

Central Valley Recovery Planning and Restoration

A Concurrent Session at the 35th Annual Salmonid Restoration Conference held in Davis, CA from March 29 – April 1, 2017.

+ Session Overview

- Session Coordinator:
 - Charlotte Ambrose, NOAA Fisheries

In the summer of 2014 a federal recovery plan was released for Central Valley salmon and steelhead that laid a framework to restore the region's historically abundant wild fish runs. This recovery plan complemented the California Department of Fish and Wildlife's Ecosystem Restoration Conservation strategy. Millions of wild salmon and steelhead once returned each year to spawn in the foothill and mountain streams surrounding California's Central Valley. Fed by rainfall, snowmelt, and coldwater springs, these streams fostered diverse and abundant Chinook salmon and steelhead runs. The mid-1800s ushered in sweeping changes to the landscape that led many species to the brink of extinction, including: Sacramento River winter-run Chinook salmon, Central Valley spring-run Chinook salmon, and Central Valley steelhead. Gold mining, dam construction, water and hydropower development, and other land uses hindered fish populations from thriving in the Central Valley. By 1989, Sacramento River winter-run Chinook was listed under the Endangered Species Act as a threatened species, but was soon reclassified as endangered in 1994. Central Valley steelhead and spring-run Chinook followed suit in 1998 and 1999, respectively, becoming federally listed as threatened species.

Today, there is a path to recovery. A concerted effort among NOAA Fisheries, California Department of Fish and Wildlife, the U.S. Fish and Wildlife Service, additional agencies, and the public culminated in NOAA Fisheries' development and release of a federal plan to recover Central Valley's listed salmon and steelhead runs. The plan provides a road map to recover these species with the goal of removing them from the Endangered Species List. With science at its foundation, the plan identifies clear priorities to guide recovery efforts in the Sacramento-San Joaquin Delta and its watersheds. It also provides a framework for targeting conservation efforts and modifying on-the-ground actions based on new science and changing circumstances.

The Salmonid Restoration Federation Conference highlights key themes that are critical for the recovery of these Central Valley salmonids: reintroductions, hatchery reform, habitat and floodplain restoration, science and monitoring and others. This session will provide the background of the recovery plans and the context of how specific recovery actions are necessary in specific locations to shift Central Valley salmon and steelhead from extinction to recovery. Persons with an all-encompassing view of recovery for Central Valley salmonids with examples of how specific efforts advance those broader recovery goals are encouraged to submit abstracts.

+ Presentations

Part 1

(Slide 4) Recovering Central Valley Chinook Salmon and Steelhead
Brian Ellrott, NMFS

(Slide 22) Salmon Recovery NGO Experience
John McManus, Golden Gate Salmon Association

(Slide 66) Accelerating Salmonid Recovery: Expediting Permitting of Habitat Restoration in the Central Valley
Eric Ginney, Environmental Science Associates, Ruth Goodfield, NOAA Restoration Center, and Erika Lovejoy, Sustainable Conservation

Recovering Central Valley Spring-run Chinook Salmon and the Role of the Yuba River



Brian Elliott

National Marine Fisheries Service

Salmonid Restoration Federation Annual Conference

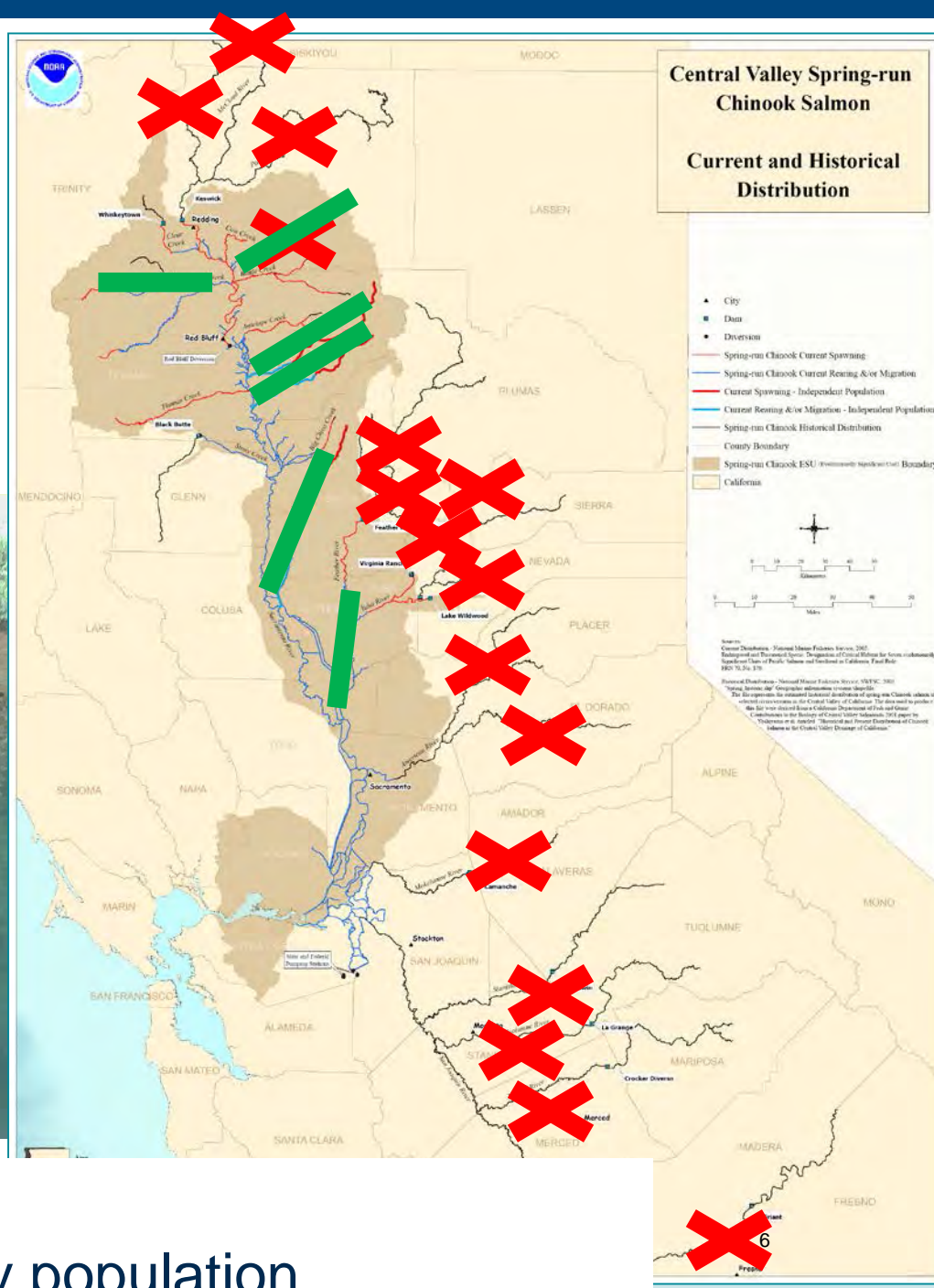
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Outline

- Define spring-run Chinook salmon recovery
 - Historic, current, and recovered population structure
- Yuba River's role
- Yuba River Salmon and Steelhead Goals and Objectives

Spring-run Chinook salmon

Current Population Structure



- Historically: 19 populations
- Currently: 5 wild; 1 hatchery population

Spring-run Chinook Salmon Diversity Groups



Spring-run Chinook Salmon Recovery Criteria

Diversity Group	# of Viable Populations for Recovery
NW California	1
Basalt and Porous Lava	2
Northern Sierra	4
Southern Sierra	2

Maintain multiple populations at moderate risk



Population level extinction risk criteria

low risk=viable

Criterion	Risk of Extinction		
	High	Moderate	Low
Extinction risk from PVA	> 20% within 20 years – or any ONE of –	> 5% within 100 years – or any ONE of –	< 5% within 100 years – or ALL of –
Population size ^a	$N_e \leq 50$ –or– $N \leq 250$	$50 < N_e \leq 500$ –or– $250 < N \leq 2500$	$N_e > 500$ –or– $N > 2500$
Population decline	Precipitous decline ^b	Chronic decline or depression ^c	No decline apparent or probable
Catastrophe, rate and effect ^d	Order of magnitude decline within one generation	Smaller but significant decline ^e	not apparent
Hatchery influence ^f	High	Moderate	Low

^a Census size N can be used if direct estimates of effective size N_e are not available, assuming $N_e/N = 0.2$.

^b Decline within last two generations to annual run size ≤ 500 spawners, or run size > 500 but declining at $\geq 10\%$ per year. Historically small but stable population not included.

^c Run size has declined to ≤ 500 , but now stable.

^d Catastrophes occurring within the last 10 years.

^e Decline $< 90\%$ but biologically significant.

