

Central Valley Flood System Conservation Strategy

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California Department
of Water Resources
Chico, June 3, 2013



PUBLIC SAFETY

ENVIRONMENTAL STEWARDSHIP

ECONOMIC STABILITY

Flood System Infrastructure at Risk

- 50% urban levees do not meet current standards
- 60% nonurban levees have high potential for failure
- 50% evaluated channels cannot pass design flows

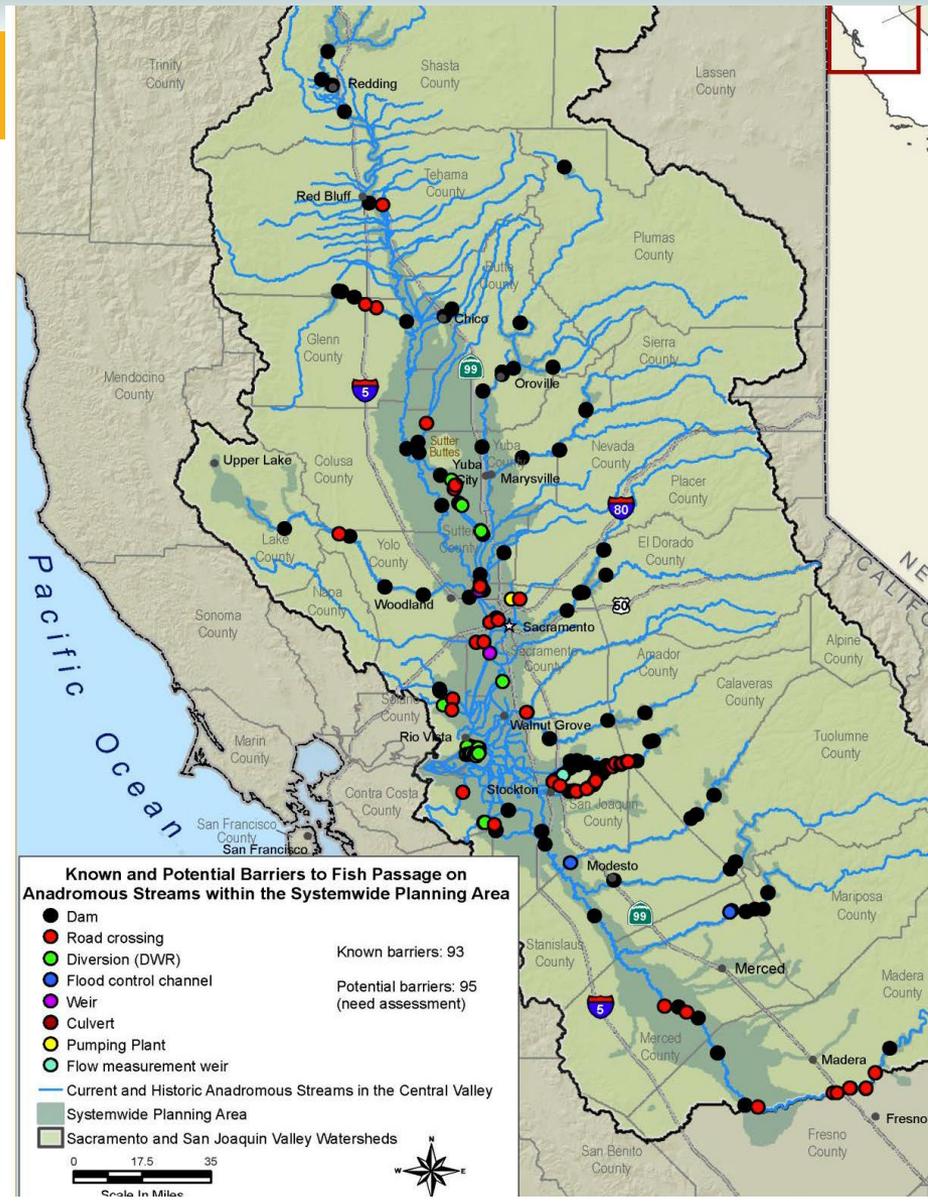
Valley at Risk

- Among lowest level of flood protection
- 1 million people residing in floodplains
- \$70 Billion in assets at risk
- \$3 Billion damages -major flood events

