Board Meeting Agenda

Russ Baggerly, Director
Mary Bergen, Director
Bill Hicks, Director
Pete Kaiser, Director
James Word, Director

CASITAS MUNICIPAL WATER DISTRICT
September 12, 2012
3:00 P.M. – DISTRICT OFFICE

Right to be heard: Members of the public have a right to address the Board directly on any item of interest to the public which is within the subject matter jurisdiction of the Board. The request to be heard should be made immediately before the Board's consideration of the item. No action shall be taken on any item not appearing on the agenda unless the action is otherwise authorized by subdivision (b) of ¶54954.2 of the Government Code and except that members of a legislative body or its staff may briefly respond to statements made or questions posed by persons exercising their public testimony rights under section 54954.3 of the Government Code.

1. Public Comments

2. General Manager comments.

3. Board of Director comments.

4. Consent Agenda

   a. Minutes of the August 6, 2012 Board Meeting.
   b. Recommend approval of a purchase order to C.D. Lyon Construction, Inc. in the amount of $25,800.00 for the refurbishment of Casitas Dam's #9 intake screen and articulating cart.
   c. Resolution authorizing the agreement with United States Geological Survey for the Cooperative Stream Gaging Program.
   d. Recommend approval of a purchase order to Travis Agriculture Construction, Inc. in the amount of $24,250.00 to install temporary tanks and piping.

   RECOMMENDED ACTION: Adopt Consent Agenda

5. Bills

6. Committee/Manager Reports

   a. Executive Committee Minutes
   b. Recreation Committee Minutes
   c. Water Resources Committee Minutes
   d. Finance Committee Minutes

7. Presentation of plans for renovation of the Bait & Tackle building by Gary Wolfe and recommend approval of concept plan.

   RECOMMENDED ACTION: Motion approving concept plan.

8. Resolution approving a grant from California Department of Boating & Waterways for $15,000.00 in miscellaneous equipment for the Rogue Patrol Boat.

   RECOMMENDED ACTION: Adopt Resolution

9. Recommend approval of the Lake Casitas Recreation Pest Management Plan.

   RECOMMENDED ACTION: Motion approving recommendation

   Recess Casitas Board Meeting

10. Lake Casitas Improvement Foundation Meeting

    a. Review of the Treasurer's report.
    b. Recommend allocation of funds in the amount of $4,205.00 to be used to supplement the 2012/2013 purchase of trout.

    Reconvene Casitas Board Meeting

11. Recommend approval of revisions to the Business Ordinance to include a policy on the use of credit cards.

    RECOMMENDED ACTION: Adopt Ordinance

12. Presentation and discussion on the 2011 Fisheries Report.

13. Discussion regarding the State Regional Water Quality Control Board Ventura River TMDL and impairments.

    RECOMMENDED ACTION: Direction to Staff

14. Information Items:

a. Monthly Cost Analysis for operation of Robles, fisheries and fish passage.
b. Casitas Reservoir Water Inventory Summary.
c. Lake Casitas Storage Volume Comparison.
d. Recreation Area Report for July.
e. News articles are available at the District Office.
f. Investment Report.

15. Adjournment

If you require special accommodations for attendance at or participation in this meeting, please notify our office 24 hours in advance at (805) 649-2251, ext. 113. (Govt. Code Section 54954.1 and 54954.2(a).

Minutes of the Casitas Municipal Water District
Board Meeting Held
August 6, 2012

A special meeting of the Board of Directors was held August 6, 2012 at Casitas' Office, Oak View, California. Directors Baggerly, Word, Hicks, Bergen and Kaiser were present. Also present were Steve Wickstrum, General Manager, Rebekah Vieira, Clerk of the Board, and Attorney, John Mathews. There was one staff member and no members of the public in attendance. President Baggerly led the group in the flag salute.

1. Public Comments

None

2. General Manager comments.

Mr. Wickstrum reported on the incident near Lake Casitas. Staff worked well coordinating and doing things or not doing things as requested by the Sheriff's department. It was resolved with the individual by 2:30 that afternoon. Our staff worked well and in coordination with Command Center.

Mr. Wickstrum informed the board of his attendance at a meeting with LARWCB regarding TMDL and pumping in the Ventura River. The meeting is on the 15th from 1 – 3:30.

3. Board of Director comments.

President Baggerly asked about the siren. Mr. Wickstrum explained the issue was resolved. We received a complaint from a gentleman who wanted the sirens to stop. Every night at dusk he would hear sirens in the Foster Park area. It turns out that our staff decided that they would drive the boat around the lake and turn on the siren. I've asked that they take the trip around the lake without the siren.

Director Hicks mentioned he attended the Tri County Fish meeting and I can see why the Federal government is broke. There were about 40 people working for the State and Feds around the table. I don't think we did anything in 2.5 hours. They are kicking around making us put a fish ladder around the dam. Mr. Wickstrum added that is right out of the steelhead recovery plan. Director Bergen asked what the meeting objective is. Mr. Wickstrum replied they were discussing the implementation of the Steelhead Recovery Plan.

4. Consent Agenda ADOPTED

a. Minutes of the July 25, 2012 Board Meeting.
b. Resolution approving agreement with Ernst & Young for audit services for State Water Project.

c. Recommend approval of a purchase order to Aqua Metric for $191,843.44 for the purchase of 1,325 Sensus Technology meter transducer units for upgrading of meter registers.

d. Recommend approval of a purchase order to Harrington Industrial Plastics in a not to exceed amount of $144,071.58 for the purchase and delivery of sixteen 12,500 gallon plastic tanks.

The consent agenda was offered by Director Word, seconded by Director Hicks and passed by the following roll call vote:

AYES:	Directors:	Kaiser, Bergen, Hicks, Word, Baggerly
NOES:	Directors:	None
ABSENT:	Directors:	None

Resolution is numbered 12-30.

5. Bills APPROVED

Director Hicks questioned #02325 for electro fishing survey. Mr. Wickstrum explained that this was several months ago while Scott was applying for permits for electro shocking for tagging fish. Fish & Wildlife Service stopped everything to determine the effect on red legged frogs. The mini study we did shows there are no impacts to the frogs relative to the electro shocking.

On the motion of Director Hicks, seconded by Director Bergen and passed, the bills were approved.

6. Committee/Manager Reports APPROVED FOR FILING

a. Executive Committee Minutes

On the motion of Director Word, seconded by Director Bergen and passed, the Committee/Manager Reports were approved for filing.

7. Discussion regarding Ventura LAFCo ballot and selection of a candidate to support. APPROVED

On the motion of President Baggerly, seconded by Director Word and passed the Board decided to nominate Marianne Rooney.

8. Discussion regarding the funding request of the Ventura County Watershed Protection District regarding the San Antonio Creek Spreading Grounds Rehabilitation Project.

President Baggerly informed the board that this started out to be a good idea and it was a favorite project but to get it approved it had to go through a lot of permitting and it was determined it needed a well and a streambed alteration agreement. It was difficult and costly. The amount of water that could be

injected into the aquifer was reduced down to 120 acre feet per year. The cost of the project for the amount of water you will get makes it almost useless. Director Word added the bids received are considerably over the estimate. President Baggerly added there is not enough left in the grant to pay for the whole project. Casitas is on line for $15,000 a year for maintenance. They asked if we wanted to provide more money. They are almost $500,000 short. Director Bergen added the models are pitiful. They have to put in a fish screen and an automated intake structure. The operation will be a nightmare.

On the motion of Director Word, seconded by Director Hicks and passed the Board determined that Casitas is not interested in investing in the request for additional funding for this project.

9. Information Items:

a. Monthly Cost Analysis for operation of Robles, fisheries and fish passage
b. Memo from General Manager regarding his attendance at the CSDA General Manager Leadership Summit.
c. News articles.
d. Investment Report

President Baggerly moved the meeting to closed session at 3:36 p.m.

10. Closed Session

a. (Govt. Code Sec. 54956.9 (a))
Conference with Legal Counsel – Existing Litigation
Name of Case: Stanley Revell vs. Roger Herbison, Lake Casitas Marina, Inc, and Casitas Municipal Water District
Case No. 56-2012-00415946-CU-PO-VTA

President Baggerly moved the meeting back to open session at 3:43 p.m. and Mr. Mathews reported that staff was provided an update on the case and reported a demurrer on behalf of the district was granted to the district without leave to amend.

11. Adjournment

President Baggerly adjourned the meeting at 3:44 p.m.

_____
Bill Hicks, Secretary

CASITAS MUNICIPAL WATER DISTRICT
INTEROFFICE MEMORANDUM

TO: GENERAL MANAGER

FROM: TREATMENT PLANT MANAGER

SUBJECT: CASITAS DAM INTAKE GATE #9 REFURBISHMENT

DATE: SEPTEMBER 4, 2012

RECOMMENDATION:

It is recommended that the General Manager approve a purchase order for C.D. Lyon Construction, Inc. in the amount of $25,800.00 for the refurbishment of Casitas Dam's #9 intake screen and articulating cart.

BACKGROUND AND DISCUSSION:

The FY 2012/13 budget contains funds in the amount of $30,000.000 for the refurbishment of an intake screen and associated articulating cart on Casitas Dam's intake structure.

A job walk was conducted and three contractors attended. Only one firm submitted a bid. It was indicated that the specification requirement for offsite blasting and coating was the reason for the two "decline to bid" responses. The offsite blasting and coating requirement addresses red lead primer issues.

C.D. Lyon Construction, Inc. PO Box 1456 Ventura, Ca 93002	Joaquin Silva	$25,800.00
Clark Engineering 2235 N. Ventura Ave Ventura, Ca 93001	Tomo Cuzic	Decline to bid
West Coast Welding 2201 Celsius Ave Oxnard, Ca	Randy Mock	Decline to bid

CASITAS MUNICIPAL WATER DISTRICT
Interdepartmental Memorandum

DATE: August 30, 2012

TO: Steven E. Wickstrum,
General Manager

FROM: Neil Cole,
Principal Civil Engineer

SUBJECT: **USGS-CMWD Cooperative Stream Gaging Program for November 1, 2012 to October 31, 2013 - Ventura River near Ventura Gaging Station**

RECOMMENDATION:

It is recommended that the Board of Directors approve continuing the cooperative stream gaging program with the U.S. Geological Survey (USGS) for the Ventura River near Ventura station and adopt the resolution.

BACKGROUND:

Since 1961 Casitas and the USGS have maintained agreements for the USGS operation of various stream and reservoir gaging stations within the District. In 1988, Casitas assumed the operation of all subject stations, with the exception of the Ventura River near Ventura gaging station that is located near the Foster Park Bridge. The USGS has reliably provided Casitas, City of Ventura and Ventura County with information gathered from this key gaging station.

Attached is a letter from the U.S. Geological Survey dated August 9, 2012 that outlines the proposed source of funding for the gaging station program. The local cost share portion of the agreement remains at $13,550 for the 2012-13 water year. The City of San Buenaventura (Ventura) and Ventura County Watershed Protection District (VCWPD) will continue to be partners with Casitas and divide this cost equally. The actual cost to Casitas will be $4517.

USGS has provided two copies of a Joint Funding Agreement for Casitas to sign and return.

Attachment – USGS letter and Joint Funding Agreement

United States Department of the Interior

U.S. GEOLOGICAL SURVEY
California Water Science Center
6000 J Street, Placer Hall
California State University
Sacramento, California 95819-6129
Phone: (916) 278-3000 Fax: (916) 278-3070
http://water.wr.usgs.gov

August 9, 2012

Mr. Steve Wickstrum, General Manager
Casitas Municipal Water District
1055 Ventura Avenue
Oak View, California 93022

Attention: Mr. Neil Cole, P.E.

Dear Mr. Wickstrum:

This letter confirms discussions between our respective staffs, concerning the continuation of our cooperative water resources program between the Casitas Municipal Water District (CMWD) and the U.S. Geological Survey (USGS) for the period November 1, 2012 to October 31, 2013.

The USGS has made a policy change regarding Federal Matching Funds (FMF) effective October 1, 2012. The accounting of USGS FMF shown in paragraph 2(a) of the attached Joint Funding Agreement (JFA) no longer reflects the portion of USGS funding associated with facilities and science support at the Bureau level. The USGS continues to provide funding for these support services, but, under a new USGS business practice, this USGS funding is no longer included on the JFA. This change in USGS business practice does not change the overall cost of this work, nor does it diminish the total benefits and services that are provided by the USGS. No additional costs are incurred by CMWD as a result of this change in accounting.

The proposed program and associated costs are as follows:

Station number and name		CMWD Funds	USGS Funds	Total Funds
11118500	Ventura River near Ventura	$ 13,550	$ 6,850	$ 20,400
	TOTAL	**$ 13,550**	**$ 6,850**	**$ 20,400**

Total cost of the proposed program is $20,400. Cost to CMWD is $13,550, and subject to the availability of Federal matching funds, the USGS will provide $6,850.

Enclosed are two originals of Joint Funding Agreement (JFA) 13WSCA05100, signed by our agency, for your approval. If you are in agreement with this proposed program, please return one fully executed JFA to our office. Work performed with funds from this agreement will be conducted on a fixed-price basis. Billing for this agreement will be rendered annually.

The USGS is required to have an agreement in place prior to any work being performed on a project. We request that the JFA be returned prior to November 1, 2012. If a JFA is not received by November 1, we will be required to suspend operations until an agreement is received.

If you have any questions concerning this program, please contact Matt Scrudato, in our Santa Maria Field Office, at (805) 928-9539. If you have any administrative questions, please contact Tammy Seubert, in our Sacramento Office, at (916) 278-3040.

Sincerely,

Donna Schiffer, acting

Eric G. Reichard
Director, USGS California Water Science Center

Enclosure

cc: Matt Scrudato, USGS CAWSC

Form 9-1366
(Oct. 2005)

U.S. Department of the Interior
U.S. Geological Survey
Joint Funding Agreement

Customer #:	6000000825
Agreement #:	13WSCA05100
Project #:	
TIN #:	95-6004993
Fixed Cost Agreement	☑ Yes ☐ No

FOR
WATER RESOURCES INVESTIGATIONS

THIS AGREEMENT is entered into as of the 1st day of November, 2012, by the U.S. GEOLOGICAL SURVEY, UNITED STATES DEPARTMENT OF THE INTERIOR, party of the first part, and the CASITAS MUNICIPAL WATER DISTRICT, party of the second part.

1. The parties hereto agree that subject to availability of appropriations and in accordance with their respective authorities there shall be maintained in cooperation for cooperative water resources investigations in the Casitas Municipal Water District, herein called the program. The USGS legal authority is 43 USC 36C; 43 USC 50; and 43 USC 50b.
2. The following amounts shall be contributed to cover all of the cost of the necessary field and analytical work directly related to this program. 2(b) includes In-Kind Services in the amount of $0.

(a) $6,850.00 by the party of the first part during the period November 1, 2012 **to** October 31, 2013

(b) $13,550.00 by the party of the second part during the period November 1, 2012 **to** October 31, 2013

USGS DUNS IS 1761-38857

(c) Additional or reduced amounts by each party during the above period or succeeding periods as may be determined by mutual agreement and set forth in an exchange of letters between the parties.

(d) The performance period may be changed by mutual agreement and set forth in an exchange of letters between the parties.

3. The costs of this program may be paid by either party in conformity with the laws and regulations respectively governing each party.
4. The field and analytical work pertaining to this program shall be under the direction of or subject to periodic review by an authorized representative of the party of the first part.
5. The areas to be included in the program shall be determined by mutual agreement between the parties hereto or their authorized representatives. The methods employed in the field and office shall be those adopted by the party of the first part to insure the required standards of accuracy subject to modification by mutual agreement.
6. During the course of this program, all field and analytical work of either party pertaining to this program shall be open to the inspection of the other party, and if the work is not being carried on in a mutually satisfactory manner, either party may terminate this agreement upon 60 days written notice to the other party.
7. The original records resulting from this program will be deposited in the office of origin of those records. Upon request, copies of the original records will be provided to the office of the other party.

Page 2 of 2

Form 9-1366 continued	U.S. Department of the Interior U.S. Geological Survey Joint Funding Agreement	Customer #: Agreement #: Project #: TIN #:	6000000825 13WSCA05100 95-6004993

8. The maps, records, or reports resulting from this program shall be made available to the public as promptly as possible. The maps, records, or reports normally will be published by the party of the first part. However, the party of the second part reserves the right to publish the results of this program and, if already published by the party of the first part shall, upon request, be furnished by the party of the first part, at costs, impressions suitable for purposes of reproduction similar to that for which the original copy was prepared. The maps, records, or reports published by either party shall contain a statement of the cooperative relations between the parties.
9. USGS will issue billings utilizing Department of the Interior Bill for Collection (form DI-1040). Billing documents are to be rendered **annually**. Payments of bills are due within 60 days after the billing date. If not paid by the due date, interest will be charged at the current Treasury rate for each 30 day period, or portion thereof, that the payment is delayed beyond the due date. (31 USC 3717; Comptroller General File B-212222, August 23, 1983).

U.S. Geological Survey
United States
Department of the Interior

USGS Point of Contact

Name: Tammy Seubert
Address: 6000 J Street, Placer Hall
Sacramento, CA 95819-6129
Telephone: (916) 278-3040
Email: tseubert@usgs.gov

Signatures

By Donna Schiller, acting Date 8/9/2012
Name: Eric G. Reichard
Title: Director, USGS California Water Science Center

By_____ Date_____
Name:
Title:

By_____ Date_____
Name:
Title:

CASITAS MUNICIPAL WATER DISTRICT

Customer Point of Contact

Name: Steve Wickstrum, General Manager
Address: 1055 Ventura Avenue
Oak View, CA 93022
Telephone: 805-649-2251
Email:

Signatures

By_____ Date_____
Name:
Title:

By_____ Date_____
Name:
Title:

By_____ Date_____
Name:
Title:

CASITAS MUNICIPAL WATER DISTRICT

RESOLUTION DIRECTING EXECUTION OF A
JOINT FUNDING AGREEMENT BETWEEN
UNITED STATES GEOLOGICAL SURVEY AND
CASITAS MUNICIPAL WATER DISTRICT

WHEREAS, Casitas Municipal Water District and the U.S. Geological Survey, U.S. Department of the Interior, have previously entered into a cooperative agreement involving matching funds covering the operation and maintenance of a certain stream gaging stations in the Ventura River watershed; and

WHEREAS, it is desirable that arrangements for the U.S. Geological Survey to perform the operation and maintenance of the Ventura River near Ventura stream gaging station during the November 1, 2012 to October 31, 2013 period; and

WHEREAS, the U.S. Geological Survey has indicated that subject to the availability of Federal matching funds, the U.S. Geological Survey will provide $6,850 in funds; and

Whereas, Casitas Municipal Water District's cost to have the U.S. Geological Survey operate and maintain the Ventura River near Ventura stream gaging station during the November 1, 2012 to October 31, 2013 period will remain the same as last year at $13,550; and

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Casitas Municipal Water District that the General Manager is hereby authorized and directed on behalf of Casitas to sign the Joint Funding Agreement in the form provided by the U.S. Geological Survey, and request continuation of said cooperative arrangements during the period November 1, 2012 through October 31, 2013 at a fixed total cost of $13,550 to Casitas. Further, direct staff to seek reimbursement of two-thirds of the $13,550 upon receipt of the billing from the U.S. Geological Survey.

ADOPTED this _____ day of _____, 2012.

_____
Russ Baggerly, President
Casitas Municipal Water District

ATTEST:

_____
Bill Hicks, Secretary
Casitas Municipal Water District

CASITAS MUNICIPAL WATER DISTRICT
INTEROFFICE MEMORANDUM

TO: STEVEN E. WICKSTRUM, GENERAL MANAGER

FROM: NEIL COLE, CIVIL ENGINEER

SUBJECT: AUTHORIZE THE GENERAL MANAGER TO SIGN A PURCHASE ORDER WITH TRAVIS AGRICULTURAL CONSTRUCTION, INC TO INSTALL TEMPORARY TANKS AND PIPING

DATE: SEPTEMBER 5, 2012

RECOMMENDATION:

It is recommended that the Board of Directors authorize the General Manager to sign a purchase order with Travis Agricultural Construction of Ventura for a not to exceed amount of $24,250.00 to install temporary tanks and piping at the Upper Ojai Reservoir site.

BACKGROUND AND DISCUSSION:

Casitas has been in the process of completing interior repairs and coating for all of the steel reservoirs in the system. The reservoirs completed to date have all been sites with two reservoirs. This has allowed one reservoir to remain operational while the repairs and coating were completed. All of the reservoirs on two reservoir sites have been repaired and their interiors coated.

Casitas has five reservoir locations with only one reservoir. It is now time to begin repairing and coating the interior of the single reservoir sites. Upper Ojai Reservoir is schedule for repair and coating in this fiscal year. Upper Ojai Reservoir will be the first single reservoir site completed.

Temporary water storage is required to allow the reservoir to be out of service while the interior repairs and coating are completed. Sixteen 12,500 gallon plastic tanks are proposed to provide the temporary storage. The Board has previously authorized the purchase of the tanks. Casitas has ordered the pipe and valve materials necessary to connect the temporary tanks to the system. This project will set the temporary tanks in the proper location and install all of the Casitas supplied material.

Request for proposals were sent to six firms. Three firms submitted proposals.

Firm	Bid price
Travis Agricultural Construction	$24,250.00
SH Construction	$33,556.00

Toro Enterprises	$44,240.00

Travis Agricultural Construction has successfully completed projects for Casitas in the past.

FUNDING:

Funding for this work is included in the FY 2012-13 Capital Budget under the Upper Ojai Reservoir Structural Repair Project.

CASITAS MUNICIPAL WATER DISTRICT
Payable Fund Check Authorization
Checks Dated 8/7/12-9/6/12
Presented to the Board of Directors For Approval September 12, 2012

Check	Payee			Description	Amount
000351	Payables Fund Account	#	9759651478	Accounts Payable Batch 072712	$459,033.20
000353	Payables Fund Account	#	9759651478	Accounts Payable Batch 082412	$293,747.67
000354	Payables Fund Account	#	9759651478	Accounts Payable Batch 082912	$326,914.07
000355	Payables Fund Account	#	9759651478	Accounts Payable Batch 090612	$654,182.50
					$1,733,877.44
000352	Payroll Fund Account	#	9469730919	Estimated Payroll 9/6/12	$165,000.00
000356	Payroll Fund Account	#	9469730919	Estimated Payroll 9/20/12	$155,000.00
					$320,000.00
				Total	$2,053,877.44

Publication of check register is in compliance with Section 53065.6 of the Government Code which requires the District to disclose reimbursements to employees and/or directors.

The above numbered checks,
000351-000356
have been duly audited is hereby certified as correct.

Denise Collin 9/6/12
Denise Collin, Accounting Manager

Signature

Signature

Signature

A/P Fund

Publication of check register is in compliance with Section 53065.6 of the Government Code which requires the District to disclose reimbursements to employees and/or directors.

000351	A/P Checks:	012445-012545
	A/P Draft to P.E.R.S.	080923
	A/P Draft to State of CA	080922
	A/P Draft to I.R.S.	080921
	Void:	012497
000353	A/P Checks:	012443-012444, 012546-012646
	A/P Draft to P.E.R.S.	082323
	A/P Draft to State of CA	082322
	A/P Draft to I.R.S.	082321
	Void:	
000354	A/P Checks:	012647-012735
	A/P Draft to P.E.R.S.	
	A/P Draft to State of CA	
	A/P Draft to I.R.S.	
	Void:	012702-012703
000355	A/P Checks:	012736-012808
	A/P Draft to P.E.R.S.	090623
	A/P Draft to State of CA	090622
	A/P Draft to I.R.S.	090621
	Void:	

The above numbered checks, have been duly audited are hereby certified as correct.

Denise Collin 9/6/12

Denise Collin, Accounting Manager

_____

Signature

_____

Signature

_____

Signature

CERTIFICATION

Payroll disbursements for the pay period ending 08/04/12
Pay Date of 08/09/12
have been duly audited and are
hereby certified as correct.

Signed: Denise Collin 8/6/12
Denise Collin

Signed: _____
Signature

Signed: _____
Signature

Signed: _____
Signature

^

CERTIFICATION

Payroll disbursements for the pay period ending 08/18/12
Pay Date of 08/23/12
have been duly audited and are
hereby certified as correct.

Signed: Denise Collin 8/20/12
Denise Collin

Signed: _____
Signature

Signed: _____
Signature

Signed: _____
Signature

^

CERTIFICATION

Payroll disbursements for the pay period ending 09/01/12
Pay Date of 09/06/12
have been duly audited and are
hereby certified as correct.

Signed: Denise Collin 9/4/12
Denise Collin

Signed: _____
Signature

Signed: _____
Signature

Signed: _____
Signature

^

VENDOR SET: 01 Casitas Municipal Water D
BANK: * ALL BANKS
DATE RANGE: 8/07/2012 THRU 9/06/2012

VENDOR I.D.	NAME	STATUS	CHECK DATE	INVOICE AMOUNT	DISCOUNT	CHECK NO	CHECK STATUS	CHECK AMOUNT
C-CHECK	VOID CHECK	V	8/09/2012			012497		
C-CHECK	VOID CHECK	V	8/29/2012			012702		
C-CHECK	VOID CHECK	V	8/29/2012			012703		

* * T O T A L S * *	NO			INVOICE AMOUNT	DISCOUNTS	CHECK AMOUNT
REGULAR CHECKS:	0			0.00	0.00	0.00
HAND CHECKS:	0			0.00	0.00	0.00
DRAFTS:	0			0.00	0.00	0.00
EFT:	0			0.00	0.00	0.00
NON CHECKS:	0			0.00	0.00	0.00
VOID CHECKS:	3	VOID DEBITS	0.00			
		VOID CREDITS	0.00	0.00	0.00	

TOTAL ERRORS: 0

VENDOR SET: 01 BANK:	TOTALS:	3	0.00	0.00	0.00
BANK:	TOTALS:	3	0.00	0.00	0.00

VENDOR SET: 01 Casitas Municipal Water D
BANK: AP ACCOUNTS PAYABLE
DATE RANGE: 8/07/2012 THRU 9/06/2012

VENDOR	I.D.	NAME	STATUS	CHECK DATE	INVOICE AMOUNT	DISCOUNT	CHECK NO	CHECK STATUS	CHECK AMOUNT
01616		FRED BRENEMAN							
	I-073012	7/22/12-8/4/12	R	8/07/2012	391.00		012443		391.00
00188		PETTY CASH							
	I-080312	Replenish Petty Cash	R	8/07/2012	341.26		012444		341.26
01441		ADVANTAGE TELECOM, INC							
	I-38881	Monthly LCRA Phone Charges	R	8/09/2012	679.31		012445		679.31
01325		Aflac Worldwide Headquarters							
	I-272950	Supplemental Insurance 7/12	R	8/09/2012	2,933.94		012446		
	I-405951	Supplemental Insurance 5/12	R	8/09/2012	4,400.91		012446		
	I-841649	Supplemental Insurance 6/12	R	8/09/2012	2,933.94		012446		10,268.79
01985		AFLAC/FLEX ONE							
	I-080912	Reimburse Medical 2012	R	8/09/2012	56.00		012447		56.00
01707		AIRGAS SPECIALTY PRODUCTS							
	I-131252358	Ammonium Hydroxide for TP	R	8/09/2012	3,046.36		012448		3,046.36
00010		AIRGAS USA LLC							
	I-9007234975	Acetylene for Pipelines	R	8/09/2012	91.07		012449		
	I-9007439434	Cutoff Wheel, Brush Wheel, PL	R	8/09/2012	230.18		012449		321.25
00011		ALERT COMMUNICATIONS							
	I-120700847101	Call Center 8/12	R	8/09/2012	333.83		012450		333.83
00029		AMERICAN TOWER CORP							
	I-1292185	Tower Rent, Red Mtn, Rincon Pk	R	8/09/2012	1,551.56		012451		1,551.56
00014		AQUA-FLO SUPPLY							
	I-349971	Sprinkler Parts for Ave 1 PP	R	8/09/2012	14.72		012452		
	I-350950	Sprinklers for LCRA Maint	R	8/09/2012	843.03		012452		
	I-351681	Nozzles for LCRA Irrigation	R	8/09/2012	7.65		012452		
	I-352708	Irrigation Repair B-58 LCRA	R	8/09/2012	100.18		012452		
	I-352877	Solenoid Valve for B Camp	R	8/09/2012	105.53		012452		1,071.11
01703		ARNOLD LAROCHELLE MATTHEWS							
	I-34948	Matter No 5088-008 5/12	R	8/09/2012	816.00		012453		
	I-34949	Matter No 5088-001 5/12	R	8/09/2012	2,832.00		012453		
	I-35213	Matter No 5088-008 6/12	R	8/09/2012	8,439.50		012453		
	I-35214	Matter No 5088-001 6/12	R	8/09/2012	1,872.00		012453		13,959.50

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01666		AT & T							
	I-000003551427	T-1 Lines	R	8/09/2012	896.92		012454		896.92
00020		AVENUE HARDWARE, INC							
	I-46815	Wedges for Dam Elec Repair	R	8/09/2012	353.28		012455		
	I-47264	Bolts, Duct Tape for WP Doors	R	8/09/2012	17.74		012455		
	I-47950	Parts for Canal Foot Bridge	R	8/09/2012	63.20		012455		
	I-47959	Markers, Masks for TP	R	8/09/2012	56.29		012455		490.51
00030		B&R TOOL AND SUPPLY CO							
	I-1249014000101	Safety Glasses for Pipelines	R	8/09/2012	89.32		012456		
	I-1249057000101	Tools for Pipelines	R	8/09/2012	53.29		012456		
	I-1249097000101	Masonary Bits for Pump Plants	R	8/09/2012	165.30		012456		307.91
01153		RUSS BAGGERLY							
	I-Jul 12	Reimburse Mileage 7/12	R	8/09/2012	71.04		012457		71.04
00821		BEST BEST & KRIEGER LLP							
	I-683181	Matter # 82356.00002 7/12	R	8/09/2012	1,988.93		012458		1,988.93
00065		CALIFORNIA PARK & REC SOCIETY							
	I-073012	Fee for Course & Exam	R	8/09/2012	545.00		012459		545.00
	Playground Safety Inspector Certification for PSO								
00055		CASITAS BOAT RENTALS							
	I-001396	Mooring for Rogue Boat	R	8/09/2012	100.00		012460		
	I-001400	Kayak Rental for JR Lifeguards	R	8/09/2012	220.00		012460		
	I-Jun 12 Cafe Passes	Cafe Pass Reimbursment	R	8/09/2012	2,577.85		012460		2,897.85
00511		Centers for Family Health							
	I-16480	Drug Tests	R	8/09/2012	135.00		012461		135.00
00057		CLEAN SOURCE							
	I-268534802	Janitorial Supplies	R	8/09/2012	16.24		012462		16.24
02322		Coast Cart, Inc.							
	I-2754	Meters for EZ-Go Carts	R	8/09/2012	214.51		012463		214.51
01843		COASTAL COPY							
	I-418240	Copier Usage, LCRA	R	8/09/2012	143.03		012464		143.03
00295		COMMUNICATION SERVICES							
	I-15349	Cable TV Repair at LCRA	R	8/09/2012	618.13		012465		
	I-15350	Cable TV Repair at LCRA	R	8/09/2012	598.35		012465		1,216.48

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00061		COMPUWAVE							
	I-SB02070961	Toner Cartridges, LCRA Main	R	8/09/2012	239.44		012466		239.44
00062		CONSOLIDATED ELECTRICAL							
	I-9009662251	Breaker for Rincon PP	R	8/09/2012	41.46		012467		41.46
01588		CONSULTING WEST ENGINEERS							
	I-CMWD1211	OVPP Electrical Upgrades	R	8/09/2012	10,500.00		012468		10,500.00
02034		D.K. Mechanical							
	I-2339	Repair Parking Brake, Cat #109	R	8/09/2012	435.34		012469		435.34
00081		DELTA LIQUID ENERGY							
	I-23209428	Fill Propane Tank, Showers	R	8/09/2012	279.63		012470		279.63
01498		Department of Industrial Relat							
	I-P1023996SN	Lazy River Inspection	R	8/09/2012	195.00		012471		
	I-P1026842SN	Annual Classification Fee, WP	R	8/09/2012	740.00		012471		
	I-P1028621SN	Lazy River Inspection	R	8/09/2012	195.00		012471		1,130.00
00182		DEWITT PETROLEUM							
	I-0021168IN	Gas for LCRA	R	8/09/2012	1,668.63		012472		1,668.63
01112		E.H. WACHS COMPANY							
	I-INV076535	Counter for Valve Operator, PL	R	8/09/2012	325.02		012473		325.02
02411		Element Payment Services							
	C-INV162360A	Accrue Use Tax	R	8/09/2012	7.18CR		012474		
	D-INV162360A	Accrue Use Tax	R	8/09/2012	7.18		012474		
	I-INV162360	LCRA Credit Crad Fees	R	8/09/2012	114.00		012474		114.00
01705		RJ FADDIS							
	I-Jul 12	Gas for Rogue Boat	R	8/09/2012	477.95		012475		477.95
00095		FAMCON PIPE & SUPPLY							
	I-143524	Meter Parts for WH Stock	R	8/09/2012	1,271.45		012476		
	I-143693	Ball Valves for WH Stock	R	8/09/2012	353.93		012476		
	I-143728	Angle Meter Stops for WH Stock	R	8/09/2012	227.37		012476		1,852.75
10120		CHARLES Z. FEDAK & COMPANY							
	I-072512	Audit Services FY 11/12	R	8/09/2012	1,370.00		012477		1,370.00
00099		FGL ENVIRONMENTAL							
	I-206568A	Lake Nutrient Monitoring	R	8/09/2012	1,332.80		012478		
	I-206695A	Wet Chemistry-NO3	R	8/09/2012	61.00		012478		
	I-206918A	Wet Chemistry-NO3	R	8/09/2012	43.00		012478		1,436.80

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00101		FISHER SCIENTIFIC							
	I-5541356	Lab Testing Supplies	R	8/09/2012	208.46		012479		208.46
00103		FRANK'S ROOTER & PUMPING							
	I-85341	Repair Sewer Line Camp A-4	R	8/09/2012	886.41		012480		886.41
00104		FRED'S TIRE MAN							
	I-59905	Oil Change, Eq#30, E&M	R	8/09/2012	39.61		012481		
	I-59930	Front Brakes, Eq#30, E&M	R	8/09/2012	191.16		012481		230.77
01280		FRY'S ELECTRONICS, INC.							
	I-4595399	Computer Monitor for O & M	R	8/09/2012	148.06		012482		148.06
00216		THE GAS COMPANY							
	I-073012	Acct#00801443003	R	8/09/2012	482.87		012483		
	I-073012A	Acct#18231433006	R	8/09/2012	43.85		012483		526.72
00115		GRAINGER, INC							
	I-9885923640	Compressor Parts for PL	R	8/09/2012	33.90		012484		
	I-9885923657	Safety Glasses for E&M	R	8/09/2012	9.95		012484		
	I-9886924571	Cable Ties for Pump Plants	R	8/09/2012	79.68		012484		
	I-9886924589	Spray Paint for Pump Plants	R	8/09/2012	7.35		012484		
	I-9888131761	Bucket, Hard Hat for TP	R	8/09/2012	56.99		012484		187.87
01052		HARBOR FREIGHT TOOLS USA, INC							
	I-147681	Gloves, Digging Bar,Dist Maint	R	8/09/2012	74.99		012485		74.99
00953		HEWLETT-PACKARD COMPANY							
	I-51567065	Scada Printer	R	8/09/2012	240.24		012486		240.24
01594		HIGHWAY TECHNOLOGIES, INC.							
	I-65107917001	Signs for LCRA	R	8/09/2012	56.31		012487		56.31
02415		William Holliday							
	I-071712	Frequent Visitor Refund	R	8/09/2012	83.34		012488		83.34
00126		CAROLE ILES							
	I-Jul 12	Reimburse Mileage 7/12	R	8/09/2012	40.79		012489		
	I-Jun 12	Reimburse Mileage 6/12	R	8/09/2012	34.96		012489		75.75
02182		Industrial Coating and Restora							
	I-1 Retention	Coating Dam Intake, Retention	R	8/09/2012	2,386.50		012490		2,386.50

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01574		INDUSTRY LABELS CO.							
	I-28074	Ribbons for LCRA, WP Printers	R	8/09/2012	191.49		012491		191.49
00131		JCI JONES CHEMICALS, INC							
	I-554645	Chlorine for TP, CM#554695	R	8/09/2012	1,770.00		012492		
	I-555472	Chlorine for TP, CM#555631	R	8/09/2012	1,770.00		012492		3,540.00
00360		LESLIE'S POOL SUPPLIES, INC							
	I-142299326	Chemicals and Filters for WP	R	8/09/2012	625.10		012493		625.10
01270		SCOTT LEWIS							
	I-Jul 12	Reimburse Expenses 7/12	R	8/09/2012	695.32		012494		695.32
09881		Marzulla Law, LLC							
	I-1825	File #4139.0003, 7/12	R	8/09/2012	359.95		012495		359.95
00151		MEINERS OAKS ACE HARDWARE							
	I-505474	Drill Bits for Robles	R	8/09/2012	24.44		012496		
	I-505495	Coupling for Avenue 1 PP	R	8/09/2012	3.47		012496		
	I-505513	Screwdrivers for LCRA Maint	R	8/09/2012	24.92		012496		
	I-505781	Wrench, Key Made for LCRA	R	8/09/2012	4.91		012496		
	I-505843	Deadbolt, Breaker for Maint	R	8/09/2012	15.02		012496		
	I-505946	Hose Menders, Bolts for DM	R	8/09/2012	36.87		012496		
	I-506057	Toilet Parts for Camp C RR	R	8/09/2012	8.28		012496		
	I-506131	Rod, Bolts for Canal, Dst Main	R	8/09/2012	5.60		012496		
	I-506477	Air Gun, Connectors, Telemetry	R	8/09/2012	21.49		012496		
	I-506806	Galvanized Pipe for Robles	R	8/09/2012	311.94		012496		
	I-506899	Ball Valve, Aerator, Dist Main	R	8/09/2012	16.76		012496		
	I-507136	Flagging Tape for Waterpark	R	8/09/2012	20.27		012496		
	I-507308	Bug Spray, Phone Case, E&M	R	8/09/2012	27.78		012496		521.75
00144		BOB MONNIER							
	I-Jul 12	Reimburse Mileage 7/12	R	8/09/2012	97.57		012498		97.57
01102		NIAGARA CONSERVATION CORP.							
	I-INV00036477	Tank Lids for Toilets, Maint	R	8/09/2012	68.63		012499		68.63
01570		Ojai Auto Supply LLC							
	I-248814	Filters for Diesel Pump, LCRA	R	8/09/2012	25.72		012500		
	I-249970	Wiper Blades for Water Truck	R	8/09/2012	11.56		012500		37.28
00165		OJAI LUMBER CO, INC							
	I-2434293	Sideboards for Flat Beds, LCRA	R	8/09/2012	72.59		012501		72.59

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00884		OJAI TERMITE & PEST CONTROL							
	I-93172	Yellow Jacket Treatment	R	8/09/2012	225.00		012502		225.00
02255		Ojai Valley Land Conservancy							
	I-56 071612	Watershed Coordinator Match	R	8/09/2012	2,667.00		012503		2,667.00
00169		OJAI VALLEY SANITARY DISTRICT							
	I-14685	Cust#20594 Sewer Service	R	8/09/2012	150.63		012504		
	I-14768	Cust#52921 Sewer Service	R	8/09/2012	50.21		012504		200.84
00383		ON DUTY UNIFORMS & EQUIPMENT							
	I-108133	PSO Uniforms	R	8/09/2012	127.07		012505		127.07
02386		Oregon State University							
	I-AMBC131302	Steelhead Genetic Study	R	8/09/2012	3,300.00		012506		3,300.00
01627		OSCAR'S TREE SERVICE							
	I-9993	Remove Pine Tree Picnic #9	R	8/09/2012	950.00		012507		950.00
02149		PolyJohn Enterprises Corporati							
	I-142342	Portable Restrooms for LCRA	R	8/09/2012	7,185.76		012508		7,185.76
00627		PORT SUPPLY							
	I-7719	Boathouse Supplies	R	8/09/2012	115.66		012509		115.66
01334		POWER MACHINERY CENTER							
	I-E67958	Forklift Rental for Rincon PP	R	8/09/2012	330.51		012510		330.51
01439		PRECISION POWER EQUIPMENT							
	I-1783	Engine Cover for Pipelines	R	8/09/2012	21.68		012511		21.68
00313		ROCK LONG'S AUTOMOTIVE							
	I-6037	Replace Instrument Cluster,#28	R	8/09/2012	538.04		012512		
	I-6045	Repairs to #35, Engineering	R	8/09/2012	967.06		012512		
		Replace Transmission and Motor Mounts							
		Replace Fuel Pump							
	I-6059	Repairs to #26, LCRA Truck	R	8/09/2012	432.18		012512		
		Replace Radiator Hoses, Heater Hoses, Clamps, Coolant							
	I-6061	Repairs to #8, E&M Truck	R	8/09/2012	595.20		012512		
		Lube & Oil Change, Replace Alternator Drive Belt,Fuel Filter							
		Transmission Flush							
	I-6075	Lube, Oil Change, Battery, #43	R	8/09/2012	266.11		012512		2,798.59
		Lube & Oil Change, Replace Battery							

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01037		SAF-T-FLO INDUSTRIES CORP.							
	I-121907	Injector Solution Tube, TP	R	8/09/2012	214.19		012513		214.19
02344		ServiceMaster Building Mainten							
	I-10840	Janitorial Svcs 8/12 Dist Ofc	R	8/09/2012	1,032.00		012514		1,032.00
00725		SMART & FINAL							
	I-072712	Supplies for TP, Vinegar, Soap	R	8/09/2012	46.41		012515		46.41
02003		Sostre & Associates							
	I-1962	CMS Fee and Website Hosting	R	8/09/2012	249.00		012516		249.00
00215		SOUTHERN CALIFORNIA EDISON							
	I-072712	Acct#2210507034	R	8/09/2012	18,258.94		012517		
	I-072712A	Acct#2237011044	R	8/09/2012	45.45		012517		
	I-072812	Acct#2210503702	R	8/09/2012	2,984.12		012517		
	I-080112	Acct#2210505426	R	8/09/2012	2,457.62		012517		
	I-080212	Acct#2269631768	R	8/09/2012	19.47		012517		
	I-080312	Acct#2210502480	R	8/09/2012	120,116.12		012517		
	I-080712	Acct#2237789169	R	8/09/2012	24.04		012517		143,905.76
10100		SPECIALTY MARINE, INC							
	I-474	10 Hr Svc for Rogue Boat,#135	R	8/09/2012	255.18		012518		
	I-475	Spark Plugs for Pac Angler	R	8/09/2012	128.65		012518		383.83
01069		SPECTER INSTRUMENTS							
	I-1207022311	WIN-911 Annual Support, Scada	R	8/09/2012	395.00		012519		395.00
00048		STATE OF CALIFORNIA							
	I-080112	State Water Plan Payment	R	8/09/2012	118,271.00		012520		118,271.00
01696		SUPERIOR MACHINE							
	I-1761	Machine Victaulic Grooves, PP	R	8/09/2012	450.00		012521		450.00
02416		William Terry							
	I-072612	Irrigation Controller Rebate	R	8/09/2012	250.00		012522		250.00
01173		TOICO INDUSTRIES, INC.							
	C-0114906INA	Accrue Use Tax	R	8/09/2012	27.80CR		012523		
	D-0114906INA	Accrue Use Tax	R	8/09/2012	27.80		012523		
	I-0114906IN	CT Deodorizer for LCRA	R	8/09/2012	453.28		012523		453.28
01662		TYLER TECHNOLOGIES, INC.							
	I-02547091	Incode Software Maintenance	R	8/09/2012	3,633.75		012524		3,633.75
	8/1/12-7/31/13 Includes Billed Consumption, Report Writer Mail Merge Reports & Labels, Custom Meter Field Report								

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00225		UNDERGROUND SERVICE ALERT							
	I-720120092	July 12 New Tickets	R	8/09/2012	214.50		012525		214.50
00185		Univar USA Inc							
	I-LA790139	Hydrochloric Acid, Waterpark	R	8/09/2012	982.41		012526		
	I-LA790282	Sodium Hypochlorite, Waterpark	R	8/09/2012	2,176.74		012526		
	I-LA793103	Sodium Hypochlorite, WP	R	8/09/2012	1,745.31		012526		4,904.46
00251		VENTURA COUNTY STAR							
	I-1071553	Public Notice, CCR	R	8/09/2012	42.90		012527		42.90
00257		VENTURA RIVER COUNTY WATER							
	I-073112	Acct#03-50100A	R	8/09/2012	16.19		012528		
	I-073112A	Acct#05-37500A	R	8/09/2012	111.49		012528		127.68
01396		VULCAN MATERIALS COMPANY							
	I-106741	Asphalt Recycling, Pipelines	R	8/09/2012	100.00		012529		
	I-106742	Recycle Concrete, Grand Ave PP	R	8/09/2012	100.00		012529		
	I-791112	Cold Mix Asphalt, Pipeline	R	8/09/2012	485.91		012529		685.91
00439		WAYCASY CRANE SERVICE							
	I-5646	Install Grapal Cart at Dam	R	8/09/2012	740.00		012530		740.00
02418		Larry Wilde							
	I-071612	Irrigation Controller Rebate	R	8/09/2012	250.00		012531		250.00
00489		STEVE WICKSTRUM							
	I-Jul 12	Reimburse Expenses 7/12	R	8/09/2012	1,332.26		012532		1,332.26
01203		DENISE COLLIN							
	I-Jul 12	Reimburse Mileage 7/12	R	8/09/2012	11.10		012533		11.10
1		Dale & Alanna Grimm							
	I-000201207270588	UB Refund	R	8/09/2012	0.08		012534		0.08
1		Ellyn Dembowski							
	I-000201207270590	UB Refund	R	8/09/2012	47.62		012535		47.62
1		Downey S & 1 Assn							
	I-000201207270591	UB Refund	R	8/09/2012	34.06		012536		34.06
1		Nancy Newland							
	I-000201207270592	UB Refund	R	8/09/2012	42.39		012537		42.39

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1		Clark Rice							
	I-000201207270589	UB Refund	R	8/09/2012	20.81		012538		20.81
1		David Wiser							
	I-000201207270593	UB Refund	R	8/09/2012	4.25		012539		4.25
1		Charles Bonsignore							
	I-000201207270594	UB Refund	R	8/09/2012	31.98		012540		31.98
00124		ICMA RETIREMENT TRUST - 457							
	I-CUI201208070595	457 CATCH UP	R	8/09/2012	569.24		012541		
	I-DCI201208070595	DEFERRED COMP FLAT	R	8/09/2012	2,561.52		012541		
	I-DI%201208070595	DEFERRED COMP PERCENT	R	8/09/2012	85.53		012541		3,216.29
01960		Moringa Community							
	I-MOR201208070595	PAYROLL CONTRIBUTIONS	R	8/09/2012	16.75		012542		16.75
00985		NATIONWIDE RETIREMENT SOLUTION							
	I-CUN201208070595	457 CATCH UP	R	8/09/2012	423.06		012543		
	I-DCN201208070595	DEFERRED COMP FLAT	R	8/09/2012	3,877.68		012543		4,300.74
00180		S.E.I.U. - LOCAL 721							
	I-UND201208070595	UNION DUES	R	8/09/2012	610.50		012544		610.50
00230		UNITED WAY							
	I-UWY201208070595	PAYROLL CONTRIBUTIONS	R	8/09/2012	45.00		012545		45.00
01985		AFLAC/FLEX ONE							
	I-081112	Reimburse Medical 2012	R	8/16/2012	70.00		012546		70.00
02419		Kim Alcala							
	I-072712	Waterpark Refund	R	8/16/2012	24.00		012547		24.00
02420		Patrick Alexander							
	I-080412	Waterpark Refund	R	8/16/2012	67.50		012548		67.50
02421		Barbara Anstiss							
	I-072612	Waterpark Refund	R	8/16/2012	24.00		012549		24.00
00014		AQUA-FLO SUPPLY							
	I-351725	Ball Valve for O&M Cust Svc	R	8/16/2012	37.54		012550		
	I-353559	Irrigation Repair, Event Area	R	8/16/2012	13.21		012550		50.75

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01666		AT & T							
	I-000003579325	T-1 Line, Acct#8310001729783	R	8/16/2012	357.32		012551		
	I-000003581106	T-1 Lines, Acct#8310002969306	R	8/16/2012	1,154.11		012551		1,511.43
00030		B&R TOOL AND SUPPLY CO							
	I-1249060000101	Nut for Shop Grinder, Pipeline	R	8/16/2012	17.60		012552		
	I-1249251000101	Drill Bit for Welding Shop	R	8/16/2012	27.55		012552		
	I-1249493000101	Hole Saw, File for Robles	R	8/16/2012	48.77		012552		93.92
02446		Scott Baker							
	I-081212	Camping Fee Refund	R	8/16/2012	34.00		012553		34.00
02422		Katryna Bautista							
	I-072312	Day Use Fee Refund	R	8/16/2012	10.00		012554		10.00
00032		BIOVIR LABORATORIES, INC							
	I-120855	Giardia/Crypto 6/20/12	R	8/16/2012	405.61		012555		
	I-120977	Analysis 7/12 & Matrix Spike	R	8/16/2012	796.48		012555		1,202.09
02423		Boys & Girls Club of Greater							
	I-072712	Waterpark Fee Refund	R	8/16/2012	580.00		012556		580.00
01616		FRED BRENEMAN							
	I-081312	8/5/12-8/18/12	R	8/16/2012	391.00		012557		391.00
02424		Blue Caleel							
	I-072712	Waterpark Refund	R	8/16/2012	60.00		012558		60.00
00055		CASITAS BOAT RENTALS							
	I-Jul 12	Gas for Boats at LCRA	R	8/16/2012	1,341.24		012559		1,341.24
00057		CLEAN SOURCE							
	I-268947200	Janitorial Supplies	R	8/16/2012	233.75		012560		
	I-269075200	Janitorial Supplies	R	8/16/2012	3,104.89		012560		
	I-269075201	Janitorial Supplies	R	8/16/2012	209.14		012560		
	I-269187300	Janitorial Supplies	R	8/16/2012	462.20		012560		4,009.98
00059		COASTAL PIPCO							
	I-S1733722001	Brass Bushing for O&M CS	R	8/16/2012	16.72		012561		
	I-S1735009001	PVC Parts for O&M CS	R	8/16/2012	38.83		012561		
	I-S1735074001	PVC Parts for Treatment Plant	R	8/16/2012	33.10		012561		88.65
01055		Neil Cole							
	I-Jul 12	Reimburse Expenses 7/12	R	8/16/2012	88.95		012562		88.95

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02426		Philip Corsi							
	I-080412	Camping Fee Refund	R	8/16/2012	50.00		012563		50.00
02447		Danielle Creedon							
	I-080512	Camping Fee Refund	R	8/16/2012	15.00		012564		15.00
01764		CSG Systems, Inc.							
	I-710000	UB Mailing 6/12	R	8/16/2012	968.33		012565		968.33
02034		D.K. Mechanical							
	I-2338	Oil Change, #88, Pump Truck	R	8/16/2012	569.19		012566		569.19
00182		DEWITT PETROLEUM							
	I-0021435IN	Gas & Diesel for Main Yard	R	8/16/2012	5,056.85		012567		
	I-0021577IN	Gas & Diesel for LCRA	R	8/16/2012	4,132.69		012567		9,189.54
00085		DON'S INDUSTRIAL SUPPLIES, INC							
	I-349423	Gaskets for LCRA Maint	R	8/16/2012	37.42		012568		37.42
02425		Casey Duarte							
	I-072712	Waterpark Refund	R	8/16/2012	36.00		012569		36.00
02427		Lorelei Ellingwood							
	I-072712	Waterpark Refund	R	8/16/2012	36.00		012570		36.00
02428		Bridget Fabbian							
	I-072912	Waterpark Program Fee	R	8/16/2012	280.00		012571		280.00
00095		FAMCON PIPE & SUPPLY							
	I-143657	Saddle, Bushing for Pipelines	R	8/16/2012	141.57		012572		141.57
00099		FGL ENVIRONMENTAL							
	I-206703B	Radio Chemistry-Gross Beta	R	8/16/2012	73.10		012573		
	I-207132A	Wet Chemistry-NO3	R	8/16/2012	43.00		012573		116.10
00104		FRED'S TIRE MAN							
	I-60133	Flat Repair, #39 LCRA Truck	R	8/16/2012	15.00		012574		15.00
01280		FRY'S ELECTRONICS, INC.							
	I-4614809	Mouse for Water Conservation	R	8/16/2012	86.19		012575		86.19
02429		Maggie Gamillo							
	I-080312	Waterpark Refund	R	8/16/2012	24.00		012576		24.00

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02430		Lois Gomez							
	I-072712	Waterpark Refund	R	8/16/2012	60.00		012577		60.00
02158		Google, Inc.							
	I-2816992	Additional Usage, IT Dept	R	8/16/2012	3.25		012578		3.25
02448		Charice Guerra							
	I-081412	Camping Fee Refund	R	8/16/2012	101.50		012579		101.50
02431		Luke Higgins							
	I-072712	Waterpark Refund	R	8/16/2012	48.00		012580		48.00
02432		Kathleen Hunter							
	I-080312	Waterpark Refund	R	8/16/2012	24.00		012581		24.00
02433		Dawn Jensen							
	I-072912	Camping Fee Refund	R	8/16/2012	214.00		012582		214.00
01022		KELLY CLEANING & SUPPLIES, INC							
	I-25263267	Janitorial Services, LCRA	R	8/16/2012	280.00		012583		280.00
00667		KENNEDY/JENKS CONSULTANTS INC							
	I-66797	Project 1189010*00 7/12	R	8/16/2012	1,136.09		012584		1,136.09
02434		Joan Kenton							
	I-072712	Waterpark Refund	R	8/16/2012	44.00		012585		44.00
02203		KEYT TV							
	I-122453	Commercials for Waterpark	R	8/16/2012	320.00		012586		320.00
02435		Summer Knight							
	I-072712	Waterpark Refund	R	8/16/2012	24.00		012587		24.00
09846		KOOLCO MECHANICAL INC							
	I-33763	Ice Machine Repair, Maint	R	8/16/2012	357.72		012588		357.72
00360		LESLIE'S POOL SUPPLIES, INC							
	I-301358189	Chemicals for Waterpark	R	8/16/2012	758.61		012589		758.61
00328		LIGHTNING RIDGE							
	I-8467	T-Shirts for Waterpark	R	8/16/2012	234.43		012590		234.43
02437		Stephanie Mavros							
	I-072712	Waterpark Refund	R	8/16/2012	24.00		012591		24.00

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00280		MCCARTY & SONS TOWING, INC							
	I-59182	Tow Eq#81 to CMWD	R	8/16/2012	220.00		012592		220.00
00329		MCMASTER-CARR SUPPLY CO.							
	I-33900139	Parts for Robles Repair	R	8/16/2012	283.68		012593		283.68
00151		MEINERS OAKS ACE HARDWARE							
	I-507004	Receptacles for Pipelines	R	8/16/2012	67.28		012594		
	I-507417	Masking Tape for LCRA	R	8/16/2012	19.18		012594		
	I-507644	Plywood, Crimp for Dist Maint	R	8/16/2012	44.73		012594		
	I-508038	Plungers for LCRA Maint	R	8/16/2012	20.25		012594		
	I-508040	Primer, Flagging Tape, Dst Mnt	R	8/16/2012	26.19		012594		177.63
02449		Dania Ochoa							
	I-081012	Waterpark Refund	R	8/16/2012	110.00		012595		110.00
00163		OFFICE DEPOT							
	I-619282678001	Office Supplies	R	8/16/2012	49.00		012596		49.00
02438		Richard Oh							
	I-072712	Waterpark Refund	R	8/16/2012	132.00		012597		132.00
00912		OJAI BUSINESS CENTER, INC							
	I-7782	Price Lists for Fair Booth	R	8/16/2012	26.81		012598		26.81
00169		OJAI VALLEY SANITARY DISTRICT							
	I-14683	5/1-6/30/12 Sewer Svc 99991	R	8/16/2012	14,149.81		012599		14,149.81
00383		ON DUTY UNIFORMS & EQUIPMENT							
	I-030712	Gloves for APSO	R	8/16/2012	26.81		012600		26.81
01092		JOHN PARLEE							
	I-081012	TP Operation Class	R	8/16/2012	153.04		012601		153.04
01334		POWER MACHINERY CENTER							
	I-E68029	Club Car Lease, Y13634	R	8/16/2012	798.20		012602		
	I-E68039	Club Car Lease, Y13864	R	8/16/2012	602.67		012602		1,400.87
10042		PSR ENVIRONMENTAL SERVICE, INC							
	I-5585	Leak Detection Cert, LCRA	R	8/16/2012	1,048.52		012603		
	I-5589	Gas Tank Inspection, LCRA	R	8/16/2012	210.00		012603		
	I-5590	Gas Tank Inspection, Main Yard	R	8/16/2012	210.00		012603		1,468.52

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02439		Wilfredo Rivera							
	I-071412	Camping Fee Refund	R	8/16/2012	126.50		012604		126.50
00313		ROCK LONG'S AUTOMOTIVE							
	I-6070	Fuel Pressure Regulator, #27	R	8/16/2012	300.21		012605		
	I-6148	Lube & Oil Change, #18	R	8/16/2012	602.98		012605		
		Replace Transmission Filter & Gasket, New Battery							
	I-6190	Disc Rotor, Spark Plugs #8 E&M	R	8/16/2012	1,390.24		012605		2,293.43
02450		Aquileo Santiago							
	I-081212	Waterpark Refund	R	8/16/2012	48.00		012606		48.00
02440		Julie-ann Scott							
	I-072712	Waterpark Refund	R	8/16/2012	48.00		012607		48.00
00725		SMART & FINAL							
	I-080812	Breakroom Supplies Dist Ofc	R	8/16/2012	104.49		012608		104.49
10100		SPECIALTY MARINE, INC							
	I-072012	Power Trim Switch, #138, Arima	R	8/16/2012	55.04		012609		
	I-548	500 Hour Service, #289 Cortez	R	8/16/2012	610.73		012609		665.77
01600		VARIETY LIGHTING SUPPLY							
	I-00139836	Campground Lighting Bulbs	R	8/16/2012	138.35		012610		138.35
00271		WEST COAST AIR CONDITIONING							
	I-S41849	PM Service A/C Unit LCRA	R	8/16/2012	130.00		012611		
	I-S41854	PM Service A/C Unit Dist Ofc	R	8/16/2012	185.00		012611		315.00
02441		Jennifer Whittaker							
	I-072712	Waterpark Refund	R	8/16/2012	36.00		012612		36.00
02442		Scott Wirz							
	I-080312	Waterpark Refund	R	8/16/2012	60.00		012613		60.00
02443		Kathy Wise							
	I-080312	Waterpark Refund	R	8/16/2012	48.00		012614		48.00
02444		Christina Worburger							
	I-072712	Waterpark Refund	R	8/16/2012	36.00		012615		36.00
02445		Jose Zuniga							
	I-080312	Camping Fee Refund	R	8/16/2012	25.00		012616		25.00

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00420		AE Group Mechanical Engineers,							
	I-CASIT.HVAC2012.3	Office HVAC & Lighting Design	R	8/23/2012	17,850.00		012617		17,850.00
01985		AFLAC/FLEX ONE							
	I-082312	Reimburse Medical 2012	R	8/23/2012	56.00		012618		56.00
01985		AFLAC/FLEX ONE							
	I-456341ER	Service Fee Invoice	R	8/23/2012	125.00		012619		125.00
00029		AMERICAN TOWER CORP							
	I-1283725	Tower Rent, Red Mtn, Rincon Pk	R	8/23/2012	1,551.56		012620		1,551.56
00018		AT & T MOBILITY							
	I-829434088X08142012	PT Wildlife Biologist Cell	R	8/23/2012	6.80		012621		6.80
02283		Mary Bergen							
	I-Jul 12	Reimburse Mileage	R	8/23/2012	8.21		012622		8.21
01062		BP Medical Supplies							
	C-B870562A	Accrue Use Tax	R	8/23/2012	28.93CR		012623		
	D-B870562A	Accrue Use Tax	R	8/23/2012	28.93		012623		
	I-B870562	Medical Supplies for WP	R	8/23/2012	399.01		012623		399.01
00896		CALIFORNIA LAKE MGMT SOCIETY							
	I-082312	CALMS Conference 10/4-10/5	R	8/23/2012	250.00		012624		250.00
00055		CASITAS BOAT RENTALS							
	I-July 12	Cafe Pass Reimbursment	R	8/23/2012	2,119.28		012625		2,119.28
00059		COASTAL PIPCO							
	I-S1735581001	Pump Truck Suction Hose	R	8/23/2012	163.42		012626		163.42
00719		CORELOGIC INFORMATION SOLUTION							
	I-80563920	Realquest Subscription	R	8/23/2012	125.00		012627		125.00
01001		CUSTOM PRINTING							
	I-119101	Day Use Tags	R	8/23/2012	995.04		012628		995.04
01595		DOUBLE R TOWING							
	I-3818	Tow #26 to Rock's	R	8/23/2012	50.00		012629		50.00
00086		E.J. Harrison & Sons Inc							
	I-28946	Acct#1C00054230	R	8/23/2012	6,279.00		012630		
	I-963	Acct#500546088	R	8/23/2012	1,400.00		012630		7,679.00

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01280		FRY'S ELECTRONICS, INC.							
	C-4621565	Credit for Admin Monitor	R	8/23/2012	43.09CR		012631		
	I-4607333	Computer Monitors for Pipeline	R	8/23/2012	335.98		012631		
	I-4615981	Computer Monitor for Admin	R	8/23/2012	245.04		012631		537.93
00163		OFFICE DEPOT							
	I-618929648001	Chairs for Fish,White Board PL	R	8/23/2012	600.80		012632		600.80
00168		OJAI VALLEY NEWS							
	I-02714065	Public Notice, Rates	R	8/23/2012	20.00		012633		
	I-02714068	Public Notice, Budget	R	8/23/2012	16.00		012633		36.00
01381		ONTRAC							
	I-7482317	Refrigerated Sample to Biovir	R	8/23/2012	7.15		012634		7.15
00215		SOUTHERN CALIFORNIA EDISON							
	I-081712	Acct#2237011044	R	8/23/2012	20.97		012635		
	I-082112	Acct#2157697889	R	8/23/2012	9,288.06		012635		
	I-082112A	Acct#2266156405	R	8/23/2012	132.84		012635		
	I-082112B	Acct#2312811532	R	8/23/2012	72.72		012635		9,514.59
02163		Toro Enterprises, Inc.							
	I-7480	Senior Canyon Upgrade Project	R	8/23/2012	112,100.00		012636		112,100.00
02452		TransPaC Solutions							
	I-HC12087677	Woodland Pressure Damage Pmt	R	8/23/2012	823.64		012637		
	Event#TPCS-1674767-2486657								
	I-HC12087677A	Woodland Pressure Damage Pmt	R	8/23/2012	1,000.00		012637		1,823.64
	Event#TPCS-1674767-2486657								
01967		Robert Vasquez							
	I-081512	Safety Boots	R	8/23/2012	170.00		012638		170.00
01283		Verizon Wireless							
	I-1107222551	Dist Ofc,TP,Monthly Cell Chrgs	R	8/23/2012	562.87		012639		
	Acct#77062830400001								
	I-1107223321	LCRA Monthly Cell Charges	R	8/23/2012	195.62		012639		758.49
	Acct#77232361800001								
00270		WELLS FARGO BANK							
	I-080912	Hip Waders for Fisheries	R	8/23/2012	46.90		012640		
	I-080912A	LCD TV for Cable Project, LCRA	R	8/23/2012	101.00		012640		
	I-080912B	Monthly Credit Card Charges	R	8/23/2012	731.76		012640		879.66

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00124		ICMA RETIREMENT TRUST - 457							
	I-CUI201208210596	457 CATCH UP	R	8/23/2012	569.24		012641		
	I-DCI201208210596	DEFERRED COMP FLAT	R	8/23/2012	2,561.52		012641		
	I-DI%201208210596	DEFERRED COMP PERCENT	R	8/23/2012	128.30		012641		3,259.06
01960		Moringa Community							
	I-MOR201208210596	PAYROLL CONTRIBUTIONS	R	8/23/2012	16.75		012642		16.75
00985		NATIONWIDE RETIREMENT SOLUTION							
	I-CUN201208210596	457 CATCH UP	R	8/23/2012	423.06		012643		
	I-DCN201208210596	DEFERRED COMP FLAT	R	8/23/2012	3,877.68		012643		4,300.74
00180		S.E.I.U. - LOCAL 721							
	I-UND201208210596	UNION DUES	R	8/23/2012	610.50		012644		610.50
00230		UNITED WAY							
	I-UWY201208210596	PAYROLL CONTRIBUTIONS	R	8/23/2012	45.00		012645		45.00
02453		Scott Vanwinkle							
	I-082012	Damage to Truck Mirror	R	8/24/2012	221.02		012646		221.02
00008		ADVANTAGE PHYSICAL THERAPY							
	I-CWD165	Evaluation	R	8/29/2012	2,875.00		012647		2,875.00
01707		AIRGAS SPECIALTY PRODUCTS							
	I-131255826	Ammonium Hydroxide, TP	R	8/29/2012	3,046.36		012648		3,046.36
00010		AIRGAS USA LLC							
	I-9903863362	Cylinder Rental for Pipelines	R	8/29/2012	39.86		012649		39.86
00417		APPLIED INDUSTRIAL TECHNOLOGY							
	I-85992625	Motor Coupling Kit, Orings, PP	R	8/29/2012	51.69		012650		51.69
00014		AQUA-FLO SUPPLY							
	I-356585	PVC Parts for 2" Service	R	8/29/2012	83.16		012651		
	I-356877	PVC Adapters for Pipelines	R	8/29/2012	29.07		012651		112.23
00840		AQUA-METRIC SALES COMPANY							
	I-0044401IN	Sensus 520M MXUs for O&M CS	R	8/29/2012	191,843.44		012652		
	I-0044405IN	Register Parts for O&M CS	R	8/29/2012	15,864.87		012652		207,708.31
01703		ARNOLD LAROCHELLE MATTHEWS							
	I-35489	Matter 5088-008 7/12 Srvcs	R	8/29/2012	5,094.00		012653		
	I-35490	Matter No#5088001 7/12 Srvcs	R	8/29/2012	3,153.00		012653		8,247.00

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02179		Art Street Interactive							
	I-86973	Res Software, Maint & Hosting	R	8/29/2012	542.15		012654		542.15
01666		AT & T							
	I-000003605623	Local, Regional, Long Distance	R	8/29/2012	782.87		012655		
	I-000003631805	T-1 Lines C602222128777	R	8/29/2012	896.92		012655		1,679.79
00020		AVENUE HARDWARE, INC							
	I-47420	Tie Down for Pipeline Truck	R	8/29/2012	32.12		012656		
	I-47431	Soldering Iron for TP	R	8/29/2012	35.34		012656		67.46
00021		AWA OF VENTURA COUNTY							
	I-081412	Reception on 9/20/12	R	8/29/2012	1,000.00		012657		1,000.00
00030		B&R TOOL AND SUPPLY CO							
	I-1249789000101	Top Nut for Grinder, Pipelines	R	8/29/2012	20.41		012658		
	I-1250388000101	Terry Cloth Rags for Inventory	R	8/29/2012	346.26		012658		366.67
02283		Mary Bergen							
	I-Jun 12	Reimburse Mileage 6/12	R	8/29/2012	12.32		012659		12.32
00031		BIG T's FREIGHTLINER, INC.							
	I-1222230069	Air Filter for #88, Pump Truck	R	8/29/2012	18.99		012660		
	I-222260100	Repair #81, Utility Truck	R	8/29/2012	1,264.60		012660		1,283.59
	Replace Injector Pressure Regulator								
00038		BLACK GOLD INDUSTRIES							
	I-19038	Waste Oil Removal from Garage	R	8/29/2012	365.00		012661		365.00
01616		FRED BRENEMAN							
	I-082712	8/19/12-9/1/12	R	8/29/2012	391.00		012662		391.00
02454		Norma Burboa							
	I-081112	Waterpark Fee Refund	R	8/29/2012	12.00		012663		12.00
01023		CARQUEST AUTO PARTS							
	I-7294350005	Light for Eq#37, Maint Truck	R	8/29/2012	37.28		012664		
	I-7294350098	Oil for Garage	R	8/29/2012	11.55		012664		
	I-7294350473	Parts to Install Meters, Carts	R	8/29/2012	18.90		012664		67.73
00055		CASITAS BOAT RENTALS							
	I-001401	Kayak Rental,Jr Lifeguard Trip	R	8/29/2012	185.00		012665		
	I-001402	Service Pac Angler, #136	R	8/29/2012	271.45		012665		456.45

