



**Instream Flow Studies for the Protection
of Public Trust Resources:
A Prioritized Schedule and Estimate of Costs**

Submitted In Accordance with the
Requirements of Water Code Section 85087

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STATE WATER RESOURCES CONTROL BOARD
REGIONAL WATER QUALITY CONTROL BOARDS



STATE OF CALIFORNIA

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Executive Summary

Chapter 5 of the 2009-10 Seventh Extraordinary Session (SB X7 1, Simitian) directs the State Water Resources Control Board (State Water Board) to submit to the Legislature, by December 31, 2010, a prioritized schedule and estimate of costs to complete instream flow studies for two categories of rivers and streams, by two specific deadlines:

- 1) high priority rivers and streams in the Delta watershed that were not covered in the Board's "Final Report on Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem" by 2012; and
- 2) all major rivers and streams outside the Sacramento River watershed by 2018.

The definition of the two stream categories is ambiguous. There are a number of tributaries that are both in the Delta watershed and outside the Sacramento River watershed, including the San Joaquin, Calaveras, Cosumnes, and Mokelumne Rivers. The State Water Board interprets the first category to mean all Delta and Sacramento River tributaries not covered under the Board's "Final Report on Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem." Two additional schedules are prioritized for "all major rivers and streams outside the Sacramento River watershed."

This report identifies 138 rivers and streams for instream flow studies. The total estimated cost to conduct scientific instream flow studies for the high priority rivers and streams tributary to the Delta is \$32.46 million. The total estimated cost to conduct scientific instream flow studies for the high priority rivers and streams outside the Delta watershed is \$107.25 million. The detailed schedules and costs are preceded with a few short discussions on the timelines given in the directive, the organization of schedules, the cost estimates for instream flow studies, and cost estimates for the next logical step: setting instream flow objectives.

I. Timelines for Instream Flow Studies

To comply with requirements of Chapter 5/X7 2009, the Board provides three schedules in this report:

Schedule 1 is for High Priority Rivers and Streams Tributary to the Sacramento River and Delta. Schedules 2 and 3 are for High Priority Rivers and Streams Outside the Sacramento River and Delta Watershed that Support Anadromous Species and Nonanadromous species respectively. Although the Chapter 5/X7 2009 calls for a

completion date for Schedule 1 waterbodies in 2012 and a completion date for Schedule 2 and Schedule 3 waterbodies in 2018, the State Water Board notes, that these deadlines are unrealistic. An instream flow study rooted in sound science requires at least three years of sampling and monitoring. The 2012 deadline would allow for a maximum of one and a half years of study. Realistically, completing instream flow studies and preparing flow recommendations for all rivers and streams listed in this report is a project that will take substantial time to complete.

II. Organization of Schedules and Prioritization Criteria

In developing these schedules, the State Water Board has coordinated with the Department of Fish and Game (as required by Water Code Section 85087) as well as the Regional Water Resources Control Boards (Regional Water Boards). To prioritize the schedules, the State Water Board determined that those streams which serve as habitat for threatened and endangered California anadromous fish, such as coho and chinook salmon and steelhead trout, should be prioritized for instream flow studies. Some of the rivers and streams listed may no longer support anadromous populations. These water bodies are included in the list as candidates for restoration of anadromous populations. Inland streams that do not generally support anadromous populations are prioritized in a separate schedule. Rivers and streams which are located within the habitat range of declining native amphibian and reptile populations, such as the California Red-Legged Frog and Western Pond Turtle, are noted. The presence of these species across all three schedules demonstrates a shared ecological concern between different regions of the state.

- ***Schedule 1 – High Priority Rivers and Streams Tributary to the Sacramento River and Delta.*** There are two priority groups in this schedule. Priority 1 includes rivers and streams that serve as habitat for spring-run chinook salmon. Spring-run Chinook are more adversely affected by lack of flow than fall-run Chinook because they enter fresh waterways as the dry season begins.
- ***Schedule 2 – High Priority Rivers and Streams Outside the Sacramento River and Delta Watershed that Support Anadromous Species.*** There are two priority groups in this schedule. Priority 1 includes rivers and streams that serve as habitat for either Coho Salmon, or Southern California Steelhead. Coho salmon are more sensitive than Chinook or Steelhead. Their range is limited to the North Coast, where they are federally listed as threatened, and the Central Coast where they are federally listed as endangered. Southern California Steelhead are federally listed as endangered.
- ***Schedule 3 – High Priority Rivers and Streams Outside the Sacramento River and Delta Watershed that Support Non-Anadromous Species.*** The rivers and streams in this schedule do not generally serve as habitat for the anadromous species used to prioritize the rest of the schedules. There are two priority groups in this schedule. Priority 1 includes rivers and streams that serve as habitat for the Lahontan Cutthroat Trout, a federally listed threatened species, as well as the Lost

River, which is the sole habitat of the Lost River Sucker, a federally listed endangered species. All other rivers and streams in Schedule 3 list species that are endemic to the Lahontan region and are sensitive according to the California Natural Diversity Database.

Table A summarizes the total estimated costs to conduct these instream flow studies. The specific rivers and streams identified for study are listed in alphabetical order within Table B, C and D.

III. Cost Estimates for Contracted Instream Flow Studies

Given the ecological diversity of the watersheds represented in this list, a generic cost estimate to complete instream flow studies state-wide is difficult to determine. The studies required for any given stream would need to be tailored on a case-by-case basis after the stream has been physically examined. Scientific studies would need to be accomplished through contracted consultants. This means that there are two distinct costs associated with this endeavor: (1) staffing costs to manage the contracts and coordinate the studies, and (2) costs associated with the actual contracted activities themselves. Contracted activities that may need to occur in an instream flow study are flow/habitat modeling, spawning gravel studies, fish passage studies, water temperature monitoring/modeling, developing timing of pulse flows, and compilation of hydrology. The length of study also factors into the cost. Some streams may require longer study periods than others, depending on the complexities of the habitat.

The staffing required to oversee the consultants and manage the contracts also depends on the complexity of the studies required. Out of necessity, the cost estimates included in this report are highly generalized. Each stream is rated on an estimated range of costs:

- **High Cost Range:** the contract cost estimate of instream flow studies is in a range of \$800,000 - \$2 million. For this category, the State Water Board would require one staff position, costing \$150,000 annually to manage the studies for two rivers. Using one individual, over an average three year study period, amounts to \$450,000 in staffing costs to manage the study contracts for two rivers or streams.
- **Mid Cost Range:** the contract cost estimate of instream flow studies is in a range of \$400,000 – \$800,000. For this category, the State Water Board would require one staff position, costing \$150,000 annually to manage the contracts for studies of three rivers or streams. Over an average three year study period, consequently, one position and \$450,000 would be needed, for three rivers or streams.
- **Low Cost Range:** the contract cost estimate of instream flow studies is in a range of \$150,000 - \$400,000. For this category, the State Water Board would require one staff position, costing \$150,000 annually to manage the studies of four rivers or streams. Over an average three year, study period, consequently, the State Water

Board would need \$450,000 to fund a staff position to manage the study contracts for four rivers or streams.

