

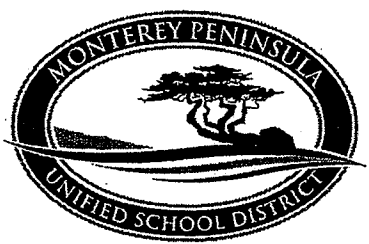


Supplement to 8/16/10 MPWMD Board Packet

Attached are copies of letters received between July 13, 2010 and August 6, 2010. These letters are also listed in the August 16, 2010 Board packet under item 23, Letters Received.

Author	Addressee	Date	Topic
Dan Albert	Darby Fuerst	7/7/10	Authorization to Drill Additional Test Well Under Existing License Agreement
Paul Kephart	MPWMD Board	7/13/10	SNG Water Distribution Permit
Rick Albers	MPWMD Board	7/13/10	SNG Water Distribution Permit
Paul Bruno	Kristi Markey	7/19/10	Application to Amend California American Water Distribution System to Serve Monterey Bay Shores Ecoresort
Laurens H. Silver	MPWMD Board	7/19/10	Testimony of Sierra Club Opposing Approval of a Water Distribution Permit to Serve the SNG Ecoresort
Peter Fallon	Darby Fuerst	7/21/10	Fractured Rock Wells
Steve Dallas	Darby Fuerst	7/20/10	Fractured Rock Wells
Brian LeNeve	Darby Fuerst	7/22/10	Protest by Carmel River Steelhead Association/Permit 20808B (Application 27614B) Carmel River, Monterey County
Laurens H. Silver	Regina Doyle	8/4/10	Joint Application of Cal-Am and SNG for a Water Distribution Permit

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MONTEREY PENINSULA UNIFIED SCHOOL DISTRICT

P.O. Box 1031
700 Pacific Street
Monterey, CA 93942-1031

(831) 901-7227
(831) 649-3130 FAX
www.mpusd.k12.ca.us

Dan Albert, Asst. Superintendent District Operations
dalbert@mpusd.k12.ca.us

RECEIVED

July 7, 2010

JUL 14 2010

Darby Fuerst
General Manager
Monterey Peninsula Water Management District
P.O. Box 85
Monterey, CA 93942-0085

MPWMD

RE: Authorization to Drill Additional Test Well Under Existing License Agreement

Dear Mr. Fuerst: *Darby*

Pursuant to Section 1.b. of the "License to Drill/Maintain/and Monitor Water Wells" between the Monterey Peninsula Unified School District and the Monterey Peninsula Water Management District, commencing February 3, 2009 and terminating February 4, 2012, and subject to all of the terms and conditions said License Agreement, the School District hereby grants written permission for the Water District to drill one additional test well of no more than 22 inches in diameter for the sole and exclusive purpose of testing the feasibility and capacity for injection of the Seaside Aquifer from the Fitch Middle School site. The drilling and construction of the test well will be completed by August 8, 2010. If the drilling and construction is not completed by this date, all construction will commence after operational school hours. The additional well may not be used for pumping water from the Carmel River in any form into the Seaside Aquifer for delivery and or resale by the Monterey Peninsula Water Management District, California American Water Company or the Marina Water Management District now or in the future without first obtaining the separate-written approval from the School District.

Sincerely,
Dan Albert

Dan Albert
Assistant Superintendent
District Operations



rana creek
LIVING ARCHITECTURE

10 Harris Court, Suite C-9
Monterey, CA 93940
Ph 831. 659. 3820
Fz 831. 646. 2106
www.ranacreek.com

July 13th 2010

Monterey Peninsula Water Management District
5 Harris Court
Building GPO
Box 85 Monterey California 93942

RECEIVED

JUL 16 2010

MPWMD

Re: SNG water distribution permit

Dear MPWMD Board of Directors,

I am writing to express my support for your approval of Ed Ghandour's SNG Water Distribution Permit. Your decision is about SNG's water distribution permit for Monterey Bay Shores EcoResort (a joint Cal Am and SNG application). Your opinion of other non-related land use and architectural issues should not have bearing on this decision. The Coastal Commission will deal with all other issues related to the project. Your job is only related to the WDS Permit and the regulations governing its issuance. Here you need be focused only on compliance with your rules for a WDS permit. The applicant has complied with your rules. Your staff supports approval.

I am disappointed the District has expended so much money on excessive legal fees after wrongful denial of the permit last year. The court has ruled in favor of SNG. No CEQA environmental studies need to be conducted on impacts to the Carmel River by the Seaside Adjudicated Basin.

In the future I encourage your board to be more focused on water conservation and water innovation projects for our County. As part of its application SNG-MBS obtained Monterey County Health Departments endorsement of its grey water recycling system that reduces water consumption. The District should be proud of this leading edge approach and grateful to the applicant for his vision and leadership.

SNG has gone through the process. It has complied with the regulations. The District should act in accordance with the Court's ruling. The Board should approve the permit.

Respectfully

Paul Kephart
CEO and President
Rana Creek Habitat Restoration

Cc
SNG



rana creek
LIVING ARCHITECTURE

10 Harris Court, Suite C-5
Monterey, CA 93940
Ph 831.659.3820
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July 13th 2010

Monterey Peninsula Water Management District
5 Harris Court
Building GPO
Box 85 Monterey California 93942

RECEIVED
JUL 16 2010
MPWMD

Re: SNG water distribution permit

Dear MPWMD Board of Directors,

I am writing to express my support for your approval of Ed Ghandour's SNG Water Distribution Permit, a joint Cal Am and SNG application for a water distribution for Monterey Bay Shores EcoResort. Please keep in mind that your role is to focus on compliance with rules for a WDS permit, upon which your opinion about other non-related land use issues should not come to bear. The applicant has complied with your rules for a WDS permit, and your staff supports its approval. The Coastal Commission has jurisdiction over other related issues for this project.