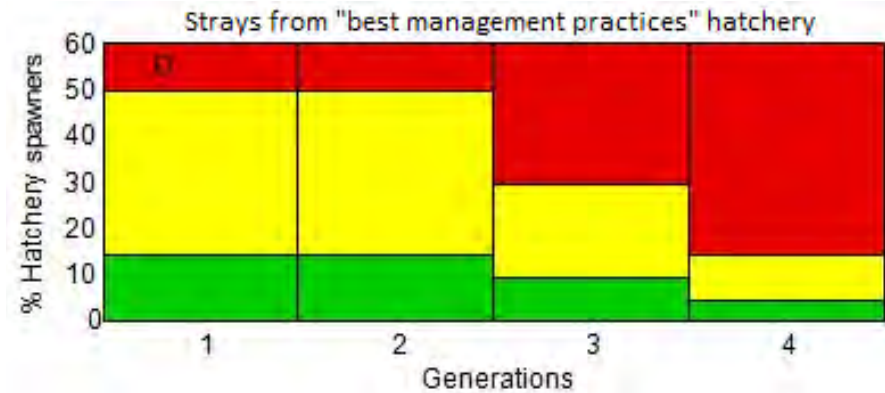
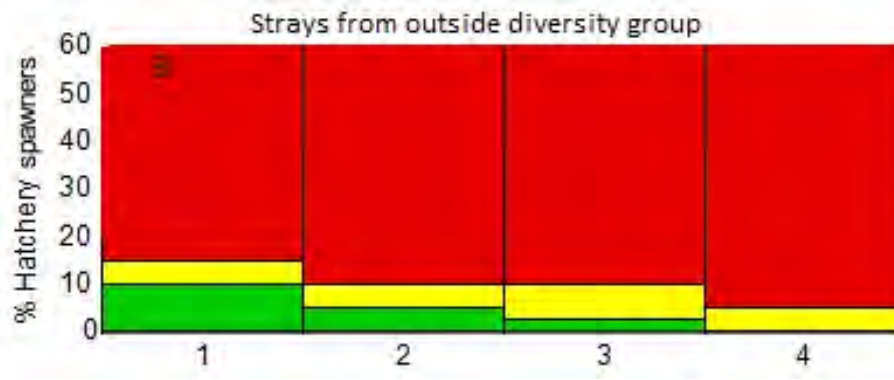
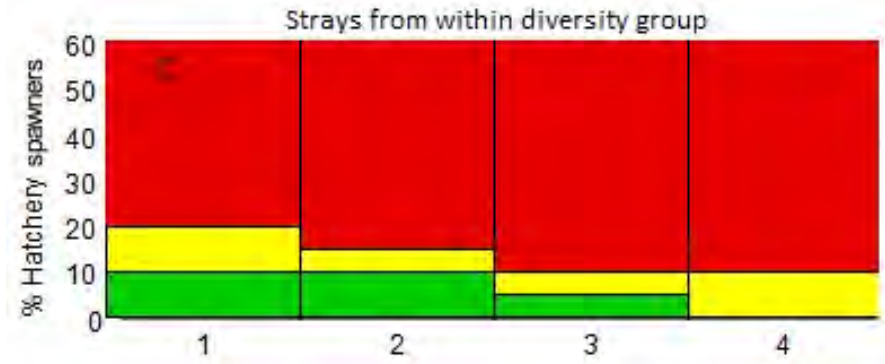
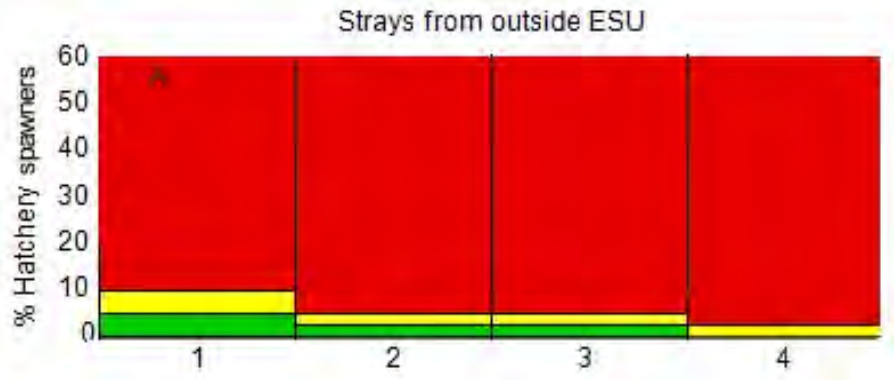
^f See Figure 1 for assessing hatchery impacts.



