

**CALIFORNIA DEPARTMENT OF FISH AND GAME
INSTREAM FLOW PROGRAM**

**ANNUAL REPORT
2011**



**California Department of Fish and Game
Water Branch, Instream Flow Program
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February 1, 2012

Instream Flow Program Annual Report 2011

Preface

The primary objective of the Department's Instream Flow Program is to develop scientific information on the relationships between flow and available stream habitat to determine what flows are needed to maintain healthy conditions for fish and wildlife. Relationships between flow and habitat will be developed on the selected streams for each species' critical lifestage needs, including spawning, rearing and migration. The Department has interest in assuring that water flows within streams are maintained at levels which are adequate for long-term protection, maintenance and proper stewardship of those resources.

This annual report outlines the activities of the Department in 2011 to implement Public Resources Code sections 10000-10005 through the Department's Instream Flow Program, followed by a general workplan for 2012.

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I. PROGRAM ELEMENTS

In calendar year 2011, the Department's Instream Flow Program included the following program elements and activities related to instream flow:

Instream Flow Program Web Site

The Department maintained a public internet web site for the Instream Flow Program in 2011. The web site contains links to instream flow reports and documents including annual reports, workplans, study plans, the priority streams list, flow recommendations, and historical flow studies. The web address is: http://www.dfg.ca.gov/water/instream_flow_docs.html

Riverine Habitat Simulation (RHABSIM) Training

The Department hosted a Riverine Habitat Simulation (RHABSIM) computer modeling analysis training in May 2011. RHABSIM is a fully integrated computer program for river hydraulics and aquatic habitat modeling. RHABSIM is a conversion of the Physical Habitat Simulation (PHABSIM) hydraulic and habitat simulation system developed by the U.S. Fish and Wildlife Service (USFWS), and is a modeling tool available for use in one-dimensional (1D) modeling in an Instream Flow Incremental Methodology (IFIM) process for developing instream flow prescriptions for protection of fish and wildlife.

The RHABSIM training was designed to be consistent with the Department's policy of using the IFIM approach and developing defensible data for assessing the relationship between stream flows and aquatic habitat. A primary benefit of using the IFIM approach is data defensibility, a necessary foundation for fulfilling the Department's interest in assuring that water flows within streams are maintained at levels which are adequate for long-term protection, maintenance and proper stewardship of fish and wildlife resources.

The RHABSIM training was attended by Department staff and staff from the State Water Resources Control Board (SWRCB). Staff were trained on modeling using RHABSIM which included: transect profile construction, velocity data input, calibration of water surface elevation models, and calibration of water velocity models. Additional instruction was given on quality assurance and species criteria curves. The training also covered linking hydraulics to species criteria, sensitivity analysis and options, as well as conducting a time series analysis. The class concluded with an introduction to System for Environmental Flow Analysis (SEFA) as well as instruction on developing and defending instream flow recommendations. Tom Payne from Normandeau and Associates, Fisheries Consultants (Arcata, CA), with assistance from Stacy Li (retired NOAA), conducted the RHABSIM training.

Priority Streams for Instream Flow Assessment

The Department's priority stream list contains a ranked list of streams and watercourses identified throughout the state for which minimum flow levels need to be established. The Department developed the list of 22 priority streams or watercourses for future instream flow work pursuant to Public Resources Code (PRC) section 10004 in 2008. This list was compiled and ranked based on input from Regional Department staff, staff from the SWRCB, USFWS, and the National Marine Fisheries Service (NMFS). In developing the ranking, Department staff considered criteria such as 1) presence of Coho or other anadromous species; 2) likelihood that the Department flow recommendations would provide a high level of improvement; 3) availability of recent flow studies or other relevant data; and 4) the possibility of partners/willing landowners.

The Department continued to use the priority streams list developed in 2008 for prioritizing flow related efforts and did not revise the list in 2011.

Coordination of Instream Flow Efforts

The Department coordinated instream flow efforts in 2011 with the Department's Regions, the SWRCB, USFWS, other scientists, and other interested parties. Coordination efforts included informal public meetings with purposes that included: to exchange information and solicit input; to engage interested parties in study design and development, and obtain comments on study progress and results; to maintain dialogue throughout the instream flow study process and during important decision making steps; to build trust in the underlying science and performance of the studies so that study results are considered valid, credible, and usable; to understand roles and responsibilities from all interested parties; to understand needs of data users; and to explore ways to complement existing efforts and leverage funds.