It is unfortunate that that such a large amount of taxpayer's money has been spent in legal fees following the wrongful denial of the permit last year. No CEQA environmental studies about impacts to the Carmel River by the Seaside Adjudicated Basin need to be conducted. The court has ruled in favor of SNG.

Going forward; I hope that MPWMD realigns its priorities to embrace water conservation and water innovation projects in our County. As part of its application, SNG-MBS obtained an endorsement by the Monterey County Health Department for its graywater recycling system that will reduce water consumption onsite. Indeed, we should be proud of this innovative and visionary project.

SNG has gone through the process. It has complied with the regulations. The District should act in accordance with the Court's ruling. The Board should approve the permit.

Respectfully,

Rick Alpers
Vice President, Operations & Sales
Rana Creek Habitat Restoration

Cc
SNG

Received at July 19, 2010.
MPWMD Board Meeting
Item 21

Paul B. Bruno, CPA
114 Via Del Milagro, Monterey, CA, 93940

January 12, 2009

JUL 19, 2010



Ms. Kristi Markey, Chair
Monterey Peninsula Water Management District
Post Office Box 85, Monterey, 93942

Re: Application to Amend California American Water Distribution System to Serve
Monterey Bay Shores Ecoresort, MPWMD Application # 20080915MBS-L4

Dear Ms. Markey,

I am writing to support the Board's approval of the application to amend California American Water Distribution System to serve the Monterey Bay Shores Ecoresort. The Board will consider this matter on January 29, 2009. Unfortunately, I will be attending to other business in Washington DC and unable to speak to the board in person that day.

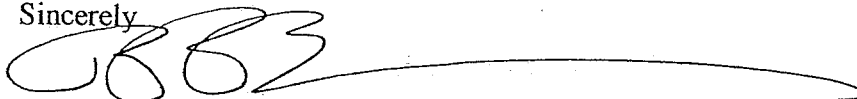
As you may know, I currently serve as the Vice Chair of the Seaside Basin Watermaster and have twice served on the MPWMD's Community Advisory Committee. I am not writing to debate the merits of the proposed resort. While I support the preliminary design of the ecoresort and believe that it encompasses many visionary components, I will not address those aspects of the project since land use decisions are not within the District's charge.

I understand that the MPWMD must approve any amendments to a water distribution system within its boundaries. In this case, your Board's approval should be a mere formality. The request before you is unique in that it deals with the applicant's adjudicated rights to produce water from the basin. Those rights are governed by the Seaside Basin Watermaster which has already taken a position on their plan. At its October 23rd meeting, the Watermaster unanimously approved a letter stating that Security National Guaranty's water distribution plan was in compliance with the Basin Adjudication. Specifically, that "SNG's approach as described is consistent with the terms of the Basin Adjudication Decision." Please note that Director Lehman participated in that meeting as the MPWMD's representative.

SNG's plan is more than just consistent with the adjudication. I believe that it is a very innovative way to bring us one step closer to achieving the goal of protecting the basin from seawater intrusion. The adjudication encourages this sort of creativity by allowing those who have water rights to move both the pumping and the use within the basin. Accordingly, I believe that it would be very difficult for the MPWMD to defend a denial of this application.

The Watermaster understood that SNG's proposal would be good for the overall health and protection of the basin. If your board judges the requested amendment on its merits, they should come to the same conclusion and approve the request.

Sincerely



Paul B. Bruno, CPA

Re: Testimony of Sierra Club Opposing Approval of a Water Distribution Permit to Serve the SNG "Ecoresort."

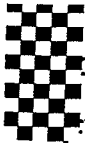
In a letter dated July 16, 2010, to District Chair Regina Doyle. Sierra Club urged the District Board. at its meeting Monday evening, July 19, to deny the joint Cal Am-SNG (Monterey Bay Shores Ecoresort) water distribution application. Cal Am is seeking to deliver 90 acre feet from its Seaside Basin (Peralta Well) production to the SNG "Ecoresort." through an addition to its service area and extension of its delivery substructure.

The Sierra Clubs letter requests that the District Board must take into account all impacts to the resources of the Carmel River from Cal Am's delivery of water to SNG by Cal Am. Because the Seaside Basin is over draft, the water Cal Am provides to SNG (90 afy) will result in a proportionate reduction (by 85 AFY) of water available to Cal Am's other customers in the Seaside Basin. This is required under the terms of the Adjudication.

In order to avert paying substantial penalties for exceeding its production allocation as a Standard Producer under the Adjudication decree., Cal Am has substantial economic incentive to increase its diversions from the Carmel River (by 85 afy) as replacement water (so long as Cal production is less than the amount permitted by the SWRCB under the 2009 Cease and Desist Order. (In fact since 2005 Cal Am has been below the production ceiling by 5-8%).

Sierra Club strongly believes that the resources of the Carmel River should not harmed to any degree by an increase in Cal Am's illegal diversions resultant from its delivery of water to the "Eco-Resort". To the extent the Seaside Basin is in overdraft, as determined in the Adjudication., the Adjudication requires Cal Am to proportionately reduce its production (Cal Am produces 87% of the water produced by the standard producers) when it provides water service to the Ecoresort . Cal Am should not be allowed to avoid the required decreases its production allocation to serve other customers relying on Seaside Basin water by increasing its unlawful diversions from the Carmel River.

Sierra Club believes this matter deserves your immediate attention, and urges you appear Monday night to protest against Cal Am "robbing" the River to make up for increases in its production from the Seaside Basin ordered by the Court. Cal Am must not be allowed to shift to the River its production decreases. It must not be allowed to increase its unlawful diversions from the River in order to accommodate the needs of the Eco Resort. The joint water distribution permit, if approved, would provide with Cal Am with a means to enhance its water delivery capabilities at the expense of the rate payers.