The dollar amount in each schedule summary is based on the high end of each cost estimate range. Staffing and staff cost estimates are prorated to the number of rivers and streams in each priority grouping as described above.

Potential Cost Savings and Existing Studies

The cost estimates included in this report do not reflect studies that already may be in existence for certain streams that would reduce the costs of conducting the instream flow studies. Significant cost savings would be achieved by partnering with organizations already undertaking studies and relying upon existing studies and information that has already been collected and, in some cases, also analyzed. For example, information on instream flow needs in the American River is available in a Surface Water Resources, Inc. report prepared for the Water Forum: *A Draft Policy Document for the Lower American River Flow Management Standard*. The cost for instream flow studies in the American River may, therefore, be far less than the high cost estimate of \$800,000 to \$2 million, if the State Water Board can rely upon the information summarized in this report. Contacting stakeholders and reviewing existing information are, therefore, necessary first steps prior to initiating any new studies.

IV. Cost Estimates for Setting Instream Flow Objectives

Streamflow studies do not result in additional streamflow. If existing streamflows are insufficient to meet environmental needs, voluntary or regulatory actions are necessary to ensure that the flows are made available. After conducting instream flow studies, the next logical step¹ would be to set instream flow objectives as part of the regulatory framework needed to prevent further ecological damage to the Delta or other California rivers and streams. Streamflow objectives can be set administratively either as part of the State Water Board's planning processes, which would then require subsequent implementation actions, or directly as the result of a regulatory water rights action taken to amend specific water right permits and licenses. In either case, the activity would require compliance with: (1) the California Environmental Quality Act (CEQA), (2) the Water Code, and (3) the Administrative Procedures Act, as well as other regulatory requirements. A wide range of costs could occur as a result of these processes. A simple case with a smaller watershed and limited water use would cost approximately \$600,000. A larger watershed with more complex water use issues would cost several million dollars.

¹ The Board notes that partnering with other agencies and organizations may open opportunities for potential solutions that have not been tried before. The point of this section is that further steps beyond the completion of studies will likely be required to protect flows.

Summary of Cost Estimates (Table A)

	Contract Oversight Staffing Estimate	Contracted Scientific Studies Estimate	Total Cost Estimate for Studies and Study Oversight
Schedule 1 (Table B) High-priority Rivers and Streams Tributary to the Sacramento River and Delta			
Priority Group 1	\$4.16 million	\$26.4 million	\$30.56 million
Priority Group 2	\$300,000	\$1.6 million	\$1.9 million
Total Estimated Costs for Schedule 1			\$32.46 million
Schedule 2 (Table C) High Priority Rivers and Streams that Support Anadromous Species			
Priority Group 1	\$10.39 million	\$60.8 million	\$71.19 million
Priority Group 2	\$2.36 million	\$13.2 million	\$15.56 million
Total Estimated Costs for Schedule 2			\$86.75 million
Schedule 3 (Table D) High Priority Rivers and Streams that Support Only Non-Anadromous Species			
Priority Group 1	\$1.12 million	\$4.8 million	\$5.92 million
Priority Group 2	\$2.17 million	\$12.4 million	\$14.57 million
Total Estimated Costs for Schedule 3			\$20.5 million

**V. Detailed Stream Lists with Instream Flow Studies Cost Estimate Range
Schedule 1 (Table B) High Priority Rivers and Streams Tributary to the Sacramento River and Delta**

Water Body	Priority Group	Threatened, Endangered, and Sensitive Aquatic Species Present (or Historically Present) and Other Rationale for Inclusion	Estimated Cost Range for Contracted Studies and Potential Cost Savings ¹
American River	1	<ul style="list-style-type: none"> ▪ Central Valley Spring Chinook Salmon, Fall Chinook Salmon, Central Valley Steelhead Trout, Sierra Nevada Yellow-Legged Frog, Foothill Yellow Legged-Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Draft Recovery Plan ▪ Stream identified by USFWS in 2001 Restoration Plan 	<ul style="list-style-type: none"> ▪ High (\$800,000 - \$2,000,000) ▪ As noted in the text of this report, there are studies underway for lower American River by the Water Forum. Anticipated release of a Draft EIR in summer 2011.
Antelope Creek (Tributary to Sacramento River near Red Bluff)	1	<ul style="list-style-type: none"> ▪ Central Valley Spring Chinook Salmon, Central Valley Steelhead Trout, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Draft Recovery Plan ▪ Stream identified by USFWS in 2001 Restoration Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000)
Battle Creek (Tributary to Sacramento River)	1	<ul style="list-style-type: none"> ▪ Sacramento River Winter Chinook Salmon, Central Valley Spring Chinook Salmon, Central Valley Steelhead Trout, Green Sturgeon, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Draft Recovery Plan ▪ Stream identified by USFWS in 2001 Restoration Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000)
Bear River (Tributary to Feather River)	1	<ul style="list-style-type: none"> ▪ Central Valley Spring Chinook Salmon, Central Valley Steelhead Trout, Sierra Nevada Yellow-Legged Frog, Foothill Yellow-Legged Frog, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Draft Recovery Plan ▪ Stream identified by DFG in 2008 Priority Streams List 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Big Chico Creek	1	<ul style="list-style-type: none"> ▪ Sacramento River Winter Chinook Salmon, Central Valley Spring Chinook Salmon, Central Valley Steelhead Trout, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Draft Recovery Plan ▪ Stream identified by USFWS in 2001 Restoration Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)

¹ Note: until all stakeholders for each stream are contacted, and an evaluation of existing information is complete, a true picture of potential cost savings will not be possible.

