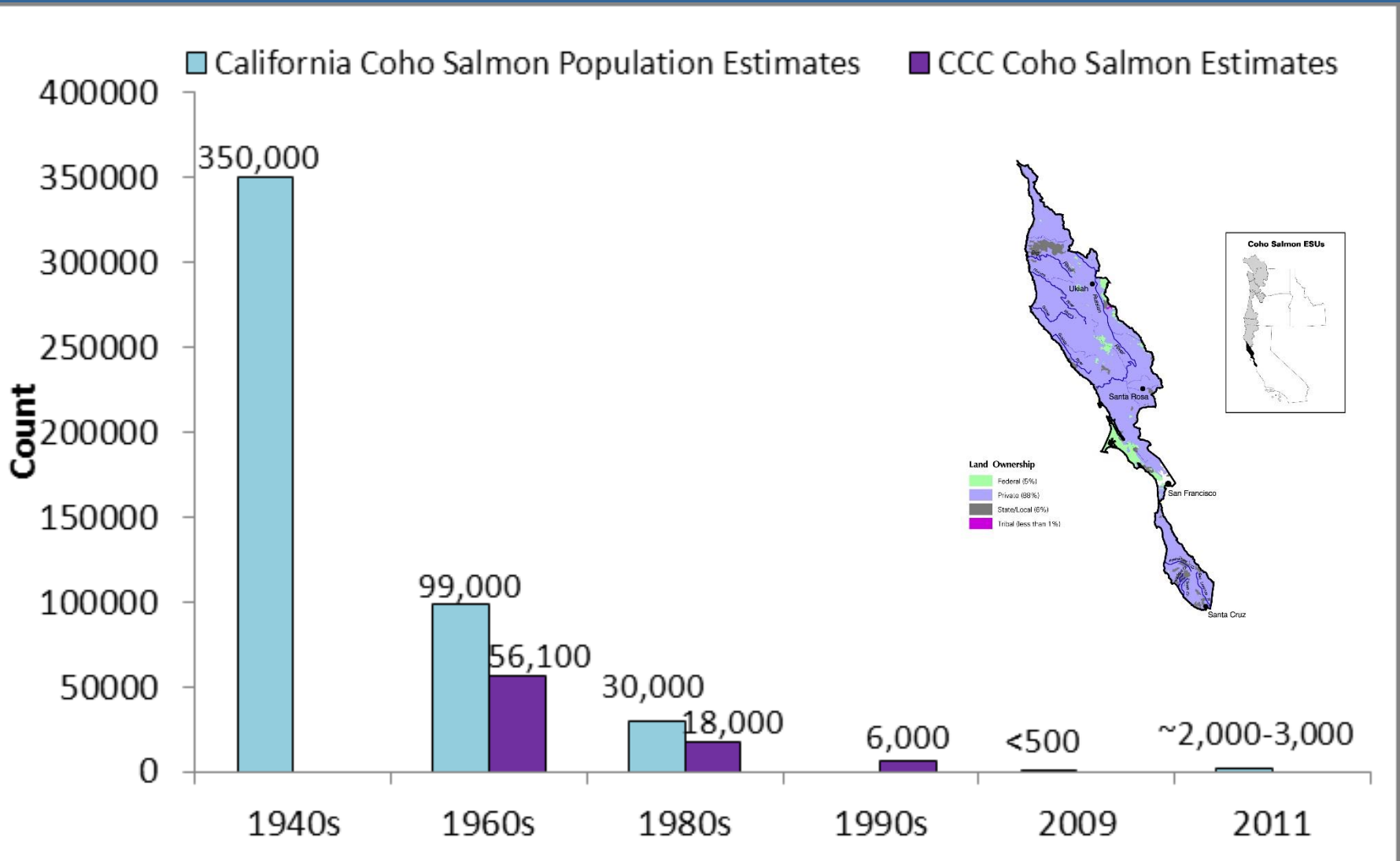# UC Cooperative Extension and CA Sea Grant

Program Goal:
Conduct monitoring and research to support salmon and steelhead recovery in the Russian River watershed