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00117		CERTEX USA, INC							
	I-1070148300	Cable, Sleeves for Fisheries	R	8/29/2012	52.29		012666		52.29
01384		CLEAN HARBORS ENVIRONMENTAL SE							
	I-6W1240133	Waste Disposal Services	R	8/29/2012	156.10		012667		156.10
00057		CLEAN SOURCE							
	I-268534801	Janitorial Supplies	R	8/29/2012	0.06		012668		
	I-269355400	Janitorial Supplies	R	8/29/2012	3,206.70		012668		3,206.76
02322		Coast Cart, Inc.							
	I-2791	Mirrors for EZ Go Carts 1 & 2	R	8/29/2012	64.24		012669		
	I-2812	Spark Plugs, Oil Filters,Carts	R	8/29/2012	74.81		012669		
	I-2813	Install Spark Plug, EZ 2 Cart	R	8/29/2012	80.31		012669		
	I-2822	Tune Up EZ Go Cart #1	R	8/29/2012	75.00		012669		
	I-2835	Install Brake Lights, EZ Go 3	R	8/29/2012	353.89		012669		
	I-2836	Tune Up EZ Go Cart #3	R	8/29/2012	75.00		012669		723.25
01843		COASTAL COPY							
	I-423075	Copier Usage for LCRA	R	8/29/2012	88.95		012670		
	I-423076	Copier Usage, Dist Ofc	R	8/29/2012	62.33		012670		151.28
00059		COASTAL PIPCO							
	I-S1735674001	Irrigation Parts for LCRA	R	8/29/2012	74.33		012671		74.33
00061		COMPUWAVE							
	I-SB02071216	Printer Cartridges	R	8/29/2012	134.78		012672		134.78
01902		Conaway Ice Inc.							
	I-154315	Dry Ice for Fisheries	R	8/29/2012	8.58		012673		8.58
00062		CONSOLIDATED ELECTRICAL							
	I-9009662609	Cop Lug for Pump Plant	R	8/29/2012	12.32		012674		
	I-9009662714	Arc Flash for Fairview PP MCC	R	8/29/2012	4,987.13		012674		
	I-9009662771	Parts for Solar Light Repair	R	8/29/2012	312.11		012674		
	I-9009663316	Sensor for Solar Lights, LCRA	R	8/29/2012	65.63		012674		5,377.19
01483		CORVEL CORPORATION							
	I-3004800	Admin Fees and Excess Claims	R	8/29/2012	4,350.00		012675		4,350.00
02214		CS-amsco							
	I-6775	Check Valve Parts for PP	R	8/29/2012	3,898.49		012676		3,898.49

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01001		CUSTOM PRINTING							
	I-119441	Application for Leave Slips	R	8/29/2012	167.31		012677		167.31
02034		D.K. Mechanical							
	I-2345	Repairs to Cat #109, Pumper#88	R	8/29/2012	267.29		012678		
		Shocks for Cat #109, Fuel Sensor for Pump Truck #88							
	I-2346	Replace Fuel Sender, #114	R	8/29/2012	268.88		012678		
	I-2357	Hyd Seal Kits for #111 JD310C	R	8/29/2012	516.19		012678		1,052.36
10106		DeZURIK/Apco							
	I-RPI58009643	Butterfly Valves for OVPP	R	8/29/2012	10,842.98		012679		10,842.98
00771		DLT SOLUTIONS INC.							
	I-SI196599	AutoCAD Subscription Renewal	R	8/29/2012	1,196.14		012680		1,196.14
	3 Year Renewal 8/1/12-7/31/15								
00086		E.J. Harrison & Sons Inc							
	I-28922	Acct#1C-00053370	R	8/29/2012	114.55		012681		114.55
00944		EDULEARN, INC.							
	I-23937	Window 2008 Server & Network	R	8/29/2012	999.00		012682		999.00
00095		FAMCON PIPE & SUPPLY							
	I-143745	Parts to Move Services	R	8/29/2012	330.33		012683		
	I-143988	Pipe, Nipples for Warehouse	R	8/29/2012	1,114.17		012683		
	I-144112	Concrete Boxes for O&M CS	R	8/29/2012	1,313.81		012683		
	I-144223	Concrete Meter Boxes	R	8/29/2012	1,313.81		012683		
	I-144227	Parts for Warehouse/Inventory	R	8/29/2012	158.52		012683		
	I-144290	Concrete Meter Boxes	R	8/29/2012	788.29		012683		
	I-144324	Concrete Meter Boxes	R	8/29/2012	525.53		012683		5,544.46
00013		FERGUSON ENTERPRISES INC #1083							
	I-0413295	Bolts for Fish Ladder Work	R	8/29/2012	782.44		012684		
	I-0413477	Bolts for Fish Ladder Work	R	8/29/2012	43.76		012684		
	I-0414528	Copper Tubing & Pipe, WH Stock	R	8/29/2012	1,641.61		012684		
	I-8529656	Filter Kits for Restrooms,LCRA	R	8/29/2012	52.42		012684		2,520.23
00099		FGL ENVIRONMENTAL							
	I-207441A	Wet Chemistry-NO3	R	8/29/2012	43.00		012685		
	I-207469A	Metals, Total-Mn	R	8/29/2012	70.00		012685		113.00
00101		FISHER SCIENTIFIC							
	I-7746525	Lab Testing Supplies	R	8/29/2012	183.00		012686		183.00

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02319		Flow Science Incorporated							
	I-0006740	LCRA Aeration System Study	R	8/29/2012	9,792.90		012687		9,792.90
00104		FRED'S TIRE MAN							
	I-60220	2 Tires for #88, Pump Truck	R	8/29/2012	1,089.92		012688		
	I-60378	2 Tires for #88, Pump Truck	R	8/29/2012	843.97		012688		
	I-60461	Tire for Club Car #12	R	8/29/2012	47.85		012688		
	I-60523	Oil Change, Batteries for #42	R	8/29/2012	433.79		012688		
	I-60529	4 Tires for Eq#46, Rear Brakes Front & Rear Shocks	R	8/29/2012	1,397.46		012688		3,812.99
02455		Faviola Gomez							
	I-081412	Waterpark Fee Refund	R	8/29/2012	48.00		012689		48.00
00115		GRAINGER, INC							
	I-9907805486	Cleaning Tissues for E & M	R	8/29/2012	30.16		012690		
	I-9908743546	Degreaser for Pump Plant	R	8/29/2012	34.88		012690		65.04
00121		HACH COMPANY							
	I-7886549	LDO Sensor Cap for TP	R	8/29/2012	125.35		012691		125.35
01052		HARBOR FREIGHT TOOLS USA, INC							
	I-155660	Stamp Set for Tree Labeling	R	8/29/2012	30.01		012692		
	I-158068	Paint Brushes for Warehouse	R	8/29/2012	23.57		012692		53.58
02456		Daniel Hernandez							
	I-081812	Waterpark Fee Refund	R	8/29/2012	48.00		012693		48.00
01594		HIGHWAY TECHNOLOGIES, INC.							
	I-65108720001	Waterpark Hours Sign	R	8/29/2012	54.00		012694		
	I-65108721001	Sign for Campgrounds	R	8/29/2012	108.00		012694		162.00
00127		INDUSTRIAL BOLT & SUPPLY							
	I-00129131	Eye Bolts for Canal Bridge	R	8/29/2012	11.88		012695		11.88
00872		Irrisoft, Inc.							
	I-4285	Weather Station Signal Service	R	8/29/2012	79.00		012696		79.00
00131		JCI JONES CHEMICALS, INC							
	I-556255	Chlorine for TP, CM#556321	R	8/29/2012	1,770.00		012697		
	I-556967	Chlorine for TP, CM#557017	R	8/29/2012	1,770.00		012697		
	I-556979	Hypochlorite for TP, CM#557015	R	8/29/2012	899.94		012697		
	I-557431	Chlorine for TP, CM#557470	R	8/29/2012	1,770.00		012697		6,209.94

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00145		MAGNUM FENCE & SECURITY, INC.							
	C-080812	Credit Inv#8927	R	8/29/2012	28.88CR		012698		
	I-4405	Parts for Upper Rincon Creek	R	8/29/2012	80.03		012698		
	I-4406	Parts for Upper Rincon Creek	R	8/29/2012	2.26		012698		
	I-9046	Parts for Gate at Fish Ladder	R	8/29/2012	90.77		012698		144.18
02461		Mario Martinez							
	I-081012	Late Day Pass Refund	R	8/29/2012	45.00		012699		45.00
00280		MCCARTY & SONS TOWING, INC							
	I-59183	Tow #81 to Big T's for Repairs	R	8/29/2012	220.00		012700		220.00
00151		MEINERS OAKS ACE HARDWARE							
	I-505824	9V Batteries for LCRA	R	8/29/2012	7.50		012701		
	I-506805	Tools for O & M CS	R	8/29/2012	225.23		012701		
	I-506989	Cable, Batteries for Fisheries	R	8/29/2012	20.24		012701		
	I-507298	Wrenches, Cleaners, Pipelines	R	8/29/2012	56.25		012701		
	I-507779	Cloth Shade for Scada Panels	R	8/29/2012	57.81		012701		
	I-507844	Supplies for Fisheries	R	8/29/2012	65.09		012701		
	I-508366	Cloth Shade for Fairview PP	R	8/29/2012	129.47		012701		
	I-508370	Paint for Elec Shop Cabinet	R	8/29/2012	26.34		012701		
	I-508663	Ball Valves for Waterpark	R	8/29/2012	5.93		012701		
	I-508774	Primer for Pipelines	R	8/29/2012	11.78		012701		
	I-508864	Spray Bottle for Dist Maint	R	8/29/2012	5.14		012701		
	I-508873	Concrete Mix for Pipelines	R	8/29/2012	44.92		012701		
	I-509065	Bolts for Pump Plants	R	8/29/2012	4.68		012701		
	I-509089	A/C Unit for Unit at Cas #1	R	8/29/2012	214.49		012701		
	I-509141	Paint and Brush for Pipelines	R	8/29/2012	17.27		012701		
	I-509434	Pipe Supplies for O&M CS	R	8/29/2012	65.88		012701		
	I-509545	Knee Boots, Supplies for WP	R	8/29/2012	48.06		012701		
	I-509597	Key Made for Dist Maint	R	8/29/2012	1.60		012701		
	I-509812	Caps for Tool Rack, LCRA Maint	R	8/29/2012	4.25		012701		
	I-509931	Knee Boots, Batteries for WP	R	8/29/2012	31.53		012701		
	I-510118	Mortar Mix for O&M CS	R	8/29/2012	72.75		012701		
	I-510335	Paint and Paint Brush for Fish	R	8/29/2012	30.87		012701		
	I-510344	Anchors for Dist Maint	R	8/29/2012	5.24		012701		
	I-510346	Drinking Fountain, Picnic #1	R	8/29/2012	55.75		012701		
	I-510427	Bulbs for SH, Hose Ends, LCRA	R	8/29/2012	15.40		012701		
	I-510537	Latex Glove for O & M CS	R	8/29/2012	10.18		012701		1,233.65
00881		MEINERS OAKS SASH & DOOR							
	I-12056	Hinges for Doors at LCRA	R	8/29/2012	121.94		012704		121.94

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00163		OFFICE DEPOT							
	C-620469615001A	Correct Invoice #620469615001	R	8/29/2012	0.01CR		012705		
	I-619282896001	Blank Awards for Waterpark	R	8/29/2012	29.71		012705		
	I-620469615001	Office Supplies	R	8/29/2012	160.23		012705		
	I-621133911001	Toners for Stock	R	8/29/2012	71.14		012705		261.07
01570		Ojai Auto Supply LLC							
	I-250130	Hitchpin for Dist Maint	R	8/29/2012	7.07		012706		
	I-251759	Terminal for Hr Meters, EZ Go	R	8/29/2012	3.64		012706		10.71
00165		OJAI LUMBER CO, INC							
	I-2436685	Replace Stop Sign Post, LCRA	R	8/29/2012	39.46		012707		
	I-2436717	Concrete Mix for Pump Plant	R	8/29/2012	50.06		012707		89.52
00884		OJAI TERMITE & PEST CONTROL							
	I-93424	Yellow Jacket Removal, C-11	R	8/29/2012	250.00		012708		250.00
00602		OJAI TRUE VALUE							
	I-41982	Dust Pan for Show Booth, LCRA	R	8/29/2012	9.64		012709		9.64
01051		OJAI VALLEY CARD & GIFT							
	I-11650103	Stamp Pads for Waterpark	R	8/29/2012	21.49		012710		21.49
01342		ONSET COMPUTER CORPORATION							
	C-861A	Accrue Use Tax	R	8/29/2012	15.74CR		012711		
	D-861A	Accrue Use Tax	R	8/29/2012	15.74		012711		
	I-861	Data Logger Parts, Fisheries	R	8/29/2012	231.00		012711		231.00
02386		Oregon State University							
	I-AMBC131303	Steelhead Genetic Study	R	8/29/2012	3,300.00		012712		3,300.00
00178		PARADISE CHEVROLET							
	I-CTCB489258	Replace Driver Door Hinges,#28	R	8/29/2012	966.10		012713		966.10
10072		PERMACOLOR,INC							
	I-274830	Powder Coat Brackets, Robles	R	8/29/2012	500.00		012714		500.00
02457		Maria Piedra							
	I-081812	Waterpark Fee Refund	R	8/29/2012	36.00		012715		36.00
00686		POLLARD CO., INC.							
	C-I333043INA	Accrue Use Tax	R	8/29/2012	9.43CR		012716		
	D-I333043INA	Accrue Use Tax	R	8/29/2012	9.43		012716		
	I-I333043IN	Hose for Flushing, WQ	R	8/29/2012	143.27		012716		143.27

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01694		POOLFILTERS.BIZ							
	I-300035000	Filters for Waterpark	R	8/29/2012	547.50		012717		547.50
00033		ROBERT SKEELS & CO.							
	I-50086	Padlocks for O&M CS	R	8/29/2012	295.14		012718		295.14
00313		ROCK LONG'S AUTOMOTIVE							
	I-6193	Renew Heater Connections, #26	R	8/29/2012	72.04		012719		
	I-6226	Lube & Oil Change #46 TP	R	8/29/2012	70.13		012719		
	I-6255	A/C Repair on Admin Van #32	R	8/29/2012	123.86		012719		266.03
02458		Salvador Sandoval							
	I-081912	Waterpark Fee Refund	R	8/29/2012	48.00		012720		48.00
02459		Cristal Santos							
	I-081412	Waterpark Fee Refund	R	8/29/2012	12.00		012721		12.00
02003		Sostre & Associates							
	I-1984	CMS Fee and Web Hosting	R	8/29/2012	249.00		012722		249.00
00215		SOUTHERN CALIFORNIA EDISON							
	I-082512	Acct#2210507034	R	8/29/2012	12,841.73		012723		
	I-082812	Acct#2210503702	R	8/29/2012	5,196.50		012723		18,038.23
10100		SPECIALTY MARINE, INC							
	I-648	O-Rings & Gaskets for #136	R	8/29/2012	34.39		012724		34.39
	Pac Angler								
01987		StayWell Company							
	I-6816529	Lifeguard Instructor Manual	R	8/29/2012	168.02		012725		168.02
02460		Sean Thompson							
	I-081912	Waterpark Fee Refund	R	8/29/2012	36.00		012726		36.00
01709		TYCO VALVES & CONTROLS							
	I-157911500	Reclaim Filtration Valve, TP	R	8/29/2012	355.55		012727		355.55
01662		TYLER TECHNOLOGIES, INC.							
	I-02549247	Monthly UB Website Fees	R	8/29/2012	153.00		012728		153.00
00185		Univar USA Inc							
	I-LA795962	Sodium Hypochlorite for WP	R	8/29/2012	1,822.76		012729		
	I-LA800079	Sodium Hypochlorite for WP	R	8/29/2012	2,605.54		012729		
	I-LA800080	Hydrochloric Acid for WP	R	8/29/2012	1,068.37		012729		5,496.67

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00247		County of Ventura							
	I-081512	Encroachment Permits	R	8/29/2012	2,200.00		012730		2,200.00
00246		VENTURA COUNTY AIR POLLUTION							
	I-1028345	Permit for Robles	R	8/29/2012	535.00		012731		535.00
00256		VENTURA RENTAL CENTER, INC.							
	I-1315133	Propane for Forklift,Main Yard	R	8/29/2012	75.45		012732		
	I-1317003	Rent Excavator, Rincon Creek	R	8/29/2012	241.74		012732		
	I-1317373	Excavator Rental for Pipeline	R	8/29/2012	244.02		012732		561.21
00330		WHITE CAP CONSTRUCTION SUPPLY							
	I-716469100	Igloo Coolers for O&M CS	R	8/29/2012	60.04		012733		60.04
00276		RON YOST							
	I-082312	Reimburse Possessory Tax	R	8/29/2012	530.99		012734		530.99
01203		DENISE COLLIN							
	I-082212	8/19/12	R	8/29/2012	144.36		012735		144.36
01345		MIKE SHIELDS							
	I-Aug 12	Reimburse Expenses 8/12	R	8/31/2012	113.63		012736		113.63
01122		Suzi Taylor							
	I-Aug 12	Reimburse Expenses 8/12	R	8/31/2012	80.28		012737		80.28
02033		Abbot Industrial Supplies							
	I-39784	Trash Bags for LCRA	R	9/06/2012	386.10		012738		386.10
02463		Khaled Alawar							
	I-082412	Irrigation Controller Rebate	R	9/06/2012	250.00		012739		250.00
00011		ALERT COMMUNICATIONS							
	I-120800847101	Call Center 9/12	R	9/06/2012	227.30		012740		227.30
00836		AMERICAN RED CROSS							
	I-10135130	Lifeguard Certs 7/2/12	R	9/06/2012	525.00		012741		525.00
00014		AQUA-FLO SUPPLY							
	I-356754	PVC Flange for Pipelines	R	9/06/2012	27.02		012742		
	I-363662	Plumbing Parts for Filter Room	R	9/06/2012	99.83		012742		126.85
00030		B&R TOOL AND SUPPLY CO							
	I-1250231000101	Chuck Key for Drill,LCRA Maint	R	9/06/2012	55.68		012743		55.68

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09065		ERIC BEHRENDT							
	I-090412	Safety Boots	R	9/06/2012	170.00		012744		170.00
09716		CA-NV SECTION AWWA							
	I-090412	Cert#1407 Expires 3/31/13	R	9/06/2012	50.00		012745		50.00
00117		CERTEX USA, INC							
	I-1070146800	Ratchet Strap for Pump Plants	R	9/06/2012	28.90		012746		28.90
00057		CLEAN SOURCE							
	I-269694600	Janitorial Supplies LCRA	R	9/06/2012	1,390.16		012747		
	I-269753100	Janitorial Supplies, LCRA	R	9/06/2012	42.54		012747		1,432.70
02322		Coast Cart, Inc.							
	I-2838	Repair EZ-Go #2, Tail Light	R	9/06/2012	131.46		012748		131.46
00059		COASTAL PIPCO							
	I-S1738305001	New Hand Pump, LCRA Maint	R	9/06/2012	31.36		012749		
	I-S1738714002	Lubricant & PVC Parts, TP	R	9/06/2012	25.34		012749		56.70
02464		Conejo Valley USD							
	I-082312	Waterpark Fee Refund	R	9/06/2012	240.00		012750		
	I-082312A	Waterpark Refund Fee	R	9/06/2012	210.00		012750		450.00
00062		CONSOLIDATED ELECTRICAL							
	I-9009663700	Cutting Oil for Pump Plant	R	9/06/2012	28.73		012751		28.73
01588		CONSULTING WEST ENGINEERS							
	I-CMWD1212	OVPP Electrical Upgrades	R	9/06/2012	7,440.00		012752		7,440.00
00740		DELL MARKETING L.P.							
	I-XFWMRR621	Computer CPUs,Admin 3,Engin 1	R	9/06/2012	4,950.47		012753		4,950.47
01595		DOUBLE R TOWING							
	I-3852	Tow #26 to Rock's Auto	R	9/06/2012	50.00		012754		50.00
01452		FEDERAL EXPRESS FREIGHT							
	I-2704733113	Freight on Parts,Strut Channel	R	9/06/2012	59.80		012755		59.80
00099		FGL ENVIRONMENTAL							
	I-207467A	Lake Nutrients Sampling 7/25	R	9/06/2012	1,524.40		012756		
	I-207943A	Wet Chemistry-NO3	R	9/06/2012	61.00		012756		
	I-208220A	Wet Chemistry-NO3	R	9/06/2012	18.00		012756		
	I-208221A	Wet Chemistry-NO3	R	9/06/2012	43.00		012756		
	I-208488A	Wet Chemistry-NO3	R	9/06/2012	43.00		012756		1,689.40

VENDOR SET: 01 Casitas Municipal Water D
BANK: AP ACCOUNTS PAYABLE
DATE RANGE: 8/07/2012 THRU 9/06/2012

VENDOR	I.D.	NAME	STATUS	CHECK DATE	INVOICE AMOUNT	DISCOUNT	CHECK NO	CHECK STATUS	CHECK AMOUNT
00101		FISHER SCIENTIFIC							
	I-2095914	Aquatic Sampling Equip, Fish	R	9/06/2012	49.44		012757		49.44
01280		FRY'S ELECTRONICS, INC.							
	I-4643867	Network Wireless Card for IT	R	9/06/2012	43.09		012758		
	I-4656155	Cable Ext for Headset	R	9/06/2012	6.45		012758		
	I-4656163	Ext Cord, Plugs for Waterpark	R	9/06/2012	6.82		012758		56.36
02417		GardenSoft							
	I-4199	Waterwise Gardening Website	R	9/06/2012	1,083.33		012759		1,083.33
00216		THE GAS COMPANY							
	I-082712	Acct#18231433006	R	9/06/2012	42.05		012760		
	I-082812	Acct#00801443003	R	9/06/2012	392.15		012760		434.20
00115		GRAINGER, INC							
	I-9907805478	Imp Wrench-TP,Spray Paint-WH	R	9/06/2012	610.55		012761		
	I-9915717392	Start Capacitor, Distribution	R	9/06/2012	5.67		012761		616.22
01052		HARBOR FREIGHT TOOLS USA, INC							
	I-166096	Swatters, Batteries for LCRA	R	9/06/2012	27.80		012762		
	I-526060	Paint Brushes,Spare Tires LCRA	R	9/06/2012	91.11		012762		
	I-528599	Hoses for Dump Stations, LCRA	R	9/06/2012	61.10		012762		180.01
00126		CAROLE ILES							
	I-Aug 12	Reimburse Mileage 8/12	R	9/06/2012	34.96		012763		34.96
00131		JCI JONES CHEMICALS, INC							
	I-558108	Chlorine for TP, CM#558133	R	9/06/2012	1,770.00		012764		1,770.00
02345		John Crane Inc.							
	I-090412	Sealing Systems Course, E&M	R	9/06/2012	750.00		012765		750.00
01022		KELLY CLEANING & SUPPLIES, INC							
	I-72523658	Janiotial Services, LCRA 8/12	R	9/06/2012	280.00		012766		280.00
02203		KEYT TV							
	I-122599	Commercials for Waterpark	R	9/06/2012	960.00		012767		960.00
02465		Arnulfo Liera							
	I-082512	Camping Fee Refund	R	9/06/2012	26.00		012768		26.00
00328		LIGHTNING RIDGE							
	I-8221201	CMWD T-Shirts for O&M CS, Lab	R	9/06/2012	517.08		012769		517.08

VENDOR SET: 01 Casitas Municipal Water D
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DATE RANGE: 8/07/2012 THRU 9/06/2012

VENDOR	I.D.	NAME	STATUS	CHECK DATE	INVOICE AMOUNT	DISCOUNT	CHECK NO	CHECK STATUS	CHECK AMOUNT
09881		Marzulla Law, LLC							
	I-1838	File #41390003 8/12	R	9/06/2012	1,471.91		012770		1,471.91
00329		MCMASTER-CARR SUPPLY CO.							
	I-35474505	Polyethlene Sheet for PP	R	9/06/2012	55.77		012771		
	I-35564282	Parts for Strut Channel System	R	9/06/2012	447.07		012771		502.84
00151		MEINERS OAKS ACE HARDWARE							
	I-505846	Key Made for LCRA	R	9/06/2012	4.79		012772		
	I-510056	Bolts & Screws for LCRA Maint	R	9/06/2012	9.05		012772		
	I-511089	Hose Adapter & Bolts for Maint	R	9/06/2012	5.92		012772		
	I-5111183	Couplings, F Camp Irrigation	R	9/06/2012	8.46		012772		
	I-511168	Filters, Bolts for TP	R	9/06/2012	34.44		012772		
	I-511319	Trash Bags, Bolts, LCRA Maint	R	9/06/2012	17.15		012772		
	I-511473	WD40, Starting Fluid for PL	R	9/06/2012	8.03		012772		
	I-511544	Silica Sand, Robles	R	9/06/2012	48.21		012772		
	I-511627	Straps for Backwash Tank, WP	R	9/06/2012	16.09		012772		
	I-512249	Hose Ends for LCRA Maint	R	9/06/2012	5.16		012772		
	I-512355	Lead Surface Test, Robles	R	9/06/2012	10.53		012772		167.83
01876		NALCO COMPANY							
	I-96834081	Anionic Polymer for TP	R	9/06/2012	662.22		012773		662.22
00163		OFFICE DEPOT							
	I-620469521001	Office Supplies	R	9/06/2012	34.09		012774		34.09
00607		OJAI ELECTRIC							
	I-071423	Troubleshoot Vault #5 WP	R	9/06/2012	75.00		012775		75.00
00165		OJAI LUMBER CO, INC							
	I-2436729	Concrete for Grand Ave PP	R	9/06/2012	33.38		012776		33.38
00947		CITY OF OJAI							
	I-082912	Encroachment Permit	R	9/06/2012	516.50		012777		516.50
	Grand Avenue near Fulton Waterline Repair & Paving								
00988		PLUMBERS WAREHOUSE #1455							
	I-0009944	Diaphragm for Mens RR Dist Ofc	R	9/06/2012	26.92		012778		
	I-X280668	Parts for Sloan Toilet,SA Ramp	R	9/06/2012	74.06		012778		100.98
00184		POWERSTRIDE BATTERY CO, INC							
	I-V579685	Battery, Lower M Solar Lights	R	9/06/2012	185.50		012779		
	I-V579701	Battery for #38, Maint Truck	R	9/06/2012	82.85		012779		268.35

VENDOR SET: 01 Casitas Municipal Water D
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VENDOR	I.D.	NAME	STATUS	CHECK DATE	INVOICE AMOUNT	DISCOUNT	CHECK NO	CHECK STATUS	CHECK AMOUNT
01439		PRECISION POWER EQUIPMENT							
	I-1809	Parts for Chainsaws, Trimmers	R	9/06/2012	80.40		012780		
	I-1810	Pruner Head Gear Assy, DM	R	9/06/2012	227.24		012780		307.64
00313		ROCK LONG'S AUTOMOTIVE							
	I-6279	Repairs to #20,Fisheries Truck	R	9/06/2012	5,127.34		012781		
		Rebuilt Transmission, Front & Rear Shocks, Upper & Lower Radiator Hoses, Lube & Oil Change, New Ball Joints & Tie Rod							
	I-6292	Lube & Oil Change #26 LCRA	R	9/06/2012	80.99		012781		5,208.33
00202		S.H. CONSTRUCTION							
	I-559	Paving after Leak on Grand Ave	R	9/06/2012	7,150.00		012782		7,150.00
02466		Vicenta Sanchez							
	I-082512	Waterpark Refund Fee	R	9/06/2012	24.00		012783		24.00
02467		Florencio SanJuan							
	I-082612	Waterpark Fee Refund	R	9/06/2012	24.00		012784		24.00
02344		ServiceMaster Building Mainten							
	I-11093	Carpet Cleaning, Dist Ofc	R	9/06/2012	230.00		012785		
	I-11196	Janitorial Srvc, 9/12 Dist Ofc	R	9/06/2012	1,032.00		012785		1,262.00
02003		Sostre & Associates							
	I-1966	Update Website Calculator,SSL	R	9/06/2012	250.00		012786		250.00
00215		SOUTHERN CALIFORNIA EDISON							
	I-083012	Acct#2210502480	R	9/06/2012	111,439.57		012787		
	I-083012A	Acct#2210505426	R	9/06/2012	2,689.95		012787		
	I-090512	Acct#2269631768	R	9/06/2012	19.32		012787		114,148.84
02202		Stanley Pest Control							
	I-414070	Pest Control at Waterpark	R	9/06/2012	170.00		012788		170.00
00048		STATE OF CALIFORNIA							
	I-090112	State Water Plan Payment	R	9/06/2012	142,945.00		012789		142,945.00
00048		STATE OF CALIFORNIA							
	I-1210E53102	1988 CA Safe Drinking Wtr Bond	R	9/06/2012	152,533.74		012790		152,533.74
01147		SUPERIOR GATE SYSTEMS							
	I-2738	Canal Gate Keypad Service Call	R	9/06/2012	85.00		012791		85.00

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VENDOR	I.D.	NAME	STATUS	CHECK DATE	INVOICE AMOUNT	DISCOUNT	CHECK NO	CHECK STATUS	CHECK AMOUNT
02057		Swank Motion Pictures, Inc.							
	I-RG1716664	Movie Rented for Movie Night	R	9/06/2012	196.00		012792		196.00
02468		Juan Valdivia							
	I-082512	Camping Fee Refund	R	9/06/2012	26.00		012793		26.00
02281		County of Ventura							
	I-072512	Election Boundry Division Maps	R	9/06/2012	192.50		012794		192.50
00257		VENTURA RIVER COUNTY WATER							
	I-083112	Acct#0350100A	R	9/06/2012	19.17		012795		
	I-083112A	Acct#0537500A	R	9/06/2012	101.80		012795		120.97
00258		VENTURA STEEL, INC							
	I-131385	Brass Lock Washers for Robles	R	9/06/2012	761.48		012796		761.48
00826		STAN WHISENHUNT DBA							
	I-5417	Campground Brochures, LCRA	R	9/06/2012	1,454.12		012797		1,454.12
1		Justin Morgan							
	I-000201208300600	UB Refund	R	9/06/2012	12.46		012798		12.46
1		Dave Willows							
	I-000201208300601	UB Refund	R	9/06/2012	125.28		012799		125.28
1		KROTONA INSTITUTE							
	I-000201208300602	US REFUND	R	9/06/2012	66.92		012800		66.92
01203		DENISE COLLIN							
	I-Aug 12	Reimburse Expenses 8/12	R	9/06/2012	64.30		012801		64.30
00124		ICMA RETIREMENT TRUST - 457							
	I-CUI201209040603	457 CATCH UP	R	9/06/2012	569.24		012802		
	I-DCI201209040603	DEFERRED COMP FLAT	R	9/06/2012	2,561.52		012802		3,130.76
01960		Moringa Community							
	I-MOR201209040603	PAYROLL CONTRIBUTIONS	R	9/06/2012	16.75		012803		16.75
00985		NATIONWIDE RETIREMENT SOLUTION							
	I-CUN201209040603	457 CATCH UP	R	9/06/2012	423.06		012804		
	I-DCN201209040603	DEFERRED COMP FLAT	R	9/06/2012	3,877.68		012804		4,300.74
00180		S.E.I.U. - LOCAL 721							
	I-UND201209040603	UNION DUES	R	9/06/2012	610.50		012805		610.50

VENDOR SET: 01 Casitas Municipal Water D
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VENDOR	I.D.	NAME	STATUS	CHECK DATE	INVOICE AMOUNT	DISCOUNT	CHECK NO	CHECK STATUS	CHECK AMOUNT
00230		UNITED WAY							
	I-UWY201209040603	PAYROLL CONTRIBUTIONS	R	9/06/2012	45.00		012806		45.00
01985		AFLAC/FLEX ONE							
	I-090612	Supplemental Insurance 2012	R	9/06/2012	56.00		012807		56.00
00004		ACWA/JPIA							
	I-Apr 12	April 12 Health Insurance	R	9/06/2012	109,217.26		012808		109,217.26
00128		INTERNAL REVENUE SERVICE							
	I-T1 201208070595	Federal Withholding	D	8/09/2012	24,685.61		080921		
	I-T3 201208070595	FICA Withholding	D	8/09/2012	22,265.25		080921		
	I-T4 201208070595	Medicare Withholding	D	8/09/2012	6,259.66		080921		53,210.52
00049		STATE OF CALIFORNIA							
	I-T2 201208070595	State Withholding	D	8/09/2012	7,639.34		080922		7,639.34
00187		CALPERS							
	I-PER201208070595	PERS EMPLOYEE PORTION	D	8/09/2012	10,363.18		080923		
	I-PRR201208070595	PERS EMPLOYER PORTION	D	8/09/2012	12,537.30		080923		22,900.48
00128		INTERNAL REVENUE SERVICE							
	I-T1 201208210596	Federal Withholding	D	8/23/2012	23,866.79		082321		
	I-T1 201208210597	Federal Withholding	D	8/23/2012	7.65		082321		
	I-T3 201208210596	FICA Withholding	D	8/23/2012	21,486.95		082321		
	I-T3 201208210597	FICA Withholding	D	8/23/2012	16.56		082321		
	I-T3 201208220598	FICA Withholding	D	8/23/2012	8.28		082321		
	I-T4 201208210596	Medicare Withholding	D	8/23/2012	6,192.12		082321		
	I-T4 201208210597	Medicare Withholding	D	8/23/2012	4.62		082321		
	I-T4 201208220598	Medicare Withholding	D	8/23/2012	2.30		082321		51,585.27
00049		STATE OF CALIFORNIA							
	I-T2 201208210596	State Withholding	D	8/23/2012	7,286.14		082322		7,286.14
00187		CALPERS							
	I-PER201208210596	PERS EMPLOYEE PORTION	D	8/23/2012	10,158.02		082323		
	I-PRR201208210596	PERS EMPLOYER PORTION	D	8/23/2012	12,293.73		082323		22,451.75
00128		INTERNAL REVENUE SERVICE							
	I-T1 201209040603	Federal Withholding	D	9/06/2012	24,324.36		090621		
	I-T3 201209040603	FICA Withholding	D	9/06/2012	20,555.94		090621		
	I-T4 201209040603	Medicare Withholding	D	9/06/2012	5,962.04		090621		50,842.34

VENDOR SET: 01 Casitas Municipal Water D
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VENDOR I.D.	NAME	STATUS	CHECK DATE	INVOICE AMOUNT	DISCOUNT	CHECK NO	CHECK STATUS	CHECK AMOUNT
00049	STATE OF CALIFORNIA							
I-T2 201209040603	State Withholding	D	9/06/2012	7,730.65		090622		7,730.65
00187	CALPERS							
I-PER201209040603	PERS EMPLOYEE PORTION	D	9/06/2012	10,047.61		090623		
I-PRR201209040603	PERS EMPLOYER PORTION	D	9/06/2012	12,162.61		090623		22,210.22

* * T O T A L S * *	NO			INVOICE AMOUNT	DISCOUNTS	CHECK AMOUNT
REGULAR CHECKS:	363			1,489,572.29	0.00	1,489,572.29
HAND CHECKS:	0			0.00	0.00	0.00
DRAFTS:	9			245,856.71	0.00	245,856.71
EFT:	0			0.00	0.00	0.00
NON CHECKS:	0			0.00	0.00	0.00
VOID CHECKS:	0	VOID DEBITS	0.00			
		VOID CREDITS	0.00	0.00	0.00	

TOTAL ERRORS: 0

VENDOR SET: 01 BANK: AP TOTALS:	372	1,735,429.00	0.00	1,735,429.00
BANK: AP TOTALS:	372	1,735,429.00	0.00	1,735,429.00
REPORT TOTALS:	375	1,735,429.00	0.00	1,735,429.00

Void Check #012183
Check Lost, Reissued
on Check #012620

< 1,551.56 >

$1,733,877.44

Casitas Municipal Water District
Reimbursement Disclosure Report (1)
Fiscal Year 2012/13
July 1, 2012-August 31, 2012

Date paid	Board of Director/ Employee	Description	Amount Paid	
7/5/2012	Ken Grinnell	Advanced Water Treatment Class	$	130.00
7/5/2012	Brian Taylor	Meals & Water for Crew Working Villanova Break	$	108.02
7/13/2012	RJ Faddis	Premium Fuel for Rogue Boat 6/21/12	$	200.00
7/13/2012	RJ Faddis	Premium Fuel for Rogue Boat 6/29/12	$	151.88
7/13/2012	Scott Lewis	Lodging CMWD 6/3/12-6/10/12	$	500.67
7/13/2012	Scott Lewis	Car Rental CMWD 6/3/12-6/10/12	$	342.51
7/13/2012	Scott Lewis	Radio Telemetry Repair	$	610.00
8/9/2012	RJ Faddis	Premiun Fuel for Rogue Boat 7/8/12	$	219.17
8/9/2012	RJ Faddis	Premiun Fuel for Rogue Boat 7/15/12	$	258.78
8/9/2012	Scott Lewis	Airfare to CMWD 7/29/12-8/6/12	$	421.20
8/9/2012	Steve Wickstrum	Roundtrip Mileage Napa-CSDA 7/15-7/18	$	436.23
8/9/2012	Steve Wickstrum	Lodging Napa-CSDA 7/15-7/18	$	549.03
8/16/2012	John Parlee	TP Operation Class Registration and Manual	$	153.04
8/23/2012	Robert Vasquez	Safety Boots	$	170.00
8/29/2012	Ron Yost	Annual Possessory Tax	$	530.99
8/31/2012	Mike Shields	Picture Frames for Historic Dam Pictures	$	113.63

Note:
1) Reimbursement Disclosure Report prepared pursuant to California Government Code 53065.5

CASITAS MUNICIPAL WATER DISTRICT
Inter-Office Memorandum

DATE: September 5, 2012

TO: Board of Directors

FROM: General Manager, Steve Wickstrum

Re: Executive Committee Meeting of September 5, 2012

RECOMMENDATION:
It is recommended that the Board of Directors receive and file this report.

MEETING:

1. **Roll Call.** Directors Baggerly and Word
General Manager Steve Wickstrum

2. **Public Comments.** None.

3. **Board/Manager comments.**
Director asked that the Executive meeting of October 2nd be moved to October 9th. The Committee agreed to this change.

The General Manager commented on the recent meeting with the State Regional Water Quality Control Board concerning the upcoming decisions on the pumping and diversion TMDL. It was suggested that a letter be written with respect to historical patterns of Ventura River Reach 4 (Matilija Dam to Foster Park) in reconsideration of developing a decision by the State Regional Water Quality Control Board.

4. **Update on State Water.**
The General Manager is continuing to investigate alternatives for its allocation of State Water. The Department of Water Resources and State Water Contractors are attempting to develop language for alternatives that may be applicable to Casitas. The State Water Contractors are proposing an alternative market-price based turn-back pool that would allow agreements for a two-year sale of water. This proposal is under further refinement before it is presented to the SWC Board and the Department of Water Resources. The General Manager is also continuing to investigate temporary transfer options in conjunction with the City of Ventura and discussing temporary transfer opportunities with the United Water Conservation District.

5. **Update on the City Ventura Agreement.**
The Committee discussed the recent renegotiation of the water service agreement. The City is in review of Casitas' draft agreement and may provide a response within the week.

CASITAS MUNICIPAL WATER DISTRICT
Inter-Office Memorandum

DATE: September 4, 2012

TO: Board of Directors

FROM: General Manager, Steve Wickstrum

Re: Recreation Committee Meeting of September 4, 2012

RECOMMENDATION:
It is recommended that the Board of Directors receive and file this report.

BACKGROUND AND OVERVIEW:

1. **Roll Call**. Directors Kaiser and Hicks,
General Manager Steve Wickstrum
Park Services Manager Carol Belser
Public: Gary Wolfe

2. **Public comments**. None.

3. **Board/Management comments**.
Director Hicks shared his neighbor's comment regarding the good water quality of Casitas water at the tap, noting a difference from water the neighbor received in another town.

Director Kaiser asked about the revenue for the park compared to other years. PSM Belser reported on the revenues of June 2012 being better than that of June 2011.

4. **Review of plans for Bait and Tackle building remodel.**
Mr. Gary Wolfe presented the architectural drawings for the building remodel, which is actually a replacement of the older structure. The building size is the same as the existing building with a slight change in the orientation, and also matching the exterior appearance of the café building. This project has been well received by the Bureau of Reclamation. Mr. Wolfe will provide a presentation to the Board of Directors on September 12, 2012.

5. **Department of Boating and Waterways non-matching grant in the amount of $15,000 for Rogue vessel equipment.**
PSM Belser presented to the Committee that staff are able to obtain non-matching funding for additional safety equipment for the Rogue vessel. The Committee was appreciative of Staff's efforts to seek grant funding for the equipment. The grant application will be moved to the Board meeting of September 12, 2012.

6. **Update on Labor Day Weekend.**
PSM Belser represented that the weekend was very busy. Approximately one-half of the campsites had been reserved for a group function, and the group was very well organized with their participants. There were no issues or incidents that staff could

not resolve. Gary Wolfe commented that it appeared that boat rentals were down, which may have resulted because the group did not come over to rent boats. After this past weekend, the Water Adventure will be closed for the winter.

7. **Draft update of the Pest Management Plan.**

PSM Belser presented the draft update of the Pest Management Plan. The Plan is required as a condition of the Recreation Agreement with the Bureau of Reclamation, and provides a guide for the assessment of the best methods to control pests. The Committee discussed current efforts to control pests and a recent occurrence with bees at the Recreation Area. The Plan will be brought forward to the Board on September 12, 2012.

8. **Review of Incidents and Comments.**

PSM Belser reported on various incidents that occurred in the LCRA. One situation on August 3rd was handled by the Sheriff's department. Several other minor incidents were reported to the Committee.

CASITAS MUNICIPAL WATER DISTRICT
Inter-Office Memorandum

DATE: August 21, 2012

TO: Board of Directors

FROM: General Manager, Steve Wickstrum

Re: Water Resources Committee Meeting of August 20, 2012

RECOMMENDATION:

It is recommended that the Board of Directors receive and file this report.

BACKGROUND AND OVERVIEW:

1. **Roll Call**. Director Baggerly and Director Hicks.
   General manager Steve Wickstrum
   Staff – Ron Merckling

2. **Public Comments**. None.

3. **Board Comments**.
   Director Baggerly noted that he was busy with water supply and flooding subcommittees on the Ventura River Watershed Council and representing the Ojai Groundwater Basin Management Agency.

4. **Manager Comments**.
   The General Manager reported on the consultant's progress with the aeration system analysis and possible improvements to the existing system.

   Ron Merckling reported that the update MOU for landscape grant is in its final stages of development and will come before the Board when ready.

5. **Water Supply Status.**
   The Committee discussed the current storage condition of Lake Casitas and the diversion events of Water Year 2011-12. It was noted that there has been a decline in lake storage every month of the water year and that Lake Casitas was at approximately 77% capacity on June 30, 2012. The information will be provided in the Board agenda.

6. **Conditional Exemption from Acreage Limitation – Reclamation Reform Act.**
   The Bureau of Reclamation has issued a letter that grants a conditional exemption from the ownership and full-cost pricing provisions of the Reclamation Reform Act (RRA) of 1982. The RRA requires annual reporting by agricultural landowners that own more than 40 acres. The RRA also provides for an exemption from the RRA requirements when the district has fully repaid its construction cost obligation in accordance with the terms of the repayment contract. The District completed the repayment obligation in February 2012. The Conditional exemption is not official until the Bureau proceeds through a formal review to confirm that all administrative bills and

charges have been paid and that all appeals by the District related to RRA issues are resolved. The District will continue to gather annual reporting forms until the conditional exemption is officially granted by the Bureau.

7. **Status of Landholding Audit Appeal.**

The District has received a letter from the Bureau regarding the District's appeal of June 28, 2011 concerning minor discrepancies and perceived late reporting of RRA forms by landholders. The Bureau did not agree in all cases with the District's appeal, and staff does not agree with the Bureau's determination on each landholder's appeal. The Committee discussed the General Manager's direction to move forward without an additional appeal, which may cause years of delay in the Bureau's granting of the conditional exemption from acreage limitation requirements (RRA). Given the staff's concerns of the Bureau's determination, staff recommended not forwarding the administrative charges to each individual agricultural customer. The General Manager will proceed in this direction and issue a letter to the Bureau that addresses the appeal and the desire to proceed with the RRA conditional exemption.

8. **Ventura River Pumper/Diverter – Draft MOA**

The Committee discussed the recent meeting with the staff of the State Regional Water Quality Control Board and US Environmental Protection Agency regarding the Ventura River pumper/diverter TMDL. The USEPA appears to be looking to an alternative solution to the TMDL, such as a Memorandum of Agreement, to address the impairment listing. It is unknown at this time how the MOA will address the listing, but time is short and the Ventura River group is motivated to work on the MOA in lieu of a TMDL requirement. The Committee and Board will be kept posted as the MOA is developed.

CASITAS MUNICIPAL WATER DISTRICT
Inter-Office Memorandum

DATE: August 21, 2012

TO: Board of Directors

FROM: General Manager, Steve Wickstrum

Re: Finance Committee Meeting of August 16, 2012

RECOMMENDATION:

It is recommended that the Board of Directors receive and file this report.

BACKGROUND AND OVERVIEW:

1. **Roll Call**.
   Director Bergen and Director Word
   General Manager Steve Wickstrum

2. **Public comments**. None.

3. **Board/Management comments**.
   The General Manager commented on the District's rate set for Temporary water service being lower than that set by most other water purveyors in Ventura County. The Committee may consider a review of the Temporary water rate.

4. **Review of the Financial Statement for June 2012.**
   The Committee reviewed the financial statement for June 2012. The Committee recognized variations in Water Storage Valuations due to the decline in water currently in storage at Lake Casitas. Revenues are very close to budget values. Revenues in Recreation budget appear to be slightly above budget values.

5. **Review of the Water Consumption for June and July 2012.**
   The Committee reviewed the fiscal year water consumption numbers. Water sales totaled 14,655 acre-feet. The sales number is up over 1,000 acre-feet over the FY 2010-11 water sales. The water sales numbers for July 2012 were not available at the time of the meeting.

6. **Review of proposed amendment to the Business Ordinance to include a policy on the use of district credit cards.**
   The Committee reviewed a draft revision of the Business Ordinance that addressed the use of district credit cards. This item is to be moved to the Board of Directors for consideration of adoption.

CASITAS MUNICIPAL WATER DISTRICT
Interdepartmental Memo

DATE: September 4, 2012

TO: Steve Wickstrum, General Manager

FROM: Carol Belser, Park Services Manager

SUBJECT: Consideration for the Board to Approve Renovation of the Bait and Tackle Building at Lake Casitas Recreation Area

Recommendation:
It is recommended that the Board approve the Bait and Tackle building renovation project conducted and funded by our Concessionaire Gary Wolfe.

Background:
In 2010, the BOR adopted Final Environmental Impact Statement (EIS) and Record of Decision (ROD) 10-111 for the Lake Casitas Resource Management Plan (RMP) and Reclamation's subsequent Management Agreement 11-LC-20-0216, paved the way to facilitate improvements and renovations of facilities at the Lake Casitas Recreation Area.

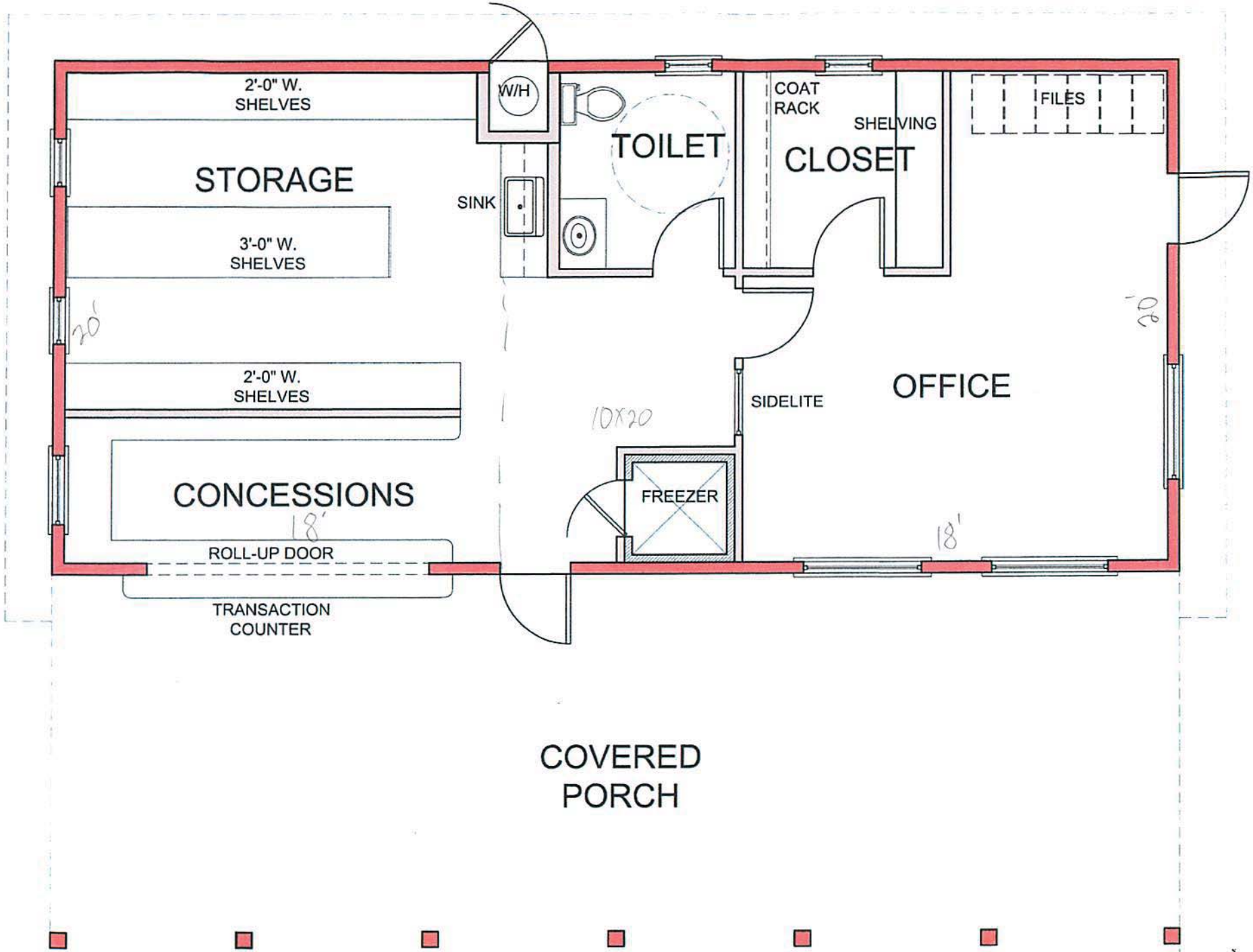
The Bait and Tackle Concession building belonging to Gary Wolfe located at the Santa Ana Launch Ramp area was purchased in 1969 and subsequently moved on skids and placed on a concrete slab in its present location. Due to structure damage over the years caused by wind, rain and sun, the current bait shop is in a state of decay: water damaged floors, moisture leaks in the subfloor and general deterioration of the building's structure and wiring.

Gary Wolfe proposes to tear down and rebuild the bait shop in order to bring it into compliance with current building and electrical codes paying all expenses. The proposed layout and an aerial view of the project footprint taken from BOR's project document is attached. The proposed building plans will be posted at the Board meeting.

Reclamation supports the project, has reviewed the plans and is moving towards final environmental approvals. The Casitas Municipal Water District Recreation Committee has reviewed and approves of the renovation plans.

Analysis:
It is recommended the Board review and approve the project. If approved and after it clears the Reclamation NEPA team, we anticipate completion sometime this winter or early spring 2013.

Figure 5 Conceptual Construction Plan



LAKE CASITAS CONCESSION AND OFFICE

PROPOSED LAYOUT (07.25.12)

SCALE: 3/16"=1'-0"

CASITAS MUNICIPAL WATER DISTRICT
Interdepartmental Memo

DATE: September 4, 2012

TO: Steve Wickstrum, General Manager

COPY: Carol Belser, Park Services Manager

FROM: Suzi Taylor, Park Services Officer

SUBJECT: **Grant from California Department of Boating & Waterways for $15,000.00 in miscellaneous equipment for the Rogue Patrol Boat for Lake Casitas Recreation Area**

RECOMMENDATION

It is recommended that the Board of Directors authorize the execution of the Standard Agreement from the California Department of Boating & Waterways with respect to a grant in the amount of $15,000.00 to purchase miscellaneous equipment for the Rogue Patrol Boat.

BACKGROUND AND OVERVIEW

Casitas recently acquired the 2012 Rogue Jet Boat, while it is equipped with standard operating equipment; additional equipment is needed to properly outfit the vessel for Casitas Ordinance enforcement efforts as well as for customer service and assistance.

On Tuesday, September 4, 2012 the Recreation Committee reviewed and supported the grant acceptance to forward to the Board. If approved, the grant will allow the Recreation Area to purchase the equipment with minimal financial impact.

STATE OF CALIFORNIA
STANDARD AGREEMENT
STD 213 (Rev 06/03)

AGREEMENT NUMBER
12-204-760
REGISTRATION NUMBER
eP 1229444

1. This Agreement is entered into between the State Agency and the Contractor named below:

STATE AGENCY'S NAME
DEPARTMENT OF BOATING AND WATERWAYS

CONTRACTOR'S NAME
CASITAS MUNICIPAL WATER DISTRICT

2. The term of this Agreement is: AUGUST 01, 2012 through JULY 31, 2027
15 year term

3. The maximum amount of this Agreement is: $ 15,000.00
FIFTEEN THOUSAND DOLLARS AND NO/100

4. The parties agree to comply with the terms and conditions of the following exhibits which are by this reference made a part of the Agreement.

Contract	5 page(s)
Exhibit A – Standard Terms and Conditions	12 page(s)
Exhibit B – Administrative Requirements	46 page(s)
Exhibit C* – Uniform Audit Requirements	11 page(s)
Exhibit D – Certification Clauses	6 page(s)
Exhibit E – Darfur Contracting Act	2 page(s)

Items shown with an Asterisk (*), are hereby incorporated by reference and made part of this agreement as if attached hereto. These documents can be viewed at www.ols.dgs.ca.gov/Standard+Language

IN WITNESS WHEREOF, this Agreement has been executed by the parties hereto.

CONTRACTOR

CONTRACTOR'S NAME *(if other than an individual, state whether a corporation, partnership, etc.)*
CASITAS MUNICIPAL WATER DISTRICT

BY *(Authorized Signature)* | DATE SIGNED *(Do not type)*

PRINTED NAME AND TITLE OF PERSON SIGNING

ADDRESS
11311 SANTA ANA ROAD
VENTURA, CA 93001

STATE OF CALIFORNIA

AGENCY NAME
DEPARTMENT OF BOATING AND WATERWAYS

BY *(Authorized Signature)* | DATE SIGNED *(Do not type)*

PRINTED NAME AND TITLE OF PERSON SIGNING
LUCIA C. BECERRA, ACTING DIRECTOR

ADDRESS
2000 EVERGREEN STREET SUITE 100 SACRAMENTO CA 95815

California Department of General Services Use Only

☒ Exempt per: 4.04

CASITAS MUNICIPAL WATER DISTRICT

RESOLUTION APPROVING A GRANT FROM THE CALIFORNIA DEPARTMENT OF BOATING AND WATERWAYS FOR THE PURCHASE OF MISCELLANEOUS EQUIPMENT TO OUTFIT THE ROGUE PATROL BOAT AT LAKE CASITAS RECREATION AREA

WHEREAS, the California Department of Boating and Waterways has agreed to provide a grant in the amount of fifteen thousand dollars ($15,000) to the Casitas Municipal Water District for the purchase of miscellaneous equipment to outfit the Rogue patrol boat; and

WHEREAS, the Board of Directors of the Casitas Municipal Water District desires to accept the grant funds for the purpose of purchasing miscellaneous equipment to outfit the Rogue patrol boat at the Lake Casitas Recreation Area.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the Casitas Municipal Water District authorize and direct the General Manager, Steven E. Wickstrum, to execute, in the name of Casitas Municipal Water District, an agreement with the Department of Boating and Waterways for a grant in the amount of fifteen thousand dollars ($15,000) to purchase miscellaneous equipment to outfit the Rogue patrol boat at the Lake Casitas Recreation Area. Further, that the General Manager be empowered to execute contracts, agreements, amendments and requests for payment for the purpose of securing grant funds and to implement and carry out the purposes specified in the grant application and agreement.

ADOPTED this _____ day of _____, 2012.

_____
President,
Casitas Municipal Water District

ATTEST:

_____
Secretary,
Casitas Municipal Water District

CASITAS MUNICIPAL WATER DISTRICT
Interdepartmental Memo

DATE: September 4, 2012

TO: Steve Wickstrum, General Manager

FROM: Carol Belser, Park Services Manager

SUBJECT: Consideration for the Board to Approve the Lake Casitas Recreation Area Integrated Pest Management Plan

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Recommendation:
It is recommended that the Board adopt the attached Integrated Pest Management Plan for the Lake Casitas Recreation Area.

Background:
The District and the Bureau of Reclamation (BOR) entered into a Management Agreement in October 2011 for managing the Lake Casitas Recreation Area. A requirement of that Agreement includes a Pest Management Plan approved by the Casitas Board and the BOR. The BOR requested the plan be completed within two years of the Agreement date or by October 2013.

Casitas submitted a draft Pest Management Plan to the BOR in December 2011. The plan was reviewed and approved by our BOR liaison, Dave Woolley, and sent on to the Denver office for final approval. Apparently, in addition to Casitas' Plan, twenty-two other Recreation Areas within the BOR submitted Pest Management Plans using various formats. The BOR is in the process of creating a uniform template for all agencies but the delivery date is unknown.

The Recreation Committee reviewed and approved the Plan at their September 4, 2012 meeting. It is important to note that the Lake Casitas Recreation Area/Integrated Pest Management Plan is a plan for the Recreation Area only, and not intended to address pest management protocols within the entire District boundaries. A subsequent plan will be developed for the Casitas Municipal Water District.

Analysis:
Our BOR Liaison, Dave Woolley, has recommended that Casitas Board review and approve the plan to comply with the Lake Casitas Recreation Area's Management Agreement time line of two years. When the BOR has produced their template the Casitas Board can then update the plan to meet the format requirements.

Lake Casitas Recreation Area

Integrated Pest Management Plan

August 2011

Integrated Pest Management Program

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Exhibits:

1. Map of Service Area – Lake Casitas Recreation Area
2. Invasive Species Site Map

CASITAS MUNICIPAL WATER DISTRICT
INTEGRATED PEST MANAGEMENT PROGRAM
August 2011

INTRODUCTION

Integrated pest management (IPM) is an ongoing process that minimizes human health and environmental impacts while effectively suppressing pest populations. To be truly effective, the process requires established procedures that not only must be practiced, but undergo a periodic review. These procedures must properly identify pests, monitor pest populations, evaluate a wide variety of pest control strategies, implement the appropriate strategies, continually evaluate the effectiveness and impacts of implementation, and modify the control strategies as necessary.

SUMMARY

The goal of the District's Integrated Pest Management (IPM) Program is to employ a comprehensive set of procedures that optimally combines chemical, biological, and mechanical control alternatives for pest control in a manner that:

1. Maximizes protection of all surface waters;
2. Minimizes pesticide use and requires use of "least toxic" pesticides or methods of pest control;
3. Manages pests effectively using environmentally safe and cost effective practices.
4. Manages and facilitates fire protection areas including that include weed/grass abatement as identified in Casitas Fire Management Plan

Environmentally safe practices are those that ensure the adequate protection of the public and District employees, are protective of potable water sources, other aquatic and terrestrial resources, and public and private property. An IPM Committee, consisting of members including: the District's General Manager, Recreation Manager, a Qualified Applicator, Certified staff and the District's Safety Officer will ensure adaptive management strategies allow for future modification of control methods over time, based on the level and risk associated with the pest species, treatment method alternatives and results. These procedures are to be provided to managers, supervisors and staff who perform pest management as part of their District responsibilities. It is to be strictly followed in implementation of all pest management activities.

PROCEDURES

I. GENERAL - IPM BEST MANAGEMENT PRACTICES

The following procedures (Best Management Practices) will be implemented and followed by all District personnel who perform pest management in the Lake Casitas Recreation Area and in the Reservoir Area property as indentified in Exhibit 1. District personnel shall document their control activities and maintain records as noted in these procedures.

A. Identify All Potential Pests. The Maintenance Foreman, under the Park Services Manager, is the person with the responsibility for pest management and will be trained to accurately identify pest species of animals and plants, the damage they can cause, and the control alternatives available. Field manuals, a list of Noxious Weeds as identified, outside terrestrial biologist and other resources may be made available to staff to assist in pest identification as necessary. A listing of Pests, Plant Species and Noxious Weeds (identified with an asterisk) is found in **Appendix A** and a map of invasive pants is shown in **Exhibit 2**.

B. Determination of Pest Management Action Level. District personnel with responsibility for pest management shall determine the annual and seasonal infestation levels that are unacceptable. These unacceptable levels are pest management action levels that indicate appropriate action must be taken to prevent damaging infestation. The determination of these levels will be completed using, in most cases, the following criteria:

- It is determined that the pest population will reach a critical level if left untreated
- Biological or environmental factors cannot be expected to reduce the pest problem within a reasonable time; and
- Pest management costs (including any environmental or health impacts) are less than the potential pest damage.

If the determination concludes that pest management control action is necessary, District personnel responsible for pest management shall identify and/or implement the appropriate management practice per Section C - Determine Acceptable Pest Management Practices.

C. Determine Acceptable Pest Management Practices.

1. District personnel responsible for pest management shall determine acceptable pest management practices using the criteria below. These criteria may not be met in every case. Judgment should be used in these cases to determine acceptable pest management practices that are:

- Least damaging to the general environment;
- Least hazardous to human health;
- Less of an impact on non-target organisms;
- Appropriate considering the absence of listed, candidate or locally rare species;
- Most likely to produce a permanent reduction of the pest; and
- Most cost effective in the short and long-term.

2. As pest management practices are developed, they may include a combination of various control alternatives. The preferred methods in an IPM program are those which permanently prevent pest problems in an environmentally sensitive manner, therefore, eliminating the potential for pest damage. A pest management practice may include one or more of the following elements:

- No controls are necessary;

- Physical/mechanical controls (hand abatement, soil tilling, discing, mowing, etc.);
- Biological controls (grazing by goats or cows, birds of prey, use of predators or parasites);
- Chemical controls ranging from low toxicity materials such as soaps and oils, to appropriate pesticides; and
- Other (mulching, planting competing or alternative vegetation).

The Pest Management Program Matrix is found in Appendix B.

D. Establish a Record Keeping System.

1. Good records are essential for evaluating and improving an IPM program and for reference when management, the Board of Directors, or the public requests information on how the District handles certain types of pest species. District personnel responsible for pest management are required to keep written records to document acceptable pest management practices that include the following:

- The identification of pests at a particular site
- A description of unacceptable infestation levels and action determination (see Section B above);
- The selection of the acceptable pest management practice for a given site (see Section C above;
- The degree of pest infestation using density, distribution or some other parameter(s); and
- Information on how the pest problem was treated including: what, how much, where, when and who performed the treatment.

2. To evaluate and improve the IPM program, District personnel responsible for pest management shall record the monitoring of selected treatment sites. The monitoring activities shall be implemented as follows using the Site Monitoring Evaluation Form found in **Appendix C**:

- Treated sites which are representative of specific treatment applications (i.e., pest, acceptable pest practice, location, etc.), will be selected for monitoring each calendar year.
- Each year thereafter, monitoring shall be conducted at different sites such that monitoring does not duplicate or occur at a treated site that is similar in treatment application from the previous year.
- The monitoring shall document short and long-term effectiveness of the treatment;
- Monitoring or documenting any side effects of treatment on non-target organisms;
- Document citizen complaints or other problems that may arise and other positive feedback;
- Monitoring forms will be submitted to the IPM Committee for annual review.

E. Consideration of Endangered Species

District personnel responsible for pest management must give consideration of threatened or endangered species prior to implementing pest management practices. Special precautions or mitigation measures may be required to prevent harm under certain conditions. Although pesticide use as specified under the pesticide product labeling requirements currently satisfies all legal requirements regarding pesticide use and endangered species protection, it is the District's practice to minimize impacts to all non-target organisms including threatened and endangered species to the best extent possible when implementing a pest management practice.

Resources are available to assist with the identification and protection of threatened or endangered species. These include maps, guidance documents and/or a Bureau of Reclamation biologist who could be requested every few years to ensure that pest management activities do not conflict with threatened or endangered species regarding proposed pesticide. This document will provide maps that show areas of listed and sensitive species in relationship to Bureau facilities. Updating the resources provides the tools to identify timeframes for periods of allowable routine operations and maintenance activities in consideration of the listed and sensitive species habitat.

II. ONGOING IPM PROGRAM REVIEW

A. IMP COMMITTEE

The District, through an IPM Committee, will evaluate its IPM Program annually or as necessary, as scheduled and organized by the Park Service Manager to ensure the procedures strive to achieve the goals through an adaptive management process. The IPM Committee shall also be responsible for issuing and updating this IPM Program Summary and Procedures, as necessary. The Committee chair will rotate mutually among the members. IPM Committee responsibilities shall include:

- Review the IPM Best Management Practices to ensure that responsible District personnel employ the practices, and revise the practices if necessary to achieve the goals.
- Review monitoring records from the current or previous year(s) to determine if the acceptable pest management practice is appropriate or requires alteration to achieve the program goals.
- Update of invasive species may include review by a terrestrial biologist.
- Compilation of annual Recreation Area pesticide usage report.
- As necessary, review requests for new pesticides for possible addition to the list of approved least-toxic pesticides.

III. PESTICIDE USAGE PRACTICES

General District Pesticide Use Practices

1. District personnel responsible for pest management may determine that chemical pesticide use is necessary. Only approved "least toxic" pesticides will be used to minimize the overall risk to the applicator and impact to the environment.

2. All federal, state and local laws and regulations will be strictly adhered to:

Federal	U.S. EPA Environmental Protection Agency 75 Hawthorne Street San Francisco, CA 94105 Phone: (415) 947-8000 (866) EPA-WEST (toll free in Region 9) Fax: (415) 947-3553 Email: r9.info@epa.gov
State	Cal-EPA Depart. of Pesticide Regulation/Pest Management Licensing Branch Phone: (916) 445-3914 1001 I Street Sacramento, CA 95812 http://www.cdpr.ca.gov/branchph.htm
Local	Ventura County Agricultural Commissioner P.O. Box 889, Santa Paula, CA 93061 815 East Santa Barbara Street Phone: (805) 933-3165 FAX: (805) 525-8922

3. All chemical product label instructions will be strictly followed, including utilizing the personal protective equipment recommended by the manufacturer of the product.

4. Prior to pesticide use, evaluate the site for spot treatment. If appropriate, use spot treatment to minimize pesticide use.

5. Least toxic pesticides will be applied at the appropriate time and under prerequisite weather conditions to maximize their effectiveness on the target species. The likelihood of discharging non-degraded pesticides in storm water runoff will be minimized.

6. Pesticides will not be mixed adjacent to a storm drain inlet, culvert or watercourse. Mix in an area where spillage, if it occurs, can be easily contained

7. Pesticide use and application techniques selected for along roadside berms will be implemented to retain some vegetative presence to minimize soil erosion, slow the rate of storm water runoff, and minimize potential for contaminated runoff.

8. Calibrate field equipment regularly to ensure the desired application rate.

9. Mix only as much material as necessary for the application.

10. Maintain a record of pesticide usage. That record shall include the type and quantity of pesticide used. Report to County Agricultural Commission monthly on pesticide usage.

11. When an area is to be treated with a pesticide whose label requires notification or posting, adequate notification or posting will be conducted prior to the application. The Public Information Department will be contacted at least one week prior to the application to coordinate any public notice information needed.

12. Pesticides shall not be applied without specific written approval of the proposed application by the Park Manager and/or Maintenance Foreman.

13. New or substitute products may only be used with IPM Committee approval.

14. Pesticide may be limited to necessary spot treatment of vegetation for fire prevention at road crossings and for access to specific structures. Additional applications will be limited to specific pest infestations. Staff will adhere to the label recommendations regarding proper distance from the water.

15. For pesticide application protocol specific to treatment of waters in Lake Casitas see **Appendix D.**

16. Visually monitor success of the pesticide treatment and adjust future potential usage based on visual monitoring results.

IV. APPROVED PESTICIDE LIST

The following least toxic pesticides are currently approved for use and application by District staff and contractors on District property, rights-of-ways or other areas where chemical pest control has been determined to be necessary:

Product Name	**EPA Number**
Activator 90 Surfactant	36206-50014
Aluminum Phosphide (Fumigant)	CASRN 20859-73-8
Aquamaster	524-343
Bayer Advanced Insect Control	72155-73
Citric Acid	77-92-9
Copper sulfate (crystals)	7758-98-7
Diazinon (knox-out2FM ant spray)	62719-542
Direx 4L	352-678
Fastrac all weather blox	12455-W1-1

Friponil	120068-37-3/129121
Mark it Blue indicator	N/A
Mark it Blue Spray colorant	N/A
Maxforce ant killer bait	6424821
Onslaught	1021-1815
Ortho Home Defence Insecticide	239-2663
Ortho lawn & weed Insect killer	1021-1778-239
PAK 27	68660-9
PCQ	12455-50003-AA
Rodeo	524-343
Round-Up Pro Max	524-579
Sevin Bug Killer	432-1211-71004
Soil & Turf Insect control	9688-84
Take down Insecticide	67702-J-54705
Tomcat Rodent Block	12455-5-3240
Weed-B-Gone	2217-896-239
Zinc Phosphide	738F-98-003

*EPA Registration Numbers are listed on the pesticide containers and are specific to the formulation of the pesticide. These numbers will change if a manufacturer changes a formulation, regardless of any change in the product name. Always check EPA Registration Number to confirm that product is consistent with the above list.

Rodenticides with the anticoagulants chlorophacinone and diphacinone are also approved for use.

V TRAINING AND CERTIFICATION

A. District personnel and authorized contractors who apply pesticides requiring a certification shall obtain a state pesticide applicator certification or work under the direction of an employee who has obtained the state certification.

B. District personnel who apply pesticides shall be trained in general IPM practices, the safe use of pesticides and proper inspection of applicator equipment to prevent accidental pesticide leaks, spills, and potential hazards to applicators and the environment. Each work unit shall maintain records of who received the training for at least three years. New employees shall not apply pesticides until they have received the appropriate training or until their supervisor confirms that they have met the training objectives at their previous job.

C. District personnel who apply pesticides will be trained in procedures and methods to identify and protect Endangered Species during the use and application of pesticides conducted by the Bureau of Reclamation, or outside training and education programs.

VI. PESTICIDE STORAGE

A. Pesticides shall be stored indoors in locked and labeled storage units or within

locked District facilities.

B. Pesticide containers must be clearly labeled to indicate the name of the pesticide, signal word and company name.

C. Pesticides stored that reach their expiration date shall be disposed of per the procedures described in Section VII, Pesticide Disposal.

VII. PESTICIDE DISPOSAL

A. Triple rinse empty pesticide containers with water immediately upon emptying contents. Place rinse water in spray tank incorporating it into the pesticide mixture and apply it.