Yolo Bypass and downtown Sacramento, Jan 1986

Ecosystem at risk

- 4% of historic riparian forest remains
- 53 T&E or sensitive species
- 180 fish passage barriers

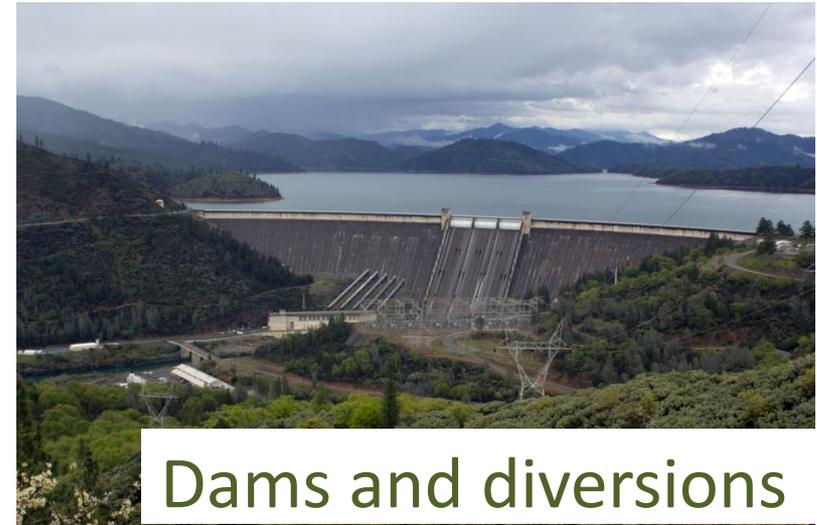
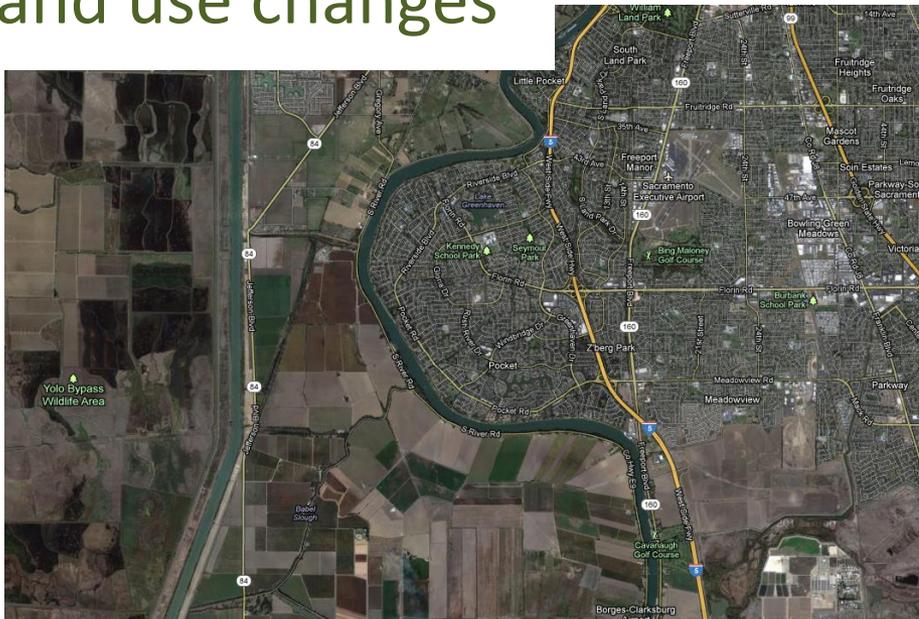