The Department developed and participated on multiple technical project teams in 2011 to review existing data, identify data gaps in existing information, and to develop recommendations for future instream flow need assessments. Technical project teams met in 2011 to discuss, review, and plan instream flow efforts on the Big Sur River in Monterey County, the Santa Maria River in Santa Barbara County, and the Shasta River in Shasta County. Technical project teams are stream- or water course- specific and consist of Department staff from various offices including the Water Branch, Engineering Branch, and Fisheries Branch in Sacramento, and Regional office staff.

Partnership with SWRCB

The Department continued to maintain a partnership with the SWRCB in 2011 for purposes of harmonizing priority setting, study availability, and data evaluation. Department staff provided field methods training to SWRCB staff, promoted

instream flow study implementation coordination with SWRCB staff, and participated in quarterly coordination meetings to coordinate activities and explore collaboration options on Delta tributary and other flow studies with SWRCB staff.

SWRCB Field Training and Study Implementation Coordination

Department staff provided field training to SWRCB staff on current instream flow methodologies in local Sacramento area creeks in 2011. The training covered proper instruction and use of field equipment for making discharge measurements, surveying bed topography and water surface elevations, and conducting critical riffle analysis. Department staff also coordinated participation of SWRCB staff with field work on flow studies underway in 2011 including projects on the Big Sur River (Monterey County), Lower Butte Creek (Butte County), the Yuba River (Yuba County), and Kimball Creek (Napa County). SWRCB assisted Department staff with field efforts including: attending project scoping meetings; conducting site reconnaissance; collecting transect data including depth, velocity, substrate composition, and cover type data; collecting water surface elevations and bed profile elevations; collecting bed topography data using the auto level and total station; and making discharge measurements.

Quarterly Coordination Meetings with SWRCB

Department staff participated with SWRCB staff at quarterly meetings in 2011 to discuss coordination activities for instream flow activities. The quarterly meetings have provided an important coordination and information sharing forum for the Department to provide status updates to SWRCB on studies underway, and seek opportunities for coordination and collaboration of future studies. Department staff also made separate presentations on the IFIM process and an overview of instream flow methodologies at the quarterly coordination meetings.

Coordination of Delta Tributary Flow Studies with SWRCB

The quarterly coordination meetings have also provided an open opportunity for Department staff to coordinate upcoming Sacramento-San Joaquin River Delta (Delta) tributary studies with SWRCB staff. Department staff have provided SWRCB staff the Department's 10-year plan for conducting the flow studies to meet DFG mandates through the PRC, Fish and Game Code, and Senate Bill 1, Delta Reform Act (SB 1). DFG is currently exploring ways to coordinate and collaborate with SWRCB on the upcoming Department Delta tributary studies in ways that will extend current resources, satisfy Department mandates through the PRC and Fish and Game Code, as well as to meet DFG's requirements for defensible data.

Identification and Evaluation of Instream Flow Data

The Department continued to seek recently completed or ongoing instream flow studies that could possibly be used to develop stream flow recommendations. The Department also identified nearly completed flow study reports produced under the Central Valley Project Improvement Act (CVPIA) Instream Flow Investigations by the USFWS. The USFWS intends to release reports on the Stanislaus River and Clear Creek in 2012. The purpose of the USFWS reports is to provide scientific information to the U.S. Fish and Wildlife Service's CVPIA program to assist in determining instream flow needs for Central Valley streams. In 2009 the Department evaluated a flow study report on Butte Creek by the USFWS and used the information and data to develop stream flow recommendations for Butte Creek.

Instream Flow Recommendations to SWRCB

Since creation of the Department's Instream Flow Program in 2008, the Department had committed to develop and transmit one flow recommendation to the SWRCB by 2010, and on average, to develop and transmit one flow recommendation per year after 2010 to the extent funds are available. In May 2009, the Department transmitted flow recommendations for Butte Creek to SWRCB for consideration as set forth in section 1257.5 of the Water Code (DFG, 2009; Figure 1). The flow recommendations report, which may be accessed on the Department's Instream Flow Program web site http://www.dfg.ca.gov/water/instream_flow_docs.html, also contains comments received from the public comment period and the responses to those comments.