B. Dispose of triple rinsed empty pesticide containers according to County Agricultural Commission and manufacturer's recommendations.

C. Dispose of the container rinse water or spray tank rinse water as a product over the target site.

D. If possible, unopened, unwanted or unused pesticides should be returned. Other District work units can be contacted to determine if they can use the unwanted pesticide in their operation. Possible options are also an attempt to return it to the manufacturer, or a qualified buyer. If returning an unwanted pesticide is not feasible or disposal of outdated pesticide is necessary, contact the State of California EPA office disposal directions.

VIII. PESTICIDE SPILL RESPONSE

A. Spill kits will be prepared and maintained at pesticide storage areas and on all application equipment that has a tank capacity of 50 gallons or more.

B. Spill kits should include the following:

- An instruction sheet with contact notification list and phone numbers;
- Absorbent material capable of absorbing up to five gallons of liquid;
- Shovel, broom, dustpan, gloves; and
- Warning tape to secure the area in case clean-up cannot be accomplished immediately.

C. District personnel who apply pesticides will be trained in the use of the spill kits.

D. District personnel responsible for pest management shall maintain a written pesticide spill response and notification procedure, and all employees who apply pesticides shall be familiar with the notification procedure.

IX. PESTICIDE USAGE REPORTS

A. The Recreation Area Manager shall ensure that applicable monthly Pesticide

Usage Reports and notices of intent are provided to the County of Ventura Agriculture Commission.

B. At the end of the calendar year, the CMWD Park Manager and/or Maintenance Foreman shall compile copies of the monthly Pesticide Usage Reports and review them with the IPM Committee, which will provide a Recreation Area Pesticide Usage Report annually. The annual report shall be retained on file with the IPM Committee and made available upon request to interested parties.

Appendix A
Species and Natural Communities in the Plan Area

United States Department of the Interior
Bureau of Reclamation
Lake Casitas
Final Resource Management Plan / Environmental Impact Statement
February 2010

Table A-1. Lake Casitas Resource Management Area List of Plant Species 2007

Scientific Name	Common Name	Family
*Acacia sp.**	Acacia	Fabaceae
Acourtia microcephala	Sacapellote	Asteraceae
Adenostoma fasciculatum	Chamise	Rosaceae
Adiantum jordanii	California maidenhair fern	Pteridaceae
Agrostis exarata	Spike bentgrass	Poaceae
Agrostis pallens	Thin grass	Poaceae
*Agrostis viridis**	Water bent	Poaceae
*Ailanthus altissima**	Tree of Heaven	Simaroubaceae
Alisma plantago-aquatica	Water plantain	Alismaceae
*Alnus rhombifolia**	White alder	Betulaceae
*Amaranthus sp.**	Amaranth	Amaranthaceae
Ambrosia psilostachya	Western ragweed	Asteraceae
Amsinckia menziesii	Common fiddleneck	Boraginaceae
*Anagallis arvensis **	Scarlet pimpernel	Primulaceae
Antirrhinum kelloggii	Climbing snapdragon	Scrophulariaceae
Antirrhinum multiflorum	Chaparral snapdragon	Scrophulariaceae
Apiastrum angustifolium	Wild celery	Apiaceae
Arctostaphylos glandulosa ssp. mollis	Eastwood's manzanita	Ericaceae
Artemisia californica	California sagebrush	Asteraceae
Artemisia douglasiana	Mugwort	Asteraceae
*Arundo donax**	Giant reed	Poaceae
Asclepias californica	California milkweed	Ascepiadaceae
Asclepias fascicularis	Narrow-leaved milkweed	Ascepiadaceae
Astragalus trichopodus var. phoxus	Santa Barbara milk vetch	Fabaceae
*Avena barbata**	Slender wild oat	Poaceae
*Avena fatua**	Wild oat	Poaceae
Baccharis pilularis ssp. consanguinea	Coyote brush	Asteraceae
Baccharis plummerae†	Plummer's baccharis	Asteraceae
Baccharis salicifolia	Mule fat	Asteraceae
*Bassia hyssopifolia**	Fivehook bassia	Chenopodiaceae
Bloomeria crocea	Common goldenstar	Liliaceae
*Brassica nigra**	Black mustard	Brassicaceae
Brickellia californica	California brickellbush	Asteraceae
Brodiaea jolonensis	Dwarf brodiaea	Liliaceae
Bromus carinatus	California brome	Poaceae
*Bromus diandrus**	Ripgut brome	Poaceae
*Bromus hordeaceus**	Soft chess	Poaceae
*Bromus madritensis ssp. rubens**	Red brome	Poaceae
*Bromus trinii**	Chilean chess	Poaceae
Calandrinia ciliata	Red maids	Portulacaceae
Calochortus albus	White fairy lantern	Liliaceae
Calochortus catalinae†	Catalina mariposa lily	Liliaceae
Calystegia macrostegia ssp. macrostegia	Morning-glory	Convolvulaceae
Camissonia bistorta	Sun cup	Onagraceae
Capsella bursa-patoris	Shepherd's purse	Brassicaceae
Cardamine californica	Milkmaids	Brassicaceae
*Carduus pycnocephalus**	Italian thistle	Asteraceae

Table A-1. Lake Casitas Resource Management Area List of Plant Species 2007

Scientific Name	Common Name	Family
Carex barbarae		Cyperaceae
Castilleja applegatei ssp. martinii	Martin's paintbrush	Scrophulariaceace
Castilleja exserta	Purple owl's clover	Scrophulariaceace
Castilleja foliolosa	Woolly paintbrush	Scrophulariaceace
Ceanothus cuneatus	Buck brush	Rhamnaceae
Ceanothus megacarpus	Bigpod ceanothus	Rhamnaceae
Ceanothus oliganthus	Jim bush	Rhamnaceae
Ceanothus spinosus	Greenbark ceanothus	Rhamnaceae
*Cedrus deodara**	Deodar cedar	Pinaceae
*Centaurea melitensis**	Tocalote	Asteraceae
Cerastium glomeratum	Mouse-ear chickweed	Caryophyllaceae
Cercocarpus betuloides	Mountain mahogany	Rosaceae
Chenopodium californicum	Pigweed	Chenopodiaceae
*Chenopodium foliosum**	Leafy goosefoot	Chenopodiaceae
*Chenopodium murale**	Nettle-leaf goosefoot	Chenopodiaceae
Chlorogalum pomeridianum	Soap plant	Liliaceae
*Circium vulgare**	Bull thistle	Asteraceae
Cirsium occidentale	Cobwebby thistle	Asteraceae
Clarkia bottae	Punch-bowl godetia	Onagraceae
Clarkia purpurea ssp. quadrivulnera	Purple clarkia	Onagraceae
Clarkia unguiculata	Elegant clarkia	Onagraceae
Claytonia perfoliata	Green miner's lettuce	Portulacaceae
Clematis lasiantha	Chaparral clematis	Ranunculaceae
Clematis ligusticifolia	Virgin's bower	Ranunculaceae
Collinsia heterophylla	Chinese houses	Scrophulariaceae
*Conium maculatum**	Poison hemlock	Apiaceae
*Convolvulus arvensis**	Bindweed	Convolvulaceae
Conyza canadensis	Western horseweed	Asteraceae
Conyza floribunda	Asthmaweed	Asteraceae
*Cordyline australis**	Cabbage tree	Liliaceae
*Cortaderia selloana**	Pampas grass	Poaceae
Crassula connata	Pigmy-weed	Crassulaceae
*Crypsis schoenoides**	Swamp grass	Poaceae
Cryptantha micrantha	Purple root cryptantha	Boraginaceae
Cryptantha sp.	Cryptantha	Boraginaceae
Cupressus macrocarpa	Monterey cypress	Cupressaceae
Cuscuta sp.	Dodder	Cuscutaceae
*Cynodon dactylon**	Bermuda grass	Poaceae
Cyperus eragrostis	Tall cyperus	Cyperaceae
Cyperus erythrorhizos	Red-rooted cyperus	Cyperaceae
Datisca glomerata	Durango root	Datiscaceae
Datura wrightii	Jimson weed	Solanaceae
Daucus pusillus	Wild carrot	Apiaceae
*Delairea odorata**	Cape ivy	Asteraceae
Descurainia sp.	Tansy mustard	Brassicaceae
Dicentra chrysantha	Golden ear-drops	Papaveraceae
Dichelostemma capitatum	Blue dicks	Liliaceae
Distichlis spicata	Salt grass	Poaceae
Dryopteris arguta	Coastal wood fern	Dryopteridaceae

Table A-1. Lake Casitas Resource Management Area List of Plant Species 2007

Scientific Name	Common Name	Family
Dudleya lanceolata	Lanceleaf Live forever	Crassulaceae
*Echinochloa crus-gallii**	Barnyard grass	Poaceae
Echinodorus berteroi	Bur head	Alismataceae
Eleocharis macrostachya	Spikerush	Cyperaceae
Elymus glaucus	Pacific blue rye-grass	Poaceae
Emmenanthe penduliflora	Whispering bells	Hydrophyllaceae
Encelia californica	Bush sunflower	Asteraceae
Epilobium canum ssp. canum	California fuchsia	Onagraceae
Epilobium ciliatum	Willow herb	Onagraceae
Equisetum sp.	Horsetail	Equisetaceae
Eremocarpus setigerus	Dove weed	Euphorbiaceae
Eriodictylon erassifolium	Yerba santa	Hydrophyllaceae
Eriogonum cinereum	Ashy-leaf buckwheat	Polygonaceae
Eriogonum fasciculatum	California buckwheat	Polygonaceae
Eriophyllum confertiflorum	Golden yarrow	Asteraceae
*Erodium botrys**	Broad-leaf filaree	Geraniaceae
*Erodium cicutarium**	Red-stemmed filaree	Geraniaceae
*Erodium moschatum**	White-stemmed filaree	Geraniaceae
Eschscholzia californica	California poppy	Papaveraceae
Eucalyptus sp.	Eucalyptus	Myrtaceae
Eucrypta chrysanthemifolia	Common eucrypta	Hydrophyllaceae
Euthamia occidentalis	Western goldenrod	Asteraceae
Festuca rubra	Red fescue	Poaceae
Filago californica	California filago	Asteraceae
*Foeniculum vulgare**	Sweet fennel	Apiaceae
Fraxinus dipetela	Foothill ash	Oleaceae
Galium aparine	Goose grass	Rubiaceae
Galium nuttallii	Climbing bedstraw	Rubiaceae
Galium porrigens	Climbing bedstraw	Rubiaceae
Gaura coccinea	Wild honeysuckle	Onagraceae
Geranium carolinianum	Carolina geranium	Geraniaceae
Gilia capitata	Blue field gilia	Polemoniaceae
Gnaphalium californicum	Green everlasting	Asteraceae
Gnaphalium canescens ssp. beneolens	Fragrant everlasting	Asteraceae
*Gnaphalium luteo-album**	Cudweed everlasting	Asteraceae
Hazardia squarrosa	Saw-toothed goldenbush	Asteraceae
Helianthemum scoparium	Peak rush-rose	Cistaceae
Heliotropum curassavicum	Heliotrope	Boraginaceae
Hemizonia fasciculata	Slender tarweed	Asteraceae
Hemizonia increscens ssp. increscens	Coast tarplant	Asteraceae
Heteromeles arbutifolia	Toyon	Rosaceae
Heterotheca grandiflora	Telegraph weed	Asteraceae
*Hirschfeldia incana**	Summer mustard	Brassicaceae
*Hordeum murinum ssp. gussoneanum**	Meaditerranean barley	Poaceae
*Hypochaeris glabra**	Smooth cat's ear	Asteraceae
Isocoma menziesii	Coast goldenbush	Asteraceae

Table A-1. Lake Casitas Resource Management Area List of Plant Species 2007

Scientific Name	Common Name	Family
Juglans californica ssp. californica	Southern California black walnut	Juglandaceae
Juncus acutus ssp. leopoldii	Leopold's rush	Juncaceae
Juncus balticus	Baltic rush	Juncaceae
Juncus bufonius var. bufonius	Toad rush	Juncaceae
Juncus effuses	Bog rush	Juncaceae
Juncus mexicanus		Juncaceae
Juncus patens	Common rush	Juncaceae
Juncus phaeocephalis	Brownhead rush	Juncaceae
Juncus xiphioides	Iris-leaved rush	Juncaceae
Keckiella cordifolia	Honeysuckle penstemon	Scrophulariaceae
Lactuca serriola *	Prickly lettuce	Asteraceae
*Lamarckia aurea**	Goldentop grass	Poaceae
Lamium amplexicaule *	Henbit	Lamiaceae
Lathyrus vestitus	Pacific pea	Fabaceae
*Lavatera arborea**	Tree mallow	Malvaceae
Layia platyglossa	Tidy Tips	Asteraceae
Lepidium nitidum	Peppergrass	Brassicaceae
Leptodactylon californicum	Prickly phlox	Polemoniaceae
Leptosiphon liniflorus	Flax-flowered linanthus	Polemoniaceae
Lessingia filaginifolia	Common California-aster	Asteraceae
Leymus condensatus	Giant wild rye	Poaceae
Leymus triticoides	Alkali rye	Poaceae
Linaria canadensis var. texana	Toadflax	Scrophulariaceae
Lithophragma affine	Common woodland star	Saxifragaceae
*Lobularia maritime**	Sweet alyssum	Brassicaceae
*Lolium multiflorum**	Italian ryegrass	Poaceae
*Lolium perenne**	Perennial ryegrass	Poaceae
Lonicera subspicata ssp. denudata	Chaparral honeysuckle	Caprifoliaceae
*Lotus corniculatus**	Birdfoot trefoil	Fabaceae
Lotus grandiflorus	Chaparral lotus	Fabaceae
Lotus purshianus	Spanish clover	Fabaceae
Lotus salsuginosus var. salsuginosus	Coastal lotus	Fabaceae
Lotus scoparius	Deer weed	Fabaceae
Lotus strigosus	Hairy lotus	Fabaceae
Ludwigia peploides	Yellow water-weed	Onagraceae
Lupinus bicolor	Miniature lupine	Fabaceae
Lupinus hirsutissimus	Stinging lupine	Fabaceae
Lupinus longifolius	Long leaf bush lupine	Fabaceae
Lupinus nanus	Sky lupine	Fabaceae
Lupinus succulentus.	Succulent lupine	Fabaceae
Lupinus truncatus	Blunt-leaved lupine	Fabaceae
*Lythrum hyssopifolium**	Hyssop loosestrife	Lythraceae
Madia exigua	Threadstem madia	Asteraceae
Malacothamnus fasciculatus	Chaparral mallow	Malvaceae
Malacothrix saxatilis var. tenuiflora	Cliff-aster	Asteraceae
Malosma laurina	Laurel sumac	Anacardiaceae
*Malva parviflora**	Cheeseweed	Malvaceae
Marah fabaceus	Man root	Cucurbitaceae
Marah macrocarpus	Wild cucumber	Cucurbitaceae

Table A-1. Lake Casitas Resource Management Area List of Plant Species 2007

Scientific Name	Common Name	Family
*Marrubium vulgare**	Horehound	Laminaceae
*Matricaria matricioides**	Pineapple weed	Asteraceae
*Medicago polymorpha **	Bur-clover	Fabaceae
Melica imperfecta	Coast range melic	Poaceae
*Melilotus alba**	White sweetclover	Fabaceae
*Melilotus indicus**	Yellow sweetclover	Fabaceae
Mentha arvensis	Wild mint	Lamiaceae
Mentzelia sp.	Blazingstar	Loasaceae
Mimulus aurantiacus	Bush monkey flower	Scrophulariaceae
Mimulus cardinalis	Scarlet monkey flower	Scrophulariaceae
Mimulus guttatus	Common monkeyflower	Scrophulariaceae
Mirabilis californica	California four-o'clock	Nyctaginaceae
Muhlenbergia rigens	Deergrass	Poaceae
*Myriophyllum sp.**	Milfoil	Haloragaceae
Nassella cernua	Nodding needlegrass	Poaceae
Nassella lepida	Foothill needlegrass	Poaceae
Nassella pulchra	Purple needlegrass	Poaceae
Navarretia ojaiensis†**	Ojai navarretia	Polemoniaceae
Nemophila menziesii	Baby-blue-eyes	Hydrophyllaceae
*Nicotiana glauca**	Tree tobacco	Solanaceae
Oenothera elata ssp. hirsutissima	Hooker's evening primrose	Onagraceae
Olea europea	Olive	Oleaceae
Opuntia sp.	Prickly-pear cactus	Cactaceae
*Oxalis pes-caprae**	Sour-grass	Oxalidaceae
Paeonia californica	California peony	Paeoniaceae
Pellaea andromedifolia	Coffee fern	Pteridaceae
Pellaea mucronata	Birdfoot fern	Pteridaceae
*Pennisetum clandestinum**	Kikuyu grass	Poaceae
*Pennisetum setaceum**	Fountain grass	Poaceae
Penstemon centranthifolius	Scarlet bugler	Scrophulariaceae
Penstemon heterophyllus	Foothill penstemon	Scrophulariaceae
Pentagramma triangularis	Goldenback fern	Pteridaceae
Phacelia cicutaria	Caterpillar phacelia	Hydrophyllaceae
Phacelia viscida	Sticky phacelia	Hydrophyllaceae
*Phalaris aquatica**	Harding grass	Poaceae
*Phalaris canariensis**	Canary grass	Poaceae
Phoenix sp.	Date palm	Arecaceae
Pholistoma auritum	Fiesta flower	Hydrophyllaceae
Phoradendron sp.	Mistletoe	Viscaceae
Phyla nodiflora	Common lippia	Verbenaceae
*Picris echioides**	Bristly ox-tongue	Asteraceae
*Pinus radiata**	Monterey pine	Pinaceae
*Pinus sp.**	Variety of pines in campground	Pinaceae
*Piptatherum miliaceum**	Rice-grass	Poaceae
Plagiobotrys nothofulvus	Rusty popcorn flower	Boraginaceae
Plantago erecta spp. erecta	California plantain	Plantaginaceae
*Plantago lanceolata **	English plantain	Plantaginaceae
*Plantago major**	Common plantain	Plantaginaceae
Plantanus racemosa	California sycamore	Plantaceae

Table A-1. Lake Casitas Resource Management Area List of Plant Species 2007

Scientific Name	Common Name	Family
*Poa annua**	Annual bluegrass	Poaceae
*Poa bulbosa**	Bulbous bluegrass	Poaceae
Poa secunda	One-sided bluegrass	Poaceae
Polygala cornuta var. fishiae	Fish's milkwort	Polygalaceae
*Polygonum arenastrum**	Dooryard knotweed	Polygonaceae
Polygonum lapathifolium	Willow weed	Polygonaceae
Polypodium californicum	California polypody	Polypodiaceae
*Polypogon interruptus**	Ditch beard grass	Poaceae
*Polypogon monspeliensis**	Rabbitsfoot grass	Poaceae
Populus balsamifera ssp. trichocarpa	Black Cottonwood	Salicaceae
Populus fremontii	Fremont Cottonwood	Salicaceae
Potamogeton pusillus	Small pondweed	Potamogetonaceae
Prunus ilicifolia	Hollyleaf cherry	Rosaceae
Psilocarphus sp.	Wooly heads	Asteraceae
Pteridium aquilinum	Bracken fern	Dennstaedtiaceae
Pterostegia drymarioides	Fairy mist	Polygonaceae
*Pyracantha sp.**	Firethorn	Rosaceae
Quercus agrifolia	Coast live oak	Fagaceae
Quercus berberidifolia	Scrub oak	Fagaceae
Quercus chrysolepis	Canyon oak	Fagaceae
Quercus douglassii	Blue oak	Fagaceae
Quercus dumosa†	Coastal scrub oak	Fagaceae
Quercus lobata	Valley oak	Fagaceae
Ramalina reticulata	Lace lichen	--
Ranunculus californicus	California buttercup	Ranunculaceae
*Raphanus raphanistrum**	Jointed charlock	Brassicaceae
*Raphanus sativa**	Wild Radish	Brassicaceae
Rhamnus californica	Coffeeberry	Rhamnaceae
Rhamnus crocea	Redberry	Rhamnaceae
Rhamnus ilicifolia	Hollyleaf redberry	Rhamnaceae
Rhus integrifolia	Lemonade berry	Anacardiaceae
Rhus trilobata	Skunkbrush	Anacardiaceae
Ribes aureum	Golden current	Grossulariaceae
Ribes californicum	Canyon gooseberry	Grossulariaceae
Ribes malvaceum	Chaparral currant	Grossulariaceae
Ribes sanguineum	Redflower currant	Grossulariaceae
Ribes speciosum	Fuchsia-flowered gooseberry	Grossulariaceae
*Ricinus communis**	Castor bean	Euphorbiaceae
Romneya coulteri†	Matilija poppy	Papaveraceae
Rorippa nasturtium-aquaticum	Water cress	Brassiaceae
Rosa californica	California rose	Rosaceae
Rubus ursinus	Pacific blackberry	Rosaceae
*Rumex crispus**	Curly dock	Polygonaceae
*Rumex pulcher**	Fiddle dock	Polygonaceae
Rumex salicifolius	Willow dock	Polygonaceae
Salix exigua	Narrow-leaved willow	Salicaceae
Salix gooddingii	Black willow	Salicaceae
Salix laevigata	Red willow	Salicaceae
Salix lasiolepis	Arroyo willow	Salicaceae

Table A-1. Lake Casitas Resource Management Area List of Plant Species 2007

Scientific Name	Common Name	Family
Salix lucida ssp. lasiandra	Shining willow	Salicaceae
*Salsola tragus**	Russian thistle	Chenopodiaceae
Salvia apiana	White sage	Lamiaceae
Salvia columbariae	Chia sage	Laminaceae
Salvia leucophylla	Purple sage	Laminaceae
Salvia mellifera	Black sage	Laminaceae
Salvia spathacea	Hummingbird sage	Laminaceae
Sambucus mexicana	Blue elderberry	Caprifoliaceae
Sanicula crassicaulis	Pacific sanicle	Apiaceae
Satureja douglasii	Yerba buena	Lamiaceae
Saxifraga californica	California saxifrage	Saxifragaceae
*Schinus molle**	Peruvian pepper tree	Anacardiaceae
*Schinus terebinthifolius**	Brazilian pepper tree	Anacardiaceae
Schismus arabicus	Arabian schismus	Poaceae
Scirpus californicus	California bulrush	Cyperaceae
Scirpus maritimus	Prairie bulrush	Cyperaceae
Scirpus microcarpus		Cyperaceae
Scrophularia californica	California figwort	Scrophulariaceae
Scutellaria tuberosa	Skullcap	Lamiaceae
Selaginella sp.	Spikemoss	Selaginellaceae
*Senecio vulgaris**	Common groundsel	Asteraceae
Sidalcea malviflora	Common checker bloom	Malvaceae
*Silene gallica**	Windmill pink	Caryophyllaceae
Silene laciniata ssp. major	Indian pink	Caryophyllaceae
*Silybum marianum**	Milk thistle	Asteraceae
Sisyrinchium bellum	Blue-eyed grass	Iridaceae
Solanum americanum	Common nightshade	Solanaceae
Solanum douglasii	Douglas nightshade	Solanaceae
Solanum xanti	Chaparral nightshade	Solanaceae
Solidago californica	California goldenrod	Asteraceae
*Sonchus asper**	Prickly sow-thistle	Asteraceae
*Sonchus oleraceus**	Common sow-thistle	Asteraceae
*Spergula arvensis**	Corn spurrey	Caryophyllaceae
*Spergularia rubra**	Sand spurry	Caryophyllaceae
Stachys bullata	California hedge nettle	Lamiaceae
Stellaria media	Chickweed	Caryophyllaceae
Stephanomeria sp.	Stephanomeria	Asteraceae
Stylomecon heterophylla	Wind poppy	Papaveraceae
Symphoricarpos albus var. laevigatus	Common snowberry	Caprifoliaceae
Symphoricarpos mollis	Trailing snowberry	Caprifoliaceae
*Tamarix aphylla**	Tamarisk	Tamaricaceae
*Taraxacum officinale**	Common dandelion	Asteraceae
Tauschia arguta	Southern umbrellawort	Apiaceae
Thalictrum fendleri	Meadow rue	Ranunculaceae
Toxicodendron diversilobum	Poison oak	Anacardiaceae
Trichostema lanatum	Wooly bluecurls	Laminaceae
Trichostema lanceolatum	Vinegar weed	Laminaceae
*Trifolium hirtum**	Rose clover	Fabaceae

Table A-1. Lake Casitas Resource Management Area List of Plant Species 2007

Scientific Name	Common Name	Family
Typha angustifolia	Slender cattail	Typhaceae
Typha domingensis	Southern Cattail	Typhaceae
Typha latifolia	Common cattail	Typhaceae
Umbellularia californica	California bay	Lauraceae
Uropappus lindleyi	Silver puffs	Asteraceae
Urtica dioicea ssp. holosericeae	Hoary nettle	Urticaceae
Venegasia carpesioides	Canyon sunflower	Asteraceae
Verbena lasiostachys	Vervain	Verbenaceae
*Veronica anagallis-aquatica**	Water speedwell	Scrophulariaceae
*Veronica catenata**	Chain speedwell	Scrophulariaceae
*Vicia sativa **	Spring vetch	Fabaceae
*Vinca major**	Periwinkle	Apocynaceae
Vitis californica	California wild grape	Vitaceae
*Vulpia megalura**	Rattail fescue	Poaceae
Vulpia myuros		Poaceae
*Vulpia octoflora**	Six-weeks fescue	Poaceae
Xanthium strumarium	Cocklebur	Asteraceae
Yucca whipplei	Our Lord's candle	Liliaceae
Zigadenus sp.	Death Camas	Liliaceae

* nonnative, †sensitive/rare
Source: Anne Wells, Kathy Rindlaub, and Johanna Kisner
** Identified in the plan area during subsequent, unaffiliated surveys
Source: David Magney

Table A-2. Lake Casitas Plan Area Bird List

Species	Wi	Sp	Su	Fa	Notes
Geese and Ducks					
Greater White-fronted Goose	U				
Snow Goose	R			R	
Ross's Goose	R				
Canada Goose	C	U		U	
Domestic Goose			R		
Wood Duck	U				
Gadwall	C	U		U	
American Wigeon	C	U		U	
Mallard	C	C	C	C	
Domestic Duck	C	C	C	C	
Blue-winged Teal	R	R		R	
Cinnamon Teal	U				
Northern Shoveler	C	U		U	
Northern Pintail	U				
Green-winged Teal	C	U		U	
Canvasback	U				
Redhead	R				
Ring-necked Duck	U				
Greater Scaup	U				
Lesser Scaup	C	U		U	
Surf Scoter				R	
Bufflehead	C	U		U	
Common Goldeneye	R				
Hooded Merganser	U				
Common Merganser	U				
Red-breasted Merganser	U				
Ruddy Duck	C	C	C	C	
New World Quail					
California Quail	C	C	C	C	
Loons and Grebes					
Common Loon	U				CSC (nesting); not known to nest in Plan Area
Pied-billed Grebe	C	U	U	U	
Horned Grebe	U				
Eared Grebe	U				Rare breeding species in region; not known to breed in Plan Area
Western Grebe	C	C	C	C	Rare breeding species in region; breeds in Plan Area
Clark's Grebe	C	C	C	C	Rare breeding species in region; breeds in Plan Area
Pelicans and Cormorants					
American White Pelican	R				CSC (nesting colony); no nesting in Plan Area
Double-crested Cormorant	C	C	U	C	CSC (rookery); rookery not known in Plan Area
Bitterns and Herons					
American Bittern	R				
Least Bittern	R	R		R	CSC (nesting); potentially nesting in Plan Area
Great Blue Heron	C	C	C	C	Rare breeding species in region; Breeds in Plan Area

Table A-2. Lake Casitas Plan Area Bird List

Species	Wi	Sp	Su	Fa	Notes
Great Egret	C	U		U	
Snowy Egret	C	C	C	C	
Cattle Egret	U				
Green Heron	U	U	U	U	
Black-crowned Night-Heron	C	C	C	C	
White-faced Ibis	R				
Vultures, Hawks and Eagles					
Turkey Vulture	C	C	C	C	
Osprey	C	U		U	CSC (nesting); not known to nest in Plan Area
White-tailed Kite	U				FP (nesting)
Bald Eagle	R				SE/Federally delisted
Northern Harrier	C	U		U	CSC (nesting)
Sharp-shinned Hawk	C	U		U	CSC (nesting)
Cooper's Hawk	C	U	U	U	CSC (nesting)
Red-shouldered Hawk	C	C	C	C	
Zone-tailed Hawk	R				Accidental
Swainson's Hawk				R	ST; not known to nest in Plan Area
Red-tailed Hawk	C	C	C	C	
Ferruginous Hawk	U	R			CSC
Rough-legged Hawk	R				
Golden Eagle	U				CSC, FP
Falcons					
American Kestrel	C	C	C	C	
Merlin	U				CSC (wintering)
Peregrine Falcon	R	R	R	R	SE / FP; not known to nest in Plan Area
Prairie Falcon	U				CSC; not known to nest in Plan Area
Rails and Coots					
Virginia Rail	U				
Sora	U				
Common Moorhen	R				
American Coot	C	C	C	C	
Plovers and Avocets					
Semipalmated Plover				R	
Killdeer	C	C	C	C	
Black-necked Stilt					
American Avocet	U				
Sandpipers					
Greater Yellowlegs	C	U		U	
Spotted Sandpiper	C	U		U	
Marbled Godwit					
Western Sandpiper	R				
Least Sandpiper	C	U		U	
Dunlin	R				
Long-billed Dowitcher	C	U		U	
Wilson's Snipe/Common Snipe	U	U	U	U	

Table A-2. Lake Casitas Plan Area Bird List

Species	Wi	Sp	Su	Fa	Notes
Wilson's Phalarope		R		R	
Red-necked Phalarope		R		R	
Gulls and Terns					
Pomarine Jaeger				R	
Bonaparte's Gull	U				
Mew Gull	C	U		U	
Ring-billed Gull	C	C	C	C	
California Gull	U				CSC (nesting colony); not known to nest in Plan Area
Herring Gull	U				
Western Gull	R			R	
Caspian Tern	U				
Common Tern				R	
Forster's Tern	U	U		U	
Pigeons and Doves					
Rock Pigeon	C	C	C	C	
Band-tailed Pigeon	U	U	U	U	
Eurasian Collared-Dove	R	R	R	R	
Mourning Dove	C	C	C	C	
Cuckoos					
Greater Roadrunner	R	R	R	R	
Barn Owls and Typical Owls					
Barn Owl	C	C	C	C	
Great Horned Owl	C	C	C	C	
Northern Pygmy Owl	R				observed in 2002
Burrowing Owl	R				CSC; last observed in 1988
Short-eared Owl	R				CSC (nesting); not known to nest in Plan Area
Swifts					
Vaux's Swift		U		U	CSC (nesting); not known to nest in Plan Area
White-throated Swift	U	U	U	U	
Hummingbirds					
Black-chinned Hummingbird		U	U	U	
Anna's Hummingbird	C	C	C	C	
Costa's Hummingbird		U			
Rufous Hummingbird	R	U		U	
Allen's Hummingbird		U	U	U	
Kingfishers					
Belted Kingfisher	C	U		U	
Woodpeckers					
Lewis's Woodpecker	U				
Acorn Woodpecker	C	C	C	C	
Red-naped Sapsucker	U				
Red-breasted Sapsucker	U				
Nuttall's Woodpecker	C	C	C	C	
Downy Woodpecker	C	C	C	C	
Hairy Woodpecker	U	U	U	U	

Table A-2. Lake Casitas Plan Area Bird List

Species	Wi	Sp	Su	Fa	Notes
Northern Flicker/Red-shafted Flicker	C	C	C	C	
Tyrant-Flycatchers					
Western Wood-Pewee		U	U	R	
Hammond's Flycatcher		R			
Pacific-slope Flycatcher		U	U		
Black Phoebe	C	C	C	C	
Say's Phoebe	C	U		U	
Ash-throated Flycatcher		U	C	U	
Cassin's Kingbird	U	U	U	U	
Western Kingbird		U	C	U	
Shrikes					
Loggerhead Shrike	C	U		U	CSC (nesting)
Vireos					
Cassin's Vireo		U	R	R	
Solitary Vireo		U	U	U	
Hutton's Vireo	R	U	U	U	
Jays and Crows					
Western Scrub Jay	C	C	C	C	
American Crow	C	C	C	C	
Common Raven	C	C	C	C	
Swallows					
Tree Swallow	U	C	C	C	
Violet-green Swallow	U	C	C	C	
Northern Rough-winged Swallow		C	C	C	
Cliff Swallow		C	C	C	
Barn Swallow		C	C	C	
Titmice and Bushtits					
Oak Titmouse	C	C	C	C	
Bushtit	C	C	C	C	
Nuthatches and Creepers					
Red-breasted Nuthatch	R			R	
White-breasted Nuthatch	C	C	C	C	
Brown Creeper	U				
Wrens					
Rock Wren	U	U	U	U	
Canyon Wren	U	U	U	U	
Bewick's Wren	C	C	C	C	
House Wren	C	C	C	C	
Marsh Wren	C	U		U	
Kinglets					
Ruby-crowned Kinglet	C	U		U	
Old World Warblers and Thrushes					
Blue-gray Gnatcatcher	C	U		U	
Western Bluebird	C	C	C	C	
Mountain Bluebird	R			R	

Table A-2. Lake Casitas Plan Area Bird List

Species	Wi	Sp	Su	Fa	Notes
Hermit Thrush	U				
American Robin	C	C	U	C	
Varied Thrush	R				
Wrentit	C	C	C	C	
Mockingbirds and Thrashers					
Northern Mockingbird	C	C	C	C	
California Thrasher	C	C	C	C	
Starlings					
European Starling	C	C	C	C	
Pipits, Waxwings and Silky-Flycatchers					
American Pipit	U				
Cedar Waxwing	C	U		U	
Phainopepla	C	C	C	C	
Wood Warblers					
Orange-crowned Warbler	C	C	C	C	
Yellow Warbler		C	C	C	CSC (nesting)
Yellow-rumped Warbler/Myrtle Warbler	U				
Yellow-rumped Warbler/Audubon's Warbler	C	U		C	
Townsend's Warbler	C	U		C	
Common Yellowthroat	C	C	C	C	
Wilson's Warbler		C		C	
Tanagers					
Western Tanager	R	U		U	
New World Sparrows					
Spotted Towhee	C	C	C	C	
California Towhee	C	C	C	C	
Rufous-crowned Sparrow	U	U	U	U	CSC
Chipping Sparrow	U				
Vesper Sparrow	R			R	
Lark Sparrow	C	C	C	C	
Savannah Sparrow	C	U		U	
Grasshopper Sparrow	U	R	R	R	Species of local concern; rare breeder in region
Fox Sparrow	U				
Song Sparrow	C	C	C	C	
Lincoln's Sparrow	C	U		U	
Swamp Sparrow	U				
White-crowned Sparrow	C	U		U	
Golden-crowned Sparrow	C	U		U	
Dark-eyed Junco/Slate-colored Junco	U				
Dark-eyed Junco/Oregon Junco	C	C	C	C	
Dark-eyed Junco/Gray-headed Junco	R				
Grosbeaks and Buntings					
Black-headed Grosbeak		U	C	U	

Table A-2. Lake Casitas Plan Area Bird List

Species	Wi	Sp	Su	Fa	Notes
Lazuli Bunting			R		
Blackbirds and Orioles					
Red-winged Blackbird	C	C	C	C	
Tricolored Blackbird	U				CSC (nesting colony)
Western Meadowlark	C	C	C	C	
Yellow-headed Blackbird	R	U			
Brewer's Blackbird	C	C	C	C	
Great-tailed Grackle	C	C	C	C	
Brown-headed Cowbird	C	C	C	C	
Hooded Oriole		U	C	U	
Bullock's Oriole	R	U	C	U	
Finches					
Purple Finch	U	U	U	U	
House Finch	C	C	C	C	
Pine Siskin	C	U		U	
Lesser Goldfinch	C	C	C	C	
Lawrence's Goldfinch	R	U	U	U	
American Goldfinch	C	C	C	C	
Old World Sparrows					
House Sparrow	C	C	C	C	

Total Number of Species	146	124	91	127
Total Species and Races	149	124	91	127
Yellow-rumped Warbler	1	0	0	0
Dark-eyed Junco	2	0	0	0
Total Extra Races	3	0	0	0

Bird Data Sources: Christmas Bird Count 1987-2006; URS observations from 2004-2005; Lake Casitas Birdathon 4/29/98; Lake Casitas Birdathon 4/18/01; Lake Casitas Birdathon 4/9/03; Summer V. Wilson 1/1/90 to 12/9/03

Thanks to Jack Gillooly of Ventura Audubon Society for providing data sources

SYMBOLS
Wi- Winter: Mid-October to Mid-March (5 months)
SP- Spring Migration: Mid-March to Mid-May (2 months)
SU- Summer: Mid-May to Mid-August (3 months)
Fa- Fall Migration: Mid-August to Mid-October (2 months)

R- 0–15 individuals per season
C- Almost always found in proper habitat
U- Regularly found in proper habitat but often missed

CSC- State Species of Special Concern
FP- Fully Protected Species
FT- Federally Threatened
SE- State Endangered
ST- State Threatened

Note: Taxonomic order follows the American Ornithologists' Union's Checklist of North American Birds, 7th edition (1998), and its subsequent supplements.
Source: Original by Karl Krause; revised by URS Biologists Johanna Kisner, David Kisner, Brooke McDonald, and Crissy Slaughter, and David Compton, March 2007.

Table A-3. Lake Casitas Resource Management Area List of Wildlife Species

Common Name	Latin Name
Arthropods	
Crayfish	unidentified
Tarantula	*Aphonopelma eutylenum*
Mammals	
Virginia Opossum	*Didelphis virginiana*
Brush Rabbit	*Sylvilagus bachmani*
California Ground Squirrel	*Spermophilus beecheyi*
Pocket Gopher	*Thomomys bottae*
Desert Woodrat	*Neotoma lepida*
Coyote	*Canis latrans*
Gray Fox	*Urocyon cinereoargenteus*
Raccoon	*Procyon lotor*
Badger	*Taxidea taxus*
Striped Skunk	*Mephitis mephitis*
Mountain Lion	*Felis concolor*
Bobcat	*Felis rufus*
Black bear	*Ursus americanus*
Mule Deer	*Odocoileus hemionus*
Amphibians	
Coast Range Newt	*Taricha torosa torosa*
Arboreal salamander	*Aneides lugubris*
Western Toad	*Bufo boreas*
California Tree Frog	*Hyla cadaverina*
Pacific Tree Frog	*Pseudacris regilla*
California Red-legged Frog	*Rana aurora draytoni*
Bullfrog	*Rana catesbeiana*
Reptiles	
Western Pond Turtle	*Clemmys marmorata*
Western Fence Lizard	*Sceloporus occidentalis*
Side-blotched Lizard	*Uta stansburiana*
Western Whiptail	*Cnemidophorus tigris*
Southern Alligator Lizard	*Gerrhonotus multicarinatus*
Gopher Snake	*Pituophis melanoleucus*
California King Snake	*Lampropeltis getulus*
Western Rattlesnake	*Crotalus viridis helleri*

Table A-4. Lake Casitas Resource Management Area List of Special-Status Species

Scientific Name/Common Name	Status Federal/ State/ Other	Habitat	Occurrence in Plan Area	Flowering/Active Period
Plants				
Aphanisma biltoides Aphanisma	--/--/1B	Coastal scrub, dunes.	Unlikely. Nearest record from Taylor Ranch near Ventura in 1963.	March – June
Astragalus didymocarpus var. *milesianus* Miles' milk vetch	--/--/1B	Coastal scrub.	Low potential to occur. Nearest record is undated occurrence in Ojai area.	March – June
Astragalus pycnostachyus var. *lanosissimus* Ventura marsh milk-vetch	E/E/1B	Coastal salt marsh.	Not expected due to lack of suitable habitat or recent records. Nearest record near City of Ventura in 1911.	June – October
Atriplex pacifica South coast saltscale	--/--/1B	Coastal dunes, playas.	Not expected due to lack of suitable habitat.	March – October
Atriplex serenana var. *davidsonii* Davidson's saltscale	--/--/1B	Coastal bluff scrub on alkaline soil.	Unlikely due to lack of suitable habitat. Nearest record in Ojai in 1971.	April – October
Baccharis plummerae ssp. *plummerae* Plummer's baccharis	--/--/4.3	Coastal sage scrub, oak/riparian woodlands, chaparral.	Present in the mountains at the southern edge of Plan Area.	May – October
Calochortus palmeri var. *palmeri* Palmer's mariposa lily	--/--/1B	Vernally moist places in yellow pine forest.	Not expected due to lack of suitable habitat. Nearest record along upper Sespe Creek.	May – July
Calochortus weedii var. *vestus* Late-flowered mariposa lily	--/--/1B	Chaparral, woodland; often on serpentine soils between 900 – 3,000 ft. msl.	Potential to occur in Plan Area, but not observed during surveys.	June – August
Centromadia parryi ssp. *australis* Southern tarplant	--/--/1B	Marshes and vernal pools, alkaline soils.	Not expected due to lack of appropriate habitat. Nearest record near mouth of Padre Juan Canyon near coast in 1974.	May – November
Chaenactis glabriuscula var. *orcuttiana* Orcutt's pincushion	--/--/1B	Coastal bluff scrub, coastal dunes.	Not expected due to lack of appropriate habitat. Nearest record from Pierpont Bay in 1961.	January – August
Cordylanthus maritimus ssp. *maritimus* Salt marsh bird's-beak	--/--/1B	Coastal dunes, coastal salt marsh.	Not expected due to lack of appropriate habitat.	May – October
Delphinium umbraculorum Umbrella larkspur	--/--/1B	Mesic woodland slopes from 1300 to 5200 ft. msl.	Not expected due to lack of appropriate habitat. Nearest record from Murrieta Canyon in 1964.	April – June
Fritillaria ojaiensis Ojai fritillary	--/--/1B	Forests; chaparral; often on rocky soils between 900 – 2,000 ft. msl.	Low potential to occur. Known to occur in the region but not in the Plan Area. Records from Stewart Canyon, north of Ojai; east end of Santa Ynez Mtns, and west of Ojai.	March – May
Horkelia cuneata ssp. *puberula* Mesa horkelia	--/--/1B	Sandy or gravelly sites within chaparral, woodland slopes, or coastal scrub.	Unlikely due to lack of recent records. Nearest record from Ojai Valley in 1895.	March – May

Table A-4. Lake Casitas Resource Management Area List of Special-Status Species

Scientific Name/Common Name	Status Federal/ State/ Other	Habitat	Occurrence in Plan Area	Flowering/Active Period
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields	--/--/1B	Coastal salt marshes.	Not expected due to lack of appropriate habitat. Nearest record from mouth of Ventura River in 1895.	Feb – May
Layia heterotricha Pale-yellow layia	--/--/1B	Woodland slopes on alkaline or clay soils.	Unlikely due to lack of recent observations. Nearest record from along Hwy 33 north of Ojai.	March – June
Navarretia ojaiensis Ojai navarretia	--/--/1B.1	Clayey soils, usually in grasslands on north-facing slopes at the base of the slope	Present in the Plan Area on a hill just northeast of Casitas Dam.	May-July
Nolina cismontana Chaparral nolina	--/--/1B	Sandstone and shale within chaparral and coastal scrub.	Moderate potential to occur. Recorded from Coyote Creek near Lake Casitas, unknown year.	May – July
Oxytheca parishii var. *abramsii* Abram's oxytheca	--/--/1B	Shale to sandy places within chaparral above 3,500 ft. msl.	Not expected due to lack of recent observations, and Plan Area is outside the elevational range of this species. Nearest record is from Reyes Peak, unknown year.	June – August
Sagittaria sanfordii Sanford's arrowhead	--/--/1B	Freshwater marsh below 2,000 ft. msl.	Unlikely due to lack of recent observations. Nearest record from Ojai Valley was extirpated in 1983.	May – October
Sidalcea neomexicana Salt spring checkerbloom	--/--/2	Chaparral; coastal/desert scrub, coniferous forest, playas on alkaline soils below 1,000 ft. msl.	Unlikely due to lack of recent observations. Nearest record between Santa Ana Blvd. and San Antonio Creek Bridge (Oak View).	March – June
Streptanthus campestris Southern jewel flower	--/--/1B	Open, rocky areas in chaparral and lower montane coniferous forest above 2000 ft. msl.	Not expected because the Plan Area is outside the elevational range of this species. Nearest record from Divide Peak in 1994.	May – July
Insects				
Coelus globosus Globose dune beetle	--/--/--	Coastal sand dunes.	Not expected due to lack of appropriate habitat. Nearest record from Ventura Beach in 1954.	Information not available.
Danaus plexippus Monarch butterfly	--/--/--	Winter roost sites along the Pacific Coast in wind-protected tree groves.	Low potential for winter roost sites. Roost sites not known in Plan Area, bu known to roost nearby on Ventura River floodplain.	November – January
Amphibians				
Anaxyrus (=*Bufo*) *californicus* Arroyo toad	E/SC/--	Washes and intermittent streams.	Low potential to occur due to presence of marginal habitat and presence of bullfrogs. Not found during red-legged frog surveys in 2003-2004. Nearest record along Lion Creek in 2006.	Spring and Summer

Table A-4. Lake Casitas Resource Management Area List of Special-Status Species

Scientific Name/Common Name	Status Federal/ State/ Other	Habitat	Occurrence in Plan Area	Flowering/Active Period
Rana draytoni California red-legged Frog	T/SC/--	Lowlands and foothills with permanent deep water and dense riparian vegetation.	Low potential to occur due to presence of marginal habitat and presence of bullfrogs. Not observed in 2003-2004 protocol surveys. Nearest recent record from San Antonio Creek.	January – April
Scaphiopus (=Spea) hammondii Western Spadefoot	--/SC/--	Ponded water habitats with adjacent oak savannah habitat.	Low potential to occur due to presence of marginal habitat and presence of bullfrogs. Not found during red-legged frog surveys in 2003-2004. Known to occur in Ventura County.	February – May
Reptiles				
Anniella pulchra pulchra Silvery legless lizard	--/SC/--	Sandy soil under sparse vegetation.	Moderate potential to occur due to presence of suitable habitat. Nearest record in the City of Ventura in 2001.	Active in Spring and Summer
Phrynosoma coronatum (blainvilii population*)* Coast (San Diego) horned lizard	--/SC/--	Rocky, sandy soil in coastal sage scrub and chaparral.	Moderate potential to occur due to presence of suitable habitat. Nearest record north of Los Robles Diversion Canal outside Plan Area in 2002.	
Thamnophis hammondii Two-striped garter snake	--/SC/--	Along streams with rocky beds and riparian growth.	Low potential to occur due to presence of suitable habitat, but recent observations are lacking. Nearest records from Sespe Creek and near Rose Valley Falls in 1985.	Active year-round
Clemmys marmorata pallida Southwestern pond turtle	--/SC/--	Permanent or nearly permanent bodies of water.	Occurs in Plan Area. Observed in Santa Ana Creek and East Santa Ana Creek during field surveys and CRLF protocol surveys.	Active in Spring and Summer
Birds				
Ixobrychus exilis hesperis Least Bittern (nesting)	--/SC/--	Roosts, nests, and hides in dense, emergent vegetation	Known to occur in Plan Area in marsh at the north side of the lake near Coyote Creek. Breeding unknown.	Nesting in Spring
Gymnogyps californianus California Condor	E/E/--	Vast expanses of open savannah, grasslands, and foothill chaparral at moderate altitude.	Not expected. Not observed in Plan Area. Nearest recent records from Sespe-Piru and Matilija Condor areas.	March – June
Haliaeetus leucocephalus Bald Eagle	Delisted/E/--	Large bodies of open water such as lakes, marshes, seacoasts and rivers, where there are plenty of fish to eat and tall trees for nesting and roosting.	Known to occur in the Plan Area as a rare winter visitor. Breeding unlikely.	Winter mid-October-March
Elanus leucurus White-tailed Kite	--/FP (nesting)/--	Coastal and valley lowlands, nests in tree tops with dense foliage including orchards.	Known to breed in Plan Area. Breeding observed during 2003-2005 surveys.	Nesting activity in Spring

Table A-4. Lake Casitas Resource Management Area List of Special-Status Species

Scientific Name/Common Name	Status Federal/ State/ Other	Habitat	Occurrence in Plan Area	Flowering/Active Period
Accipiter cooperi Cooper's Hawk (nesting)	--/SC/--	Open woodland and riparian habitats.	Breeds in Plan Area.	January – July
Accipiter striatus Sharp-shinned Hawk (nesting)	--/SC/--	Forage in open woodland and oak savannah; nest in montane habitats.	Forages in Plan Area in winter, but unlikely to breed there.	April – September
Aquila chrysaetos Golden Eagle	--/SC,FP/--	Open woodland, chaparral, and grassland.	Casual visitor to Plan Area, but unlikely to breed there.	January – July
Buteo regalis Ferruginous Hawk (wintering)	--/SC/--	Open habitats.	Occasional winter visitor to Plan Area.	September – April
Buteo swainsoni Swainson's Hawk (nesting)	--/T/--	Riparian forest and open grassland or savannah.	Occasional visitor to Plan Area, but unlikely to breed.	April – September
Charadrius alexandrinus nivosus Western snowy plover	T/SC/--	Sandy beaches.	Not expected due to lack of appropriate habitat. Nearest record from Ventura Beach in 1948.	
Circus cyaneus Northern Harrier (nesting)	--/SC/--	Scrublands, grasslands, and fields	Forages in Plan Area in winter, but unlikely to breed there.	April – September
Speotyto cunicularia hypugia Burrowing Owl (burrow site)	--/SC/--	Grasslands.	Occasional winter visitor to Plan Area. Breeding unlikely. Last observed in 1988.	March – August
Falco columbarius Merlin (wintering)	--/SC/--	Open grassland and marsh.	Forages in Plan Area in winter, but unlikely to breed there.	September – May
Falco mexicanus Prairie Falcon (nesting)	--/SC/--	Arid regions with cliffs or high banks.	Occasional winter visitor to Plan Area, but unlikely to breed.	April – September
Falco peregrinus anatum Peregrine Falcon	--/E,FP/--	Low mountains and coastal areas.	Occasional visitor to Plan Area, but unlikely to breed.	March – July
Eremophila alpestris actia California Horned Lark	--/SC/--	Open grassland.	Unlikely. Not observed in the Plan Area.	April – September
Lanius ludovicianus Loggerhead Shrike (nesting)	--/SC/--	Trees and shrubs in open areas.	Present year-round.	January – July
Vireo bellii pusillus Least Bell's Vireo	E/E/--	Riparian scrub, especially willows.	Unlikely due to lack of suitable habitat and not observed in Plan Area. Riparian scrub in the Plan Area is not of sufficient quantity and structure for this species. Historic record at Foster Park along the Ventura River from 1916.	Spring
Dendroica petechia Yellow Warbler (nesting)	--/SC/--	Riparian woodland including willows, cottonwoods, and other small trees	Present in Plan Area. Breeding is likely.	Nesting in Spring
Aimophila ruficeps canescens Rufous-crowned Sparrow	--/SC/--	steep, rocky exposed slopes with open Coastal Sage scrub and Chaparral with grassy areas	Present in Plan Area.	Nesting in Spring

Table A-4. Lake Casitas Resource Management Area List of Special-Status Species

Scientific Name/Common Name	Status Federal/ State/ Other	Habitat	Occurrence in Plan Area	Flowering/Active Period
Ammodramus savannarum Grasshopper sparrow	--/--/-- (declining throughout range)	Grassland.	Present in Plan Area.	April – September
Agelaius tricolor Tricolored Blackbird	--/SC/--	Riparian.	Occurs in Plan Area as an occasional visitor. Not known to breed in Plan Area.	Nesting activity in Spring
Mammals				
Antrozous pallidus Pallid bat	--/SC/--	Open, dry rocky habitats.	Not expected. Nearest record is Ventura County in 1906.	
Chaetodipus californicus femoralis Dulzura pocket mouse	--/SC/--	Coastal scrub, chaparral, and grassland.	Not expected. Nearest record below Matilija Dam, unknown year.	
Choeronycteris mexicana Mexican long-tongued bat	--/SC/--	Well-lit caves.	Not expected. Outside normal range. Nearest record from Ventura County in 1994.	
Eumops perotis californicus Western mastiff bat	--/SC/--	Crevices in cliff faces in open arid habitat.	Not expected due to lack of recent records. Nearest record is from Weldons in 1907.	
Neotoma lepida intermedia San Diego desert woodrat	--/SC/--	Coastal scrub with dense canopy.	Not expected. Nearest record from near railroad tracks west of Ventura in 1992.	
Fish				
Eucyclogobius newberryi Tidewater goby	E/SC/--	Brackish water streams and lagoons.	Not expected due to lack of appropriate habitat. Nearest record from mouth of the Ventura River is 1995.	
Gila orcuttii Arroyo chub	--/SC/--	Slow water streams with mud or sand bottoms.	Likely to occur in Plan Area, but no status outside of native range in Los Angeles basin. Nearest record from Sespe Creek in 2000.	
Oncorhynchus mykiss irideus Southern Steelhead	T/SC/--	Coastal rivers and streams; spawn in cool, clear, well-oxygenated streams usually in higher-elevation headwaters	High potential to occur in lower Coyote Creek downstream of Casitas Dam. Present in Ventura River and tributaries, but unable to migrate through Lake Casitas Dam.	

Sources:

California Department of Fish and Game (CDFG). 2010. California Natural Diversity Database (CNDDB). Version 3.1.0.

California Native Plant Society (CNPS). 2007. Inventory of Rare and Endangered Vascular Plants of California.

United States Fish and Wildlife Service (USFWS). 2010. Ventura Office, California. Informal consultation and Technical Assistance for the Lake Casitas Resource Management Plan, January 2010.

Key – Listing Status

T – Federally/State threatened
E – Federally/State endangered
SC – State species of special concern
FP - State Fully Protected Species
1B – CNPS listed plants (rare, threatened, or endangered Plants Rare, Threatened, or Endangered in California and Elsewhere
2 -- Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere.
4 -- Plants of Limited Distribution

Site Photographs

Photograph 1. View of vegetation at Cooper Canyon including grassland in foreground and chaparral in background

Photograph 2.View of coastal sage scrub at Cooper Canyon

Photograph 3. Pools at upper end of Cooper Canyon tributary

Photograph 4. Oak woodland restoration site near Casitas Dam

Photograph 5. Oak woodland restoration site near Casitas Dam

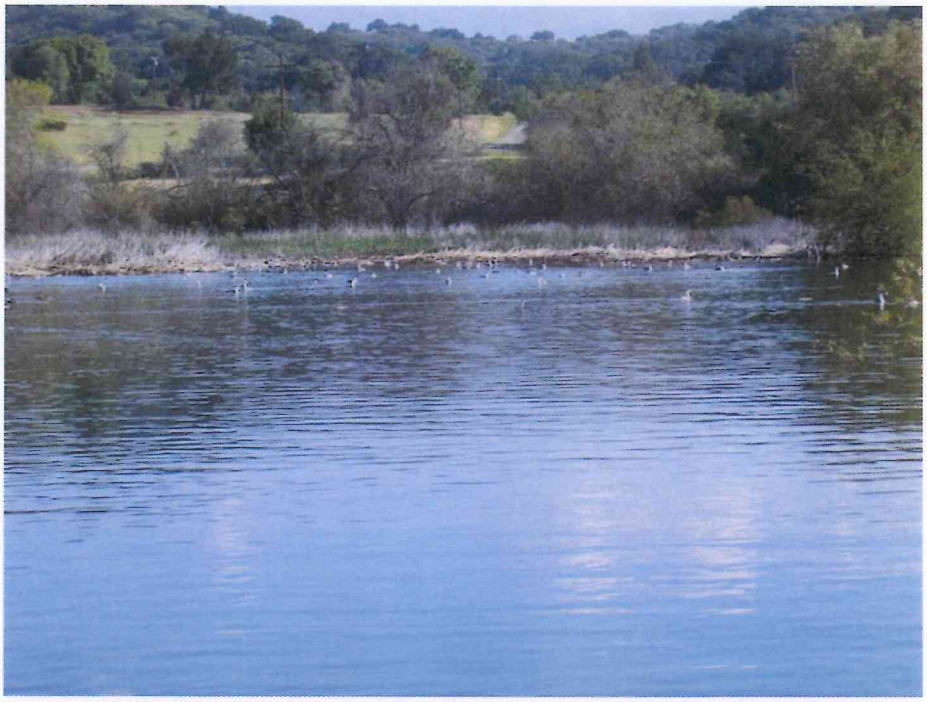
Photograph 6. View of the Borrow Site B Restoration Site

Photograph 7. View of wetland at the Casitas Wetland/Grassland Restoration Project Site (taken 3-23-07)

Photograph 8. View of grassland area and edge of wetland at the Casitas Wetland/Grassland Restoration Site (taken 3-23-07)

Photograph 9. View of the lake from Laguna Ridge

Photograph 10. View of a cove at Lake Casitas with willow and mule fat vegetation in the water



Photograph 11. Important grebe breeding area at Wadleigh Arm, Lake Casitas.

Photograph 12. Important grebe breeding area at Station Canyon, Lake Casitas

Appendix B
Pest Management Program Matrix

Pest Management Program Matrix

Pest/Pest Problem	Locations/ Facilities	Management Objective	Action Level	Management Practice	Environmental Effects
Algae* **See Appendix D*	Reservoir and Canal	Control non native invasive species; and/or prevent taste odor issues.	15% of water surface is infested with filamentous algae.	Apply algaecide PAK 27	This management practice eliminates food source for algae resulting in die-off of algae. The treatment area is limited to reservoir shoreline allowing fish to migrate away from these areas.
Burrowing Mammals	All facilities and campgrounds	Prevent damage to facilities and roads, and prevent disease spread.	Identified undermining / human nuisance, over population and possible disease in campgrounds, picnic areas, event areas, buildings, roads facilities. Zero tolerance along Robles Canal and Saddle Dike.	Live traps, kills traps, birds of prey, fumigants and grain baits, anti-coagulants, Aluminum Phosphide, Zinc Phosphide	Rodentcides placed in targeted areas that limit access to target organisms and exposure to the environment.
Nuisance Pests	Where human contact is probable	Prevent human stings and bites.	Human interaction and contact in campgrounds, picnic areas, event areas, buildings, roads facilities that result in bites and stings.	Remove and relocate honey bees. For Africanized bees, yellow jackets and in areas where removal is impractical, Soap Products, Dawn detergent w/water. Live traps, Fipronil, Sevin, and Bee-Bopper Diazinon. For Rattlesnakes remove and relocate or kill.	Localized specific treatment minimizes environmental effects. Pesticides placed in targeted areas that limit access to human contact and exposure to the environment.
Annual Grasses/ Broadleaf/Perennials	All facilities and campgrounds	Allow safe access to facilities and camping areas; prevent damage to structures, control non-native invasive species and fire prevention.	Zero tolerance. 100 foot perimeter of facilities for fire protection. Manage in parking areas, campgrounds, event area, and trails.	Mowing, discing, weed whipping, hand pull, competitive plants Herbicide Round-up ProMax Pre-Emergent: Direx 4L	Vegetation growth would be minimal in areas where pre-emergent herbicides area applies. Emerged plants killed with post emergent herbicides. Pesticide residues on soil particles and breakdown products present at site.

Pest/Pest Problem	Locations/ Facilities	Management Objective	Action Level	Management Practice	Environmental Effects
Shrubs/Trees	Where negative impact to facilities or roads are identified, aesthetics and visual barriers relating to safety, clear visibility for animal access and crossings	Allow safe access to facilities and camping areas; prevent damage to structures, control non-native invasive species and fire prevention. Remove visual barriers.	Zero tolerance within 15 feet of Robles canal and on Saddle dike.	Post emergent cutting, trimming, removal. Applying post emergent herbicide.	Spot treatment minimizes effects to non-target organism. Application procedures precautions prevent residue to enter the water.
Invasive Species* **Identified in Appendix A*	Recreation Area	Control non native invasive species.	Anywhere where plants are identified and can be removed in a safe manner to employees.	Mowing, discing, weed whipping, hand pull, competitive plants Round up/Herbicide/Round-up ProMax Pre-Emergent: Direx 4L	Spot treatment minimizes effects to non-target organism. Application procedures precautions prevent residue to enter the water.

Appendix C
Site Monitoring Evaluation Plan

Casitas Municipal Water District
Lake Casitas Recreation Area
Integrated Pest Management Plan
Site Monitoring Evaluation Form

Person completing this form: _____ Treatment Date: _____

Pest: _____

Treatment location: _____

Selected pest management practice: _____

TREATMENT EFFECTIVENESS (1 week after treatment)

Has the treatment:

Been effective on target pest? ❑ yes ❑ no

Affected non-target organisms? ❑ yes ❑ no

Comments: _____

_____

TREATMENT EFFECTIVENESS (1 month after treatment)

Has the treatment:

Been effective on target pest? ❑ yes ❑ no

Affected non-target organisms? ❑ yes ❑ no

Comments: _____

_____

TREATMENT EFFECTIVENESS (2 months after treatment)

Has the treatment:

Been effective on target pest? ❑ yes ❑ no

Affected non-target organisms? ❑ yes ❑ no

Comments: _____

_____

TREATMENT EFFECTIVENESS (3 months after treatment)

Has the treatment:

Been effective on target pest? ❑ yes ❑ no

Affected non-target organisms? ❑ yes ❑ no

Comments: _____

_____

Appendix D-1
CMWD Aquatic Pesticide Application Plan for PAK 27

Casitas Municipal Water District

AQUATIC PESTICIDE APPLICATION PLAN
For Sodium Carbonate Peroxyhydrate (PAK 27)
August 2010

Casitas Municipal Water District's (CMWD) Aquatic Pesticide Application Plan (APAP) is a comprehensive plan that describes the necessity of, and process for applying Sodium Carbonate Peroxyhydrate (PAK 27) to the lake Casitas reservoir. The plan describes what will be done to reduce water quality impacts, and how those impacts will be monitored. The APAP complies with Water Quality Order No. 2004-0009-DWQ, the Statewide General National Pollutant Discharge Elimination System Permit For The Discharge Of Aquatic Pesticides For Aquatic Weed Control In The Waters of The United States General Permit No. CAG 990005. The APAP contains the following elements:

1. Description of the water body.

Lake Casitas is a 250,000-acre ft capacity reservoir that receives water by runoff from a 33 square mile watershed and the Ventura River diversion. Lake Casitas is filled by Coyote Creek, Santa Ana Creek and the Ventura River (through the Robles Diversion Canal). At full capacity the lake has an average depth of 94 feet and a maximum depth of 267 feet. Lake water is drawn into the filtration plant through the multi-level intake structure, allowing the selection of the highest water quality from the lake at any given time. An aeration system is used during spring and summer to help prevent excessive algae growth caused by nutrient recycling. Water is released over the spillway of the dam occasionally when the lake is full. In order to prevent spilling, diversion through the canal is stopped when the lake elevation approaches spill level. If the lake spills, the water goes into Coyote Creek, which eventually joins the Ventura River

The primary use of Lake Casitas is as a drinking water supply. The CMWD distribution system provides drinking water to approximately 60,000 customers. The lake also has a recreation area that features boating, fishing, and camping.

2. Description of the algae being controlled and why.

During summer, the surface layer of the lake is characterized by warm oxygenated water where algae blooms with their associated taste and odor problems occur. There are many species of algae growing in the lake; the planktonic blue-green algae (or cyanbacteria) are the major problem causing species. Algae blooms have been related to taste and odor complaints from direct and wholesale customers, and odor is a regulated aesthetic drinking water standard. Additionally, when water with a high amount of organic material is chlorinated, levels of disinfection by-products can increase. Disinfection by-products are a regulated health related drinking water standard. Algae blooms also cause operational problems at the treatment plant, and can interfere with the ability of the treatment plant to meet regulated health standards. Because of this, algae control may be necessary in order to meet primary drinking water regulations.

3. Control tolerances or how much growth can occur before action is necessary.

Algae analyses are done frequently throughout the spring and summer. If levels of taste and odor causing algae increase to levels that have historically caused problems, odor samples are taken from various depths in the lake to monitor the odor problem, and the frequency of algae monitoring is increased. Algae treatment is considered if the algae population continues to increase, Sedgewick- Rafter counts increase, there are measurable odor problems, and visible clumps of algae are forming in the lake. There are also species of algae that cause problems at the treatment plant. If the filtration process is compromised by algae, PAK 27 treatment may be necessary.

4. Factors influencing the decision to use aquatic pesticides in regards to control tolerances.
Algae control is necessary to protect the primary beneficial use of the lake as a drinking water supply. The decision to implement algae control treatment is based on the algae growth, and whether or not the species involved causes water quality problems, or problems at the treatment plant. Algae control measures are implemented when it appears that algae levels will threaten water quality, and algae growth is increasing. There are no adverse impacts expected from the use of PAK 27 for algae control.

5. Types of aquatic pesticides used, the method in which they are applied, and the adjuvants used.

The aquatic pesticide that will be used is PAK 27, a granular addition compound of sodium carbonate (Na2CO3) and hydrogen peroxide (H2O2). CMWD has contracted with Clean Lakes, Inc. for aquatic plant control applications. Clean Lakes, Inc. applications staff hold State of California Department of Pesticide Regulation (DPR) Qualified Applicator Licenses or Certificates. Or the application can be made by Casitas employees that hold State of California Department of Pesticide Regulation (DPR) Qualified Applicator Licenses. Licensed personnel will perform Algaecide applications using Best Management Practices. CMWD will do the water quality monitoring for compliance with the NPDES permit monitoring program.

6. Description of the application area and the treatment area in the system.
There are several areas in the reservoir that are being considered for treatment. For a shoreline treatment, the area to which PAK 27 will be directly applied is calculated to be 72 surface acres for the immediate treatment area. Or a treatment of the intake area can be done, and would cover 129 surface acres. A treatment of the intake area including Ayers creek would cover 239 surface acres. Spot treatments in areas that have heavy growth may also be done. It is expected that the PAK 27 will begin mixing immediately with the entire reservoir volume (approximately 250,000 AF when the reservoir is full). To protect bass spawning areas applications will be made approximately one hundred feet away from the shoreline area.

7. Alternative control methods used and what the limitations are.

Physical control methods such as shading or light limitation can be used to prevent algae growth. These methods generally use dyes that interfere with photosynthesis, and are impractical for a drinking water supply because of potential contaminants that can be added to the water.

Benthic barrier or nutrient inactivation methods such as alum addition cause phosphorous to

precipitate on the bottom sediments making nutrients unavailable for algae growth. This method can be effective but may interfere with the ability to meet drinking water standards, is expensive, and doesn't work for long if sediment-laden water is deposited on top of the alum. Alum addition can also change the pH of the water and cause problems for fish.

Dredging to remove bottom sediments is also used to prevent internal nutrient recycling. This method is expensive, and impractical for a drinking water supply.

Hypolimnetic withdrawal or the release phosphorous laden water from the deep water portion of the lake is also impractical, expensive, would waste water and cause problems for customers downstream of the dam.

Other methods of controlling algae growth such as biological control or plankton manipulation have been considered. Grass carp have been used as a biological control against hydrilla, but have not been proven to be effective in controlling blue green algae. Plankton manipulation can be used to promote large populations of zooplankton that consume algae, but this method is impractical because it is accomplished by reducing the population size of fish that eat zooplankton, such as bass.

Evaluation of other methods for controlling algae has determined that PAK 27 may be an effective method that does not leave a residual toxin.

8. How much product is needed and how this is determined

PAK 27 is applied at a rate of 10 lbs/acre foot to the top 2-3 feet of the water column (or 30 lbs / surface acre) for moderate levels of algae, and 15 lbs/ acre foot (45 lbs / surface acre) for higher levels of algae. The amount of product used is based on information provided by the manufacturer. The dose is designed to control the algae without using more chemical than is necessary.

9. Monitoring plan including the location of the representative sites
See attachment.

10. Control structures and inspection schedule to ensure there is no leakage.

The dam has two methods for the release of water, over the top of the spillway, and through a valve at the bottom of the spillway. Lake Casitas has spilled only seven times in it's fifty year existence, during winter rainfall events. In order to minimize spilling, diversion of water from the Ventura River through the canal is stopped when the lake elevation approaches spill level. The valve at the bottom of the spillway is inspected on a regular basis to ensure that it is not leaking. Additionally, the valve can be inspected prior to PAK 27 application in order to ensure it is not leaking.

11. If a section 5.3 exception has been granted describe the exception period. If weeds are also controlled outside of this period, how is it ensured that receiving water criteria are not exceeded.

There is no request for a section 5.3 exception because there are no CTR Priority Pollutant Levels, Criterion Maximum Concentrations, or Criterion Continuous Concentrations identified

for the ingredients in PAK 27.

12. Description of the BMPs to be implemented.

- The most effective BMP that has been implemented is watershed management. Protection of the watershed area helps prevent external phosphorous loading from human activities. Fertilizers and other pollutants are normally not used in the watershed area, with the exception of selected portions of the recreation area.

- CMWD has a lake aeration system that is used during the spring and summer months. The aeration system helps prevent nutrient recycling, and internal phosphorous loading. Phosphorous can stimulate the growth of blue green algae. The aeration system may also help shift the population from blue green algae to less harmful green algae.

- CMWD does regular analysis of algae during spring and summer to determine algal counts and identification of species.

- If adverse weather conditions have the potential for causing the treatment to be ineffective, would compromise the application, or make application problematic, the treatment will be delayed until weather conditions are acceptable.

- A post-treatment survey for impacts on non-target organisms will be done.

- Applications will be made according to label directions and requirements.

- Application personnel will comply with procedures recommended by CDPR and the EPA for avoiding accidental spills of algaecides.

- Personnel that are certified as licensed by the DPR will supervise the application process.

- Monitoring, effluent limitations, receiving water limitations and reporting requirements specified in the APAP will be complied with.

