



# **Recovery Strategy for California Coho Salmon Progress Report 2004 - 2012**



# California Fisheries Restoration Grants Program (FRGP)

- From 2004 to the present time, FRGP has allocated a total expenditure of over **\$100 million** to coho salmon recovery projects in California.
- In recent years, the FRGP program has focused on projects intended specifically to benefit coho salmon through the restoration of suitable habitat conditions in watersheds within the CCC and SONCC ESUs.

# FRGP Performance Metrics for Coho Salmon Recovery

- **Fish Passage Improvement** - Number of blockages removed – 118
- **Fish Passage Improvement** - Miles of stream opened – 209
- **Fish Screening Projects** - Number of fish screens installed/replaced – 92
- **Instream Habitat Improvement** - Total miles of stream treated - 223

# FRGP Metrics (cont.)

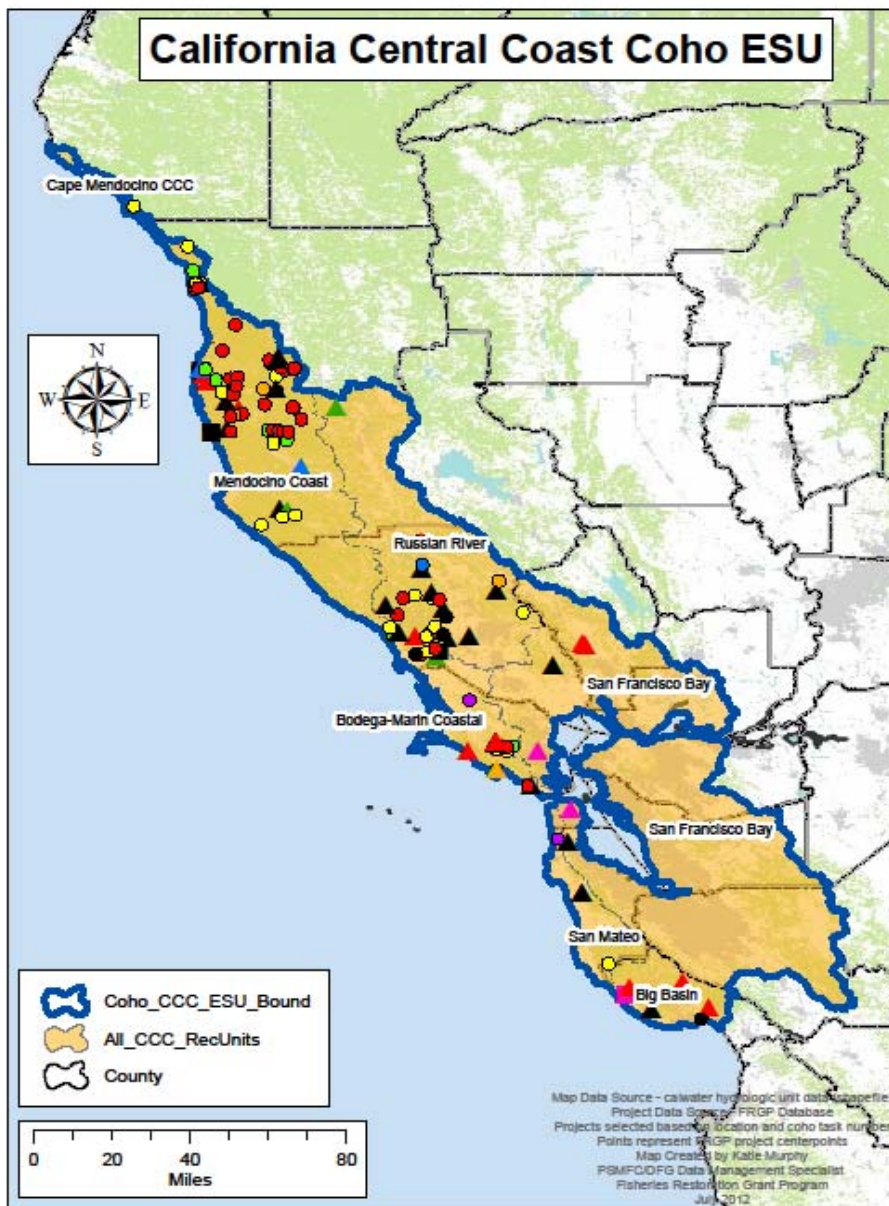
- **Riparian Habitat Improvement** - Miles of riparian bank treated - 149
- **Riparian Habitat Improvement** - Acres of riparian area treated - 1,467
- **Upland Habitat Improvement** - Acres of upland area treated - 4,117
- **Upland Habitat Improvement** - Miles of road treated - 462