The Department currently has three instream flow studies finishing up in early 2012 on priority rivers throughout the State. These studies include the Shasta River - Canyon Reach, the Santa Maria River, and the Big Sur River. Department staff anticipate final flow recommendations for these rivers being transmitted to SWRCB per PRC sections 10000-10005 in late 2012.

In 2010 the Department began preparing flow recommendations for the McCloud River, Shasta County, for transmittal to the SWRCB pursuant to PRC sections 10001-10002. However, the McCloud flow recommendations were put on hold in 2011 pending a current data collection effort and reanalysis of the data as part of the McCloud River flow studies.

Instream Flow Studies Underway

An instream flow study typically includes the following tasks: 1) project/contract management; 2) habitat mapping; 3) field reconnaissance and site selection; 4) species and lifestage specific habitat suitability criteria (HSC) development, 5) hydraulic data collection; 6) construction and calibration of hydraulic and habitat simulation models; 7) identification of flow recommendations considering all important elements such as hydrology, biology, geomorphology, water quality

and connectivity and 8) peer review. Many of these tasks require contracting with outside experts from universities, other agencies, and/or consultants.

Several Department flow studies were underway in 2011 including studies on the Big Sur River, the Santa Maria River, and the Shasta River - Canyon Reach (Figure 1). Each study includes multi-agency involvement with technical oversight by the Department. A Proposition 84 grant, authorized through the Ocean Protection Council (OPC), funded various levels of support for each of the flow studies by outside contractors. The field work components of each of these flow studies is on schedule and expected to be complete in early 2012.

Department staff also initiated an instream flow study on lower Butte Creek (Figure 1) in 2011. The lower Butte Creek study is a joint effort of Department and USFWS staff and will focus primarily on Spring Run Chinook Salmon adult passage, with flow and habitat relationships for other aquatic species and lifestages also being examined. The lower Butte Creek study is the first of Delta tributary flow studies that are planned to commence through 2020. Other priority Delta tributary rivers that the Department may investigate flow and habitat relationships for, and/or use existing information from other efforts for development of flow recommendations, include, but may not be limited to: the Tuolumne River (current FERC study), the Bear River, the Merced River (current FERC study), Deer Creek (tributary to the Sacramento River), the Middle Fork Feather River, the Stanislaus River (current USFWS study), the Shasta River – upstream of the Canyon Reach, and the Scott River (Figure 1). Many of these priority-rivers are also tributaries of the Delta identified by the SWRCB's Instream Flow Studies for the Protection of Public Trust Resources: A Prioritized Schedule and Estimate of Costs (2010).

Efforts to Seek Funding for Instream Flow Program

The Department has sought funding from various sources since the program began in 2008 including water rights fees, General Fund monies, existing and future bond measures (including leveraging of bond expenditures that might necessitate stream flow studies), federal funding, grants, and fees on project applicants (such as development projects that may necessitate stream flow studies). The Department seeks funding to develop the information and data needed for in-stream flow recommendations, with the goal of transmitting those recommendations to the SWRCB for consideration when it exercises its water rights authority.

Proposition bond funding was secured in the amount of \$1,039,000 as part of the Governor's Budget for 2011-2012 for implementing the Delta flow requirements of SB 1. Through SB 1, the Department will provide oversight on and complete new instream flow studies for priority rivers and streams in the Delta watershed over the next 10 years (FY 2010-11 through FY 2020-2021). The Department