- While sampling according to the monitoring plan, a visual assessment will be made by Casitas personnel to check for potential adverse effects to the environment, or the beneficial uses of Lake Casitas that could be caused by the application of PAK 27. For longer-term effects the lake will be assessed visually at varying intervals following PAK 27 application while doing routine fieldwork on the lake.

13. Evaluation of other available BMPs to determine feasible alternatives to the selected aquatic pesticide application project that could reduce potential water quality impacts.

An evaluation of other available BMPs includes the alternative treatments that have been considered in section seven. These alternatives will be reconsidered as possible treatment methods, or methods to reduce algaecide use if conditions change.

14. Receiving Water Limitations

Currently there are no state or EPA based numeric objectives for PAK 27 (sodium carbonate peroxyhydrate). Therefore, there are no receiving water limitations. However, it the application will be monitored for physical, chemical and visual parameters.

15. Effluent limitations for compliance with the General Permit

Effluent limitations will be complied with by developing and implementing this APAP, implementing the BMPs, and complying with all pesticide label instructions.

16. Aquatic pesticide use requirements for compliance with the general permit

The aquatic pesticide use requirements specified in the General Permit will be complied with by accomplishing the following items:

- The supervising applications personnel will be licensed by the DPR.
- Pesticide use will be consistent with FIFRA label instructions.
- When requested, CMWD will provide a phone number to SRWQCB. CMWD will provide the SRWQCB with the most current application schedule and possible changes in schedule. Information may be made available by electronic means.
- Every calendar year prior to the first application of aquatic pesticides CMWD will notify potentially affected governmental agencies with the following information: A statement of CMWD's intent to apply an aquatic pesticide, the name of the pesticide, the purpose of use, the general time period and locations of expected use, any water use restrictions or precautions during treatment, and a phone number that interested persons may call to obtain additional information from the discharger.

17. Pesticide application log for compliance with the General Permit

CMWD shall maintain a log for each aquatic pesticide application. The application log shall contain the following information:

- Date of application.
- Location of application.
- Name of applicator.
- List of gates or control structures in the treatment area that may discharge to surface waters.
- Time of gate or control structure closure and reopening, include any calculations used to determine closure and reopening times if applicable.
- Application details such as water temperature, flow or level of water body, time application started and stopped, and aquatic pesticide application rate and concentration.
- A visual monitoring assessment.
- A certification that the applicator(s) followed the APAP.

Appendix D-2
Sodium Carbonate Peroxyhydrate Monitoring Plan

SODIUM CARBONATE PEROXYHYDRATE MONITORING PLAN
Casitas Municipal Water District
August 2010

INTRODUCTION

This Monitoring Plan is to be used for compliance with the NPDES Aquatic Weed Permit during sodium carbonate peroxyhydrate (PAK 27) application for algae control. The primary users of this document will be the staff doing the sampling and fieldwork for this program.

The goals of the procedures and specifications outlined in this monitoring plan are to provide references, standardized procedures and quality specifications for sampling at Lake Casitas following the application. In order to do this the plan identifies sampling locations, number of samples and field procedures to be used. The plan details QA/QC procedures and specifications and establishes methods for reviewing and documenting compliance with field procedures.

The goals of the monitoring plan are to:

- Measure and improve the effectiveness of the APAP
- Support the development, implementation, and effectiveness of BMPs
- Assess the chemical, physical and biological impacts on receiving waters resulting from aquatic pesticide applications
- Assess the overall health and evaluate long-term trends in receiving water quality
- Demonstrate that water quality of the receiving waters following completion of resource or weed management projects are equivalent to pre-application conditions
- Identify and characterize aquatic pesticide application projects conducted by the discharger
- Ensure that projects that are monitored are representative of all pesticides and application methods used by the discharger

A. Monitoring Provisions

1. SAMPLE ANALYSIS

For samples that are sent to the laboratory (turbidity, conductivity and hardness), all analyses shall be conducted at a laboratory certified for such analyses by the California Department of Public Health. All analyses shall be conducted in accordance with the latest edition of "Guidelines establishing Test Procedures For Analysis of Pollutants" (Guidelines), promulgated by the U.S. Environmental Protection Agency (USEPA) (Title 40 Code of Federal Regulations part 136). **Some samples will be analyzed in the field by Casitas personnel.**

2. SAMPLING PROCEDURES

Samples will be collected using procedures that minimize loss of monitored constituents during sample collection and analysis, and maintain sample integrity. Proper sampling techniques must be used to ensure that a sample is representative of the conditions found in the lake following PAK 27 treatment. Field sampling quality assurance protocol is used to determine the possible effects of field equipment and procedures on the samples being collected.

a. General Field Sampling Requirements:

1. Contamination Prevention Procedures:
   - Wear new disposable gloves while taking sample.

- Wear clean uncontaminated clothing.
- Cap sample containers immediately after taking sample.
- Samples placed directly in field cooler, and lab refrigerator prior to pick up.
- Sampling materials (bottles, gloves and clothing) are not used or stored near the application area.
- All sampling and field equipment that may contact samples must be decontaminated before sampling and between each use. Decontaminate the sampling device by rinsing thoroughly with distilled water.

2. Sample containers:
   Sample containers are pre-cleaned according to United States Environmental Protection Agency (U.S. EPA) specification for the appropriate methods.

3. Documentation:
   All field activities must be documented in a field data book to support data interpretation and ensure defensibility of the data. Field personnel must record the following information in a field data book:

   - Name(s) of field personnel
   - Site/sampling location identification
   - Date and time of sample collection
   - All field measurements, such as pH, temperature, and dissolved oxygen
   - Observation of weather and conditions that can influence sample results
   - Any problems encountered during sampling
   - Corrective actions

b. Sample Identification:
All samples must be uniquely identified to ensure that results are correctly reported and interpreted. Samples must be identified by site, sampling location, sample date, depth, time, and sample type (normal field sample or QC sample).

c. Field and Laboratory Staff Training:
All staff performing field or laboratory procedures shall receive training to ensure that the work is conducted correctly and safely. At a minimum all staff shall be familiar with the field guidelines and procedures in this document.

d. QC Sample Collection:
Field QC samples are used to assess the influence of sampling procedures and equipment used in sampling. The following field QC samples will be collected for this program:

1. Duplicate samples- Samples will be collected in duplicate.

2. Equipment blank- Will be made by filling the sampling device (Kemmerer bottle) with laboratory grade reagent water, and using that water to fill the sample bottles for the equipment blank. The sampling blank will be exposed to the same sampling equipment, handling, storage times, processing and analysis as the samples being collected. There will be one equipment blank done prior to taking any samples in order to check the sampling equipment for contamination.

e. Sample Custody:

Sample custody-Sample possession must be traceable from the time of collection until results are reported and verified by the laboratory, and samples are disposed of. Sample custody procedures provide a mechanism for documenting information related to sample collection and handling. Sample transfer between field staff and the laboratory is documented by signing and dating a chain of custody form whenever sample possession

changes. If samples are not shipped on the collection day, they are held in the refrigerator. Sample holding times and preservatives used will be noted to ensure holding times are within the specified limit.

1.Chain-of-Custody Form:
A chain-of-custody form is completed after sample collection, and prior to sample shipment or release. The chain-of-custody form, sample labels, and field documentation are crosschecked to verify sample identification and number of containers. Information to be included in the chain of custody forms includes:

- Sample identification
- Date and time of collection
- Samplers initials
- Analytical method(s) requested
- QC sample identification
- Signature blocks for release and acceptance of samples
- Any comments to identify special conditions or requests

2. Sample labels:
A sample label is affixed to each sample collected. Sample labels uniquely identify samples with sampling site and depth, analytical method requested, the samplers name and initials, and date/time of sample collection.

3. Documentation Procedures:
In order to keep an accurate written record of sample collection activities a sample logbook including the following items will be maintained for all samples collected:

- All entries must be legible, written in waterproof ink and contain accurate documentation of the field activities
- Daily entries must be initialed and dated
- Errors or changes will be crossed out with a single line, dated and initialed
- The chain of custody forms will be completed accurately and legibly, and filed with the sample log book

f. Sample Shipments and Handling:

All sample shipments are accompanied by the chain-of-custody form, which identifies the content. The original form accompanies the shipment and a copy is retained by CMWD.

Samples are either shipped to the laboratory, or are held in the refrigerator and picked up by the laboratory. Blue ice will be packed with shipped samples. The following procedures are used to prevent bottle breakage and cross-contamination:

- Bubble wrap or other cushioning material is used to keep breakable bottles from contacting one another to prevent breakage
- Breakable sample bottles are individually sealed in plastic re-closeable bags
- Samples are capped tightly; seal is checked prior to shipping
- All samples are transported inside hard plastic coolers

g. Corrective Action:

During the course of sample collection in this study, CMWD will make sure that procedures are followed as specified in this document. Problems with field data quality that may require corrective action are documented in the field data book.

3. MONITORING FREQUENCY

CMWD will submit monitoring results to the appropriate Regional Board if any constituent required to be monitored under this General Permit is monitored more frequently than specified.

4. RETENTION OF RECORDS

CMWD shall retain records of all monitoring information including calibration and maintenance records, copies of reports required by this General Permit, and records of data used to complete the application for this General Permit. Records shall be maintained for a minimum of three years from the date of sampling, measurement, or report. This period may be extended during the course of any unresolved litigation regarding this discharge, or when requested by the appropriate Regional Board Executive Officer.

5. MONITORING RECORDS

Records of monitoring information shall include the following:

- The date, exact place, and time of sampling or measurements
- The individuals who performed the sampling or measurements
- The dates analyses were performed
- The individuals who performed the analyses
- The analytical techniques or methods used
- The analytical results

6. DEVICE CALIBRATION AND MAINTENANCE

All monitoring instruments and devices that are used by CMWD to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy.

B. Receiving Water Monitoring

1. For each application at each site, CMWD shall prepare a map with convenient scale showing the application area, treatment area, immediately adjacent untreated areas (if entire water body is not treated), and water bodies receiving treated water. CMWD shall also provide information on surface area and/or volume of application area and treatment area and any other information used to calculate dosage and quantity of each pesticide used at each application site. CMWD shall also identify sampling locations and provide GPS coordinates for each sampling site.
2. CMWD shall inspect the integrity of the valve and spillway prior to application to ensure that treated water does not unintentionally get discharged into the Coyote Creek area below the dam.
3. CMWD has one application site; therefore CMWD will collect samples at two locations in the lake.
4. CMWD has less than 20 application sites; and will collect samples at two locations. The sampling locations and frequencies were selected in order to provide data that is representative of conditions found in the entire lake, and to represent average conditions found in the lake following copper sulfate use. The sample locations will be offshore of Coyote ramp (# 1), and at the buoy in the closed area near the intake structure at the dam. See the attached map for sample locations.
5. The following monitoring is required for each sampling:
    a. Background monitoring –Background samples shall be collected at the treatment area, just prior (up to 24-hours in advance of application) to the application event.
    b. Event monitoring-Event monitoring samples shall be collected at the treatment area after sufficient time has elapsed to allow the PAK 27 has fully dissolve and mix with

the receiving water.

c. Post-event monitoring-Post event samples shall be collected within the treatment area within one week after the application event.

6. The following parameters shall be analyzed for:

Sample Type	Constituent/ Parameter	Sample Method	Laboratory Method	Frequency
Visual	1. Site description: Lake 2. Appearance: (sheen, color, clarity etc.) 3. Weather conditions	Visual Observation	Not Applicable	All applications At all sites
Physical	1. Temperature* 2. Turbidity* 3. Electrical conductivity*	Grab (3')	See USEPA Guidelines	All applications At 10% of all Sites
Chemical	1. pH* 2. Dissolved oxygen* 3. Hardness (CaCO3)	Grab (3')	See USEPA Guidelines	All applications At 10% of all Sites

*Field testing

For all sample sites, pH, temperature, and dissolved oxygen are measured prior to collecting samples for laboratory analyses. All monitoring instruments and devices will be properly maintained and calibrated as necessary to ensure their continued accuracy. To ensure that the dissolved oxygen/temperature meter is operating properly and producing accurate and reliable data, routine calibration should be performed at least once per day prior to instrument use. If calibration reveals that the instrument is outside established accuracy limits, it should be noted and the instrument should be serviced in the laboratory or field. If the instrument continues to malfunction, the instrument will be sent back to the manufacturer for repair. The dissolved oxygen meter is calibrated by adjusting the meter according to the barometric pressure. The meter calibration is set according to the oxygen content at that particular pressure. The thermometer is checked by comparison with a National Institute of Standards and Technology (NIST) reference thermometer. A pH meter is included and is calibrated with at least two standard calibration solutions that bracket the expected range of measurements.

7. Visual Assessment:

During the sampling procedure a visual assessment will be made by Casitas personnel (including the fish biologist if available) to check for potential adverse effects to the environment, or beneficial uses of Lake Casitas that could be caused by the application of copper sulfate. Personnel at recreation will be notified and asked to be on the alert for any problems during routine patrol. Personnel at recreation will also be asked to notify the water quality supervisor if a member of the public observes adverse effects on the environment. For longer term effects, the lake will be assessed visually at varying intervals following PAK 27 application while doing routine field work on the lake including sampling, monitoring of algae levels, or dissolved oxygen and temperature measurements on the lake.

C. Additional Monitoring

Dischargers that propose monitoring as part of their CEQA compliance must also comply with that monitoring plan where the two plans differ. In CMWD's case, there are no CEQA compliance issues because CMWD is not requesting a categorical exception.

D. Reporting

1. All reports shall be submitted to the appropriate Regional Board. All reports submitted in response to this order must comply with the provisions stated in "Standard Provisions and Reporting for Waste Discharge Requirements (NPDES)" (Attachment D), section B, Monitoring and Reporting Requirements.
2. Annual reports shall contain the following information:
    a. An Executive Summary discussing General Permit compliance or violations and the effectiveness of the APAP to reduce or prevent the discharge of pollutants associated with aquatic pesticide applications.
    b. A summary of monitoring data, including the identification of water quality improvements or degradation, and recommendations for improvements to the APAP (including proposed BMP's) based on the monitoring results. All receiving water monitoring data shall be compared to applicable water quality standards.
    c. Identification of BMP's, and a discussion of their effectiveness in meeting this General Permits' requirements.
    d. A discussion of BMP modifications addressing violations of this General Permit.
    e. A map showing the location of each application and treatment area.
    f. Types and amounts of aquatic pesticides used at each application event during each application
    g. Information on surface area and/or volume of treatment area and any other information used to calculate dosage and quantity of each pesticide used.
    h. List of gates in the treatment area that may discharge to surface waters; time of gate closure, and reopening, include any calculations used to determine closure and reopening times, if applicable.
    i. Sampling results for all required monitoring under section B of this MRP and any additional sampling conducted in compliance with section A.3 of this MRP. Sampling results shall indicate the name of the sampling agency or organization, detailed sampling location information (including latitude and longitude or township/range/section if available), detailed map or description of each sampling site (i.e., address, crossroads, etc.), collection date, name of constituent/parameter and it's concentration detected, minimum levels, method detection limits for each constituent analysis, name or description of water body sampled, a comparison with applicable water quality standards, and a description of the analytical QA/ QC plan. Sampling results shall be tabulated so that they are readily discernable.
    j. Recommendations to improve the monitoring program, BMP's and/or the APAP to ascertain compliance with this General Permit.
    k. Proposed changes to the APAP and monitoring program.

E. Report schedule

CMWD will comply with the monitoring and reporting program as specified in the general permit. The required monthly and annual reports will be submitted to the Regional Water Quality Control Board. The annual report is due March 1 following the calendar year of the reporting period.

Exhibit 1
Map of Service Area – Lake Casitas Recreation Area

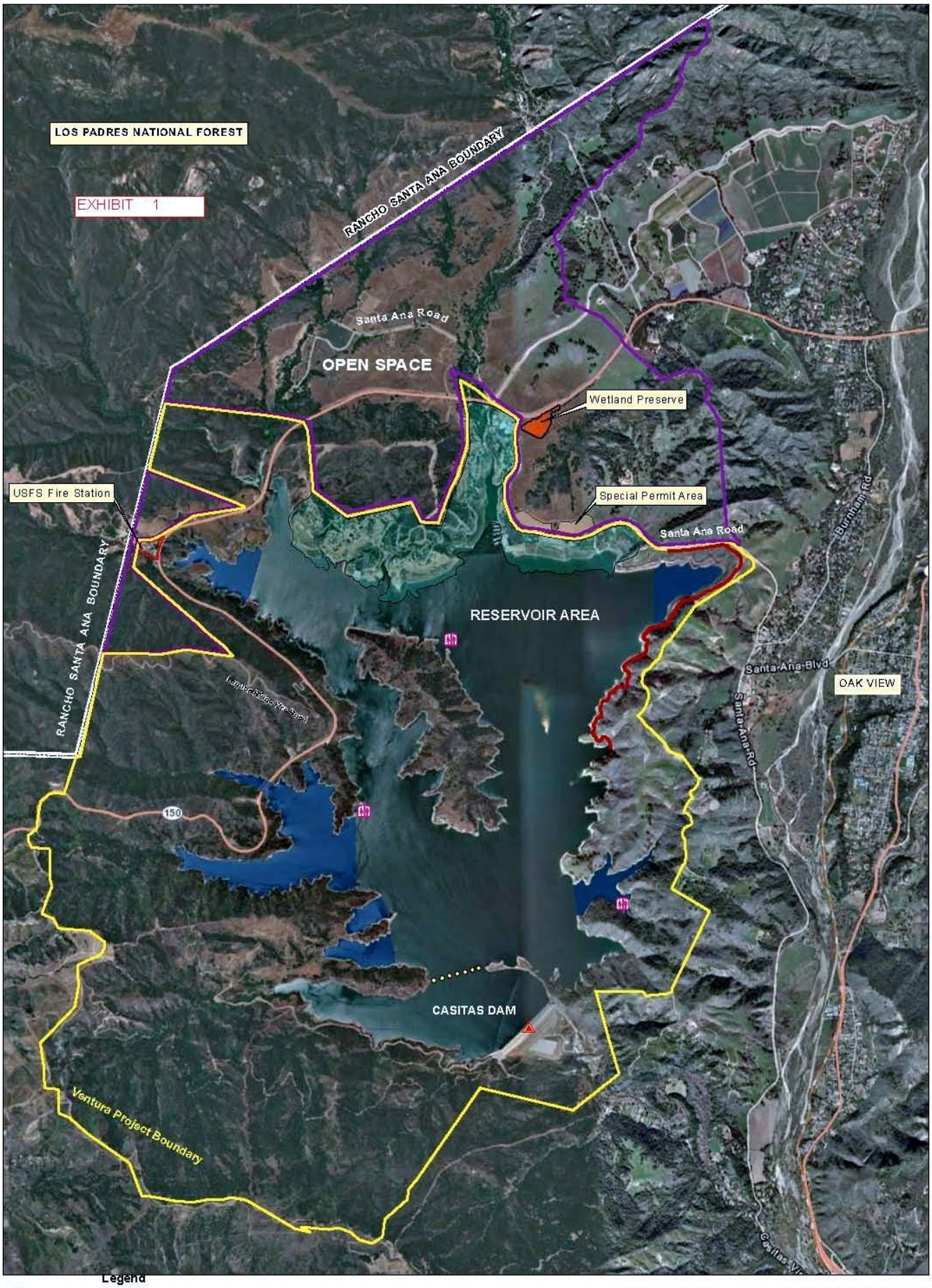
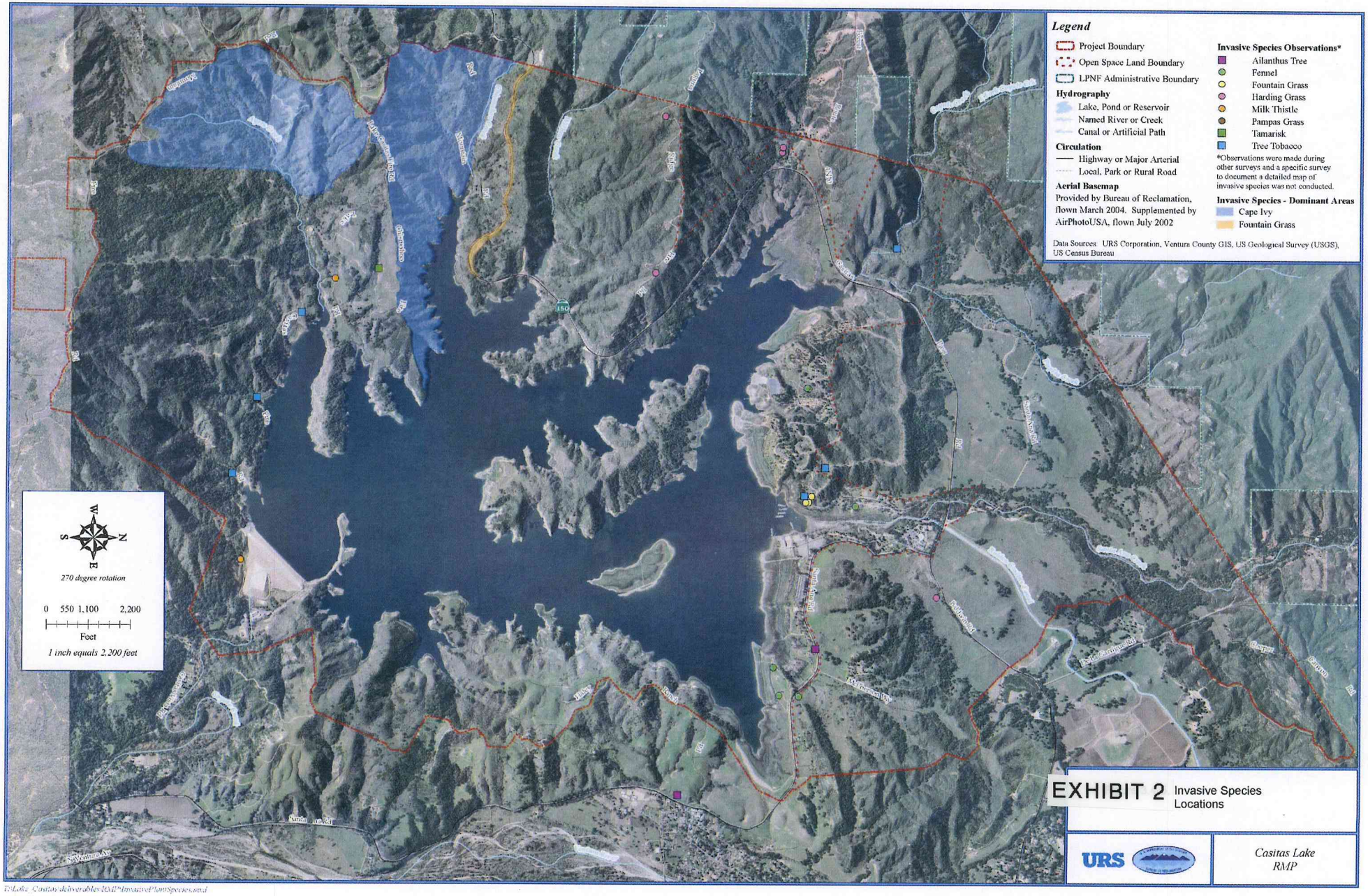

LOS PADRES NATIONAL FOREST
EXHIBIT 1
RANCHO SANTA ANA BOUNDARY
Santa Ana Road
OPEN SPACE
Wetland Preserve
USFS Fire Station
Special Permit Area
Santa Ana Road
Burnham Rd
RANCHO SANTA ANA BOUNDARY
RESERVOIR AREA
Santa Ana Blvd
OAK VIEW
Santa Ana Rd
150
CASITAS DAM
Ventura Project Boundary
Legend
Restrooms
Casitas Recreation Area
Casitas Reservoir Lands - Ventura River Project
Open Space "Title IV Lands"
Casitas Dam
Bike Trail
Posted Closed Shoreline
Bouys
Special Permit Area
N
0 0.2 0.4 0.8 1.2 1.6
Miles
RECLAMATION
Managing Water in the West
U.S. DEPARTMENT OF THE INTERIOR
MARCH 3, 1849

Exhibit 2
Invasive Species Site Map



T:\Lake Casitas\deliverables\MXD\InvasivePlantSpecies.mxd

LAKE IMPROVEMENT FOUNDATION

GL# 11-2-62-2410-00

DATE	FROM	DEPOSIT	PYMTS	BALANCE	MEMORANDUM
10/01/1997	Tanaka Bait & Tackle	500.00		$500.00	
10/01/1998	Oak View Civic Council	50.00		$550.00	
10/01/1998	Tanaka Bait & Tackle	1,250.00		$1,800.00	
09/01/1999	Tanaka Bait & Tackle	1,700.00		$3,500.00	
09/01/1999	Rotary Club of Ojai West	500.00		$4,000.00	
12/01/1999	Suzi Lydick	250.00		$4,250.00	
01/01/2000	Bill Hicks	300.00		$4,550.00	
05/01/2000	Pat Weinberger		487.99	$4,062.01	T-Shirt Reimbursement
06/01/2000	Cash Contributions	34.00		$4,096.01	
06/01/2000	James Word	15.00		$4,111.01	
06/01/2000	Ronald Paul	45.00		$4,156.01	
06/01/2000	Doris Harbison	15.00		$4,171.01	
?????	Unknown Entry	212.54		$4,383.55	
08/14/2002	Secretary of State		20.00	$4,363.55	Filing F 10819
04/21/2003	American Bass Association	1,155.00		$5,518.55	Bass
06/26/2003	American Bass Association	1,025.00		$6,543.55	Bass
06/30/2004	Interest Transfer for Year	127.08		$6,670.63	
06/30/2004	Memorial for Jim Loeble		177.04	$6,493.59	Cost From Workorder 890402
12/23/2003	Elaine Paul	100.00		$6,593.59	Plaque for Jim Loeble
07/01/2003	Affinity Group	250.00		$6,843.59	Donation
06/30/2005	Santa Barbara Monumental Co.		283.08	$6,560.51	Plaque for Jim Loeble
09/23/2005	Interest Transfer for Year	159.68		$6,720.19	
08/18/2005	Secretary of State		20.00	$6,700.19	
01/25/2006	The Tax Specialists		500.00	$6,200.19	
06/30/2006	Interest Transfer for Year	233.55		$6,433.74	
02/06/2007	Norm Smith / Family Fishing		500.00	$5,933.74	
09/12/2007	State of California		20.00	$5,913.74	LCIF Filing
12/26/2007	Roger Snowbarger	100.00		$6,013.74	
03/14/2008	Kenneth Wayne McFeeters	50.00		$6,063.74	
03/14/2008	Wells Hall	100.00		$6,163.74	
03/14/2008	David C. Regan	100.00		$6,263.74	
03/19/2008	Ojai Electric	100.00		$6,363.74	
03/19/2008	Ventura Wholesale Electric Inc.	15.00		$6,378.74	
03/24/2008	Coordinated Wire Rope	200.00		$6,578.74	
07/18/2008	Night Fishing Tournement	1170.00		$7,748.74	
08/22/2008	Contest for Fair Booth LCRA	300.00		$8,048.74	
09/09/2008	Night Fishing Tournement	1305.00		$9,353.74	
09/09/2008	Night Fishing Tournement	1350.00		$10,703.74	
09/10/2008	Moonlight Fishing	990.00		$11,693.74	
10/09/2008	Visions in Time Foundation	500.00		$12,193.74	
10/21/2008	Night Fishing Tournement	1215.00		$13,408.74	
10/21/2008	Night Fishing Tournement	900.00		$14,308.74	
10/30/2008	Reclass to Revenue Re: Rob, Pirates Festival		500.00	$13,808.74	Did not meet minimum payment of event space
12/18/2008	Moonlight Fishing	510.00		$14,318.74	
02/01/2009	Okuma Fishing Tackle		858.00	$13,460.74	Rods & Reels, Kid's Fishing Day
02/01/2009	Okuma Fishing Tackle		683.18	$12,777.56	Rods & Reels, Kid's Fishing Day
02/01/2009	Okuma Fishing Tackle		333.19	$12,444.37	Rods & Reels, Kid's Fishing Day
02/01/2009	Okuma Fishing Tackle		482.63	$11,961.74	Rods & Reels, Kid's Fishing Day
02/01/2009	Okuma Fishing Tackle		107.25	$11,854.49	Rods & Reels, Kid's Fishing Day
04/01/2009	Casitas Park Store		1250.00	$10,604.49	Food, Kid's Fishing Day
04/01/2009	Casitas Park Store		1250.00	$9,354.49	Food, Kid's Fishing Day
05/08/2009	State of California		20.00	$9,334.49	LCIF Filing
06/17/2009	Night Fishing Tournement	1,440.00		$10,774.49	
06/17/2009	Night Fishing Tournement	1,035.00		$11,809.49	
07/28/2009	Donation	510.00		$12,319.49	
08/18/2009	Donation Shelly M. Reyes	990.00		$13,309.49	
08/27/2009	Donation West Coast Christian Anglers	420.00		$13,729.49	
09/22/2009	Donation Shelly M. Reyes	855.00		$14,584.49	
09/22/2009	Donation Shelly M. Reyes	810.00		$15,394.49	
09/29/2009	Donation West Coast Christian Anglers	570.00		$15,964.49	
02/22/2010	Donation Kiwanis Club	500.00		$16,464.49	
02/22/2010	Donation Firemans Assoc. Charity Fund	606.00		$17,070.49	
03/15/2010	Check 4569 Okuma Fishing Tackle		985.07	$16,085.42	Family Fishing Day
03/15/2010	Check 4717 Coordinated Wire Rope		374.19	$15,711.23	Family Fishing Day
03/19/2010	Check 4770 Sysco Food Services of LA		2249.63	$13,461.60	Family Fishing Day
03/20/2010	Check 4648 Harbor Freight		21.60	$13,440.00	Family Fishing Day
03/25/2010	Check 4725 Erics Tackle		593.99	$12,846.01	Family Fishing Day
03/25/2010	Petty Cash Family Fishing Day		43.11	$12,802.90	Family Fishing Day
06/29/2010	Donation Shelly M. Reyes	900.00		$13,702.90	Family Fishing Day
03/09/2011	Importation Permit / Fish Planting		45.25	$13,657.65	
03/23/2011	Rainbow Trout / Kids Fishing Day		7500.50	$6,157.15	
03/24/2011	Food for Kids Fishing Day / Water Spring Alpine		239.60	$5,917.55	
03/24/2011	Food for Kids Fishing Day / Hot Dog Buns		315.90	$5,601.65	
05/09/2011	State of California		20.00	$5,581.65	LCIF Filing
05/10/2011	LCIF Night Fishing	400.00		$5,981.65	
06/15/2011	Jim Reyes	925.00		$6,906.65	
08/29/2011	Money Order	500.00		$7,406.65	Night Fishing Anglers Choice
10/18/2011	Daniel & Megan Merchant	155.00		$7,561.65	Night Fishing Anglers Choice
10/18/2011	Kevin Caruso	255.00		$7,816.65	Night Fishing Anglers Choice
02/22/2012	Flora Gardens - Replace Lobal Oak Tree		80.43	$7,736.22	
02/24/2012	Harbor Freight - Ties for Kids Fishing Day		8.54	$7,727.68	
06/15/2012	Donation - Richard Tauber	494.00		$8,221.68	Western Outdoor Bass
08/06/2012	Donation - Richard Tauber	416.00		$8,637.68	Western Outdoor Bass
08/10/2012	Donation - Richard Tauber	338.00		$8,975.68	Western Outdoor Bass
08/10/2012	Donation - Richard Tauber	105.00		$9,080.68	Trout Purchase
09/04/2012	Donation - Richard Tauber	100.00		$9,180.68	Trout Purchase
09/04/2012	Donation - Richard Tauber	338.00		$9,518.68	Western Outdoor Bass
09/04/2012	Donation - Richard Tauber	520.00		$10,038.68	Western Outdoor Bass

CASITAS MUNICIPAL WATER DISTRICT

LAKE CASITAS RECREATION AREA

DATE: September 5, 2012

TO: Steve Wickstrum, General Manager

FROM: Carol Belser, Park Services Manager

SUBJECT: Request for Funds From the Lake Casitas Improvement Foundation (LCIF) for 2012/13 Trout Purchase

Recommendation:

It is recommended that the LCIF allocate $4,205.00 of its fund balance to be used to supplement the 2012/2013 purchase of trout to stock in Lake Casitas.

Background and Overview:

At the August 10, 2012 meeting of the Recreation Committee, the Committee supported requesting the LCIF board to allocate a portion of the fund balance toward the next trout purchase.

In 2010 the DFG ceased to plant rainbow trout in Lake Casitas due to legal action challenging their hatchery and stocking operations and from a subsequent Environmental Impact Report/Environmental Impact Statement (EIR/EIS) that considers species and habitats affected by hatchery-raised rainbow trout. The current moratorium will be in effect at least until the Department conducts a Biological Assessment (using their funds and a consultant) and a Biological Opinion is formed. Casitas' ability to receive stocking allocation from the DFG is dependent on the results of the Biological Opinion. A letter received in from DFG 2012 indicated the any change in the planting status is at least one year away.

Analysis:

Casitas has planted trout since the DFG moratorium by purchasing the trout from private hatcheries with our own funds. To supplement the allocated $30,000 in 2012/2013 budget, we are requesting the LCIF consider adding $4,000 to the budgeted funds for the purchase of smaller trout to support the bass population. Additionally, $205.00 of the requested amount was collected by Rich Tauber, Director of the Western Outdoor News Bass Casitas Teams, for small trout purchases and he expects continued donations of this nature. If approved, the LCIF fund balance will be approximately $6,000.00.

CASITAS MUNICIPAL WATER DISTRICT
Inter-Office Memorandum

DATE: September 6, 2012

TO: Board of Directors

FROM: General Manager, Steve Wickstrum

Re: Revision of the Ordinance prescribing a system of Business Administration

RECOMMENDATION:

It is recommended that the Board of Directors approve the revisions to the Ordinance prescribing a system of business administration.

BACKGROUND AND OVERVIEW:

The District's auditor has recommended that the District include in its business ordinance a policy on the issuance and use of business credit cards. The attached Ordinance has been revised to include a credit card policy that reflects the District's current practices. The credit card language in the Ordinance has been reviewed by the Finance Committee and recommended to be brought before the Board for review and consideration of approval.

CASITAS MUNICIPAL WATER DISTRICT

AN ORDINANCE OF CASITAS MUNICIPAL WATER DISTRICT PRESCRIBING A SYSTEM OF BUSINESS ADMINISTRATION

WHEREAS, Section 71304 of the California Water Code provides that the Board of Directors may prescribe by ordinance a system of business administration; and

WHEREAS, it is desirable to have a system of business administration relative to accounting, auditing, and disbursement of moneys by Casitas; and

WHEREAS, it is desirable to change the signature requirements for the general fund bank account;

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Casitas Municipal Water District as follows:

1. Budget. The General Manager is hereby directed to prepare annually a fiscal budget no later than the second regular meeting in May. The budget so planned and submitted shall reflect the general policies of the Board of Directors and the anticipated expenditures to carry out such policies. The General Manager shall submit the budget in such form and substance that it will clearly reflect the planned program of Casitas' operations and improvements and will comply with the form prescribed by the County Auditor.

Obligations shall be incurred only within the detailed provisions of the applicable budget, subject to the following exceptions:

a. Unbudgeted obligations may be incurred within the limits of funds available for expenditures in the fiscal year if approved in advance by the Board of Directors or upon approval by the General Manager if necessary for protection of life or property.

b. The General Manager may make transfers between detailed budget items within a single department provided the amounts budgeted within the department for capital outlay and operation and maintenance, respectively, are not exceeded. The Board shall routinely be advised of said transfers.

2. Purchase of Materials, Supplies, and Services. The General Manager is hereby authorized to execute purchase orders and contracts not exceeding $20,000.00 without prior Board approval, provided that this limitation shall not apply to replenish warehouse stores stock. Purchases for this purpose shall be made in an amount equal to but not exceeding an amount necessary to maintain the minimum quantities of stock on hand as determined by the General Manager to be economical and necessary for Casitas' needs. All purchases in excess of $300 shall normally be supported by an executed purchase order or contract, and all proposed expenditures shall be verified to ascertain that provision has been included in the budget for the activity or expense intended. Exceptions might be an emergency situation, an order that does not arrive on time, the need for supplies that are not in the warehouse, or services that need to be performed in order to determine what needs to be replaced and/or repaired. In these instances, an invoice and requisition will be

furnished that fully explains the reason for not following normal procedures along with the approval of the supervisor who accepts responsibility for incurring the expenditures. The General Manager may delegate to the Accounting Manager authority to execute individual purchase orders up to $1,000.

In the General Managers absence, or an emergency situation the Assistant to the General Manager will have authorization to purchase materials, supplies and services not exceeding $20,000.

a. No purchase order shall be issued unless moneys for payment of Casitas' obligations thereunder are available for expenditure under the budget applicable to the year in which such purchase order is issued.

b. No purchase order shall be issued unless it relates to the operation and maintenance of Casitas or Ventura River Project facilities or to a construction project approved by the Board.

c. From time to time, by resolution, the Board of Directors shall adopt a statement of terms and conditions applicable to construction, alteration or repair of Casitas' facilities in the form prescribed by Casitas' attorney. The General Manager shall be authorized to approve change orders as recommended by the Engineer providing the total increased cost of all change orders does not exceed 5 percent of the total contract amount or $20,000, whichever is greater.

d. The General Manager in his purchasing decisions shall consider costs of transportation to firms outside the County as opposed to firms inside the County when making purchasing decisions and shall also consider any taxes to be paid on items outside the County as being an extra cost, while those sales taxes inside the County may be discounted from the total bid when considering award. Should the differences in bid price be greater than those amounts of transportation and taxes, the General Manager shall award the purchase of goods and services to the lowest responsible bidder.

3. **Credit Cards. The General Manager may acquire business credit cards issued in the name of the District for designated use by the General Manager and/or the Assistant to the General Manager, and business credit cards authorized and controlled by the General Manager for purchases at vendors (i.e., Sears, Home Depot). The credit cards may be used at the sole discretion and approval of the General Manager and/or the Assistant to the General Manager only for the official business of the District, such as business travel, business expenditures and vendor payments, within the limits set forth by District ordinance or credit card limit, whichever is less.**

a. The credit cards are not to be given or loaned to others, regardless of the circumstances. If credit card(s) are lost, stolen or if there is a billing dispute or unauthorized use, the cardholder must advise the credit card company and the Accounting Manager/Treasurer immediately. A disputed item must be noted on the cardholder's Statement of Account so it will not be paid until the problem is resolved and the cardholder shall immediately notify the card issuer of such dispute.

b. No members of the Board of Directors will be issued credit cards for District business purposes.

c. Administration shall safeguard all documents that contain credit card information pursuant to the Identity Theft Prevention Program.

d. Cardholders may not use their credit card for cash advances from banks, credit unions or automatic teller machines. This prohibition similarly extends to cash equivalents such as bank checks, traveler's checks and electronic cash transfers.

e. Receipts for all credit card expenditures must be promptly turned into the Accounts Payable along with the credit card monthly statement and appropriate budget account number by each transaction. Any receipts for meals or entertainment must clearly indicate the names of all persons attending the meal and the business purpose of the meeting. An audit of the cardholder purchases will occur on a monthly basis by Accounts Payable.

f. Misuse of the credit card or noncompliance with this ordinance, as determined by the General Manager, may result in the revocation of the credit card and its privileges. Misuse may also result in employee discipline, up to and including termination.

g. Employees that are separating from service with the District must cancel and turn in the District-issued purchasing credit card prior to the last day of employment.

4. Collection and Deposit of Revenues. A "General Fund Bank Account" shall be established and maintained in a bank designated by the Board of Directors and all revenue, unless otherwise provided, shall be deposited therein. The Board of Directors may, from time to time, direct the General Manager to establish and maintain special bank accounts for the handling of funds received or set aside for specific purposes.

All revenue collected shall be accounted for in a manner that will indicate the source, nature, and amount of each collection. Collections so made shall be deposited intact in the bank accounts established.

5. Disbursements. Routine financial obligations of Casitas shall be paid from a special fund designated as the "Payables Fund Account" established in a bank designated by the Board of Directors. Funds in the payables fund account shall be replenished from time to time from the general funds account in order to enable Casitas to meet its routine fiscal obligations. The General Manager shall assure that checks made from the General Fund to replenish the "Payables Fund Account" shall not exceed the total amount of the bi-monthly payables list or $500,000 whichever is lower. In the event that the General Manager or Accounting Manager was unavailable to co-sign a payables or payroll check, the Board member requested to co-sign will require a verification of the request by the Accounting Manager or General Manager. Disbursements from the payables fund account shall be authorized:

a. By a check signed by one of the following combinations of two signatures:

- The General Manager or Accounting Manager and any member of the Board of Directors.
- The General Manager or Assistant to the General Manager and the Accounting Manager.
- The Assistant to the General Manager or Accounting Manager and any member of the Board of Directors.
- Any two members of the Board of Directors.

Under no circumstances shall any officer authorized under this ordinance to sign checks of Casitas sign a blank or incomplete check. Any officer who does not comply with this

provision shall be subject to severe disciplinary action.

An audit of all claims against Casitas shall be made prior to presentation of the checks for signature. Such audit shall consist of a verification as to accuracy and completeness of all documents supporting payment; i.e., copy of purchase order, executed receiving and inspection report, and vendor's invoice or statement. Should a vendor not honor Casitas purchase orders but provide the lowest price for an item, the General Manager may issue a payables check to the vendor for the item receiving in return an invoice for the item for audit purposes. Reimbursable personal expense claims shall be approved by the General Manager. Personal expenditures for which reimbursement may be claimed shall include only expenses incurred while an employee, officer, or director is acting in his official capacity as a Casitas representative. All claims for reimbursement must be for goods or services which are ordinary and necessary for the fulfillment of Casitas duties, and such expenses shall, where practicable, be documented by checks, receipts, or other evidence, such evidence to be submitted at the time request for reimbursement is made.

A separate voucher authorization list covering disbursements made from the payables fund account showing check number, payee, description of materials or services purchased, and amount shall be prepared and accompany each check presented for signature. Each list shall be certified correct by the Casitas Accounting Manager and submitted to the Board of Directors for ratification. Signatures of a majority of the Board members on the voucher list shall constitute Board approval.

A fidelity bond covering Casitas officers authorized to sign checks on the payables fund account shall be in force at all times. The bond shall be in an amount sufficient to cover the maximum limit of the payables fund account.

b. A petty cash fund of $800 shall be maintained, and expenditures may be made from this fund only for individual expenditures not in excess of $75.00. Expenditures may be made for postage, freight and express bills, invoices for materials, reimbursement of personal expenses, meal allowances, and in payment of encroachment permit fees, licenses, or other charges levied by a county, state agency, public utility, or railroad company in connection with the granting to Casitas of rights in property owned or controlled by such grantors and other similar purposes.

c. Funds transferred to the payables fund account and all other withdrawals from the general fund account shall be authorized by the signatures of any two members of the Board of Directors.

d. Payroll obligations of Casitas shall be paid from a special fund designated as the "Payroll Fund Account" established in a bank designated by the Board of Directors. The payroll fund account shall be replenished on a biweekly basis in the amount of the biweekly payroll from the general fund account in order to enable Casitas to meet its payroll obligations. Disbursements from the payroll fund account shall be authorized:

(1) By a check signed by electronic signatures of the General Manager and the Accounting Manager.

(2) By a check signed by one of the following combinations of two signatures:

- The General Manager or Accounting Manager and any member of the Board of Directors.

- The General Manager or Assistant to the General Manager and the Accounting Manager.
- The Assistant to the General Manager or Accounting Manager and any member of the Board of Directors.
- Any two members of the Board of Directors.

(3) Under the payroll system, at the option of each of Casitas' employees, either issue a payroll check to said employee in the amount of such employee's net pay as computed, or credit said net pay to the bank account of such employee. Statements shall be provided to employees electing to have their net pay so credited.

(4) Under no circumstances shall any officer authorized under this ordinance to sign checks of Casitas sign a blank or incomplete check. Any officer who does not comply with this provision shall be subject to severe disciplinary action.

The payroll register shall be used as the voucher authorization list for payroll disbursements. Each list shall be certified correct by the Casitas Accounting Manager and submitted to the Board of Directors for ratification. Signatures of a majority of the Board members on the voucher list shall constitute Board approval.

The Accounting Manager shall be responsible for the password security within the Incode Accounting Software for check signing digital signatures. This password will be required to be entered into the system by the Accounting Manager before each check writing batch for all funds. A payroll check register shall be maintained to keep a record of all checks written.

e. A separate voucher authorization list covering disbursements made from the general fund account showing check number, payee, description of the transaction, and amount shall be prepared and accompany each check presented for signature. The list shall be certified correct by the Casitas Accounting Manager and submitted to the Board of Directors for approval. Signature of a majority of the Board members on the voucher authorization list shall constitute approval of claims and authorization for the signatures of any two members of the Board of Directors in payment of same.

f. Disbursements from special bank accounts established for the handling of funds received or set aside for specific purposes, other than the payables fund account or the payroll funds account, shall be accomplished pursuant to instructions approved by the Board of Directors.

6. Paying interest on deposit moneys. Special projects such as meter and service installations, pipeline construction, fire hydrant installations, etc. require money deposits. Standard connection fees are not considered special projects and do not earn interest upon deposit. On deposits of $10,000 or less, no interest will be earned or returned to the depositor. Deposits in excess of $10,000 shall earn simple interest similar to a bank deposit account at a rate of 5%. Casitas shall establish a liability account in the General Ledger in the depositor's name. Interest shall be earned by the depositor from date of deposit. When expenditures are incurred by Casitas on the project, interest will be earned on the deposit less any expenditure to date. Funds in excess of the project will be returned to the depositor. Where deposits are less than Casitas expenditures on the project, the depositor shall pay Casitas the remaining costs plus interest lost based on a usury rate of 10%.

7. Powers, functions, and duties assigned herein to the General Manager, Assistant to the General Manager and those assigned to the Accounting Manager, with the exception of the

signing of checks, may be delegated by them to the staff member acting in their respective capacities when they are absent from the office.

8. Bidding Requirements. The General Manager is directed to establish a bidding procedure for the District. For all purchases/contracts over $75 income or expense, the General Manager shall take bids. From $75 to $34,999, informal bids shall be taken. Informal bids shall consist of calls to three (3) bidders minimum to obtain prices. From $35,000 up, formal bids shall be taken. Formal bids require a written specification of the goods and services and a written answer after appropriate public notice.

a. Bidding Requirements for Small Projects: If, in the opinion of the General Manager, it is difficult for the District to obtain bids for small jobs, the General Manager may award purchase orders for work at a cost equal to or less than $5,000 if the following requirements are met:

- There are funds available in the unencumbered budget for the work.
- An estimate is made by staff of the cost of the work before the Purchase Order is issued.
- The work can be completed on a time-and-materials basis.
- The District is provided a bill detailing the cost of time and materials.
- A report is made to the Board to be placed on the Information Items section of the Agenda which will detail the estimate and the cost, and review the quality of work by the contractor.

b. Sole Source Purchases. The General Manager can approve sole source purchasing as an exception to section 8 for any of the following reasons:

- Only one available supplier with no available competition.
- Equipment that was purchased with bidding competition but support, spare parts and repairs have to be provided by factory reps with protected territory.
- Services that have been bid out and results have been damaging to Casitas.
- Products used to maintain system standard when significant spare parts inventories need to be maintained and readily available.
- Utility Companies with which you have to work.
- Purchases that require significant staff time to get to the location to conduct the business in comparison to the cost of item.
- Agreements on Deposits
- Sources to Call in Emergencies

9. Permits. It shall be the general policy of the Board of Directors of Casitas Municipal Water District not to get permits from other public agencies, which are exempted by Governmental Code Section 53091, or for recreation due to its federal enclave status. However, Casitas shall get permits where, in the opinion of the Board of Directors, it is appropriate to do so.

ADOPTED this 12th day of September, 2012.

_____

Russ Baggerly, President
Casitas Municipal Water District

ATTEST:

_____

Bill Hicks, Secretary
Casitas Municipal Water District

2011 Robles Fish Passage Facility
Progress Report

Steelhead smolt with gastric radio tag. Smolt was captured, tagged, and released downstream of the Robles Fish Facility in April 2011.

Casitas Municipal Water District
1055 Ventura Avenue
Oak View, California 93022

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1.0 EXECUTIVE SUMMARY

Casitas Municipal Water District (CMWD) is implementing the Robles Fish Passage Facility Project (Robles Fish Facility) described in the Biological Assessment (BA) proposed by Bureau of Reclamation (USBOR 2003). The affects of the Robles Fish Facility were analyzed in the Biological Opinion (BO) prepared by the National Marine Fisheries Service (NMFS 2003a). This 2011 Robles Fish Passage Facility Progress Report, as described by the BO, is the culmination of monitoring, evaluation, and operational data collected during the reporting period of 01 July 2010 to 30 June 2011.

The monitoring and evaluation studies related to the Robles Fish Facility conducted during the 2010-2011 reporting period are included in two main sections of this progress report. The Fisheries Monitoring and Evaluation section includes: upstream fish migration impediment evaluation, sandbar monitoring at the mouth of the Ventura River, fish attraction evaluation, fish passage monitoring, downstream fish passage evaluations, and downstream fish migration through the Robles Reach. The Facility Operation section includes: information and data on the facility status, flow observations and control, costs associated with operation and monitoring, assessment of the effectiveness to provide fish passage, recommendations of priorities for future activities, and revisions deemed necessary to the operations.

A total of 43 water depth transects at six monitoring sites were completed and analyzed for the upstream fish migration impediment evaluation in 2011. The sandbar at the mouth of the Ventura River was closed only for short periods during mid October 2011 and was open for potential volitional steelhead passage during the remainder of the reporting period. A total of 640 *O. mykiss* juveniles were counted in the area upstream and downstream of the Robles Fish Facility during the fish attraction evaluations in 2011. This number likely represents multiple counts of some *O. mykiss* due to smolting rates and migration behavior. During the fish passage monitoring evaluations, 150 *O. mykiss* were detected migrating upstream through the Robles Fish Facility in 2011. Twenty-five *O. mykiss* migrating smolts were captured downstream of the Robles Fish

Facility; 16 were radio-tagged, 8 PIT-tagged, and one was not tagged. The mean migration rate through the Robles Reach was 2.2 km/day.

2.0 INTRODUCTION

NOAA Fisheries listed the southern California steelhead, *Oncorhynchus mykiss*, as endangered in 1997 (NMFS 1997) under the Endangered Species Act (ESA, 16 U.S.C. § 1531 et. seq.) of 1973. Steelhead were organized into stocks (i.e., groups) of evolutionary significant units (ESU) that were considered to be substantially isolated from other steelhead stocks reproductively and were an important part of the evolutionary legacy of the species. The southern California steelhead ESU included, at that time, steelhead populations from the Santa Maria River in San Luis Obispo County south to Malibu Creek in Los Angeles County. The ESU was later extended to the US/Mexican border in San Diego County during 2002 (NMFS 2003b). In a later delineating approach, NOAA Fisheries recognized the anadromous life history form of *O. mykiss* as a distinct population segment (DPS) as described under the ESA (NMFS 2005). The DPS policy differs from the ESU by delineating a group of organisms by "marked separation" rather than "substantial reproductive isolation". In the case of *O. mykiss* of the southern California steelhead ESU, this marked separation between the two life history forms was considered valid because of physical, physiological, ecological, and behavioral factors related to its anadromous life history characteristics. Both resident and anadromous *O. mykiss*, where the two forms co-occur and are not reproductively isolated, are still part of the ESU; however, the anadromous *O. mykiss* (i.e., steelhead) are now part of a smaller subset identified as the southern California steelhead DPS.

Rainbow trout (*O. mykiss*) can be generally organized into four large groupings (Behnke 1992; Scott and Crossman 1973): 1) coastal rainbow trout that extend from northern Baja California to northern Alaska near the Kuskokwim River and also the Kamchatkan Peninsula of northeastern Asia, 2) redband trout of the inland Columbia and Frazer River basins, 3) redband trout of the central valley of California, and 4) trout of the Gulf

of California drainages. The taxonomic group of coastal rainbow trout, *O. m. irideus*, exhibit two life history forms; anadromous and resident. The common name for the anadromous life history form is termed steelhead trout and the resident form is generally termed rainbow trout. Throughout the range of coastal rainbow trout, there is a widespread occurrence of the anadromous life history form (Behnke 1992). There are two general life history patterns exhibited by adult anadromous steelhead when they return from the ocean to spawn in fresh water. The patterns are grouped by either summer or winter spawning runs. There are many exceptions to this pattern, but this general characterization has been used to group steelhead spawning runs by the season in which the peak occurs as they return from the ocean (Busby et al. 1996). Summer steelhead are generally found in river systems that drain from farther inland, such as the Columbia River basin. Winter steelhead runs are typically found in the coastal systems where the river systems are not as large. The winter steelhead life history pattern is the most abundant anadromous life history within the natural range of the species (Busby et al. 1996).

3.0 FISHERIES MONITORING AND EVALUATION

The monitoring and evaluation studies and activities related to the modification of the Robles Facility, as outlined in the BO (NMFS 2003a), were intended to achieve three main objectives:

I. Monitor Fish Passage Facility operations and performance.

II. Determine if the Fish Passage Facility functions and operates in such a fashion that migrating steelhead:
    a. Successfully navigate into and through the facility, and
    b. Move through the facility in good physical condition.

III. Determine if the operations at the Robles Diversion are enhancing the opportunity for:
    a. Adult steelhead to migrate upstream to the Robles Facility, and
    b. Smolts and kelts to migrate downstream through the Robles Reach.

5-year Reevaluation of Initial Evaluation and Monitoring Activities

As described in the BO, a 5-year reevaluation of the initial fish flow operations would be conducted to determine if monitoring and evaluations have been completed (NMFS 2003a). The initiation of the 5-year period began in 2006, which was the first year the Robles Fish Facility was fully operational. An annual and ongoing reevaluation began after the 2010 fish passage season. Through the Cooperative Decision Making Process, the Robles Biological Committee will review each of the specific evaluations and determine if the original objectives have been addressed and could be discontinued or if additional study would be needed. It is recommended that all aspects of the monitoring and evaluation for the Robles Fish Facility be continued during 2012. Due to the variable water conditions and insufficient number of adult and juvenile steelhead, the objectives of the monitoring and evaluation program have not yet been accomplished. Each aspect of the monitoring and evaluation will be evaluated annually to determine if sufficient information exist to complete each objective. See Appendix 36 for correspondence among Biological Committee participants related to the 2011 progress report and 2012 study plan.

3.1 Upstream Fish Migration Impediment Evaluation

Introduction

The ability of adult steelhead to swim upstream can be impeded during the migration season at times of low-river flow (NMFS 2003a). Evaluations at shallow water habitat units (i.e., critical riffles) have been commonly used as a method to determine if impediments exist for adult and juvenile steelhead in California rivers (Dettman and Kelley 1986; Bratovich and Kelley 1988; Hager 1996). The Robles Reach, which extends downstream from the Robles Fish Facility approximately 6.5 km (NMFS 2003a) to just upstream of the San Ana Boulevard bridge (Appendix 1), is a wide alluvial section of the Ventura River that is composed of active wash deposits of unconsolidated silt, sand, gravel, and boulders (Tan and Jones 2006). Due to this type of channel

morphology and geology, alluvial channels like the Robles Reach have high infiltration rates that cause channel surface flow to rapidly recede and cease shortly after storm events (Cooke et al. 1992).

An initial assessment of potential passage impediments in relation to river discharge was completed by ENTRIX (1999). The physical characteristics of seven potential impediments were evaluated using the Thompson (1972) passage criteria. The Thompson (1972) passage criteria for adult steelhead at critical riffles is a water depth of 0.6 ft for 25% of the total transect width and a continuous portion equal to 10% of the total transect width. ENTRIX (1999) also evaluated the potential impediments using a criteria of 0.5 ft and 0.6 ft depth for 25% of the total width and a total of 8 ft width for both depths. The resulting discharge required was estimated to be between 40 and 65 cfs. There have been several modifications to the Thompson passage criteria by other researchers; Dettman and Kelly (1986) on the Carmel River used a depth of 0.6 ft over a 5 ft continuous section, a criteria of 0.6 ft depth over an 8 ft section was used on the Santa Ynez River (SYRTAC 2000), and Harrison et al. (2006) used a criteria of 0.6 ft depth over a 10 ft section on the Santa Clara River. Thompson's (1972) depth criterion of 0.6 ft was not based on actual migration observations and was never validated. It has been observed that adult salmonids can successfully move through shallower riffles than the 0.6 ft criterion (Mosley 1982).

The objective of the impediment evaluation is to assess factors that may impede steelhead's ability to migrate to the fish passage facilities (NMFS 2003a). Because of the potential for low-river flows to impede upstream fish migration, the Robles Reach will be the primary focus of the impediment evaluations (NMFS 2003a).

Methods

Selected channel features that may pose an impediment to upstream passage were surveyed multiple times during the fish migration season (January through June) to measure water depth, velocity, and channel width along a transect at each site. The

selected sites were surveyed over a range of discharges from approximately 30-100 cfs (the upper limit was dependent on the ability to safely conduct the surveys), which was correlated with discharge at the Robles Fish Facility. The number of repeated surveys was dependent on the number and duration of significant rain events, rate of hydrograph recession, and time constraints due to other aspects of the monitoring and evaluation program. The impediment surveys will most likely be conducted over a period of 3-4 years given the natural variation of water conditions. The selected impediment sites will be resurveyed as many times as needed to develop a statistically rigorous data set to evaluate fish passage in relation to Robles Fish Facility discharge.

During the initial phase, the Ventura River was surveyed from the mouth to the Robles Fish Facility (23 km) using standard stream survey techniques and was completed in 2008 (CMWD 2008). This provided physical measurements of all habitat units for the selection process. The survey methodology followed Moore et al. (2002) and was equivalent to a level IV survey as described in the California Salmonid Stream Habitat Restoration Manual (Flosi et al. 2002).

Over the course of three meetings and one conference call between 24 January and 18 June of 2009, the Biological Committee (BC) for the Robles Fish Facility completed an impediment site selection process that culminated in the selection of eight sites that would be monitored for the impediment evaluation. The BC reviewed physical parameters of the 379 habitat units surveyed and general river characteristics that included: unit type, length, width, water depth, slope, longitudinal location (river km), step height on step units, discharge at Foster Park and the Robles Fish Facility at the time of the surveys, and a river profile for the 23 km of the Ventura River surveyed. Upon completing an initial assessment of this data, a list of potential sites was developed that the BC visited in the field on 27 May 2009 to determine if monitoring was warranted. This data and field assessment included regular BC members Mike Kinsey (BOR), Stan Glowacki (NMFS), Mary Larson (CDFG), and Scott Lewis (CMWD). Hydrologists Bob Hughes (CDFG) and David Crowder (NMFS) were also involved in this assessment and selection process.

ENTRIX Site Assessments

An effort was made to locate and determine the status of the ENTRIX (1999) sites during 2009. Because there had been numerous bed-mobilizing runoff events after the study was completed, the status of the sites was unknown and needed to be determined. Based on the site descriptions in the ENTRIX (1999) study report, field surveys were conducted to locate and describe the existing channel conditions at the original site locations.

Of the seven sites originally identified by ENTRIX (1999), only four sites were located with any degree of certainty. Of those four sites, all were no longer in the primary low-flow channel. Sites 1-3 were originally located between the Robles Fish Facility and the Hwy 150 bridge. The river channel in the general area where these sites were located has migrated naturally due to bed-mobilizing runoff events (primarily during a 2005 flood event) since the study was completed. The area where sites 1-3 were located may indeed still be within the river channel, but because of GPS field measurement errors (Larry Wise, ENTRIX, personal communication), their exact locations and status could not be determined. Even if those three sites are still within the river channel, there could have been longitudinal migration of the channel features over the last 10 years. Site 4 was originally located just upstream of the Hwy 150 bridge. The channel, based on photos from 2003, migrated laterally approximately 20 m towards the left bank (looking upstream, and all other examples) caused from natural channel meandering. Site 5 was originally located just downstream of Santa Ana Blvd bridge. Based on photos from 2003, the channel has moved latterly approximately 30 m from the right bank towards left bank. This could be partly due to channel modifications made by CalTrans near the bridge in recent years (Mary Larson, CDFG, personal communication). Sites 6 and 7 were both originally located near the community of Casitas Springs. Site 6 was located behind the Arroyo Trailer Park and Site 7 was located approximately 200 yards downstream (ENTRIX 1999). Based on aerial photos of this area prior to the 2005 flood event, the river channel was located considerably closer to the left bank than in 2009. The main low-flow river channel in 2009 was

located on the right bank against the levee that protects Casitas Springs from high water runoff events. This represented approximately a 30 m shift to the right bank for Site 6 and a 50 m shift for Site 7. The main low-flow channel at sites 6 and 7 appeared to have switched between preexisting channels and was not the result of natural meandering over the last 10 years. Of the four original sites that could be located, all would be inundated at higher flows; however, because low-flow river conditions are the focus of the upstream fish impediment evaluation (NMFS 2003a), new sites were needed for future evaluations.

Results

During 2011, a total of 54 water depth transects were completed. Discharge from the Robles Fish Facility ranged from 30 to 100 cfs when transects were conducted. There was a high-flow event that peaked on 20 March 2011. The peak flow of approximately 20,000 cfs at the USGS Foster Park gage station represented a recurrence interval of about 6 years. Data from 11 transects collected prior to the high-flow event could not be used in the 2011 analyses because some impediments sites were altered significantly by the high flow event. It appeared that the lower in the Ventura River a site was, the more an impediment site and the channel were altered. Because of the high-flow event, only 43 transects were analyzed in this report. Data were analyzed by modeling discharge from the Robles Fish Facility and water depth at each site for several passage criteria that resulted in numerous adult steelhead passage criteria discharges.

Site 2, which was located near the Ojai Valley Sanitary District treatment plant at rkm 7.5, was surveyed only once prior to the March high-flow event. The high-flow event substantially changed Site 2 and it no longer appeared to be a potential impediment. Prior to the high flow event, Site 2 was characterized by having a long transverse riffle with dense vegetation that had progressively developed since the January 2005 high-flow event. In addition, approximately 80% of the discharge was flowing through the middle section of the riffle through a series of small channels in the vegetation. After

the March 2011 high-flow event, two additional large channels were scoured through the riffle, one upstream and one downstream of the old primary channel (Appendix 15a). The upper most channel became the new primary channel and was visually estimated to pass approximately 85% of the total site discharge. The old primary channel had approximately 10% of the discharge and the lower new channel passed the remaining 5%. The area of the riffle in which the old primary channel was located received a substantial amount of gravel and cobble deposition from the March flow event. This likely contributed to the decrease of the percentage of total flow post flood in this area of the site. At the time of the visual estimates, numerous depth measurements were also recorded. The new primary channel, which passed 85% of the discharge, had maximum depths that ranged from 1.2 to 3.2 ft in the thalweg and a mean of 2.1 ft for five depths measured. At the time of the depth measurements and visual estimates, the discharge at Foster Park and the Robles Fish Facility was 46 cfs and 30 cfs, respectively. The scour of new channels by the March high-flow event substantially changed the channel at Site 2. Due to the large amount of total discharge and water depths in one of the new channels, during a time of lower flow from the Robles Fish Facility, this site was no longer considered a potential impediment and monitoring was not conducted after the March 2011 high-flow event.

Site 3 was also affected by the March 2011 high-flow event. The site was not altered enough to consider it substantially different. However, the March event did cause significant scour and depositional changes about 600 m upstream of the site where two channels split. These changes forced the vast majority of the river's flow to move to the left channel (looking upstream). Site 3 was originally located next to the Casitas Springs levee in the right channel. After the March 2011 high-flow event, there was approximately 80% of the flow in this new primary channel. The two channels split for 1 km before returning together. This switching between the two channels has occurred in the past. In fact, one of the original ENTRIX (1999) impediment sites was located in this new primary channel. After determining the primary channel had changed, a new impediment site was selected on 27 March and monitoring began on 28 March 2011. It was reasoned that a new site needed to be selected immediately to take advantage of

post-storm flows rather than going through a lengthy Biological Committee selection process and lose a data collection opportunity. The committee was notified of the change in a letter dated 29 April 2011. The new impediment site was located at the upstream end of the new primary channel. After visually surveying the 1 km reach of the new primary channel, the new site (Site 3-2) appeared to be clearly the most significant potential impediment.

Site 3-2 was surveyed four times at discharges at Robles ranging from 30 to 69 cfs and Foster Park discharges ranging from 77 to 258 cfs. The Site 3-2 regression produced plausible results using the Thompson passage criteria (Appendix 3), which were 30 and 86 cfs. The resulting minimum discharges required to meet the three other criteria were negative and therefore not plausible. However, when the regression was forced through the origin, the resulting discharges ranged from 10 to 19 cfs. Minimum passage discharge to meet Thompson criteria were also calculated using the site discharge, which were 93 and 186 cfs (Appendix 4).

Site 4 was surveyed six times at Robles discharges ranging from 31 to 76 cfs. The March high-flow event did not appear to alter Site 4 substantially. To validate and quantify this observation, the percent length and continuous length regressions were tested to compare the 2010 and 2011 results. There was no significant difference between the 2010 and 2011 regressions for the percent length of Site 4 that was ≥ 0.6 ft (p-value = 0.07, one-way ANCOVA). In addition, there was no significant difference between the 2010 and 2011 regressions for the continuous length of Site 4 that was ≥ 0.6 ft (p-value = 0.9, one-way ANCOVA). Therefore, the transect data from 2010 and 2011 were combined into one regression model to increase the sample size that improved the regression statistics. The resulting minimum discharges required to meet the Thompson criteria were 62 and 50 cfs (Appendix 5). The resulting minimum discharges required to meet the three other criteria ranged from 40 to 69 cfs. The minimum discharge to meet the Thompson criteria when using the site discharge were 61 and 43 cfs (Appendix 6). Figures for sites 4, 7, and 8 include individual regression

lines for each year as well as a line for the combined years. The resulting Robles discharges at those site for 2011 are in Appendix 19a.

The March high-flow event caused substantial changes at Site 5. The primary channel changed from the right (Site 5-1) to the left channel (Site 5-2) due primarily to sediment scour and some deposition. Previously, approximately 80% of the discharge was flowing through Site 5-1. After the high-flow event, approximately 60% of the discharge was flowing through Site 5-2. In fact, there was significantly more discharge flowing through Site 5-2 than 5-1 after the high-flow event (one-sided p-value < 0.001, t-test). Because Site 5-2 was the primary channel, it was used in all analyses. Site 5-2 was surveyed five times after the high-flow event. Robles discharge ranged from 30 to 74 cfs. The resulting minimum discharges required to meet the Thompson criteria were 55 and 14 cfs (Appendix 7). One of the resulting minimum discharges required to meet the three other criteria was negative and therefore not plausible. The regression was then forced through the origin and the resulting discharges ranged from 11 to 23 cfs. The minimum discharge to meet the Thompson criteria when using the site discharge were 48 and 3 cfs (Appendix 8)

Site 6, which was located about 1.3 km upstream from Santa Ana bridge, was substantially modified by the March high-flow event (Appendix 15h). A second channel was created that separated about 20 m upstream of the site. The two channels reconnected approximately 200 m downstream. Initial observations indicated that both channels appeared to have similar discharges; therefore, measurements were collected in both channels to determine the primary channel. The original channel had approximately 46% of the flow and the new channel had 54%. However, this small difference was not statistically significant (p-value = 0.12, t-test). After further analysis, the resulting minimum Thompson discharges for the new side channel were not plausible at -203 and -54 cfs. Furthermore, the regression for the percent total length was not statistically significant (p-value = 0.33). The original channel was chosen for final analysis because there was no significant difference in discharge between the two channels, the new channel regression produced non-plausible results, and original

channel had improved regression statistics. The original channel (Site 6-2) was surveyed five times at Robles discharges ranging from 30 to 75 cfs (Appendix 9). The resulting minimum discharges required to meet the Thompson criteria were 64 and 65 cfs. The resulting minimum discharges required to meet the three other criteria ranged from 35 to 96 cfs (Appendix 9). Like the Robles discharge analysis, the site discharge analysis comparing the new channel with the original channel had similar results. The discharge for the Thompson criteria were not plausible at -68 to -440 cfs. Consequently, the original channel for site discharge analysis was deemed most appropriate for the same reasons. The minimum discharge to meet the Thompson criteria when using the site discharge were 31 and 32 cfs (Appendix 10).

Site 7 was not substantially modified by the March high-flow event. There were only two post-storm transects conducted and therefore a valid statistical comparison between the pre and post high-flow event results could not be done. However, the site visually appeared very similar before and after the high-flow event and the one directly comparable discharge produced similar results. As soon as additional data are collected, a comparison will be made. The data from 2010 and 2011 were combined for the final analysis. Site 7 was surveyed five times during 2011 at Robles discharges ranging from 31 to 76 cfs. The resulting minimum discharges required to meet the Thompson criteria were 23 and 53 cfs (Appendix 11). The resulting minimum discharges required to meet the three other criteria ranged from 13 to 26 cfs. The minimum discharge to meet the Thompson criteria when using the site discharge were 17 and 41 cfs (Appendix 12).

Site 8, like Site 7 and 4, was not substantially modified by the March high-flow event. There were only three post-storm transects conducted and therefore a statistical comparison between the pre and post high-flow event results was not suitable. However, the site visually appeared very similar before and after the high-flow event and the data recorded were similar. Like Site 7, when additional data are collected, a comparison will be made. The data from 2010 and 2011 were combined for the final analysis. Site 8 was surveyed five times during 2011 at Robles discharges ranging from

31 to 75 cfs. The resulting minimum discharges required to meet the Thompson criteria were -77 and 6 cfs (Appendix 13). The resulting minimum discharges required to meet the three other criteria ranged from 16 to 28 cfs. The minimum discharge to meet the Thompson criteria when using the site discharge were -74 and -2 cfs (Appendix 14). Photos of the potential impediment sites at a Robles discharge of about 30 cfs are in Appendix 15a-h for reference.

The regression equations and statistics for the four passage criteria using the Robles discharge are in Appendix 16. The calculated minimum discharges to meet the four passage criteria using the Robles discharge are in Appendix 17. The regression equations and statistics for the Thompson passage criteria using the site discharge are in Appendix 18. The calculated minimum discharges to meet the Thompson passage criteria using the site discharges are in Appendix 19.