- Captive Broodstock Program
- CA Coastal Monitoring Program

- Coho Partnership
- Fish use of habitat enhancement projects

Decline of coho salmon

Source: NOAA fisheries, 2012

Russian River- North

0   2.5   5
Miles

**Russian River Watershed
Historic Coho Streams**

Pacific Ocean

**Russian River
Coho Broodstock Program**

— Historic Coho Streams*
— Russian River Streams
— Russian River Watershed

*Historic coho salmon streams based on
NOAA Technical Memorandum NMFS.
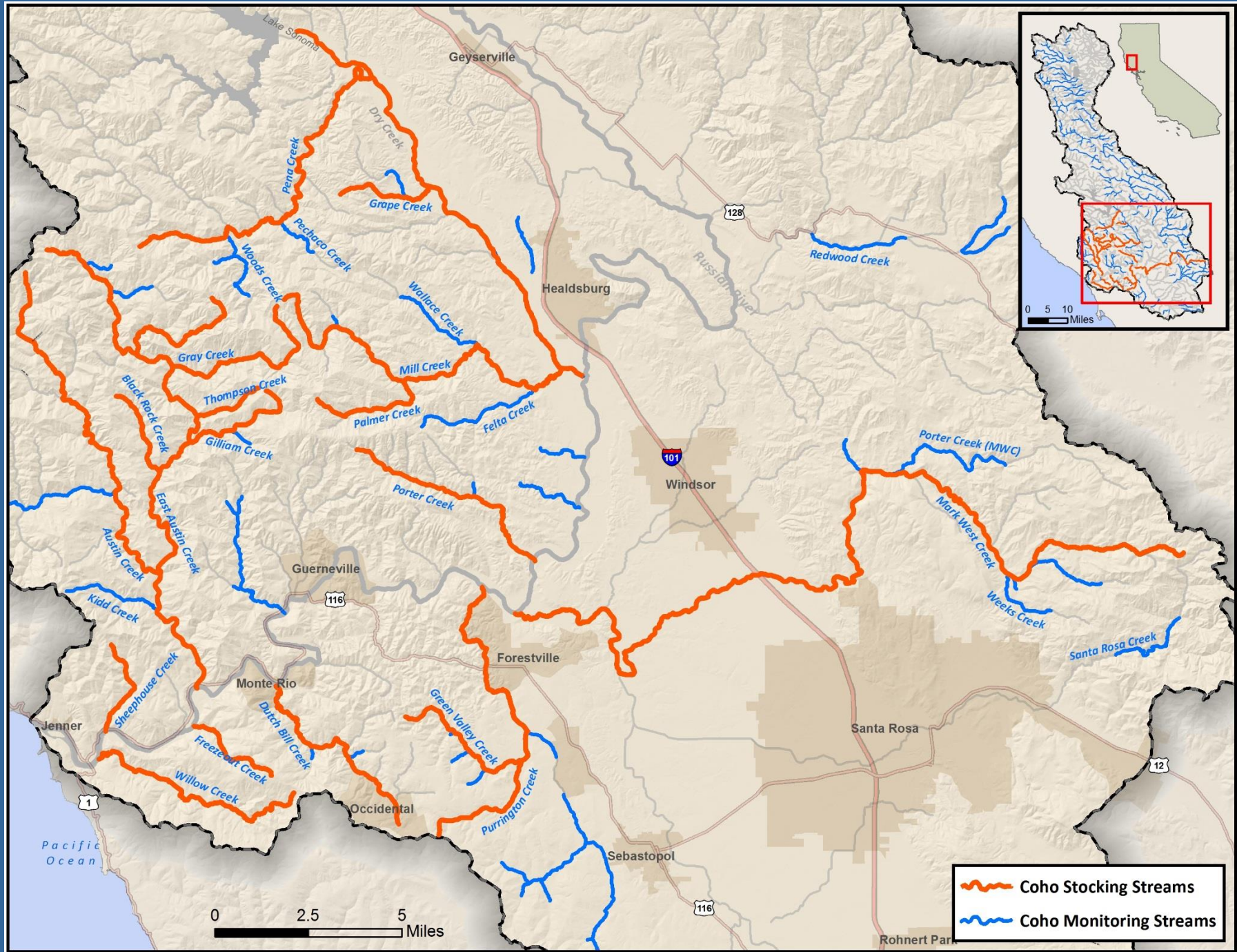Spence, et al. Oct. 2005.

Sea Grant
California

UC CE

SCRIPPS
INSTITUTION OF
OCEANOGRAPHY

0   2.5   5
Miles

Projection: NAD 1983 UTM Zone 10N
Map Prepared By: Andrew Bartshire, University of California

Russian River- South

Russian River- North

Wild coho presence
in the early 2000's

Green Valley Creek

Pacific Ocean

**Russian River
Coho Broodstock Program**

Historic Coho Streams*
Russian River Streams
Russian River Watershed

Sea Grant
California

UC
CE

SCRIPPS

*Historic coho salmon streams based on
NOAA Technical Memorandum NMFS.
Spence, et al. Oct. 2005.

0   2.5   5
        Miles

Projection: NAD 1983 UTM Zone 10N
Map Prepared By: Andrew Bartshire, University of California

Russian River- South

0   2.5   5
        Miles

N

Russian River Coho Salmon Captive Broodstock Program

o **Extinction of coho salmon in the Russian River basin imminent without immediate intervention**

o **In 2001, state and federal agencies collaborated with local organizations to create captive broodstock program**

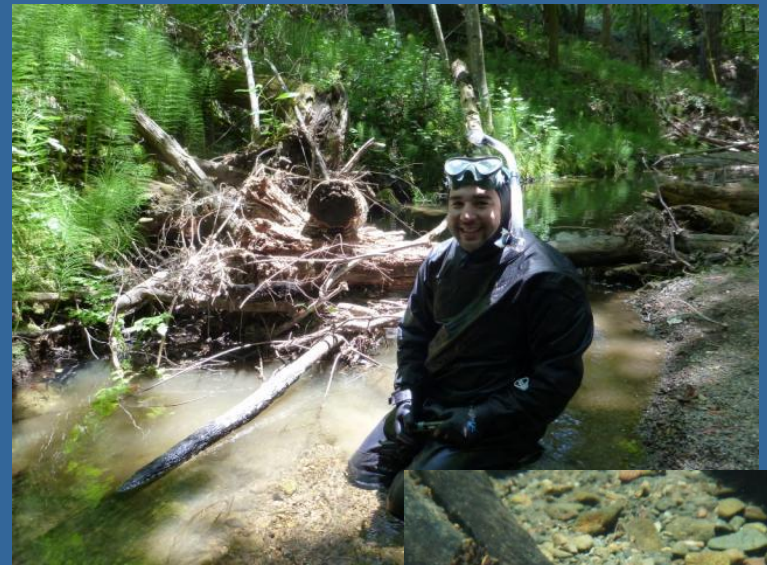o **Program Goal: Re-establish self-sustaining runs of native coho salmon in historic coho streams**

Legend:
- **Coho Stocking Streams** (orange)
- **Coho Monitoring Streams** (blue)

Map labels:

Lake Sonoma, Geyserville, Dry Creek, Pena Creek, Grape Creek, Pechaco Creek, Woods Creek, Wallace Creek, Gray Creek, Mill Creek, Thompson Creek, Black Rock Creek, Palmer Creek, Felta Creek, Gilliam Creek, Healdsburg, Russian River, Redwood Creek, 128, 101, Porter Creek (MWC), Mark West Creek, East Austin Creek, Porter Creek, Windsor, Austin Creek, Guerneville, 116, Weeks Creek, Kidd Creek, Santa Rosa Creek, Sheephouse Creek, Monte Rio, Dutch Bill Creek, Green Valley Creek, Forestville, Santa Rosa, Jenner, Freezeout Creek, Willow Creek, Occidental, Purrington Creek, Sebastopol, 12, Pacific Ocean, 1, 116, Rohnert Park

Scale: 0 2.5 5 Miles

Inset map: California, with detail 0 5 10 Miles

Adult spawner surveys

Adult spawner surveys

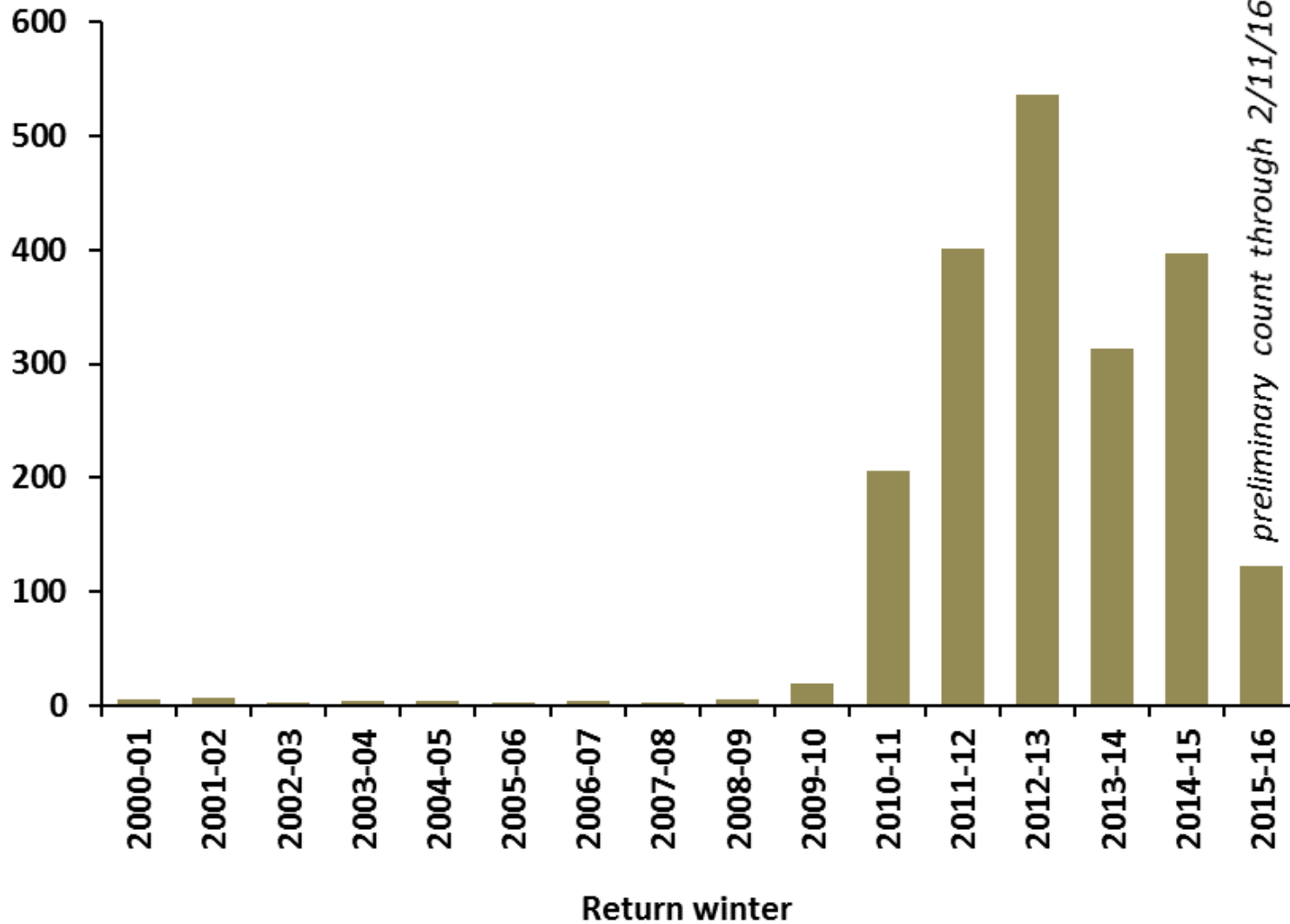**Juvenile snorkel surveys**

Adult spawner surveys
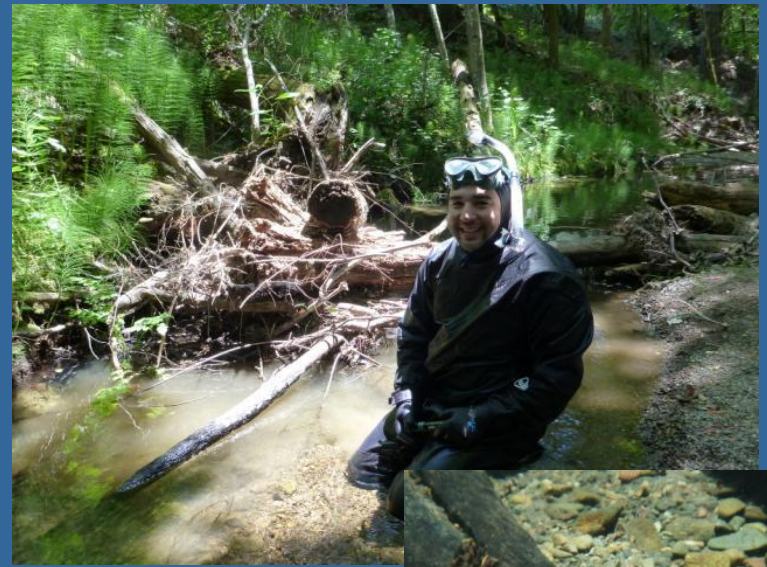
Juvenile snorkel surveys