Recovery Criteria – Population Size

- Round up to 850

Hatchery Influence Criteria



High risk



Moderate risk



Low risk

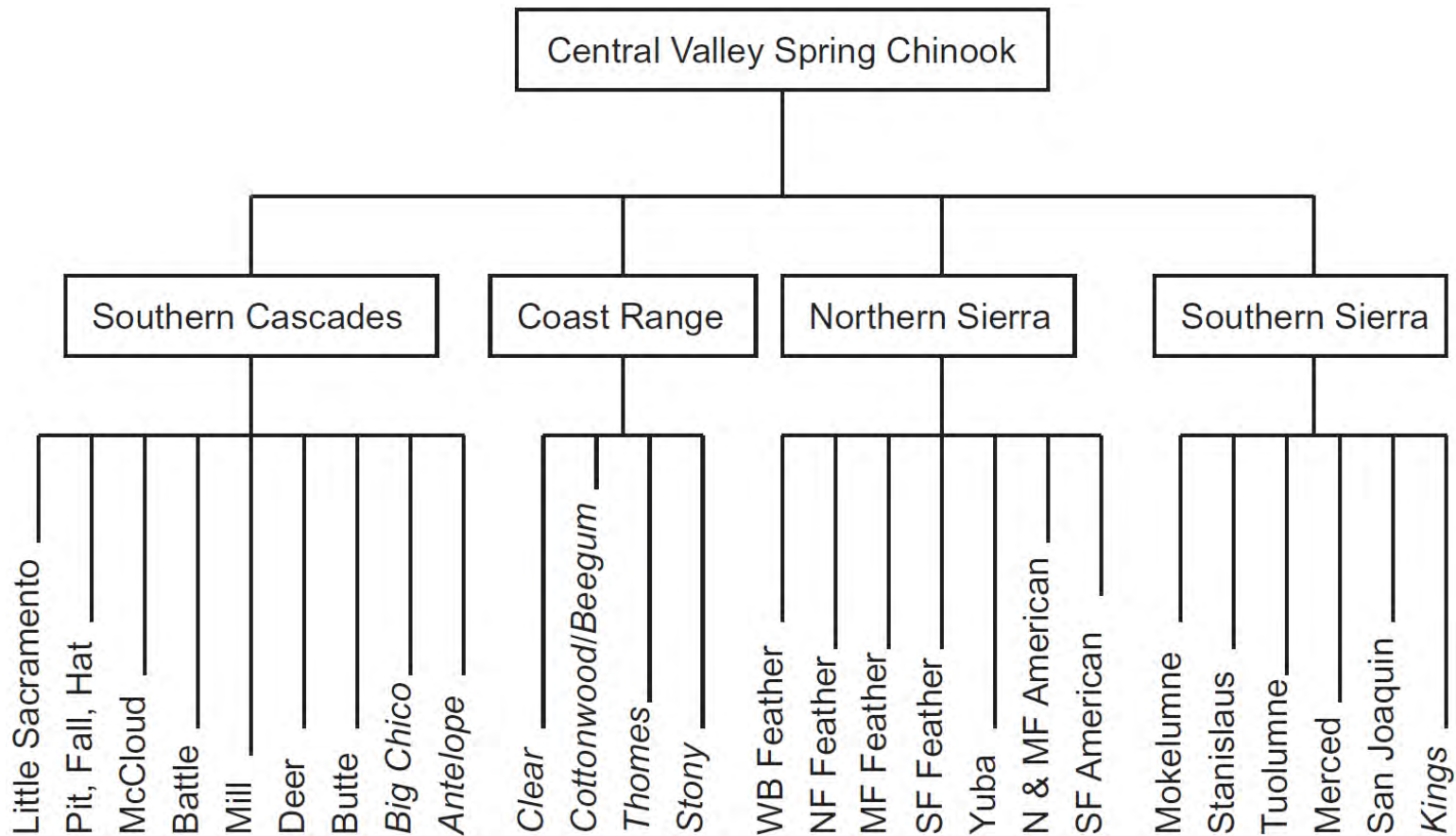
Viable Salmonid Population Criteria

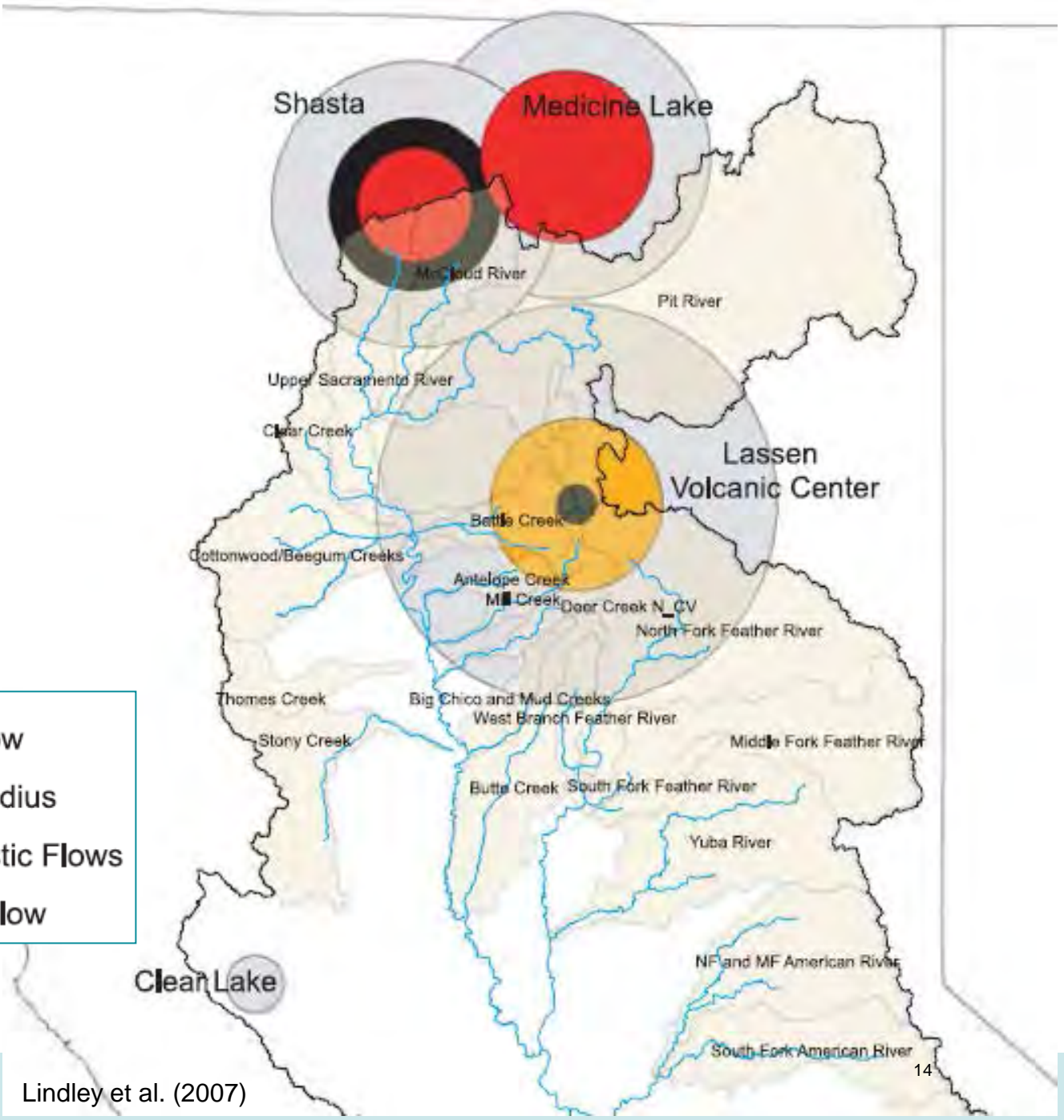
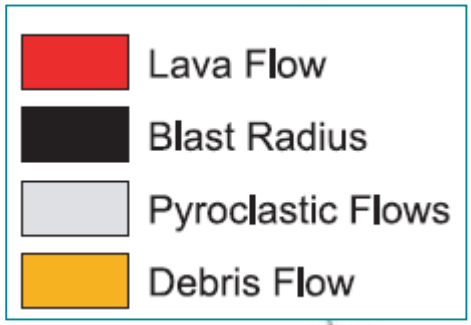
- Census size > 2,500 (Annual run size >850)
- Stable or positive (i.e., no sustained or dramatic decreases)
- 0-5% hatchery origin spawners in the wild

Spring-run Recovery is Achievable

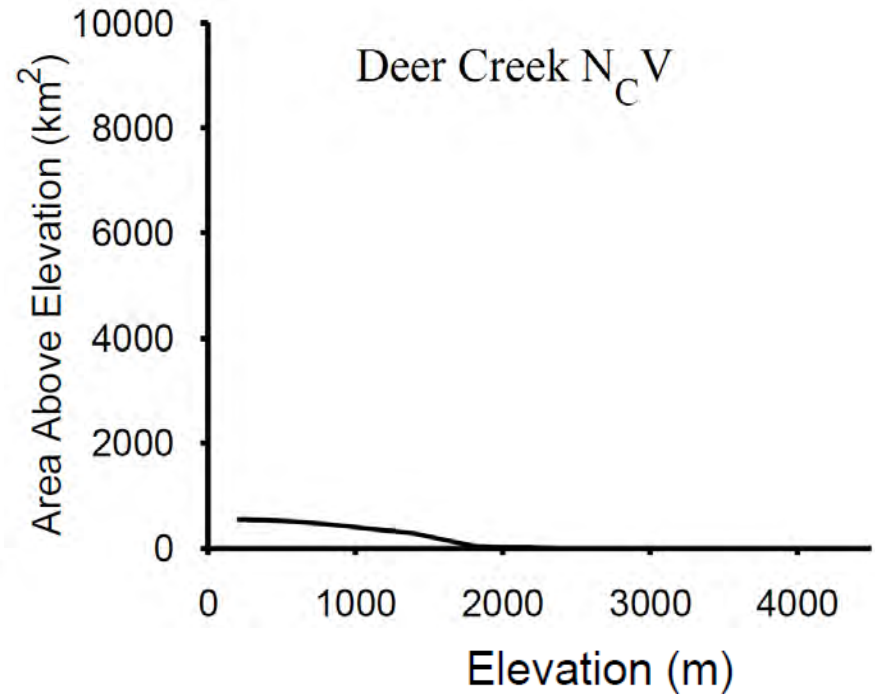
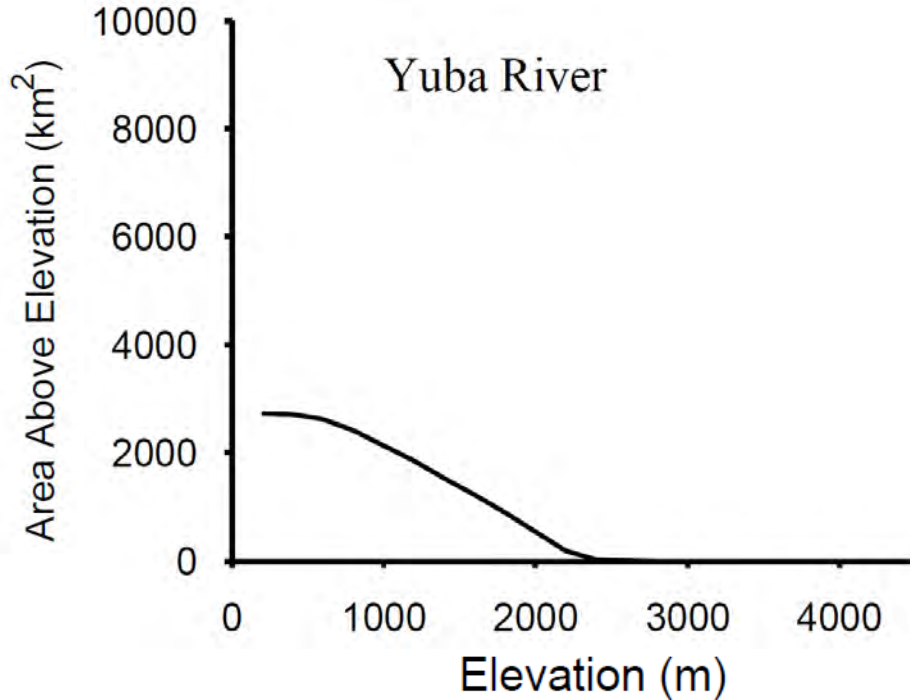
- 9 viable populations needed
- Total run size > 7,650