Fremont Weir fish passage



Ecological losses due to multiple factors

Land use changes



Dams and diversions



Invasive species

Legislative and Voter Response

- 2006 Bond Acts
 - Prop 1E - \$4.09 billion
 - Disaster Preparedness and Flood Protection Bond Act
 - Prop 84 - \$800 million for flood control projects
 - Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act
- 2008 Legislation
 - Central Valley Flood Protection Act of 2008

Central Valley Flood Protection Act of 2008

Achieve multiple objectives

Reduce risk to
life and safety

Reduce
damages from
floods

Reduce O&M
requirements

Promote
natural river
processes

Increase and
improve
habitat

Expand flood
system
capacity

CENTRAL VALLEY FLOOD MANAGEMENT PLANNING PROGRAM



June 2012

2012 Central Valley Flood Protection Plan

*A Path for Improving Public Safety, Environmental Stewardship,
and Long-Term Economic Stability*



PUBLIC SAFETY

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Plan Goals

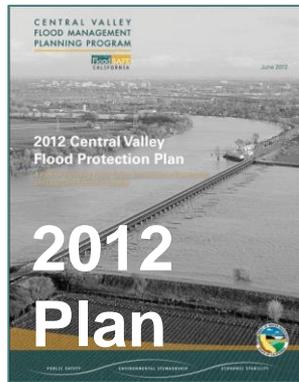
- Improve flood risk management
- Improve operations and maintenance
- Promote ecosystem functions
- Promote multi-benefit projects
- Improve institutional support

DSHIP

ECONOMIC STABILITY



Refining the investment approach



Basin-wide Feasibility Studies

Conservation Strategy



Regional Flood Management Plans



2012

/

2013

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2014

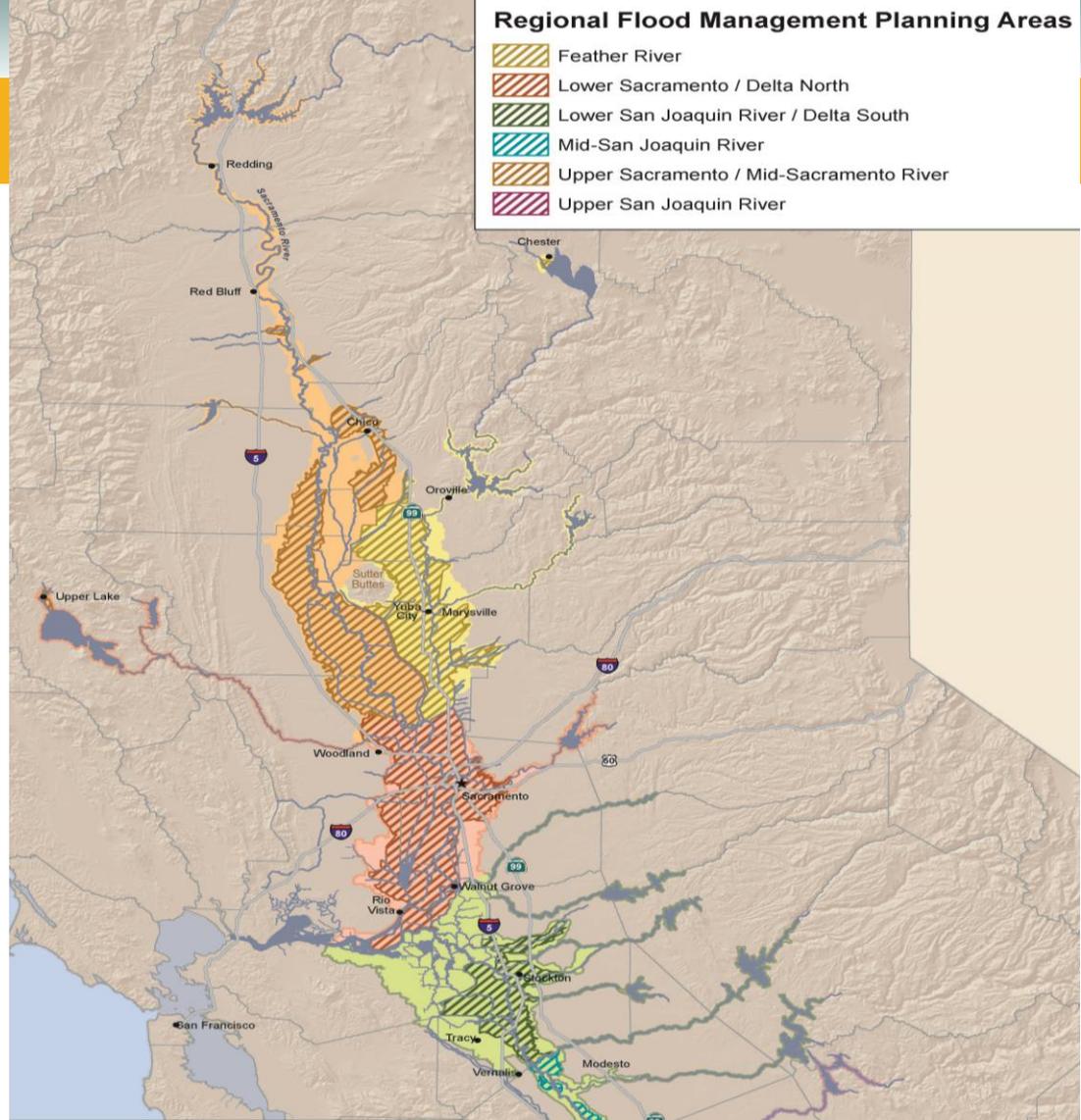
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2015