Downstream migrant smolt trapping
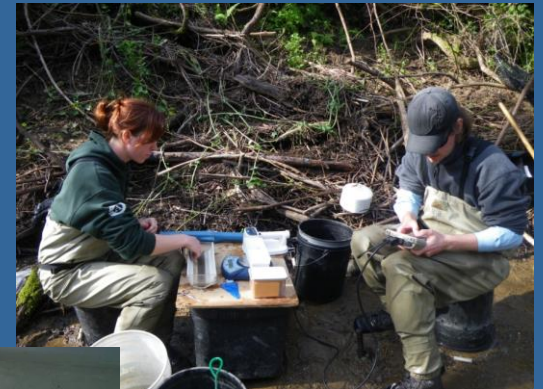
Estimated adult coho returns to the Russian River basin

preliminary count through 2/11/16

Return winter

Estimated adult coho returns to Green Valley Creek
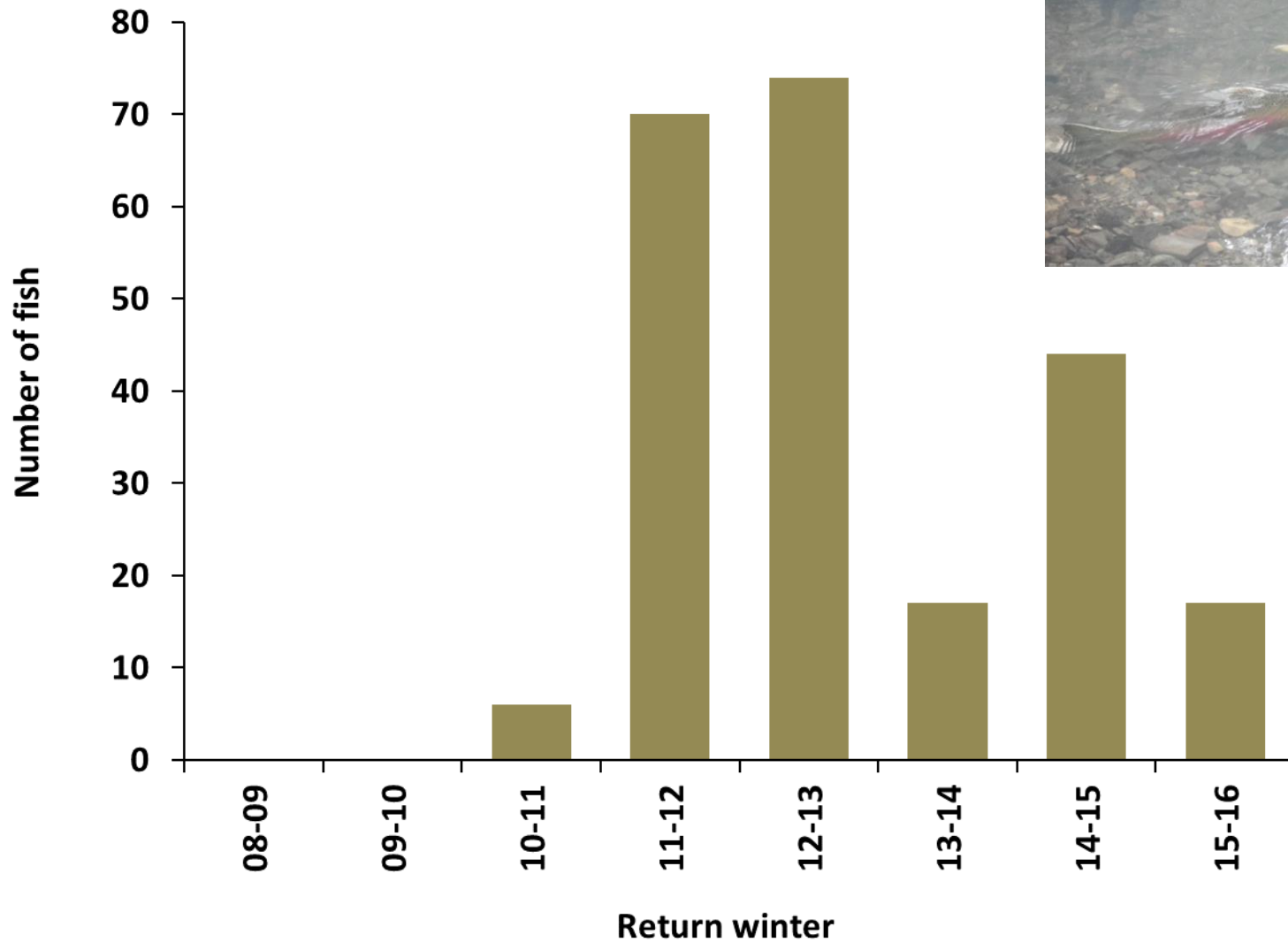
*Note: first four years of estimates based on spawner surveys, last four years based on PIT tag detections
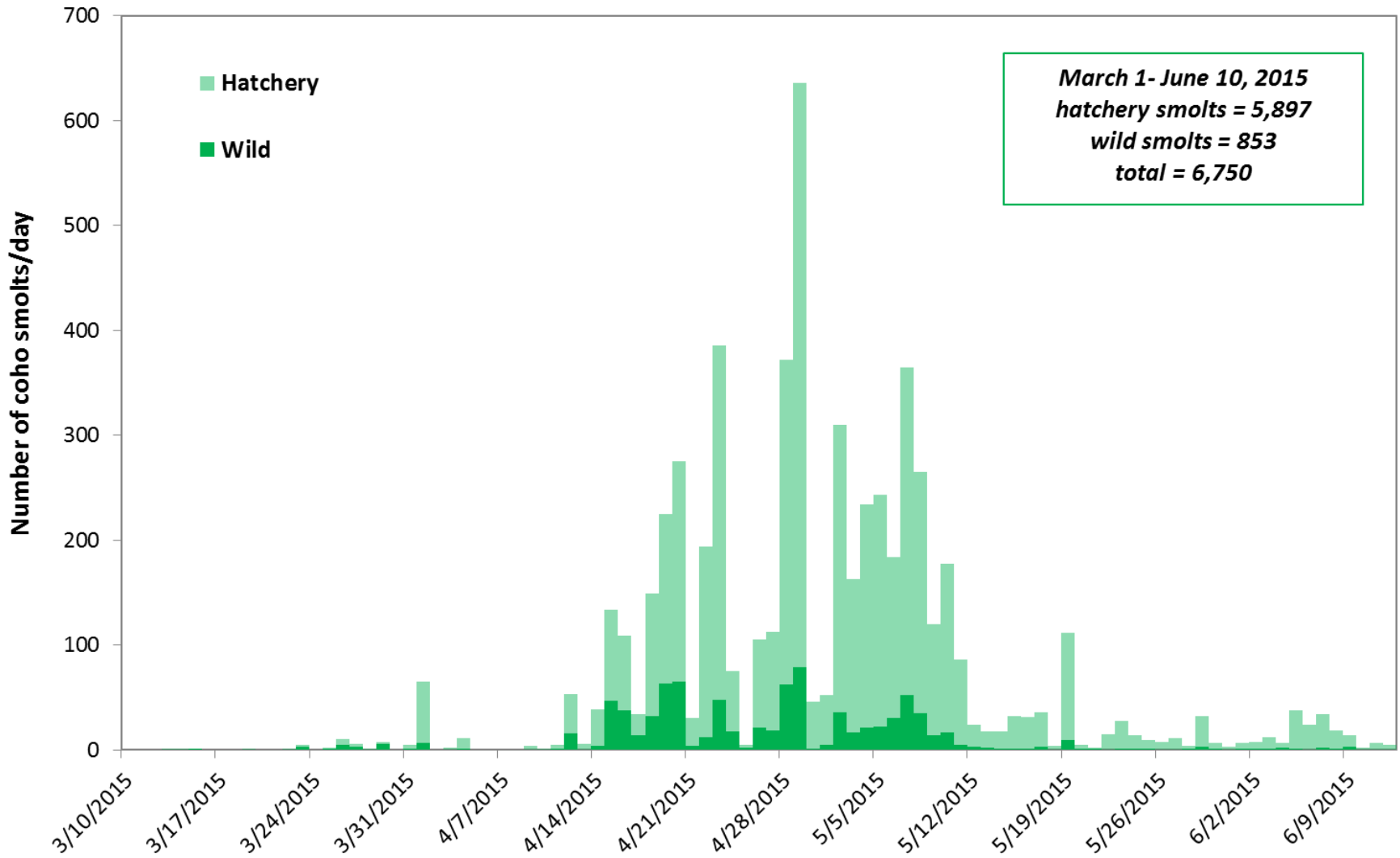
Green Valley Creek juvenile presence