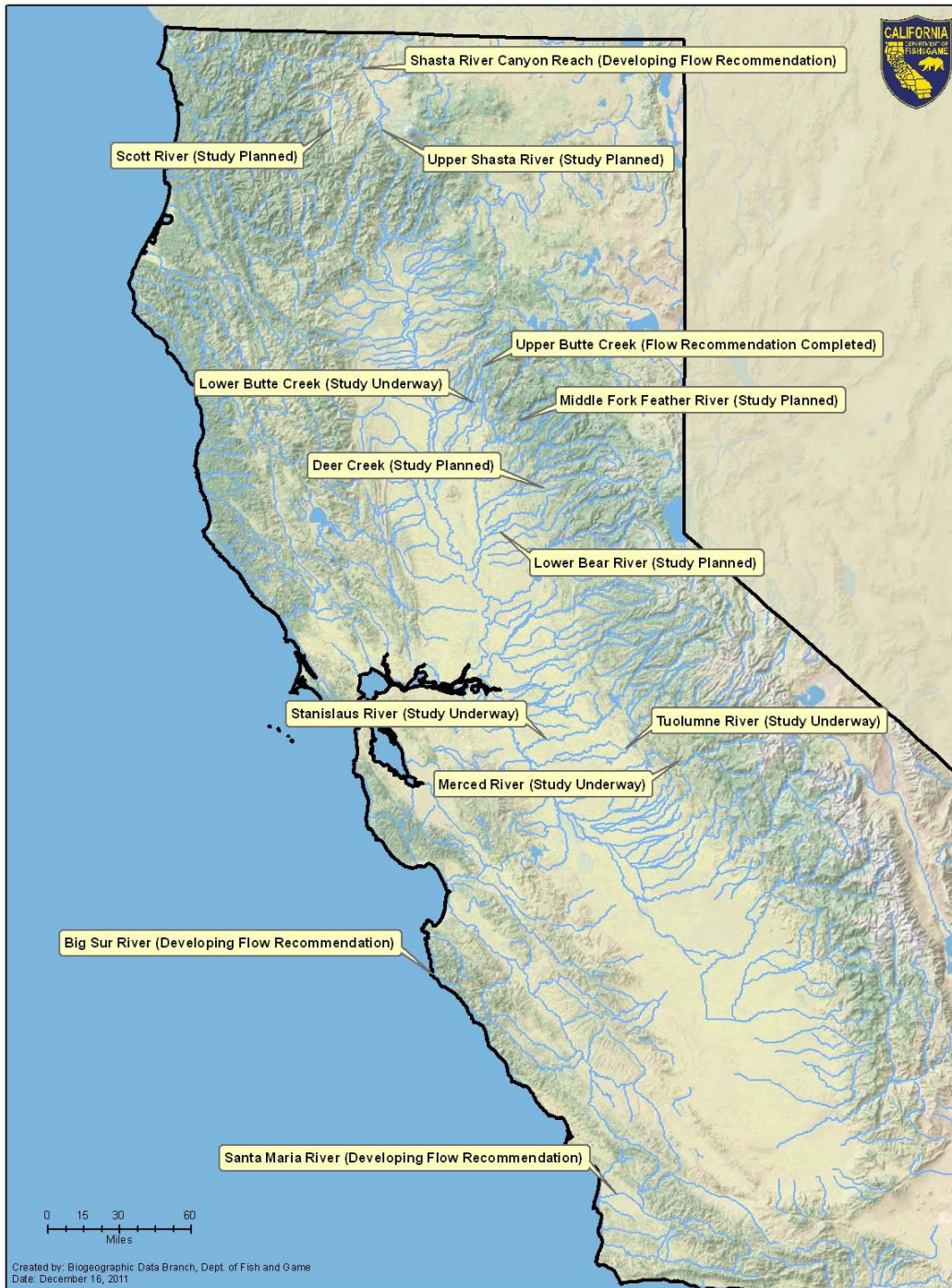


Figure 1. Map of California identifying rivers where instream flow studies are being planned or already underway, and where flow recommendations have or are being developed pursuant to the Public Resources Code (PRC) sections 10000 -10005 through the Department of Fish and Game Instream Flow Program.

received 5.2 positions (3 permanent full time, and 2.2 temporary help) to implement SB 1. This funding will not carry the program's activity on Delta tributaries over the next ten years as envisioned by SB 1 as the bonds are almost expended. Replacement funding will be needed.

In summary, the Department continues to seek funding through grant programs and other efforts for implementation of the Instream Flow Program. Table 1 contains a summary of the funds sought and secured by the Department for implementation of the Instream Flow Program.

Table 1. Funds sought and secured for Instream Flow Program 2008-2011.

	Funds Dedicated and Sought¹	Funds Secured²
Calendar Year 2008		
Fisheries Restoration Grant Program (FRGP) Fire Relief Big Sur River	\$454,841	\$0
Ocean Protection Council (OPC) Coastal Flow Studies	\$1,000,000	\$1,000,000
Calendar Year 2009		
Fisheries Restoration Grant Program (FRGP) San Gregorio Creek Flow Study	\$454,842	\$0
Fisheries Restoration Grant Program (FRGP) Big Sur River Flow Monitoring	\$185,560	\$185,560
Butte Creek Flow Recommendations - dedicated	\$222,732	\$0
Governor's Budget Proposal for 2010-2011	\$1,039,000	\$0
Calendar Year 2010		
Governor's Budget 2010-2011	N/A	\$1,039,000
Calendar Year 2011		
Governor's Budget 2011-2012	\$1,039,000	\$1,039,000
Total 2008	\$1,454,841	\$1,000,000
Total 2009	\$1,902,134	\$185,560
Total 2010	N/A	\$1,039,000
Total 2011	\$1,039,000	\$1,039,000
Total (2008-2011)	\$4,395,975	\$3,263,560
Arithmetic Mean (2008-2011)	\$1,098,994	\$815,890

