NOAA's National Marine Fisheries Service Biological Opinion

for

Water Supply, Flood Control Operations & Channel Maintenance by the Army Corps, SCWA, and MCRRFCD in the Russian River

September 24, 2008

Purpose:

Provide the Corps, SCWA, and MCRRFCD with ESA "take exemption" for the project,

and ensure that the Corps' actions and interdependent & interrelated actions

do not

jeopardize Federally listed species or adversely modify designated critical habitat

Project Elements Addressed:

- Operations at Warm Springs Dam (WSD) and Coyote Valley Dam (CVD)
  - Flood Control Operations
  - Hydroelectric project operations
  - Water supply releases from dams
- Channel Maintenance by SCWA and MCRRFCD
  - Russian River mainstem
  - Dry Creek below WSD
  - Zone 1A

Project Elements (continued)

- Water level management of estuary at Jenner
- Fish Hatchery Operations
  - Don Clausen Fish Hatchery at WSD
  - Coyote Valley Fish Facility at CVD
- Water Diversion operations by SCWA

Chinook Salmon
Threatened
Photo credit: Josh Fuller

Coho Salmon
Endangered

Steelhead
Threatened
Photo credit: Josh Fuller
SIMMS.

Southern Resident Orca
Endangered

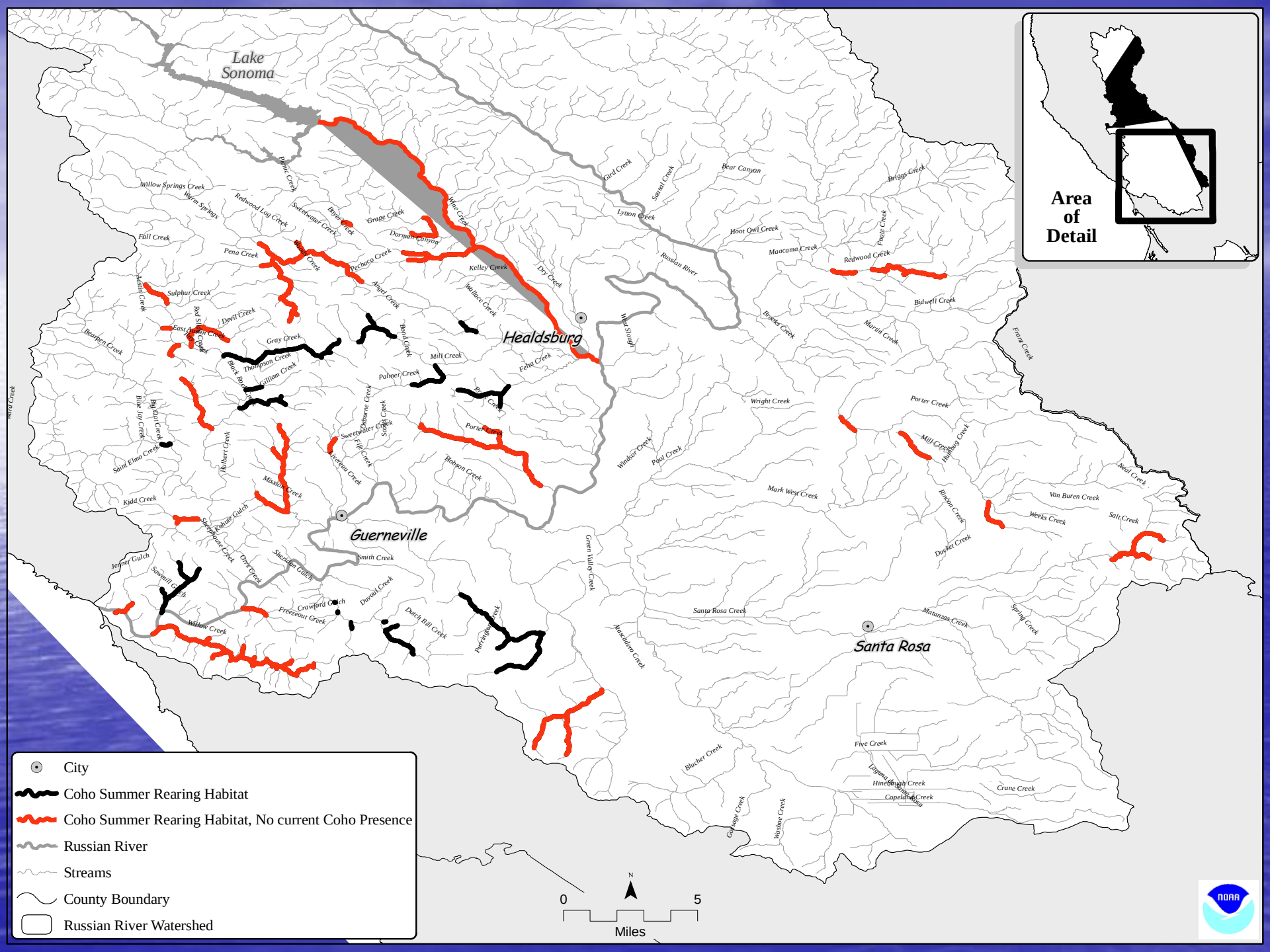
Species Geographic Ranges

Structure of the Jeopardy Analysis

- Status of the Species
- Environmental Baseline
- Effects of the Project

- Integration & Synthesis-Conclusions

- Reasonable & Prudent Alternative
- Additional Terms & Conditions to minimize take of species