# FRGP Metrics (cont.)

- **Monitoring** - Miles of stream monitored - 1,578
- **Fish rearing** - Number of hatchery fry/smolt released - 182,675
- **Organizational Support** - Number of watershed plans/assessments completed - 196

- A total of 433 FRGP funded projects benefiting coho salmon recovery was completed over the time period 2004 - 2012, addressing 287 recovery tasks, listed in the 2004 *Recovery Strategy*.

# California Central Coast Coho ESU



# Major categories of FRGP project

- **Fish passage** – FP (fish passage at stream crossings), HB (Instream barrier modification for fish passage), SC (Fish screening of diversions), FL (Fish ladder)
- **Instream habitat** – HA (Habitat acquisition and conservation easements), HI (Instream habitat restoration), HS (Instream bank stabilization), HR (Riparian restoration), HU (watershed restoration – upslope)
- **Organizational support** – AC (Americorps program), OR (watershed and regional organization) PD (Project design), PL (Watershed evaluation, assessment and planning), PI (Public involvement), ED (Public School Watershed and Fishery Conservation Education Projects), TE (Private Sector Technical Training and Education Project Grants).
- **Monitoring** – MO (Project Monitoring Following Project Completion), MD (Monitoring projects).
- **Water** – WC (Water Conservation Measures (Ditch Lining, Piping, Stock Water Systems), WP (water Purchase), WD (water measuring devices).
- **Cooperative rearing** – RE (Cooperative rearing).



# FRGP Projects in CCC ESU

ESU and Recovery Unit	Fish Passage	Instream Habitat	Organizational Support	Monitoring	Water	Fish Rearing	Total
<b>CCC ESU</b>							
Big Basin	0	0	2	4	0	4	10
San Mateo	0	1	2	0	0	0	3
San Francisco Bay	0	0	5	3	0	0	8
Bodega-Marin	3	10	10	5	1	0	29
Mendocino Coast	8	39	13	3	0	0	63
Russian River	4	16	11	2	0	0	33
<b>NUMBER OF PROJECTS</b>	<b>15</b>	<b>66</b>	<b>43</b>	<b>17</b>	<b>1</b>	<b>4</b>	<b>146</b>