Water Body	Priority Group	Threatened, Endangered, and Sensitive Aquatic Species Present (or Historically Present) and Other Rationale for Inclusion	Estimated Cost Range for Contracted Studies and Potential Cost Savings¹
Lower Butte Creek	1	<ul style="list-style-type: none"> ▪ Central Valley Spring Chinook Salmon, Central Valley Steelhead Trout, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Draft Recovery Plan ▪ Stream identified by USFWS in 2001 Restoration Plan ▪ Stream identified by DFG in 2008 Priority Streams List 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000)
Calaveras River	2	<ul style="list-style-type: none"> ▪ Fall Chinook Salmon, Central Valley Steelhead Trout, Sierra Nevada Yellow-Legged Frog, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Draft Recovery Plan ▪ Stream identified by USFWS in 2001 Restoration Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000)
Clear Creek	1	<ul style="list-style-type: none"> ▪ Central Valley Spring Chinook Salmon, Central Valley Steelhead Trout ▪ Stream identified by NMFS in 2009 Draft Recovery Plan ▪ Stream identified by USFWS in 2001 Restoration Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$800,000)
Cosumnes River	2	<ul style="list-style-type: none"> ▪ Fall Chinook Salmon, Central Valley Steelhead Trout, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Draft Recovery Plan ▪ Stream identified by USFWS in 2001 Restoration Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000)
Cottonwood Creek (two forks, tributary to Sacramento River)	1	<ul style="list-style-type: none"> ▪ Central Valley Spring Chinook Salmon, Central Valley Steelhead Trout, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Draft Recovery Plan ▪ Stream identified by USFWS in 2001 Restoration Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Cow Creek (Tributary to Sacramento River)	1	<ul style="list-style-type: none"> ▪ Fall Chinook Salmon, Central Valley Spring Chinook Salmon, Central Valley Steelhead Trout, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Draft Recovery Plan ▪ Stream identified by USFWS in 2001 Restoration Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000)
Deer Creek (Tributary to Sacramento River)	1	<ul style="list-style-type: none"> ▪ Central Valley Spring Chinook Salmon, Central Valley Steelhead Trout, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Draft Recovery Plan ▪ Stream identified by USFWS in 2001 Restoration Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000)

Water Body	Priority Group	Threatened, Endangered, and Sensitive Aquatic Species Present (or Historically Present) and Other Rationale for Inclusion	Estimated Cost Range for Contracted Studies and Potential Cost Savings¹
Fall River	1	<ul style="list-style-type: none"> ▪ Sacramento River Winter Chinook Salmon, Central Valley Spring Chinook Salmon, Central Valley Steelhead Trout ▪ Stream identified by NMFS in 2009 Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Lower Feather River	1	<ul style="list-style-type: none"> ▪ Central Valley Spring Chinook Salmon, Central Valley Steelhead Trout ▪ Stream identified by NMFS in 2009 Draft Recovery Plan ▪ Stream identified by USFWS in 2001 Restoration Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$800,000)
Hat Creek	1	<ul style="list-style-type: none"> ▪ Sacramento River Winter Chinook Salmon, Central Valley Spring Chinook Salmon, Central Valley Steelhead Trout ▪ Stream identified by NMFS in 2009 Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Little Sacramento - Above Shasta	1	<ul style="list-style-type: none"> ▪ Sacramento River Winter Chinook Salmon, Central Valley Spring Chinook Salmon, Central Valley Steelhead Trout ▪ Stream identified by NMFS in 2009 Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000)
McCloud River	1	<ul style="list-style-type: none"> ▪ Sacramento River Winter Chinook Salmon, Central Valley Spring Chinook, Central Valley Steelhead Trout ▪ Stream identified by NMFS in 2009 Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000)
Merced River	1	<ul style="list-style-type: none"> ▪ Central Valley Spring Chinook, Fall Chinook Salmon, Central Valley Steelhead Trout, Yosemite Toad, Sierra Nevada Yellow-Legged Frog, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Draft Recovery Plan ▪ Stream identified by USFWS in 2001 Restoration Plan ▪ Stream identified by DFG in 2008 Priority Streams List 	<ul style="list-style-type: none"> ▪ High (\$800,000 - \$2,000,000)
Mill Creek (Tributary to Sacramento River)	1	<ul style="list-style-type: none"> ▪ Central Valley Spring Chinook Salmon, Central Valley Steelhead Trout, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Draft Recovery Plan ▪ Stream identified by USFWS in 2001 Restoration Plan 	<ul style="list-style-type: none"> ▪ High (\$800,000 - \$2,000,000)
Mokelumne River	1	<ul style="list-style-type: none"> ▪ Central Valley Spring Chinook Salmon, Fall Chinook Salmon, Central Valley Steelhead Trout, Sierra Nevada Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Draft Recovery Plan ▪ Stream identified by USFWS in 2001 Restoration Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000)
Pit River	1	<ul style="list-style-type: none"> ▪ Sacramento River Winter Chinook Salmon, Central Valley Spring Chinook, Central Valley Steelhead Trout ▪ Stream identified by NMFS in 2009 Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000)

Water Body	Priority Group	Threatened, Endangered, and Sensitive Aquatic Species Present (or Historically Present) and Other Rationale for Inclusion	Estimated Cost Range for Contracted Studies and Potential Cost Savings¹
Interdam Sacramento – Shasta to Keswick	1	<ul style="list-style-type: none"> ▪ Sacramento River ESU Winter Chinook Salmon, Central Valley Spring Chinook, Central Valley Steelhead Trout ▪ Stream identified by NMFS in 2009 Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000)
Upper Sacramento - - Keswick to Red Bluff	1	<ul style="list-style-type: none"> ▪ Sacramento River Winter Chinook Salmon, Central Valley Spring Chinook Salmon, Central Valley Steelhead Trout ▪ Stream identified by NMFS in 2009 Draft Recovery Plan ▪ Stream identified by USFWS in 2001 Restoration Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000)
Lower San Joaquin (below Merced River)	1	<ul style="list-style-type: none"> ▪ Central Valley Spring Chinook Salmon, Fall Chinook Salmon, Central Valley Steelhead Trout, Green Sturgeon, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Draft Recovery Plan ▪ Stream identified by USFWS in 2001 Restoration Plan 	<ul style="list-style-type: none"> ▪ High (\$800,000 - \$2,000,000)
Upper San Joaquin River	1	<ul style="list-style-type: none"> ▪ Central Valley Spring Chinook Salmon, Fall Chinook Salmon, Central Valley Steelhead Trout, Green Sturgeon, Sierra Nevada Yellow-Legged Frog, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Draft Recovery Plan ▪ Stream identified by USFWS in 2001 Restoration Plan 	<ul style="list-style-type: none"> ▪ High (\$800,000 - \$2,000,000)
Stanislaus River	1	<ul style="list-style-type: none"> ▪ Central Valley Spring Chinook Salmon, Fall Chinook Salmon, Central Valley Steelhead Trout, Yosemite Toad, Sierra Nevada Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Draft Recovery Plan ▪ Stream identified by USFWS in 2001 Restoration Plan 	<ul style="list-style-type: none"> ▪ High (\$800,000 - \$2,000,000)
Tuolumne River	1	<ul style="list-style-type: none"> ▪ Central Valley Spring Chinook Salmon, Fall Chinook Salmon, Central Valley Steelhead Trout, Steelhead Trout, Yosemite Toad, Sierra Nevada Yellow-Legged Frog, Foothill Yellow-Legged Frog, California Red Legged Frog, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Draft Recovery Plan ▪ Stream identified by USFWS in 2001 Restoration Plan ▪ Stream identified by DFG in 2008 Priority Streams List 	<ul style="list-style-type: none"> ▪ High (\$800,000 - \$2,000,000)
Yuba River	1	<ul style="list-style-type: none"> ▪ Central Valley Spring Chinook Salmon, Central Valley Steelhead Trout ▪ Stream identified by NMFS in 2009 Draft Recovery Plan ▪ Stream identified by USFWS in 2001 Restoration Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000)