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2016

Regional Flood Management Planning and Conservation Strategy



Source: DWR adapted by AECOM 2012



What is the Conservation Strategy ?

- Integral part of Central Valley flood management planning
- Builds on the 2012 CVFPP Conservation Framework
- Long-term strategic plan for improving environmental conditions within the flood management system



Why the Conservation Strategy?

- Meet legislative environmental direction
- Meet CVFPP goals
- Improve both flood and ecological system
- Broaden collaboration, public support and funding



Conservation Strategy Goals

- Achieve CVFP Act environmental objectives
 - Promote natural dynamic hydrologic and geomorphic processes
 - Increase and improve habitat quantity, diversity, and connectivity
 - Promote the recovery and stability of native species populations
- Support & collaboration for multi-benefit projects
- Quality of environmental information & tools for decision-making

Conservation planning and implementation

Improve Regulatory Efficiency & Effectiveness

Regional Permitting, RAMP

Proposal Solicitation (PSP)

Improve Conditions & Trends

Habitat Projects

Conservation Strategy
(Document)

Improve Information for Decisions

Inventory, Monitoring, Analysis, Modeling

Engage and Inform Others

Objectives and Monitoring Progress

Goals

Flood Risk Management

Flood O&M

Ecosystem Functions

Multi-Benefit Projects

Institutional Support



Example Metrics/Indicators

Ecosystem Processes

Inundated Floodplain (extent)
Natural Bank (length)
River Meander Potential (extent)