Why the Yuba River is Critical for Spring-run Recovery



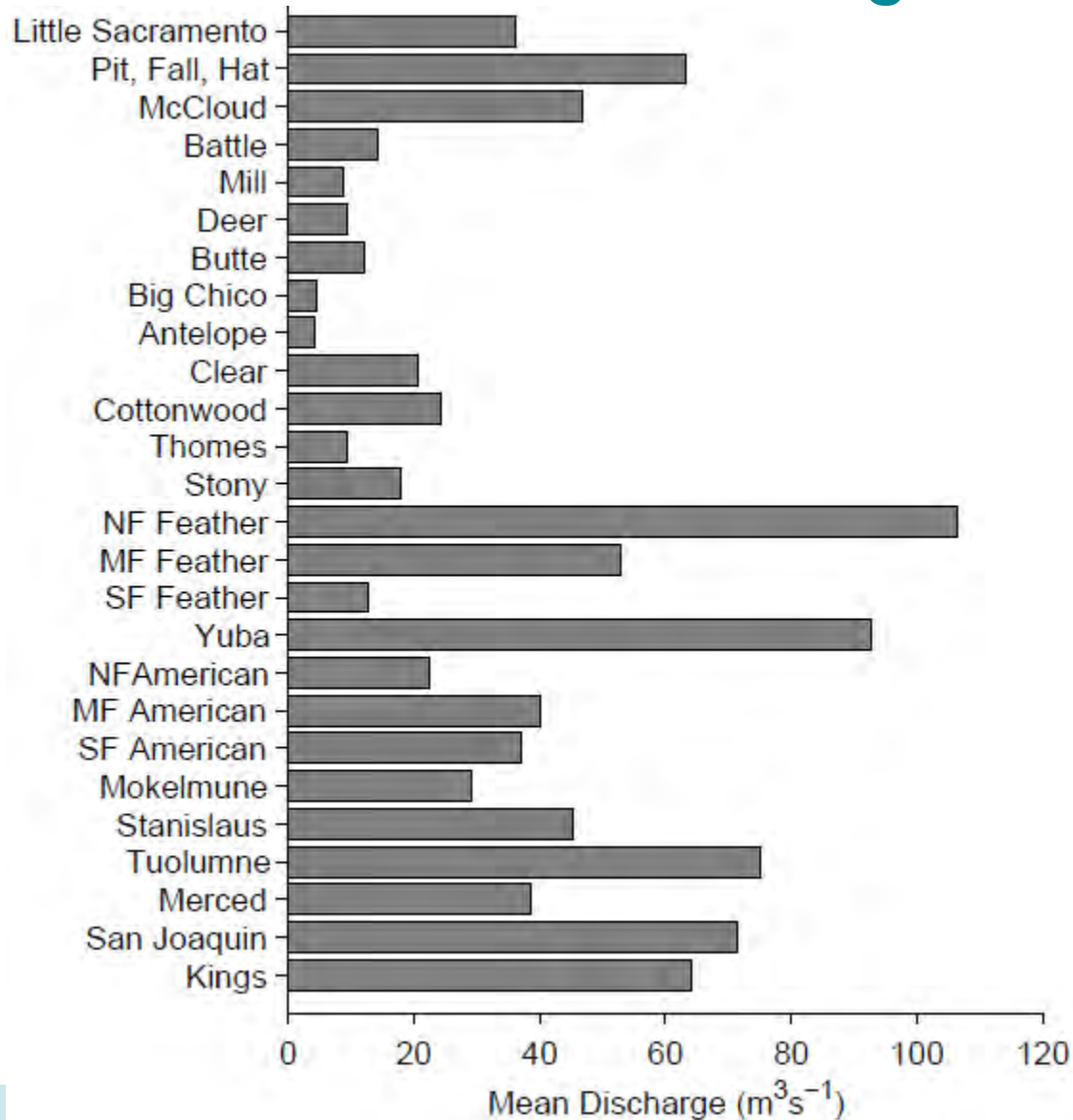


Why the Yuba River is Critical for Spring-run Recovery

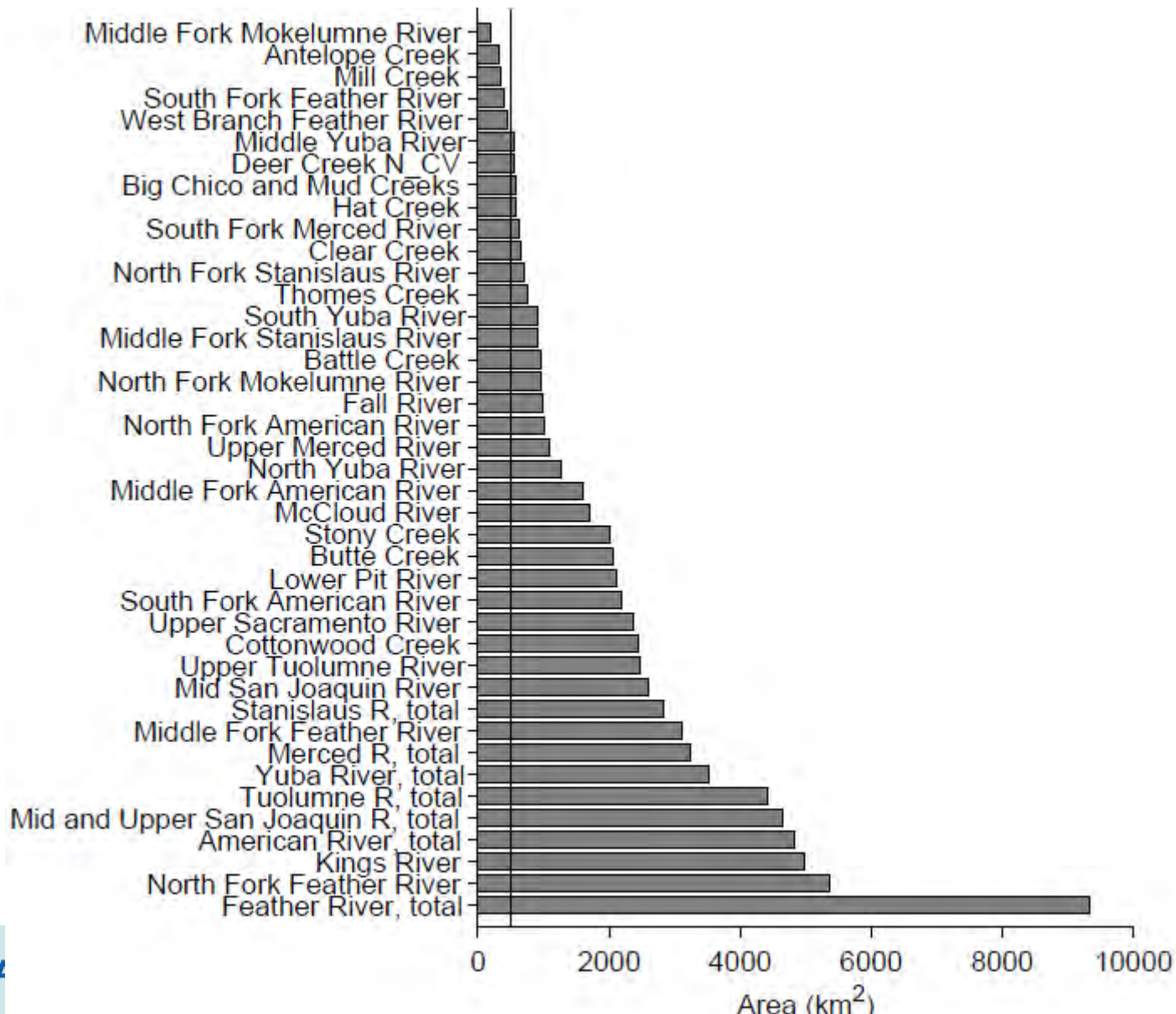


Lindley et al. (2004)

Mean Annual Discharge



Watershed Size

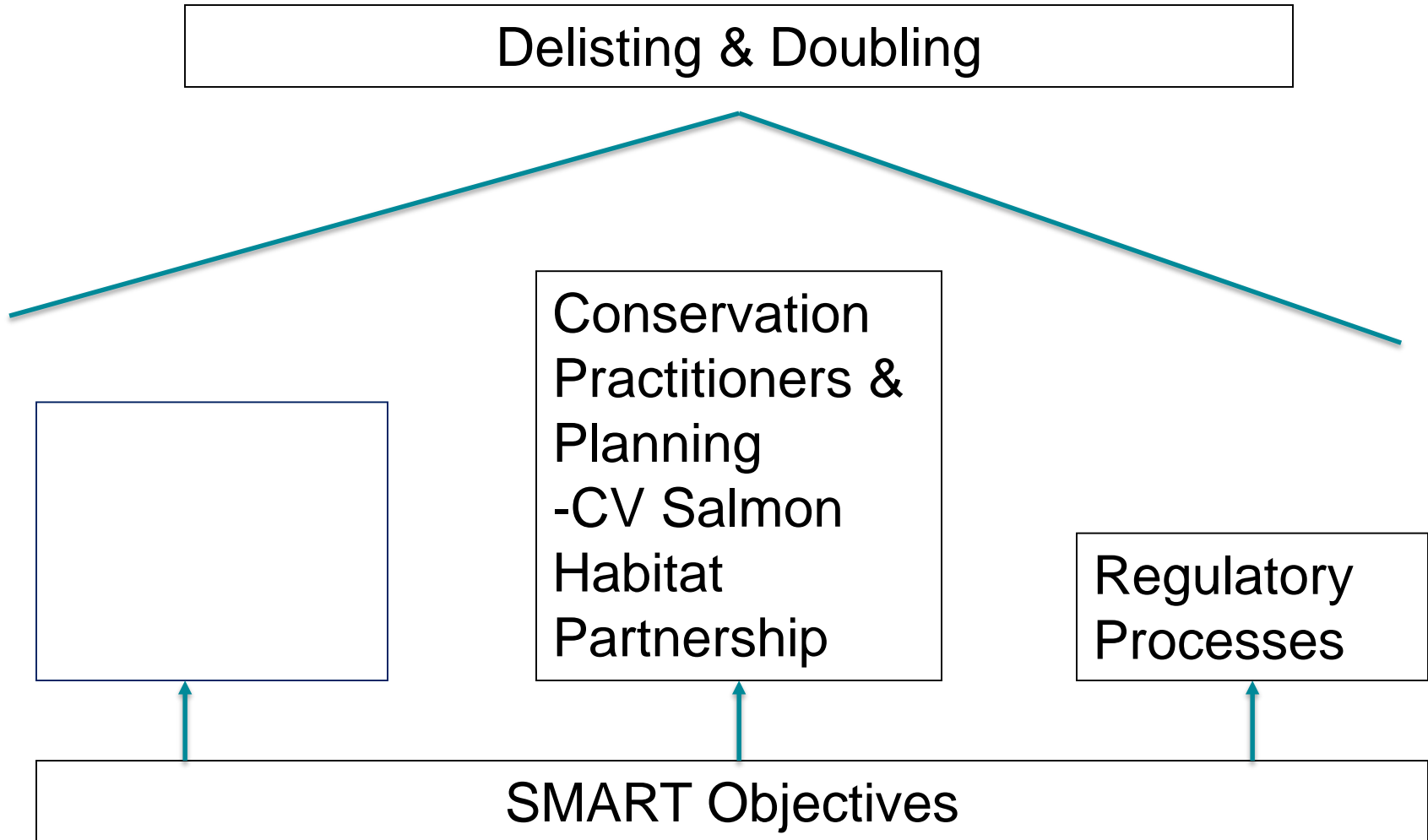


Why the Yuba River is Critical for Spring-run Recovery

Source	Redd-Based Potential of Spawning Adults (# of fish)	
	Low	High
Yuba Salmon Forum	514	7,816
Yuba Salmon Partnership	362	4,188
RIPPLE	2,920	8,224

Yuba Goals and Objectives Process

Conceptual Model of CV Salmonid Conservation



Questions?





GGSA's mission is to protect and restore Central Valley salmon



Think they got permits to build the levees?



State of the art equipment at the time...



CEQA compliance officer?



Who did the NEPA document?