Summer 2015:

estimated 2,294 wild coho (23% of basinwide total)

2015 Green Valley Creek coho salmon smolt count

# *Green Valley: critical refuge for coho*

- o Last viable coho run in Russian River basin

- o Primary source of Broodstock Program fish

- o High adult returns and juvenile presence

- o Excellent oversummer survival in average flow years

- o Good overwinter survival

- o Large smolts emigrating to ocean

Low summer streamflow: bottleneck to survival

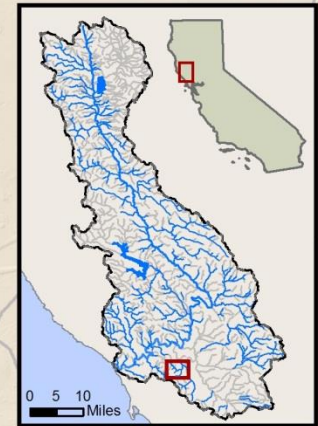# 2015 Juvenile Coho Snorkel Counts
Green Valley Creek

Harrison Creek

Nutty Valley Creek

Green Valley Creek

Little Green Valley Creek

Atascadero Creek

Purrington Creek
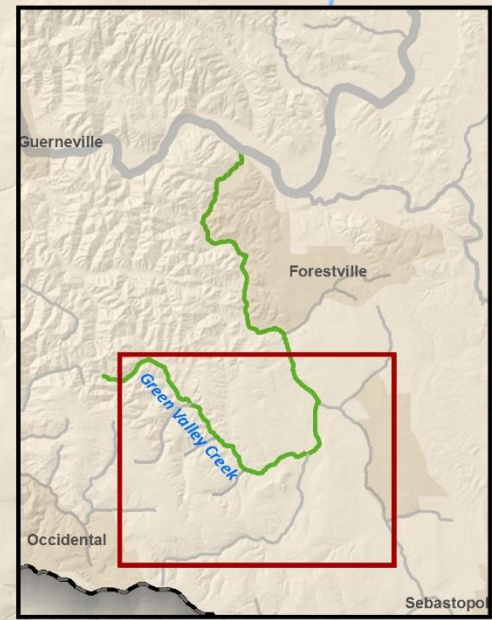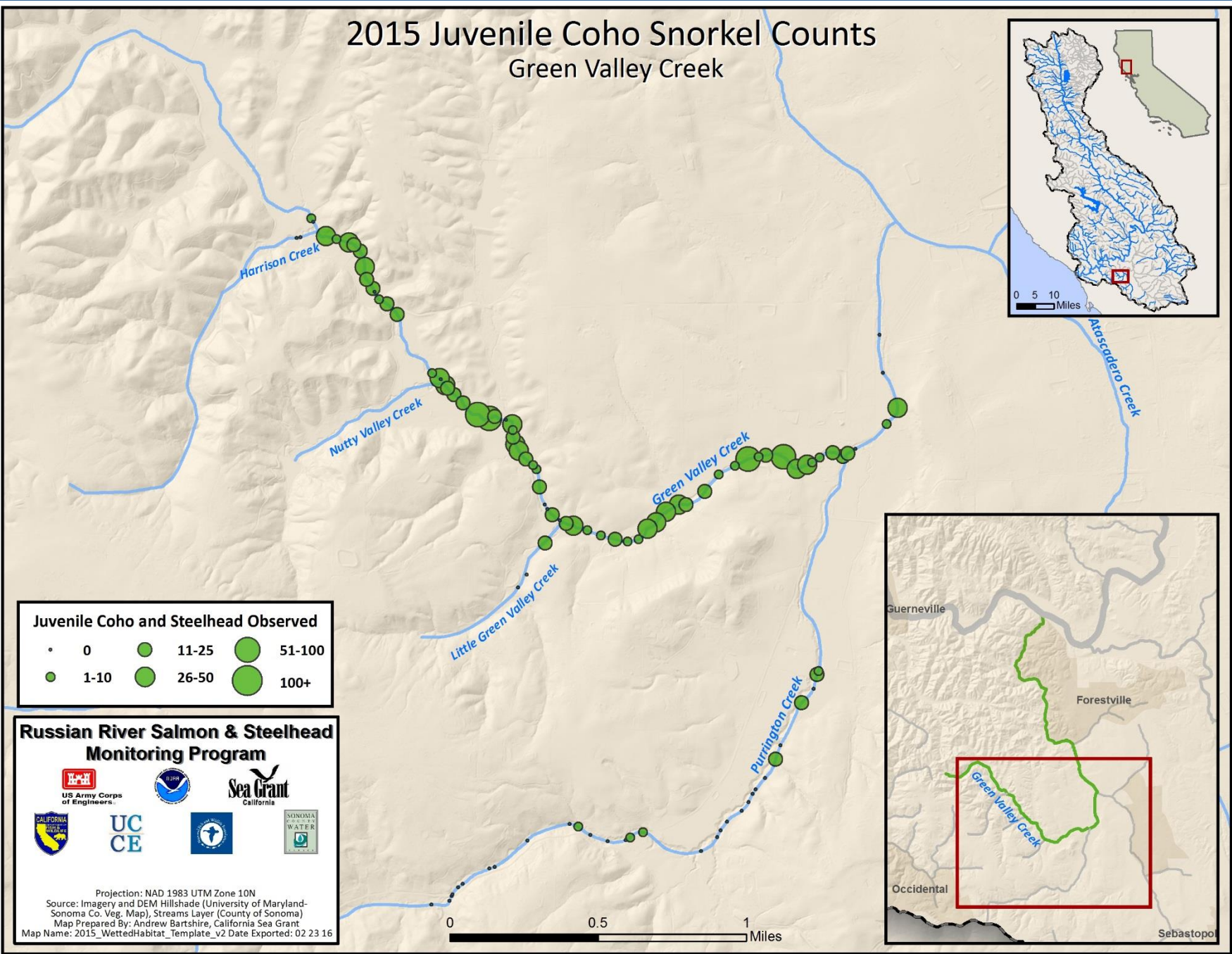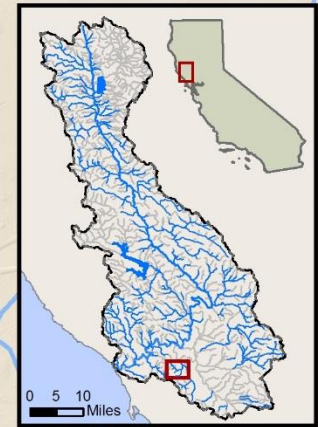
Juvenile Coho and Steelhead Observed

• 0	● 11-25	⬤ 51-100
● 1-10	● 26-50	⬤ 100+

Russian River Salmon & Steelhead Monitoring Program

US Army Corps of Engineers

Sea Grant California

CALIFORNIA FISH AND WILDLIFE

UC CE

SONOMA COUNTY WATER

0   5   10 Miles

Guerneville

Forestville

Green Valley Creek

Occidental

Sebastopol

0   0.5   1 Miles

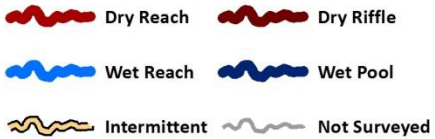# Wetted Habitat Survey
Green Valley Creek

2015 Late Summer Wetted Habitat Condition
Surveys conducted August-October, 2015

- Dry Reach
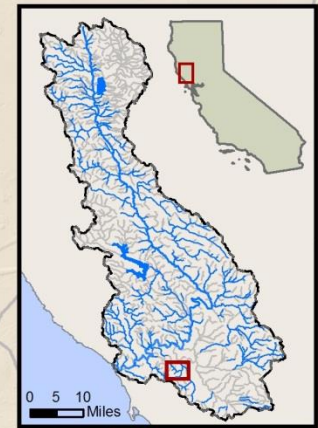- Dry Riffle
- Wet Reach
- Wet Pool
- Intermittent
- Not Surveyed