Discussion

The survey and analytical methods used to evaluate the potential impediments in the Ventura River appeared to be able to produce plausible estimates of minimum discharge needed for adult steelhead passage in most cases. This is assuming that the criteria are valid in determining passage success. The intent of evaluating the impediments using the aforementioned criteria was simply to continue the validation process and determine if similar results could be obtained to that of ENTRIX (1999) on the Ventura River.

ENTRIX (1999) used the criteria developed by Thompson (1972) for adult steelhead at potential impediments, which is a water depth of 0.6 ft for 25% of the total transect width and a continuous portion equal to 10% of the width. ENTRIX also evaluated the potential impediments using a modification that would produce a water depth of 0.6 ft over a continuous width of 8 ft. The transect that required the highest minimum discharge to meet the two criteria was used to determine the discharge needed for adult steelhead passage, which was a range of 40-65 cfs. Although it is not clear, it appears

that NMFS averaged these two numbers and subtracted 10% of the difference [(65+40)/2)-(65-40)x0.1] to develop the initial minimum flow of 50 cfs for the Robles Fish Facility (NMFS 2003a). The discharge estimates by ENTRIX (1999) were generally lower than those produced by field measurements during 2010 and 2011. The mean discharge of all ENTRIX sites for the 25% criterion was about 28 cfs. The mean of the sites, excluding Site 8, reported here was about 53 cfs. There appears to be several possible reasons for the differences that could include: (1) ENTRIX used a modeling approach that was based on data collected from a dry channel. At the time of site selection and survey, any potential side channels were not evident and therefore all of the modeling would have assumed the flowing water would have passed only through the primary channel. (2) Several of the sites surveyed during 2011 included areas that developed secondary and even tertiary channels at higher flows. These sites were also selected when there was no surface water flowing and led to the same potential error. However, the field surveys during 2010 and 2011 revealed that as the discharge increased, surface water began to flow in the side channels resulting in higher discharge estimates. Lastly, (3) vegetation at the lower river sites caused surface channel water to spread out into shallow areas that resulted in higher estimates. Field measurements, like those collected during 2010 and 2011 could detect these types of differences. In contrast, the single transect modeling that ENTRIX conducted was incapable of determining such distinctions. The vegetation growth in the lower river is likely due to the rising ground water downstream of the Robles Reach and inflow from San Antonio Creek that provides perennial water for vegetation establishment and growth.

The 20 March 2011 high-flow event caused substantial changes to the Ventura River channel. These channel changes altered some of the impediment monitoring sites, which necessitated modifications to the monitoring. Site 2 was altered to the point that it no longer appeared to be a potential impediment. This was at least partially because of its location in the Ventura River. The farther downstream a site was, the larger the peak discharge became simply due to the increased drainage area upstream. Other changes were related to new primary channel changes (i.e., switching between two

existing channels) or creation of entirely new channels. However, three sites were not altered substantially and data from transects conducted in both years were combined into one regression model to increase the sample size that improved the regression statistics. Sites that changed little were likely able to dissipate more hydraulic energy as in the case of a wide channel or withstand the hydraulic energy without substantial change in the case of a channel with less mobile substrate (Leopold et al. 1964).

There was a clear difference between minimum discharge results based on Robles discharge as opposed to site discharge used in the analyses. At Site 3-2, the minimum discharge to meet Thompson criteria when using the Robles discharge was 30 and 86 cfs. When using the site discharge in the analysis, the minimum discharge was 93 and 186 cfs. This difference of 63 to 100 cfs was due to the tributary flow from San Antonio Creek, surface runoff, channel recharge, and other smaller drainages and tributaries. Site 3-2 was located downstream of the San Antonio Creek confluence with the Ventura River. The discharge from San Antonio Creek and the Ventura River upstream of their confluence share a similar pattern to their hydrographs. In comparing a 32-day period after the March high-flow event, the discharge between San Antonio Creek and the Ventura River upstream of the confluence was highly correlated (R^2 = 0.99, p-value <0.0001, linear regression). This should not be too surprising since the Ventura River basin is affected by storm precipitation in a similar pattern and produces a similar post-storm hydrograph among tributaries. Therefore, even though the minimum discharge to meet the Robles-based Thompson criteria was less, the additional water needed to meet the site-based Thompson criteria was intrinsically integrated into the Robles-based model given the similar post-storm hydrographs. Because 2011 was the first year data were collected at Site 3-2, only four transects were completed and additional data would be needed before conclusions could be made.

Upstream of the San Antonio Creek and the Ventura River confluence, the Robles-based minimum discharges were generally greater than the site-based discharges. This appeared to be due to the presence of side channels. Simply, the site-based minimum discharge did not include the secondary channel and the Robles-based

minimum discharge did. This difference was generally proportional to the size of the secondary channel. The smallest difference was at Site 4, where there was only a 1 cfs difference for the 25% transect length criterion; 62 cfs for the Robles-based and 61 cfs for the site-based discharges.

Data must be collected at the new impediment sites or additional data collected at sites that changed substantially. Data collected at sites where the bed cross sections changed cannot be combined with previous data and analyzed. This situation applies to sites 3-2, 5-2, and 6-2. For sites where data could be combined for both years, some improvement to regression equations was gained. Site 4 showed significant model improvement for all criteria evaluated. In fact, Site 4 was the most consistent and robust site modeled to date because 1) the model results were similar for all criteria evaluated, 2) the criteria results were from model interpolation and not extrapolation, 3) all models were highly significant (0.001), 4) and the models all conformed to a general conceptual model that would necessitate a negative y-intercept (i.e., no locations on a transect would have a water depth ≥ 0.6 ft before the Robles discharge reached zero).

The limitations of the criteria, method, and/or channel applicability became evident at other sites. Site 7 began to deviate from the conceptual model of a negative y-intercept. Not to a degree that there were non-significant models that produce non-plausible results, only that a more horizontal model was evident for the percent length models; it also suffered from extrapolation issues. Site 8 produce essentially non-plausible results for the percent length models. At -77 and 6 cfs for the Thompson criteria, the limitations were apparent. It appears that for some channel shapes, modeling percent length may not be a valid approach to determine minimum discharge. Even though an absolute measurement will change (e.g., length in feet), a relative measurement (e.g., length as a percent of total) may not.

Additional data analysis may be conducted as more data from each site are collected. Different non-linear models can be explored that could fit the data better and data transformations can be conducted. For example, the Thompson method plots percent

length; however, this is generally not an accepted statistical practice when using standard linear regression. Regardless of the passage criteria ultimately used, the survey and analytical methods used to evaluate the potential impediments appeared to produce reasonable estimates of minimum discharge in many cases. Additional data collection and analysis will likely improve the results.

3.1.1 Sandbar Monitoring

Introduction

The Ventura River, like many other California rivers, typically develops a seasonal sandbar at the mouth during the late spring or summer that is breached by higher river flows in the late fall or winter. If a sandbar does develop, which occurs more often during dry years, the resulting lagoon can provide important rearing habitat for steelhead juveniles because of the abundant food resources available that can facilitate the physiological and behavioral changes associated with smoltification (Cannata 1998) and can also enhance marine survival (Bond et al. 2008).

The primary objective of the sandbar monitoring is to determine if the criteria for initiation of the fish passage augmentation season have been met (NMFS 2003a). As stipulated in the BO, the fish passage augmentation season will extend from 01 January through 30 June of each year and will commence after the sandbar has been breached at least once during the current year's fish flow operations season. During the fish passage augmentation season, several Robles Fish Facility operation criteria must also be implemented (see NMFS 2003a for a complete list of operational criteria).

Methods

During each sandbar inspection, observations and recordings were made that included: date, time, status of the sandbar, general location of the mouth, tidal stage, water temperature, and discharge at the Robles Fish Facility and the USGS Foster Park gage

station. Because the sandbar was open on 01 January 2011, its status was monitored once every two weeks for the remainder of the fish passage season. During the remainder of the year, the sandbar was monitored at least monthly.

Results

During the reporting period, July 2010 through June 2011, the mouth of the Ventura River was inspected 20 times to determine if the sandbar was open or closed. Thirteen of the observations occurred during the fish passage augmentation season (01 January to 30 June 2011) and seven were outside of the fish passage augmentation season. The sandbar was only closed during the October observation; however, this closure was brief in nature because it only occurred during low tides. During high tides, the surface water reached the Pacific Ocean (Appendix 20). In mid December of 2010, the sandbar was open and the Ventura River was flowing into the Pacific Ocean allowing fish to volitionally enter or exit the estuary. On 03 January 2011, the sandbar was also open, which officially initiated the beginning of the fish passage augmentation season. The sandbar was open for the remainder of the 2011 fish passage augmentation season. On the days the sandbar was inspected during the reporting period, the discharge at the USGS Foster Park gage station ranged from approximately 5 to 1,200 cfs and 0 to 364 cfs at the Robles Fish Facility. The river was observed exiting almost exclusively from the west side of the estuary during the reporting period. During the 25 March 2011 observation, the river was exiting from two locations on each side of the sandbar due to the high river discharge. This observation occurred 5 days past the peak of a storm event.

Discussion

The sandbar at the mouth of the Ventura River tends to remain open during average and above average precipitation years and can close at times during years with few significant rain events (Lewis et al. 2010). During 2005 and 2006, the sandbar remained open and did not close until April of 2007 after an extended period of low

precipitation (Appendix 21). During 2008, the sandbar was only closed during October and November and reopened in December. During the period that the sandbar was closed in December of 2007, the lagoon had a surface area of 4.7 ha. During an open period in August of 2008, the estuary had a surface area of 2.8 ha, which represents an approximately 70% increase in surface area during periods when the sandbar was closed (Lewis et al. 2010).

The tendency for the sandbar to remain open in all but very dry years is likely due to a few factors. Although the mid reach of the Ventura River goes dry every year, subsurface water continues to flow and eventually begins to resurface just upstream of the confluence with San Antonio Creek and continues to increase slightly proceeding downstream. Additionally, treated effluent water from the Ojai Valley Sanitary District at rkm 7.5 increases the river discharge by approximately 3 cfs. Finally, tributary flow from San Antonio Creek also adds to the Ventura River through a surface or subsurface connection throughout the year. These factors contribute to the quantity at the mouth of the Ventura River to keep the sandbar from fully forming and closing the outlet during most years. The status of the sandbar indicates changes in the estuary/lagoon that may help determine potential entry and exit condition for adult and juvenile steelhead. It appears that passage conditions remain suitable during most seasons when steelhead are likely migrating. However, conditions optimal for juvenile rearing, which is when the sandbar is closed and a deeper freshwater lagoon is formed, appears limited most years.

3.2 Fish Attraction Evaluation

Introduction

River discharge has been shown to be one of several key environmental factors initiating and facilitating steelhead and other salmonid adult and juvenile migrations in natural fluvial environments (Shapovalov and Taft 1954; Banks 1969; Spina et al. 2005). As adults and juveniles approach fish passage facilities, sufficient discharge and water

velocities become even more important to ensure successful passage through any facility (Clay 1995; Beeman and Maule 2001).

The entrance of the fish ladder at the Robles Fish Facility is located approximately 20 m downstream of the spillway gates and is where fish migrating upstream enter and where fish migrating downstream exit. The downstream end of the ladder is adjacent to a large pool (entrance pool) that was scoured out and maintained by high discharges through the spillway gates. Maximum discharge at the exit of the ladder is 170 cfs (50 cfs through the entire ladder and an additional 120 cfs can be supplemented at the lower end of the ladder). The distance downstream from the entrance pool to the lower most interim rock weir is approximately 200 m. This reach includes all four rock weirs and the facility's low-flow road crossing, which is also the weir used to measure discharge for the Robles Fish Facility. The habitat unit types that can be used by migrants in this reach includes the four pools created by the weirs, a glide created by the low flow road crossing, a riffle, and the entrance pool.

The objective of the fish attraction evaluation is to determine if adult or juvenile steelhead were holding immediately downstream of the Robles Fish Facility during the fish passage augmentation season (NMFS 2003a).

Methods

The fish attraction surveys were conducted on a weekly basis during the fish passage season from January through June of 2011. The particular survey methodology used was determined based on water visibility, river discharge, and expected steelhead life history stage present at the time of the survey. From January through March 2011, which is when the vast majority of adults were expected to be migrating upstream (Shapovalov and Taft 1954), bank surveys were the predominant method used. Beginning in March through the remainder of the fish passage season, snorkel surveys were the predominant method used, which is when steelhead smolts were expected to migrate downstream (Shapovalov and Taft 1954; Spina et al. 2005). Bank surveys

were conducted by one or two surveyors in an upstream direction. The surveyors wore polarized sunglasses to reduce water surface reflection. Snorkel surveys were conducted by one or two surveyors in an upstream direction. All fish species were identified and enumerated to the greatest extent possible that the river conditions and fish densities allowed at the time of the surveys. Lengths of each *O. mykiss* were estimated to the nearest cm if only a few individuals were present. At times of greater abundance, *O. mykiss* were grouped and assigned to the nearest length (cm) category. In order to collect additional information that may help determine *O. mykiss* upstream and downstream movements through the Robles Fish Facility, an upstream study reach was added in 2009. The upstream study reach included observations in the screenbay of the facility and the area immediately upstream of the low-flow fish exit in the forebay. The total distance of this upstream reach was approximately 140 m.

Results

A total of 640 *O. mykiss* were counted from January through June of 2011 in the 340 m study reach (Appendix 22). A total of 7,140 m were surveyed by either bank or snorkel methodologies during the 6-month period. The water temperatures during the study period ranged from 11 °C in January to 22 °C in June and turbidity was less than 14 NTUs. *O. mykiss* were first observed in late January and peaked in late April and early May and remained between approximately 40 to 60 fish for the remainder of the season (Appendix 23). The discharge at the Robles Fish Facility ranged from about 20 to 50 cfs at the time of the surveys. However, during late March between scheduled surveys there was a high-flow event that peaked at Foster Park near 20,000 cfs, which represented a recurrence interval of about 6 years. During the period that *O. mykiss* counts began to increase, the discharge was very constant at about 30 cfs.

The 200 m reach downstream of the fish facility was surveyed on 21 separate occasions, 3 bank and 18 snorkel surveys. A cumulative total of 4,200 m were surveyed from January through June. A total of 205 *O. mykiss* were observed downstream of the Robles Fish Facility (Appendix 24). The peak count for the

downstream reach was 24 *O. mykiss*. After the counts increased in late April, generally between 5 and 20 *O. mykiss* were counted each time for the remainder of the study period.

The 140 m reach upstream of the facility was surveyed on 21 separate occasions, 3 bank and 18 snorkel surveys. A cumulative total of 2,940 m were surveyed from January through June 2011. A total of 435 *O. mykiss* were observed in the upstream reach. Observations of *O. mykiss* upstream of the Robles Fish Facility were somewhat similar to downstream counts. The general pattern of increasing counts in late April and remained relatively consistent for the remainder of the season was similar for both upstream and downstream counts (Appendix 24).

An additional fish attraction survey method was conducted in 2011. This entailed surveying three times per day for five consecutive days following a BO-defined storm event and after a Secchi depth of 1 m was reached in the entrance pool. These surveys were conducted for three storm events and no adult steelhead were observed. Only bank surveys were conducted because the turbidity was too high to conduct snorkel surveys. The BO-defined storm events occurred on 18 February, 26 February, and 20 March. The two February events were relatively small and only yielded a mean daily discharge of 71 and 133 cfs downstream of the Robles Fish Facility. Because of this, the time for the visibility to reach 1 m was only 1 and 2 days, respectively. However, the March event was much larger and 8 days were needed before the visibility reached 1 m. Of the 45 total surveys planned for the post-storm fish attraction study, three were not completed. These were not completed because other aspects of the monitoring program were being conducted during this critical post-storm study period.

Discussion

The total count of 640 *O. mykiss* in the upstream and downstream reaches was in all likelihood the result of repeated counts of *O. mykiss* over the course of the survey season. Because the surveys were conducted weekly, some *O. mykiss* likely remained

in the 340 m reach for more than one week and were counted at least one additional time; most likely several times. Without tracking individual *O. mykiss* (e.g., mark/recapture, telemetry, or other tagging studies), the time spent by *O. mykiss* in close proximity to the Robles Fish Facility cannot be determined by observations alone.

From observational counts alone, the ability to interpret the fine-scale migration behavior of the *O. mykiss* near the Robles Fish Facility is limited. The abundance trends were similar for upstream and downstream observations (Appendix 24). The increase of upstream and downstream counts simultaneously would indicate the downstream migrating *O. mykiss* were not delayed, at least within the one-week sampling interval, as they passed downstream through the Robles Fish Facility. Likely because of the better water conditions, the fish counts remained somewhat consistent in the reaches to the end of the study period. In previous years, as river flows decreased, *O. mykiss* numbers decreased also due to upstream and downstream movement (CMWD 2010). During 2011, the discharge from the Robles Fish Facility remained greater than 25 cfs through the end of the study period and provided *O. mykiss* with sufficient rearing habitat to remain in the study reaches. Cooler water temperatures also likely contributed to the *O. mykiss* remaining in the study reaches through the study period. It was not until the end of June that measured temperatures exceeded 20 °C.

There was a surface water connection to the lower Ventura River for 16 weeks during the study period, from mid February to the end of May. The surface water connection to the lower Ventura River was lost after smolt counts had reached peak numbers at the Robles Fish Facility. The majority of the steelhead smolts likely had an opportunity to migrate downstream and enter the ocean; however, given that the counts remained high, it is clear that a significant portion did not.

Based on qualitative observations during the snorkel surveys, it appeared that most of the *O. mykiss* were going through the smoltfication process. The onset of smoltification can be identified by vanishing parr marks, silvering of the body, and darkening of the

margins of the fins among other characteristics (Chrisp and Bjornn 1978; Hasler and Scholz 1983; Quinn 2005; Spina et al. 2005). During the survey period, 524 *O. mykiss* (82%) were observed and categorized into five classifications that included parr, three transitional phases (T-1, T-2, and T-3), and full smolts following the methods of Hasler and Scholz (1983). This method has been used successfully to classify smolting steelhead (Allen Scholz, Eastern Washington University, personal communication). A total of 80% of *O. mykiss* classified were in early to late smoltification stages (T-1 to full smolt). This would indicate that a downstream smolt migration behavior was likely the primary reason for their occurrence in the fish attraction study reach. Based on snorkel observations during June, it appeared the remaining *O. mykiss* were beginning to revert to a resident form (i.e., lightening of the margin of the fins, coloring across lateral line, and reappearance of parr marks). During this period of smolt reversal, maximum daily water temperatures began to reach 21 °C, which exceeded the temperature limit of smolt regulating enzymes and hormones (Allen Scholz, Eastern Washington University, personal communication) and could explain the residualization observations and lack of emigration.

The total number of *O. mykiss* observed during 2011 was substantially more than in 2010. During the same period in 2010, 147 *O. mykiss* juveniles were counted as compared to the 640 during 2011 (CMWD 2010). The dramatic increase was likely due in part to the improved water condition that provided suitable habitat in the study reach for a greater period. There was at least one adult steelhead that passed upstream through the Robles Fish Facility during 2010; its spawning success was not known. The observed *O. mykiss* were likely a combination of 1+ and 2+ smolts from steelhead broods and resident rainbow trout produced progeny that had smolted and migrated downstream in attempt to reach the ocean.

3.3 Fish Passage Monitoring

Introduction

Monitoring of migratory fish moving through fish passage facilities has been conducted using many different methods that include: visual counting, trapping and hand counting, continuous video recording, PIT tagging, radio telemetry, and acoustical telemetry. In each fish passage application, the particular physical and biological conditions (e.g., variable discharge, turbidity, debris, size of facility, and number of fish) usually dictate which method would be most effective. New technologies have been employed to improve fish passage monitoring in turbid conditions specifically. One such monitoring device is the Vaki Riverwatcher® (Riverwatcher). The Riverwatcher has the capability to operate in greater turbidity than more traditional monitoring equipment. Because of this advertised capability, the Riverwatcher was selected to be used in the Robles Fish Facility by the Technical Advisory Group.

The primary objective of fish passage monitoring is to provide an index of the number of upstream adults and downstream kelts migrating through the Robles Fish Facility (NMFS 2003a). The Riverwatcher was advertised to detect fish down to a fish body depth of about 40 mm (Vaki 2003) and it was not known how well it would work for smolt-sized fish given the debris load in the Ventura River (NMFS 2003a).

Methods

Upstream and downstream migrating fish were monitored passing through the Robles Fish Facility using the Riverwatcher. The Riverwatcher is located in the fish bypass channel, which is the channel between the fish ladder and fish screens. The Riverwatcher consists of two scanner plates with light diodes that transmit beams of infrared light through the water to a corresponding receiver plate. When a fish swims (or debris drifts) through the infrared light beams, it breaks the light signal and a silhouette of the fish is recorded on a computer. Other data recorded when the

Riverwatcher scanner is triggered are: date and time, total length (TL) of the fish (from a length/height ratio), swimming speed (m/sec), and direction of the fish movement (upstream or downstream). In addition, the scanner triggers an underwater camera to record a 10-second video clip (25 frames/sec). Only fish swimming upstream can be recorded in the Riverwatcher computer system because it was only designed for one camera, and that camera is on the upstream side of the scanner. An additional two cameras were installed in 2008-09 so that video of downstream fish could be captured on a digital video recorder (DVR). Both downstream cameras are located upstream of the Riverwatcher scanners in an aluminum tunnel along with the upstream Riverwatcher camera. The downstream digital cameras recorded continuously at 12 frames/sec and captured about 2-3 weeks of data until the DVR data storage drive was full (each week of data required approximately 4 h to review). These two downstream cameras are independent of the Riverwatcher and have to be reviewed separately for downstream detections. Once the DVR memory is full, it is exchanged with a second DVR and the data are reviewed before the DVRs have to be exchanged again.

The Riverwatcher scanner and cameras are positioned at the bottom of an aluminum frame covered with 1/2 inch aluminum bars, spaced 1 1/2 inches on center resulting in 1 inch spacing between the bars (crowder), which directs the fish to swim between the scanner plates. The crowder can be raised and lowered in guide slots of the fish bypass channel with the aid of an A-frame hoist for cleaning or repair. The Riverwatcher is usually operated during the entire flow augmentation season as long as sufficient water elevations in the fish bypass are present and debris and turbidity are low enough so that the crowder will not be damaged and the Riverwatcher will function. The Riverwatcher was operated continuously from mid December 2010 through June 2011 during the reporting period. During this time, the crowder was removed from the fish bypass channel and cleaned or inspected 123 times. During times of higher debris, the cleaning and inspections occurred multiple times per day, and at times of low debris, cleaning and inspections occurred only once every 2-3 days. The crowder was removed for cleaning for a combined total of approximately 34 h during the operation period, which represented 0.9% of the time the Riverwatcher could have possibly been

operated if there were no operational limitations. The Riverwatcher was operated a total of 193 days, which was 96.9% of the time the Riverwatcher could have possibly been operated.

Prior to 2010, each upstream and downstream Riverwatcher detection was reviewed and classified as an adult steelhead, *O. mykiss* non-adult steelhead, other species if identifiable, unknown fish, fish probable, or false detection (see Appendix 25 for detection classification flow chart). At the request of NMFS, this classification system was modified during the review process of the 2010 progress report. All confirmed *O. mykiss* were classified solely as *O. mykiss*. The classifications were determined by using a combination of the silhouette images, estimated lengths, and video clips. In addition, if larger adult sized *O. mykiss* were detected and a useful video clip was recorded, measurements of eye diameter and standard length (SL) were estimated from the video clip to calculate morphometric ratios that were compared to known steelhead and rainbow trout. A commonly used method is to develop ratios of body measurements for comparison to remove the effects of body size so actual differences can be determined (Strauss and Bond 1990). This was done by comparing SL to the ratio of eye diameter in linear regression. Standard length is the length from the snout to the end of the hypural plate near the end of the fleshy caudal peduncle, which is unaffected by caudal fin deformities (Anderson and Neumann 1996). Previous to 2010, the adult steelhead classification was used if the fish observed was an *O. mykiss* and displayed the typical characteristics of an anadromous adult steelhead, such as black spotting on dorsal, adipose, and caudal fins, black spotting on dorsal side of body, silvery body, vertical edge to caudal fin, ≥ 38 cm TL (Shapovalov and Taft 1954), and had an eye diameter/SL ratio ≤ 0.045 (CMWD 2008). The new classification method could have included juvenile resident, smolts, adult resident, and adult anadromous *O. mykiss* migrating throughout the basin. Conceivably, after more data are collected from the downstream trapping component of the monitoring and evaluation, or from other Ventura River basin research projects, a more detailed classification of Riverwatcher detections could be used again. The fish unknown classification was used if the detection was identified to be a fish based on video evidence, but a fish identity could

not be determined due to high turbidity or the fish not swimming through the camera field of view. The fish probable classification was used if no fish was observed in the video, but the silhouette was similar to that of a typical fish silhouette based on previous experience. Even with reasonably good video coverage, smaller fish were still able to pass through the Riverwatcher undetected by the video cameras. This can occur if the fish swim very close, high, or low to the cameras. In addition, this can happen if an upstream fish swims through the scanners then stops before entering the video field of view. High turbidity can also obscure the video detection and identification of fish. The false detection classification was used when no fish was observed in the video and the silhouette was not similar to that of a typical fish silhouette based on previous experience. Because false detections tended to occur frequently during higher discharges when turbidity and debris were also high, it was likely that most false detections were caused by debris, high turbidity, and water turbulence. When turbidity exceeds about 100 NTUs, hundreds of false detections per hour can occur and not until turbidity falls below about 30 NTUs is the Riverwatcher fully operational (Table 1).

Table 1. Riverwatcher operational status over a range of water turbidity (NTUs).

Turbidity (NTU)	Riverwatcher status
> 200	Not operational
100-200	Many false detections
30-100	Scanner operational, but unable to confirm with video
< 30	Video grid detectable
0-30	Riverwatcher fully operational

Results

During the 2011 fish migration season, the Riverwatcher recorded 1,124 total detections, of which 435 were upstream and 698 were downstream (Appendix 26). Of the total upstream detections, 29% (n = 127) were determined to be fish (excluding largemouth bass) and included: 101 *O. mykiss*, 20 probable fish, and 6 unknown fish. Of the total downstream detections, 10% (n = 67) were determined to be fish (excluding largemouth bass) and included 49 *O. mykiss* and 18 probable fish.

The mean date for the upstream migrating *O. mykiss* was 25 May and 05 May 2011 for the downstream migrating *O. mykiss* (Appendix 26). During the migration season, there was a general increase of fish detections for both upstream and downstream (Appendix 27).

Upstream detections occurred essentially at all times of the day, but the modal time was 1200 h (Appendix 28). The majority of downstream detections occurred between about 05:00 h to 13:00 h.

The mean total lengths for both upstream and downstream migrating *O. mykiss* was estimated to be 27 cm (Appendix 26). Overall lengths of upstream and downstream migrating *O. mykiss* ranged from 20 to 46 cm (Appendix 29). The software program that operates the Riverwatcher estimates the TL of a fish detection based on a ratio of height to length (Vaki 2003). This ratio can be changed depending on available data for the target species. Based on morphometric measurements of *O. mykiss* mortalities over the last several years, an *O. mykiss* height to TL ratio was estimated to be 5.1:1 for fish ranging from about 10 to 28 cm. During a validation and calibration pilot study, it was estimated that the Riverwatcher was underestimating the fish heights by about 10 mm. A correction was added to the TL to height ratio to calibrate it to the known fish heights. This calibrated ratio was used to estimate the TL of Riverwatcher detections from January through June of 2010. However, the resulting TL estimates appeared to be over estimated when compared to known *O. mykiss* lengths that were measured in 2009. It was decided that a more accurate method would be to use a regression model to convert Riverwatcher estimated fish heights to lengths. Again, from the morphometric measurements, a sigmoid regression was conducted to develop a model for converting the Riverwatcher fish heights to total lengths ($TL = 687.68 / (1 + \exp(-(D - 50.78)/23.97)) / 10$, p-value < 0.0001, $R^2 = 0.99$, $n = 59$, D = body depth). This regression model will continue to be improved upon as more data becomes available. In general, the Riverwatcher was inefficient at detecting smolt-sized fish passing upstream or downstream and underestimated the size of fish that it did detect.

The physical river conditions of temperature, turbidity, and discharge at the time of passage were similar for upstream and downstream migrating *O. mykiss* and other fish classifications (Appendix 26). The mean water temperature recorded during the time *O. mykiss* were migrating upstream was approximately 18 °C and was 16.7 °C for downstream migrants. The mean turbidity levels at the time of passage for upstream and downstream *O. mykiss* was about 2-3 NTUs. The mean turbidity at the time of the false detections in both upstream and downstream directions was approximately 150-170 NTUs. The discharge from the Robles Fish Facility at the time of upstream passage for *O. mykiss* was a mean of 30 cfs and 31 cfs for downstream *O. mykiss*. Like turbidity, the periods of false detections coincided with higher discharge. For a list of all fish detections, see Appendix 30. The total time the Riverwatcher was not operational because of high turbidity was 4.7 days, which represented 2.6% of the time the Riverwatcher could have been operated if no operational limitations existed.

Discussion

Approximately 939 false detections occurred and were likely due to greater river discharges, associated turbidity and debris, and settings of the Riverwatcher to detect smaller fish. In addition, to increase the chance of detecting any adult steelhead, the Riverwatcher and crowder were left in the ladder for longer periods at high turbidity. Since the Riverwatcher is recommended to be set at a minimum of no less than 40 mm (Vaki 2003), an overestimation of fish passage was likely since all false detections could not be identified and eliminated. For the 2011 season, the minimum height was set at 28 mm so that a large number of false detections could be eliminated while still attempting to detect steelhead smolts. Based on available data from the Ventura Basin, the height of 28 mm was determined to be similar to some of the smallest steelhead smolts expected to emigrate downstream through the Robles Fish Facility. The height of 28 mm corresponds to 146 mm TL and 139 mm FL. *O. mykiss* mortalities found and measured during the course of ongoing field monitoring efforts, and subsequently turned over to NMFS, were all larger than 146 mm TL. The estimated fish detection rate from the validation pilot study and the comparison of snorkel counts to

Riverwatcher detections both indicate that as much as 78-88% of smolt sized *O. mykiss* are not detected by the Riverwatcher. During the 2009 validation pilot study, larger sized fish (i.e., height > 60 mm) appeared to be detected nearly 100% of the time. This height is equal to about 300 mm TL and is larger than what would be expected to be migrating downstream through the Riverwatcher. Before a detection rate correction could be applied to downstream detections, more data would need to be collected on detection efficiency. The highly variable results from the pilot study were not sufficient to develop a correction factor with enough confidence. Like the detection efficiency, the Riverwatcher estimated fish heights were also highly variable and the true error could not be determined. The data collected to date indicates that the Riverwatcher is unable to sufficiently monitor steelhead smolt emigration and given the manufacture's operational recommendations, these results should not be surprising. Additional Riverwatcher validation/calibration tests were conducted during the summer of 2011 in an attempt to further identify the operation limitations of the Riverwatcher. These results will be reported on in the 2012 progress report.

From general observations over the last several years, and supported by observations during the 2009 validation pilot study, *O. mykiss* juveniles do not move through the fish crowder and Riverwatcher quickly. *O. mykiss* tend to swim downstream and back upstream repeatedly before ultimately moving in one direction. This lack of uniform and rapid directional movement is also supported by observations during fish attraction monitoring where *O. mykiss* have been observed repeatedly swimming in and out of the fish ladder on both the upstream and downstream ends. Also, *O. mykiss* that appeared to be the same fish (based on video and length estimates) have been observed on video swimming back and forth through the fish crowder. *O. mykiss* juveniles were observed holding in areas for extended periods of time before either moving downstream or back upstream, which is commonly found in all salmonid smolts (Quinn 2005). During the fish attraction surveys, of the *O. mykiss* that were categorized into smolt transformation stages and all stages were observed. Because the smolt migration rate is positively correlated with the smoltification process (Quinn 2005), some holding and lack of rapid downstream migration would be expected.

The detection of *O. mykiss* passage by the Riverwatcher did not show the same diel migration pattern through the Robles Fish Facility as in 2009 where *O. mykiss* primarily passed downstream just before dawn then passed back upstream just before and after dusk. The reasons for the differences have not been determined at this time. The early morning movement of downstream migrating smolts is common among steelhead throughout its range (Dauble et al. 1989). Monitoring upstream movements of smolts has not been studied specifically and little available data exists to make comparisons. Most smolt monitoring studies do not have volitional passage with passive monitoring like that used at the Robles Fish Facility. Therefore, the opportunity to examine upstream movements is not usually available. The distance of daily migrations are unknown; however, it is likely the fish remained within, or near, the Robles Fish Facility before continuing their downstream migration.

As previously discussed, the Riverwatcher's ability to accurately estimate fish lengths is an area that will need more work to fully determine its usefulness in monitoring smolt-sized *O. mykiss*. However, the use of the regression model to estimate TL from the Riverwatcher's estimate of height produced plausible results. The mean TL of *O. mykiss* detections was larger than what others have documented for steelhead smolts in central and southern California. Shapovalov and Taft (1954) estimated a mean FL for 2+ and 3+ age smolts at approximately 17 cm. Spina et al. (2005) also measured a mean smolt FL of approximately 17 cm. This difference could be due to several reasons. The error associated with the Riverwatcher estimates could be one possible cause. In addition, the regression model used does appear to result in an over estimate when compared to video estimates. Regardless, the Ventura River smolts are indeed larger and this is probably due to faster growth rates in the warmer water as compared to the more northern basins. Age of the migrants might also explain the differences observed; however, no scales of *O. mykiss* were collected for aging.

3.4 Downstream Fish Passage Evaluations

Introduction

Passage evaluations of migrating salmonids through fish passage facilities have been conducted throughout the western United States for many years. Methods to determine if a facility is operating as designed and not causing harm to the intended fish species vary. Early work typically entailed trapping and tagging fish before entering a facility and recapturing them after exiting. Trapping and visual inspections for injuries, PIT tagging, radio telemetry, and acoustical telemetry has been conducted extensively as well.

There are two objectives for the downstream fish passage evaluation. The first objective is to determine if downstream migrants are successfully passing through the Robles Fish Facility. The second objective is to capture and examine steelhead smolts and kelts and determine if there are any injuries that may have been caused by downstream passage through the Robles Facility (NMFS 2003a).

Methods

A weir trap was placed and operated approximately 100 m downstream of the Robles Fish Facility. The weir trap consisted of a live-box (120 cm for all three dimensions) with an internal fyke. The trap was situated in the center of the river channel and thalweg. The live-box internal frame was constructed of PVC pipe and covered with plastic fencing with 1.9-cm diagonal openings. A plastic fence (3-cm openings) supported by T-bar fence posts was extended upstream on both sides of the live-box at 30° angles into the river channel and ended near each bank leaving gaps of approximately 1 m so adult steelhead could pass upstream by the trap location (Appendix 31). Two-meter deflector wings positioned approximately 14 m upstream of the trap were also used to guide shore-orientated smolts toward the thalweg. Because the vast majority of downstream steelhead migrants were expected to be captured from

mid-March through mid-June (Shapovalov and Taft 1954; Dettman and Kelley 1986), the trap was planned to be operated from mid-March through June 2011 or until water temperatures exceeded a daily mean of 22°C, which could negatively impact captured fish (SYRTAC 2000).

The trap was operated only at lower river flows when it would be effective at capturing downstream migrants. The upper limit of river flow operation will be determined after successive seasons. Because base-flow conditions are more likely to be used for downstream passage by steelhead (NMFS 2003a), a weir trap was chosen as the method for this evaluation rather than a rotary screw trap. After assessing representative hydrographs from previous years, evaluating potential screw trap sites, and the potential for capturing downstream migrants with a screw trap at the higher discharges, a screw trap was determined to be much less effective at gathering the data needed to address the objectives of the downstream passage evaluation.

When the trap was in use, it was checked twice per day (in the morning and late afternoon). The trap generally operated from Sunday afternoon through Saturday morning. Data collected included: fork length (mm), weight (g), and a subsample of scales and tissues for aging and genetic analysis. Fish that were to be handled were put into an aerated container with a solution of tricaine methanesulfonate (MS-222) and Stress Coat®. The anesthesia MS-222 is registered by the US Food and Drug Administration for use with food fish (Summerfelt and Smith 1990). The level of anesthesia needed is generally stage 2-4, which is a deep sedation to a total loss of equilibrium (Summerfelt and Smith 1990). A concentration of 60-100 mg/L of MS-222 was used to achieve a short induction time (3-4 minutes) as recommended by Summerfelt and Smith (1990). This concentration allows for a recovery time of less than 5 minutes (Summerfelt and Smith 1990), but from previous experience, anesthetized steelhead smolts generally will most likely recover in less than 3 minutes. Stress Coat® is a synthetic slime coating that replaces the naturally secreted protective slime that is lost during capture and handing of fish. Stress Coat was added to both the

anesthetizing and recovery containers at the manufacture's recommended concentration of 0.25 ml/L.

Scale loss was assessed by examining captured fish and estimating scale loss over three zones on each side of the fish. The three zones were: 1) the caudal zone that included the area above and below the lateral line from the caudal fin to the posterior end of the dorsal fin, 2) the dorsal zone that included the area anterior of the caudal zone to the operculum and above the lateral line, and 3) the ventral zone that included the area anterior of the caudal zone to the operculum and below the lateral line (Marine and Gorman 2005). The percentage of scale loss in each zone was estimated and then weighted by each zone's area proportional to the total area of all six zones. Summing the resulting weighted scale loss yielded the total area of each fish with scale loss. Any physical injury was noted and categorized among the fins, skin, eyes, and head. Within each anatomical category, there are 2-3 types of injuries that could be documented. In general, the scale loss and physical injury methods followed those of Marine and Gorman (2005) and McNabb et al. (1998). Only one weir trap was used initially to determine if there are any significant physical injuries or scale loss occurring. If significant scale loss or physical injuries are occurring, and the Robles Biological Committee deems it necessary, a second trap would be installed and operated upstream of the Robles Fish Facility. To determine if any injuries were the result of passage through the facility, steelhead would be captured, marked, and released upstream the Robles Fish Facility and recaptured downstream of the facility to any differences.

Prior to the operation of the downstream weir trap, an annual fish handling training class was conducted with seasonal fisheries technicians and full-time biologists. This training class was conducted with hatchery rainbow trout and all techniques and procedures were practiced until the fisheries personnel were fully proficient with each. Additional, annual training and review occurred with all other aspects of the monitoring and evaluation program so personnel are proficient at each task that they may be assigned to conduct.

Results

The weir trap was operated from 14 March through 17 June 2011. During the 20 March high-flow event, the weir trap was swept downstream and lost. Just prior to its loss, an attempt was made to remove as much of the trap before the higher flows reached the Robles Fish Facility, but debris overloaded the fish screens and forced water to be spilled earlier than anticipated. A replacement trap was not installed until 04 April 2011, 15 days after the peak flows. Trapping was stopped when the mean daily water temperatures approached 22 °C and there was a forecasted increase of air temperatures.

A total of 25 smolts were captured between 13 March and 10 May 2011; 52% of the smolts were captured during the first two weeks of April (Appendix 32). The mean FL was 203 mm and mean weight was 85 g. The smolts all appeared to be undergoing smoltification; 28% were T-2, 24% were T-3, and 48% were full smolt and the mean condition factor was 1.0. The mean daily water temperature was 14.7 °C on days when smolts were captured. During days smolts were captured, the stream discharge into the Robles Fish Facility ranged from 40 to 177 cfs. All 25 smolts showed signs of descaling. Using the descaling assessment methods described, the descaling ranged from 0.8% to 9.3% with a mean of 3.4%. The most common physical injuries were small but noticeable areas of skin damage to the head region on 22 (88%) *O. mykiss* captured. Other injuries included skin contusions on 4 fish (16%), and 2 fish (8%) showing some fin damage.

Of the 25 smolts captured, 16 were radio tagged and released downstream into the first weir pool. One *O. mykiss* was too small to radio tag and was released into the pool. In order to help understand migration behavior of *O. mykiss* smolts near the Robles Fish Facility and determine condition and travel rate for any recaptured fish, all smolts captured in excess of radio tagging needs were implanted with a PIT tag. There were 8 smolts PIT tagged and released approximately 2 km upstream of the Robles Fish

Facility at the Camino Ciello bridge. No PIT-tagged *O. mykiss* were detected migrating downstream through the fish ladder or were recaptured in the weir trap.

Discussion

The first objective of the downstream fish passage evaluation is to determine if steelhead are successfully passing downstream through the Robles Fish Facility (NMFS 2003a). Previous trapping efforts resulted in limited, but improving capture success. The 25 smolts captured in 2011 was a significant increase over previous years and allowed for a more thorough evaluation. *O. mykiss* juvenile are successfully navigating through the Robles Fish Facility during the expected steelhead smolt migration period considering the following: 1) smolts were captured migrating downstream through the Robles Fish Facility, 2) the fish attraction evaluation observed smolts downstream of the facility, 3) and the Riverwatcher and downstream video cameras detected downstream-migrating *O. mykiss*.

The second objective of downstream fish passage evaluation is to determine if there are any injuries to steelhead smolts or kelts that may be caused by passing downstream through the Robles Fish Facility (NMFS 2003a). The 25 *O. mykiss* smolts captured downstream of the Robles Fish Facility had a mean descaling of 3.4%. It could not be determined how much of this was due to passage downstream through the Robles Fish Facility or the trapping and handling procedures. Smolts are known to easily lose scales, and given that scales were commonly found in the anesthetizing and recovery buckets, much of this loss could likely be due to handling. A literature research will be conducted to determine what level of scale loss other researchers have estimated for steelhead smolts passing through fish facilities versus trapping and handling.

The skin damage on the heads of many of the smolts is thought to be from trapping. This was first noticed with some of the smolts captured prior to the 2011 season, but to a greater degree. After changing the mesh material to a smaller size two successive years, the severity of the injury has been reduced. The location of the skin damage on

the top of the snout and head region suggests that it may result from “nosing” into the mesh to avoid capture while in the trap; this behavior was also observed during removal from the trap. Even though the percentage of smolts with this injury was high, the actual size of the injury was small. The injuries were approximately 2 mm x 10 mm and corresponded to the shape and dimensions of the plastic mesh. The injuries were not skin abrasions, but contusions and the epidermis was not broken. Given this detailed level of *O. mykiss* examinations, small injuries that would likely go unnoticed have been observed. Additional improvements will be made for the 2012 trapping season by adding smoother material to the inside of the trap to determine if the injuries can be reduced or eliminated.

The last smolt was captured on 10 May 2011 and was the only one captured in May. Given that the mean daily water temperature was consistently exceeding 16-17 °C (Appendix 33), the lack of continued downstream migration of *O. mykiss* was not unexpected. These temperatures are known to exceed the temperature limit of smolt regulating enzymes and hormones (Allen Scholz, Eastern Washington University, personal communication) and could explain much of this behavior as the *O. mykiss* residualized. The results of the data indicate that smolts actively migrating were doing so primarily from mid March to mid April. Since the trap was capturing smolts very soon after it was installed, an earlier start to trapping might be necessary to determine the initiation of emigration.

3.5 Downstream Fish Migration through the Robles Reach

Introduction

When the number of fish physically handled in a study is of concern, such as with an endangered species, radio telemetry can be a useful method over others like extensive trapping (Hockersmith et al. 2000). Telemetry migration information of steelhead smolts in the Ventura River would allow for the determination of survival, travel time and rates through select reaches, migration relative to river discharge, habitat use, and passage

success through critical riffles. By tracking the tagged fish until the batteries die, it is anticipated that downstream migration can be monitored all the way to the Ventura River estuary/lagoon and could provide important data on estuary rearing and emigration behavior.

The purpose of the downstream migration evaluation is to determine how successfully smolts are migrating through the Robles Reach (NMFS 2003). Because of the limited number of steelhead smolts most likely passing downstream through the facility, a pilot study using radio telemetry was used for evaluations.

Methods

During the expected smolt migration period of mid-March through mid-June, 16 steelhead smolts captured in the weir trap downstream of the Robles Fish Facility were tagged with radio transmitters and released downstream of the weir trap. Only steelhead smolts that exhibited steelhead smolt characteristics and in good physical condition were tagged. Smolting characteristics include: increased skin reflectance, larger heads, slimmer bodies, longer caudal peduncle, loss of parr marks, and darker margin of the dorsal fin (Beeman et al. 1995; Haner et al. 1995; Ando et al. 2005). These smolting characteristics have been used in southern California to identify steelhead smolts migrating downstream (Spina et al. 2005).

The radio transmitters were manufactured by Advanced Telemetry Systems (ATS) and had transmitter radio frequencies ranging from 149.000 to 150.999 MHz, a pulse rate of 30 per minute, and a pulse width of 18 ms. Each tag had a unique radio frequency so that individual fish, if needed, could be tracked during their downstream migration. The transmitters weighed 0.85 g and had an expected operational life of about 48 days. The dimensions of ATS tags (model number F1435) were 14 mm long with a diameter of 7 mm. The ratio of tag weight to steelhead smolt weight in the air was less than 5%, which ensured that physiological stress will be minimized (Jepsen et al. 2001) and swimming performance was not altered (Brown et al. 1999). Based on the expected

sizes of captured smolts; estimated from steelhead smolts captured in the Santa Clara River (ENTRIX 2000), the maximum tag-to-weight ratio was expected to be closer to approximately 3%. The steelhead smolts were anesthetized with a solution of MS-222 and placed on a water and Stress Coat® soaked foam pad ventral side up and the tags were gastrically inserted (Adams et al. 1998). The tags were lubricated with food-grade glycerin to prevent abrasion (Adams et al. 1998; Hockersmith et al. 2000) and gently inserted through the mouth and into the stomach using a rigid small-diameter tube. The fish were allowed to fully recover to assure they were behaving normally before they were released downstream for tracking; typical recovery occurs in approximately 3 minutes. The estimated time for tagging and recovery were based on previous radio telemetry studies with steelhead smolts (Lewis 2001, 2002, and 2003).

After tagging and recovery, the steelhead smolts were released downstream of the weir trap. Each tagged smolt was located on a daily basis as it migrated downstream for the first week after release and then at least weekly until the battery died, the fish was lost, the fish entered the ocean, was found dead, or the tag was regurgitated. Mobile tracking was done using an ATS radio telemetry receiver (model R2100) and 3-element Yagi antennae. Initial broad scanning was accomplished from locations at higher elevations accessed by a vehicle driven on roads near the Ventura River. Once a general location of a tagged steelhead was found, the final location was determined on foot. This method can yield locations of $\pm$ 10 m (Lewis 2001). All determined locations were recorded on a map and datasheet. Every reasonable effort was made to determine the ultimate final location of each radio tagged steelhead and if any mortality occurred, the cause of the mortality was determined if possible. It was estimated, that at the most, one tag would be lost due to regurgitation during the study period; Hockersmith et al. (2000) measured a short-term regurgitation rate of 1.3% using the gastric method, Adams et al. (1998) measured a regurgitation rate of 4.2%, and Jepson et al. (2001) measured a 5.0% regurgitation rate. Beyond the 30-40 day period, the regurgitation rate typically increases dramatically.

Using the method of radio telemetry to monitor migration through the Robles Reach will provide more usable information while using fewer fish to gather that information; compared to using an additional weir trap at the downstream end of the Robles Reach. It is estimated that no more than one steelhead mortality will occur due to the method and this initial sample size. Hockersmith et al. (2000) measured a mortality rate of 2.4% using the gastric method. Gastric implanted fish also have similar survival rates, overall health, and similar physiological stress as fish with surgically implanted radio or PIT tags (Adams et al. 1998; Hockersmith et al. 2000; Jepsen et al. 2001).

Results

Of the 16 smolts tagged and released downstream of the Robles Fish Facility, 7 smolts were found to have migrated through the Robles Reach (Appendix 34). The number of days to migrate through the Robles Reach ranged from 1 to 8 days and the mean was 3 days. This was a mean migration rate of 2.2 km/day. The range of discharges from Robles during the period from release to initial detection downstream of the Robles Reach was from 30 to 33 cfs for all but one of the tagged smolts. One smolt was detected downstream of the Robles Reach one day after release; a migration rate of about 6 km/day. This occurred as flows were increasing during the March high-flow event. The remaining 9 smolts were found to have moved less than 4 km downstream of the Robles Fish Facility. It appears that a high rate of tag regurgitation occurred during the study. Of the 16 smolts tagged and released downstream of the Robles Fish Facility, 10 smolts appeared to regurgitate their tags. The range of days to regurgitation was estimated to be from 1 to 18 days and the mean was about 6 days. This did not include one *O. mykiss* that was found to move upstream of the Robles Fish Facility. Due to the length of time from release until it was found, an accurate time to tag loss could not be calculated.

Discussion

Even though the high rate of regurgitation limited the number of days that smolt migration behavior could be assessed, the time prior to tag loss did provided important information. It's not known the exact cause of the high tag loss. The size of the tag may have been too small, which could have allowed regurgitation to more easily occur. Before additional tags are used, a literature review will be conducted to determine if there is a correlation of tag and body size to tag loss. There was an attempt to locate all of the tags that were thought to be regurgitated. For fish that had not moved for a period of time, the tag location was determined and the surrounding area was snorkeled. While the snorkeling was occurring, the tag was continuously monitored to determine if any movement occurred that would indicate the fish still had the tag and was moving away from the snorkeler. Even with multiple searches, no tags were found using this method. Tags regurgitated prior to the high-flow event could have been buried by bed-load, but why tags regurgitated after the high flow could not be found is uncertain. The closest a tagged *O. mykiss* was found to the mouth of the Ventura River was at rkm 5, about 200 m downstream of Shell Road bridge. Other tagged smolts were lost and not found after a week or two and it is possible that they migrated down and out of the Ventura River before they could be detected in the lower river. The primary object of the study was to evaluate migration through the Robles Reach and therefore the same effort was not given to searching the lower river. In addition, it was much more difficult to find suitable sites to access and search the lower river and fish could have more easily moved through the lower river undetected. In general, the method of radio telemetry to evaluate movement through the Robles Reach appears useful at addressing this objective. Additional data is still needed to better understand the smolt migration through this reach.

4.0 ROBLES FACILITY OPERATIONS

4.1 Facility Status

The Robles Fish Passage Facility started the 2010-2011 season in a fully functional mode with the exception of the Fish Ladder flow meter. The 2010-2011 season was characterized by an above average rainfall year, 35.99 inches as measured at Casitas Dam. The average annual rainfall at the dam is 24.06 inches. The area experienced an unusually wet December in 2010 with 15.79 inches reported for the month at Casitas Dam and good rainfalls in February and March 2011. Two peak flow events, one with an overlapping peak, as defined by the BA/BO occurred during the Fish Flow Operations Season. Water diversions began on December 19, 2010 and continued through June 14, 2011 with the exception of two days in February. The diversion periods included water that was downloaded from Lake Matilija. Some surface flow continued over the measurement weir through the date this section of the report was prepared in late August 2011.

The 2010 Report identified several projects to be completed during the summer and fall. The principal projects were:

- Adjust interim weir two and three to improve fish passage.
- Replace the mechanical limit switches with optical switches on the brush system.
- Repair or replace the auxiliary water flow meter.
- Relocate the fish passage flow meter to minimize turbulence from the Vaki shroud.
- Update and improve the automated controls for the facility.

A brief description of each project and the project's status is listed below:

Adjust interim weir two and three to improve fish passage-This work was accomplished. Additional adjustments may be made to weir three during fall 2011.

Replace the mechanical limit switches with optical switches on the brush system- This work was accomplished. The new optical limit switches so far have been more reliable then the original mechanical switches.

Repair or replace the auxiliary water flow meter-The meter was found to be intact and functioning. The erroneous readings appear to be from "sloshing".

Relocate the fish passage flow meter to minimize turbulence from the Vaki shroud-Work on this item was begun but the early heavy rains prevented completion. The work will be completed during the summer and fall of 2011.

Update and improve the automated controls for the facility-This work was completed and will continue as Casitas gains additional experience with the system.

4.2 Flow Observations and Control

Flow and level measurement devices are located at various locations within the Robles Fish Passage Facility. The primary points of measuring and recording stream flows entering, flowing through and leaving the Robles Fish Passage Facility are:

- Matilija Creek at Matilija Hot Springs – located approximately 2,100 feet downstream of Matilija Dam – good rating for low to moderate flows – operated by Casitas Municipal Water District, formerly a USGS station;
- Matilija Dam Stage Bubbler-Located at the dam, this gage provides the lake elevation. Under high flows, the dam acts as a weir. This is the primary flow measurement location under high flows and to determine if a peak has occurred.
- North Fork Matilija Creek – located approximately 3,000 feet upstream of its confluence with Matilija Creek – good rating for low to moderate flows – operated by the Ventura County Watershed District;
- Robles-Casitas Diversion Canal – located on the diversion canal approximately 1,300 feet downstream of the Robles headworks – trapezoidal channel with a good rating for flows up to 600 cfs;

- Ventura River near Meiners Oaks (VRNMO) – located approximately 540 feet downstream of the Robles Fish Passage spillway – concrete weir section – good rating to 70 cfs, use of equations above 70 cfs with poor ratings above 1000 cfs (no verifications at higher flows). **Note: This is the most reliable flow measurement for the fish passage and downstream releases.**
- Fish Ladder-A 4 path flow meter by Accusonics located near the Riverwatcher. This flow meter has not been accurate since the installation of the replacement Vaki shroud. **Note: This flow measurement device was not functional during the 2010-11 season.**
- Auxiliary Water Supply-An American Sigma flow meter. This meter did not function properly. The problem is now believed to be "sloshing" in the pipe. Casitas has proposed a solution.

All of the instruments can suffer from inaccuracies from time to time. The inaccuracies can be caused by clogged bubbler lines, electronic creep, debris accumulating on sensors, changes to the measured cross sections, and equipment problems. For this reason, the data were verified against field measurements and observations. The information gathered from each of these locations has been reduced to the daily reporting of flows in the form of average cubic-feet per second. Note: *The spreadsheets are in Appendix 35, entitled "Ventura River Flow Assessment for the Robles Fish Passage Facility – FY 10-11".*

The fish screens remained in place for the entire year.

Two storm peaks occurred this year that triggered BA/BO required supplemental flow releases. The peaks occurred on February 18 and on March 20, 2011. An overlapping peak, as defined by the BO occurred on February 26, 2011. The February peak was relatively small at about 215 cfs. The overlapping peak was the larger peak at 270 cfs. The March peak was the largest peak the system has seen since 2005 at over 6000 cfs. Some flow did go over the cut-off wall during the March peak.

4.3 Costs Associated with Operation and Monitoring

The BA/BO specified that the District provide the costs that are associated with the activity. The following is a summary of the direct costs incurred by the District during the 2010-11 fiscal years:

- **Fisheries Monitoring**:

Salaries & Benefits	$331,623
Equipment/Material	$ 42,356
	$373,979

- **Facility Operations**:

Salaries & Benefits	$ 93,007
Equipment/Materials	$ 14,158
Outside Contracts	$ 15,841
Utilities	$ 5,286
Permit	$ 535
	$128,827

- **Capital Improvements**:

  No capital improvements were made during this fiscal year.

4.4 Assessment of the Effectiveness to Provide Fish Passage

Casitas has entered into an agreement with HydroScientific West to complete the first phase of the performance (hydraulic) testing. Performance testing of the fish screen was completed March 24 and 25. The report for the fish screen portion of the testing is scheduled to be delivered shortly.

Some initial velocity data were collected during 2008 to provide general fish ladder operation parameters. During a downstream release of 50 cfs, velocity measurements were collected at the top, middle, and bottom of the entrance gate #5. Each slide gate

is 18 in wide and 8 ft tall. At each location, four measurements were taken that spanned the width of the gate. This resulted in a total of 12 velocity measurements per gate measurement. Gate #5 was first measured with the total 50 cfs flowing only through it. The mean velocity was 2.0 ft/sec for all 12 measurements. However, the velocity increased with depth. The surface mean velocity was 0.2 ft/sec, the middle of the gate was 2.8 ft/sec, and the bottom was 3.2 ft/sec. With gates #4 and #5 open at 50 cfs, the mean velocity in gate 5 dropped to 1.1 ft/sec. The surface mean velocity was 0.2 ft/sec, the middle of the gate was 2.2 ft/sec, and the bottom was 1.0 ft/sec.

4.5 Recommendations Regarding the Prioritization of Future Activities

The District has completed its sixth season with the fish passage fully operational. Several projects have been identified to improve the functionality and reliability of the system. Other items require repairs. The summer and fall work list includes:

- Modify the diffuser panel in the auxiliary water system.
- Complete the relocation of the fish passage flow meter to minimize turbulence from the Vaki shroud.
- Adjust interim weir three if flow stops in the weir section of the river.
- Modify the differential level sensors at the fish ladder entrance to individually read water levels.

4.6 Recommendations on any Revisions Deemed Necessary to the Operations

Casitas is recommending that the fish screen diffuser panels be replaced. The current diffuser panels are two super-imposed perforated plates with ¼" holes at 3/8" staggered centers. Casitas is proposing to replace the perforated plates with ½" diameter holes on 11/16" staggered centers perforated plates. This year, the brush system worked much better at keeping the screens clean. However, the diffuser panels behind the screens became clogged. The fewer but larger openings of the proposed panels should reduce the clogging.

Casitas has proposed modifying the diffuser panel on the auxiliary water in an email to all BC members. This diffuser appears to be restricting the flow in the auxiliary water system.

Casitas continues to recommend that the construction of the 15-weir portion of the project be put on hold at least until the Matilija Dam Removal Project is completed. Preliminary plans for the High Flow Sediment Bypass and High Flow Fish Passage require this area to be graded to new elevations. The existing temporary weir system has proven to be passable by adult *O. mykiss*.

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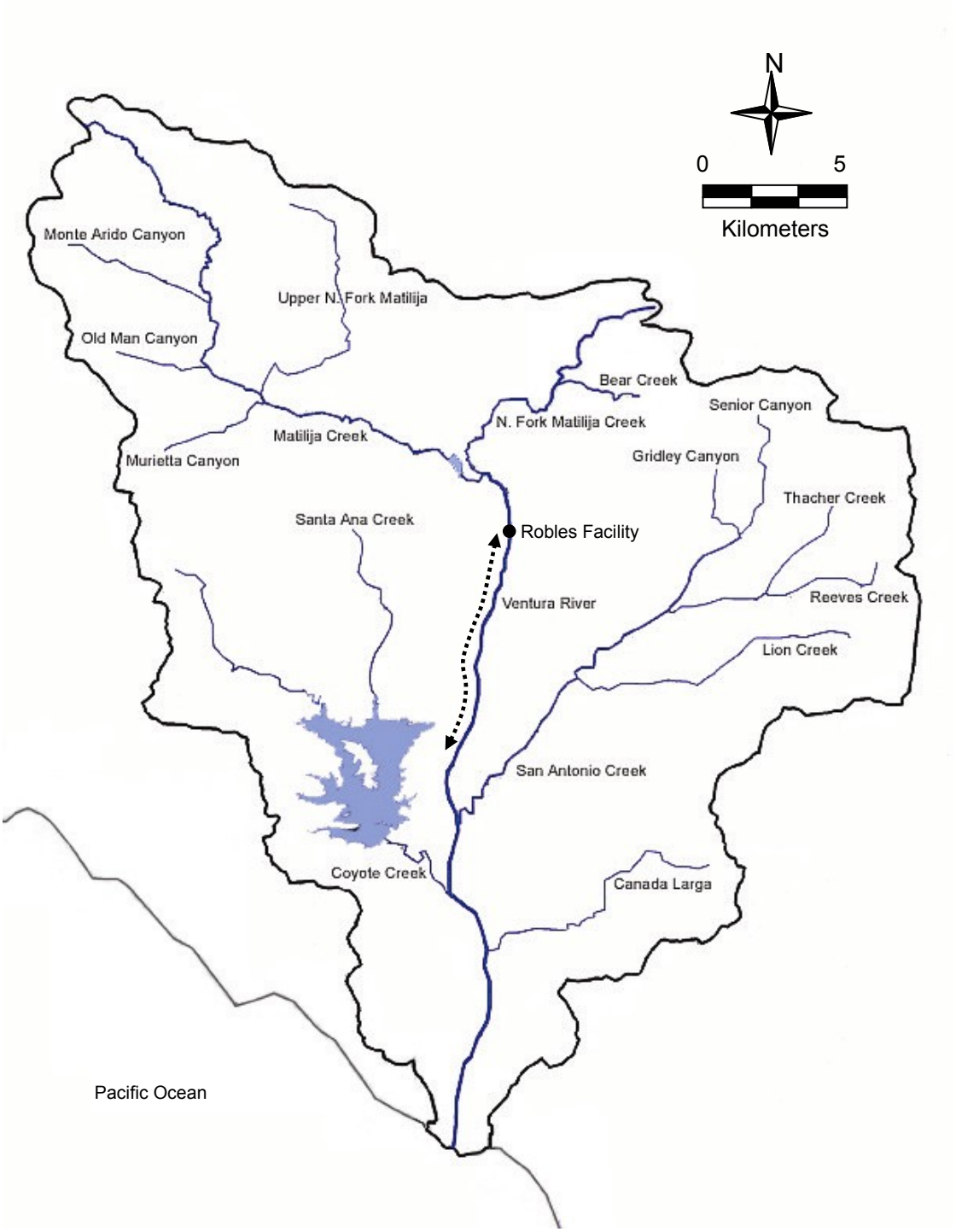
6.0 APPENDIXES



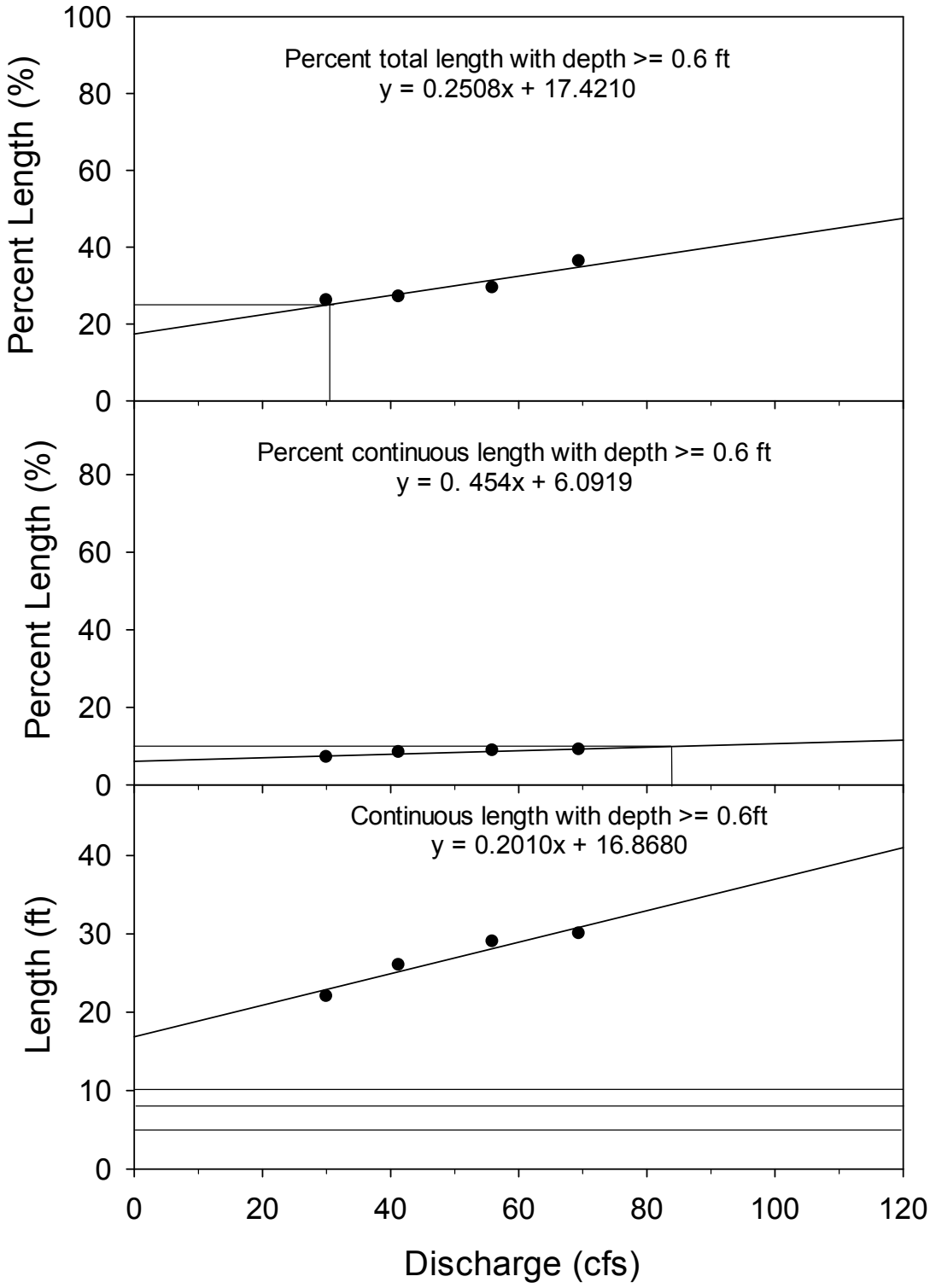
Appendix 1. Basin map of the Ventura River. The Robles Fish Passage Facility is identified by the black dot and the Robles Reach is identified by the dashed line downstream of the Robles Facility.

Appendix 2. Summary data of impediment sites originally selected during 2009 for upstream fish migration impediment evaluations. Several sites were altered by high flows that peaked 20 March 2011 (see text for description).

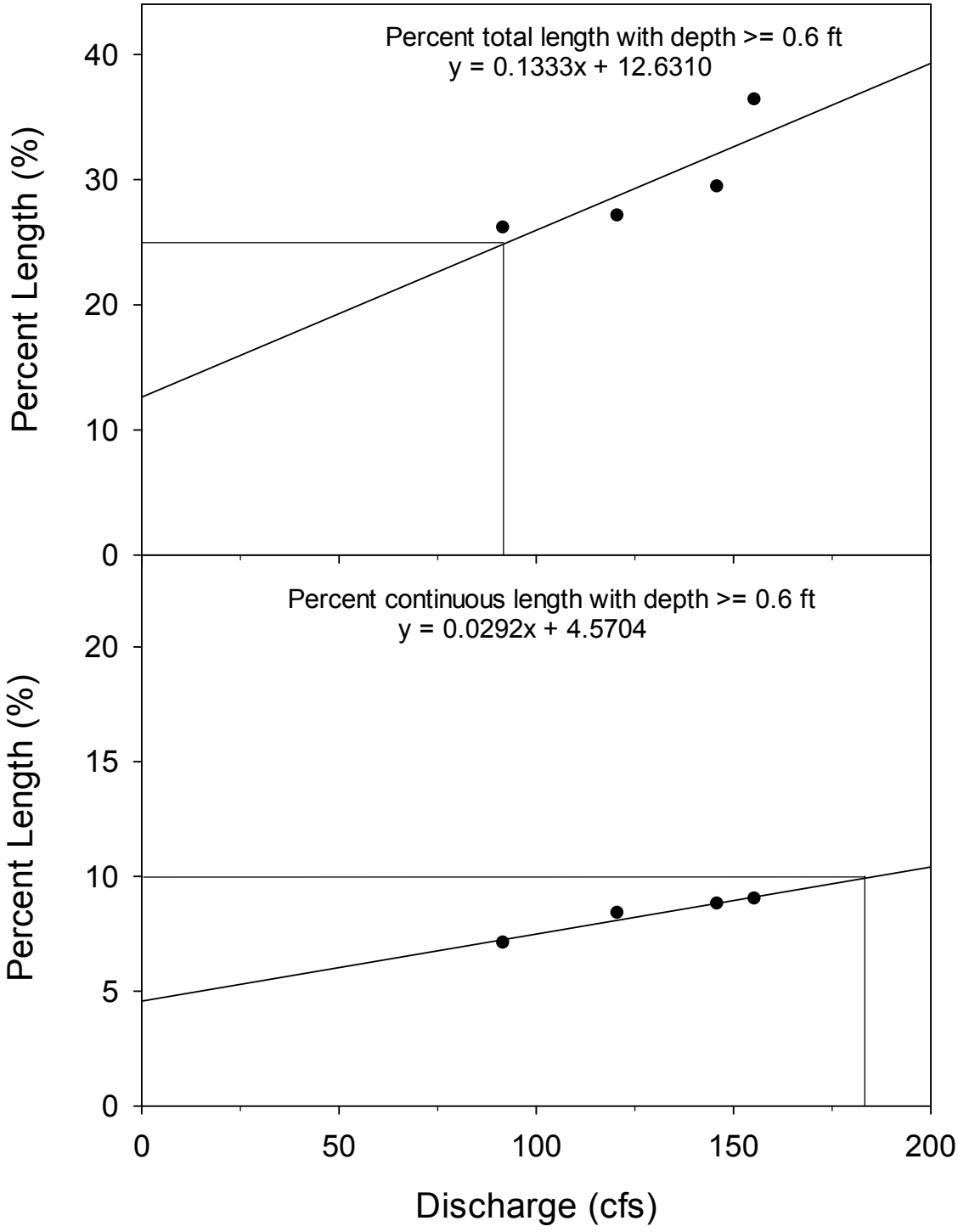
Site	Latitude (N)	Longitude (W)	km	Habitat Type[a]	Site Description	Length (m)	Slope (%)	Percent Substrate[b]						Active Channel Width (m)
								SO	SD	GR	CB	BD	BR	
1			0		River mouth				100					
2	34°20'27"	119°17'53"	7.5	RI	Near treatment plant	16.4	2.8	10	10	15	45	20	0	31.3
3	34°22'07"	119°18'34"	11	RB	Near Casitas Springs at end of levy	22.0	3.7	10	5	10	65	10	0	27.0
4	34°23'05"	119°18'36"	13	RI	0.5 km upstream of San Antonio Cr. confluence	23.8	5.0	0	0	0	15	85	0	27.9
5	34°23'46"	119°18'33"	15	RI	0.4 km downstream of Santa Ana Blvd. bridge	8.4	7.0	0	5	5	45	45	0	50.6
6	34°24'39"	119°18'06"	17	CB	1.4 km upstream of Santa Ana Blvd. bridge	26.1	5.0	0	0	0	65	35	0	33.8
7	34°26'04"	119°18'00"	19	RB	1.1 km upstream of Hwy 150 bridge	31.6	2.0	5	0	10	40	45	0	65.9
8	34°12'15"	119°17'36"	22	CB	1.2 km downstream of Robles Fish Facility	9.2	10.0	0	0	10	45	45	0	32.4

[a]The habitat types are: RB = rapid with protruding boulders, RI = riffle, and CB = cascade over boulders.