0/2010

Windows Live Hotmail Print Message

W: WDC Meeting on 21 July 2010

From: **Pete Fallon** (pmfallon1@msn.com)
 Sent: Tue 7/20/10 3:34 PM
 To: arlene@mpwmd.dst.ca.us
 Cc: darby@mpwmd.dst.ca.us

RECEIVED

JUL 20 2010

MPWMD

July 20, 2010

MPWMD
 Darby Fuerst
 Water Demand Committee (WDC) meeting 21 July, 2010

To Whom it May Concern,

Due to previous commitments, I will be unable to attend the WDC meeting on July 21, 2010. However, I support item #6; "REVIEW ESTIMATED COSTS ASSOCIATED WITH PROPOSED EXPANSION OF FRACTURED ROCK STUDY TO INCLUDE ENTIRE DISTRICT"

I approve your proposal to allocate monies (\$ 30k or so) for this very important study of Fractured Rock Wells. Hopefully we can avoid another North County failed well situation here on the peninsula. It is common knowledge that several wells have already failed and that needs to be contained. It is also vitally important that we conserve and protect all our underground water resources. Having "open season" on well drilling in Monterey County is counter productive to our long term water conservation policies. I request that we immediately suspend all well drilling until this study is completed and approve UO 143 immediately. In my opinion, failure to do this is irresponsible only compounds our problem.

Thanks for your continued work on this vital issue.

Best Regards,

 Peter M. Fallon

Arlene Tavani

From: steve.dallas [sgdallas@yahoo.com]

Sent: Tuesday, July 20, 2010 2:14 PM

To: Arlene Tavani

Cc: Darby Fuerst

Subject: Water Demand Committe meeting July 21,2010 (pease enter into the record)

RECEIVED

JUL 20 2010

MPWMD

July 20,2010

MPWMD

Darby Fuerst

Water Demand Committee (WDC) meeting 21 July, 2010

To Whom it May Concern,

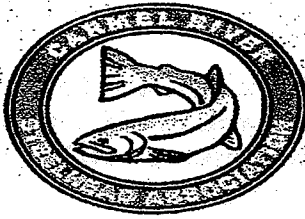
I'm sorry i can not attend you WDC meeting on July 21,2010 but I'm in FULL support of item #6.
"REVIEW ESTIMATED COSTS ASSOCIATED WITH PROPOSED EXPANSION OF FRACTURED
STUDY TO INCLUDE ENTIRE DISTRICT"

I hope and ask that you approve the small amount of dollars 30k for this very important study in Fracture Wells. We do not need another North County Problem here in our area, and as you know some wells hav failed in our Community in the MPWMD.

Thank you
Steve Dallas

<http://www.mpwmd.dst.ca.us/asd/board/committees/waterdemandcommittee/2010/20100721/agenda2010>

7/20/2010



Carmel River Steelhead Association
501 (C)(3) TIN 77-0093979
P.O. Box 1183
Monterey, CA 93942

RECEIVED

JUL 27 2010

MPWMD

Darby Fuerst, General Manager
 Monterey Peninsula Water Management District
 P.O. Box 85
 Monterey, CA 93942-0085

July 22, 2010

**Subject: Protest by Carmel River Steelhead Association
 Permit 20808B (Application 27614B) Carmel River, Monterey County**

Dear Mr. Fuerst:

Thank you for your letter of June 7, 2010. As I explained to Andrew Bell in the two conversations I had with him after June 7, 2010, your letter arrived right after we had our monthly board of directors meeting. As the outcome of this protest is very important to us I wanted to discuss it with the entire board which met on July 15.

It appears that we are still far apart in resolving the CRSA protest. CRSA believes that a meeting would go a long way toward settling these issues.

After the meeting we had in October of last year Joyce Ambrosius with NMF stated that if CRSA wanted to change any flow requirements in the "Instream Flow needs for Steelhead in the Carmel River" CRSA would have to come up with science to back up our request. In your letter of June 7, 2010 you state "We ask that you provide a rationale as to the basis for the change to these flow criteria."

To address these requests, CRSA has been studying the Instream Flow report and the river to see how the two relate to each other. We have hired Salmonid and Flow experts to conduct and supervise Thompson riffle measurements, PHABSIM transects, pebble surveys and fish counts.

Our first Thompson survey which started at 80 cfs showed that even at that high flow fish could not pass. As we could not increase the flow in the river this summer we have been conducting regular PHABSIM transects of three riffles. The experts want another survey done at low flows (around 12 to 15 cfs.) When complete the experts will enter the data in a computer program to determine what flows would be necessary for fish to pass these obstacles. Until that is done and the results are in, CRSA is not in a position to provide the complete science requested by NMF and MPWMD.

While we are eager to meet and resolve the protest, at this time we do not know what flow will be required for the survival of Steelhead on the Carmel River. We would be willing to meet with you at any time, but at this time if you ask us for a flow requirement it would have to be high enough to cover all probabilities. We think it is important to complete the surveys and then schedule a meeting.

One thing that you can provide us in the interim is the legal justification for changing a State Water Board Order (that conditions 28 to 31 be included in any permits granted under application 27614B.) It appears, and in your June 7 letter you indicate that permit 20808A condition 23 and table A, B, and C were substituted for Decision 1632 condition 28 and tables A and B. CRSA does not believe these two conditions are equal. A table for the amount of water to remain in the river to protect the environment in summer is not the same as a table that shows how much water one can remove from the river before hurting fish in winter. Any change to Decision 1632 should have gone through the public process.

When a meeting is scheduled we will need to know which agencies and personnel will be attending. If "experts" or attorneys will be involved we will need at least two weeks or more to make sure we have the proper personnel in attendance.