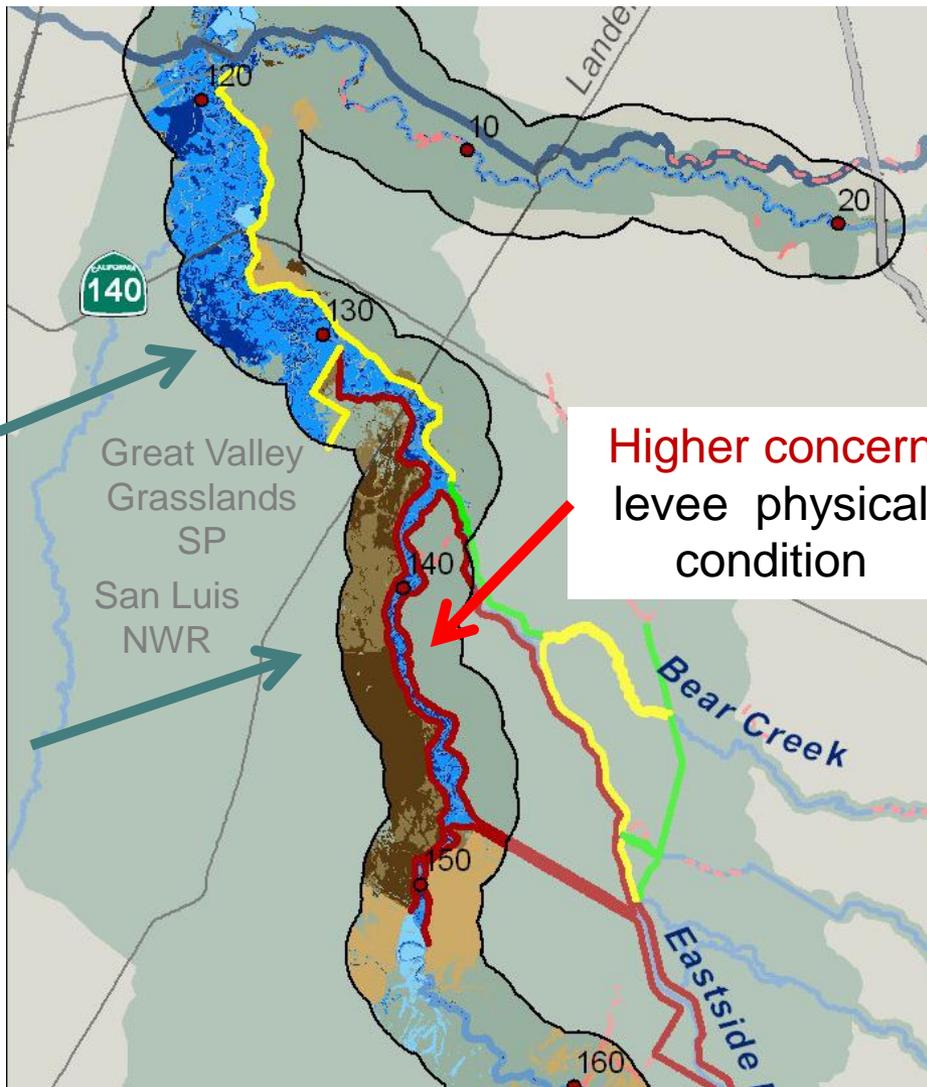
Habitats

Shaded Riverine Aquatic (length, connectivity, attributes)
Riparian (extent, connectivity)
Marsh (extent, connectivity)
Floodplain Agriculture (extent, connectivity)

Species

Stressors

Floodplain Inundation Restoration Potential



Connected
Floodplain
Habitat

Disconnected
Floodplain
Habitat

Higher concern
levee physical
condition

**Upper San Joaquin Basin
Connectivity of FIP-Land
Cover Types
50% and 67% Chance Sustained
Spring Flood Inundation Potential**

Connected

- Natural - Riparian-Wetland
- Natural - Upland
- Agriculture

Disconnected

- Natural - Riparian-Wetland
- Natural - Upland
- Agriculture

Project Levees (Physical Condition)