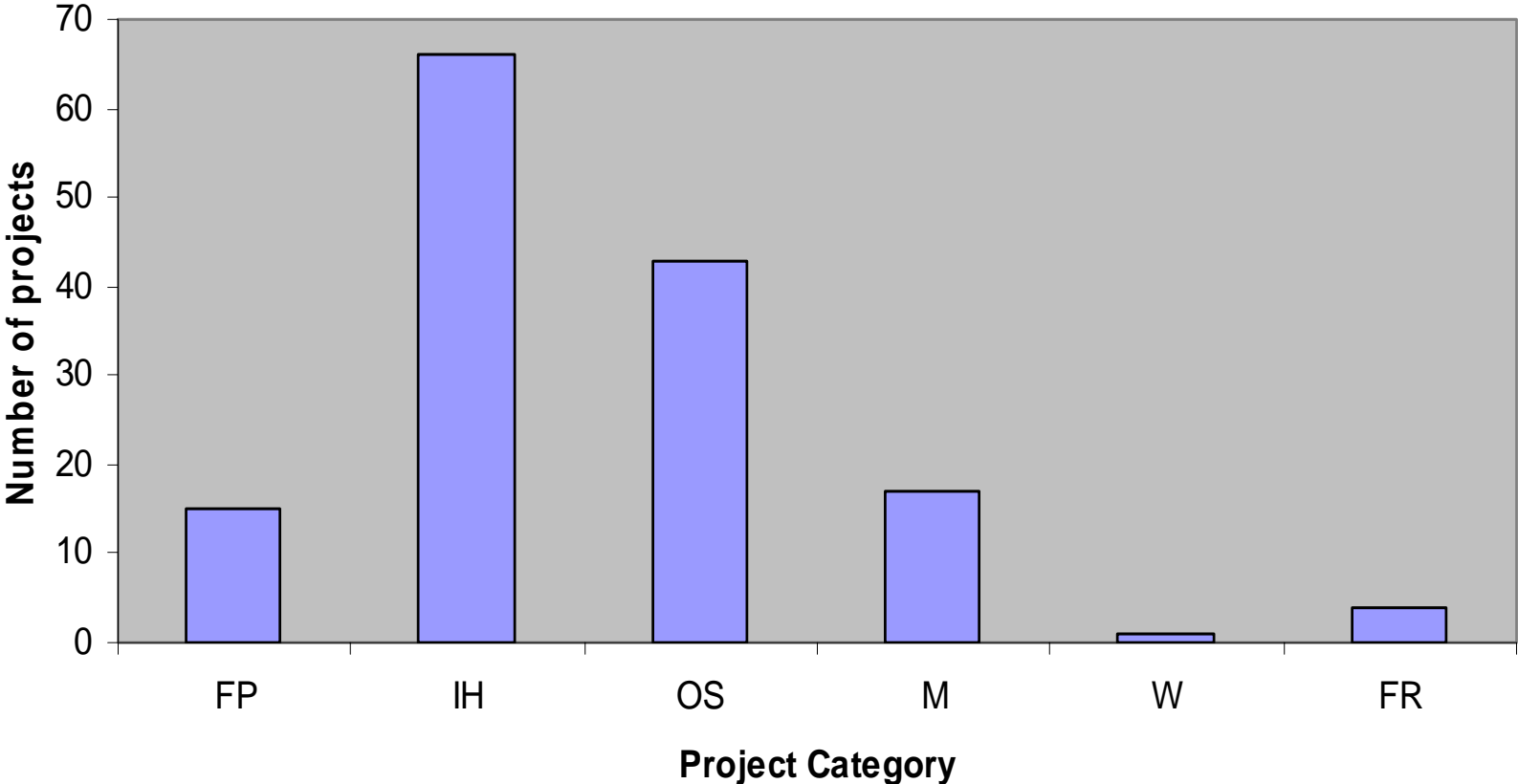
# Southern Oregon Northern California Coho ESU