Sincerely,



Brian LeNeve
CRSA Board member

Cc: Katherine Mrowka, Chief Inland Streams Unit, State Water Resources Control Board
Robert McLean, President, California American Water
Craig Anthony, General Manager, Coastal Division, California American Water
Joyce Ambrosius, Central Coast Supervisor, NMFS
Jeffery R. Single, Regional Manager, CA Dept. of Fish and Game

CALIFORNIA ENVIRONMENTAL LAW PROJECT
A Non-Profit Legal Corporation



Of Counsel-

Laurens H. Silver, Esq.
P. O. Box 667
Mill Valley, CA 94942
Telephone: (510) 237-6598
Facsimile: (510) 237-6598
Mobile: (415) 515-5688

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AUG -5 2010

MPWMD

August 4, 2010

Sent Via Electronic Mail and
U.S. Mail

Regina Doyle, Chair
Board of Directors
Monterey Peninsula Water Management District
5 Harris Court, Box 85,
Monterey, CA 93942-0085

Re: Joint Application of Cal-Am and SNG For A Water Distribution Permit

Dear Ms. Doyle:

Sierra Club requests that the following documents be considered part of the record relating to the District's consideration of the above captioned matter:

- a. WR 2009-0060 (Cease and Desist Order)
- b. Exhibit PT 39 (Written Testimony of Joyce Ambrosius submitted in evidence in WR 2009-0060 hearings) (attached in electronic form).
- c. Declaration of Dr. John Williams prepared and signed on April 7, 2010 in MPWMD v. SWRCB, M102101, Superior Court, Santa Clara County) (attached in electronic form).

It is anticipated that demand from the Ecoresort will be the greatest during the summer months when the steelhead fry become stranded in the River. Sierra Club urges the District to take this factor into account in formulating conditions on the permit that will minimize incremental diversions from the Carmel River during the summer months attributable to (as an indirect effect) Cal-Am's increased production from the Seaside Basin to serve SNG.

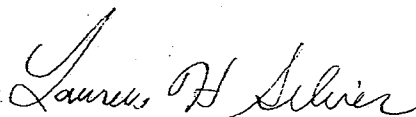
Since SWRCB Order 2002-02 was issued, the Carmel River population of steelhead shows a declining trend. See Williams Declaration at 10 *et seq* (attached). The best measurement available of population trends in the SCCC steelhead DPS are the numbers of spawning adults returning to the area below San Clemente Dam. In 2007, the total count at the dam was only 222 adults, while the 2008 total was 412 adults. *Id.* In 2009 only 95 adults returned, a seventeen year low. The steelhead population in the Carmel River has seen a 49% to 72% decline in numbers from 2001 to 2008. Williams Declaration at 11-14 and Figures 1 and 2. This year to date 153 fish were counted at San Clemente Dam up to March 30.

California American Water (CAW) is responsible for approximately 85% of the total water diversions from the Carmel River system and its associated subterranean flow. As a result of direct diversions of water by CAW and others, the Carmel River goes dry downstream from the Narrows (River Mile 9.5) usually by July of each year. From July until the winter rains begin, the only water remaining in the lower river is in isolated pools that gradually dry up as the groundwater table declines in response to pumping. Surface flow into the Carmel River Lagoon normally recedes after the rainy season in late spring, and ceases in summer as rates of water extraction from the river and alluvial aquifer exceed the flow in the river. (Williams Declaration at 5-6).

In his Declaration Dr. Williams concludes that in light of the low returns of adult steelhead the last two years, it is critical that every step be taken to minimize Cal-Am's unlawful diversions from the River. Declaration at 13 et. seq.

Preventing Cal-Am from indirectly diverting summertime production to serve SNG to the Carmel River would benefit the survival of steelhead fry in the River. Many steelhead fry rear in the habitat below the Narrows. Maintaining flow through this summer and fall in more of this habitat will allow such fish to rear to the smolt life-stage in the river, and avoid the stress and mortality associated with rescue and rearing in an artificial habitat. Even for parts of the river that do eventually go dry, keeping water in the river longer will allow fish more time to grow before they are subjected to rescue. See Williams Declaration at ¶20, 25, 26. Sierra Club again requests that if the District Board declines to perform additional environmental review, it minimize any impacts of Cal-Am production for SNG on the Carmel River, by requiring that there be no increased summer diversions from the Carmel River as an indirect result of Cal-Am's service to SNG and that in terms of water accounting, Cal-Am shall not use ASR water to serve SNG.

Sierra Club appreciates this opportunity to provide comment on the Joint Application in anticipation of the meeting on August 16 and to supplement the record of the July 19th hearing.



Laurens H. Silver, Esq.
California Environmental Law Project
Attorney for Sierra Club

cc: Vicky Whitney

IN THE MATTER OF THE CONSIDERATION OF A CEASE AND DESIST ORDER
AGAINST CALIFORNIA AMERICAN WATER (CAL AM) FOR UNAUTHORIZED
DIVERSION OF WATER FROM THE CARMEL RIVER IN MONTEREY COUNTY

DIVISION OF WATER RIGHTS PROSECUTION TEAM EXHIBIT 39 (PT – 39)

WRITTEN TESTIMONY OF JOYCE AMBROSIUS, FISHERY BIOLOGIST

I, Joyce Ambrosius, declare as follows:

1. Statement of Qualifications.

I am the Central California Coast Team Coordinator, Fishery Biologist in the Protected Resources Division of the United States Department of Commerce, NOAA's National Marine Fisheries Service (NMFS). My primary responsibility is to protect and restore habitats for species of salmonids listed as threatened or endangered under the Endangered Species Act (ESA). I have worked as a fishery biologist for over 17 years, and during the past ten years, have focused on the protection and recovery of steelhead populations in coastal streams of San Mateo, Santa Cruz, and Monterey counties. A true and correct copy of my Statement of Qualifications is attached. I have personal knowledge of the information contained herein and, if called as a witness, I could and would testify competently thereto.

2. NMFS Interests in this Proceeding.

NMFS is responsible for protecting and recovering Pacific salmonid species and their habitats that have been listed under the ESA. Under its federally mandated responsibilities, if a marine or anadromous species may need protection under the ESA, NMFS first determines whether the species qualifies for listing as either endangered or threatened. NMFS must also determine the extent of critical habitat necessary to sustain the survival of each species and to provide for its recovery.