- Higher Concern
- Medium Concern
- Lower Concern
- Non-project Levees

Modeling Extent

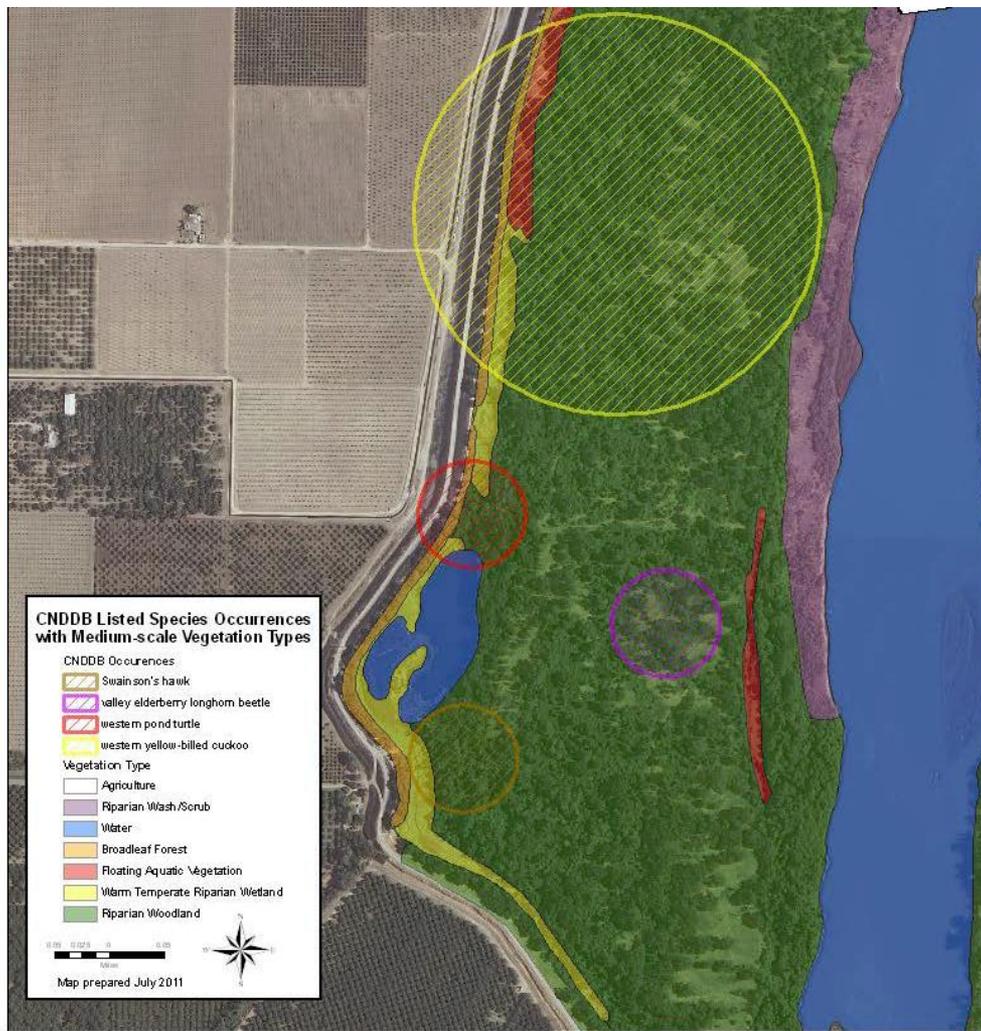
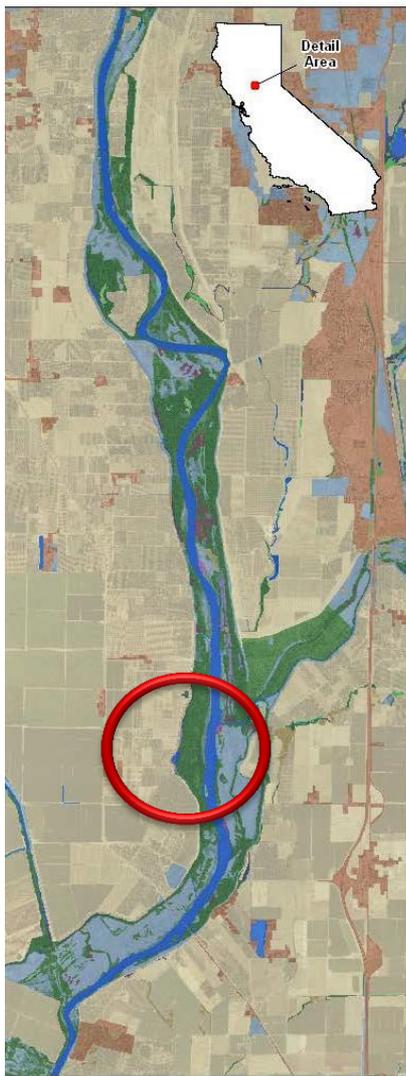
- Watershed Subregions
- Systemwide Planning Area