Schedule 2 (Table C) High Priority Rivers and Streams that Support Anadromous Species

Water Body	Priority Group	Threatened, Endangered, and Sensitive Aquatic Species Present (or Historically Present) and Other Rationale for Inclusion	Estimated Cost Range for Contracted Studies and Potential Cost Savings ²
Alameda Creek	2	<ul style="list-style-type: none"> ▪ Winter Steelhead Trout, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by CEMAR in 2007 Watershed Evaluation 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Albion River	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Winter Steelhead Trout, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan ▪ Stream identified by NMFS in 2010 Recovery Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000)
Aptos Creek	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Winter Steelhead Trout, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan ▪ Stream identified by NMFS in 2010 Recovery Plan ▪ Low water levels in summer months 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000)
Arroyo de la Cruz (San Luis Obispo County)	2	<ul style="list-style-type: none"> ▪ Winter Steelhead Trout, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Watershed may be developed in the near future 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Arroyo Siquit	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, California Red-Legged Frog ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Bear Creek (Tributary to West Fork San Gabriel)	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Bear River (Humboldt County)	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Chinook Salmon, Steelhead Trout, Foothill Yellow-Legged Frog, Northwestern Salamander, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Big River (Two Forks)	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Winter Steelhead Trout, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan 	<ul style="list-style-type: none"> ▪ High (\$800,000 - \$2,000,000)

² Note: until all stakeholders for each stream are contacted, and an evaluation of existing information is complete, a true picture of potential cost savings will not be possible.

Water Body	Priority Group	Threatened, Endangered, and Sensitive Aquatic Species Present (or Historically Present) and Other Rationale for Inclusion	Estimated Cost Range for Contracted Studies and Potential Cost Savings²
		<ul style="list-style-type: none"> ▪ Stream identified by NMFS in 2010 Recovery Plan 	
Big Sur River	2	<ul style="list-style-type: none"> ▪ Winter Steelhead Trout, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by DFG in 2008 Priority Streams List 	▪ High (\$800,000 - \$2,000,000)
Carmel River	2	<ul style="list-style-type: none"> ▪ Winter Steelhead Trout, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by DFG in 2008 Priority Streams List 	▪ Mid (\$400,000 - \$800,000)
Carpinteria Creek	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by DFG in 2008 Priority Streams List ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	▪ Low (\$150,000 - \$400,000)
Conejo Creek	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, California Red-Legged Frog ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	▪ Low (\$150,000 - \$400,000)
Coyote Creek (Marin County)	2	<ul style="list-style-type: none"> ▪ Winter Steelhead Trout, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by CEMAR in 2007 Watershed Evaluation 	▪ Low (\$150,000 - \$400,000)
Dos Pueblos Canyon Creek	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by DFG in 2008 Priority Streams List ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	▪ Low (\$150,000 - \$400,000)
Dume Creek (Zuma Canyon, Los Angeles County)	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	▪ Low (\$150,000 - \$400,000)
South Fork Eel River	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Fall Chinook Salmon, Steelhead Trout, Foothill Yellow-Legged Frog, Northwestern, Salamander, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan 	▪ High (\$800,000 - \$2,000,000)
Middle Fork Eel River	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Chinook Salmon, Winter and Summer Steelhead Trout, Foothill Yellow-Legged Frog, Northwestern Salamander, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan 	▪ High (\$800,000 - \$2,000,000)

Water Body	Priority Group	Threatened, Endangered, and Sensitive Aquatic Species Present (or Historically Present) and Other Rationale for Inclusion	Estimated Cost Range for Contracted Studies and Potential Cost Savings²
Lower Eel River	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Chinook Salmon, Steelhead Trout, Green Sturgeon, Foothill Yellow-Legged Frog, Northwestern Salamander, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪
Middle Main Eel River	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Chinook Salmon, Steelhead Trout, Foothill Yellow-Legged Frog, Northwestern Salamander, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪
North Fork Eel River	2	<ul style="list-style-type: none"> ▪ Chinook Salmon, Steelhead Trout, Foothill Yellow-Legged Frog, Northwestern Salamander, Western Pond Turtle 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪
Upper Main Eel River	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Chinook Salmon, Steelhead Trout, Foothill Yellow-Legged Frog, Northwestern Salamander, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Escondido Canyon Creek (Los Angeles County)	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Fish Fork (Tributary to San Gabriel)	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, Western Pond Turtle 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Garcia River	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Pink Salmon, Winter Steelhead Trout, California Red-Legged Frog, Northwestern Salamander, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan ▪ Stream identified by NMFS in 2010 Recovery Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪
Gazos Creek	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Winter Steelhead Trout, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan ▪ Stream identified by NMFS in 2010 Recovery Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Guadalupe River	2	<ul style="list-style-type: none"> ▪ Winter Steelhead Trout, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by CEMAR in 2007 Watershed Evaluation 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪
Gualala River	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Winter Steelhead Trout, California Red-Legged Frog, Foothill Yellow-Legged Frog, Western Pond 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪

Water Body	Priority Group	Threatened, Endangered, and Sensitive Aquatic Species Present (or Historically Present) and Other Rationale for Inclusion	Estimated Cost Range for Contracted Studies and Potential Cost Savings²
		<ul style="list-style-type: none"> Turtle ▪ Stream identified by DFG in 2004 Recovery Plan ▪ Stream identified by NMFS in 2010 Recovery Plan 	
Hopper Canyon Creek	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, California Red-Legged Frog, Foothill Yellow-Legged Frog, Arroyo Toad, Western Pond Turtle 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Middle Klamath River	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Winter and Summer Steelhead Trout, Green Sturgeon, Foothill Yellow-Legged Frog, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan 	<ul style="list-style-type: none"> ▪ High (\$800,000 - \$2,000,000)
Lower Klamath River	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Winter and Summer Steelhead Trout, Green Sturgeon, Shortnose Sucker, Foothill Yellow-Legged Frog, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪
Lagunitas Creek	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Winter Steelhead Trout, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan ▪ Stream identified by NMFS in 2010 Recovery Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪
Lake Casitas Tributaries	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, California Red-Legged Frog, Yellow-Legged Frog, Western Pond Turtle 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪
Little River	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Chinook Salmon, Steelhead Trout, California Red-Legged Frog, Foothills Yellow-Legged Frog, Northwestern Salamander, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪
Los Alisos Canyon Creek	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, California Red-Legged Frog, Western Pond Turtle 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Malibu Creek	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, Tidewater Goby, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Matilija Creek (Two Forks)	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle, Arroyo Toad ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪

Water Body	Priority Group	Threatened, Endangered, and Sensitive Aquatic Species Present (or Historically Present) and Other Rationale for Inclusion	Estimated Cost Range for Contracted Studies and Potential Cost Savings²
Mattole River	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Chinook Salmon, Steelhead Trout, Foothill Yellow-Legged Frog, Northwestern Salamander, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan ▪ Stream identified by DFG in 2008 Priority Streams List 	<ul style="list-style-type: none"> ▪ High (\$800,000 - \$2,000,000) ▪ Streamflow enhancement projects in the Mattole Headwaters are in progress by Trout Unlimited.
Murietta Canyon Creek	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, California Red-Legged Frog, Yellow-Legged Frog, Western Pond Turtle, Arroyo Toad ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Napa River	2	<ul style="list-style-type: none"> ▪ Winter Steelhead Trout, Chinook Salmon, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by CEMAR in 2007 Watershed Evaluation 	<ul style="list-style-type: none"> ▪ High (\$800,000 - \$2,000,000)
Navarro River	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Winter Steelhead Trout, Foothill Yellow-Legged Frog, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan ▪ Stream identified by NMFS in 2010 Recovery Plan ▪ Stream identified by DFG in 2008 Priority Streams List 	<ul style="list-style-type: none"> ▪ High (\$800,000 - \$2,000,000)
Noyo River	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Steelhead Trout, Foothill Yellow-Legged Frog, California Red-Legged Frog, Northwestern Salamander, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan ▪ Stream identified by NMFS in 2010 Recovery Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Otay River	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, Arroyo Toad, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪
Piru Creek (Incl. Lockwood Creek)	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, California Red-Legged Frog, Foothill Yellow-Legged Frog, Arroyo Toad, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Redwood Creek (Marin County)	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Winter Steelhead Trout, California Red-Legged Frog, Foothill Yellow-Legged Frog, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan ▪ Stream identified by NMFS in 2010 Recovery Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)

Water Body	Priority Group	Threatened, Endangered, and Sensitive Aquatic Species Present (or Historically Present) and Other Rationale for Inclusion	Estimated Cost Range for Contracted Studies and Potential Cost Savings²
		<ul style="list-style-type: none"> ▪ Stream identified by CEMAR in 2007 Watershed Evaluation ▪ Stream identified by DFG in 2008 Priority Streams List 	
Russian River (Lower, Middle, and Upper)	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Fall Chinook Salmon, Steelhead Trout, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan ▪ Stream identified by NMFS in 2010 Recovery Plan 	<ul style="list-style-type: none"> ▪ High (\$800,000 - \$2,000,000) ▪ Streamflow enhancement projects are in progress by Trout Unlimited for Lower Russian River Tributaries: Grape Creek, Mill Creek, Dutch Bill Creek, Green Valley Creek, Mark West Creek.
Salinas River	2	<ul style="list-style-type: none"> ▪ Winter Steelhead Trout, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Watershed significant to both habitat and economy, but with no instream flow requirements 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪
Salmon River	2	<ul style="list-style-type: none"> ▪ Coho Salmon, Chinook Salmon, Steelhead Trout, Foothill Yellow-Legged Frog, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪
San Antonio Creek (Santa Barbara County)	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
San Benito River	2	<ul style="list-style-type: none"> ▪ Winter Steelhead Trout, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪
San Dieguito Creek	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
San Francisquito Creek	2	<ul style="list-style-type: none"> ▪ Winter Steelhead Trout, California Red-Legged Trout, Western Pond Turtle ▪ Stream identified by CEMAR in 2007 Watershed Evaluation 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
San Gabriel River (Main Stem, North Fork, West Fork, East Fork)	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ High (\$800,000 - \$2,000,000)
San Geronimo Creek	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Winter Steelhead Trout, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
San Gregorio Creek	1	<ul style="list-style-type: none"> ▪ Coho Salmon, California Red-Legged Frog, Western Pond 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)

Water Body	Priority Group	Threatened, Endangered, and Sensitive Aquatic Species Present (or Historically Present) and Other Rationale for Inclusion	Estimated Cost Range for Contracted Studies and Potential Cost Savings ²
		<ul style="list-style-type: none"> Turtle ▪ Stream identified by NMFS in 2010 Recovery Plan ▪ Stream identified by DFG in 2008 Priority Streams List 	<ul style="list-style-type: none"> ▪ Studies underway by American Rivers and Stillwater.
San Juan Creek (Incl. Arroyo Trabuco)	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, California Red-Legged Frog, Arroyo Toad, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪
San Lorenzo River	2	<ul style="list-style-type: none"> ▪ Coho Salmon, Winter Steelhead Trout, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan ▪ Stream identified by NMFS in 2010 Recovery Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪
San Luis Rey River	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, California Red-Legged Frog, Arroyo Toad, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪
San Mateo Creek	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, Arroyo Toad, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪
San Onofre Creek	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, Arroyo Toad, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
San Vicente Creek (Santa Cruz)	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Winter Steelhead Trout, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan ▪ Stream identified by NMFS in 2010 Recovery Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Santa Anita Canyon Creek	1	<ul style="list-style-type: none"> ▪ Southern Steelhead, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Santa Clara River	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, California Red-Legged Frog, Foothill Yellow-Legged Frog, Arroyo Toad, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Public Review Draft 	<ul style="list-style-type: none"> ▪ High (\$800,000 - \$2,000,000)