**3. Status of Listing Actions and Critical Habitat Designation
in the Carmel River.**

NMFS designated the South-Central California Coast (SCCC) steelhead Distinct Population

Segment (DPS) as a federally listed threatened species on August 18, 1997, and it reasserted that listing on January 5, 2006 (71 Federal Register [FR] 834). A DPS is defined as a population that is: 1) markedly separated from other populations of the same taxon as a consequence of physical, physiological, ecological, and behavioral factors; and 2) significant to its taxon (71 FR 834). NMFS designated the entire Carmel River as SCCC steelhead Critical Habitat on September 2, 2005 (70 FR 52488).

In designating critical habitat, NMFS considers the following requirements of the species: 1) space for individual and population growth, and for normal behavior, 2) food, water, air, light, minerals, or other nutritional or physiological requirements, 3) cover or shelter, 4) sites for breeding, reproduction, or rearing offspring, and, generally, 5) habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of this species (50 CFR §424.12(b)). In addition to these factors, NMFS also focuses on known physical and biological features (primary constituent elements) within the designated area that are essential to the conservation of the species and that may require special management considerations or protection. These essential features may include, but are not limited to, spawning sites, food resources, water quality and quantity, and riparian vegetation.

4. **Protective Regulations.**

Protective regulations prohibiting a take of steelhead by all persons, including Federal agencies and private entities, were published on July 10, 2000 (65 FR 42422). These regulations, which went into effect on September 8, 2000, extend the legal prohibitions of section 9 of the ESA to SCCC steelhead, making their take unlawful. A "take" as defined in the ESA, includes, in part, to kill, injure, harm, or harass the species. The protective regulations describe certain activities that are very likely to injure or kill salmonids, or that may injure or kill salmonids, resulting in a violation of the ESA (64 FR 73479). These activities include, in part:

...Physical disturbance or blockage of the streambed where spawners or redds are present concurrent with the disturbance, Blocking fish passage through fills, dams, or impassable culverts, Water withdrawals that impact spawning or rearing habitat....

5. NMFS SCCC Steelhead Recovery Plan.

The Carmel River population of SCCC steelhead is one of the core populations identified by NMFS' Technical Recovery Team (TRT) as important for recovery of the SCCC steelhead DPS. It is the only watershed which has been singled out and placed in its own biogeographic region because of a unique set of physical and biological characteristics (PT -40). The basic strategy for recovery of SCCC steelhead is to recover a minimum number of rivers in each biogeographic region. Since the Carmel River is the only watershed in the Carmel Biogeographic region, the recovery of the SCCC steelhead population in the Carmel River is essential to the recovery of the SCCC steelhead DPS - not just because of its unique status but also because it is historically one of the largest and, therefore, potentially more viable steelhead populations within the SCCC steelhead DPS.

NMFS' SCCC Steelhead Recovery Plan is not completed at present and definitive population numbers needed to delist the SCCC population are not established as yet. NMFS' goal is to protect and conserve Carmel River steelhead and their habitat to the greatest extent possible in order to maximize the Carmel River watershed's substantial contribution toward recovering the SCCC steelhead DPS.

6. Status of Steelhead and its Critical Habitat in the Carmel River.

NMFS' most recent review of the status of west coast salmon and steelhead (71 FR 834) found the SCCC steelhead DPS is "likely to become endangered within the foreseeable future." Blocked access to historic spawning and rearing areas upstream of dams, and extensive water diversions have contributed to the decline in this population (PT - 40). Of all the streams in this DPS, the Carmel River presently maintains the largest adult run compared to any other single stream. Historically, over 90% of the rivers production occurred upstream of the San Clemente Dam (SCD) (PT - 41). The California Advisory Committee on Salmon and Steelhead cited an estimate of 20,000 steelhead in the Carmel River in 1928. Total run sizes have been estimated in the low thousands as recently as the mid 1960's to mid 1970's using a combination of ladder counts, spawning redd surveys and angler surveys. It is estimated about one-half (55%) of the

adults that enter the Carmel River move upstream of SCD (PT - 42) and the other half spawn below the dam. Though the steelhead population showed signs of recovery from the effects of the 1987-1991 drought with the 1997 and 1998 totals being the highest counts at SCD since 1975 (775 and 856, respectively); the population has been decreasing since a high of 804 adults were counted in 2001. In 2004, 2005, and 2006, the adult steelhead returns to the dam totaled only in the mid-300's (388, 328, 368 fish, respectively) (PT - 43). In 2007, the total count at the dam was only 222 adults, while this year's (2008) total is 412 adults (PT - 44). The steelhead population in the Carmel River has seen a 49% to 72% decline in numbers from 2001 to 2008.

Although all the numerous diverters in the Carmel River are contributing to the decline of the steelhead population in the river to some degree, California American Water (CAW) is responsible for approximately 85% of the total water diversions from the Carmel River system and its associated subterranean flow (PT - 45). As a result of direct diversions of water by CAW and others, the Carmel River goes dry downstream from the Narrows (River Mile 9.5) usually by July of each year. From July until the winter rains begin, the only water remaining in the lower river is in isolated pools that gradually dry up as the groundwater table declines in response to pumping. Surface flow into the Carmel River Lagoon normally recedes after the rainy season in late spring, and ceases in summer as rates of water extraction from the river and alluvial aquifer exceed the flow in the river. To keep as much stream channel wetted below SCD as possible during the low flow season, summer flow releases from SCD are negotiated annually under a Memorandum of Agreement between MPWMD, CAW, and California Department of Fish and Game (CDFG), but generally remain around 5 cubic feet per second (cfs) during late summer.

Adult steelhead migrate into the Carmel River to spawn in the winter months and then either die or return to the ocean, whereas juvenile steelhead are present and rear in the river year-round. The decrease in flows has a significant adverse effect on SCCC steelhead and critical habitat in the Carmel River by 1) decreasing the amount of habitat available for juvenile rearing, resulting in overcrowding in the areas where streamflow is still present, increased competition for food, and a decrease in food production; 2) stranding and killing steelhead as the stream channel dries

back; and 3) increasing predation (birds, raccoons) due to fish being trapped in isolated pools.