Note: Map has been rotated 30 degrees clockwise.
Source: DFG 2005, FMMP 2008,
DWR 2010 & 2011, AECOM 2011

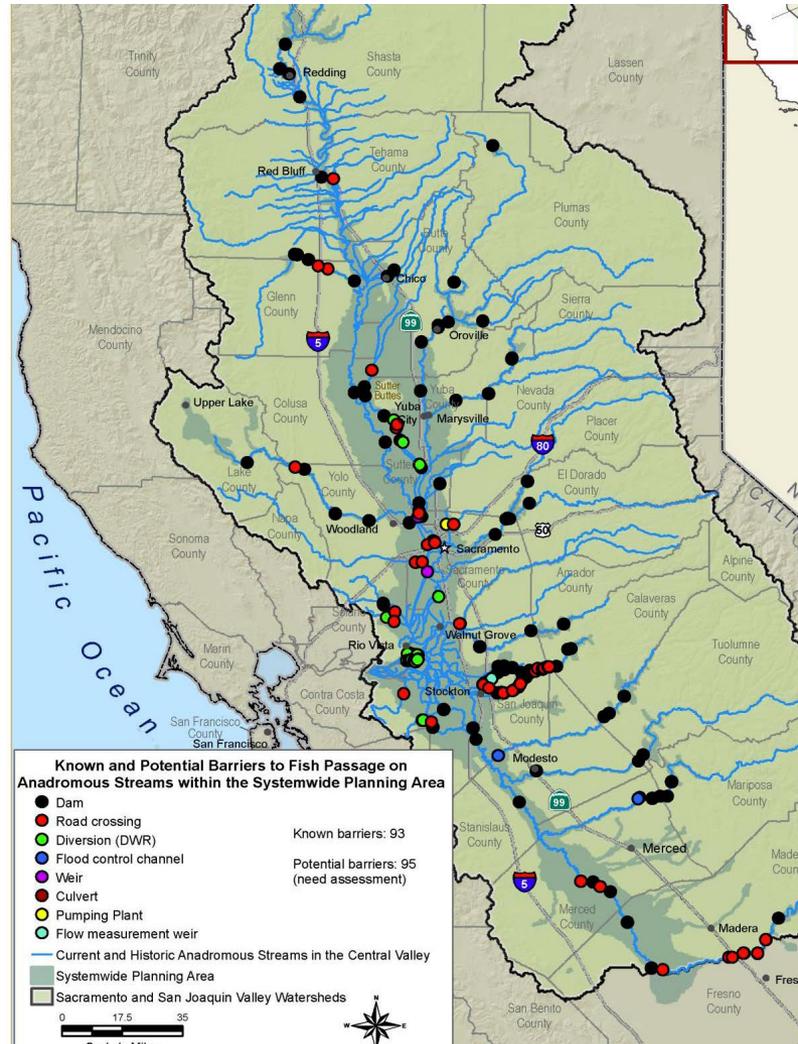
0 3.5 7
Scale In Miles

For planning purposes only; based on elevation relative to simulated water surface elevations for existing flood system.