**Today's river.... few rearing areas still exist.
Where are the side channels?**

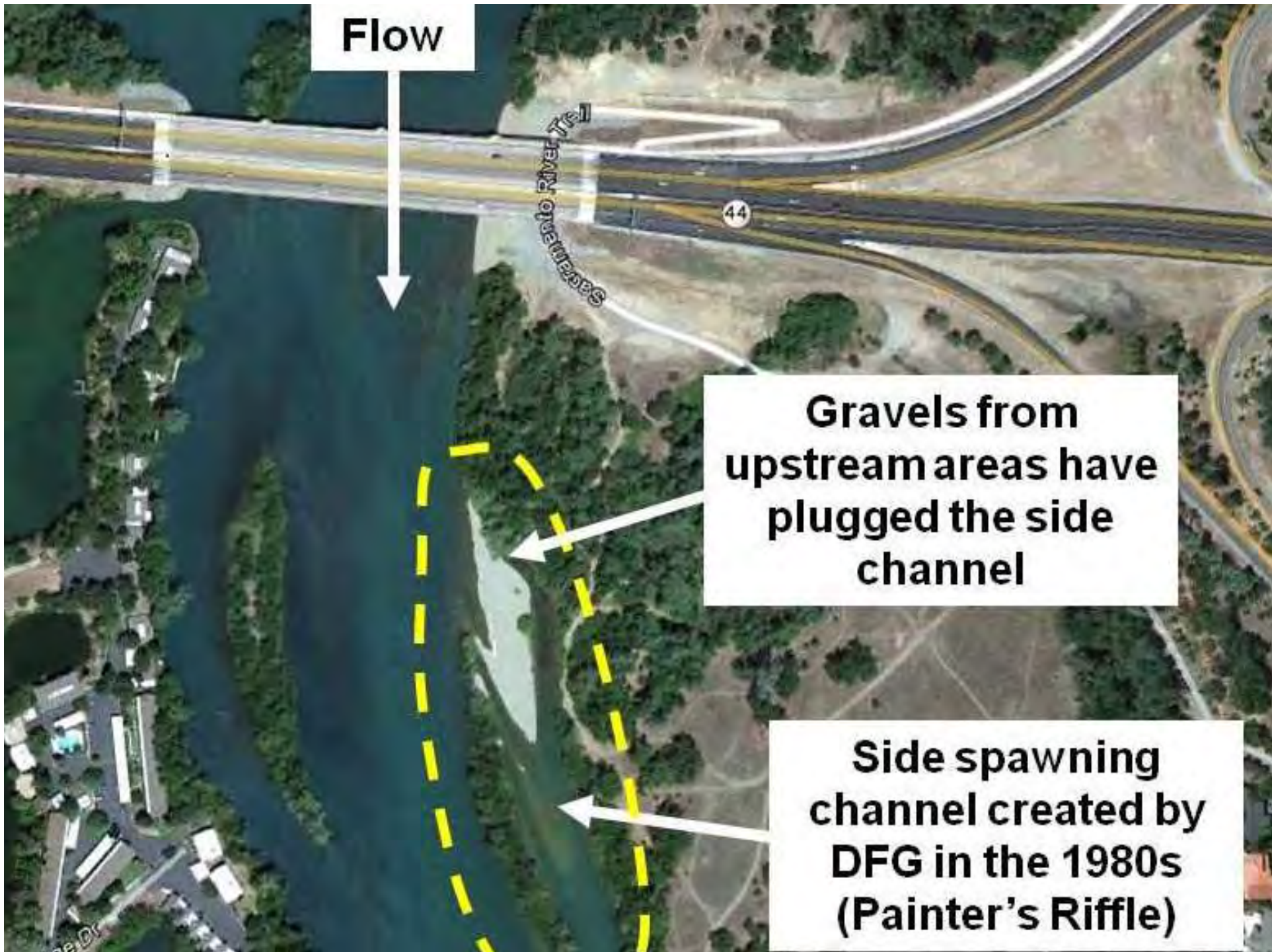


What floodplains?



Painters Riffle, “Before” shot



















2009 Salmon biop requires modification of Yolo Bypass



Cartoon courtesy of the Sacramento Bee, July 28, 2012

Wallace Weir, Yolo Bypass 2016



December 2014, saving some lost adult salmon. Photo
Sacramento Bee



NPR Sacramento webpage photo



After press coverage, word came a fix would come within 24 months





December 2013, 600 adult winter run end up in the Colusa Basin Drain



Adult fish

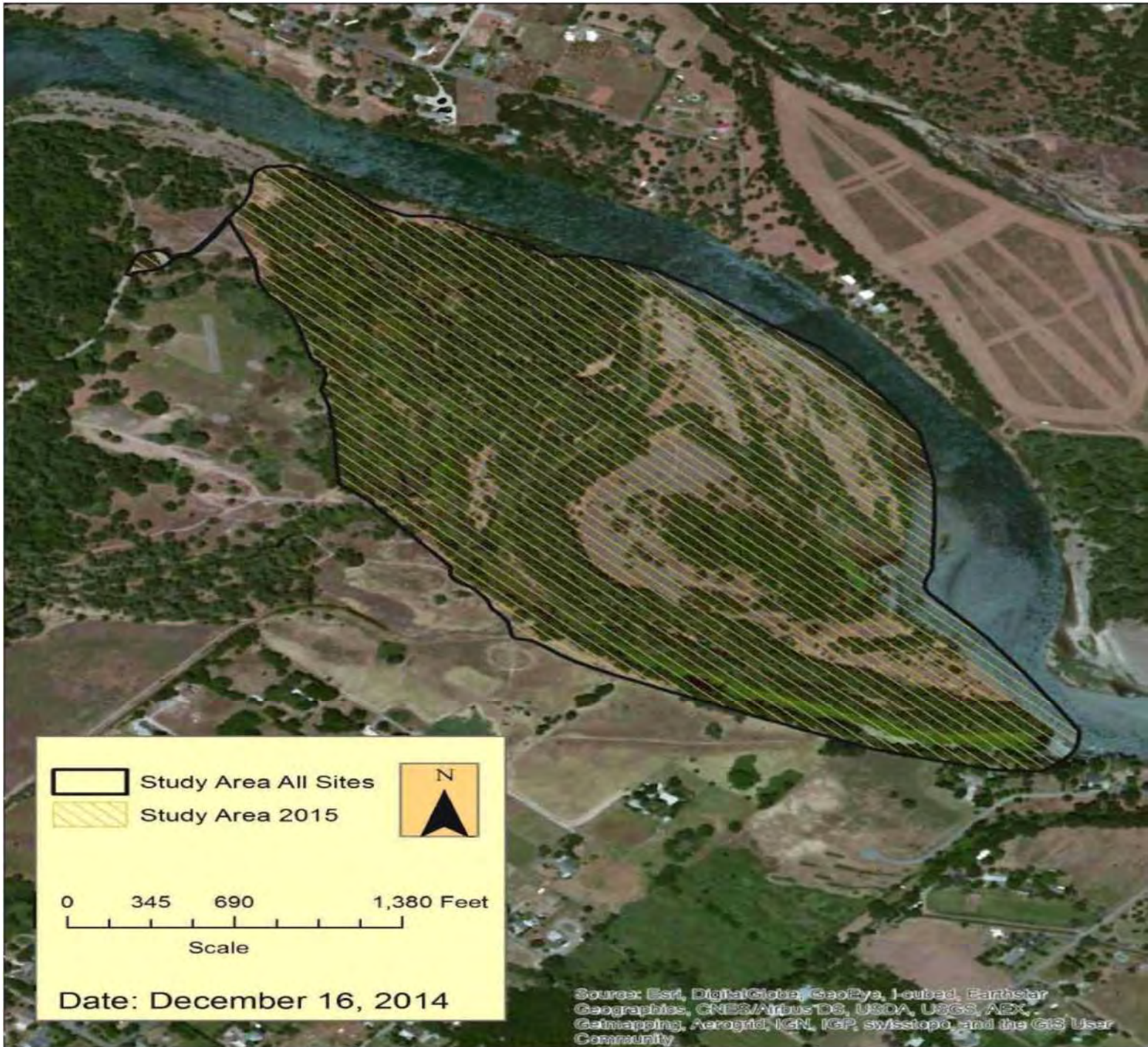


Permits sometimes flow when higher ups take notice and decide to fix things.