While large numbers of steelhead spawn below the SCD, the actual production of juveniles is low because survival depends upon streamflow remaining in the river throughout the entire summer, fall, and following winter. MPWMD annually rescues steelhead that are stranded due to dewatering between the Narrows and the Lagoon. From 1995 through 2005, a total of 208,015 juvenile steelhead were rescued. The number of juvenile steelhead rescued per year ranged from a low of 3,198 fish in 1998 to a high of 39,748 fish in 2003 (PT - 43). Rescued steelhead are either released to permanently flowing upstream reaches of stream, the Lagoon, or reared at the Sleepy Hollow Steelhead Rearing Facility. The rescue activities likely save some steelhead that would otherwise die from stranding; however, the rescue effort only accounts for a portion of the steelhead potentially lost in the lower river. A percentage of those fish that are subject to rescue, (ranging from 1-5%, and potentially higher depending on the skill of the rescuers and environmental conditions) are killed during capture. Those that are rescued may experience adverse conditions from competition and overcrowding in upper river segments or in the facility; and many that are not captured are left to die in the drying pools. Fish mortality rates have been high (over 50%) at the facility for a variety of reasons ranging from high water temperatures and disease to predation. Those fish that survive through the summer and fall are released back into the river once winter flows have connected the lower river to the Lagoon. Rescuing juvenile steelhead and rearing them over the summer period allows some fish to survive from the dewatering of the river; it is not an acceptable long term solution nor will it provide for recovery of the SCCC steelhead DPS.

After completion of SCD in 1921, the dam blocked the natural transport of sediment downstream. Lack of sediment transport below a dam causes channel incision, bed armoring, a decrease in channel complexity, overly steep banks, diminished riparian vegetation, and a lack of spawning gravels downstream. As a result of the SCD, a portion of the Carmel River downstream from the dam adjusted to the loss of bedload material by deepening its channel. In the river reach immediately downstream from the dam, fine riverbed materials were washed out, leaving only coarse materials, which prevented further erosion of the riverbed except during the

largest floods. This phenomenon, which commonly occurs downstream from dams, is called armoring. Through the process of armoring many habitat functions necessary to sustain salmonids are lost. These functions include recruitment of spawning gravels, maintenance of pool/riffle complexes and production and subsequent drift of invertebrates. Because gravels preferred by steelhead are transported downstream without being replaced, fewer riffles and pools are formed. The result is decreased spawning habitat and decreased juvenile steelhead rearing habitat. Changes in sediment load can also reduce the diversity of habitat for benthic invertebrates (a food source for steelhead). Without the scouring that occurs with mobilization of the bedload, there is a shift in the macroinvertebrate fauna to predator-resistant forms such as case-building caddisfly larvae that are less available as prey items for rearing fish (PT - 46).

Due to the lowered ground water levels from excessive water withdrawal, the riparian vegetation along the Carmel River has incurred stress and die-offs. This loss of riparian vegetation has contributed to bank erosion and destabilization of the river channel. This has endangered riverside properties which were developed after the river channel deepened. The increased development of the flood plain has created a much greater emphasis on flood protection and prevention of bank erosion, resulting in the placement of hard structures such as bare riprap, concrete rubble, cement walls, and cars, *etc.*, along about 40 percent of the lower river. The use of these hard structures has significantly degraded the habitat value of much of the lower 18 miles of river.

Hardening of the banks limits vegetation growth along the channel which decreases the amount of shade and insulation from ambient temperatures, thereby increasing water temperature, decreasing recruitment of large woody debris into the channel, and decreasing sources of prey items for steelhead from riparian vegetation. Hardening also limits sediment recruitment from the channel banks resulting in greater incision of the channel.

**7. Restoring Flow-Related Habitat in the Carmel River through
Modifications of Water Diversion Practices.**

State Water Resources Control Board (SWRCB) Order 95-10 concluded that CAW's

diversions are having an adverse effect on the riparian corridor along the river below SCD and upon steelhead which spawn in the river. Order 95-10 ordered CAW to diligently implement one or more of the following actions to terminate its unlawful diversions from the Carmel River: 1) obtain appropriate permits for water being unlawfully diverted from the Carmel River, 2) obtain water from other sources of supply and make one-for-one reductions in unlawful diversions from the Carmel, and/or 3) contract with another agency having appropriate rights to divert and use water from the Carmel River. A complete solution to the problem of excessive diversions from the Carmel River cannot be reached until CAW finds new water sources. There are currently several active plans for addressing CAWs need to obtain a new water supply. There are alternative plans for constructing a desalination facility to produce potable water that would offset direct diversions from the Carmel River. Complementing or supplementing a desalination facility is a plan to develop an Aquifer Storage and Recovery (ASR) project that would divert flows from the Carmel River during the winter and store them in an aquifer from which water could then be withdrawn during the period of seasonal low flows. The ASR project would likewise provide a water supply that would help offset unauthorized diversions from the Carmel River and help conserve natural flows during summer and fall.

In 2001, CAW and NMFS signed an agreement titled "Conservation Agreement Between California-American Water Company and National Marine Fisheries Service Dealing with Steelhead in the Carmel River, California" (PT - 47) in which CAW agreed to implement measures to reduce the effect of direct diversions on steelhead resources until CAW acquires a legal water supply and/or water rights. In part, this Conservation Agreement required CAW to modify their pumping operations to pump from the most downstream wells to maintain continuous surface stream flow in the Carmel River as far downstream as possible in the low flow season.

On March 21, 2002, the SWRCB adopted Order WRO 2002-002, modifying Condition 6 of WRO 95-10. This Order adopted a modified version of Phase I of the Conservation

Agreement, in which CAW could quickly implement and would effectively reduce CAW diversions upstream from the Narrows to a total of 0.5 cfs during low flow periods, except during emergencies (as defined in the Conservation Agreement) and for very limited well maintenance activities.