Russian River Salmon & Steelhead Monitoring Program

US Army Corps of Engineers

Sea Grant California

CALIFORNIA FISH AND WILDLIFE

UC CE

SONOMA COUNTY WATER

Harrison Creek

Nutty Valley Creek

Green Valley Creek

Little Green Valley Creek

Purrington Creek

Atascadero Creek

Russian River

0   0.25   0.5 Miles

0   5   10 Miles

Juvenile Salmonid Counts & Wetted Habitat
Green Valley Creek

2015 Late Summer Wetted Habitat Condition
Surveys conducted August-October, 2015

- ⎯⎯ Dry Reach
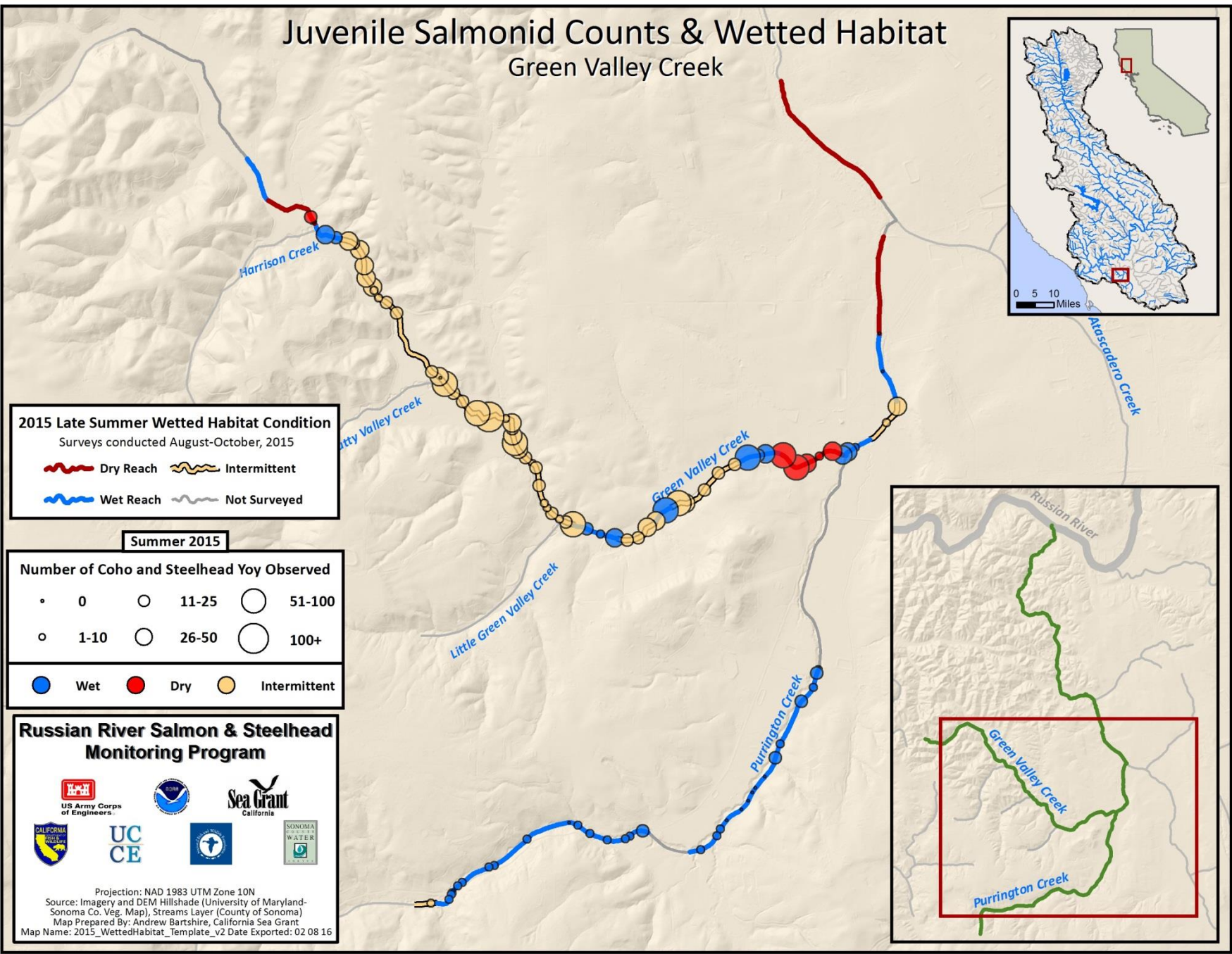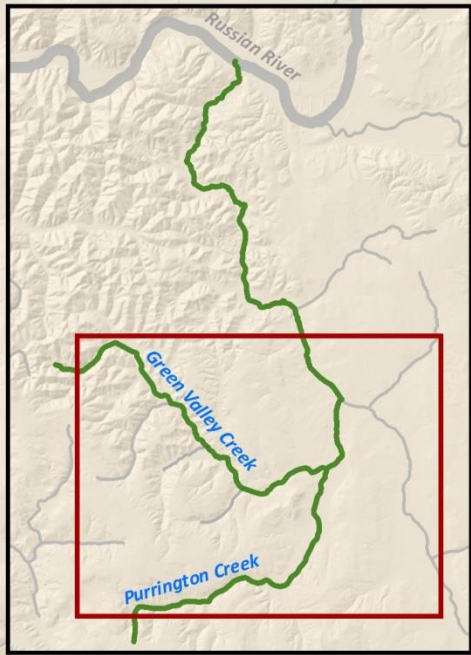- ⎯⎯ Intermittent
- ⎯⎯ Wet Reach
- ⎯⎯ Not Surveyed