¹ Funds dedicated and sought includes those funds the Department sought for implementation of the Instream Flow Program, as well as funds dedicated for development of flow recommendations from externally-funded studies and transmittal to the SWRCB.

² Funds secured include those funds the Department received through fund raising efforts that were directed towards implementation of the Department's Instream Flow Program.

Environmental Filing Fees Review

An application fee (environmental filing fee) for water diversions is currently imposed by PRC sections 10000-10005 to fund the Department's Instream Flow Program. The environmental filing fees are collected by SWRCB through the water right application process and are transmitted to the Department to help fund the Instream Flow Program. Public Resources Code section 10005 sets the filing fee at \$850 per application. Department staff reviewed the filing fees collected in 2011.

In 2011 the Department received \$50,356 pursuant to PRC section 10005 from the SWRCB. These funds were supplemented with approximately \$91,644 from the Non-dedicated Fish and Game Preservation Fund for one staff environmental scientist to coordinate the Instream Flow Program. It is anticipated that this funding structure will continue for the foreseeable future, although the Department will seek other stable funding in addition to the environmental filing fees.

Identification of Costs for Instream Flow Program

The Department intends to identify and report 1) the cost to the Department to perform or oversee any flow studies and flow recommendations and 2) the gap between the amount of money necessary to continue or begin the desired instream flow studies or to prepare flow recommendations and the amount of money currently available.

The Department estimates that approximately \$1,264,000 per a year would provide for an Instream Flow Program that can make progress at fulfilling PRC mandates. Including all fundraising activities, the Department has been able to secure \$1,181,000³ for Instream Flow Program actions in 2011. Existing funds provide a good foundation for the program by funding one full time staff coordinator position. SB 1 provides three additional full time staff positions, two temporary positions, and approximately \$581,000 in contracting resources to complete new instream flow studies for priority rivers and streams in the Delta watershed.

³ Estimate includes cost of Instream Flow Program Coordinator as well as funds secured from the Governor's Budget FY 11/12 through SB 1 to complete new instream flow studies for priority rivers and streams in the Sacramento-San Joaquin River Delta watershed.

II. SUMMARY OF IMPLEMENTATION OF PUBLIC RESOURCES CODE (PRC) SECTIONS 10000-10005.

The Department's efforts to implement PRC sections 10000-10005 through the Instream Flow Program are summarized in Table 2. The summary includes activities that took place during 2008 – 2011, and those planned for 2012. For more information about these activities please refer to Section I of this report (Program Elements).

Table 2. Summary of the implementation of Public Resources Code (PRC) sections 10000-10005 activities.

Public Resources Code (PRC) Sections	Activities	
	2008-2011	2012 (Planned)
10000-10002. Identify significant streams, develop and transmit flow recommendations to SWRCB.	Developed and transmitted flow recommendations for Upper Butte Creek to SWRCB in 2009.	Develop and transmit flow recommendations for the Big Sur River, the Shasta River – Canyon Reach, and the Santa Maria River to SWRCB.
10003-10004. Priority streams the Department plans on conducting instream flow studies on.	<p>Twenty-two streams identified for future instream flow studies in 2008.</p> <p>Completing field work on Big Sur, Shasta, and Santa Maria Rivers. Continue USGS flow monitoring on Big Sur River.</p> <p>Initiated new flow study on lower Butte Creek in Delta watershed.</p>	<p>Complete field work on Big Sur River, Shasta River, and Santa Maria River.</p> <p>Continue work on lower Butte Creek flow study.</p> <p>Begin new Delta tributary flow study to fulfill SB 1.</p>
10005. Review Environmental Filing fees. Seek funding for Department Instream Flow Program.	<p>Environmental Filing Fees reviewed.</p> <p>Funds for the 2008-2011 Department Instream Flow Program were sought through a Budget Change Proposal (BCP) as part of SB 1: Delta Flow Criteria; grant proposals to the Department's Fisheries Restoration Grant Program; and the Ocean Protection Council.</p>	<p>Review Environmental Filing Fees.</p> <p>Funds for 2012 Department Instream Flow Program may be sought from various grant programs.</p>