Water Body	Priority Group	Threatened, Endangered, and Sensitive Aquatic Species Present (or Historically Present) and Other Rationale for Inclusion	Estimated Cost Range for Contracted Studies and Potential Cost Savings²
		Recovery Plan	
Santa Margarita River	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, Arroyo Toad, Western Pond Turtle ▪ Stream identified by DFG in 2008 Priority Streams List ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪
Santa Maria River	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by DFG in 2008 Priority Streams List ▪ Stream provides steelhead migratory access to Sisquoc River ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪
Santa Paula Creek	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, California Red-Legged Frog, Foothill Yellow-Legged Frog, Arroyo Toad, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Santa Rosa Creek	2	<ul style="list-style-type: none"> ▪ Winter Steelhead Trout, California Red-Legged Frog, Western Pond Turtle ▪ Creek often dry in lower reaches 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪
Santa Ynez River	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, Tidewater Goby, Foothill Yellow-Legged Frog, California Red-Legged Frog, Arroyo Toad, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪
Scott River	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Chinook Salmon, Steelhead Trout, Scott Bar Salamander, Long-toed Salamander, Foothill Yellow-Legged Frog ▪ Stream identified by DFG in 2004 Recovery Plan ▪ Stream identified by DFG in 2008 Priority Streams List ▪ Recent stream de-watering events 	<ul style="list-style-type: none"> ▪ High (\$800,000 - \$2,000,000)
Sespe Creek (Incl. tributaries)	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, California Red-Legged Frog, Foothill Yellow-Legged Frog, Arroyo Toad, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ High (\$800,000 - \$2,000,000)

Water Body	Priority Group	Threatened, Endangered, and Sensitive Aquatic Species Present (or Historically Present) and Other Rationale for Inclusion	Estimated Cost Range for Contracted Studies and Potential Cost Savings²
Shasta River	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Chinook Salmon, Steelhead Trout, Shasta Salamander, Long-toed Salamander ▪ Stream identified by DFG in 2004 Recovery Plan ▪ Stream identified by DFG in 2008 Priority Streams List 	<ul style="list-style-type: none"> ▪ High (\$800,000 - \$2,000,000)
Sisar Creek	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, California Red-Legged Frog, Foothill Yellow-Legged Frog, Arroyo Toad, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Sisquoc River (Incl. La Brea Creek (Two Forks))	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪
Smith River	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Winter and Summer Steelhead Trout, Green Sturgeon, Chinook Salmon, Foothill Yellow-Legged Frog, Northwestern Salamander, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan 	<ul style="list-style-type: none"> ▪ High (\$800,000 - \$2,000,000)
Solstice Creek	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Sonoma Creek	2	<ul style="list-style-type: none"> ▪ Winter Steelhead Trout, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪
Soquel Creek	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Steelhead Trout, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by NMFS in 2010 Recovery Plan ▪ Watershed adjudicated but without instream flow requirements 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Suisun Creek	2	<ul style="list-style-type: none"> ▪ Winter Steelhead Trout, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by CEMAR in 2007 Watershed Evaluation 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Sweetwater Creek (San Diego County)	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, California Red-Legged Frog, Arroyo Toad, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Topanga Canyon Creek	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, California Red-Legged Frog, 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)

Water Body	Priority Group	Threatened, Endangered, and Sensitive Aquatic Species Present (or Historically Present) and Other Rationale for Inclusion	Estimated Cost Range for Contracted Studies and Potential Cost Savings²
		<ul style="list-style-type: none"> Western Pond Turtle ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	
Trancas Canyon	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, California Red-Legged Frog, Western Pond Turtle 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Sweetwater Creek (San Diego County)	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, California Red-Legged Frog, Arroyo Toad, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Topanga Canyon Creek	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Trancas Canyon	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout, California Red-Legged Frog, Western Pond Turtle 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Trinity River (Lower, Middle and Upper)	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Winter and Summer Steelhead Trout, Fall and Spring Chinook Salmon, Foothill Yellow-Legged Frog, Long-toed Salamander, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan 	<ul style="list-style-type: none"> ▪ High (\$800,000 - \$2,000,000)
South Fork Trinity River	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Winter and Summer Steelhead Trout, Fall and Spring Chinook Salmon, Foothill Yellow-Legged Frog, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪
Van Duzen River	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Chinook Salmon, Steelhead Trout, Foothill Yellow-Legged Frog, Northwestern Salamander, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪
Ventura River	1	<ul style="list-style-type: none"> ▪ Southern Steelhead Trout California Red-Legged Frog, Foothill Yellow-Legged Frog, Arroyo Toad, Western Pond Turtle ▪ Stream identified by NMFS in 2009 Public Review Draft Recovery Plan 	<ul style="list-style-type: none"> ▪ High (\$800,000 - \$2,000,000)
Waddell Creek	1	<ul style="list-style-type: none"> ▪ Coho Salmon, Winter Steelhead Trout, Foothill Yellow-Legged Frog, California Red-Legged Frog, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)

Water Body	Priority Group	Threatened, Endangered, and Sensitive Aquatic Species Present (or Historically Present) and Other Rationale for Inclusion	Estimated Cost Range for Contracted Studies and Potential Cost Savings ²
Winchuck River	1	<ul style="list-style-type: none"> ▪ Stream identified by NMFS in 2010 Recovery Plan ▪ Coho Salmon, Winter Steelhead Trout, Chinook Salmon, Cutthroat Trout, Foothill Yellow-Legged Frog, Northwestern Salamander, Western Pond Turtle ▪ Stream identified by DFG in 2004 Recovery Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000)

**Schedule 3 (Table D)
High Priority Rivers and Streams that Support Only Non-Anadromous Species**

Water Body	Priority Group	Threatened, Endangered, or Sensitive Aquatic Species Present (or Historically Present) and Other Rationale for Inclusion	Estimated Cost Range for Contracted Studies and Potential Cost Savings ³
Buckeye Creek	1	<ul style="list-style-type: none"> ▪ Lahontan Cutthroat Trout, Sierra Nevada Yellow-Legged Frog, Yosemite Toad ▪ East Walker River watershed identified by USFWS in 1994 Recover Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Cow Head Slough	2	<ul style="list-style-type: none"> ▪ Cow Head Lake Tui Chub ▪ Stream identified by USFWS in 1998 Recovery Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Deep Creek	2	<ul style="list-style-type: none"> ▪ Mojave Tui Chub, California Red-Legged Frog, Sierra Madre Yellow-Legged Frog, Arroyo Toad, Western Pond Turtle ▪ Stream identified by NPS in 2004 Workshop to Revisit Recovery Plan ▪ Mojave River watershed identified by USFWS in 1984 Recovery plan. 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Escondido Creek (San Diego County)	2	<ul style="list-style-type: none"> ▪ Western Pond Turtle ▪ Stream provides habitat for species classified as sensitive per the California Natural Diversity Database 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Green Creek	1	<ul style="list-style-type: none"> ▪ Lahontan Cutthroat Trout, Sierra Nevada Yellow-Legged Frog, Yosemite Toad ▪ East Walker River watershed identified by USFWS in 1994 Recover Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Hot Creek	2	<ul style="list-style-type: none"> ▪ Owens Sucker, California Floater Freshwater Mussel ▪ Stream provides habitat for species classified as sensitive 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)

³ Note: until all stakeholders for each stream are contacted, and an evaluation of existing information is complete, a true picture of potential cost savings will not be possible.