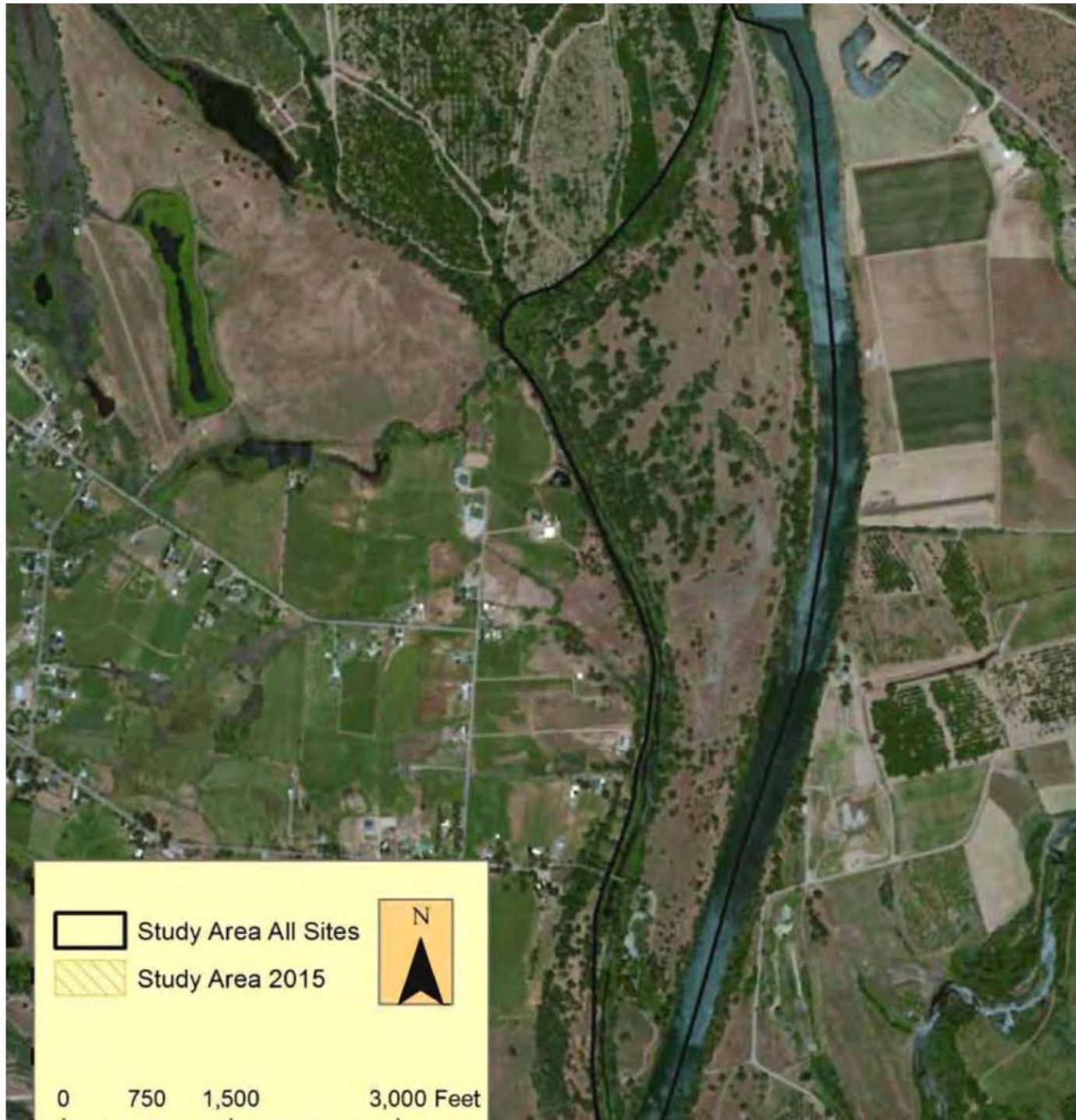








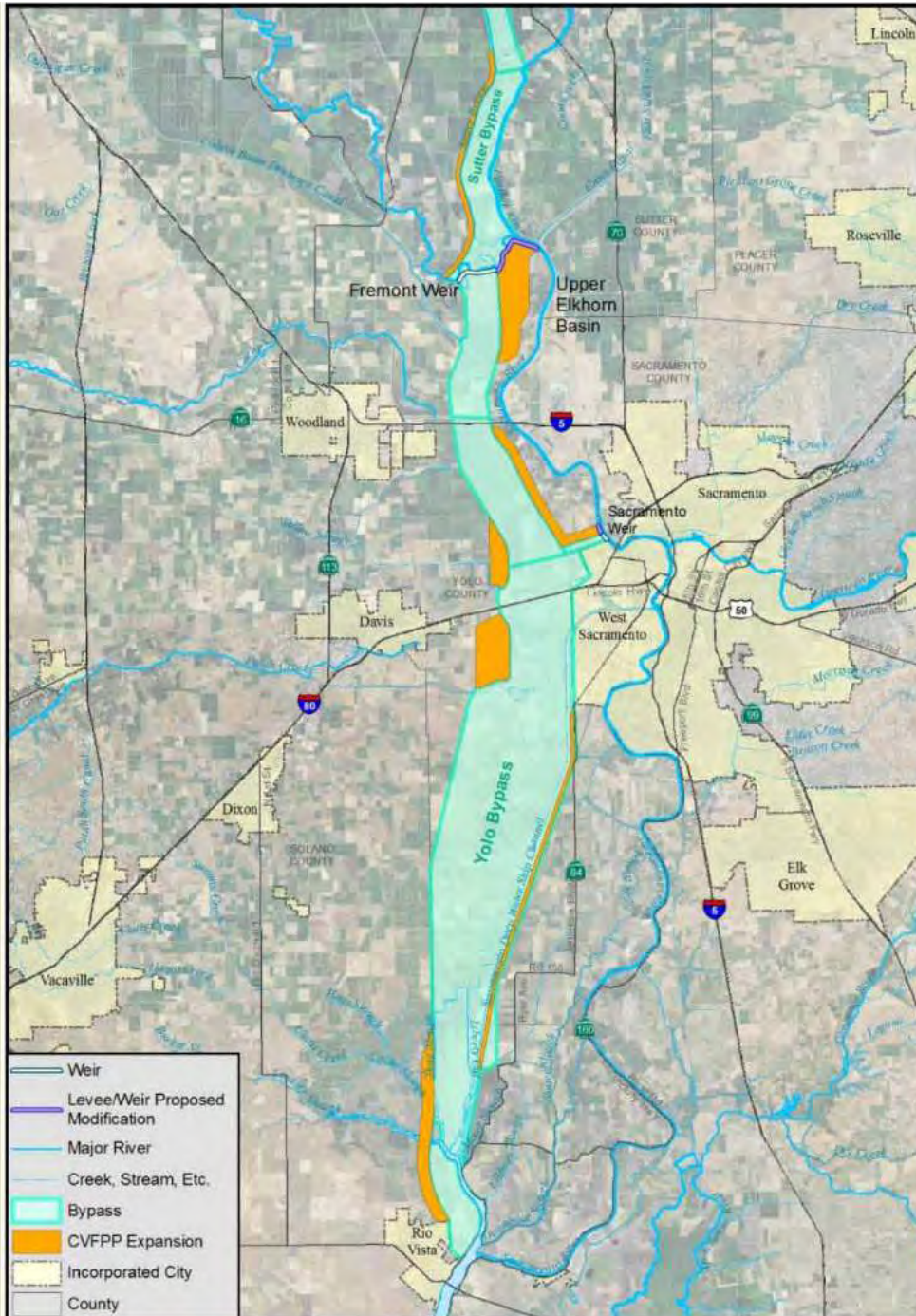










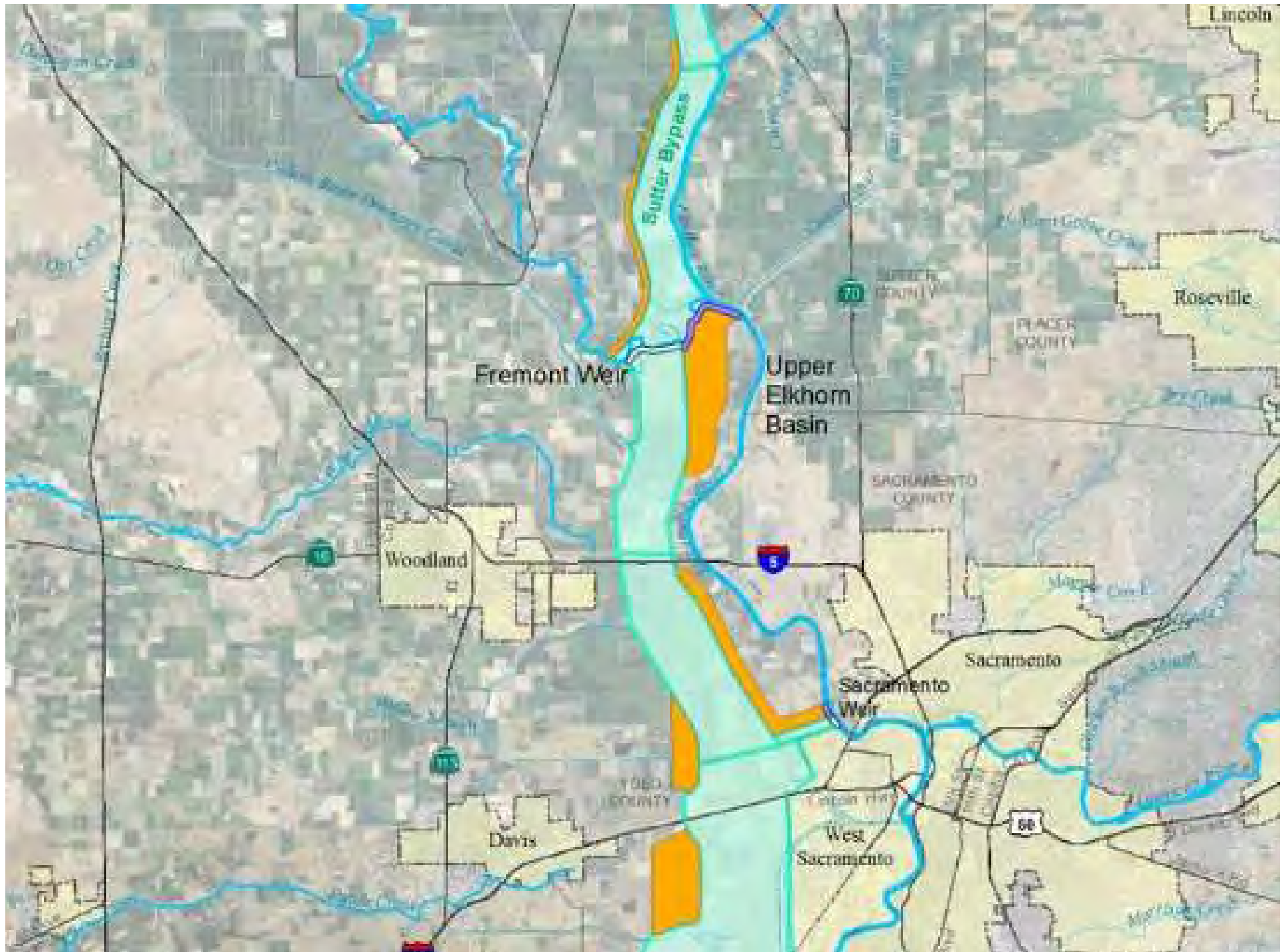


Preliminary Concepts Under Evaluation. Not Proposals for Construction

State Flood Objectives:

- State System-wide Investment Approach: A balanced approach to flood management
- Contemplating 10k-18k acre expansion
- Driven by current conditions and planning for climate change

*Prelim. concepts under evaluation; not proposals for construction













“Restoring” floodplains, connecting known stranding spots?