III. GENERAL WORKPLAN FOR CALENDAR YEAR 2012

Program Goals and Objectives

The overall goal of the Instream Flow Program is to develop scientific information to be used in developing flow recommendations that can be provided to the SWRCB, as required by PRC sections 10000-10005. The primary objective of the Instream Flow Program is to develop scientific information on the relationships between flow and physical stream habitat for indicators of ecosystem health. Flow habitat relationships for critical aquatic species' lifestages would be developed on selected priority streams. Anticipated projects may include development of the following information: relationships of flow to aquatic habitat, aquatic habitat suitability, stream temperature, channel geomorphology, riparian habitat and restoration activities; the temporal and spatial hydrologic characteristics of flow regimes; fish population abundance, distribution and dynamics; and aquatic invertebrate production.

The Department's instream flow efforts may also include: performance review of studies and development of flows by the Department or its contractors; consultation regarding study plans with individuals, agencies or corporations performing studies; review of instream flow studies not performed by the Department itself; and development of associated recommendations from studies not performed by the Department.

Priority Tasks, Schedules, and Proposed Budget

Priority tasks, schedules, and the associated proposed budget for the 2012 general workplan are outlined below. It is important to note that all tasks are deemed a priority for implementing the Instream Flow Program in 2012, with the exception of Task 2. Task 2 was completed in calendar year 2008, and will serve as the basis for the Department's instream flow efforts and investigations in the following years.

A. PRIORITY PROGRAM TASKS FOR 2012

TASK 1. Program Management.

Overall project management and administration includes overseeing and coordinating instream flow activities, technical focus groups, project coordination meetings, seeking funding through preparation of grant funding proposals, and managing project finances (budgets, contracts, etc.).

TASK 2. Identification of Priority Streams for Instream Flow Assessments.

Identification of instream flow needs includes the development of the Department's Priority Stream List, which will be used to guide the Department's future instream flow investigations. The current list was developed and ranked

with input from the Department's Regions, SWRCB, NMFS, and the USFWS. The Director has the discretion to revise the list and may add or delete streams as circumstances require. The current list was developed in August 2008.

TASK 3. Coordination of the Department's Instream Flow Efforts.

Coordination of Department's instream flow efforts includes coordination with the Department's Regions, SWRCB, USFWS, NMFS, other scientists, and other interested parties.

TASK 4. Conducting Instream Flow Assessment Investigations.

The Department initiated a new flow study in 2011 on lower Butte Creek, and will begin with contracted assistance from the USFWS in 2012. Lower Butte Creek flow studies will focus primarily on Spring Run Chinook Salmon adult passage. The Department expects to begin a new flow study on another Delta tributary watershed in 2012 as well. Selection of the waterways will be coordinated with interested agencies and staff, and will consider the Department's Priority Streams List (2008) as well as priority streams and rivers from the SWRCB.

The Department also expects to complete the field work components of the stream flow investigations on the Shasta River, Big Sur River, and the Santa Maria River in 2012. The Shasta River flow studies will include working with Humboldt State University to conduct an instream flow analysis on the mainstem of the Shasta River (Shasta River Canyon reach) which provides critical Coho salmon rearing habitat. The Big Sur River flow study is primarily an internally Department supported effort focused on adult steelhead migration and juvenile rearing, with some support from the OPC for contracting with Pacific States Marine Fisheries Commission and Normandeau Associates to develop steelhead habitat suitability criteria and conduct an assessment of the Big Sur River lagoon. The Santa Maria River flow study includes working with a private contractor selected by the OPC to determine flows needed for passage of steelhead into upper reaches of the Sisquoc River, as well as to determine use and habitat suitability of the lagoon and Sisquoc River for steelhead habitat.

TASK 5. Identification and Evaluation of Instream Flow Studies.