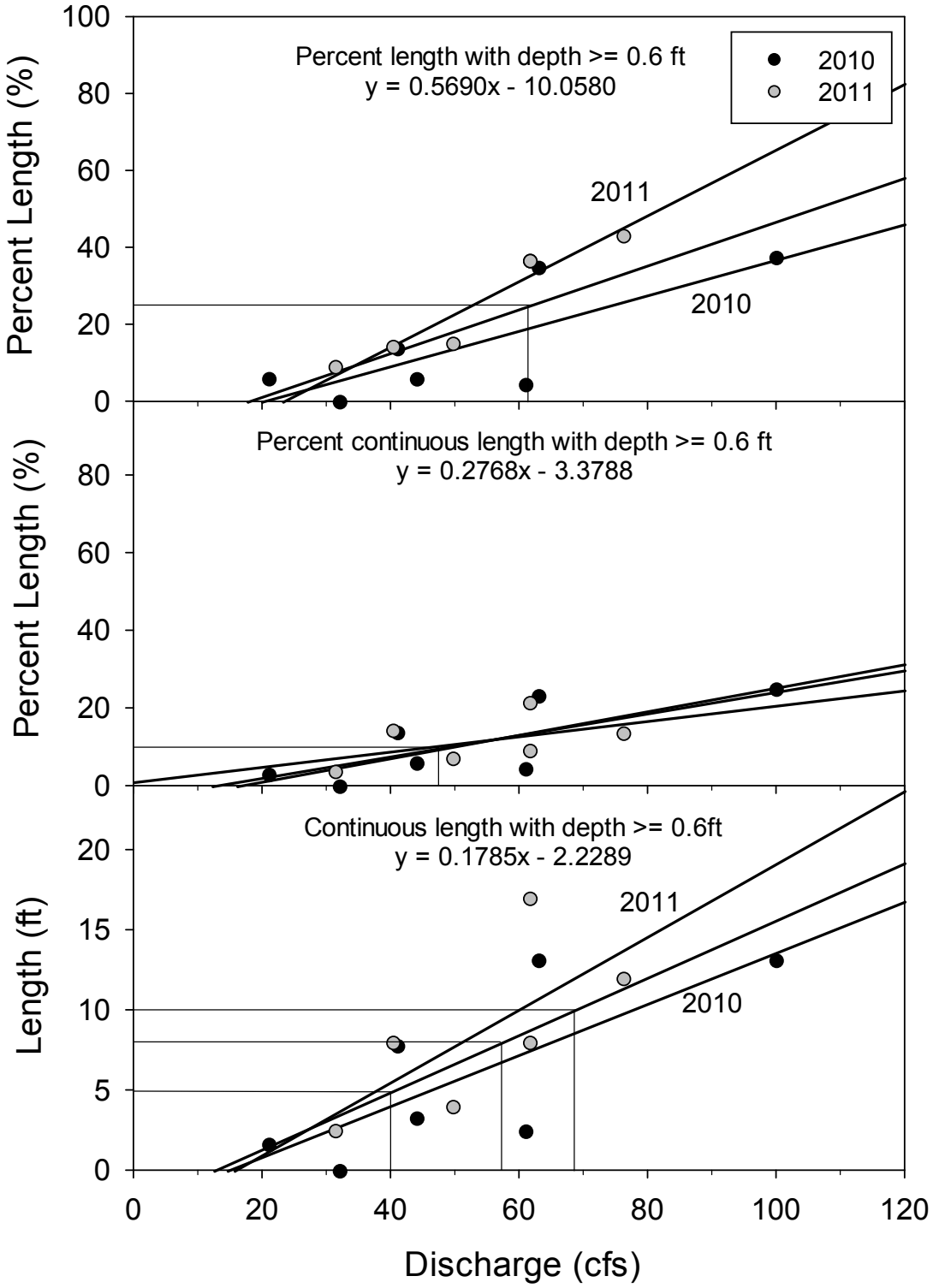
[b]The substrate types are: SO = silt and organics, SD = sand, GR = gravel, CB = cobble, BD = boulders, and BR = bedrock.



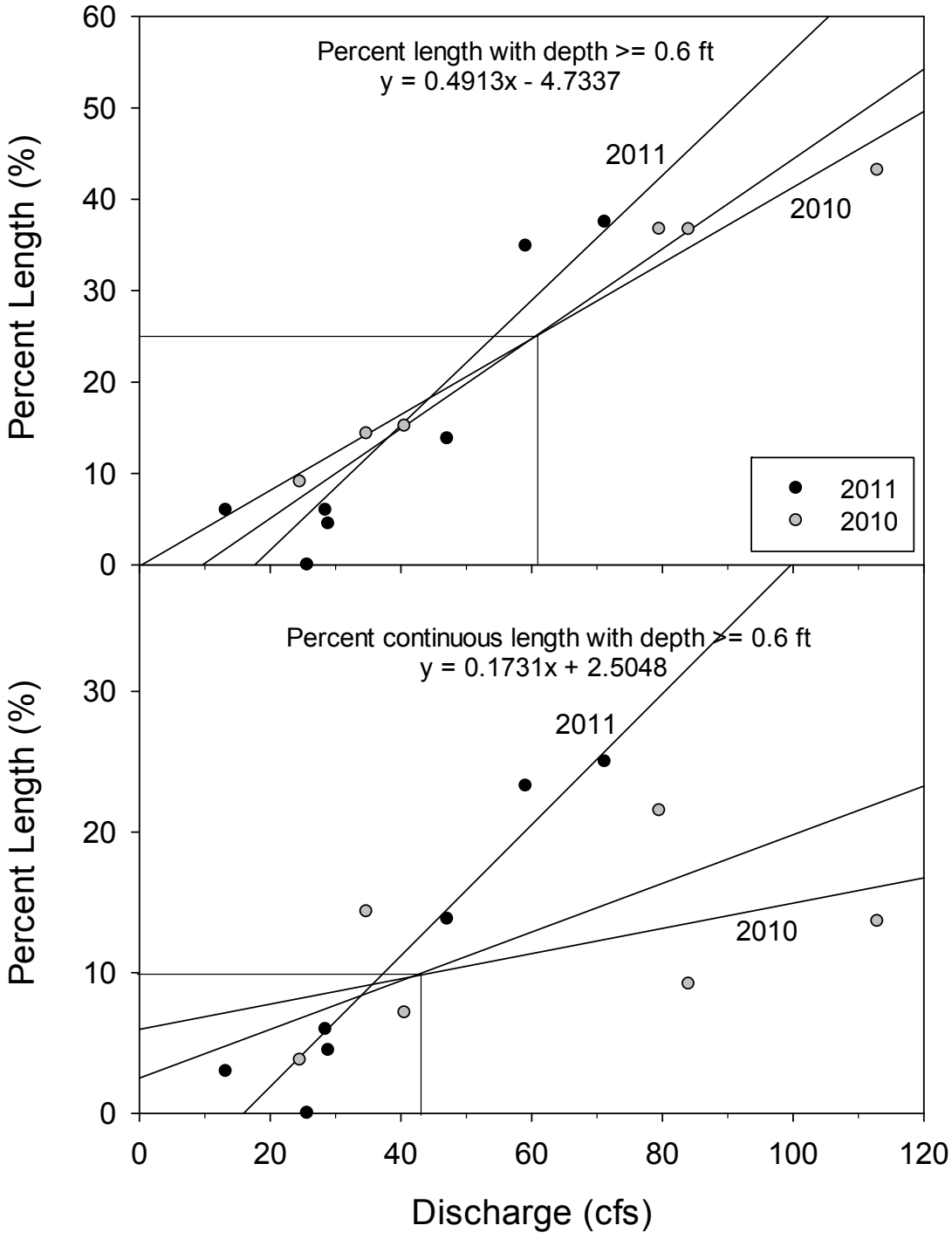
Appendix 3. Relation between Robles discharge and water depth at Site 3-2 near Casitas Springs and resulting discharge for various passage criteria.



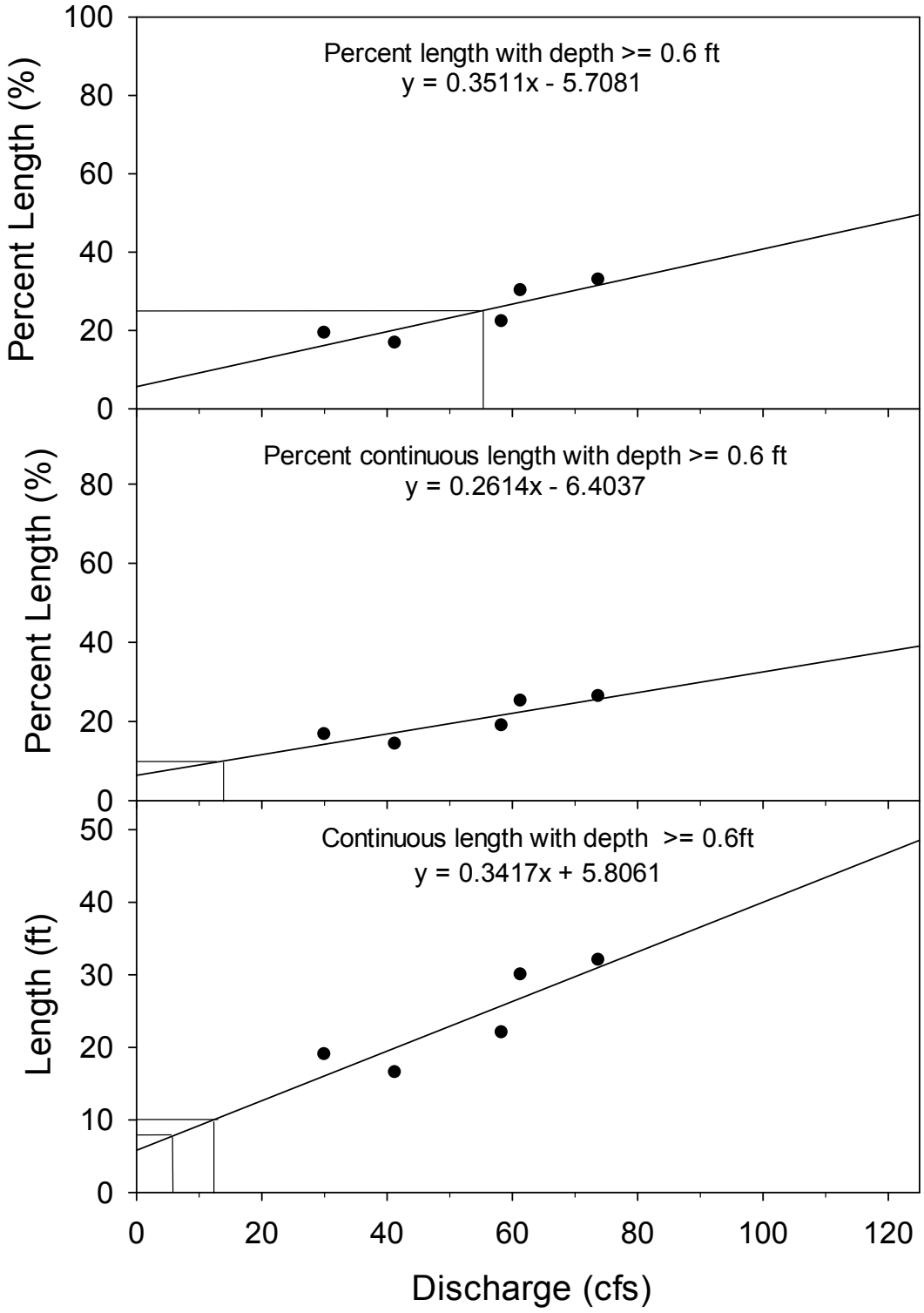
Appendix 4. Relation between site discharge and water depth at Site 3-2 near Casitas Springs and resulting discharge for the Thompson passage criteria.



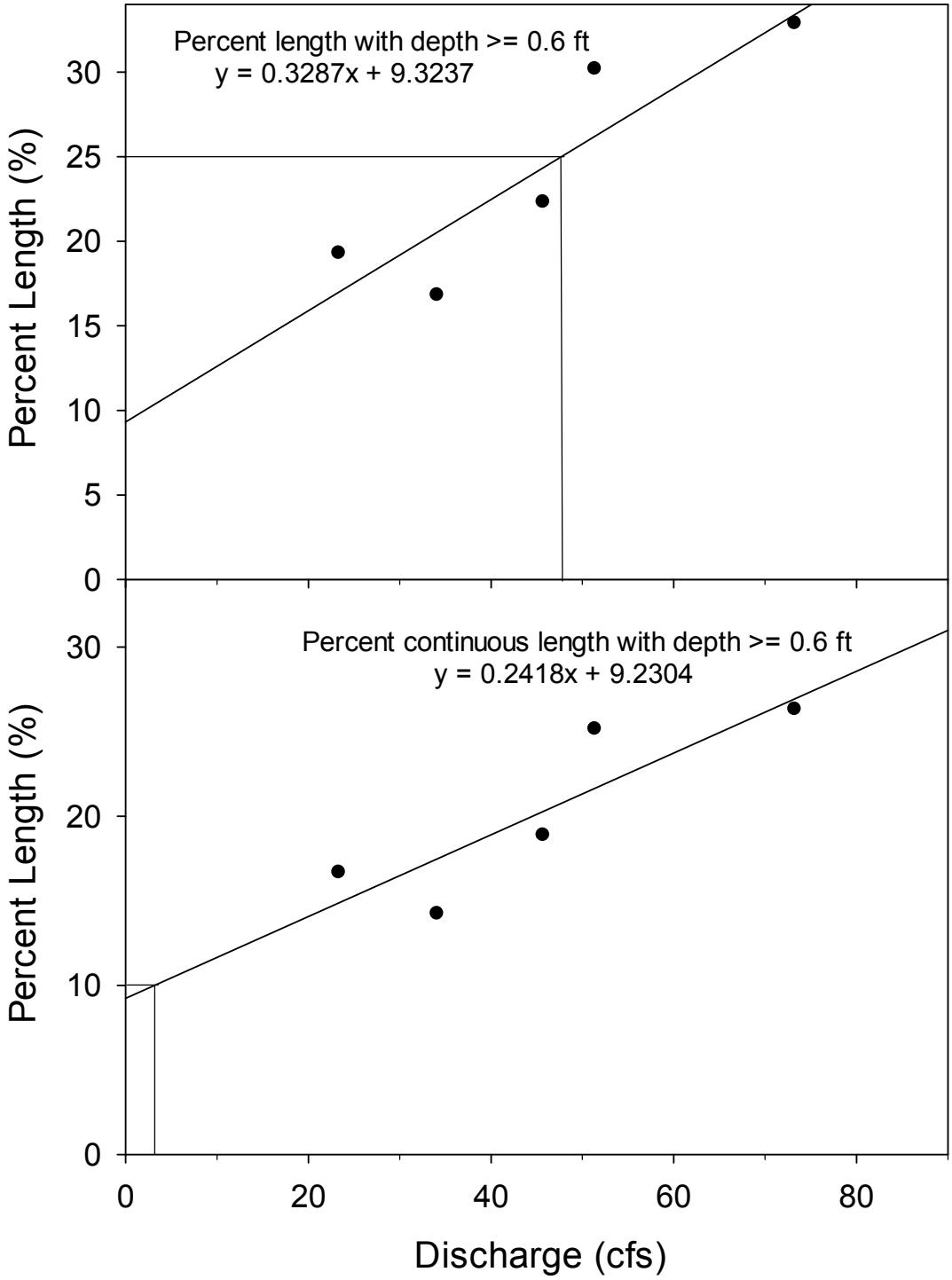
Appendix 5. Relation between Robles discharge and water depth at Site 4 upstream of San Antonio Creek and resulting discharge for various passage criteria.



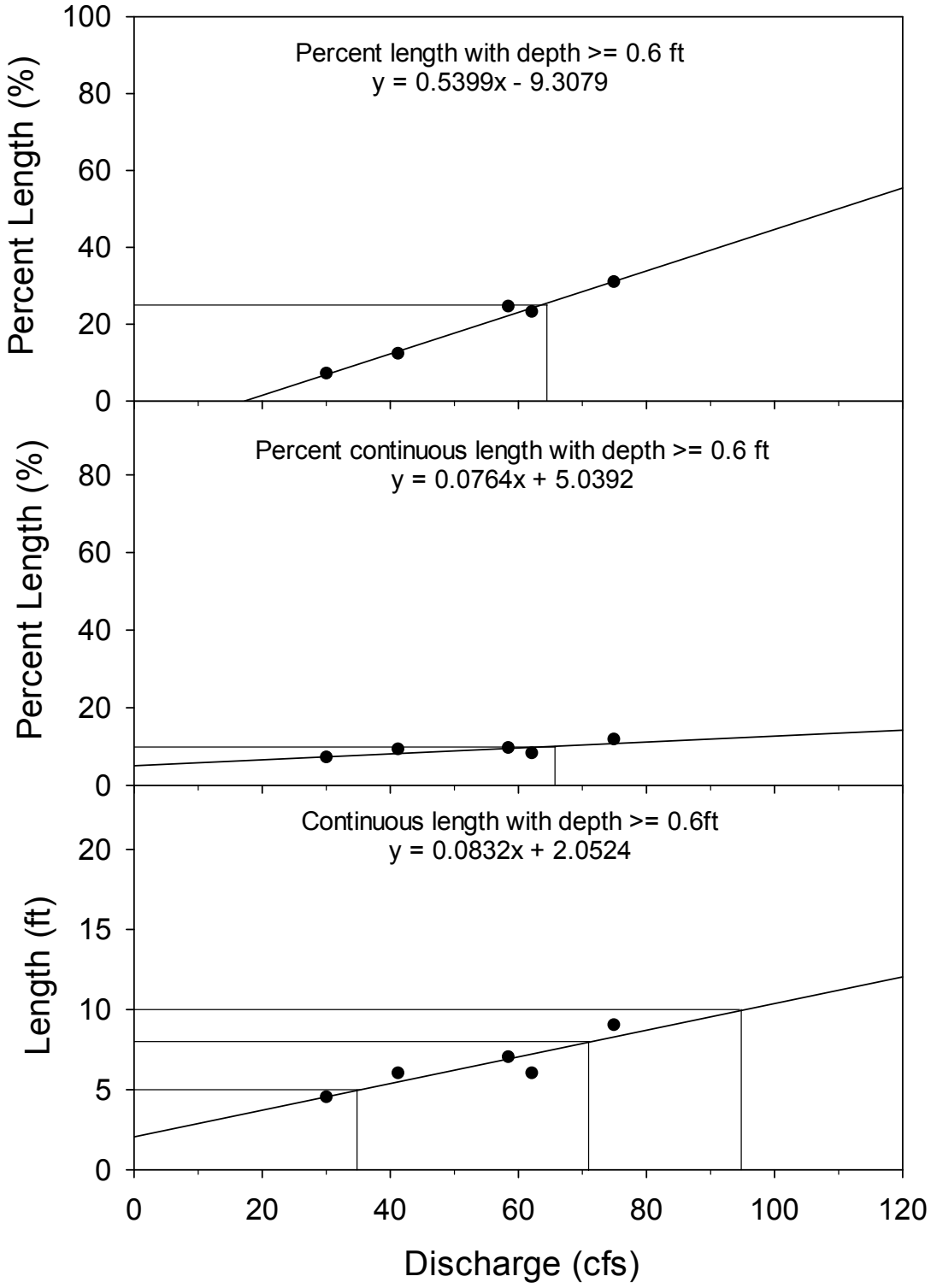
Appendix 6. Relation between site discharge and water depth at Site 4 upstream of San Antonio Creek and resulting discharge for the Thompson passage criteria.



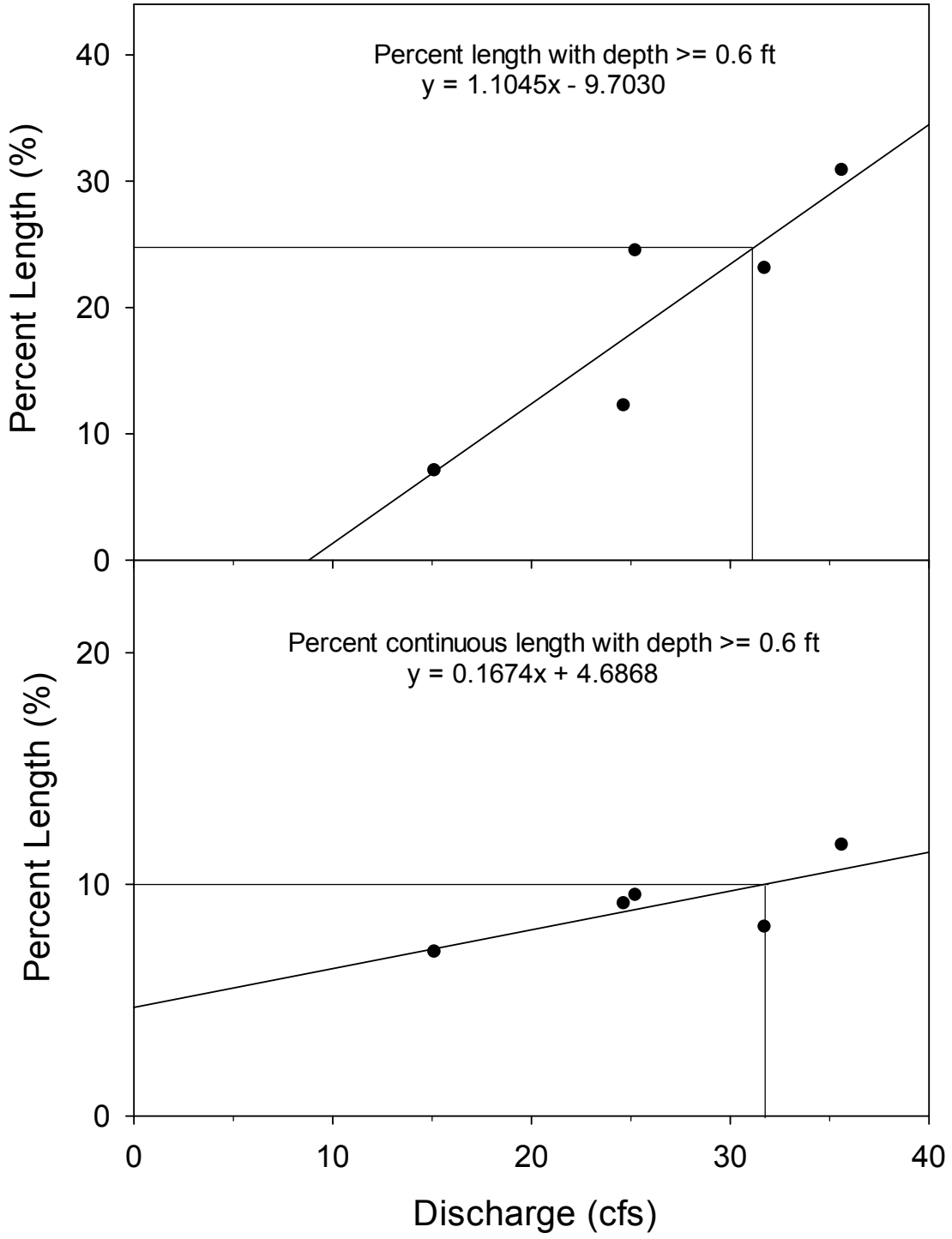
Appendix 7. Relation between Robles discharge and water depth at Site 5-2 downstream of Santa Ana bridge and resulting discharge for various passage criteria.



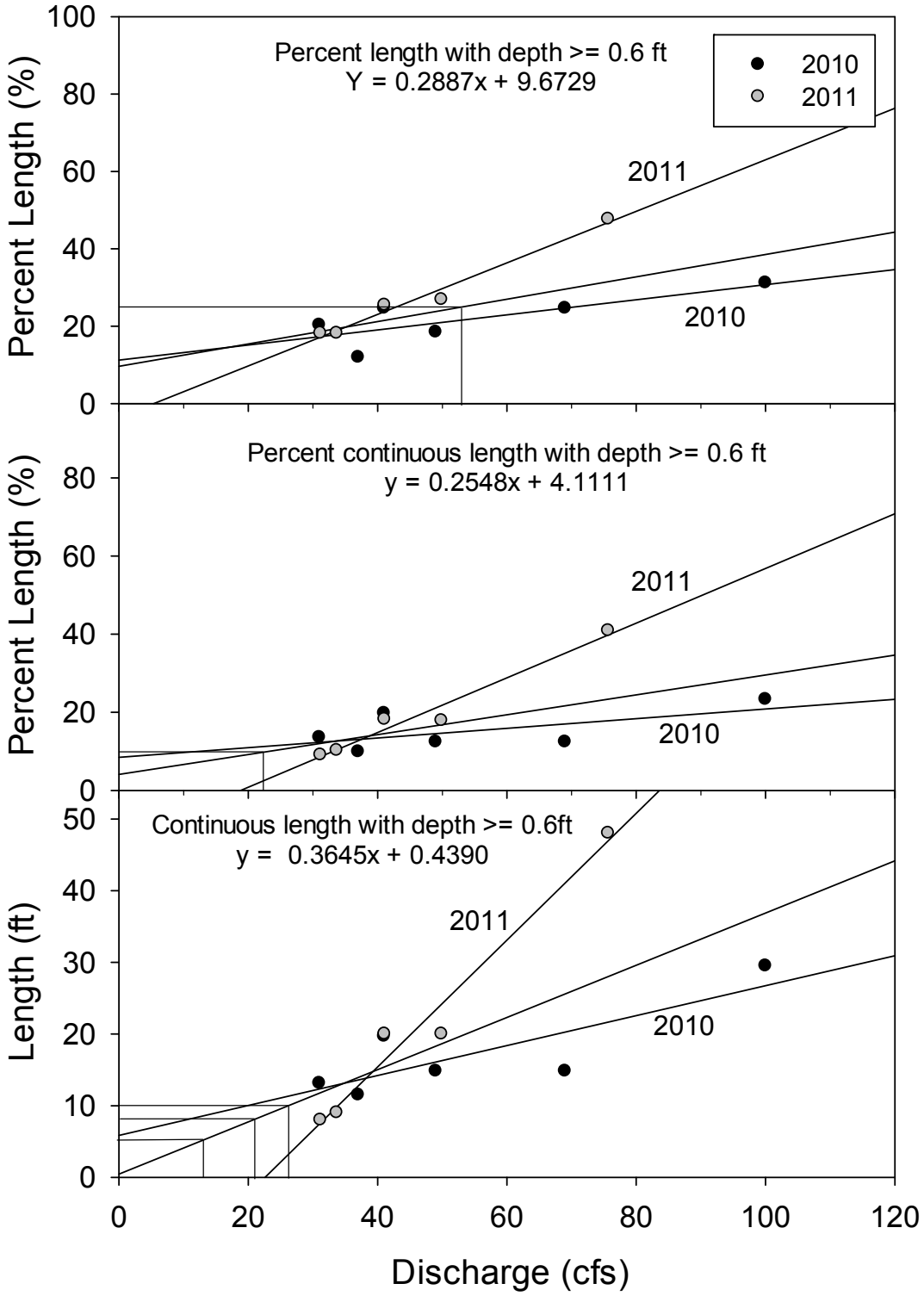
Appendix 8. Relation between site discharge and water depth at Site 5-2 downstream of Santa Ana bridge and resulting discharge for Thompson passage criteria.



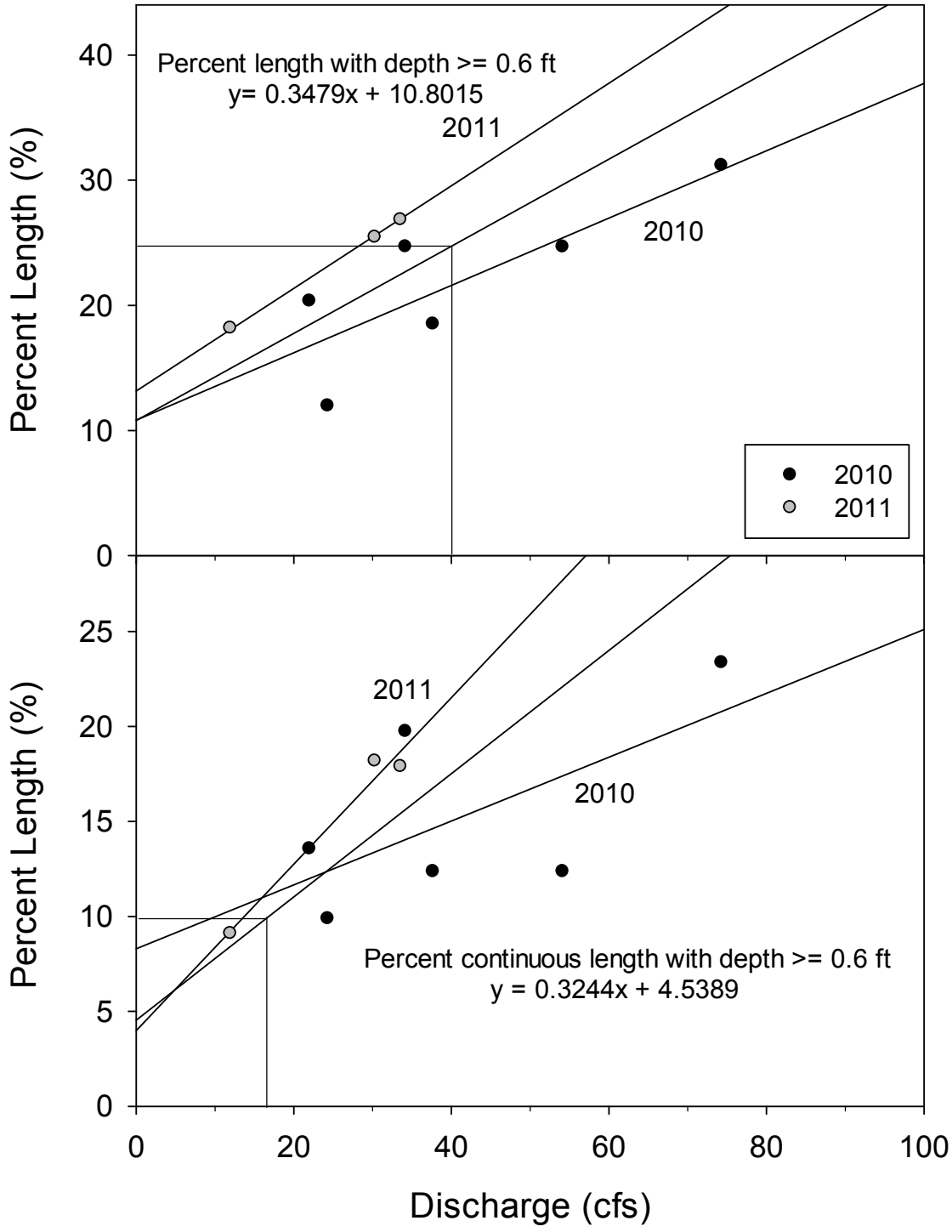
Appendix 9. Relation between Robles discharge and water depth at Site 6-2 upstream of Santa Ana bridge and resulting discharge for various passage criteria.



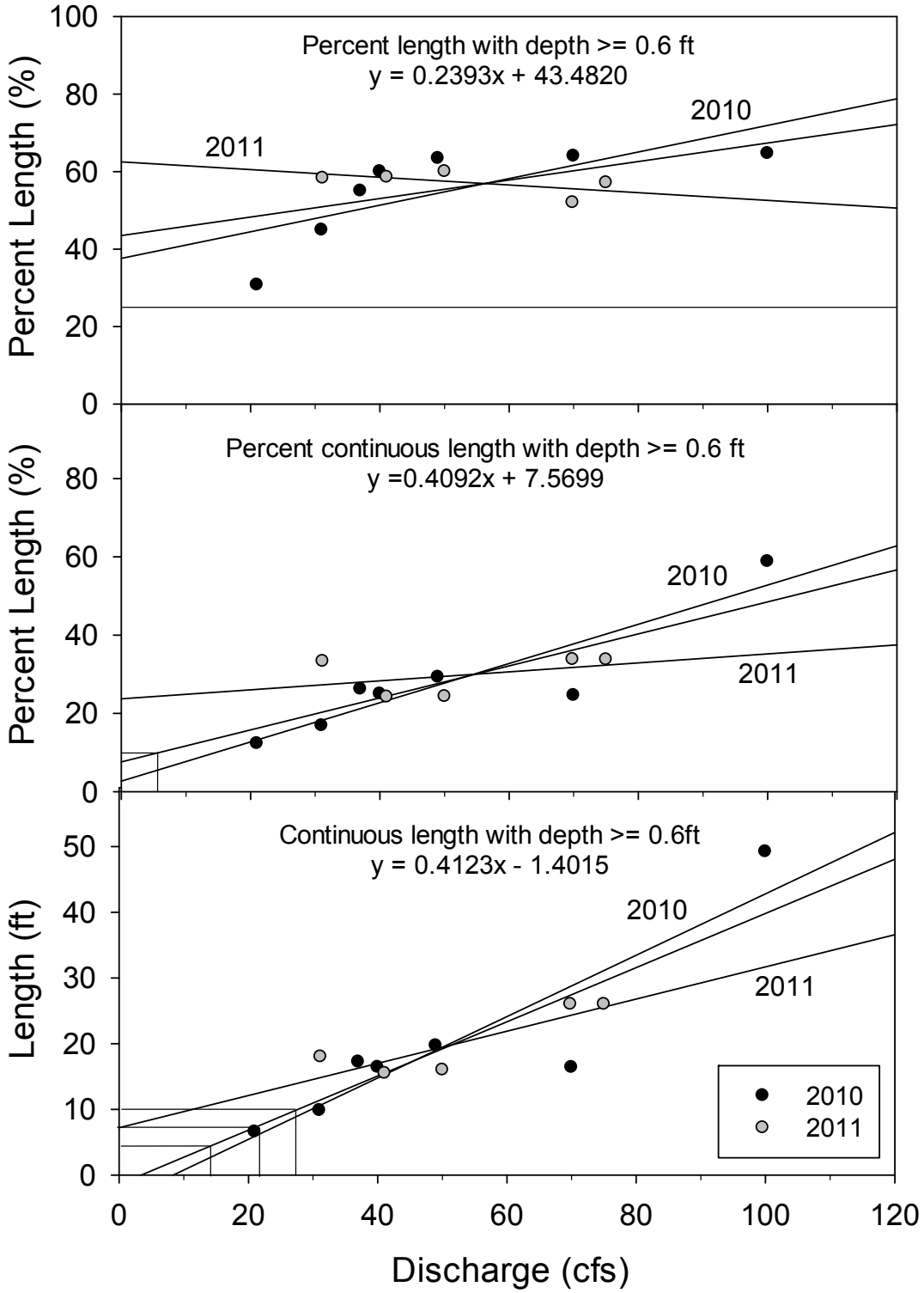
Appendix 10. Relation between site discharge and water depth at Site 6-2 upstream of Santa Ana bridge and resulting discharge for Thompson passage criteria.



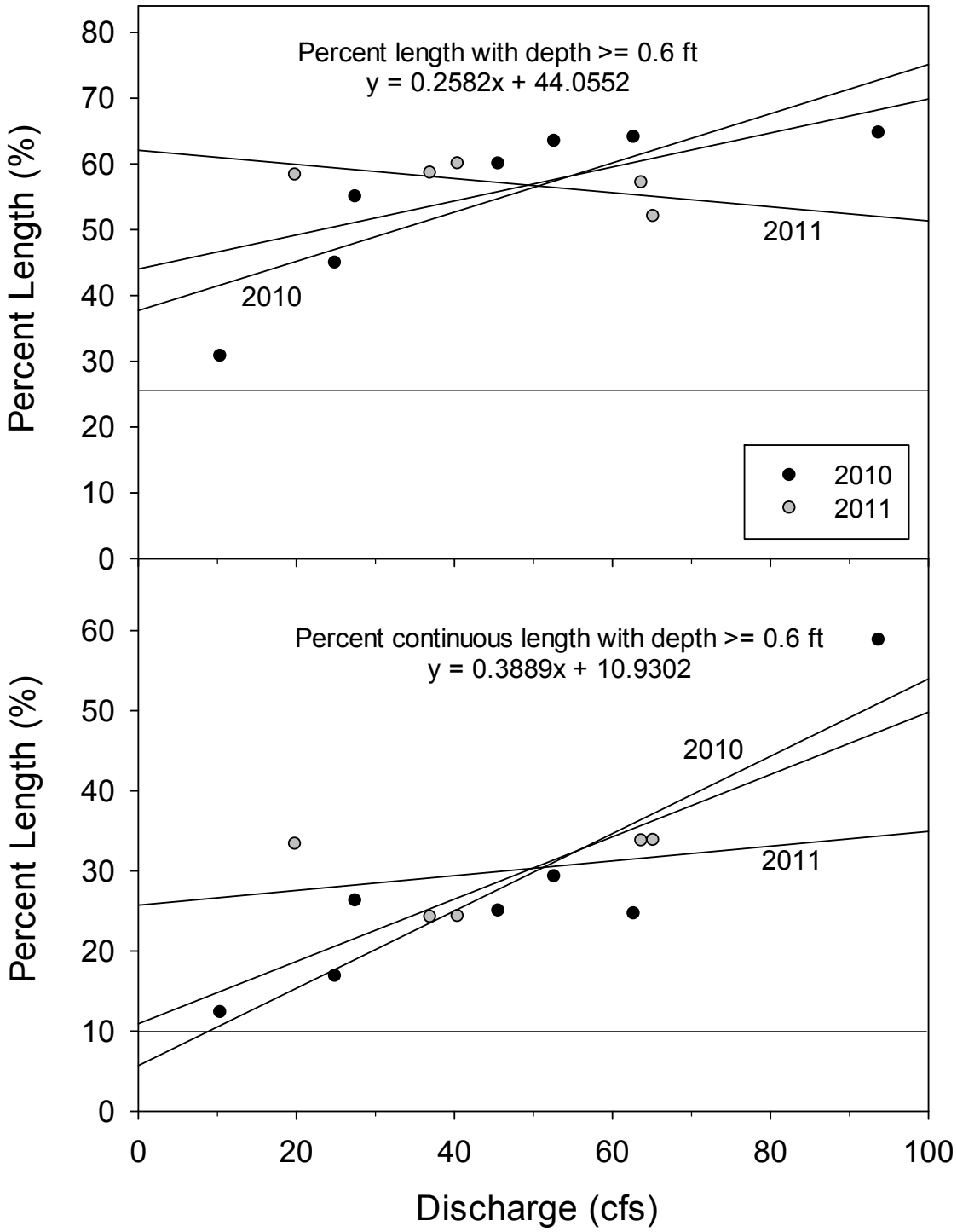
Appendix 11. Relation between Robles discharge and water depth at Site 7 upstream of Hwy 150 bridge and resulting discharge for various passage criteria.



Appendix 12. Relation between site discharge and water depth at Site 7 upstream of Hwy 150 bridge and resulting discharge for Thompson passage criteria.



Appendix 13. Relation between Robles discharge and water depth at Site 8 downstream of the Robles Fish Facility and resulting discharge for various passage criteria.



Appendix 14. Relation between site discharge and water depth at Site 8 downstream of Robles Fish Facility and resulting discharge for Thompson passage criteria.

A.

B.

C.

Appendix 15a. Photos of Site 2 impediment on 13 April 2011 during 64 cfs, as measured at Foster Park USGS gage, looking from: (A) upstream, (B) upstream from upstream edge of impediment, and (C) downstream from upstream edge of impediment.

A.

B.

C.

D.

Appendix 15b. Photos of Site 3-2 impediment on 05 April 2011 during 30 cfs discharge release from Robles Fish Facility, looking from: (A) downstream, (B) upstream, (C) right to left bank, and (D) left to right bank.

A.

B.

C.

D.

Appendix 15c. Photos of Site 4 impediment on 26 April 2011 during 31 cfs discharge release from Robles Fish Facility, looking from: (A) downstream, (B) upstream, (C) right to left bank, and (D) left to right bank.

A.

B.

C.

D.

Appendix 15d. Photos of Site 5-2 impediment on 05 April 2011 during 30 cfs discharge release from Robles Fish Facility, looking from: (A) downstream, (B) upstream, (C) right to left bank, and (D) left to right bank.

A.

B.

C.

D.

Appendix 15e. Photos of Site 6-2 impediment on 05 April 2011 during 30 cfs discharge release from Robles Fish Facility, looking from: (A) downstream, (B) upstream, (C) right to left bank, and (D) left to right bank.

A.

B.

C.

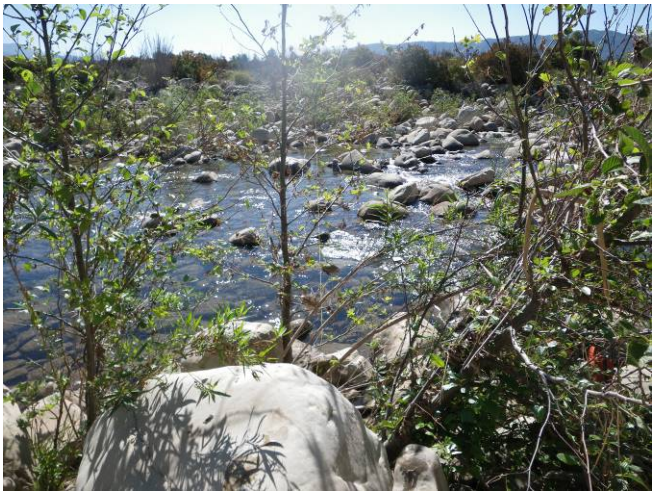
D.

Appendix 15f. Photos of Site 7 impediment on 26 April 2011 during 31 cfs discharge release from Robles Fish Facility, looking from: (A) downstream, (B) upstream, (C) right to left bank, and (D) left to right bank.

A.

B.

C.



D.

Appendix 15g. Photos of Site 8 impediment on 26 April 2011 during 31 cfs discharge release from Robles Fish Facility, looking from: (A) downstream, (B) upstream, (C) right to left bank, and (D) left to right bank.

A.

B.

Appendix 15h. Photos of Site 6 impediment Site 6 looking downstream on 09 March 2011 (A) during 36 cfs discharge release from Robles Fish Facility and looking downstream from similar location on 01 April 2011 (B) during 39 cfs.

Appendix 16. Regression equations and statistics of the four passage criteria using the Robles discharge evaluated at potential impediment sites.

	% Total Length with Depth ≥ 0.6 ft			% Continuous Length with Depth ≥ 0.6 ft			Continuous Length (ft) with Depth ≥ 0.6 ft		
Site	Equation	R^2	p-value	Equation	R^2	p-value	Equation	R^2	p-value
3-2	y = 0.2508x + 17.4210	0.87	0.07	y = 0.0454x + 6.0919	0.83	0.09	y = 0.2010x + 16.8680	0.92	0.04
4	y = 0.5690x - 10.0580	0.61	< 0.01	y = 0.2768x - 3.3788	0.51	0.01	y = 0.1785x - 2.2289	0.50	0.01
5-2	y = 0.3511x + 5.7081	0.76	0.05	y = 0.2614x + 6.4037	0.73	0.06	y = 0.3417x + 5.8061	0.75	0.06
6-2	y = 0.5399x - 9.3079	0.98	< 0.01	y = 0.0764x + 5.0392	0.62	0.11	y = 0.0832x + 2.0524	0.79	0.04
7	y = 0.2887x + 9.6729	0.46	0.02	y = 0.2548x + 4.1111	0.38	0.05	y = 0.3645x + 0.4390	0.49	0.02
8	y = 0.2393x + 43.4820	0.33	0.05	y = 0.4092x + 7.5699	0.66	< 0.01	y = 0.4123x - 1.4015	0.77	< 0.01

Appendix 17. Calculated discharge (cfs) required from the Robles Fish Facility to meet various adult passage criteria.

Site	25% Total length with depth ≥ 0.6 ft[a]	10% Continuous length with depth ≥ 0.6 ft[a]	Minimum discharge to meet Thompson criteria[a]	10ft Continuous length with depth ≥ 0.6 ft[b]	8ft Continuous length with depth ≥ 0.6 ft[c]	5ft Continuous length with depth ≥ 0.6 ft[d]
3-2	30	86	86	-34	-44	-59
4	62	50	62	69	57	40
5-2	55	14	55	12	6	-2
6-2	64	65	65	96	71	35
7	53	23	53	26	21	13
8	-77	6	6	28	23	16

[a]Thompson (1972).
[b]Harrison et al. (2006).
[c]Santa Ynez River Technical Advisory Committee (2000).
[d]Dettman and Kelly (1986).

Appendix 18. Regression equations and statistics for the Thompson passage criteria using the site discharge.

	% Total Length with Depth ≥ 0.6 ft			% Continuous Length with Depth ≥ 0.6 ft		
Site	Equation	R^2	p-value	Equation	R^2	p-value
3-2	y = 0.1333x + 12.6310	0.68	0.18	y = 0.0292x + 4.5704	0.95	0.03
4	y = 0.4913x - 4.7332	0.87	< 0.01	y = 0.1731x + 2.5049	0.38	0.02
5-2	y = 0.3287x + 9.3237	0.80	0.04	y = 0.2418x + 9.2304	0.75	0.06
6-2	y = 1.1045x - 9.7030	0.80	0.04	y = 0.1674x + 4.6868	0.58	0.14
7	y = 0.3479x + 10.8020	0.70	< 0.01	y = 0.3244x + 4.5389	0.65	< 0.01
8	y = 0.2582x + 44.0550	0.40	0.03	y = 0.3889x + 10.9300	0.63	< 0.01

Appendix 19. Calculated discharge (cfs) required at each site to meet Thompson (1972) passage criteria.

Site	25% Total length with depth ≥ 0.6 ft	10% Continuous length with depth ≥ 0.6 ft	Minimum discharge to meet Thompson criteria
3-2	93	186	186
4	61	43	61
5-2	48	3	48
6-2	31	32	32
7	41	17	41
8	-74	-2	-2

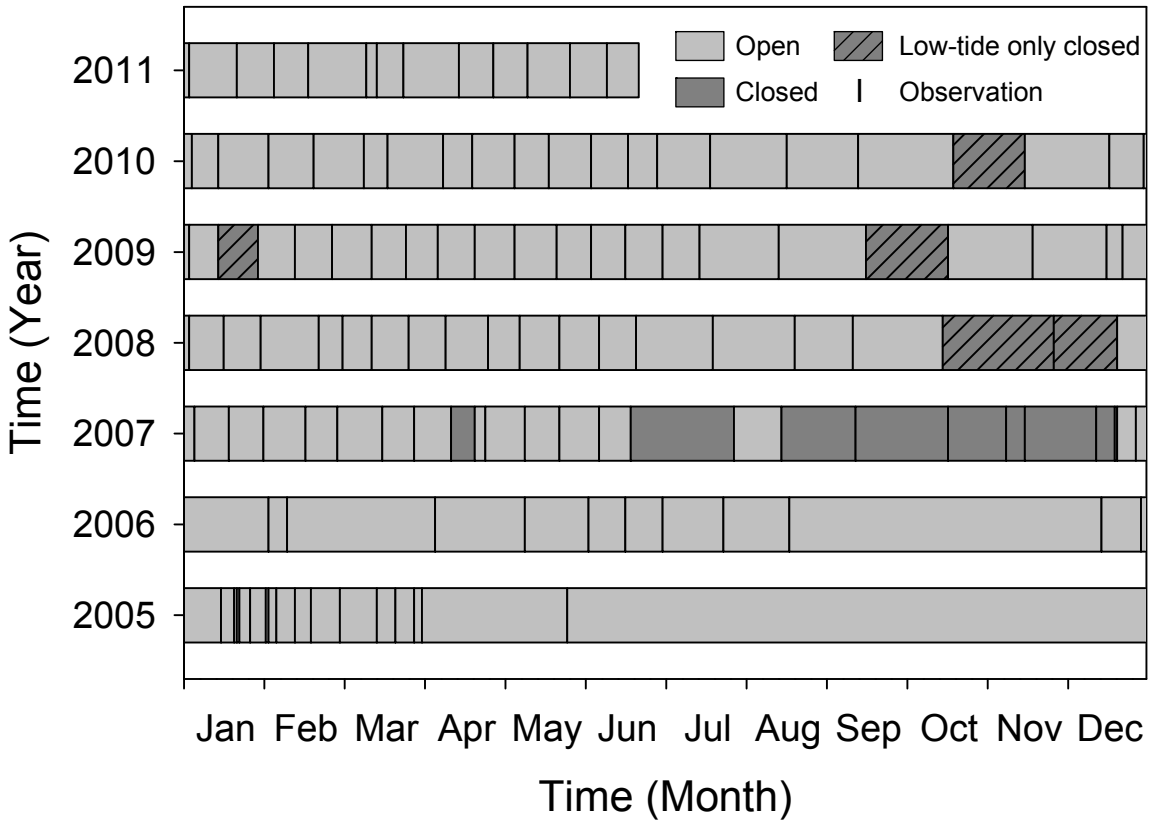
Appendix 19a. Calculated discharge (cfs) required at Robles for 2011 data to meet Thompson (1972) passage criteria.

Site	25% Total length with depth ≥ 0.6 ft	10% Continuous length with depth ≥ 0.6 ft
4	52	45
7	43	33
8	378	-120

Appendix 20. Ventura River sandbar monitoring data from July 2010 through June 2011.

Date	Sandbar Breeched (Y/N)	Time (24h)	Tide Height (ft)	Tidal State	High Tide Time (24h)	High Tide Height (ft)	Low Tide Time (24h)	Low Tide Height (ft)	Mean Daily Discharge at Foster[a] (cfs)	Mean Daily Discharge at Robles (cfs)	Notes
07/19/2010	Y	12:15	2.7	flood	17:05	5.5	10:08	2.1	11.0	1	Open on west bank
08/17/2010	Y	13:00	3.8	flood	16:35	5.3	09:40	2.8	6.4	0	Open on west bank
09/13/2010	Y	14:00	5.4	ebb	13:22	5.5	21:11	0.6	6.1	0	Open on west bank
10/19/2010	N[b]	10:45	3.6	ebb	08:06	5.1	14:28	1.2	7.7	0	If open, on west bank
11/15/2010	Y	15:30	3.2	flood	17:22	3.7	11:58	2.0	4.8	1	Open on west bank
12/17/2010	Y	14:30	0.3	flood	12:14	3.3	13:31	0.1	4.7	1	Open on west bank
12/30/2010	Y	12:40	-0.1	slack	18:46	3.2	12:31	-0.1	35.0	20	Open on west bank
01/03/2011	Y	16:00	-1.1	flood	21:45	3.9	15:22	-1.2	39.0	20	Open on west bank
01/21/2011	Y	15:30	-0.6	ebb	09:45	6.2	16:43	-1.1	26.0	20	Open on west bank
02/04/2011	Y	14:00	1.3	ebb	09:35	5.3	16:23	-0.3	25.0	20	Open on west bank
02/17/2011	Y	13:40	-0.6	ebb	08:08	6.3	15:03	-1.3	31.0	20	Open on west bank
03/11/2011	Y	14:25	2.3	flood	15:38	2.3	08:18	1.0	76.0	32	Open on west bank
03/15/2011	Y	09:15	3.1	ebb	06:25	5.0	13:48	-0.4	72.0	33	Open on west bank
03/25/2011	Y	10:15	0.1	flood	16:59	3.0	09:52	0.1	1180.0	364	Open west and east
04/15/2011	Y	09:00	4.5	ebb	07:58	4.9	14:12	0.0	59.0	31	Open on west bank
04/28/2011	Y	12:15	1.2	ebb	07:31	3.8	13:36	0.9	45.0	30	Open on west bank
05/11/2011	Y	09:30	0.9	ebb	04:09	4.0	11:10	0.4	41.0	31	Open on west bank
05/27/2011	Y	12:30	1.6	slack	07:08	3.2	12:33	1.6	41.0	32	Open on west bank
06/10/2011	Y	12:58	1.8	flood	17:52	5.5	11:08	1.1	45.0	32	Open on west bank
06/22/2011	Y	14:17	3.8	flood	15:59	4.3	09:00	1.0	34.0	27	Open on west bank

[a]USGS gauging station number 11118500, downstream of Foster Park.
[b]Sandbar was closed at low tide and open during some high tides.

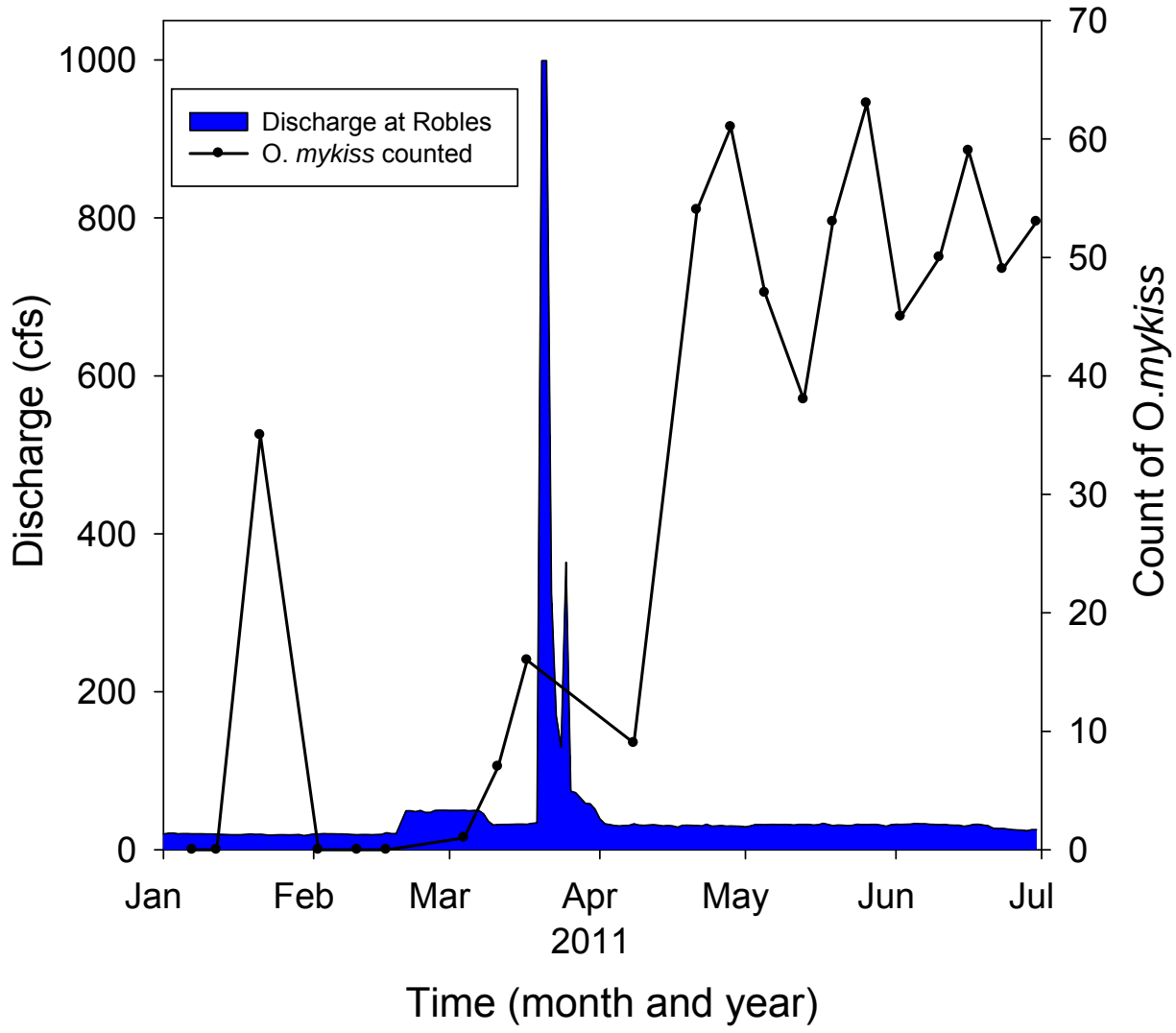


Appendix 21. Sandbar status at the mouth of the Ventura River from 2005 through June of 2011. Each observation is indicated by vertical lines and the sandbar status was assumed to remain the same until the next observation (Lewis et al. 2010).

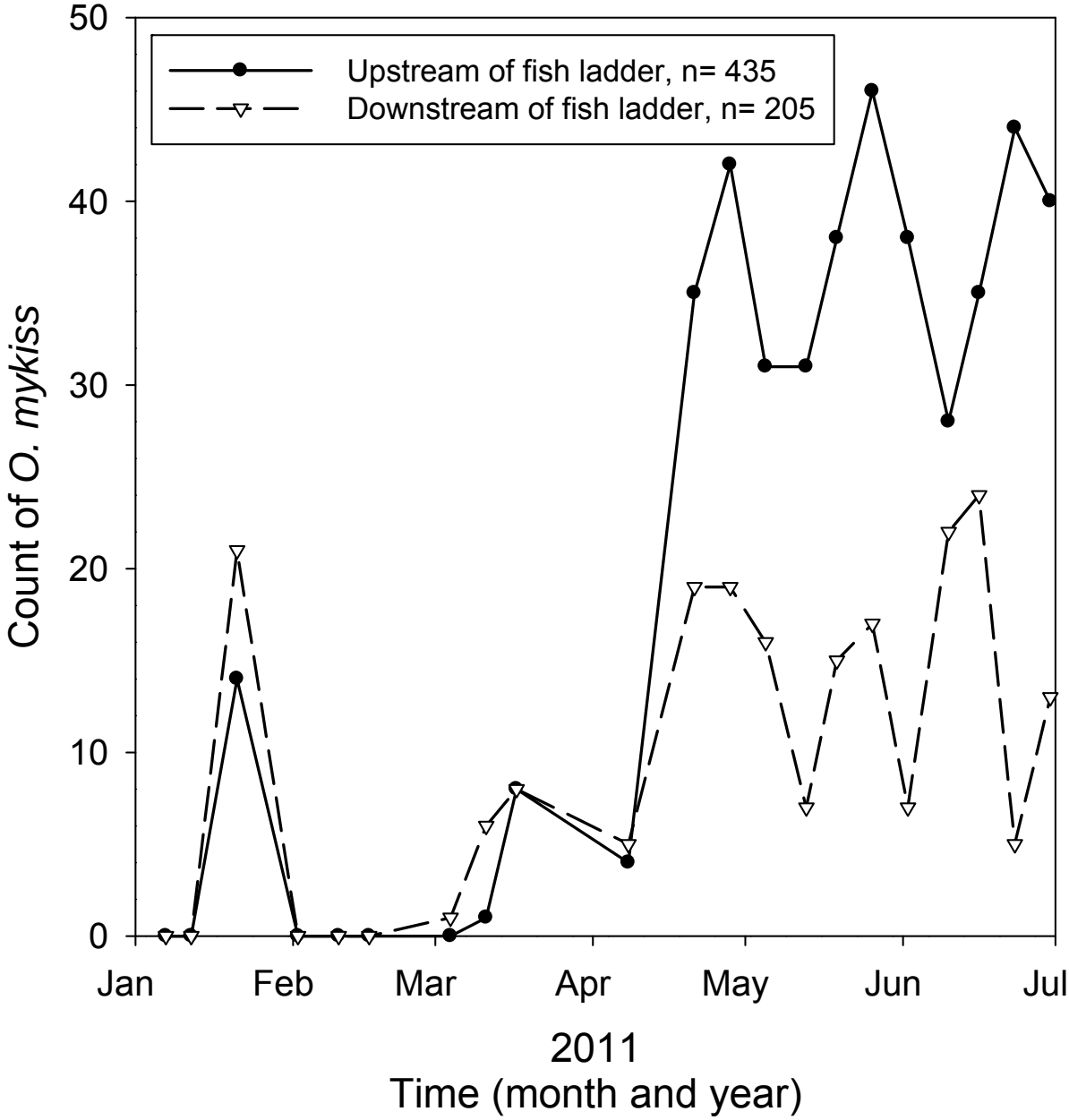
Appendix 22. Fish attraction counts of *O. mykiss* in close proximity to the Robles Fish Facility from January through June of 2011.

Date	Method	Direction	Length (m)	Temp (°C)	Turbidity (NTU)	Robles Discharge (CFS)	Species[a]	Count
7-Jan-2011	BANK	Upstream	140	11	7	20	NFO	0
7-Jan-2011	BANK	Downstream	200	11	7	20	NFO	0
12-Jan-2011	BANK	Upstream	140	11	3	20	NFO	0
12-Jan-2011	BANK	Downstream	200	11	3	20	NFO	0
21-Jan-2011	SNORKEL	Upstream	140	12	4	20	OMY	14
21-Jan-2011	SNORKEL	Downstream	200	12	1	20	OMY	21
2-Feb-2011	SNORKEL	Upstream	140	11	2	20	NFO	0
2-Feb-2011	SNORKEL	Downstream	200	11	1	20	NFO	0
10-Feb-2011	SNORKEL	Upstream	140	11	1	19	NFO	0
10-Feb-2011	SNORKEL	Downstream	200	11	1	19	NFO	0
16-Feb-2011	BANK	Upstream	140	13	6	21	NFO	0
16-Feb-2011	BANK	Downstream	200	13	2	21	NFO	0
4-Mar-2011	SNORKEL	Upstream	140	13	3	50	NFO	0
4-Mar-2011	SNORKEL	Downstream	200	13	3	50	OMY	1
11-Mar-2011	SNORKEL	Upstream	140	14	2	32	OMY	1
11-Mar-2011	SNORKEL	Downstream	200	14	2	32	OMY	6
17-Mar-2011	SNORKEL	Upstream	140	15	7	32	OMY	8
17-Mar-2011	SNORKEL	Downstream	200	15	4	32	OMY	8
8-Apr-2011	SNORKEL	Upstream	140	13	11	33	OMY	4
8-Apr-2011	SNORKEL	Downstream	200	13	9	33	OMY	5
21-Apr-2011	SNORKEL	Upstream	140	15	13	31	OMY	35
21-Apr-2011	SNORKEL	Downstream	200	15	10	31	OMY	19
28-Apr-2011	SNORKEL	Upstream	140	17	6	30	OMY	42
28-Apr-2011	SNORKEL	Downstream	200	17	3	30	OMY	19
5-May-2011	SNORKEL	Upstream	140	18	4	32	OMY	31
5-May-2011	SNORKEL	Downstream	200	18	6	32	OMY	16
13-May-2011	SNORKEL	Upstream	140	18	11	32	OMY	31
13-May-2011	SNORKEL	Downstream	200	18	2	32	OMY	7
19-May-2011	SNORKEL	Upstream	140	17	10	30	OMY	38
19-May-2011	SNORKEL	Downstream	200	17	4	30	OMY	15
26-May-2011	SNORKEL	Upstream	140	18	14	32	OMY	46
26-May-2011	SNORKEL	Downstream	200	18	14	32	OMY	17
2-Jun-2011	SNORKEL	Upstream	140	18	6	32	OMY	38
2-Jun-2011	SNORKEL	Downstream	200	18	2	32	OMY	7
10-Jun-2011	SNORKEL	Upstream	140	18	1	32	OMY	28
10-Jun-2011	SNORKEL	Downstream	200	18	1	32	OMY	22
16-Jun-2011	SNORKEL	Upstream	140	18	1	30	OMY	35
16-Jun-2011	SNORKEL	Downstream	200	18	1	30	OMY	24
23-Jun-2011	SNORKEL	Upstream	140	22	2	27	OMY	44
23-Jun-2011	SNORKEL	Downstream	200	22	2	27	OMY	5
30-Jun-2011	SNORKEL	Upstream	140	21	1	26	OMY	40
30-Jun-2011	SNORKEL	Downstream	200	21	1	26	OMY	13
		Upstream	2,940				Upstream	435
		Downstream	4,200				Downstream	205
		Total	7,140				Total	640

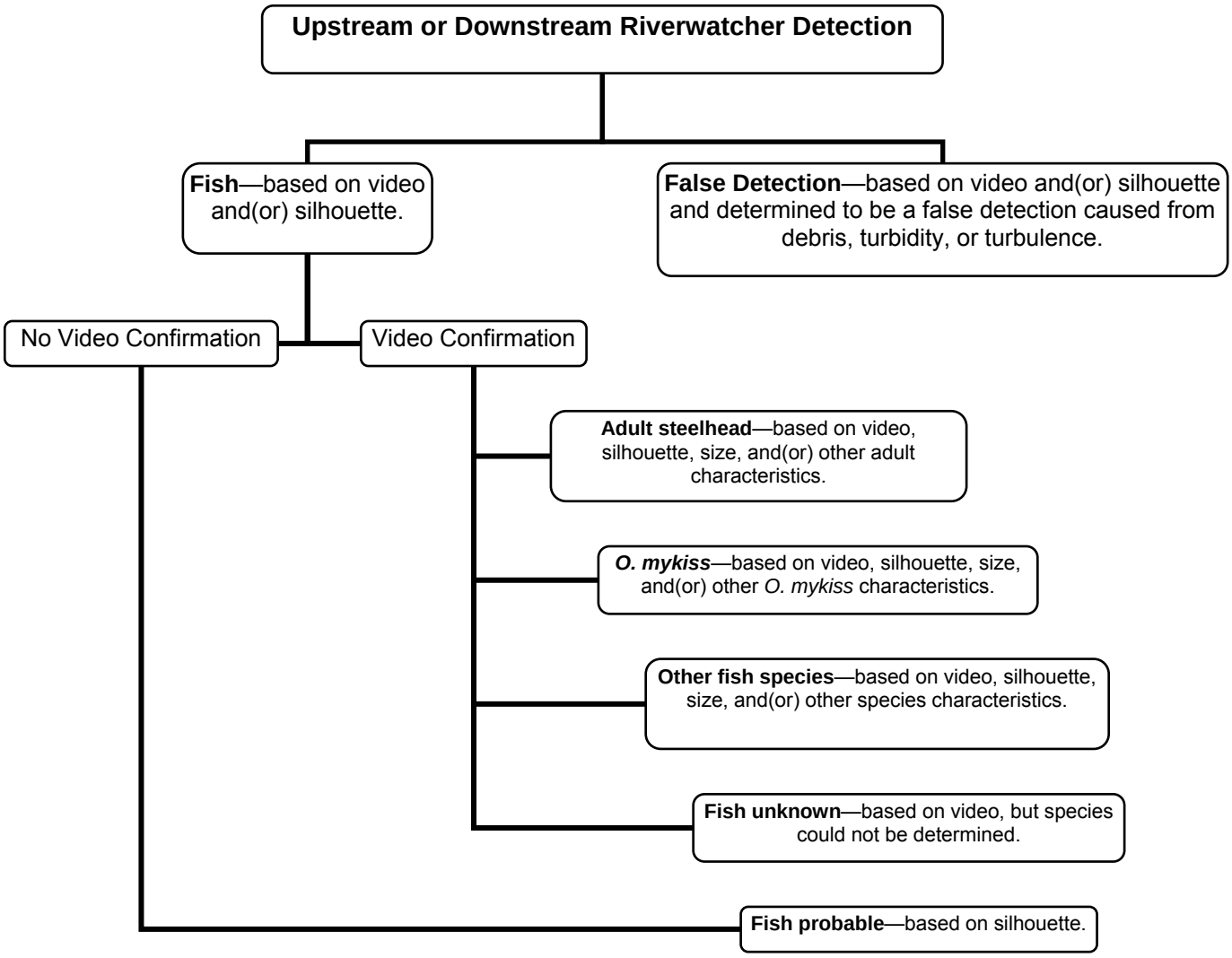
[a]OMY = *O. mykiss* and NFO = no fish observed.



Appendix 23. Total count of *O. mykiss* observed during fish attraction surveys during the fish passage season from January through June 2011 and discharge from the Robles Facility.