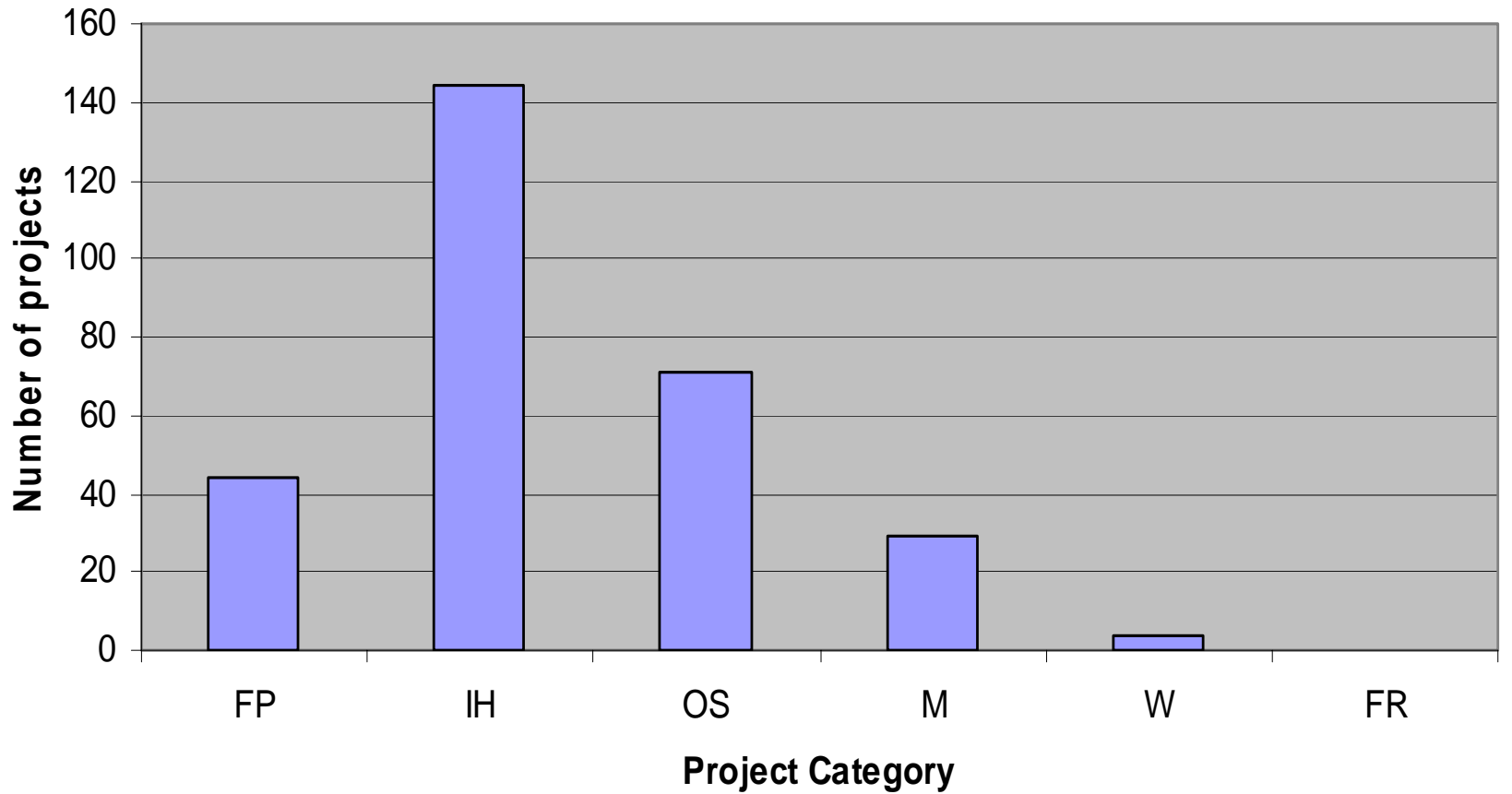
# FRGP Projects in SONCC ESU

SONCC ESU							
Middle-Upper Eel	2	1	1	0	0	0	4
South Fork Eel	1	25	9	1	0	0	36
Lower Eel/Van Duzen	1	17	11	0	0	0	29
Cape Mendocino	4	17	4	2	2	0	29
Eureka Plain	2	21	7	5	0	0	35
Mad River	5	3	3	0	0	0	11
Trinidad	0	4	0	0	0	0	4
Redwood Creek	2	4	1	11	0	0	18
Lower Klamath	0	19	6	4	0	0	29
Middle Klamath	7	2	2	1	0	0	12
Salmon River	1	0	0	0	0	0	1
Trinity River	0	4	3	0	0	0	7
South Fork Trinity River	0	0	1	0	0	0	1
Shasta Valley	14	2	7	0	0	0	23
Scott River	5	5	6	5	2	0	23
Smith River	0	18	10	0	0	0	23
Rogue/Winchuk Rivers	0	2	0	0	0	0	2
<b>NUMBER OF PROJECTS</b>	<b>44</b>	<b>144</b>	<b>71</b>	<b>29</b>	<b>4</b>	<b>0</b>	<b>292</b>
<b>OVERALL TOTALS</b>	<b>59</b>	<b>210</b>	<b>114</b>	<b>46</b>	<b>5</b>	<b>4</b>	<b>433</b>