Thanks for having me



Accelerating Salmonid Recovery

*Expediting Permitting of Habitat
Restoration in the Central Valley*



**Erika
Lovejoy**

Sustainable Conservation

**Ruth
Goodfield**

NOAA Restoration Center

**Eric
Ginney**

Environmental Science Associates

AGENDA

1. Why expedite permitting?
2. What are we doing?
3. Benefits — why it matters
4. How do you fit in?



SPECIES DECLINE



RECOVERY PLANS AND FUNDING SOURCES

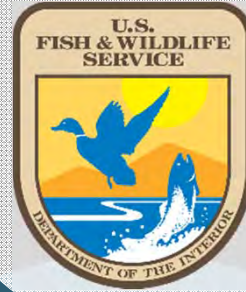
- Prop 1
- EcoRestore
- AFRP and more!

HOW DO WE
GET IT ALL DONE?





**US Army Corps
of Engineers®**



**CEQA &
NEPA**



County



The Status Quo

*Federal Endangered Species Act
Section 7: Individual Project
Consultation Process*





The Status Quo

Federal Endangered Species Act Section 7: Individual Project Consultation Process

- Develop/Define project
 - Type doesn't matter!
 - Construction approach, timing, sequencing



The Status Quo

Federal Endangered Species Act Section 7: Individual Project Consultation Process

- Prepare Biological Assessment
 - Conservation measures
 - Effects analysis
- Initiate consultation, agency review
 - Negotiate project details: changes in approach, new measures added
 - **135 day review once NMFS determines info is complete!**



RESTORATION

DEVELOPMENT

**Use Programmatic Permitting
to accelerate restoration**

Existing NOAA Fisheries Programmatic Biological Opinions

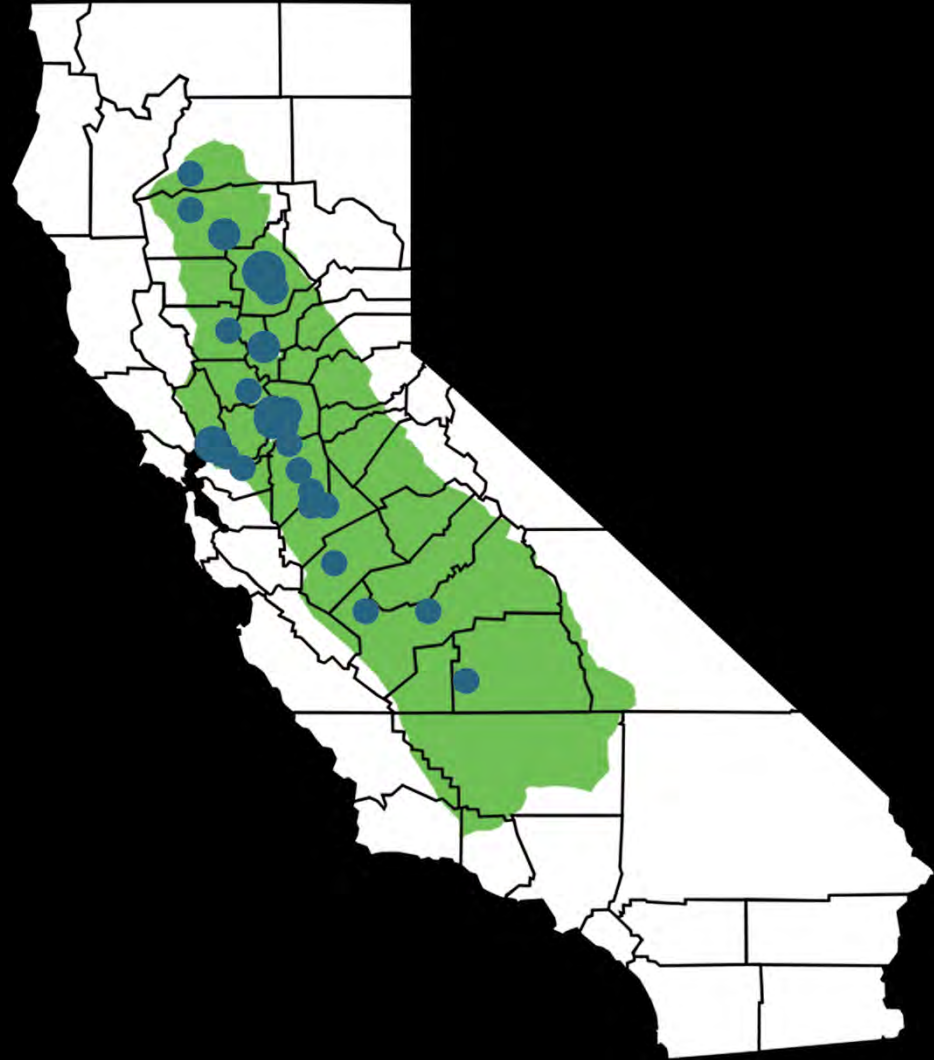
- Three PBAs/PBOs:
 - North Coast (Arcata)
 - Central Coast (Santa Rosa)
 - Southern-Central and South Coast (Long Beach)
- Eliminates need for individual project consultation for anadromous fish habitat projects
- NOAA RC: funding and technical assistance



Permitting Gap in Central Valley

&

Survey of Central Valley Restoration Proponents





Programmatic Biological Assessment

*For salmonid habitat restoration
in the Central Valley*

- Potential NOAA Restoration Center
Programmatic Biological Opinion (PBO)





Programmatic Biological Assessment

*For salmonid habitat restoration
in the Central Valley*

- Covered Species:
 - Sacramento River winter-run Chinook salmon ESU
 - Central Valley spring-run Chinook salmon ESU
 - Central Valley steelhead DPS
 - Southern DPS of North American Green sturgeon



ESU = Evolutionarily Significant Unit, DPS = Distinct Population Segment



Programmatic Biological Assessment

*For salmonid habitat restoration
in the Central Valley*

- Proposed action = various types of restoration projects
- Programmatic Sideboards, Minimization Measures:
 - Limits on area of disturbance for full stream de-watering
 - Pre-determined in-water work windows
 - Standardized protection measures





Programmatic Biological Assessment

For salmonid habitat restoration in the Central Valley

- Standardized protection measures
- Conservation measures to avoid, minimize, or otherwise reduce effects to federally listed species
 - General / BMPs
 - Water Quality
 - In-stream Construction



- Dewatering Activities & Fish Rescue
- Veg / Habitat Disturbance



Programmatic Biological Assessment

For salmonid habitat restoration in the Central Valley

- **Effects Analysis** of the Proposed Action = *Describes the direct, indirect, and cumulative effects on species that may result from the proposed action.*
- **Conclusion & Determination** = *Provides the Federal ESA-based conclusion statements for the effects of proposed action on the federally listed special-status species.*



Potential NOAA Restoration Center PBO



Not just an efficient regulatory process

A tool for developing restoration projects in a way that:

- ✓ Covers a comprehensive set of project types and habitat
- ✓ Helps frame your project
- ✓ Saves time and resources!
- ✓ *Provides predictability for planning & budgeting grant-funded projects*



Companion Tool

For other species conservation

- NMFS PBO accelerates permitting for NMFS species
- Potential project delays if projects have potential to affect other species (USFWS and CDFW jurisdiction)
- Companion tool to screen and assess for species presence
and
- If present, guidelines for conservation (avoidance and minimization) to potentially avoid need for take coverage

Proposed Project Types

In Biological Assessment

- levee setback/ breaching & floodplain restoration
- wetland restoration & enhancement
- creation of off-channel/ side-channel habitat
- in-stream habitat improvements

- bio-engineered streambank stabilization & riparian restoration
- in-stream barrier removal/ modification
- fish screens/ diversion screening
- in-stream flow enhancement/ water conservation

- upslope watershed restoration
- invasive spp. removal & riparian revegetation
- seasonal inundation of active ag land for primary productivity
- fish monitoring



Using the PBO

Potential Process

- Easy to use for restoration practitioners and the regulatory agencies
- Process modeled after the Arcata PBO
- Arcata BO process outlined in Section B, page 5-6, "Oversight & Administration"



Using the PBO

Potential Process

- Initial pre-application communication/site visit with the applicant/NOAA RC/USACE
- Applicant uses the application checklist
- Red flags to help applicants meet PBO project parameters (a design tool for the savvy!)
- Submit online – reviewed by NOAA RC/USACE review team
- Email states that NOAA RC/USACE has determined the project is covered by the BO
- Email communication chain provides proof of coverage!