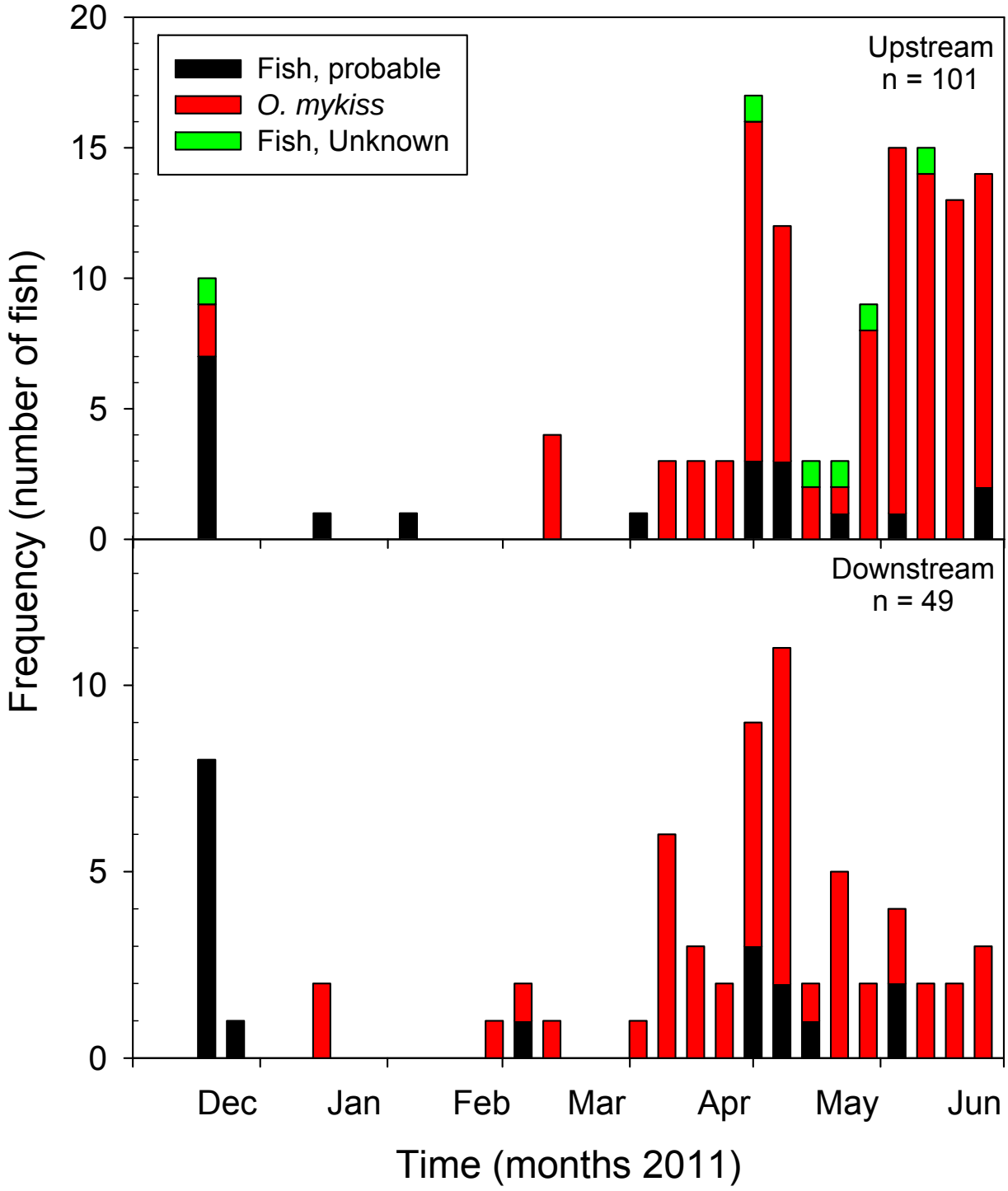
Appendix 24. Count of *O. mykiss* observed during fish attraction surveys upstream and downstream of the Robles Fish Facility during the fish passage season from January through June 2011.



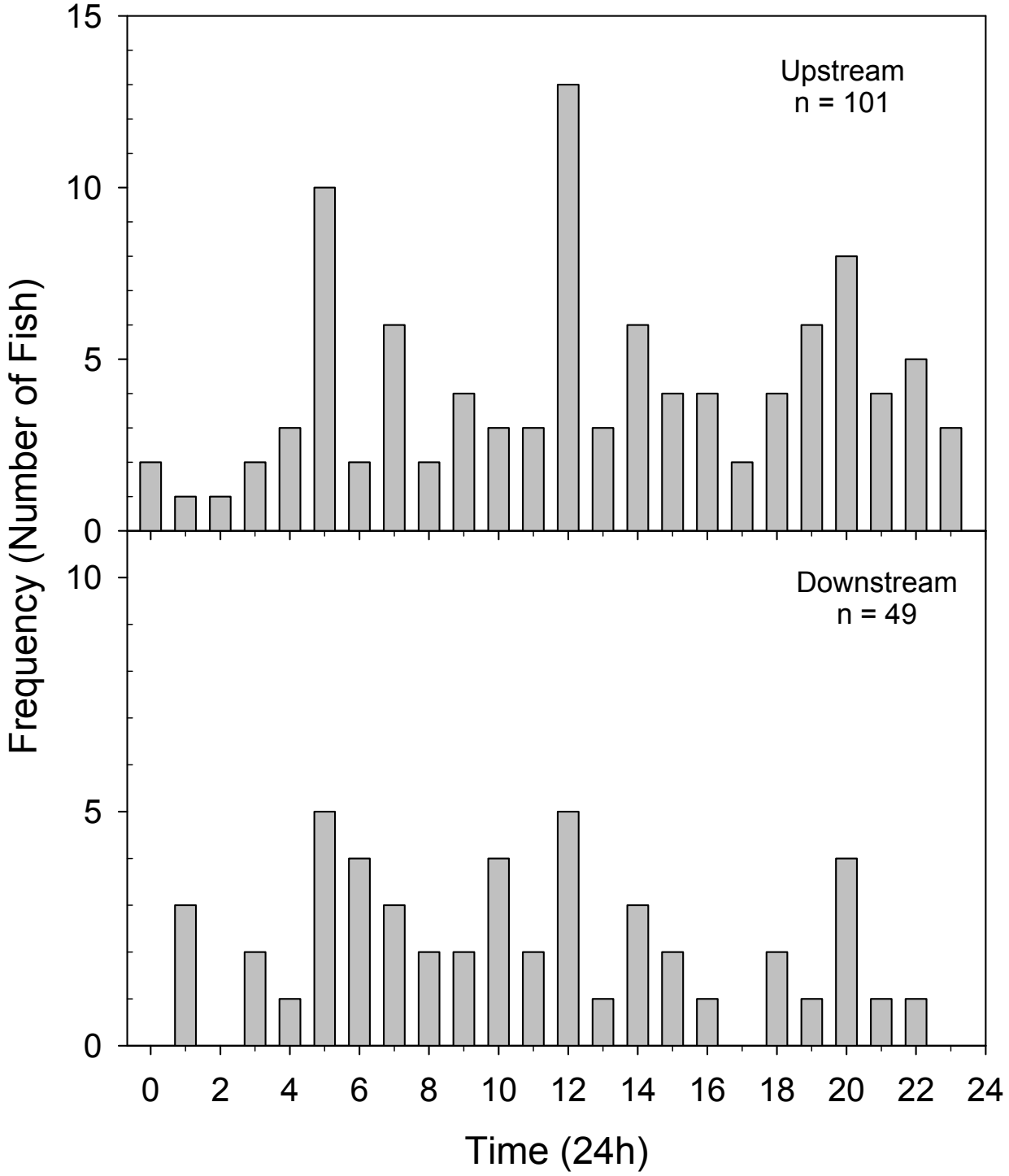
Appendix 25. Riverwatcher detection classification flow chart that outlines the pathways for upstream and downstream detections.

Appendix 26. Summary of Riverwatcher detections classified as fish probable and *O. mykiss* from January through June of 2011.

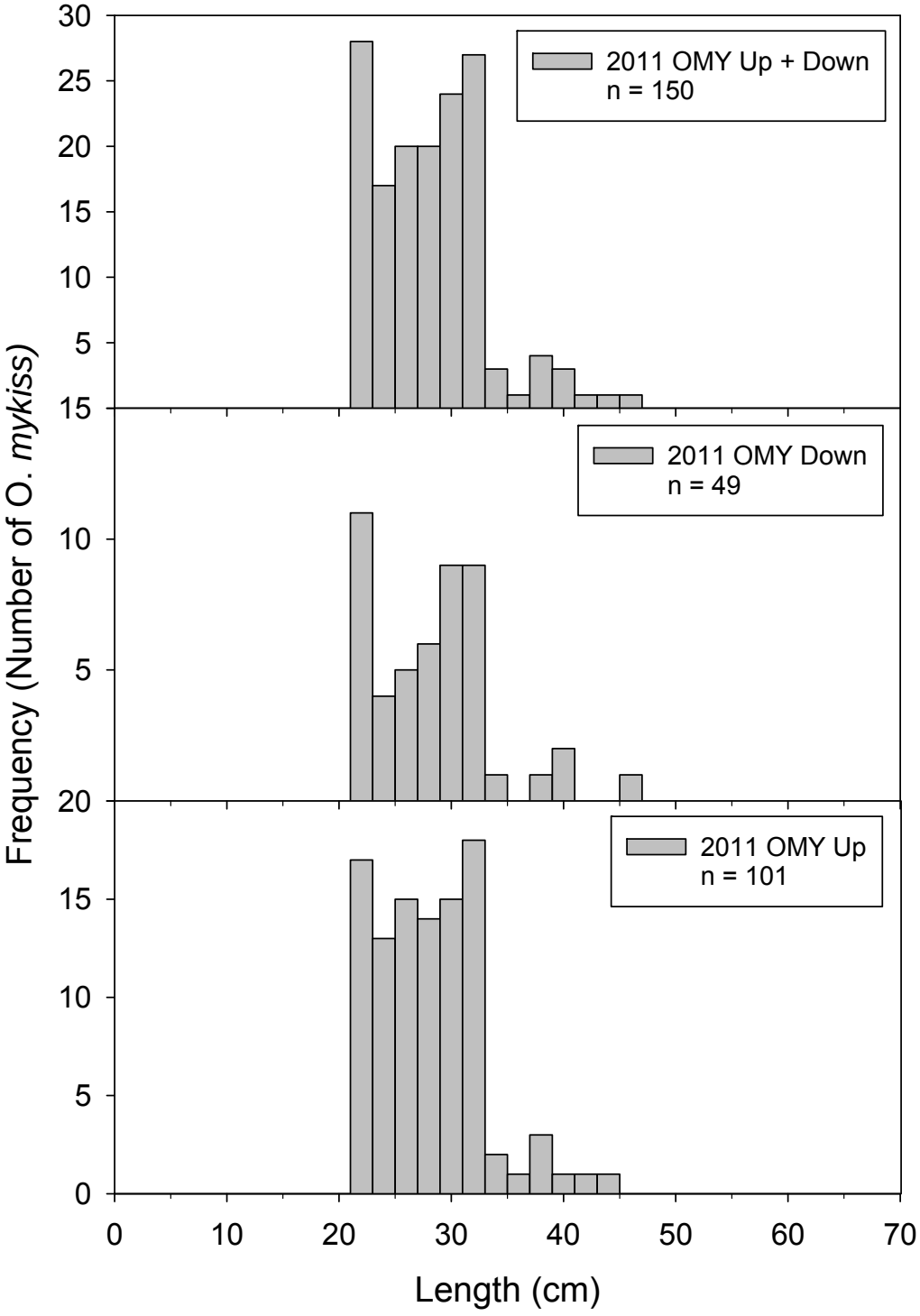
	Upstream	Downstream
O. *mykiss*	101	49
Fish, probable	20	18
False detections	308	631
Fish, unknown	6	
Total	435	698
Mean date-O. *mykiss*	25-May-11	5-May-11
Mean date-fish, unknown	30-Apr-11	
Mean date-fish, probable	18-Mar-11	2-Mar-11
Mean time-O. *mykiss* (24h)	13:14	10:58
Mean time-fish, unknown (24h)	9:03	
Mean time-fish, probable (24h)	12:23	13:54
Mean length-O. *mykiss* (cm)	27	27
Mean length- fish, unknown (cm)	26	
Mean length-fish, probable (cm)	32	30
Mean daily temperature-O. *mykiss* (°C)	18.0	16.7
Mean daily temperature-fish, unknown (°C)	16.9	
Mean daily temperature-fish, probable (°C)	15.2	14.6
Mean daily turbidity-O. *mykiss* (NTU)	3	2
Mean daily turbidity-fish, probable (NTU)	16	21
Mean daily turbidity-fish, unknown (NTU)		7
Mean daily turbidity-false detections (NTU)	171	150
Mean daily discharge-O. *mykiss* (cfs)	30	31
Mean daily discharge-fish, probable (cfs)	29	32
Mean daily discharge-fish, unknown (cfs)	32	
Mean daily discharge-false detections (cfs)	254	240



Appendix 27. Weekly Riverwatcher upstream and downstream detections classified as *O. mykiss*, fish probable, and fish unknown from January through June of 2011.



Appendix 28. Time (24h) of *O. mykiss,* fish probable, and fish unknown passage through the Riverwatcher in upstream and downstream directions from January through June of 2011.



Appendix 29. Length frequency distribution of *O. mykiss* detected passing through the Riverwatcher from January through June of 2011.

Appendix 30. Date, time, TL, direction, discharge, turbidity, and temperature at time of all upstream and downstream Riverwatcher detections that were determined to be fish.

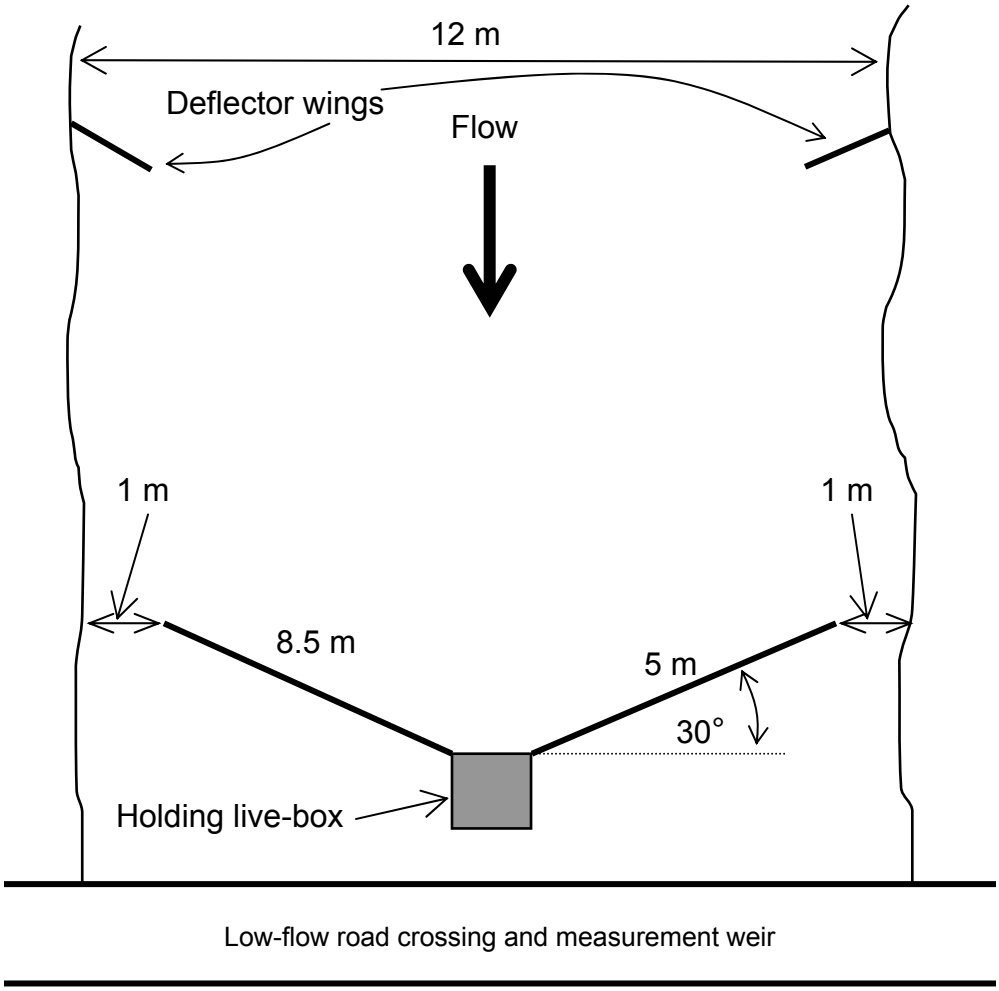
Date	Time (24h)	Fish Category	Total Length (cm)	Direction	Mean Daily Discharge (cfs)	Daily Turbidity (NTU)	Mean Daily Temperature (°C)
24-Dec-2010	11:44	Fish Probable	35	Down	22	48	12.1
24-Dec-2010	11:50	Fish Probable	35	Up	22	48	12.1
24-Dec-2010	12:29	O. mykiss	39	Up	22	48	12.1
24-Dec-2010	12:47	Fish Probable	46	Down	22	48	12.1
24-Dec-2010	13:10	Fish Probable	44	Up	22	48	12.1
24-Dec-2010	14:51	Fish Probable	35	Up	22	48	12.1
24-Dec-2010	15:09	Fish Probable	42	Down	22	48	12.1
24-Dec-2010	15:10	Fish Probable	41	Up	22	48	12.1
24-Dec-2010	15:20	Fish Probable	37	Down	22	48	12.1
24-Dec-2010	16:31	Fish Probable	37	Down	22	48	12.1
25-Dec-2010	8:55	Fish Probable	32	Up	22	29	12
25-Dec-2010	9:16	Fish Probable	42	Down	22	29	12
25-Dec-2010	9:20	O. mykiss	34	Up	22	29	12
25-Dec-2010	9:22	Fish Probable	34	Down	22	29	12
25-Dec-2010	9:23	Fish Probable	34	Up	22	29	12
25-Dec-2010	9:36	Fish Probable	30	Down	22	29	12
25-Dec-2010	9:38	Fish Probable	41	Up	22	29	12
25-Dec-2010	10:06	Fish Unknown	30	Up	22	29	12
26-Dec-2010	1:46	Fish Probable	28	Down	21	18	11.7
22-Jan-2011	9:33	Fish Probable	37	Up	19	2	11.9
22-Jan-2011	10:02	O. mykiss	23	Down	19	2	11.9
22-Jan-2011	13:59	O. mykiss	32	Down	19	2	11.9
6-Feb-2011	15:20	Fish Probable	35	Up	20	2	12.5
4-Mar-2011	21:02	O. mykiss	27	Down	50	2	12.5
11-Mar-2011	3:39	O. mykiss	20	Down	32	1	14.4
11-Mar-2011	14:29	Fish Probable	20	Down	32	1	14.4
14-Mar-2011	19:32	O. mykiss	35	Up	32	1	14.6
16-Mar-2011	5:57	O. mykiss	22	Up	33	1	15.6
16-Mar-2011	20:33	O. mykiss	42	Up	33	1	15.6
17-Mar-2011	1:27	O. mykiss	39	Down	32	3	14.6
18-Mar-2011	21:26	O. mykiss	32	Up	33	2	13.4
9-Apr-2011	8:51	Fish Probable	32	Up	31	4	12.1
9-Apr-2011	20:23	O. mykiss	25	Down	31	4	12.1
12-Apr-2011	2:05	O. mykiss	25	Up	32	2	14.3
12-Apr-2011	15:55	O. mykiss	22	Down	32	2	14.3
13-Apr-2011	20:40	O. mykiss	30	Down	31	2	14.3
14-Apr-2011	1:09	O. mykiss	25	Down	30	2	14
14-Apr-2011	1:34	O. mykiss	27	Up	30	2	14
14-Apr-2011	6:35	O. mykiss	30	Down	30	2	14
15-Apr-2011	8:23	O. mykiss	20	Down	31	2	14.7
15-Apr-2011	10:09	O. mykiss	23	Down	31	2	14.7

Date	Time (24h)	Fish Category	Total Length (cm)	Direction	Mean Daily Discharge (cfs)	Daily Turbidity (NTU)	Mean Daily Temperature (°C)
15-Apr-2011	19:40	O. mykiss	22	Up	31	2	14.7
19-Apr-2011	3:25	O. mykiss	23	Down	31	2	16.1
22-Apr-2011	10:56	O. mykiss	20	Up	30	4	15.4
22-Apr-2011	11:02	O. mykiss	30	Down	30	4	15.4
22-Apr-2011	11:08	O. mykiss	25	Up	30	4	15.4
23-Apr-2011	5:56	O. mykiss	30	Up	32	4	15.9
23-Apr-2011	9:54	O. mykiss	28	Down	32	4	15.9
24-Apr-2011	4:50	O. mykiss	28	Up	30	2	15.3
24-Apr-2011	12:18	O. mykiss	20	Down	30	2	15.3
27-Apr-2011	16:12	O. mykiss	37	Up	30	2	16.2
27-Apr-2011	16:15	O. mykiss	30	Down	30	2	16.2
28-Apr-2011	20:22	O. mykiss	23	Up	30	2	17.2
3-May-2011	6:04	O. mykiss	22	Down	32	3	17.2
4-May-2011	0:57	O. mykiss	32	Up	32	3	18
5-May-2011	5:46	O. mykiss	28	Up	32	3	18.3
5-May-2011	21:22	Fish Probable	22	Up	32	3	18.3
5-May-2011	21:24	Fish Probable	27	Up	32	3	18.3
5-May-2011	21:25	Fish Probable	23	Down	32	3	18.3
6-May-2011	4:36	O. mykiss	27	Down	32	3	18.4
6-May-2011	4:41	O. mykiss	30	Up	32	3	18.4
6-May-2011	6:41	Fish Unknown	30	Up	32	3	18.4
6-May-2011	7:29	O. mykiss	27	Up	32	3	18.4
6-May-2011	8:03	Fish Probable	28	Up	32	3	18.4
6-May-2011	8:43	O. mykiss	32	Up	32	3	18.4
6-May-2011	10:23	O. mykiss	37	Down	32	3	18.4
6-May-2011	11:57	O. mykiss	32	Up	32	3	18.4
6-May-2011	12:27	O. mykiss	25	Up	32	3	18.4
6-May-2011	19:17	O. mykiss	28	Up	32	3	18.4
6-May-2011	23:08	O. mykiss	22	Up	32	3	18.4
6-May-2011	23:08	Fish Probable	22	Down	32	3	18.4
7-May-2011	1:09	O. mykiss	25	Down	32	3	17
7-May-2011	5:18	Fish Probable	25	Down	32	3	17
7-May-2011	5:27	O. mykiss	28	Down	32	3	17
7-May-2011	5:34	O. mykiss	22	Up	32	3	17
7-May-2011	6:39	O. mykiss	41	Up	32	3	17
7-May-2011	10:39	O. mykiss	32	Up	32	3	17
7-May-2011	20:18	O. mykiss	39	Down	32	3	17
7-May-2011	20:45	O. mykiss	25	Up	32	3	17
8-May-2011	7:35	O. mykiss	34	Down	32	2	16.6
8-May-2011	7:53	O. mykiss	27	Down	32	2	16.6
8-May-2011	12:12	O. mykiss	32	Up	32	2	16.6
8-May-2011	12:26	O. mykiss	27	Up	32	2	16.6
8-May-2011	12:26	O. mykiss	20	Down	32	2	16.6
8-May-2011	12:33	O. mykiss	28	Down	32	2	16.6

Date	Time (24h)	Fish Category	Total Length (cm)	Direction	Mean Daily Discharge (cfs)	Daily Turbidity (NTU)	Mean Daily Temperature (°C)
8-May-2011	23:53	O. mykiss	32	Up	32	2	16.6
10-May-2011	6:02	Fish Probable	28	Up	32	2	16.5
10-May-2011	6:21	Fish Probable	27	Down	32	2	16.5
10-May-2011	17:23	O. mykiss	25	Up	32	2	16.5
10-May-2011	20:37	O. mykiss	22	Up	32	2	16.5
11-May-2011	5:12	O. mykiss	27	Down	31	2	16.9
11-May-2011	5:39	O. mykiss	30	Up	31	2	16.9
11-May-2011	6:22	O. mykiss	30	Down	31	2	16.9
11-May-2011	18:53	Fish Probable	30	Up	31	2	16.9
11-May-2011	20:01	O. mykiss	30	Down	31	2	16.9
12-May-2011	5:25	O. mykiss	23	Up	32	3	17.8
12-May-2011	5:36	Fish Probable	27	Up	32	3	17.8
12-May-2011	18:34	O. mykiss	28	Up	32	3	17.8
13-May-2011	18:47	O. mykiss	25	Up	32	3	18
13-May-2011	19:11	O. mykiss	22	Down	32	3	18
13-May-2011	19:54	Fish Probable	23	Down	32	3	18
13-May-2011	22:58	O. mykiss	20	Down	32	3	18
15-May-2011	12:34	O. mykiss	27	Up	31	3	16.7
20-May-2011	12:58	O. mykiss	44	Down	31	3	17.3
20-May-2011	21:32	Fish Unknown	24	Up	31	3	17.3
21-May-2011	18:48	Fish Probable	25	Down	31	3	18
21-May-2011	20:11	O. mykiss	28	Up	31	3	18
23-May-2011	11:48	O. mykiss	30	Down	31	2	17.4
23-May-2011	19:09	Fish Probable	30	Up	31	2	17.4
23-May-2011	21:58	O. mykiss	34	Up	31	2	17.4
24-May-2011	1:57	Fish Unknown	25	Up	32	2	17.5
24-May-2011	5:01	O. mykiss	23	Down	32	2	17.5
25-May-2011	7:00	O. mykiss	25	Down	32	2	18
25-May-2011	18:40	O. mykiss	20	Down	32	2	18
26-May-2011	5:12	O. mykiss	28	Down	32	2	18.3
31-May-2011	12:17	O. mykiss	30	Up	31	2	17.6
31-May-2011	12:38	O. mykiss	20	Up	31	2	17.6
1-Jun-2011	5:47	O. mykiss	25	Up	32	2	17.5
1-Jun-2011	19:32	O. mykiss	20	Up	32	2	17.5
2-Jun-2011	9:10	O. mykiss	27	Up	32	2	17.7
2-Jun-2011	10:02	O. mykiss	27	Down	32	2	17.7
2-Jun-2011	15:37	O. mykiss	25	Down	32	2	17.7
3-Jun-2011	3:43	Fish Unknown	20	Up	32	2	17.5
3-Jun-2011	22:43	O. mykiss	22	Up	32	2	17.5
4-Jun-2011	7:48	O. mykiss	23	Up	33	3	16.7
4-Jun-2011	21:04	O. mykiss	30	Up	33	3	16.7
5-Jun-2011	21:45	O. mykiss	25	Up	33	2	16.4
6-Jun-2011	14:36	O. mykiss	27	Up	33	2	16.9
7-Jun-2011	3:17	O. mykiss	23	Up	33	3	17.9

Date	Time (24h)	Fish Category	Total Length (cm)	Direction	Mean Daily Discharge (cfs)	Daily Turbidity (NTU)	Mean Daily Temperature (°C)
7-Jun-2011	7:40	Fish Probable	22	Up	33	3	17.9
7-Jun-2011	15:13	O. mykiss	25	Up	33	3	17.9
7-Jun-2011	20:01	O. mykiss	23	Up	33	3	17.9
7-Jun-2011	20:35	Fish Probable	20	Down	33	3	17.9
8-Jun-2011	6:22	O. mykiss	28	Down	32	2	17.2
8-Jun-2011	18:17	O. mykiss	28	Down	32	2	17.2
8-Jun-2011	22:44	O. mykiss	37	Up	32	2	17.2
9-Jun-2011	8:06	O. mykiss	25	Up	32	2	18.3
9-Jun-2011	12:29	O. mykiss	25	Up	32	2	18.3
9-Jun-2011	20:29	O. mykiss	22	Up	32	2	18.3
10-Jun-2011	0:07	O. mykiss	25	Up	32	3	17.6
10-Jun-2011	10:41	O. mykiss	22	Up	32	3	17.6
10-Jun-2011	17:07	O. mykiss	25	Up	32	3	17.6
11-Jun-2011	7:59	O. mykiss	28	Up	32	2	16.9
11-Jun-2011	13:58	O. mykiss	28	Up	32	2	16.9
11-Jun-2011	18:46	Fish Probable	23	Down	32	2	16.9
12-Jun-2011	12:48	O. mykiss	20	Up	31	2	16.9
12-Jun-2011	15:55	O. mykiss	25	Up	31	2	16.9
13-Jun-2011	10:21	Fish Unknown	23	Up	31	2	18.5
13-Jun-2011	12:25	O. mykiss	23	Up	31	2	18.5
13-Jun-2011	12:47	O. mykiss	28	Up	31	2	18.5
13-Jun-2011	14:12	O. mykiss	28	Down	31	2	18.5
13-Jun-2011	14:23	O. mykiss	28	Up	31	2	18.5
13-Jun-2011	18:34	O. mykiss	28	Up	31	2	18.5
14-Jun-2011	5:26	O. mykiss	22	Up	31	2	19.7
14-Jun-2011	16:29	O. mykiss	28	Up	31	2	19.7
15-Jun-2011	18:00	O. mykiss	23	Up	30	3	20.3
16-Jun-2011	5:14	O. mykiss	27	Up	30	2	18.4
16-Jun-2011	6:50	O. mykiss	20	Up	30	2	18.4
17-Jun-2011	3:15	O. mykiss	25	Up	32	2	17.9
18-Jun-2011	12:14	O. mykiss	20	Down	32	2	18
18-Jun-2011	12:33	O. mykiss	30	Up	32	2	18
18-Jun-2011	22:40	O. mykiss	23	Up	32	2	18
19-Jun-2011	9:16	O. mykiss	20	Up	31	2	18
19-Jun-2011	22:11	O. mykiss	27	Up	31	2	18
20-Jun-2011	16:07	O. mykiss	27	Up	30	2	19.6
20-Jun-2011	19:05	O. mykiss	27	Up	30	2	19.6
20-Jun-2011	20:30	O. mykiss	28	Up	30	2	19.6
21-Jun-2011	9:20	O. mykiss	28	Up	27	4	21.1
21-Jun-2011	9:34	O. mykiss	28	Down	27	4	21.1
21-Jun-2011	19:13	O. mykiss	23	Up	27	4	21.1
22-Jun-2011	14:20	O. mykiss	30	Down	27	3	21.4
22-Jun-2011	15:12	O. mykiss	28	Up	27	3	21.4
23-Jun-2011	12:51	O. mykiss	22	Up	27	3	21.5

Date	Time (24h)	Fish Category	Total Length (cm)	Direction	Mean Daily Discharge (cfs)	Daily Turbidity (NTU)	Mean Daily Temperature (°C)
23-Jun-2011	23:54	O. mykiss	37	Up	27	3	21.5
25-Jun-2011	7:56	O. mykiss	23	Up	26	4	21.2
25-Jun-2011	11:13	O. mykiss	27	Up	26	4	21.2
25-Jun-2011	14:34	O. mykiss	32	Up	26	4	21.2
26-Jun-2011	4:11	O. mykiss	32	Up	25	4	21.3
26-Jun-2011	5:29	O. mykiss	32	Up	25	4	21.3
26-Jun-2011	7:10	O. mykiss	27	Up	25	4	21.3
26-Jun-2011	14:35	O. mykiss	23	Up	25	4	21.3
26-Jun-2011	16:08	O. mykiss	27	Up	25	4	21.3
27-Jun-2011	13:31	O. mykiss	28	Up	25	4	21.7
28-Jun-2011	5:37	O. mykiss	27	Down	24	4	21.6
28-Jun-2011	13:22	O. mykiss	32	Up	24	4	21.6
29-Jun-2011	7:40	O. mykiss	22	Up	25	3	21.2
29-Jun-2011	8:06	O. mykiss	20	Down	25	3	21.2
29-Jun-2011	8:08	Fish Probable	25	Up	25	3	21.2
29-Jun-2011	14:06	O. mykiss	28	Down	25	3	21.2
29-Jun-2011	14:22	O. mykiss	23	Up	25	3	21.2
29-Jun-2011	14:43	Fish Probable	27	Up	25	3	21.2
29-Jun-2011	22:10	O. mykiss	23	Up	25	3	21.2
30-Jun-2011	14:49	O. mykiss	27	Up	26	3	20.1
30-Jun-2011	15:47	O. mykiss	30	Up	26	3	20.1



Appendix 31. Top view of downstream migrant smolt trap layout in the Ventura River below the Robles Fish Facility.

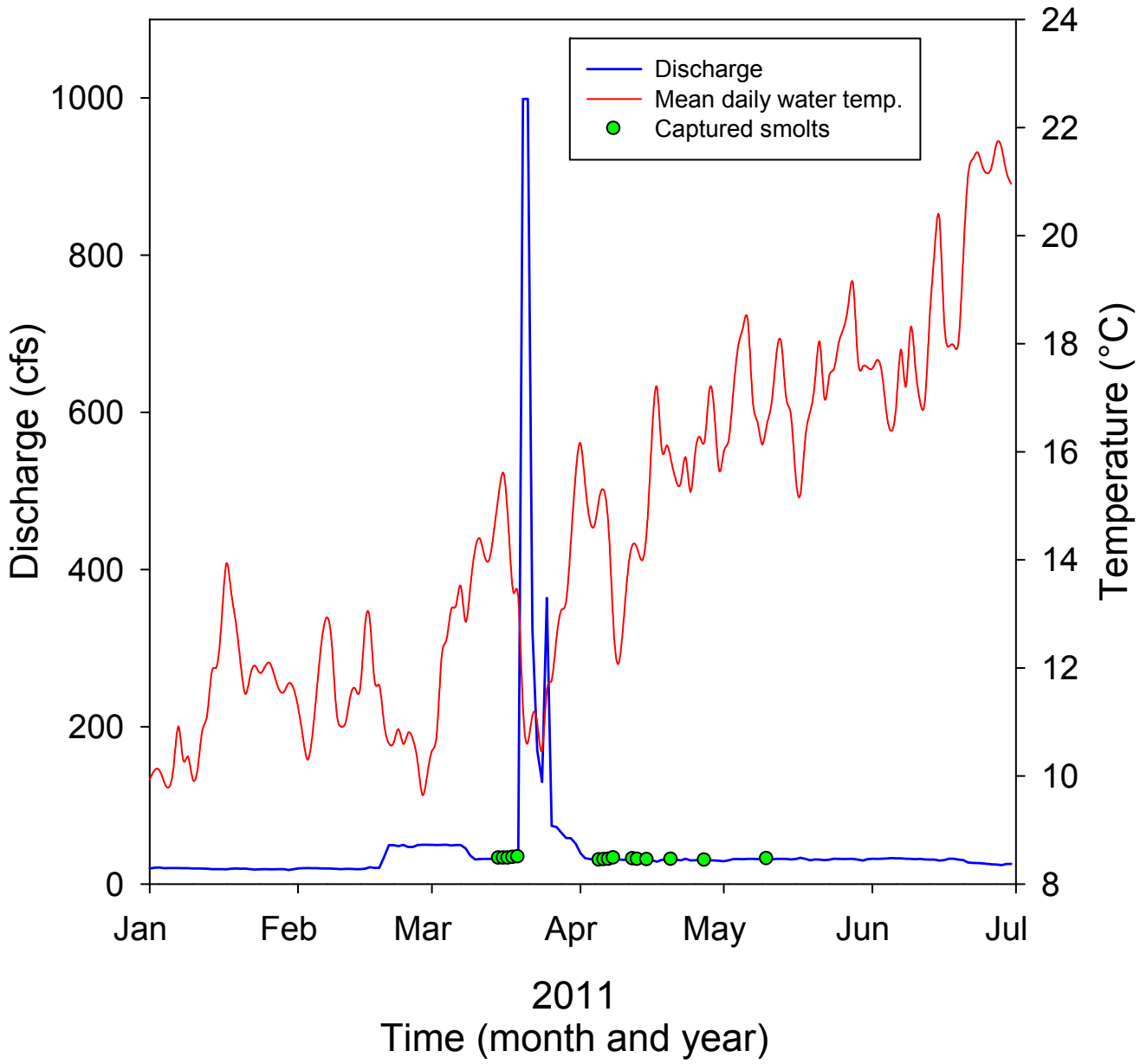
Appendix 32. Data for 25 smolts captured in the downstream weir trap during the spring of 2010.

Date	Time	Fork length (mm)	Weight (g)	Condition factor (K_{FL})[a]	Smolt stage[b]	Scale loss (%)	Mean daily water temp. (°C)	Mean daily facility inflow (cfs)	Mean daily weir discharge (cfs)	Cloud cover (%)	Moon phase (% full)	Tag type	Release site
03/15/2011	11:02	172	50	0.98	T2	1.5	15.3	42	33	60	71	Radio	Weir Pool 1
03/16/2011	9:25	225	114[b]	1.00	T3	3.2	15.6	41	33	40	81	Radio	Weir Pool 1
03/16/2011	9:47	209	94[b]	1.03	T3	3.9	15.6	41	33	40	81	Radio	Weir Pool 1
03/16/2011	15:29	188	60	0.90	T3	3.7	15.6	41	33	60	81	Radio	Weir Pool 1
03/17/2011	9:42	184	66	1.06	T3	2.8	14.6	40	32	100	89	Radio	Weir Pool 1
03/18/2011	9:23	162	41	0.97	T2	4.7	13.4	40	33	10	95	Radio	Weir Pool 1
03/19/2011	9:31	196	72	0.96	T2	2.0	13.3	44	34	100	100	Radio	Weir Pool 1
03/19/2011	9:31	199	81	1.03	T2	0.8	13.3	44	34	100	100	Radio	Weir Pool 1
04/05/2011	9:45	206	90[c]	1.03	FS	1.6	15.2	177	30	0	2	Radio	Weir Pool 1
04/06/2011	10:11	214	101	1.03	FS	3.5	15.3	166	31	75	5	Radio	Weir Pool 1
04/06/2011	10:22	224	115	1.02	FS	4.3	15.3	166	31	75	5	Radio	Weir Pool 1
04/07/2011	9:15	204	85	1.00	T3	3.2	14.4	157	31	100	10	Radio	Weir Pool 1
04/07/2011	16:09	208	84	0.93	FS	2.3	14.4	157	31	50	10	Radio	Weir Pool 1
04/07/2011	16:18	156	42	1.11	T2	2.3	14.4	157	31	50	10	None	Weir Pool 1
04/08/2011	9:51	248	156	1.02	FS	4.9	12.6	151	33	10	17	Radio	Weir Pool 1
04/08/2011	10:00	224	111	0.99	FS	2.8	12.6	151	33	10	17	Radio	Weir Pool 1
04/12/2011	10:00	190	66	0.96	T3	3.3	14.3	120	32	0	56	Radio	Weir Pool 1
04/13/2011	10:40	183	62	1.01	T3	4.2	14.2	116	31	100	66	PIT	Camino Ciello
04/13/2011	10:49	182	67	1.11	FS	2.3	14.2	116	31	100	66	PIT	Camino Ciello
04/13/2011	10:57	210	87	0.94	FS	3.0	14.2	116	31	100	66	PIT	Camino Ciello
04/15/2011	9:45	217	99	0.97	FS	3.8	14.7	107	31	NA	86	PIT	Camino Ciello
04/20/2011	10:26	213	108	1.12	T2	9.3	15.8	98	31	100	95	PIT	Camino Ciello
04/20/2011	10:33	244	142	0.98	FS	4.3	15.8	98	31	100	95	PIT	Camino Ciello
04/27/2011	9:18	211	100	1.06	FS	2.7	16.2	77	30	0	32	PIT	Camino Ciello
05/10/2011	9:34	202	68	0.83	FS	4.7	16.5	63	32	0	50	PIT	Camino Ciello
Means		203	85	1.0		3.4	14.7	101	32	58	55		

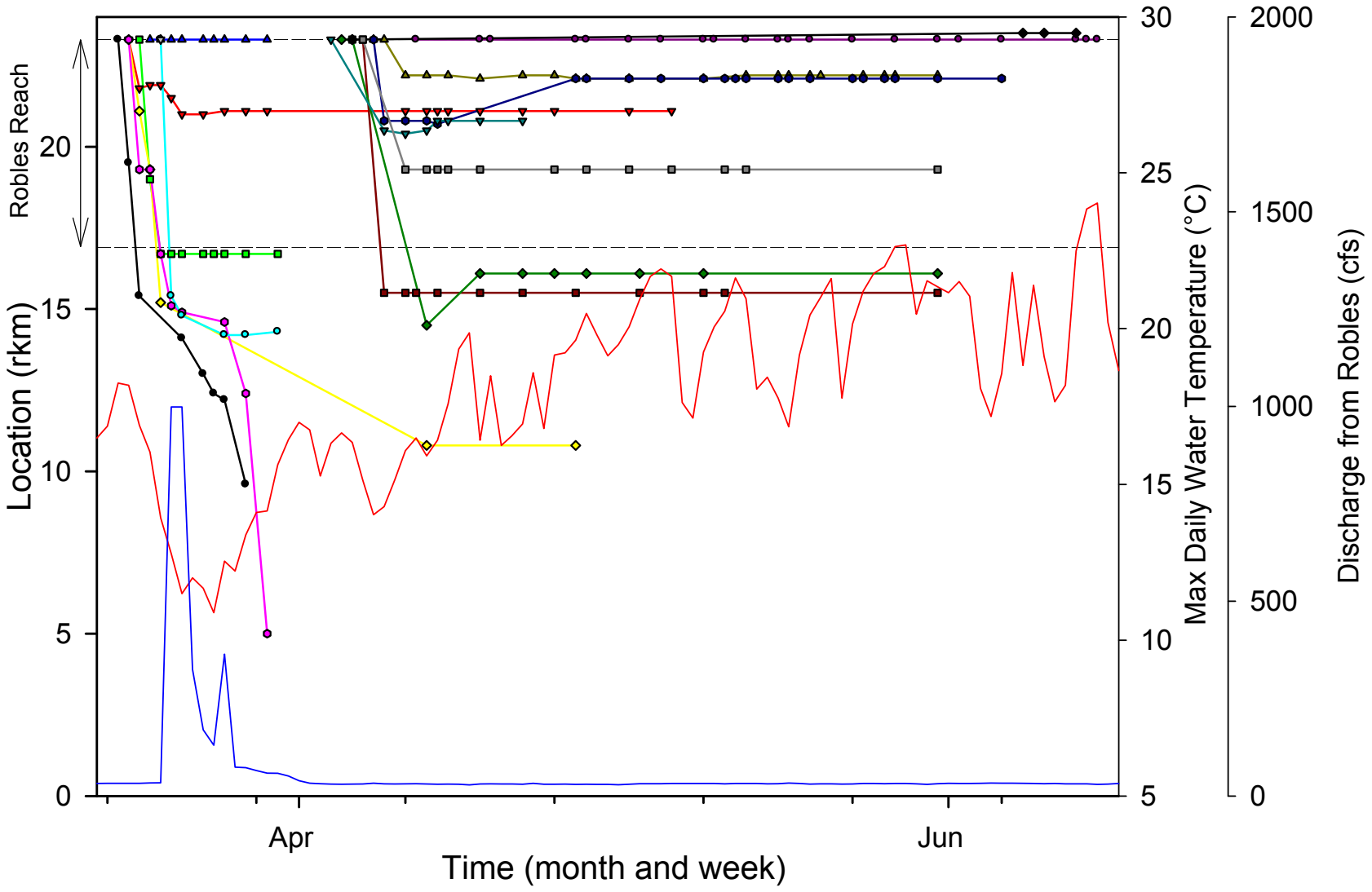
[a] K_{FL} = [weight (g) x fork length (mm)^3] x 100,000

[b] Smolt stage includes: parr, T1, T2, T3, and full smolt (FS).

[c] Scale error so weight was determined from a weight to length regression.



Appendix 33. Mean daily water temperature, mean daily discharge, and time of capture for smolts in the weir trap downstream of the Robles Fish Facility in 2011.



Appendix 34. Location and date of radio-tagged *O. mykiss* smolts released downstream of the Robles Fish Facility in March and April of 2011. Red line is maximum daily water temperature downstream of the Robles Fish Facility and the blue line is discharge from Robles. The Robles Reach is indicated by the two horizontal dashed lines.

Appendix 35. Annual flow summary at the Robles Fish Facility for water year 2010-2011.

Annual Flow Summary - Robles Fish Passage Facility
Water Year 2010 - 2011

	* (1) Source Stream Daily Flows Matilija Ck D/S Dam (cfsd)	* (2) Source Stream Daily Flows North Fork Matilija Ck.* (cfsd)	(1)+(2) Sum of Creek Flows (cfsd)		** (3) Robles Facility Daily Flows Fishway Ladder (cfsd)	(4) Robles Facility Daily Flows VRNMO Weir (cfsd)	(5) Diversion Canal (cfsd)	*** (4)+(5) Total Inflow (cfsd)
Jul-10	0	0	0		46	46	0	46
Aug-10	0	0	0		3	3	0	3
Sep-10	0	0	0		0	0	0	0
Oct-10	0	0	0		0	0	0	0
Nov-10	0	0	0		0	0	0	0
Dec-10	0	0	0		296	1014	2252	3265
Jan-11	0	0	0		605	605	878	1484
Feb-11	0	0	0		832	832	360	1193
Mar-11	0	0	0		1354	4121	4116.48	8237
Apr-11	0	0	0		931	931	2802	3733
May-11	0	0	0		976.33	976.32	781	1757
Jun-11	0	0	0		893.47	893.47	75	969
Total	0	0	0		5936	9421	11265	20687

* Preliminary flow information provided by the Ventura County Watershed Protection District. North Fork Data is estimated. To be confirmed by VCWPD. Refer to the Operations section of the Report to determine operational reasons for flow variances.
** Flow in the Fish Passage was too low to be measured by the Accusonics Flowmeter. Flow needs to be greater than 15 CFS for reasonable flow measurements.
*** This does not account for any flow being expelled from the spillway gates

Ventura River Flow Assessment
Water Year 2010 - 2011

Jul-10	(1) Source Stream Daily Flows: Matilija Ck D/S Dam (cfsd)	(2) Source Stream Daily Flows: North Fork Matilija Ck. (cfsd)	(1)+(2) Source Stream Daily Flows: Sum of Creek Flows (cfsd)	Forebay Avg. Depth (ft)	(3) Robles Facility Daily Flows: Fishway Ladder (cfsd)	(4) Robles Facility Daily Flows: VRNMO Weir (cfsd)	(5) Robles Facility Daily Flows: Diversion Canal (cfsd)	(4)+(5) Robles Facility Daily Flows: Total Inflow (cfsd)	(5) X 1.98 Robles Diversion (AF)	Field Measurement: Matilija Creek (cfsd)	Field Measurement: VRNMO (cfsd)
1			0	1.4	3	3	0	3	0		
2			0	1.3	2	2	0	2	0		
3			0	1.4	3	3	0	3	0		
4			0	1.4	3	3	0	3	0		
5			0	1.4	3	3	0	3	0		
6			0	1.5	3	3	0	3	0		
7			0	1.5	3	3	0	3	0		
8			0	1.4	3	3	0	3	0		
9			0	1.4	3	3	0	3	0		
10			0	1.4	3	3	0	3	0		
11			0	1.4	3	3	0	3	0		
12			0	1.4	3	3	0	3	0		
13			0	1.3	2	2	0	2	0		
14			0	1.3	2	2	0	2	0		
15			0	1.2	1	1	0	1	0		
16			0	1.1	1	1	0	1	0		
17			0	1.1	1	1	0	1	0		
18			0	1.1	1	1	0	1	0		
19			0	1.1	1	1	0	1	0		
20			0	1.1	1	1	0	1	0		
21			0	1.1	1	1	0	1	0		
22			0	1.1	1	1	0	1	0		
23			0	1.1	1	1	0	1	0		
24			0	1.0	0	0	0	0	0		
25			0	1.1	0	0	0	0	0		
26			0	1.0	0	0	0	0	0		
27			0	0.9	0	0	0	0	0		
28			0	0.9	0	0	0	0	0		
29			0	0.9	0	0	0	0	0		
30			0	1.0	1	1	0	1	0		
31			0	1.0	1	1	0	1	0		
Totals	0	0	0		46	46	0	46	0		

Ventura River Flow Assessment
Water Year 2010 - 2011

Aug-10	(1) Source Stream Daily Flows: Matilija Ck D/S Dam (cfsd)	(2) Source Stream Daily Flows: North Fork Matilija Ck. (cfsd)	(1)+(2) Source Stream Daily Flows: Sum of Creek Flows (cfsd)	Forebay Avg. Depth (ft)	(3) Robles Facility Daily Flows: Fishway Ladder (cfsd)	(4) Robles Facility Daily Flows: VRNMO Weir (cfsd)	(5) Robles Facility Daily Flows: Diversion Canal (cfsd)	(4)+(5) Robles Facility Daily Flows: Total Inflow (cfsd)	(5) X 1.98 Robles Diversion (AF)	Field Measurement: Matilija Creek (cfsd)	Field Measurement: VRNMO (cfsd)
1			0	1.1	1	1	0	1	0		
2			0	1.0	0	0	0	0	0		
3			0	0.8	0	0	0	0	0		
4			0	0.6	0	0	0	0	0		
5			0	0.8	0	0	0	0	0		
6			0	0.8	0	0	0	0	0		
7			0	0.7	0	0	0	0	0		
8			0	0.8	0	0	0	0	0		
9			0	0.7	0	0	0	0	0		
10			0	0.6	0	0	0	0	0		
11			0	0.6	0	0	0	0	0		
12			0	0.6	0	0	0	0	0		
13			0	0.6	0	0	0	0	0		
14			0	0.6	0	0	0	0	0		
15			0	0.7	0	0	0	0	0		
16			0	0.6	0	0	0	0	0		
17			0	0.5	0	0	0	0	0		
18			0	0.5	0	0	0	0	0		
19			0	0.6	0	0	0	0	0		
20			0	0.6	0	0	0	0	0		
21			0	0.5	0	0	0	0	0		
22			0	0.6	0	0	0	0	0		
23			0	0.5	0	0	0	0	0		
24			0	0.4	0	0	0	0	0		
25			0	0.3	0	0	0	0	0		
26			0	0.2	0	0	0	0	0		
27			0	0.2	0	0	0	0	0		
28			0	0.0	0	0	0	0	0		
29			0	0.0	0	0	0	0	0		
30			0	0.0	0	0	0	0	0		
31			0	0.0	0	0	0	0	0		
Totals	0	0	0		3	3	0	3	0		

Ventura River Flow Assessment
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Sep-10	(1) Source Stream Daily Flows: Matilija Ck D/S Dam (cfsd)	(2) Source Stream Daily Flows: North Fork Matilija Ck. (cfsd)	(1)+(2) Source Stream Daily Flows: Sum of Creek Flows (cfsd)	Forebay Avg. Depth (ft)	(3) Robles Facility Daily Flows: Fishway Ladder (cfsd)	(4) Robles Facility Daily Flows: VRNMO Weir (cfsd)	(5) Robles Facility Daily Flows: Diversion Canal (cfsd)	(4)+(5) Robles Facility Daily Flows: Total Inflow (cfsd)	(5) X 1.98 Robles Diversion (AF)	Field Measurement: Matilija Creek (cfsd)	Field Measurement: VRNMO (cfsd)
1			0	0.0	0	0	0	0	0		
2			0	0.0	0	0	0	0	0		
3			0	0.0	0	0	0	0	0		
4			0	0.0	0	0	0	0	0		
5			0	0.0	0	0	0	0	0		
6			0	0.0	0	0	0	0	0		
7			0	0.0	0	0	0	0	0		
8			0	0.0	0	0	0	0	0		
9			0	0.0	0	0	0	0	0		
10			0	0.0	0	0	0	0	0		
11			0	0.0	0	0	0	0	0		
12			0	0.0	0	0	0	0	0		
13			0	0.0	0	0	0	0	0		
14			0	0.0	0	0	0	0	0		
15			0	0.0	0	0	0	0	0		
16			0	0.0	0	0	0	0	0		
17			0	0.0	0	0	0	0	0		
18			0	0.0	0	0	0	0	0		
19			0	0.0	0	0	0	0	0		
20			0	0.0	0	0	0	0	0		
21			0	0.0	0	0	0	0	0		
22			0	0.0	0	0	0	0	0		
23			0	0.0	0	0	0	0	0		
24			0	0.0	0	0	0	0	0		
25			0	0.0	0	0	0	0	0		
26			0	0.0	0	0	0	0	0		
27			0	0.0	0	0	0	0	0		
28			0	0.0	0	0	0	0	0		
29			0	0.0	0	0	0	0	0		
30			0	0.0	0	0	0	0	0		
Totals	0	0	0		0	0	0	0	0		

* Headworks computer down. Bubbler data indicated no flow from late Aug to early Oct

Ventura River Flow Assessment
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Oct-10	(1) Source Stream Daily Flows: Matilija Ck D/S Dam (cfsd)	(2) Source Stream Daily Flows: North Fork Matilija Ck. (cfsd)	(1)+(2) Source Stream Daily Flows: Sum of Creek Flows (cfsd)		Forebay Avg. Depth (ft)	(3) Robles Facility Daily Flows: Fishway Ladder (cfsd)	(4) Robles Facility Daily Flows: VRNMO Weir (cfsd)	(5) Robles Facility Daily Flows: Diversion Canal (cfsd)	(4)+(5) Robles Facility Daily Flows: Total Inflow (cfsd)		(5) X 1.98 Robles Diversion (AF)		Field Measurement: Matilija Creek (cfsd)	Field Measurement: VRNMO (cfsd)
1			0		0.0	0	0	0	0		0			
2			0		0.0	0	0	0	0		0			
3			0		0.0	0	0	0	0		0			
4			0		0.0	0	0	0	0		0			
5			0		0.0	0	0	0	0		0			
6			0		0.1	0	0	0	0		0			
7			0		0.2	0	0	0	0		0			
8			0		0.2	0	0	0	0		0			
9			0		0.2	0	0	0	0		0			
10			0		0.1	0	0	0	0		0			
11			0		0.1	0	0	0	0		0			
12			0		0.1	0	0	0	0		0			
13			0		0.1	0	0	0	0		0			
14			0		0.1	0	0	0	0		0			
15			0		0.1	0	0	0	0		0			
16			0		0.1	0	0	0	0		0			
17			0		0.1	0	0	0	0		0			
18			0		0.1	0	0	0	0		0			
19			0		0.1	0	0	0	0		0			
20			0		0.2	0	0	0	0		0			
21			0		0.2	0	0	0	0		0			
22			0		0.2	0	0	0	0		0			
23			0		0.2	0	0	0	0		0			
24			0		0.1	0	0	0	0		0			
25			0		0.1	0	0	0	0		0			
26			0		0.1	0	0	0	0		0			
27			0		0.1	0	0	0	0		0			
28			0		0.1	0	0	0	0		0			
29			0		0.1	0	0	0	0		0			
30			0		0.1	0	0	0	0		0			
31			0		0.1	0	0	0	0		0			
Totals	0	0	0			0	0	0	0		0			

Ventura River Flow Assessment
Water Year 2010 - 2011

Nov-10	(1) Source Stream Daily Flows: Matilija Ck D/S Dam (cfsd)	(2) Source Stream Daily Flows: North Fork Matilija Ck. (cfsd)	(1)+(2) Source Stream Daily Flows: Sum of Creek Flows (cfsd)	Forebay Avg. Depth (ft)	(3) Robles Facility Daily Flows: Fishway Ladder (cfsd)	(4) Robles Facility Daily Flows: VRNMO Weir (cfsd)	(5) Robles Facility Daily Flows: Diversion Canal (cfsd)	(4)+(5) Robles Facility Daily Flows: Total Inflow (cfsd)	(5) X 1.98 Robles Diversion (AF)	Field Measurement: Matilija Creek (cfsd)	Field Measurement: VRNMO (cfsd)
1			0	0.1	0	0	0	0	0		
2			0	0.1	0	0	0	0	0		
3			0	0.1	0	0	0	0	0		
4			0	0.0	0	0	0	0	0		
5			0	0.0	0	0	0	0	0		
6			0	0.0	0	0	0	0	0		
7			0	0.0	0	0	0	0	0		
8			0	0.1	0	0	0	0	0		
9			0	0.0	0	0	0	0	0		
10			0	0.0	0	0	0	0	0		
11			0	0.0	0	0	0	0	0		
12			0	0.0	0	0	0	0	0		
13			0	0.0	0	0	0	0	0		
14			0	0.0	0	0	0	0	0		
15			0	0.0	0	0	0	0	0		
16			0	0.0	0	0	0	0	0		
17			0	0.0	0	0	0	0	0		
18			0	0.0	0	0	0	0	0		
19			0	0.3	0	0	0	0	0		
20			0	1.2	0	0	0	0	0		
21			0	1.2	0	0	0	0	0		
22			0	1.0	0	0	0	0	0		
23			0	0.9	0	0	0	0	0		
24			0	0.9	0	0	0	0	0		
25			0	0.9	0	0	0	0	0		
26			0	0.9	0	0	0	0	0		
27			0	0.9	0	0	0	0	0		
28			0	0.9	0	0	0	0	0		
29			0	0.8	0	0	0	0	0		
30			0	0.8	0	0	0	0	0		
Totals	0	0	0		0	0	0	0	0		

Ventura River Flow Assessment
Water Year 2010 - 2011

Dec-10	(1) Source Stream Daily Flows: Matilija Ck D/S Dam (cfsd)	(2) Source Stream Daily Flows: North Fork Matilija Ck. (cfsd)	(1)+(2) Source Stream Daily Flows: Sum of Creek Flows (cfsd)	Forebay Avg. Depth (ft)	(3) Robles Facility Daily Flows: Fishway Ladder (cfsd)	(4) Robles Facility Daily Flows: VRNMO Weir (cfsd)	(5) Robles Facility Daily Flows: Diversion Canal (cfsd)	(4)+(5) Robles Facility Daily Flows: Total Inflow (cfsd)	(5) X 1.98 Robles Diversion (AF)	Field Measurement: Matilija Creek (cfsd)	Field Measurement: VRNMO (cfsd)
1			0	0.9	0	0	0	0	0		
2			0	0.9	0	0	0	0	0		
3			0	0.9	0	0	0	0	0		
4			0	0.9	0	0	0	0	0		
5			0	0.9	0	0	0	0	0		
6			0	1.0	0	0	0	0	0		
7			0	0.9	0	0	0	0	0		
8			0	0.9	0	0	0	0	0		
9			0	0.9	0	0	0	0	0		
10			0	0.9	0	0	0	0	0		
11			0	0.9	0	0	0	0	0		
12			0	0.9	0	0	0	0	0		
13			0	0.9	0	0	0	0	0		
14			0	0.9	0	0	0	0	0		
15			0	0.9	0	0	0	0	0		
16			0	0.9	0	0	0	0	0		
17			0	1.5	0	0	0	0	0		
18			0	2.5	13	13	7	20	14		
19			0	6.4	35	35	311	346	616		
20			0	7.1	20	20	313	333	620		
21			0	5.1	19	19	172	191	341		
22			0	7.0	20	655	326	982	646		
23			0	7.4	21	104	335	439	664		
24			0	5.7	22	22	189	212	375		
25			0	5.1	22	22	132	154	261		
26			0	5.0	21	21	117	138	231		
27			0	4.7	20	20	87	107	171		
28			0	4.5	20	20	73	93	144		
29			0	4.7	21	21	73	94	144		
30			0	4.7	20	20	62	82	122		
31			0	4.6	20	20	55	75	109		
Totals	0	0	0		296	1014	2252	3265	4459		

Flows picked up early evening

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Jan-11	(1) Source Stream Daily Flows: Matilija Ck D/S Dam (cfsd)	(2) Source Stream Daily Flows: North Fork Matilija Ck. (cfsd)	(1)+(2) Source Stream Daily Flows: Sum of Creek Flows (cfsd)		Forebay Avg. Depth (ft)	(3) Robles Facility Daily Flows: Fishway Ladder (cfsd)	(4) Robles Facility Daily Flows: VRNMO Weir (cfsd)	(5) Robles Facility Daily Flows: Diversion Canal (cfsd)	(4)+(5) Robles Facility Daily Flows: Total Inflow (cfsd)		(5) X 1.98 Robles Diversion (AF)		Field Measurement: Matilija Creek (cfsd)	Field Measurement: VRNMO (cfsd)
1			0		4.6	20	20	49	69		96			
2			0		4.8	21	21	48	69		95			
3			0		5.0	21	21	74	95		147			
4			0		4.9	20	20	63	83		125			
5			0		4.8	20	20	56	76		111			
6			0		4.7	20	20	52	72		102			
7			0		4.7	20	20	47	67		93			
8			0		4.6	20	20	45	66		90			
9			0		4.6	20	20	42	62		84			
10			0		4.6	20	20	39	59		77			
11			0		4.5	20	20	36	56		71			
12			0		4.4	20	20	30	50		60			
13			0		4.3	19	19	26	45		51			
14			0		4.4	19	19	25	45		50			
15			0		4.3	19	19	23	42		46			
16			0		4.4	19	19	22	41		44			
17			0		4.4	19	19	20	39		41			
18			0		4.5	20	20	18	38		36			
19			0		4.5	20	20	17	37		34			
20			0		4.4	20	20	16	35		32			
21			0		4.4	20	20	15	35		30			
22			0		4.4	19	19	15	34		29			
23			0		4.3	18	18	14	33		28			
24			0		4.2	19	19	13	32		25			
25			0		4.1	19	19	12	31		24			
26			0		4.0	19	19	11	30		22			
27			0		4.0	19	19	10	29		21			
28			0		3.9	19	19	10	29		19			
29			0		3.9	19	19	9	28		18			
30			0		4.0	18	18	10	28		21			
31			0		4.2	19	19	9	28		17			
Totals	0	0	0			605	605	878	1484		1739			

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Feb-11	(1) Source Stream Daily Flows: Matilija Ck D/S Dam (cfsd)	(2) Source Stream Daily Flows: North Fork Matilija Ck. (cfsd)	(1)+(2) Source Stream Daily Flows: Sum of Creek Flows (cfsd)	Forebay Avg. Depth (ft)	(3) Robles Facility Daily Flows: Fishway Ladder (cfsd)	(4) Robles Facility Daily Flows: VRNMO Weir (cfsd)	(5) Robles Facility Daily Flows: Diversion Canal (cfsd)	(4)+(5) Robles Facility Daily Flows: Total Inflow (cfsd)	(5) X 1.98 Robles Diversion (AF)	Field Measurement: Matilija Creek (cfsd)	Field Measurement: VRNMO (cfsd)
1			0	4.3	20	20	8	27	15		
2			0	4.2	20	20	6	26	13		
3			0	4.2	20	20	6	26	12		
4			0	4.2	20	20	6	26	11		
5			0	4.1	20	20	6	26	11		
6			0	4.1	20	20	5	25	10		
7			0	4.0	20	20	4	24	9		
8			0	4.0	20	20	5	24	9		
9			0	4.0	19	19	4	23	8		
10			0	4.0	19	19	4	23	8		
11			0	4.0	19	19	4	23	8		
12			0	3.9	19	19	3	22	6		
13			0	3.9	19	19	3	22	6		
14			0	3.9	19	19	3	22	6		
15			0	4.0	19	19	3	22	6		
16			0	4.2	21	21	16	38	32		
17			0	4.4	20	20	28	48	55		
18			0	4.5	21	21	30	51	60		
19			0	6.1	34	34	23	57	45		
20			0	8.0	49	49	22	71	44		
21			0	8.0	49	49	11	60	22		
22			0	7.9	48	48	3	51	6		
23			0	8.1	50	50	0	50	0		
24			0	7.6	47	47	0	47	0		
25			0	7.7	47	47	12	59	23		
26			0	7.9	50	50	84	133	166		
27			0	8.0	50	50	38	88	74		
28			0	8.0	50	50	25	75	49		
Totals	0	0	0		832	832	360	1193	714		

Ventura River Flow Assessment
Water Year 2010 - 2011

Mar-11	(1) Source Stream Daily Flows: Matilija Ck D/S Dam (cfsd)	(2) Source Stream Daily Flows: North Fork Matilija Ck. (cfsd)	(1)+(2) Source Stream Daily Flows: Sum of Creek Flows (cfsd)	Forebay Avg. Depth (ft)	(3) Robles Facility Daily Flows: Fishway Ladder (cfsd)	(4) Robles Facility Daily Flows: VRNMO Weir (cfsd)	(5) Robles Facility Daily Flows: Diversion Canal (cfsd)	(4)+(5) Robles Facility Daily Flows: Total Inflow (cfsd)	(5) X 1.98 Robles Diversion (AF)	Field Measurement: Matilija Creek (cfsd)	Field Measurement: VRNMO (cfsd)
1			0	8.0	50	50	19	69	39		
2			0	8.0	50	50	18	68	36		
3			0	8.0	50	50	22	72	43		
4			0	8.0	50	50	18	68	35		
5			0	8.0	49	49	13	62	26		
6			0	8.1	50	50	9	59	18		
7			0	8.1	50	50	8	58	16		
8			0	7.5	45	45	12	57	23		
9			0	6.0	36	36	17	54	34		
10			0	5.0	31	31	18	49	35		
11			0	5.0	32	32	16	48	32		
12			0	5.0	32	32	15	47	29		
13			0	5.0	32	32	13	45	26		
14			0	5.0	32	32	11	44	22		
15			0	5.0	33	33	10	42	19		
16			0	5.0	33	33	9	41	18		
17			0	5.0	32	32	7	40	14		
18			0	5.1	33	33	7	40	13		
19			0	5.2	34	34	10	44	20		
20			0	5.2	50	999	108	1107	214		
21			0	8.6	50	999	382	1381	757		
22			0	8.3	50	325	399	724	789		
23			0	7.5	50	170	314	484	622		
24			0	7.6	50	130	286	416	566		
25			0	7.2	50	364	419	783	829		
26			0	7.7	50	74	444	518	879		
27			0	7.3	50	72	363	436	720		
28			0	6.9	50	65	345	410	683		
29			0	6.5	50	59	298	357	591		
30			0	6.1	50	58	262	320	518		
31			0	6.6	50	51	244	295	483		
Totals	0	0	0		1354	4121	4116	8237	8151		

Flow Exceeds 999 cfs

Ventura River Flow Assessment
Water Year 2010 - 2011

Apr-11	(1) Source Stream Daily Flows: Matilija Ck D/S Dam (cfsd)	(2) Source Stream Daily Flows: North Fork Matilija Ck. (cfsd)	(1)+(2) Source Stream Daily Flows: Sum of Creek Flows (cfsd)	Forebay Avg. Depth (ft)	(3) Robles Facility Daily Flows: Fishway Ladder (cfsd)	(4) Robles Facility Daily Flows: VRNMO Weir (cfsd)	(5) Robles Facility Daily Flows: Diversion Canal (cfsd)	(4)+(5) Robles Facility Daily Flows: Total Inflow (cfsd)	(5) X 1.98 Robles Diversion (AF)	Field Measurement: Matilija Creek (cfsd)	Field Measurement: VRNMO (cfsd)
1			0	6.5	39	39	224	263	444		
2			0	5.5	33	33	208	241	412		
3			0	5.3	32	32	184	216	364		
4			0	5.1	31	31	162	193	321		
5			0	5.0	30	30	147	177	291		
6			0	5.0	31	31	136	166	269		
7			0	5.0	31	31	127	157	251		
8			0	5.0	33	33	118	151	234		
9			0	5.0	31	31	110	142	218		
10			0	5.0	31	31	102	133	201		
11			0	5.0	31	31	95	126	187		
12			0	4.9	32	32	89	120	176		
13			0	4.6	31	31	85	116	169		
14			0	4.5	30	30	80	111	159		
15			0	4.7	31	31	76	107	151		
16			0	4.9	30	30	72	102	142		
17			0	4.9	28	28	71	99	140		
18			0	4.8	31	31	70	101	139		
19			0	4.6	31	31	66	98	131		
20			0	4.6	31	31	67	98	132		
21			0	4.6	31	31	62	93	124		
22			0	4.5	30	30	61	91	120		
23			0	4.5	32	32	58	90	115		
24			0	4.6	30	30	57	88	114		
25			0	4.5	30	30	53	83	106		
26			0	4.6	31	31	48	79	96		
27			0	4.6	30	30	47	77	92		
28			0	4.6	30	30	44	74	86		
29			0	4.6	30	30	41	71	81		
30			0	4.6	30	30	41	71	81		
Totals	0	0	0		931	931	2802	3733	5548		

Ventura River Flow Assessment
Water Year 2010 - 2011

May-11	(1) Source Stream Daily Flows: Matilija Ck D/S Dam (cfsd)	(2) Source Stream Daily Flows: North Fork Matilija Ck. (cfsd)	(1)+(2) Source Stream Daily Flows: Sum of Creek Flows (cfsd)	Forebay Avg. Depth (ft)	(3) Robles Facility Daily Flows: Fishway Ladder (cfsd)	(4) Robles Facility Daily Flows: VRNMO Weir (cfsd)	(5) Robles Facility Daily Flows: Diversion Canal (cfsd)	(4)+(5) Robles Facility Daily Flows: Total Inflow (cfsd)	(5) X 1.98 Robles Diversion (AF)	Field Measurement: Matilija Creek (cfsd)	Field Measurement: VRNMO (cfsd)
1			0	4.6	29	29	42	71	83		
2			0	4.5	30	30	37	67	73		
3			0	4.6	32	32	32	64	64		
4			0	4.6	32	32	30	62	60		
5			0	4.6	32	32	30	61	59		
6			0	4.5	32	32	29	61	58		
7			0	4.5	32	32	32	64	63		
8			0	4.6	32	32	35	67	70		
9			0	4.6	32	32	33	65	66		
10			0	4.6	32	32	31	63	62		
11			0	4.5	31	31	30	61	59		
12			0	4.5	32	32	27	59	53		
13			0	4.4	32	32	24	56	48		
14			0	4.5	32	32	27	59	53		
15			0	4.2	31	31	29	61	58		
16			0	4.5	32	32	27	59	54		
17			0	4.5	33	33	35	68	69		
18			0	4.5	32	32	40	72	79		
19			0	4.3	30	30	30	60	60		
20			0	4.3	31	31	24	55	47		
21			0	4.3	31	31	23	54	45		
22			0	4.3	30	30	23	54	46		
23			0	4.2	31	31	20	51	40		
24			0	4.3	32	32	18	50	35		
25			0	4.3	32	32	16	48	31		
26			0	4.3	32	32	14	45	27		
27			0	4.3	32	32	9	41	17		
28			0	4.3	32	32	6	39	13		
29			0	4.3	31	31	8	40	17		
30			0	4.4	30	30	11	41	22		
31			0	4.3	31	31	8	40	17		
Totals	0	0	0		976	976	781	1757	1546		

Ventura River Flow Assessment
Water Year 2010 - 2011

Jun-11	(1) Source Stream Daily Flows: Matilija Ck D/S Dam (cfsd)	(2) Source Stream Daily Flows: North Fork Matilija Ck. (cfsd)	(1)+(2) Source Stream Daily Flows: Sum of Creek Flows (cfsd)	Forebay Avg. Depth (ft)	(3) Robles Facility Daily Flows: Fishway Ladder (cfsd)	(4) Robles Facility Daily Flows: VRNMO Weir (cfsd)	(5) Robles Facility Daily Flows: Diversion Canal (cfsd)	(4)+(5) Robles Facility Daily Flows: Total Inflow (cfsd)	(5) X 1.98 Robles Diversion (AF)	Field Measurement: Matilija Creek (cfsd)	Field Measurement: VRNMO (cfsd)
1			0	4.3	32	32	6	38	12		
2			0	4.3	32	32	5	37	11		
3			0	4.3	32	32	3	35	6		
4			0	4.3	33	33	0	33	0		
5			0	4.5	33	33	5	38	10		
6			0	4.4	33	33	18	51	36		
7			0	4.3	33	33	9	41	17		
8			0	4.3	32	32	7	39	13		
9			0	4.2	32	32	5	37	10		
10			0	4.1	32	32	1	33	2		
11			0	4.2	32	32	4	36	7		
12			0	4.3	31	31	7	38	13		
13			0	4.2	31	31	5	36	9		
14			0	4.0	31	31	1	32	2		
15			0	3.8	30	30	0	30	0		
16			0	4.0	30	30	0	30	0		
17			0	4.2	32	32	0	32	0		
18			0	4.1	32	32	0	32	0		
19			0	4.1	31	31	0	31	0		
20			0	4.0	30	30	0	30	0		
21			0	3.5	27	27	0	27	0		
22			0	3.5	27	27	0	27	0		
23			0	3.6	27	27	0	27	0		
24			0	3.3	26	26	0	26	0		
25			0	3.2	26	26	0	26	0		
26			0	3.1	25	25	0	25	0		
27			0	3.0	25	25	0	25	0		
28			0	2.9	24	24	0	24	0		
29			0	3.1	25	25	0	25	0		
30			0	3.1	26	26	0	26	0		
Totals	0	0	0		893	893	75	969	149		

Appendix 36. Correspondences among Biological Committee participants regarding the 2011 progress report and 2012 study plan.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

DEC 19 2011

Ned Gruenhagen
Bureau of Reclamation
1243 N Street
Fresno, CA 93721-1813

Dear Mr. Gruenhagen:

NOAA's National Marine Fisheries Service (NMFS) is contacting the Bureau of Reclamation (Reclamation) to provide recommendations for the 2012 Robles Facility monitoring and evaluation activities defined in the Robles Biological Opinion. On November 22, 2011, NMFS received Casitas Municipal Water District's (Casitas) *2012 Monitoring and Evaluation Study Plan for the Robles Fish Passage Facility and Related Studies* (Study Plan). Having reviewed the Study Plan, NMFS understands the monitoring and evaluation activities Casitas proposes for 2012 in the Ventura River. The Biological Committee met on December 1, 2011, to discuss the 2011 Annual Report and the 2012 Study Plan. Due to the compressed timeframe to review and provide input on the 2012 Study Plan before monitoring activities begin (i.e., less than 30-days), this letter focuses on providing NMFS' comments on the monitoring and evaluation of the operation of the Robles Fish Passage Facility (Facility) that are specifically targeted at improving endangered steelhead (*Oncorhynchus mykiss*) passage conditions in the Ventura River. NMFS' comments on the 2011 Progress Report will be provided under a separate cover.