Vegetation and Species Distribution



Fish Passage Barriers

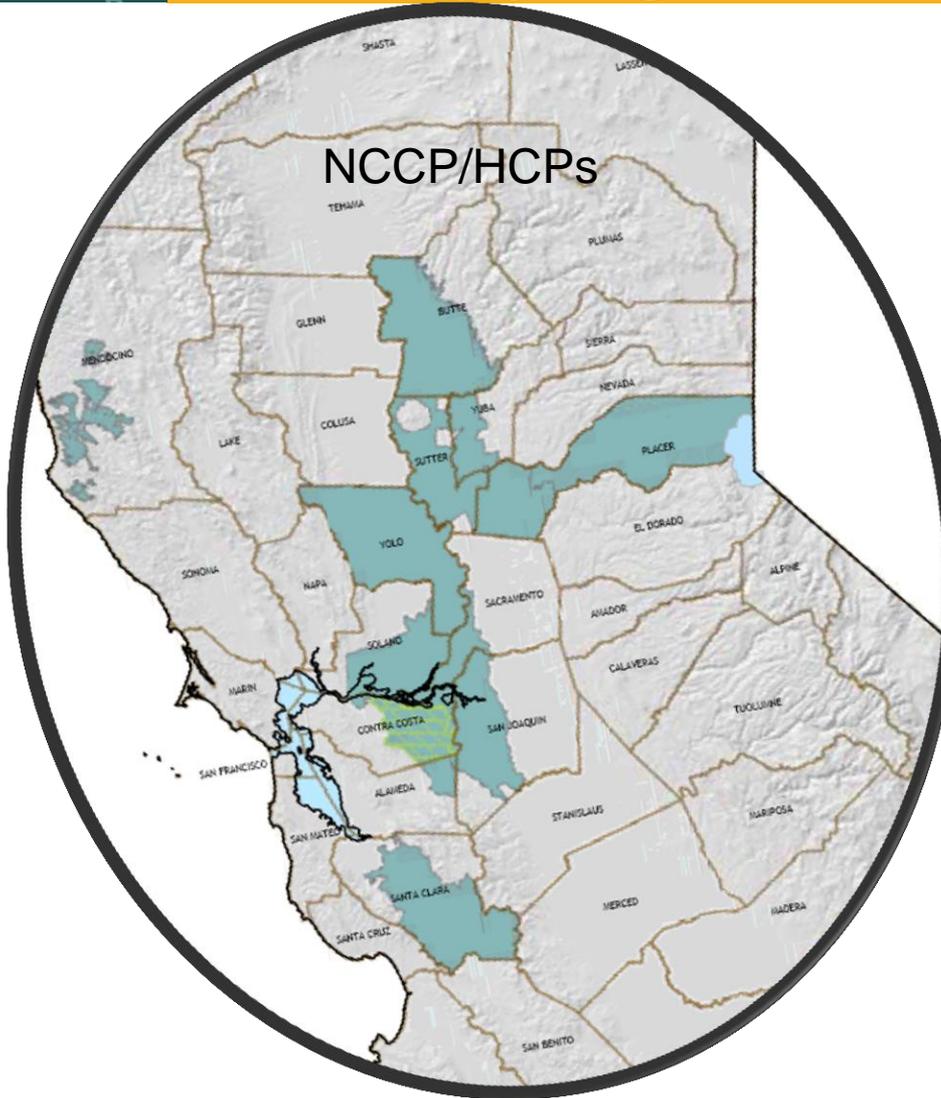


Species Conservation Needs

- Salmon (various runs)
- Steelhead
- Green Sturgeon
- Giant Garter Snake
- Bank Swallow
- Swainson's hawk
- Riparian brush rabbit
- *+ 10 other species*



Overlapping Conservation Plans



- Regional Habitat Conservation Plans (HCP) & Natural Community Conservation Plans (NCCP)
- Long-Term Central Valley Operations Criteria and Plan (OCAP)
- Central Valley Project Improvement Act programs
- Joint Venture Plans
- USFWS refuge and DFG land management plans
- T&E species recovery plans

Multi-Objective Flood Management example



Dos Rios,
Three Amigos, and
SJ River NWR