CAW was able to comply with Tier I Phase I of the Conservation Agreement; however, they were not able to comply with Tier I Phase II which required CAW to increase well capacity in the lower aquifer. Studies showed that any new well in the lower Carmel Valley would likely require surface water treatment and construction of a surface water treatment plant, which was estimated to cost approximately \$5.5 million. In light of CAW's need to focus its financial and personnel resources on a long-term water supply project, *i.e.*, the Coastal Water Project, rather than those interim measures in the Carmel River, CAW and NMFS agreed that proceeding with the measures set forth in Phase II of Tier I would not be financially prudent. Therefore, in June, 2006, CAW signed a Settlement Agreement with NMFS (PT- 48) to provide funding, in the sum of approximately \$11 million over the next 7 years, for projects to improve habitat conditions for, and production of, SCCC steelhead and/or otherwise aid in the recovery of SCCC steelhead in the Carmel River watershed in lieu of completing Phase II of Tier I. It was assumed that by the seventh year, CAW's Coastal Water Project would be on line and the illegal pumping from the river would have ceased.

In June, 2002, NMFS prepared bypass flow recommendations for the Carmel River for new water right permits titled "*Instream Flow Needs for Steelhead in the Carmel River, Bypass flow recommendations for water supply projects using Carmel River waters*" (PT - 45). This report identifies key seasons and steelhead life stages needing different levels of flow: winter (December 15-April 14) when flows are generally high and adult steelhead migrate and spawn; spring (April 15-May 31), the primary period of smolt outmigration following the winter spawning season; and the summer-fall low flow season (June 1-December 14). These flow requirements were used to determine the potential volume of water available for diversion. The report concluded there is substantial water

(>10,000 acre-feet) available for diversion during average water years and even more would be available during above-normal and wet years. However, the results also demonstrate that during relatively dry years representing roughly 20% of the years, relatively little "surplus" flow (<1000 acre-feet) is available for withdrawal without potentially adversely affecting steelhead. If implemented, these bypass flow recommendations would ensure that any exercise of new water rights was not further reducing flows needed to protect aquatic resources in the Carmel River.

In September 2003, MPWMD filed a petition with SWRCB to add points of diversion (32 CAW wells and SCD) and place of storage (Seaside Groundwater Basin) under water right permits 7130B and 20808. This permit would authorize the appropriation of water for MPWMD's Phase I ASR Project. NMFS protested this water right because 1) the status of bypass flow terms was unclear, and 2) NMFS believed MPWMD's ASR project should not result in increased volumes of water being diverted from the Carmel River, but rather the ASR project should offset the deleterious unauthorized diversions of CAW during August and September, during the period of low flow in the river.

In December 2007, the SWRCB issued Order WR 2007-0042-DWR, which authorized the appropriation of water for the ASR project, to be held jointly by CAW and MPWMD. This permit allows diversion of up to 2,426 acre-feet per year of Carmel River water to offstream storage in the Seaside Groundwater Basin. CAW and MPWMD have agreed to operate the diversions consistent with NMFS' (2002) bypass flow recommendations. In addition, MPWMD and CAW have agreed to sign a Memorandum of Understanding (MOU) between CAW, MPWMD, NMFS, and CDFG, to implement the ASR project in such a way that water produced from the ASR wells will be used to offset CAW's diversions from the Carmel River that would otherwise occur during the low flow season. The MOU stipulates the actual amount of ASR water that is recovered each year will be subtracted from CAW's total annual diversion allowance from its Carmel River sources for that year.

While all these modifications help to some degree to sustain flows in the river for steelhead and other aquatic resources, the biggest step toward recovery of the steelhead population in the Carmel River will not happen until CAW eliminates their unlawful diversions from the river.

8. NMFS' Position on SWRCB's Draft Cease and Desist Order.

The SWRCB issued a draft Cease and Desist Order (CDO) requiring CAW to make substantial reductions in its unauthorized diversions of water from the Carmel River.

NMFS supports action by the SWRCB to adopt the draft CDO, subject to certain modifications, as described below, that NMFS expects will help to ensure the water diversion reductions required under the CDO are implemented in a manner that will be most beneficial to ESA-listed SCCC steelhead. In addition, NMFS finds the draft CDO is not in conflict or inconsistent with the agreements between NMFS and CAW.

NMFS strongly recommends the SWRCB implement the reduction of unauthorized diversions such that the reductions respond to the biological needs of listed steelhead. To meet the needs of steelhead, the majority of the reductions should occur in the spring, summer and fall seasons in order to allow for the outmigration of steelhead smolts in the spring and limit the amount of river dewatering and dryback in the summer that occurs annually due to CAW's excessive water withdrawals. More specifically, NMFS recommends the CDO be amended to provide that the annual reduction in water diversion be implemented by reducing the daily mean diversions during the period of April through October by the same percentage as the annual diversion reduction percentage specified in the order. As an example, under the proposed CDO, in the first year, 2008-09, CAW must reduce its annual diversions by a total of 15%. Under the revision proposed by NMFS, the CDO would further specify that during the months of April through October, CAW must reduce their mean daily diversion amount by at least 15%, and implement the remainder of the required annual percentage reduction during the remainder of the year. NMFS believes that shaping the annual diversion reductions in this manner will help ensure that most of the water diversion reduction occurs during times of the year when flows in the Carmel

River are low and SCCC steelhead are most likely to be adversely affected by excessive water diversions.