Identification and evaluation of instream flow studies includes the identification and evaluation of existing, recently completed or on-going studies that could form the basis for flow recommendations. This task also includes data assessment, interpretation, and reporting. Data collected as part of the flow study investigations on the Shasta River, Big Sur River, and Santa Maria River as outlined in Task 4 will be evaluated and assessed throughout implementation of the studies and discussed to ensure the products are useful for developing flow recommendations by the Department. Data collected as part of flow study investigations on Delta tributaries currently underway through other efforts such as through Federal Energy Regulatory Commission (FERC) or other agency activities will also be evaluated and assessed.

TASK 6. Development and Transmittal of Flow Recommendations.

Development and transmittal of flow recommendations includes the development of flow recommendations from either existing and/or new data, and the transmittal of those flow recommendations to SWRCB. Flow recommendations are anticipated to be developed for the Big Sur River, Shasta River and Santa Maria River and transmitted to SWRCB in 2012.

TASK 7. Partnership with SWRCB.

This task includes maintenance of a partnership with the SWRCB to harmonize priority setting, study availability, and data evaluation. The Department plans to coordinate work with SWRCB on stream flow studies being conducted to address development of flow criteria for the Sacramento-San Joaquin River Delta in 2012.

TASK 8. Seek funding for Instream Flow Program.

This task includes seeking funding for the Department's Instream Flow Program. The Department intends to seek funding from various grant sources to implement the Instream Flow Program. The funding, if secured, may be used to either supplement planned activities in priority Delta tributaries, or be used for other flow study activities on other priority rivers and streams outside the Delta Watershed.

B. SCHEDULES AND DELIVERABLES

#	TASK	Dates		Deliverables ⁴
		Start	Complete	
1	Program Management	1/01/12	12/31/12	Annual Report
2	Identification of Priority Streams for Instream Flow Assessments ⁵	No Action	No Action	No Action
3	Coordination of the Department's Instream Flow Efforts	1/01/12	12/31/12	Meeting/Workshop Agendas and/or email records.
4	Conducting Instream Flow Assessment Investigations	1/01/12	12/31/12	Project-Specific Study Plans, Field Data, Site Maps, Contractor Progress Reports
5	Identification and Evaluation of Instream Flow Studies	1/01/12	12/31/12	Technical Meeting Agendas, Contractor Progress Reports, Supporting Data
6	Development and Transmittal of Flow Recommendations	1/01/12	12/31/12	Flow Recommendations for the Big Sur River, Shasta River, and Santa Maria River
7	Partnership with SWRCB	1/01/12	12/31/12	Meeting/Workshop Agendas and/or email records.
8	Seek Funding for Instream Flow Program	1/01/12	12/31/12	Grant Proposals

⁴ All outcomes and deliverables from program tasks will be summarized and reported in subsequent annual reports.

⁵ Task 2 was completed in calendar year 2008, and will serve as the basis for the Department's instream flow efforts and investigations in the following years. If priorities change a new list will be developed.

C. PROPOSED 2012 BUDGET

#	TASK	PROPOSED BUDGET (EXISTING STAFF ⁶)	PROPOSED NEW STAFF BUDGET ⁷ (SB 1 DELTA FLOW CRITERIA)	PROPOSED STAFF BUDGET TOTAL 2012
1	Program Management	\$21,300	\$45,800	\$67,100
2	Identification of Instream Flow Needs	\$0	\$0	\$0
3	Coordination of the Department's Instream Flow Efforts	\$14,200	\$68,700	\$82,900
4	Coordinating and Conducting Instream Flow Assessment Investigations	\$56,800	\$229,000	\$285,800
5	Identification and Evaluation of Instream Flow Studies	\$7,100	\$22,900	\$30,000
6	Development and Transmittal of Flow Recommendations	\$21,300	\$68,700	\$90,000
7	Partnership with SWRCB	\$7,100	\$22,900	\$30,000
8	Seek Funding for Instream Flow Program	\$7,100	\$7,100	\$7,100
Subtotal		\$142,000	\$458,000	\$600,000
Contract Services⁸				\$581,000
Total				\$1,181,000

⁶ It is anticipated that existing funds (\$89,300) and Environmental Filing Fees (\$52,700) will be used to fund one existing Staff Environmental Scientist at approximately \$142,000 (including overhead and benefits). Environmental Filing Fees are an \$850.00 fee charged for certain types of water rights applications by SWRCB, which is transmitted to the Department.

⁷ One Senior Engineer, two Environmental Scientists, and 2.2 temporary help personnel funded by Prop 84 funds.

⁸ Contract services for instream flow studies provided through SB 1 funds secured in 2010.