NOAA

APPLICATION FOR INCLUSION IN THE NOAA RC
ARCATA OFFICE PROGRAMMATIC BIOLOGICAL OPINION

INSTRUCTIONS

- Read through the Programmatic Biological Opinion (BO) to determine if the project fits under the described activities.
- Fill out an [online application from the U.S. Army Corps of Engineers](#), if necessary.
- Fill out the application below.
- Review the list of specific "Minimization and Mitigation measures" on the last pages of this application.
- Sign and date the application.
- Attach a map of the project site, project site photos, a dewatering plan, and any other documents as necessary, then submit the completed form to the NOAA Restoration Center by e-mailing it to bob.pagliuco@noaa.gov.

General Information

Applicant Name: _____

Landowner Name: _____

Project Name: _____

Project Location: _____

Project Start Date: _____ Stream: _____ Latitude: _____

Project End Date: _____ Watershed: Select _____ Longitude: _____

Project Description

How is your project expected to fit under the Programmatic BO? _____
 This project is applying for / has received funding from the NOAA Restoration Center.
 This project is expected to require / has received a permit from the U.S. Army Corps of Engineers.

Which salmonid species are present at your project site? _____
 Southern Oregon / Northern California Coho Salmon
 Central California Chinook Salmon
 Upper Klamath / Trinity River Chinook Salmon
 Northern California Steelhead Trout
 Klamath Mountains Province Steelhead Trout

What is the current problem addressed by this project? What is the context of this issue in the watershed? _____

What solution are you proposing? What are the goals, objectives, and proposed benefits of your project? _____



NOAA

APPLICATION FOR INCLUSION IN THE NOAA RC
ARCATA OFFICE PROGRAMMATIC BIOLOGICAL OPINION

PROJECT INFORMATION (continued)

Please indicate the type(s) of techniques your project is likely to involve.

Check all that apply:

- Bioengineering and/or riparian habitat restoration
- Upslope watershed restoration
- Instream habitat structures and/or improvements
- Barrier modification for fish passage improvement
- Removal of small dam(s), permanent and/or flashboard
- Creation of off-channel/side-channel habitat

- Development of alternative stockwater supply
- Creation of tailwater collection pond(s)
- Construction/use of water storage tank(s)
- Construction/use of piping ditch(es)
- Installation of fish screen(s)
- Use of headgate(s)/water measuring device(s)

Will construction occur between Jun 15 - Nov 1? _____

Will riparian vegetation (>2 inches dbh) removal exceed 0.25 acres? _____

Will native trees >16 inches dbh and 20 feet high with cavities, trees with nests, or trees > 36 inches dbh be removed? _____

Will dewatering and/or fish relocation be required? _____

Will mechanized equipment be working in the stream channel or within 25 feet of a wetted channel? _____

Will the project involve activities not described as a part of the Proposed Action section (Section II) in the Biological Opinion? If so, please explain.

Please describe the specific construction elements of your project, including dimensions, timing, equipment used, and any staging area / access roads needed.

What minimization and avoidance measures are already planned as a part of this project?

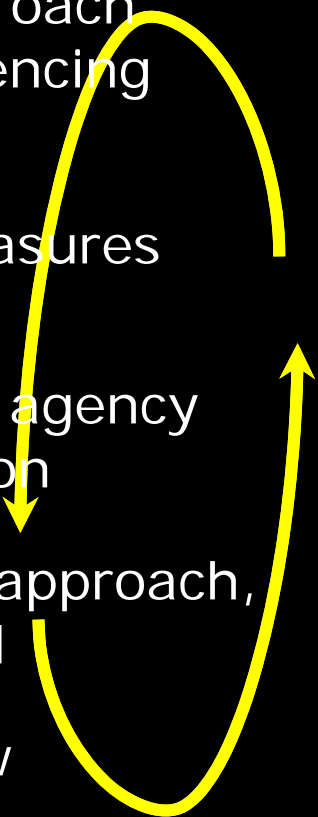
Please attach photos and a map of the project site.

Attach photos separately. Pre-project photos should be taken from the four cardinal directions and from established locations for comparison to post-project photos. Post-project photo documentation will be required of all approved projects.

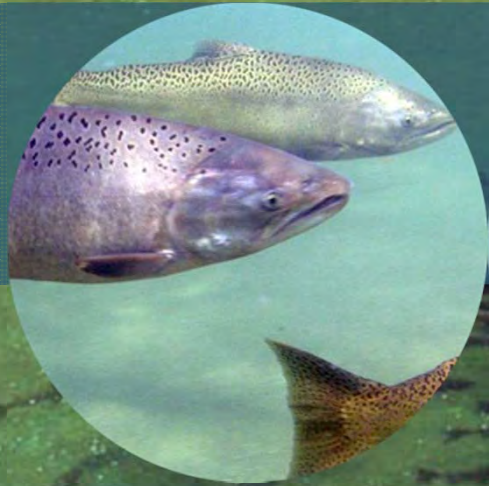
Traditional ESA Section 7 Permit Process

versus

Programmatic ESA Section 7 Process

- Develop and define project
 - Construction approach
 - Timing and sequencing
 - Prepare BA
 - Conservation measures
 - Effects analysis
 - Initiate consultation, agency review, and interaction
 - Potential changes in approach, new measures added
 - Up to 135 day review
- 

- Develop project by reviewing PBO sideboards to inform best approach to:
 - Construction, timing
 - Conservation measures
- No BA preparation
- Effects analysis is prescribed
- Consultation and agency review accelerated



BENEFITS

- Predictable timeline and standardized conservation measures accelerates project planning & design
- Programmatic permit saves significant time/\$ savings and puts more money for on-the-ground work.
- Covers projects of various sizes = species recovery
- Will accelerate Governor's WAP and NOAA restoration priorities

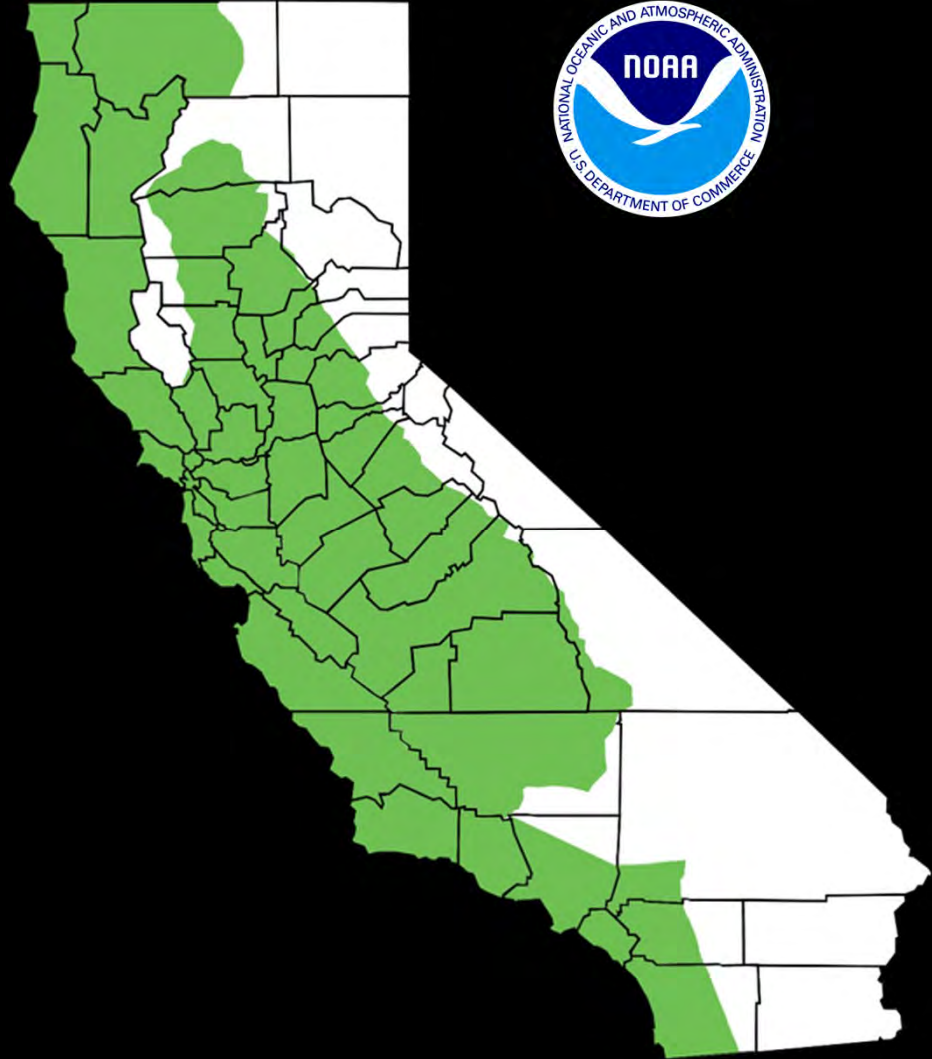


COST SAVINGS

- Individual Permit
 - NOAA RC BO & Applicant BA costs: \$25,000 to \$64,000
 - Cost of BA often comes out of grant funding
- Programmatic Permit
 - Under \$300 per project; annual costs less than \$2,000
- **Cost savings of \$24,000-\$63,000 per project = more money on the ground!**

Potential NOAA Restoration Center Programmatic Biological Opinion

- BO Estimated: May 2018
- Army Corps or NOAA can use
- Voluntary and mitigation projects covered



CALL RUTH!



916-930-3716



THE OPPORTUNITY

**1. WORK
TOGETHER**

**2. ACCELERATE
RESTORATION**

**3. SPECIES
RECOVERY**

THANK YOU!

**Erika
Lovejoy**

*Sustainable
Conservation*



Sustainable Conservation

**Ruth
Goodfield**

*NOAA
Restoration
Center*



**Eric
Ginney**

*Environmental
Science
Associates*