Water Body	Priority Group	Threatened, Endangered, or Sensitive Aquatic Species Present (or Historically Present) and Other Rationale for Inclusion	Estimated Cost Range for Contracted Studies and Potential Cost Savings³
		per the California Natural Diversity Database	
Independence Creek	1	<ul style="list-style-type: none"> ▪ Lahontan Cutthroat Trout, Sierra Nevada Yellow-Legged Frog ▪ Little Truckee River watershed identified by USFWS in 1994 Recovery Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000) ▪ Flow studies in progress by the Department of Water Resources.
Lee Vining Creek	2	<ul style="list-style-type: none"> ▪ Sierra Nevada Yellow-Legged Frog, Yosemite Toad, Mount Lyell Salamander ▪ Stream provides habitat for species classified as sensitive per the California Natural Diversity Database 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪
Little Rock (Littlerock) Creek (Eastern LA County)	2	<ul style="list-style-type: none"> ▪ Sierra Madre Yellow-Legged Frog, Arroyo Toad ▪ Stream provides habitat for species classified as sensitive per the California Natural Diversity Database 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪
Little Truckee River	1	<ul style="list-style-type: none"> ▪ Lahontan Cutthroat Trout, Sierra Nevada Yellow-Legged Frog ▪ Little Truckee River Watershed identified by USFWS in 1994 Recovery Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪
Los Peñasquitos Canyon Creek	2	<ul style="list-style-type: none"> ▪ Arroyo Toad, Western Pond Turtle ▪ Stream provides habitat for species classified as sensitive per the California Natural Diversity Database 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Lost River	1	<ul style="list-style-type: none"> ▪ Shortnose Sucker, Lost River Sucker, Western Pond Turtle ▪ Stream provides habitat for species classified as sensitive per the California Natural Diversity Database 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000) ▪
Mammoth Creek	2	<ul style="list-style-type: none"> ▪ Owens Sucker, California Floater Freshwater Mussel ▪ Stream provides habitat for species classified as sensitive per the California Natural Diversity Database 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Mill Creek (Mono Basin)	2	<ul style="list-style-type: none"> ▪ Sierra Nevada Yellow-Legged Frog, Yosemite Toad, Mount Lyell Salamander ▪ Stream provides habitat for species classified as sensitive per the California Natural Diversity Database 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Mojave River and Tributaries	2	<ul style="list-style-type: none"> ▪ Mojave Tui Chub, California Red-Legged Frog, Sierra Madre Yellow-Legged Frog, Arroyo Toad, Western Pond Turtle ▪ Mojave River watershed identified by USFWS in 1984 Recovery plan. 	<ul style="list-style-type: none"> ▪ High (\$800,000 - \$2,000,000)
West Fork Mojave River	2	<ul style="list-style-type: none"> ▪ Mojave Tui Chub, California Red-Legged Frog, Sierra Madre Yellow-Legged Frog, Arroyo Toad, Western Pond 	<ul style="list-style-type: none"> ▪ High (\$800,000 - \$2,000,000)

Water Body	Priority Group	Threatened, Endangered, or Sensitive Aquatic Species Present (or Historically Present) and Other Rationale for Inclusion	Estimated Cost Range for Contracted Studies and Potential Cost Savings ³
		Turtle <ul style="list-style-type: none"> ▪ Mojave River watershed identified by USFWS in 1984 Recovery plan. 	
Owens River and Tributaries	2	<ul style="list-style-type: none"> ▪ Owens Tui Chub, Owens Speckled Dace, Owens Sucker, Owens Pupfish, Northern Leopard Frog, Sierra Nevada Yellow-Legged Frog ▪ Stream provides habitat for species classified as sensitive per the California Natural Diversity Database 	<ul style="list-style-type: none"> ▪ High (\$800,000 - \$2,000,000)
Pine Creek (Tributary to Eagle Lake, Lassen County)	2	<ul style="list-style-type: none"> ▪ Eagle Lake Rainbow Trout ▪ Stream provides habitat for species classified as sensitive per the California Natural Diversity Database 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000)
Reverse Creek	2	<ul style="list-style-type: none"> ▪ Sierra Nevada Yellow-Legged Frog, Yosemite Toad, Mount Lyell Salamander ▪ Stream provides habitat for species classified as sensitive per the California Natural Diversity Database 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Rush Creek	2	<ul style="list-style-type: none"> ▪ Sierra Nevada Yellow-Legged Frog, Yosemite Toad, Mount Lyell Salamander ▪ Stream provides habitat for species classified as sensitive per the California Natural Diversity Database 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000)
Robinson Creek	1	<ul style="list-style-type: none"> ▪ Lahontan Cutthroat Trout, Sierra Nevada Yellow-Legged Frog, Yosemite Toad ▪ East Walker River watershed identified by USFWS in 1994 Recover Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
Sagehen Creek	1	<ul style="list-style-type: none"> ▪ Lahontan Cutthroat Trout, Sierra Nevada Yellow-Legged Frog ▪ Little Truckee River Watershed identified by USFWS in 1994 Recovery Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000) ▪ Flow studies in progress by the Department of Water Resources.
Virginia Creek	1	<ul style="list-style-type: none"> ▪ Lahontan Cutthroat Trout, Sierra Nevada Yellow-Legged Frog, Yosemite Toad ▪ East Walker River watershed identified by USFWS in 1994 Recover Plan 	<ul style="list-style-type: none"> ▪ Low (\$150,000 - \$400,000)
East Walker River	1	<ul style="list-style-type: none"> ▪ Lahontan Cutthroat Trout, Sierra Nevada Yellow-Legged Frog, Yosemite Toad ▪ East Walker River watershed identified by USFWS in 1994 Recover Plan 	<ul style="list-style-type: none"> ▪ Mid (\$400,000 - \$800,000)

VI. Public Workshop and Possible Next Steps

On November 2, 2010, the State Water Board issued a Notice of Opportunity for Public Comment and Notice of Public Workshop regarding an earlier draft version of this report. The notice for the workshop requested information on:

- (1) Whether there are streams that should be added to the list;
- (2) Whether there are existing and adequate streamflow studies for streams that are on the list; and
- (3) Whether there is other information available on likely costs that will help inform the State Water Board.