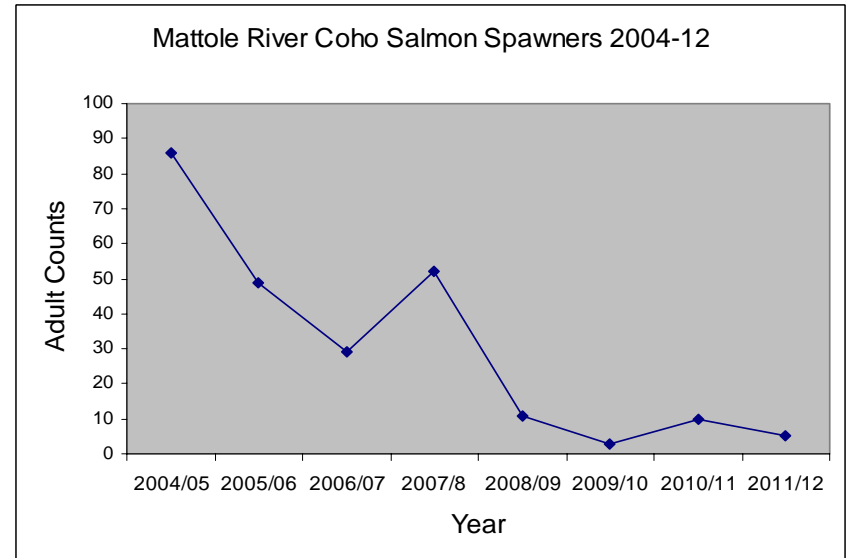
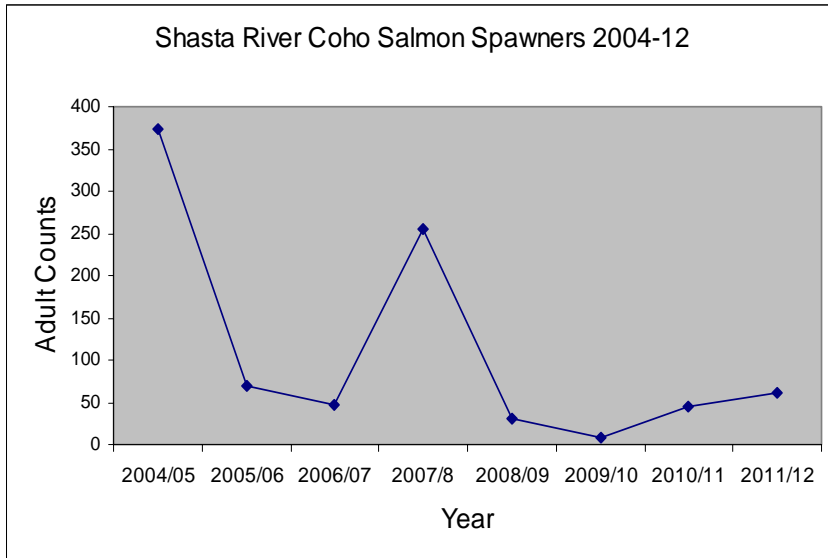
**NUMBERS OF FRGP FUNDED PROJECTS BY PROJECT  
CATEGORY IN THE CCC ESU, 2004-12**



# NUMBERS OF FRGP FUNDED PROJECTS BY PROJECT CATEGORY IN THE SONCC ESU, 2004-12



# Adult Coho Returns - Mattole & Shasta Rivers



# Why do coho continue to decline?

- Scale of habitat restoration is insufficient?
- Wrong types of habitat restoration?
- Projects are not addressing the most important limiting factors for coho recovery?
- Projects are not restoring ecosystem processes?
- Other factors?

# A Recent Study

- A recent study estimated that, given the large variability in fish response to habitat alteration, 100% of habitat would need to be restored to be 95% certain of achieving a 25% increase in coho salmon smolt production.
- The study demonstrated that considerable restoration is needed to produce measurable changes in fish abundance at a watershed scale



# ***Recommendations for future recovery activities***

- The range-wide and watershed recommendations listed in the *Recovery Strategy* should be fully implemented as soon as possible.
- Collaboration with NOAA Fisheries and other agencies in implementing joint coho salmon recovery efforts should be expanded.
- Adequate streamflow regimes and water quality to support healthy coho salmon populations should be implemented.
- All instream barriers and impediments to coho salmon migration should be identified and removed, where their removal will benefit year round survival of the species and facilitate completion of their life cycle.

# Continued

- All threats to the survival of coho salmon populations should be identified and reduced and, wherever possible, removed.
- Watershed and stream habitat restoration programs should identify and target high priority areas for coho salmon recovery. These watersheds should contain the strongest and/or ecologically or genetically significant populations, where conditions still support all life stages of coho salmon.
- A comprehensive coho salmon population monitoring program, including life-cycle stations, should be implemented as soon as possible in streams in the SONCC and CCC ESUs to provide essential data on the current status of coho salmon populations.
- Education programs to facilitate awareness of the needs of coho salmon and the effects of water use practices should be increased. Also, efforts that can be made to maintain or increase recovery of the species specific to watershed conditions should be described.