Lake Sonoma
Healdsburg
Guerneville
Santa Rosa
Area of Detail
City
Coho Summer Rearing Habitat
Coho Summer Rearing Habitat, No current Coho Presence
Russian River
Streams
County Boundary
Russian River Watershed
0
5
Miles
N
Willow Springs Creek
Warm Springs
Redwood Log Creek
Sweetwater Creek
Boyer Creek
Grape Creek
Dorman Canyon
Wine Creek
Fall Creek
Pena Creek
Pechaco Creek
Kelley Creek
Dry Creek
Angel Creek
Wallace Creek
Sulphur Creek
Austin Creek
Devil Creek
East Austin Creek
Bearpen Creek
Gray Creek
Thompson Creek
Gilliam Creek
Black Rock Creek
Bond Creek
Mill Creek
Palmer Creek
Felta Creek
Porter Creek
Sweetwater Creek
Osborne Creek
Scotts Creek
Fife Creek
Livereau Creek
Hobson Creek
Mission Creek
Hulbert Creek
Blue Jay Creek
Big Oat Creek
Saint Elmo Creek
Kidd Creek
Kohute Gulch
Sheephouse Creek
Orrs Creek
Sheridan Gulch
Smith Creek
Jenner Gulch
Sawmill Gulch
Crawford Gulch
Freezeout Creek
Willow Creek
Duvoul Creek
Dutch Bill Creek
Purrington Creek
Green Valley Creek
Atascadero Creek
Santa Rosa Creek
Blucher Creek
Grassage Creek
Washoe Creek
Gird Creek
Sausal Creek
Bear Canyon
Lytton Creek
Hoot Owl Creek
Maacama Creek
Russian River
Briggs Creek
Foote Creek
Redwood Creek
Bidwell Creek
Brooks Creek
Martin Creek
West Slough
Franz Creek
Wright Creek
Porter Creek
Windsor Creek
Pool Creek
Mill Creek
Hulbug Creek
Neal Creek
Mark West Creek
Rincon Creek
Van Buren Creek
Weeks Creek
Salt Creek
Ducket Creek
Matanzas Creek
Spring Creek
Five Creek
Hinebaugh Creek
Copeland Creek
Crane Creek

Project Effects Highlights:

- High summer flow from CVD releases impact steelhead rearing habitat in upper mainstem
- High summer flow releases from WSD adversely affect salmonid rearing in Dry Creek
- High summer flow releases adversely affect salmonid rearing in estuary
- Management of water levels in the estuary adversely affects salmonid rearing in estuary
- Annual dam inspections stop flow in East Branch
- Releases of turbid water from CVD are a concern

High summer flow releases adversely affect habitat quality:

- SCWA, NMFS, DFG, & Corps conducted assessment in 2001.
- Current velocities too swift, insufficient cover.
- High summer releases from Lake Mendocino adversely affect about 34 miles of steelhead rearing habitat in upper mainstem.
- Dry Creek has 14 miles of unusual, abundant coldwater habitat that is too swift.
- High summer releases from both reservoirs creates unnatural high inflow to estuary. This interferes with seasonal closure of the estuary.

Estuary breaching adversely affects salmonid rearing habitat

- Reduces lagoon depths
- Increases salinity

- Reduces dissolved oxygen levels near the bottom

- Freshwater lagoon formation is common & normal in central California
- They are highly productive salmonid habitats

Conclusions:

- Status quo operations significantly impact:
  - Coho salmon and steelhead abundance
  - Coho and steelhead population growth rates
  - Ecological diversity of coho and steelhead
- Status quo operations jeopardize coho salmon and steelhead and adversely modify their designated critical habitat
- Status quo operations do not jeopardize Chinook salmon or adversely modify their critical habitat

Reasonable & Prudent Alternative (RPA)

- Reduce flows in mainstem Russian River May through October 15
  - Benefits salmonid production in estuary and 34 miles of upper Russian River
- Minimize high flow impacts in Dry Creek
  - Significant pool-riffle enhancements along 6 miles, plus 20 large boulder clusters
- Adaptive management of estuary breaching
- Strengthen coho captive broodstock program

RPA (continued)

- Conduct feasibility study of Dry Creek bypass pipeline
- Install back-up water supply pipeline to the Warm Springs Dam fish hatchery
- Monitoring of Fisheries, water quality, and aquatic invertebrates
  - Mainstem Russian
  - Estuary
  - Dry Creek

Additional Terms and Conditions:

- Design and install minimum bypass flow pipeline at Coyote Valley Dam
- Study and implement dam release ramping rates that minimize impacts to fisheries while insuring flood protection
- Study turbidity issues at dams/develop & implement plan to minimize turbidity impacts to salmonids.
- Design and install new fish screens at Mirabel water intake
- Improve genetics mgmt of hatchery steelhead