The State Water Board received 12 comment letters by the November 10th deadline, all of which are posted and available for viewing on the State Water Board's website at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/ .

On November 16, 2010, the State Water Board held the public workshop. Three individuals provided verbal comments before a quorum to the State Water Board. Additional changes made to this report as a result of the comments received include:

- The addition of San Gregorio Creek in San Mateo County. This creek was recommended as an addition by The Nature Conservancy and noted in the Trout Unlimited (TU) comment letter as having instream flow studies in progress. It was identified as a priority stream in the 2008 DFG list for instream flow studies and the 2010 NMFS Coho Recovery Plan.
- Streamflow enhancement projects in process for lower Russian River tributaries were added to the cost estimate column of Schedule 2. The organizations working on these enhancement projects may have study information that can defray our initial cost estimate, though a detailed examination would be needed.
- The rationale for including the specific rivers and streams under each Schedule was expanded.

The most effective way for the state to use limited resources towards improving instream flows is to partner with stakeholders and other organizations to avoid duplicative studies and supplement work already being done. For each water body, the following six steps are recommended before the initiation of any new studies:

1. A review and analysis of existing studies and literature.
2. A physical site visit to specific locations.
3. The identification and inclusion of stakeholders.
4. An analysis of known fisheries impacts and/or water quality impairments.
5. The development of an initial list of scientific studies that may be required.
6. The development of a list of water right users and water rights.

VII. Conclusions

In accordance with Chapter 5 of the 2009-10 Seventh Extraordinary Session, the State Water Board developed a prioritized schedule and estimate of costs to complete instream flow studies for:

- (1) high priority rivers and streams in the Delta watershed that were not covered in the Board's "Final Report on Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem" by 2012; and
- (2) all major rivers and streams outside the Sacramento River watershed by 2018.

The purpose of this report is to inform the Legislature as to the complexities and resources involved in completing instream flow studies and to identify waterbodies that serve as habitat for threatened and endangered species that may benefit from instream flow studies. Most of the rivers and streams identified in this report were previously identified in recovery strategies by other state and federal agencies and third party non-governmental organizations. More research is required before this report can serve as an official plan, and even then it will need to be continually updated as new information is discovered and priorities change. The most effective way to use limited resources is for the state to serve as a liaison between the stakeholders already engaged in flow studies and to supplement those studies wherever it is determined to be necessary.

This report identifies 138 rivers and streams for instream flow studies. The total estimated cost to conduct scientific instream flow studies for the 2012 deadline is \$32.46 million. The total estimated cost to conduct scientific instream flow studies for the 2018 deadline is \$107.25 million.

Literature Cited

Center for Ecosystem Management and Restoration (CEMAR) 2007. San Francisco Estuary Watersheds Evaluation, Identifying Promising Locations for Steelhead Restoration in Tributaries of the San Francisco Estuary. Prepared for the California State Coastal Conservancy and the Resources Legacy Foundation. August 2007. 92pp
<http://www.cemar.org/SFEWE/Full%20report.pdf>

National Marine Fisheries Service. (NMFS) 2009. Public Draft Recovery Plan for the Evolutionarily Significant Units of Sacramento River Winter-run Chinook Salmon and Central Valley Spring-run Chinook Salmon and the Distinct Population Segment of Central Valley Steelhead. Sacramento Protected Resources Division. October 2009
http://swr.nmfs.noaa.gov/recovery/cent_val/Public_Draft_Recovery_Plan.pdf

National Marine Fisheries Service. (NMFS) 2010. Public Draft Recovery Plan for Central California Coast coho salmon (*Oncorhynchus kisutch*) Evolutionarily Significant Unit. National Marine Fisheries Service, Southwest Region, Santa Rosa, California.
http://swr.nmfs.noaa.gov/recovery/coho/CCC_Coho_Recovery_Plan_FINAL_PLAN_031810.pdf

National Marine Fisheries Service. (NMFS) 2009. Public Review Draft Southern California Steelhead Recovery Plan. July 2009. 430pp.
http://swr.nmfs.noaa.gov/recovery/So_Cal/Southern_California_Steelhead_Public_Draft_Recovery_Plan.pdf

National Marine Fisheries Service (NMFS) 2007. Recovery Outline for the Distinct Population Segment of Southern California Coast Steelhead. September 2007. 56pp.
http://www.swr.noaa.gov/recovery/FINAL_2007_Recovery_Outline_for_the_DPS_of_Southern_CA_Coast_Steelhead_091407.pdf

National Park Service (NPS) 2004. Report on a Workshop to Revisit the Mohave Tui Chub Recovery Plan and a Management Action Plan. 72pp.
<http://www.nps.gov/moja/naturescience/upload/ACF46F1.pdf>

United States Fish and Wildlife Service (USFWS) 1999. Arroyo southwestern toad *Bufo microscaphus californicus* recovery plan. U.S. Fish and Wildlife Service, Portland, Oregon. 119pp.
http://ecos.fws.gov/docs/recovery_plan/990724.pdf

United States Fish and Wildlife Service (FWS) 2001. Final Restoration Plan for the Anadromous Fish Restoration Program, A plan to increase natural production of anadromous fish in the Central Valley of California. January 2001. 146pp
<http://www.fws.gov/stockton/afpr/documents/finalrestplan.pdf>

United States Fish and Wildlife Service (USFWS) 1994. Lahontan cutthroat trout, *Oncorhynchus clarki henshawi*, Recovery Plan. 147pp
http://ecos.fws.gov/docs/recovery_plans/1995/950130.pdf

United States Fish and Wildlife Service (USFWS) 1984. Recovery Plan for the Mohave tui chub, *Gila bicolor mohavensis*. U.S. Fish and Wildlife Service, Portland, Oregon. 56 pp.
http://www.fws.gov/ecos/ajax/docs/recovery_plan/840912.pdf

United State Fish and Wildlife Service (USFWS) 1998. Recovery Plan for the Native Fishes of the Warner Basin and Alkali Subbasin. Portland Oregon. 86pp.

California Department of Fish and Game. (DFG) 2004. Recovery strategy for California coho salmon. Report to the California Fish and Game Commission. 594pp.

California Department of Fish and Game. (DFG) 2008. Priority Stream List for Instream Flow Assessment Prepared by the Department of Fish and Game Pursuant to Public Resources Code (PRC) Section 10004. August 2004.

California Department of Fish and Game (DFG) 2010. California Natural Diversity Database (CNDDDB)
<http://www.dfg.ca.gov/biogeodata/cnddb/>