To ensure the Facility monitoring and data reporting are conducted in accordance with the Biological Opinion, NMFS requests Reclamation review the recommendations provided in this letter and advise Casitas to modify the 2012 Study Plan such that the monitoring activities are mutually agreeable to all Biological Committee members. NMFS recommendations for the 2012 monitoring address the upstream steelhead migration impediment evaluation, fish attraction evaluation, downstream fish migration through the Robles reach, and the Facility performance testing. NMFS requests that Reclamation distribute the Final Draft of the 2012 Study Plan, incorporating NMFS' recommendations, before the 2012 monitoring activities commence.

Upstream steelhead impediment evaluation

Section 2.0 of the draft Study Plan does not provide a sufficient amount of information about the impediment sites proposed for monitoring in 2012. Table 2 provides the summary data of the impediment sites that were originally selected during the 2009 Biological Committee selection process. The text on page 7 indicates that the sites presented in Table 2 are the sites that will

be surveyed in 2012. This is not consistent with the results presented in the 2011 Progress Report, which indicate that monitoring at some sites (e.g., Site 2) has been discontinued and new replacement sites (e.g., Site 3-2) have been selected by Casitas during the 2011 monitoring season. Additionally, the group discussion at the December 1, 2011, Biological Committee meeting included plans of continuing to monitor at the new Site 3-2, assessment and likely replacement of Site 2, adding a new site just upstream from Highway 150, and assessment of Site 8 to determine whether this site has the site characteristics of a critical riffle or not (see Figures 1 and 2). NMFS recommends for the second year in a row that Reclamation advise Casitas to conduct impediment evaluation monitoring at the riffle complex approximately 200-meters upstream of Highway 150. All available Biological Committee members should accompany Casitas in the field for identification of this site, and delineation of the transect. A Biological Committee site visit is scheduled for January 11, 2012, to review the proposed monitoring sites (including the site upstream of Highway 150). NMFS understands that if the Biological Committee agrees that the site appears to be an impediment, monitoring will occur at this site during the 2012 flow augmentation season.

The methods outlined for the steelhead impediment monitoring involves surveying all selected sites over a range of discharges from approximately 20 – 100 cfs. Based on discussions at the 2011 Biological Committee meeting, NMFS understands that Casitas is limited to two survey crews to conduct the transect measurements and each crew is capable of surveying 4 – 5 sites each day. Casitas declined CDFG grant funding assistance for hiring extra technicians to conduct 2012 impediment survey transects. Results from the last two years of data collection at the seven monitoring sites indicate only 5 of 102 survey transects were completed at the upper proposed discharge (i.e., 80 – 100 cfs), though streamflows greater than 80-cfs were available for sampling. NMFS recommended that an effort be made in 2012 to collect multiple survey transects at each site when flows are greater than 80-cfs. Casitas agreed to conduct transect measurements at the upper flow range, and will attempt to survey transects at discharges greater than 100-cfs if sufficient supplemental flows exist. Casitas indicated that they use a systematic sampling matrix to ensure sites that are missing a transect measurement at a specific Robles release are sampled first when those stormflow-supplementation releases occur. This sampling method should promote surveying each site at the widest range of flows possible, and provide the rationale to conduct extra survey transects at new replacement sites to develop a better depth-discharge relationship.

Fish Attraction Evaluation

The primary purpose of the Robles fish-attraction surveys is to evaluate if migrating adult steelhead are holding in the area immediately downstream of the fish-ladder entrance during stormflow supplementation operations. The stormflow-supplementation period is defined as the period of time that downstream flow-augmentation releases are provided to enhance steelhead migration through the fish ladder. The goal of the stormflow-supplementation operations is to provide adult steelhead with at least 10 passage days, defined as days where flow released downstream of Robles is $\geq$ 50-cfs, following the peak of a storm event. Stormflow-supplementation releases that exceed the fish-ladder capacity (50-cfs) are first routed through the auxiliary water supply pipeline up to a total release of 121-cfs. The combination of the fish ladder and the auxiliary pipeline will provide the necessary downstream bypass design flow of 171-cfs as specified in the biological opinion to meet the stormflow-supplementation operations criteria when Robles inflow exceeds 671-cfs. Therefore, NMFS recommends that the fish-

attraction surveys be conducted during the 10-12 day managed release on the receding limb of naturally generated storm hydrographs.

Modifications are needed to improve the current fish-attraction evaluation surveys. NMFS agrees with Casitas that the interpretation of weekly observational counts are extremely limited for interpreting the effects of the attraction flows on the behavior of steelhead holding downstream of the fish-ladder entrance. The most restrictive element of the current survey protocol is water visibility at the time of day that the survey occurs. Another concern with the bank or snorkel survey method is the disturbance caused by the presence of the surveyor. For this reason, NMFS recommended the installation of an underwater video camera mounted above the fish-ladder entrance to monitor fish entering and exiting the fish-ladder for the duration of the stormflow supplementation period. A camera is unable to ameliorate the effects of high water turbidity, but installing the camera at the start of the stormflow supplementation period (i.e., 24-hrs post storm peak) and leaving it installed for the entire 10-day supplementation period will allow for continuous monitoring once the river conditions permit. NMFS recommends that the camera be installed prior to obtaining the 1-meter secchi-disk measurement to prevent loss of data if conditions improve prior to the next secchi measurement. This protocol frees staff to conduct other concurrent flow-dependent aspects of the monitoring program.

NMFS recommends that the fish-attraction evaluation results be presented in the Annual Report in a manner that allows for comparison to detailed Robles fish-ladder discharge. The underwater video results should be presented in tabular format similar to the Vaki Riverwatcher detections, and graphed on a fish-ladder hydrograph corresponding to flow augmentation for each storm event evaluated. The following data should be recorded for each steelhead observed entering/exiting the fish ladder entrance: orifice number, date, time, length estimate, direction, instantaneous turbidity, instantaneous fish-ladder discharge, auxiliary pipeline discharge and spillway gate operation (i.e., estimated discharge through gates). Because streamflow augmentation is ramped down each day (reportedly around midday), recording the discharge at the time of observation, rather than the mean daily discharge, is important. Report fish-ladder turbidity measured closest to the time of steelhead observation to better understand the operational limits of the underwater video to assess fish attraction. To account for the potential that no steelhead will be detected entering the fish ladder using the underwater video monitoring due to technical limitations (e.g., high turbulence, poor camera angle, high turbidity during supplementation period, etc.), all Vaki Riverwatcher detections including fish probable, fish unknown and *O. mykiss* should be included in the fish attraction evaluation results (table and graphs) for all 10-day storm-supplementation periods and overlapping storm events. The results of the underwater video and Vaki Riverwatcher detections should be clearly distinguishable in the tables and graphs.

The secondary purpose of the fish-attraction surveys is to evaluate if downstream migrants (i.e., smolts) are congregating in the entrance pool towards the end of the out-migration season when mainstem riverflows are declining. Because Ventura River turbidity is normally not a problem in late spring and summer when juvenile fish-attraction surveys are conducted, snorkel and bank surveys of the entrance pool are a sufficient method to evaluate if a fish-stranding problem exists at the Facility. NMFS does not see value in continuing the snorkel surveys upstream of the Facility because the purpose of the fish-attraction surveys is to evaluate if migrants are holding downstream of the Facility. The reporting of the upstream fish observations and discussion of

this monitoring activity should be relocated to Section 6.0 of the Study Plan titled "Additional Monitoring Studies – *O. mykiss* Presence/Absence Surveys."

Downstream fish passage evaluation

NMFS is concerned about the high level of physical injuries to steelhead observed during the 2011 Robles Facility smolt-trapping season. The reported body damage included skin damage in the head region (88%), skin contusions (16%) and fin damage (8%). With regard to the 2011 results presented in Appendix 32, whether all 25 smolts removed from the trap had sustained injuries, or if individual fish sustained multiple types of body damage, is not clear. The cause of fish injury observed in the trap, whether sustained during passage through the Robles Facility or the result of trapping, are not known to NMFS because the current smot-trapping design does not allow for resolution of this important distinction. Regardless of the cause of injury, the high level of fish injury reported after completion of the 2011 trapping season is unacceptable. Observation of steelhead injury or mortality should be reported to NMFS at the time injury or mortality is discovered. The observation of fish injury is not a new occurrence at the Robles Facility smolt trap. In 2010, 80-percent of the smolts captured had skin damage to the head region. As a result, Casitas proposed to 1) conduct a pilot test with hatchery fish in 2011 to assess what level of fish injury may be the result of their trap design, and 2) conduct literature research on the topic. Neither product has been provided for NMFS review. In 2009, the only steelhead captured in the smolt trap sustained 64% descaling due to becoming impinged in the plastic mesh covering the trap-holding box. In-season changes were made during 2009 to the trap design that were thought to eliminate future fish injury. However, uncertainty exists as to whether the injuries observed in 2011 are the result of trapping or from passage through the Facility. The available data suggest that because the trap is located downstream of the facility, the cause of fish injury will not be resolved during the 2012 trapping season. Because greater than 80-percent of smolts captured in the last two years sustained physical injuries, NMFS recommends Reclamation evaluate the need for installing an upstream and downstream trap as outlined in the 2012 Study Plan to gain a better understanding of whether passage through the Facility is causing the high level of observed fish injury.

The results of the 2011 smolt-tagging was discussed at the December 1, 2011 Biological Committee meeting. Because none of the eight PIT-tagged fish that were released upstream of the Facility were detected by the fish ladder tag reader or manually interrogated at the smolt trap, the Biological Committee agreed that a tagging protocol should be developed for tagging fish with either PIT-tags or radio tags. NMFS cautioned that the 2011 practice of tagging the earliest arriving smolts with radio tags and tagging the latest arriving smolts with PIT-tags should be discontinued. Criteria for selecting fish for tagging and the specific tag type should be independent of fish size and condition. An effort should be made to distribute fish upstream of the Facility with PIT-tags and downstream with radio tags on the same days when sufficient numbers of smolts are captured. Since the 2011 Biological Committee meeting, Casitas has agreed to PIT-tag every fourth steelhead smolt captured in the trap downstream of the Facility and release the PIT-tagged fish upstream at Camino Cielo Road. With regard to the 63-percent radio tag loss reported during 2011, NMFS would like to know Casitas' proposal to prevent future high levels of tag loss and potential tag loss due to fish mortality.

Facility operations and performance testing

The 2011 Progress Report includes Section 4.5 titled "Recommendations Regarding the Prioritization of Future Activities." Because all of the items listed in Section 4.5 affect the operation and biological monitoring of steelhead passage of the Robles Facility, NMFS recommends these action items be included in the 2012 Study Plan. In addition to the list in Section 4.5, the following evaluations are expected to be conducted per the guidelines in the Robles Performance Evaluation Program as soon as the necessary stormflows exist:

1. Fish Ladder Testing;
2. Auxiliary Water Supply System Testing;
3. Entrance Pool Testing; and,
4. Temporary Rock Weirs Testing.

Review of the Ventura River flow assessment in the 2010 and 2011 Progress Reports indicate that no field measurements have been reported at the Robles low-flow crossing measurement weir (VRNMO) for the last two water years. This concerns NMFS because Casitas reports that this device is the most reliable flow measurement at the Facility for the fish passage and downstream stormflow-supplementation. Because the flow meters in both the fish-ladder and the auxiliary water pipeline are reported to be not functioning properly (turbulence and sloshing problems), NMFS recommends that routine field measurements be conducted at the VRNMO weir to calibrate the measurement device to correct inaccuracies caused by clogging of bubbler lines, electronic creep, sensor fouling, changes to the measured cross section and equipment problems. At a minimum, field measurements should be collected prior to the first qualifying storm event of the stormflow-supplementation season (i.e., December), once during each stormflow-supplementation period, and after any larger storm events (≥ 671-cfs). Comparison of February 2009 measurements reported at the VRNMO weir indicate that the weir measurement device (27-cfs) can differ from field measurement (19.8) by as much as 27-percent. NMFS recommends that VRNMO field measurements at flows greater than the fish ladder capacity (50-cfs) be conducted in 2012 to develop a better rating curve at supplementation flows in order to adequately evaluate the performance of the proposed modification to the auxiliary diffuser panel.

In conclusion, NMFS recommends that Reclamation advise Casitas to distribute the draft 2013 Study Plan well in advance of the 2012 Biological Committee meeting to facilitate timely discussion prior to distribution of the final Study Plan. The Monitoring and Evaluation component of the Incidental Take Statement (ITS) is mandatory for continued application of the section 7 (o)(2) exemption. If Reclamation fails to assume and implement the terms and conditions or fails to require Casitas to adhere to the terms and conditions of the ITS, the Robles Facility protective coverage of section 7 may lapse. Please contact Rick Bush at (562) 980-3562 to discuss the Study Plan recommendations contained in this letter.

Sincerely,

for Penny Ruvelas
Southern California Area Office Supervisor
for Protected Resources

cc: Scott Lewis, Casitas Municipal Water District
Mary Larson, California Department of Fish and Game
Roger Root, U.S. Fish and Wildlife Service
Administrative file#: 151422SWR2002PR6168

Figure 1. Approximate location of Casitas' Site 8 transect near OVLC pools in boulder run habitat. Person on West bank positioned at GPS coordinate from Casitas' Table 2 (34°12'15", 119°17'36").

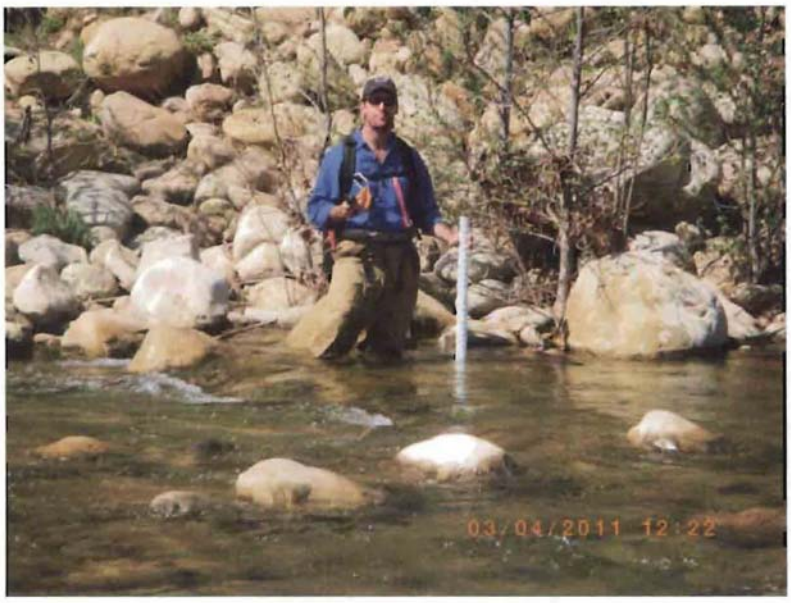


Figure 2. Depth measured 2.0-ft deep at this location (1.2-km downstream Robles) and Robles discharge was 50-cfs. All transect stream depths perpendicular to streamflow measured greater than 0.6-ft deep.

Casitas Municipal Water District
1055 Ventura Ave.
Oak View, CA 93022
805-649-2251

08 March 2012

Ned Gruenhagen
Bureau of Reclamation
South-Central California Area Office
1243 N Street
Fresno, CA 93721-1813

Dear Ned,

This letter is a response to the NMFS recommendation letter dated December 19th of 2011, which was pertaining to the Robles Fish Facility and the 2012 study plan. There were numerous issues related to the Robles Fish Passage Facility monitoring and evaluation studies that NMFS commented on in their letter that need to be addressed. Casitas' response regarding these issues has been included in this letter. The headings from the NMFS letter were followed below.

Upstream Steelhead Impediment Evaluation

The impediment site table provided in the draft 2012 study plan was not updated to include the changes made mid-season due to the March 2011 high-flow event because additional modification were anticipated after BC review process. Consequently, Casitas planned to update the table for the final study plan once the review process was completed.

Casitas decline the CDFG funding assistance at the 2011 BC meeting. However, NMFS failed to mention that at the meeting Casitas stated its plans of hiring two short-term fisheries technicians to assist with data collection efforts during the busiest time of the season. Casitas will try to collect transect data at higher flows as stated in the study plans. However, NMFS must realize and acknowledge there will always be logistical constraints with any field study.

Fish Attraction Evaluation

Casitas is willing to make the recommended changes to the Fish Attraction Evaluation, and has done so in the 2012 study plan. However, it should be noted that the current evaluation method of post-storm surveys was originally recommended by NMFS.

Casitas will conduct video monitoring at the entrance gate during 2012, but the operational and analysis limits are unknown at this point.

Contrary to NMFS, Casitas sees the value in continuing the fish attraction surveys upstream of the Robles Fish Facility. Not only do these surveys provide information about general *O. mykiss* behavior near the facility, but also they are valuable in evaluating other aspects of the monitoring and evaluations at the facility (e.g., Downstream Fish Passage Evaluation). Casitas believes these surveys can help determine whether successful passage at the Robles Fish Facility by comparing downstream to upstream counts. Therefore, Casitas believes these data should continue to be collected, analyzed, and displayed in the same manner.

Downstream Fish Passage Evaluation

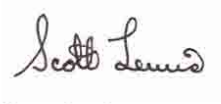
The skin damage on the heads of many of the smolts was believed to have occurred from trapping. This was first noticed with some of the smolts captured prior to 2011, but to a greater degree. Even though the percentage of smolts with this injury was high, the actual size of the injury was small. The injury was approximately 2 mm x 10 mm and corresponded to the shape and dimensions of the plastic mesh. The injuries were not skin abrasions, but contusions and the epidermis was not broken. After changing the mesh material to a smaller size, this injury was reduced. The location of the skin damage on the top of the snout and head region suggests that it was caused from "nosing" into the mesh to avoid capture; this behavior was also observed during removal from the trap. Additional improvements will be made for the 2012 trapping season by adding smoother material to the inside of the trap to determine if the injuries can be reduced or eliminated. Unfortunately, the fish trap handling experiment was not conducted during 2011 as anticipated. The experiment will be conducted this year and will be reported in the 2012 progress report. Additionally, the results of a literature review on smolt injuries will be included at that time.

Facility Operations and Performance Testing

Casitas will make all attempts to collect data as outlined in the performance evaluation study plan if flows occur during 2012. Casitas has, and will continue, to make improvements to the accuracy of measurement weir and all other Robles Fish Facility flow monitoring devices.

Casitas is committed to conducting the monitoring and evaluation of the Robles Facility as specified in the Biological Opinion and participating in the Cooperative Decision Making Process to further improve aspects of studies as needed. If BOR, NMFS, or CDFG would like to discuss any of these issues further, please contact me at your convenience.

Respectfully,



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CC: Rick Bush, National Marine Fisheries Service
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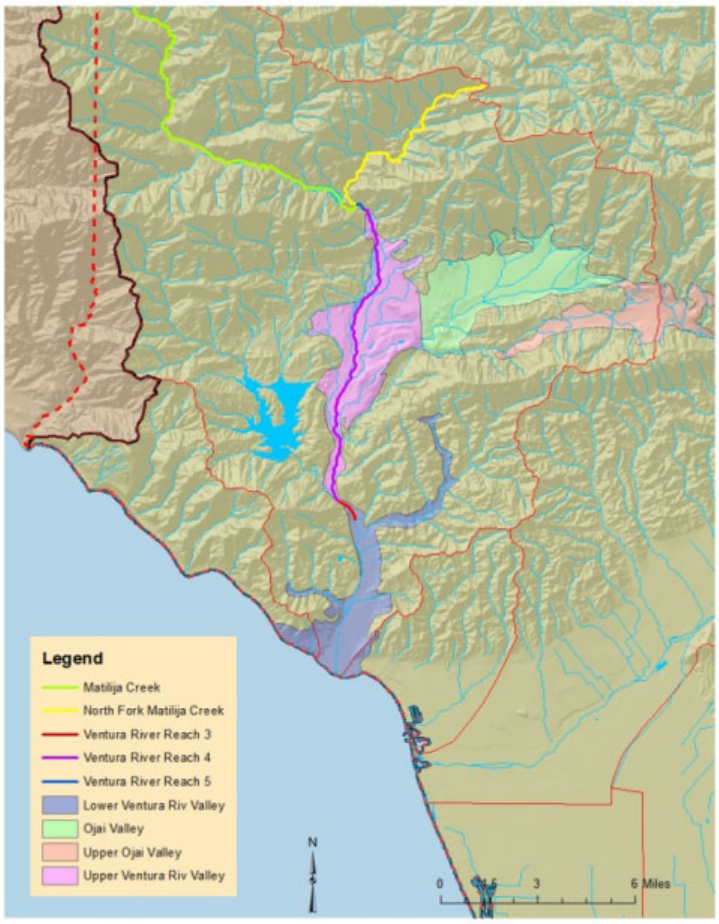
FACT SHEET

for the

Ventura River Water Diversions/Pumping Impairments

Protection of surface and ground waters in California is the responsibility of the State Water Resources Control Board (located in Sacramento) and the nine Regional Water Quality Control Boards spread throughout the State. The area covered by the Los Angeles Regional Water Quality Control Board (LA Water Board) includes coastal Ventura and Los Angeles Counties. While these Boards enforce State regulations such as the California Water Code, they also have the authority and responsibility to enforce the federal Clean Water Act. The latter requires biennial assessments of the country's waters and their ability to support certain beneficial uses such as water contact recreation, commercial fishing, and use by aquatic life. During an assessment in 1996, beneficial uses relating to maintenance of the endangered Southern California steelhead trout population in the Ventura River Reaches 3 (Weldon Canyon to confluence with Coyote Creek @Casitas Vista/Santa Ana Rd) and 4 (Coyote Creek to Camino Cielo Rd) were determined to be impaired by the LA Water Board based on the information available at the time. Water quality impairments are generally addressed through establishment of Total Maximum Daily Loads (TMDLs), which document sources of the pollutants of concern and the amount of pollutant reduction needed in order to fully support beneficial uses. Several environmental organizations challenged USEPA (as the federal agency charged with implementing the Clean Water Act) over the pace at which TMDLs were being developed in the Los Angeles Region. In 1999, a consent decree between USEPA and the environmental organizations led to a detailed schedule for completion of all listed impairments. USEPA must either establish or approve State-adopted consent decree TMDLs in the Los Angeles Region on or before certain dates; in the case of the Ventura River water diversion/pumping impairments, the deadline for establishing a plan to address the impairment is March 24, 2013.

Ventura River Watershed, Groundwater Basins, and Stream Reaches



Development of TMDLs is the usual approach taken to address impaired waters since generally impairments are caused by chemicals occurring in excess amounts and the best way to remove the impairment is to establish a plan to reduce the pollutant loads as needed to meet a target concentration that does not cause problems. However, the water diversion/pumping impairments are quite unique and could be addressed through another approach that shows "alternate programs" are in place or will be in place to resolve the impairments. If documentation of these programs and commitment to their implementation does not occur in a timely manner such that the deadline can be met by USEPA, then a TMDL will be developed by USEPA by March 24, 2013, identifying the steps that must be taken by various parties to resolve the impairments.

The LA Water Board is proposing to address the impairment in Reach 3 through delisting (removing it from the impaired waters list); after review of all available data and information, it appears this impairment may have been incorrectly assigned originally. Regarding the Reach 4 impairment, the LA Water Board sees the alternative programs approach as an opportunity for development of an array of solutions with the close involvement of watershed stakeholders. The goal would be to identify solutions that reduce anthropogenic impacts from diversions and pumping to steelhead trout over-summering habitat, particularly pools. The LA Water Board would act as a facilitator in the process since its only direct authority in this matter is over assessing attainment of beneficial uses and the subsequent listing or delisting of impaired waters. While only surface waters can be designated as impaired under the Clean Water Act, it is clear in this watershed that surface and ground waters are closely interconnected. Surface water diversions can affect the amount of water available to pumpers while pumpers can remove enough water such that flowing water or pools where steelhead trout may live during the summer months may be depleted. However, the issues of concern to the survival of steelhead trout also apply to the availability of water for human consumption. Thus, the oversight and appropriate management of the resource as a whole by federal, State and local agencies and stakeholders can benefit both humans and fish.

A Memorandum of Agreement (MOA) or similar document would be needed by no later than fall 2012 among implementing agencies/parties in order to establish the degree of commitment needed to serve as an alternative to a USEPA established TMDL. Stakeholders are encouraged to participate in relevant meetings and other activities publicized by the Ventura River Watershed Council www.venturawatershed.org or its affiliated agencies and work collaboratively toward effective solutions to address these impairments. Additional information may be obtained from Shirley Birosik, Staff Environmental Scientist, Los Angeles Water Board, at (213) 576-6679 and sbirosik@waterboards.ca.gov.

Draft Staff Report
Ventura River Reach 3
Water Diversions and Pumping Impairments

The impairment listing for water diversions and pumping is being considered for removal from the section 303(d) list, under Section 4 of the Listing Policy, for Ventura River Reach 3 (Weldon Canyon to confluence with Coyote Creek @Casitas Vista/Santa Ana Rd) because the original listing was based on no data. No additional data have been found to support the listing.

The impairments are described in the 1996 water quality assessment, where they originally appeared, as not supporting aquatic life uses. A specific beneficial use, such as cold freshwater habitat or warm freshwater habitat, was not cited although later listing cycles associated the impairment with the warm (perhaps incorrectly) freshwater habitat beneficial use. While no specific information was cited in the water quality assessment for Reach 3 in support of the listings, information from the draft **Steelhead Restoration and Management Plan for California** of 1995 (prepared by the California Department of Fish & Game [DFG] and finalized in 1996) was cited for the same impairments in Reach 4, which is immediately upstream of Reach 3. Reference to the draft management plan implies that impairment of the cold freshwater habitat beneficial use was the main concern since steelhead trout utilize colder waters. However, there is no reference to any portion of Reach 3 in that document.

General background

The Ventura River is the northernmost major river system within the Los Angeles Region; it drains an area of 235 square miles situated within the western Transverse Ranges. Topography in the watershed is rugged and as a result, the surface waters that drain the watershed have very steep gradients, ranging from 40 feet per mile at the mouth to 150 feet per mile at the headwaters. Streamflow is highly climate-driven and variable; total precipitation over the course of a year, the frequency and intensity of storms, the proceeding years' rainfall regime (drought, normal, or wet), and other general weather characteristics (i.e., cooler than usual summers, warmer than usual winters) all contribute to any one year's streamflows, which generally follow a pattern of higher flows in the winter/spring and lower flows in summer/fall. Flow in any particular reach of the river is additionally affected by the status of the underlying groundwater basin (whether full, filling, or emptying), the occurrence of natural recharge areas where surface flows will disappear at times, flow between groundwater basins, and the amount of surface or groundwater withdrawals for municipal, domestic, or agricultural uses. Residents, businesses, water utilities, and wildlife in the watershed are entirely reliant on local water supplies fed by precipitation; there is no infrastructure in place to import water.

Southern steelhead trout are acclimated to these highly variable conditions. During average to wet water-years, winter storms breach the lagoons often formed at the mouths of rivers. This provides both access and a signal for the anadromous fish to leave the ocean and start the journey upstream to spawn. In a watershed unrestricted by physical

barriers to passage such as dams, the fish would normally transit through the mainstem of the river over several days and eventually spawn where habitat is generally most suitable, in tributaries such as Matilija Creek. Even in barrier-free watersheds, however, smaller than normal winter storms might fail to breach the lagoon leaving the fish to stay in the ocean for another year. Or a large initial storm might breach the lagoon, but not be followed by enough subsequent rainfall to maintain streamflows in order for the fish to transit through the whole system. The steelhead runs for years such as those might be very small to nonexistent. In the Ventura River Watershed, during normal to wet years before dams were constructed that created physical barriers (i.e., prior to 1948), the steelhead run was estimated at 4,000-5,000 individuals. However, following the construction of Matilija Dam (located upstream of Reach 3), which cut off access to about half of the prime spawning habitat, and coincident with a drought in the late 1940s, steelhead runs dropped to about 2,000-2,500 individuals. Once the Robles Diversion was constructed around 1959, access to good spawning habitat in the North Fork of Matilija Creek was also cut off and fewer fish were produced that would eventually return to spawn as adults. The steelhead run dropped to around 100 individuals; these individuals had to utilize remaining favorable areas within the mainstem for spawning and rearing. Considering the high flows that can occur in the mainstem with larger storms (relative to flows in the tributaries), access might be attained but spawning and rearing might prove to be impossible at times. Conversely, during dry years, fish unable to transit back downstream to the ocean due to low flows must survive in pools in the mainstem and be subjected to elevated temperatures at times, endure competition with other fish for a decreasing food supply, and survive exposure to predators. Spawning might not occur or be extremely limited due to lack of water at sites appropriate for spawning during wetter years. While utilization of the mainstem by steelhead trout for their entire life cycle may work during some years, there will be many other years when this will not be feasible due to the natural characteristics of the watershed, as previously described.

Review of additional documents

Additional documents were reviewed to provide information on recovery needs and the history of steelhead trout in the Ventura River prior to the construction of dams. Other documents were reviewed to ascertain whether the aforementioned impairments nonetheless exist in Reach 3.

Regarding recovery needs, **Southern California Steelhead Recovery Plan** states that steelhead in southern California comprise a "distinct population segment" (DPS) of the species *Oncorhynchus mykiss* that is ecologically and reproductively discrete from the remainder of the species along the West Coast. Therefore, under the Federal Endangered Species Act of 1973 (ESA), this DPS qualifies for protection as an individual species. In 1997, the Southern California Steelhead DPS was first listed as an "endangered" species, or a species that is in danger of extinction throughout all or a significant portion of its range. The critical recovery actions for the Ventura River as a whole include (1) implementing operating criteria to ensure the pattern and magnitude of water releases from the dams mimic the natural or pre-dam pattern and magnitude of streamflow and (2)

physically modifying the dams to allow unimpeded migration of steelhead to upstream spawning and rearing habitats. Additionally, identification, protection, and where necessary, restoration of estuarine and freshwater rearing habitats are seen as critical recovery actions. Other recovery actions listed include: conduct hydrological analysis (groundwater), and develop and implement a groundwater monitoring program to address threats from groundwater extractions; and develop and implement a water management plan to address threats from dams and surface water diversions. However, there is no specific reference to any portion of Reach 3 in the document.

The **Ventura River Watershed Technical Investigation** from 2003 states that with regards to potential enhancement, the mainstem Ventura River is a lower priority than the upper watershed tributaries and San Antonio Creek. The mainstem includes both perennial and non-perennial reaches and portions are used for steelhead rearing while other areas are primarily used as migratory habitat. The primary limiting factors within the mainstem perennial reaches are the amount of habitat with unsuitable structure (e.g. reduced canopy cover, lack of pool habitat) and water quality (e.g. temperature and dissolved oxygen).

The draft **History and Status of Steelhead in California Coastal Drainages South of San Francisco Bay** contains historical information about the Ventura River steelhead population. The Ventura River supported large and consistent runs of steelhead up until the late 1940s when prolonged drought and the construction of Matilija Dam on Matilija Creek decimated the population. Even during the early to mid 1930s, the river below the mouth of Matilija Creek, where diversions greatly reduced streamflow, was considered to be of no value except during the winter when steelhead used the river as a migration corridor to reach the abundant spawning grounds upstream, especially in Matilija Creek. By the mid-1970s, run size was estimated to be an average of 100 individuals and is essentially the same at present.

References about flow conditions within Reach 3

While studies and reports have been prepared concerning stretches of the river involving the Foster Park subsurface dam and the Robles Diversion Dam (both in Reach 4), much less information is available for Reach 3. This is downstream of the Foster Park diversion and the City of Ventura's municipal wells but upstream of the discharge from the Ojai Valley Wastewater Treatment Plant. It also overlays a different groundwater basin.

Five references specifically commenting on water use and flow conditions within Reach 3 were found. Reach 3 overlies the beginning of the Lower Ventura River Groundwater Basin (Lower Subbasin), which receives flow from the Upper Ventura River Groundwater Basin (Upper Subbasin); consequently, the initial stretch of Reach 3 may flow at times but again this is highly dependent on the many factors previously described affecting flow. The 2010 study and report, **Groundwater Budget and Approach to a Groundwater Management Plan Upper and Lower Ventura River Basin**, found the

Upper Subbasin has a net annual gain of 1,466 ac-ft/yr of water during the period studied, 1997-2007. Groundwater flows out of the Upper Subbasin and into the Lower Subbasin at an estimated 535 ac-ft/yr. There was a net discharge of water from groundwater to the surface in the Lower Subbasin during the period studied and was estimated at 1,254 ac-ft/yr. The long-term hydrographs of wells within the Upper Subbasin indicate stable groundwater levels with 5- to 10-year rise and decline cycles. The study found no diversions within Reach 3 and only one domestic well. An earlier study listed as many as five surface water diversions in this reach (Ventura River Steelhead Restoration and Recovery Plan, 1997) which itself was based on information in a report from 1981. The Steelhead Recovery Plan also states that the Upper Subbasin is a very shallow, unconfined aquifer consisting of alluvium about 60 feet deep. The total storage capacity of the basin is about 14,000 AF, and it essentially empties during a 1 to 3 year critical dry year period. However, it will refill within a period of weeks during flood conditions. The groundwater generally occurs under unconfined conditions, with the dominant source of recharge being direct infiltration of precipitation and percolation from local streambeds. Areas of naturally shallow bedrock underlie portions of the valley, creating conditions that prevent groundwater from being lost to deep percolation and causing water levels to remain or rise near the surface (such as at Foster Park where the natural situation is enhanced with the subsurface dam). Naturally, the status of both surface water flows and the groundwater basin yield in Reach 4 has an effect on available water in Reach 3.

The 1978 **Conjunctive Use Report,** by the environmental consulting company EDAW, states that maintaining dry season flows, or flow between storms, below Foster Park would be harder since the water would no longer be available for the domestic water supply. The report also states that downstream from Foster Park there are two water diverters that pump water directly from the Ventura River for irrigation of citrus crops. Surface flows down to the treatment plant are formed by flows that get past Foster Park and by some rising groundwater downstream of Foster Park. Although Reach 3 overlies a different groundwater basin (the Lower Ventura River Valley Groundwater Basin), some groundwater from the Upper Ventura River Groundwater Basin will at times reach the lower basin, either through subsurface flow or rising surface flow.

The Conjunctive Use Report comments on seasonal differences in flow; it states the stretch of the river from Foster Park (the downstream end of Reach 4) to the Pacific Ocean has a winter base flow of 2-10 cubic feet per second (cfs) consisting of Oak View (now Ojai Valley) treatment plant effluent (just downstream of Reach 3) plus rising groundwater at Foster Park. The typical summer base flow is listed as 2-6 cfs with no surface flow at Foster Park; summer flow in the stretch of the river from Foster Park to the ocean is dependent on the average daily discharge of about 2.5 cfs from the wastewater treatment plant. The report states it is estimated that 75,000 to 100,000 gpd are lost through the gap at the east end of the subsurface dam at Foster Park and surfaces in Reach 3. By contrast, another section of the report states that the reach of the river below Foster Park to the wastewater treatment plant has essentially no flow. However, a graphical representation of surface and subsurface flows of the river in the document indicates that surface flows resume a short distance downstream of Foster Park.

The **Ventura River Steelhead Restoration and Recovery Plan** (1997) references the flow gage at Foster Park; it is described as potentially underestimating low flows since it is located on the west bank, downstream of the Casitas Vista (Foster Park) bridge and away from some of the natural low flow channels. Streamflow at this gage (USGS 11118500 gage near Foster Park) represents net runoff flowing towards the ocean below Foster Park as a residual of the cumulative upstream water development and the City of San Buenaventura's diversions; there is no other gaging physically in Reach 3. Statistics of monthly mean data for the **USGS 11118500** for water years 1930-1957 characterize the period after Matilija Dam was built but before Robles Dam went into operation. The lowest minimum flows were 0 cfs for all months except March 1951 when 0.3 cfs was recorded. Mean flows for any month during those years ranged from 2.51 cfs in September to 237 cfs in March. Combined records of the observed surface flow in the river at the Foster Park gage and the City's diversions have been reported since water year 1932 (USGS 11118501); they are considered more representative of the natural flow in the mainstem, at least above Foster Park. Statistics of monthly mean data for the **USGS 11118501** for water years 1933-1957, which includes the time period after Matilija Dam was built but before Robles Dam went into operation, show the lowest minimum flows occurring in December of 1933 (0.14 cfs) with a highest minimum flow occurring in March of 1951 (2.71 cfs). Mean flows for any month during those years ranged from 8.12 cfs in October to 266 cfs in March. Flow statistics are also available for the time period 1960-2007, which includes the time period during which both Robles and Casitas Dams went into operation. Flow means, maxima, and minima were somewhat higher in the latter time period although the within year variability is similar and highly dependent on water year type (dry, normal, wet). Ultimately, the flow records show a highly variable river system with flows greatly affected by water year type and seemingly less affected by diversions over the long term.

The 1997 **Ventura River Steelhead Survey** describes the section of river from Foster Park to the Ojai Valley Sanitary District (encompassing Reach 3) as having moderate riparian cover with perennial flows and relatively few pools although one was large. And, historically the reach maintained year-round trout habitat as a result of the contribution of surface flows from the Casitas Springs reach ("live reach" in Regional Board Reach 4), and a shallow rising groundwater table.

The National Oceanic and Atmospheric Administration (NOAA) Fisheries' 2003 Biological Opinion letter to the U.S. Bureau of Reclamation (USBR) concerning the planned Robles Diversion fishway states that the reach of the lower river currently maintaining a natural perennial surface flow extends from above San Antonio Creek (within Reach 4) all the way to the Pacific Ocean (including Reach 3).

None of the documents comment directly on whether flows in Reach 3 have any impact on steelhead survival, migration, or reproduction (most studies and reports are concentrating on impacts from specific structures or activities rather than the river or watershed as a whole – studies are generally limited in time and thus may cover

conditions only during a wet year(s) or only during a dry year(s)). And, since the Foster Park subsurface dam was constructed between 1906 and 1908, well before any environmental review process was in place, there is no known quantitative documentation of what flows were in Reach 3 before the dam was constructed and diversions began. However, the 2004 **Ventura River Ecosystem Restoration Feasibility Study** cites a 1946 (pre-Matilija Dam) CDFG report that states the Matilija Creek system supported 2,000 to 2,500 fish in normal years, which was half the total run in the Ventura River system. This implies thousands of fish were supported by the river system during a time period when the Foster Park Diversion was already in operation for several decades, which additionally implies that flows in Reach 3 were sufficient on average. The feasibility study cites the completion of Matilija Dam in 1948 and the completion of the Robles Diversion and Casitas Dams (in Reach 4) in 1958 as the major factors in the decline of steelhead trout due to cutting off access to greater than 50% of their historical spawning habitat; the most precipitous decline began in the late 1950s.

Historical conditions

A 2011 **historical ecology study** of coastal Ventura County explored the historical characteristics (morphology, hydrology, and vegetation) of the Ventura River prior to major urban and agricultural modifications utilizing maps and other documents from as far back as the 1800s. The study reported that documentation of flow conditions on the Ventura River consistently depicts three reaches with distinct summer flow regimes within the area studied (Matilija Hot Springs to the ocean). Relevant to current-day Reaches 3 and 4, the study found flow was perennial from Matilija Hot Springs to around Cozy Dell Canyon (in the vicinity of the current-day Robles Diversion). Below there the river became intermittent until Oak View and the river's confluence with San Antonio Creek. Perennial flow resumed from just above San Antonio Creek confluence down to the ocean. However, the precise extent and location of summer water would have fluctuated in response to annual variations in rainfall and runoff (the report mentions some historical documents describing the river as an abundant source of water, while others describing it as an arid stream). Thus, historical documentation supports that the upper part of the Regional Board's Reach 4 was intermittent prior to any major water diversions or pumping, as it often is today, while the lower part of Reach 4, along with Reach 3, were perennial.

Conclusions

There were no data or information cited to support the original impairment listing of Reach 3 for diversions/pumping. A review of available studies and reports relating to the river and, in particular, Reach 3 flows and how they might impact use by steelhead trout, does not indicate an impairment in this reach. Instead, the studies and reports reveal a river with highly variable flow tied closely to short-term precipitation and longer-term cycles of wet and dry periods. This is especially supported by the 2011 historical ecology study, which includes narratives from various explorers and residents who described alternately either a raging river or a dry stream while referring to the same stretch. Major

floods and droughts both occurred during the 1800s so this is not surprising. More recent observations of flow in studies describing conditions during the 1970s through 2000s also alternate in a similar fashion depending on the water year type and occurrence during longer wet or dry periods.

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DRAFT Staff Report
Ventura River Reach 4
Water Diversions and Pumping Impairments

Impairments from water diversions and pumping in Ventura River Reach 4 (Coyote Creek to Camino Cielo Rd) are being considered for removal from the Clean Water Act (CWA) 303(d) list (TMDL required list) and placement on the CWA 303(d) list (being addressed by action other than TMDL) under Sections 2.2 and 4.11 of the Listing Policy.

The impairments are described in the 1996 water quality assessment, where they originally appeared, as not supporting aquatic life uses. A specific beneficial use, such as cold freshwater habitat or warm freshwater habitat was not cited although later listing cycles associated the impairment with cold freshwater habitat. The draft **Steelhead Restoration and Management Plan for California** of 1995 (prepared by the California Department of Fish & Game [DFG] and finalized in 1996) was cited as the data source with specific reference to Robles Diversion bypass flows and lack of fish passage. The Foster Park subsurface diversion located at the downstream end of Reach 4 is not mentioned in the document, nor is there reference to any specific pumping activities. Reference to the management plan implies that impairment of the cold freshwater habitat beneficial use was the main concern since steelhead trout utilize colder waters.

General background

The Ventura River is the northernmost major river system within the Los Angeles Region; it drains an area of 235 square miles situated within the western Transverse Ranges. Topography in the watershed is rugged and as a result, the surface waters that drain the watershed have very steep gradients, ranging from 40 feet per mile at the mouth to 150 feet per mile at the headwaters. Streamflow is highly climate-driven and variable; total precipitation over the course of a year, the frequency and intensity of storms, the proceeding years' rainfall regime (drought, normal, or wet), and other general weather characteristics (i.e., cooler than usual summers, warmer than usual winters) all contribute to any one year's streamflows, which generally follow a pattern of higher flows in the winter/spring and lower flows in summer/fall. Flow in any particular reach of the river is additionally affected by the status of the underlying groundwater basin (whether full, filling, or emptying), the occurrence of natural recharge areas where surface flows will disappear at times, flow between groundwater basins, and the amount of surface or groundwater withdrawals for municipal, domestic, or agricultural uses. Residents, businesses, water utilities, and wildlife in the watershed are reliant on local water ultimately derived from precipitation; there is no infrastructure in place to import water.

Southern steelhead trout are acclimated to these highly variable conditions. During average to wet water-years, winter storms breach the lagoons often formed at the mouths of rivers. This provides both access and a signal for the anadramous fish to leave the ocean and start the journey upstream to spawn. In a watershed unrestricted by physical barriers to passage such as dams, the fish would normally transit through the mainstem of the river over several days and eventually spawn where habitat is generally most suitable,

in tributaries such as Matilija Creek. Even in barrier-free watersheds, however, smaller than normal winter storms might fail to breach the lagoon leaving the fish to stay in the ocean for another year. Or a large initial storm might breach it but not be followed by enough subsequent rainfall to maintain streamflows in order for the fish to transit through the whole system. The steelhead runs for years such as those might be very small to nonexistent. In the Ventura River Watershed, during normal to wet years before dams were constructed that posed physical barriers (prior to 1948), the steelhead run was estimated at 4,000 – 5,000 individuals. However, following the construction of Matilija Dam (located upstream of Reach 4), which cut off access to about half of the prime spawning habitat (in Matilija Creek), steelhead runs dropped to about 2,000 – 2,500 individuals. Once the Robles Diversion was constructed about 1959, access to good spawning habitat in the North Fork Matilija Creek was also cut off and fewer fish were produced that would eventually return to spawn as adults. The steelhead run dropped to around 100 individuals, which then had to utilize remaining favorable areas mostly within the mainstem for spawning and rearing. Considering the high flows that can occur in the mainstem with larger storms (relative to flows in the tributaries), access might be attained but spawning and rearing might prove to be impossible at times. Conversely, during dry years, fish unable to transit back downstream to the ocean due to low flows must survive in pools in the mainstem and be subjected to elevated temperatures at times, endure competition with other fish for a decreasing food supply, and survive exposure to predators. Spawning might not occur or be extremely limited due to lack of water at sites appropriate for spawning during wetter years. While utilizing the mainstem by steelhead trout for their entire life cycle may work during some years, there will be many other years when this will not be feasible due to the natural characteristics of the watershed as previously described.

Historical conditions

A 2011 **historical ecology study** of coastal Ventura County explored the historical characteristics (morphology, hydrology, and vegetation) of the Ventura River prior to major urban and agricultural modifications utilizing maps and other documents from as far back as the 1800s. The study reported that documentation of flow conditions on the Ventura River consistently depicts three reaches with distinct summer flow regimes within the area studied (Matilija Hot Springs to the ocean). Relevant to the current-day Reach 4, the study found flow was perennial from Matilija Hot Springs to around Cozy Dell Canyon (in the vicinity of the current-day Robles Diversion). Below there the river became intermittent until Oak View and the river's confluence with San Antonio Creek. Perennial flow resumed from just above San Antonio Creek confluence down to the ocean. However, the precise extent and location of summer water would have fluctuated in response to annual variations in rainfall and runoff (the report mentions some historical documents describing the river as an abundant source of water, while others describe it as an arid stream). Thus, historical documentation supports that the upper part of the Regional Board's Reach 4 was intermittent prior to any major water diversions or pumping, as it often is today, while the lower part of Reach 4 was perennial.

Actions to Address Impairments (other than TMDLs)

The **Steelhead Restoration and Management Plan for California**, the document used to establish the original impairment listings, identifies a number of recommended actions relating to Reach 4 including:

- A fishway should be constructed at the Robles Diversion, and
- DFG should negotiate improved bypass flows at the Robles Diversion. The negligible bypass flow from the Robles Diversion often causes a complete dewatering of the middle reach of the Ventura River.
- DFG should initiate discussions regarding the removal or modification of Matilija Dam to allow passage to headwater spawning and rearing areas. This would restore over 50% of the original spawning and rearing habitat in the Ventura River system.

Various documents were reviewed to ascertain whether the impairments are being addressed by actions other than a TMDL. They reveal a number of activities have occurred since 1996 relating to these impairments, including actions recommended by the management plan:

- The **Ventura River Steelhead Restoration and Recovery Plan** was developed in 1997. The Plan identified a range of potential conservation actions to promote recovery and restoration of steelhead trout including, 1) passage measures to facilitate upstream and downstream migration, 2) non-flow related measures to improve habitat, 3) flow-related measures to improve habitat, and 4) population augmentation through supplementation of fish to increase steelhead populations.
- Fish passage facilities were constructed at Robles Diversion in 2005 and the bypass flow pattern has been modified per NOAA Fisheries' **Biological Opinion** (BO) of 2003.
- An **Ecosystem Restoration Feasibility Study** (2004) was conducted for the river; removal of Matilija Dam was recommended in order to restore the Matilija Creek and Ventura River ecosystem .
- Development of a Habitat Conservation Plan (HCP) began in 1999. NOAA Fisheries listed anadromous steelhead in the Southern California Evolutionarily Significant Unit (ESU), which includes the Ventura River, as endangered in August 1997 under the Endangered Species Act (ESA). Consequently, any project or action that may affect steelhead or their habitats requires consultation with NOAA Fisheries to obtain an incidental "take" permit. Since operation and maintenance (O & M) of water diversions, river and stream channels managed for flood control purposes, transportation facilities and sewage treatment plants may affect steelhead in the Ventura River, project operators must consult with NOAA Fisheries to obtain permits. Other endangered species are under the jurisdiction of U.S. Fish & Wildlife Service (USFWS). To comply with the ESA, the O & M agencies are engaging in

consultation with NMFS and USFWS under Section 10 and an HCP will serve as the basis for any incidental take permit.

Additional Recommended Actions to Address Impairments

- Support early development of a groundwater management plan by local water agencies.
- Investigate (with State Board Water Rights) whether wells are pumping from percolating groundwater or subterranean streams. Refer subterranean pumpers for water rights permitting and licensing.
- Encourage enforcement by National Marine Fisheries Service of incidental take of steelhead trout in violation of the Endangered Species Act.

Conclusions

The Steelhead Restoration and Management Plan for California identified a number of potential actions that could occur in aid of steelhead trout recovery within Reach 4. The two recommended actions that directly impact Reach 4 have been completed; namely, the construction of a fish passage at the Robles Diversion and modification of bypass flows at Robles per NOAA Fisheries' BO. Other recommended actions that indirectly affect the use of Reach 4 by steelhead trout are still underway. A barrier such as Matilija Dam, physically located upstream in another reach, impacts the steelhead run in the Ventura River Reach 4 through forcing the fish to spend more of their lifespan in a portion of the mainstem which has intermittent flows, has less high quality spawning and rearing habitat, and where they are subject to higher temperatures and complete loss of water at times. Efforts are underway to remove Matilija Dam. Once removal is accomplished, steelhead trout will be able to migrate upstream to tributaries with higher quality spawning and rearing habitat, as they did prior to 1948, rather than rely upon areas within the mainstem, such as Reach 4, for spawning and rearing. Reach 4 can then be utilized primarily for transit by steelhead trout between the ocean and upstream spawning habitat, as it was historically.

The above actions primarily address activities affecting surface water (although an HCP can also encompass groundwater pumping activities). In the Ventura River Watershed, ground and surface waters are closely interconnected. Additional actions are recommended to address any contributions to the problem by groundwater withdrawals that may not be covered by the previously mentioned actions. The local water agencies have stated their intention to eventually complete a groundwater management plan although they feel various studies need to be completed first. The Regional Board will support early development of such a plan through letters of support for grants being pursued for needed studies. The water agencies are encouraged to begin the process of forming a groundwater management agency as soon as possible and lay the foundation for plan development. Additionally, while it is clear many wells are pumping from percolating groundwater, it is possible, based on anecdotal evidence provided by National

Marine Fisheries Service, that some wells are pumping from subterranean streams which requires permitting and licensing by the State Board's Division of Water Rights. An investigation into this is needed, followed by appropriate action. Finally, in lieu of a final HCP being available, and the fact that only public agencies would eventually be party to it, not private operators of diversions or wells, National Marine Fisheries Service should be encouraged to document incidental take of steelhead trout and pursue enforcement for violations of the Endangered Species Act.

The actions completed in Reach 4, those underway in the watershed to remedy the impairment, and those additional actions recommended be pursued, qualify the Reach 4 listings for water diversions and pumping to be moved to the "being addressed by action other than TMDL" list from the "TMDL required" list.

References

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U.S. Army Corps of Engineers, 2004. Matilija Dam Ecosystem Restoration Feasibility Study.

Casitas Municipal Water District
Monthly Cost Analysis
2012/2013

09/05/2012

	Marzula & Marzula *11-5-21-5049-12*	Operation of Robles *11-5-??-????-14*	Fisheries *11-5-28-50??-??*	Project Name Fish Passage	Cost of the Fish Passage
2003/2004	***0.00***	***132,143.20***	***6,066.93***		
2004/2005	***0.00***	***298,006.35***	***39,124.63***		***8,079,888.06***
2005/2006	***274,270.75***	***144,052.92***	***93,406.52***		***0.00***
2006/2007	***194,409.73***	***110,707.78***	***188,651.75***		***114,790.04***
2007/2008	***21,111.90***	***117,299.80***	***272,644.56***		***0.00***
2008/2009	***1,207.75***	***88,201.00***	***307,739.00***		***0.00***
2009/2010	***216,797.47***	***124,874.54***	***342,756.94***		***0.00***
2010/2011	***169,932.80***	***148,506.23***	***373,535.60***		***0.00***
2011/2012	***5,976.46***	***84,305.75***	***363,608.72***		***0.00***
				Expenditures	
July	359.95	3,511.66	24,786.58		
August	0.00	10,401.12	27,695.15		
September					
October					
November					
December					
January					
Feburary				***Less: Grants***	
				CA Coastal Conservancy	-1,750,000.00
March				CA Dept of Fish & Game	-1,500,000.00
				CA Dept of Fish & Game	-1,000,000.00
April				Pacific States Marine *(Timber Debris Fence)*	-8,988.86
May				Pacific States Marine *(Vaki Shroud)*	-18,980.00
June					
Total Cost YTD	***359.95***	***13,912.78***	***52,481.73***	**Total Cost TD**	***8,194,678.10***
				Less: Grant Funding	***-4,277,968.86***
Total Project Cost	***884,066.81***	***1,262,010.35***	***2,040,016.38***	**Total Project Cost**	***3,916,709.24***

Total: Operation of Robles, Fisheries and Fish Passage ***7,218,735.97***

CASITAS RESERVOIR WATER INVENTORY SUMMARY
2012 CALENDAR YEAR
(acre-feet)

	RESERVOIR (last day of previous month)		RESERVOIR INFLOW					RESERVOIR RELEASES		
MONTH	ELEV (ft)	STORAGE	DIRECT	VENTURA RIVER DIVERS'N	TOTAL	PRECIP	EVAP	TO MAIN SYSTEM	SPILL	CHANGE IN STORAGE
JAN	548.02	205482	-95	0	-95	309	269	1139	0	-1194
FEB	547.52	204288	-10	0	-10	34	403	1123	0	-1503
MAR	546.89	202785	120	12	132	839	625	1010	0	-663
APR	546.64	202193	67	75	141	630	611	706	0	-547
MAY	546.44	201718	85	0	85	0	974	1331	0	-2220
JUN	545.50	199498	735	0	735	0	1001	2034	0	-2299
JUL	544.52	197199	-65	0	-65	2	1144	1842	0	-3049
AUG	543.21	194150	-45	0	-45	1	1155	2275	0	-3475
SEP										
OCT										
NOV										
DEC										
(JAN)			NA	NA	NA	NA	NA	NA	NA	NA
TOTAL			791	87	878	1814	6181	11460	0	-14949

reservoir capacity = 254,000 a.f. @ 567 ft.

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CASITAS RESERVOIR WATER INVENTORY SUMMARY
2011/12 WATER YEAR

(All Volumes in Acre-feet)

	RESERVOIR (last of previous month)		RESERVOIR INFLOW					RESERVOIR RELEASES		
MONTH	ELEV (ft)	STORAGE	DIRECT	VENTURA RIVER DIVERS'N	TOTAL	PRECIP	EVAP	TO MAIN SYSTEM	SPILL	CHANGE IN STORAGE
OCT '11	549.76	209680	-264	0	-264	363	576	1195	0	-1673
NOV '11	549.07	208008	-453	0	-453	576	312	797	0	-986
DEC '11	548.66	207022	-422	0	-422	60	160	1018	0	-1540
JAN '12	548.02	205482	-95	0	-95	309	269	1139	0	-1194
FEB '12	547.52	204288	-10	0	-10	34	403	1123	0	-1503
MAR '12	546.89	202785	120	12	132	839	625	1010	0	-663
APR '12	546.64	202193	67	75	141	630	611	706	0	-547
MAY '12	546.44	201718	85	0	85	0	974	1331	0	-2220
JUN '12	545.50	199498	735	0	735	0	1001	2034	0	-2299
JUL '12	544.52	197199	-65	0	-65	2	1144	1842	0	-3049
AUG '12	543.21	194150	-45	0	-45	1	1155	2275	0	-3475
SEP '12										
OCT '12			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL			-348	87	-261	2813	7229	14471	0	-19147

reservoir capacity = 254,000 a.f. @ 567 ft.

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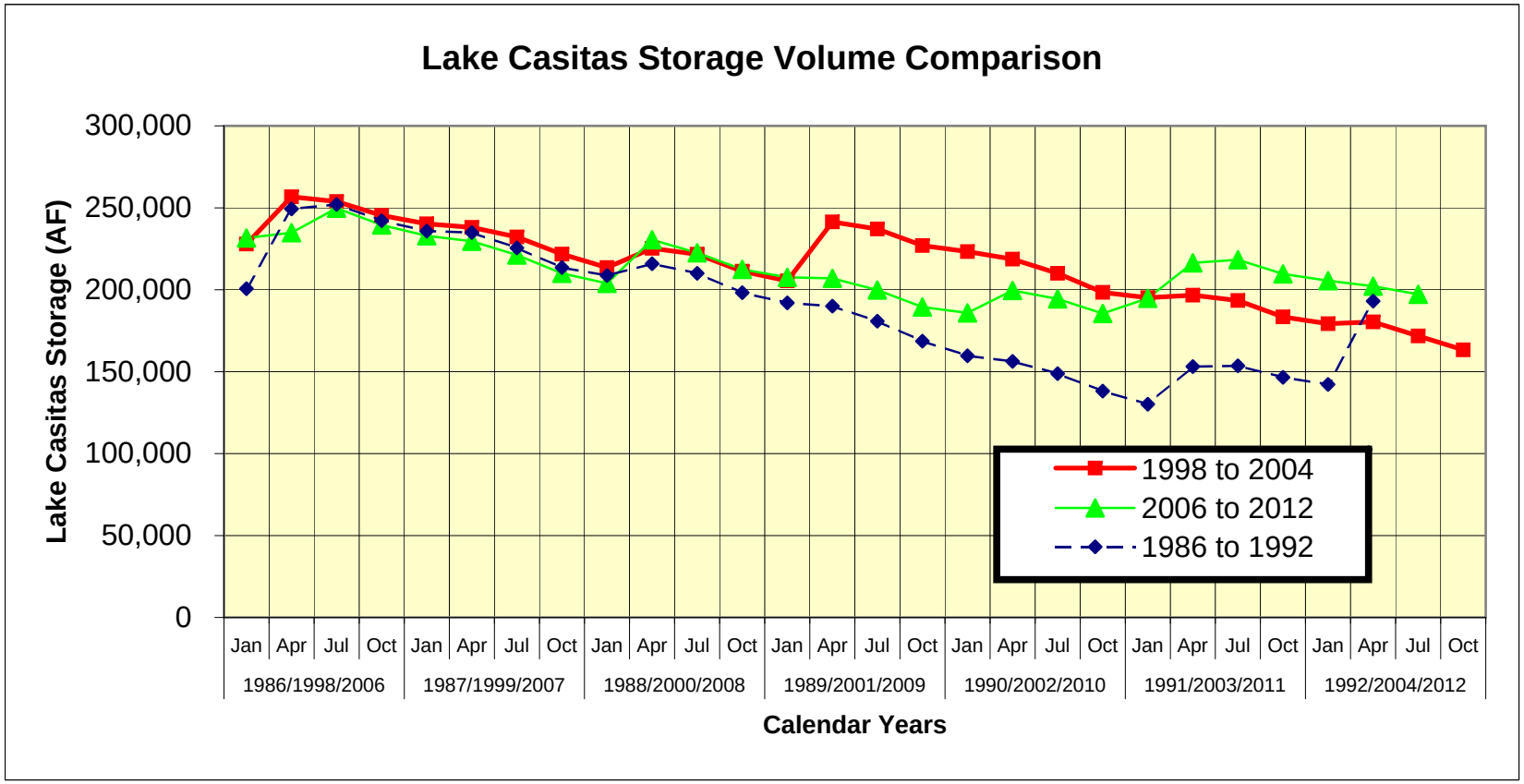


June 30, 2012 Lake Storage @ 197,199 AF = 77.63%

Total of Releases to Main Distribution System from Lake Casitas for WaterYear 2010/11 (October 1 thru September 30) = 14,490 Acre Feet

Full Lake storage = 254,002

CASITAS MUNICIPAL WATER DISTRICT
LAKE CASITAS RECREATION AREA

DATE: August 21, 2012

TO: Steve Wickstrum, General Manager

FROM: Carol Belser, Park Services Manager

SUBJECT: Recreation Area Monthly Report for July 2012

Visitation Numbers
The following is a comparison of visitations for July 2012:

	July 2011	July 2012	June 2012
Visitor Days	128,936	109,868	77,776
Camps	11,244	10,046	8,700
Cars	32,234	27,467	19,444
Boats	614	337	287
Kayaks & Canoes	10	8	5

Fiscal Year to Date Visitation	
2011/2012	128,936
2012/2013	109,871
% Change	-14.786

Administration

Astronomy Night was held on July 7 and the movie, Yogi Bear, was shown July 21. Approximately 30 and 120 participants attended respectively.

Boating
There were 13 cables sold for new inspections, 19 boats were re-inspection and a total of 726 boats were retagged. Three failed the first inspection.

Shoreline fishing at night was held July 26, 27 and 28. Moonlite fishing by boat was held on July 14 with 9 boats participating.

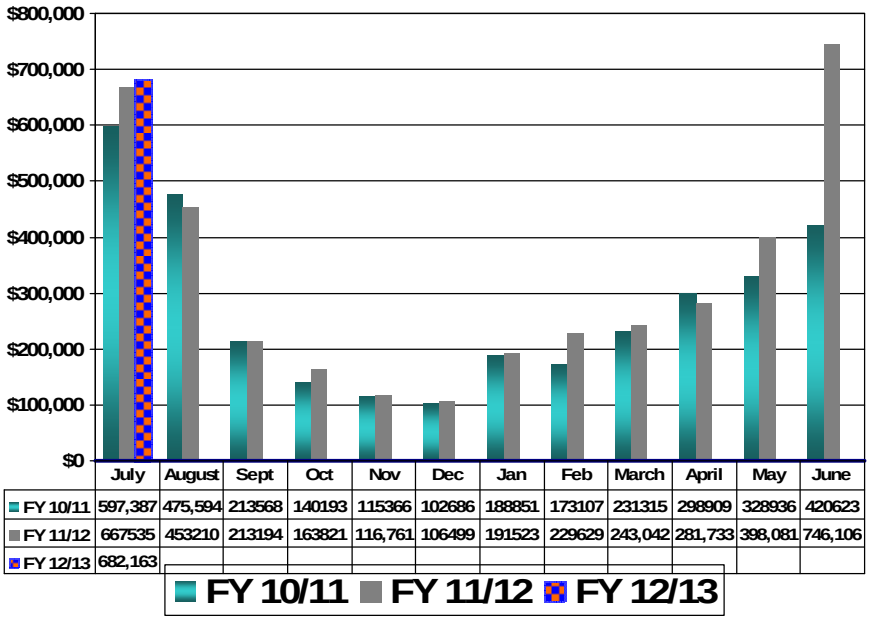
WON Bass night fishing tournament was held July 28 with 16 boats participating.

Incidents
There were several incidents requiring calls for outside support for emergency service. They included two domestic disputes, an unconscious person, a fall victim, trouble breathing, a sick child, a fractured arm, a missing person, and a physical altercation.

Revenue Reporting

The figures below illustrate all Lake Casitas Recreation Area's revenue collected in the respective month (operations, concessions, Water Adventure, etc.) per the District's Financial Summary generated by the Finance Manager.

LCRA TOTAL REVENUE



	July	August	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June
FY 10/11	597,387	475,594	213568	140193	115366	102686	188851	173107	231315	298909	328936	420623
FY 11/12	667535	453210	213194	163821	116,761	106499	191523	229629	243,042	281,733	398,081	746,106
FY 12/13	682,163											

Note: June 2012 revenue included $128,000 grant reimbursement from BOR and $80,000 from Boating Waterways for a Patrol Vessel

CASITAS MUNICIPAL WATER DISTRICT
TREASURER'S MONTHLY REPORT OF INVESTMENTS
09/05/12

Type of Invest	Institution	CUSIP	Date of Maturity	Amount of Deposit	Current Mkt Value	Rate of Interest	Date of Deposit	% of Portfolio	Days to Maturity
*TB	Federal Home Loan Bank	3133XSP930	12/13/13	$743,750	$725,711	3.125%	07/01/10	5.70%	458
*TB	Federal Home Loan Bank	3133XWNB10	06/12/15	$729,603	$747,712	2.875%	07/01/10	5.87%	997
*TB	Federal Home Loan Bank	3134A4VG60	11/17/15	$801,864	$795,753	4.750%	07/19/10	6.25%	1152
*TB	Federal Home Loan MTG Corp	3134G3GT10	10/18/17	$220,000	$220,365	1.250%	01/03/12	1.73%	1843
*TB	Federal Home Loan MTG Corp	3135G0ES80	11/15/16	$696,737	$704,159	1.375%	03/12/12	5.53%	1510
*TB	Federal National MTG Association	3136FR3N10	09/20/16	$702,422	$700,336	2.125%	09/20/11	5.50%	1455
*TB	Federal Home Loan MTG Corp	3137EABA60	11/17/17	$1,211,010	$1,216,060	5.125%	01/03/12	9.55%	1872
*TB	Federal Home Loan MTG Corp	3137EABS70	09/27/13	$766,605	$729,148	4.125%	07/01/10	5.73%	382
*TB	Federal Home Loan MTG Corp	3137EACD90	07/28/14	$739,907	$735,084	3.000%	07/01/10	5.77%	683
*TB	Federal Home Loan MTG Corp	3137EACE70	09/21/12	$723,646	$700,616	2.125%	06/30/10	5.50%	16
*TB	Federal Natl MTG Assn	31398AYY20	09/16/14	$739,123	$739,193	3.000%	07/01/10	5.81%	731
*TB	US Treasury Inflation Index NTS	912828JE10	07/15/18	$1,055,030	$1,237,485	1.375%	07/06/10	9.72%	2110
*TB	US Treasury Notes	912828JW10	12/31/13	$709,352	$711,816	1.500%	04/01/10	5.59%	476
*TB	US Treasury Notes	912828LZ10	11/30/14	$718,129	$729,092	2.125%	07/01/10	5.73%	805
*TB	US Treasury Notes	912828MB30	12/15/12	$709,707	$701,883	1.125%	06/30/10	5.51%	100
*TB	US Treasury Inflation Index NTS	912828MF40	01/15/20	$1,041,021	$1,254,157	1.375%	07/01/10	9.85%	2650
	Accrued Interest			$59,036	$84,926				
	Total in Gov't Sec. (11-00-1055-00&1065)			**$12,366,942**	**$12,733,497**			**85.50%**	
*CD	CD -			$0	$0	0.000%		0.00%	
	Total Certificates of Deposit: (11.13506)			**$0**	**$0**			**0.00%**	
**	**LAIF as of: (11-00-1050-00)**		N/A	**$443**	**$443**	0.38%	Estimated	**0.00%**	
***	**COVI as of: (11-00-1060-00)**		N/A	**$2,158,783**	**$2,158,783**	0.81%	Estimated	**14.50%**	
	TOTAL FUNDS INVESTED			**$14,526,168**	**$14,892,723**			**100.00%**	
	Total Funds Invested last report			$14,526,168	$14,857,750				
	Total Funds Invested 1 Yr. Ago			$14,535,552	$14,839,628				
****	**CASH IN BANK (11-00-1000-00) EST.**			**$2,859,097**	**$2,859,097**				
	CASH IN Western Asset Money Market			**$3**	**$3**	0.010%			
	CASH IN PIMMA Money Market			**$503,389**	**$503,389**				
	TOTAL CASH & INVESTMENTS			**$17,888,657**	**$18,255,212**				
	TOTAL CASH & INVESTMENTS 1 YR AGO			$17,995,532	$18,299,608				

*CD CD - Certificate of Deposit
*TB TB - Federal Treasury Bonds or Bills
** Local Agency Investment Fund
*** County of Ventura Investment Fund
Estimated interest rate, actual not due at present time.
**** Cash in bank

No investments were made pursuant to subdivision (i) of Section 53601, Section 53601.1 and subdivision (i) Section 53635 of the Government Code.
All investments were made in accordance with the Treasurer's annual statement of investment policy.