Summer 2015

Number of Coho and Steelhead Yoy Observed

• 0	○ 11-25	◯ 51-100
○ 1-10	◯ 26-50	◯ 100+

- 🔵 Wet
- 🔴 Dry
- 🟠 Intermittent

Russian River Salmon & Steelhead Monitoring Program

US Army Corps of Engineers

Sea Grant California

CALIFORNIA FISH AND WILDLIFE

UC CE

SONOMA WATER

Projection: NAD 1983 UTM Zone 10N
Source: Imagery and DEM Hillshade (University of Maryland-Sonoma Co. Veg. Map), Streams Layer (County of Sonoma)
Map Prepared By: Andrew Bartshire, California Sea Grant
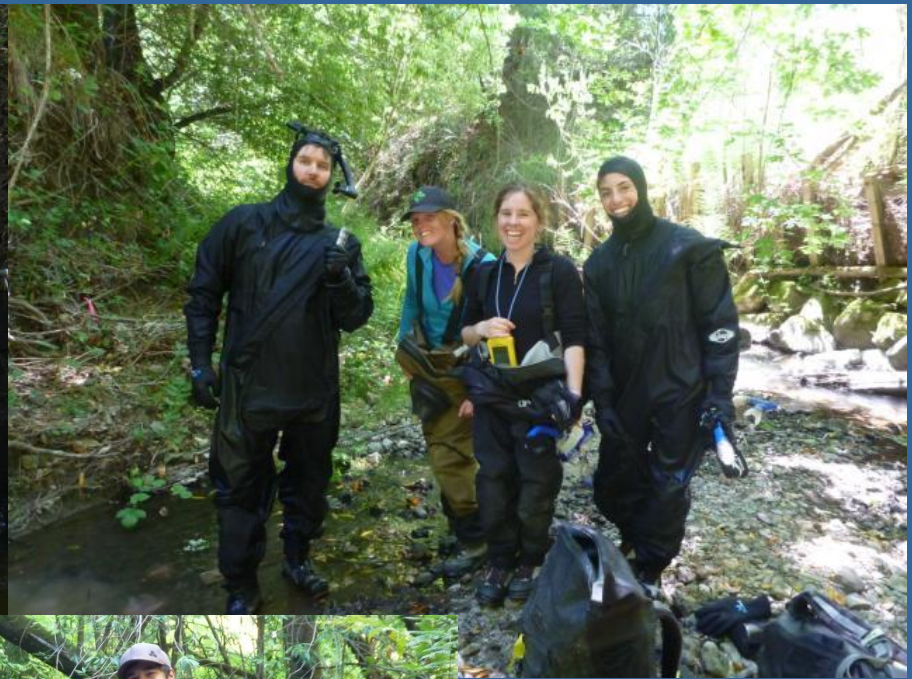Map Name: 2015_WettedHabitat_Template_v2 Date Exported: 02 08 16

Harrison Creek

Green Valley Creek

Little Green Valley Creek

Purrington Creek

Atascadero Creek

Russian River

0 5 10 Miles

Connectivity is key

very small amount of water can keep pools connected

Survival and Flow: Green Valley reference reach 2010-2013
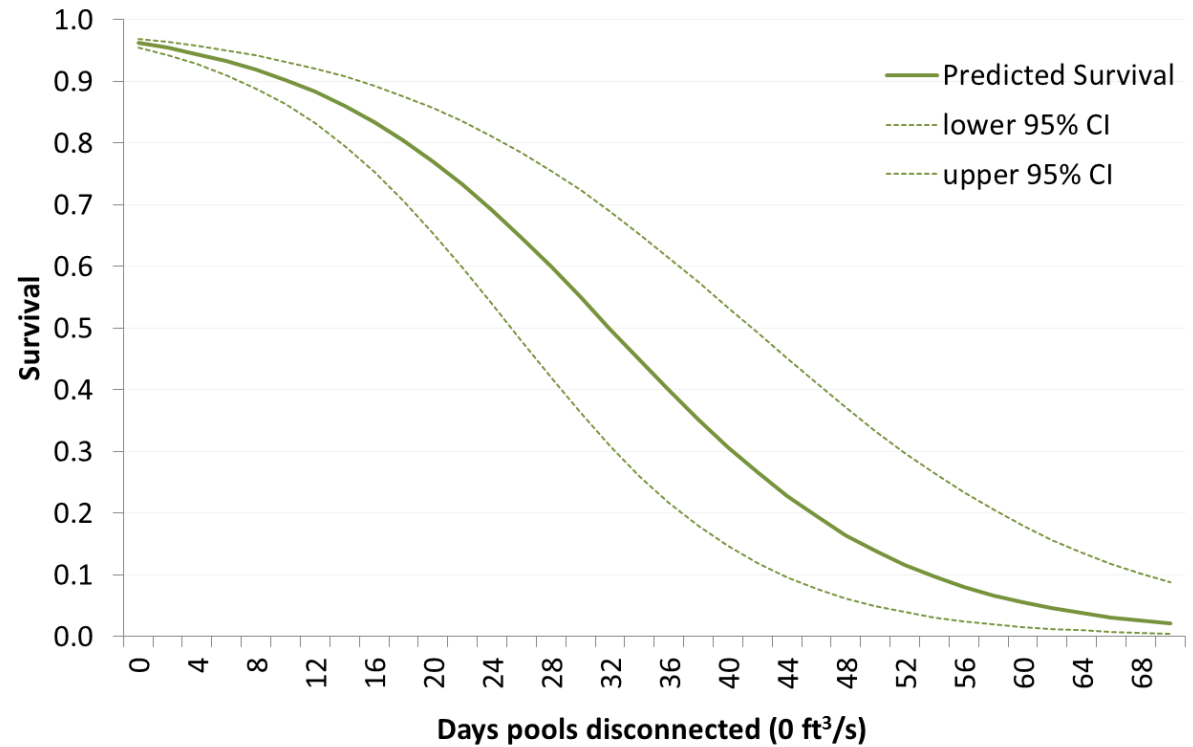
http://ca-sgep.ucsd.edu/RussianRiverCoho
or search 'Russian River coho' on Google and click the first link