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15 SUPERIOR COURT OF THE STATE OF CALIFORNIA
 16 IN AND FOR THE COUNTY OF MONTEREY

17	MONTEREY PENINSULA WATER)	
18	MANAGEMENT DISTRICT,)	Case No. M102101
19)	
20	Plaintiff/Petitioner,)	DECLARATION OF DR. JOHN G.
21)	WILLIAMS
22	v.)	
23	STATE WATER RESOURCES CONTROL)	Hearing Date: April 22, 2010
24	BOARD, Dorothy R. Rice, Executive Director,)	Time: 9:00 a.m.
25	SWRCB, and DOES 1 THROUGH 25, inclusive,)	Judge: Hon. K. Murphy
26)	Dept.: 22
27	Defendant/Respondents.)	Action Filed: October 27, 2009
28)	

29 CALIFORNIA-AMERICAN WATER)
 30 COMPANY, PEBBLE BEACH COMPANY, and)
 31 DOES 26 THROUGH 100, inclusive,)
 32)
 33 Real Parties in Interest)

34 I, Dr. John G. Williams, hereby declare under penalty of perjury:

35 **Qualifications:**

36 1. Since 1990, my professional work has focused on the biology of salmon and

1 steelhead, on restoration of these fish and their habitats, and on methods for assessing the
2 relationship between the flow and habitat in streams. I am the author of a major
3 monograph on salmon and steelhead in the Central Valley of California, written with
4 funding from the CALFED Bay-Delta Authority. I have published other papers in
5 professional journals and given talks at professional meetings on the biology and
6 management of steelhead and Chinook salmon. I am currently preparing a report on the
7 use of the Sacramento-San Joaquin River Delta under contract with the U.S. Fish and
8 Wildlife Service. I was recruited by the National Marine Fisheries Service (NMFS) to
9 serve on the Central Valley Technical Recovery Team for Central Valley salmonids, and
10 I was selected by CALFED to serve on a panel that reviewed the 2005 NMFS Biological
11 Opinion on the Long-Term Central Valley Project and State Water Project Operations
12 Criteria and Plan (OCAP BO).

13 2. I have published articles in professional journals and given talks at
14 professional meetings on instream flow assessment. I am currently working on a project
15 at the UC Davis Watershed Center on that topic, with professors Peter Moyle, Jeff
16 Mount, and Matt Kondolf, funded by the California Energy Commission; my role is to
17 write a major review of methods used for instream flow assessment, with emphasis on
18 how to incorporate ideas and techniques from statistics, ecology and other areas of
19 biology into the assessments.

20 3. I am also very familiar with the Carmel River. I have served on both the
21 Board of Directors and the staff of the Monterey Peninsula Water Management District,
22 and have written reports on the Carmel River while on the staff, and subsequently as a
23 consultant. I am co-author of an article in a professional journal on the effects of
24 diversions from wells along the river on its surface flow (Kondolf et al. 1987). I helped
25 organize two scientific meetings on efforts to restore the river. More detail on these and
26 other aspects of my scientific qualifications are provided in my curriculum vitae, which is
27 attached as Exhibit A to my Declaration submitted in Phase II of the Board Hearing and
28

1 also attached here.

2 4. The California-American Water Company (Cal-Am) owns two dams on the
3 Carmel River and a number of wells that tap the underground flow of the river. San
4 Clemente Dam, at river mile (RM) 18.5, is now effectively filled with sediment. Water
5 stored at Los Padres Dam (RM 23.5) is released into the river, and rediverted for use at
6 San Clemente or from wells along the Carmel River farther downstream. Initially, the
7 wells were located in the upper Carmel Valley, where the quality of the groundwater is
8 better. Beginning in the late 1960's, wells were developed progressively farther
9 downstream. Diversions by Cal-Am are now approximately 11,000 acre feet (af), and
10 other diversions for local use are approximately 2,000 af.

11 5. Diversions by Cal-Am routinely dry up the Carmel River in the summer and
12 fall, and deplete inflow to the Carmel River lagoon. Rearing habitat for steelhead is
13 destroyed where the river goes dry, and is degraded in the lagoon and in a portion of the
14 river above the dry reach. Because flow is so highly variable among years, in some years
15 all is diverted, so that the river does not reach the lagoon and breach the sand barrier at
16 the mouth. This happened for three years in a row in 1988-90. Flow to the lagoon
17 continues through the summer only in very wet years, such as 1983.

18 6. When the river is dry, continued diversions by Cal-Am from the underground
19 flow of the river draw down the water table. Flows early in the winter have to recharge
20 the aquifer before there is sustained flow to the ocean, unless the early flows are
21 unusually high. This delays the beginning of the migration season for adult steelhead.
22 The pumping also shortens the spring migration season for juveniles migrating
23 downstream to the ocean. Los Padres dam is also a serious migration barrier for
24 steelhead, especially juveniles migrating downstream. This increases the importance of
25 the habitat in the lagoon and lower river.

26 7. Order WR 95-10 required Cal-Am to reduce its diversions from the Carmel
27 River by 20%, from about 14,000 acre feet to about 11,000. In Order WR 2002-02, the
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1 SWRCB required Cal-Am to cease diverting from San Clemente Dam and from wells in
2 the upper valley when flow in the upper valley is below 20 cfs, i.e., during the annual
3 summer-fall low flow season. During this season, almost all of the diversions from the
4 River occur through pumping from the most downstream wells below the Narrows.

5 8. The steelhead population in the Carmel River is part of the South-Central
6 California Coast Steelhead (SCCCS) Distinct Population Segment (DPS) which was
7 listed as threatened by the National Marine Fisheries Service (NMFS) in 1997. The
8 Carmel River population has declined substantially since 2001, and is now at high risk of
9 extinction. Steelhead (*Oncorhynchus mykiss*) are anadromous fish that spawn and rear as
10 juveniles in freshwater, but gain most of their growth in the ocean. Non-anadromous *O.*
11 *mykiss* are known as rainbow trout.

12 9. Steelhead are part of the same genus as Pacific salmon, and share the main
13 elements of their life cycle: they reproduce in fresh water, but gain most of their growth
14 in the ocean. Steelhead life histories are highly variable, but in the most common case,
15 maturing adults return to the stream where they were hatched. The fish spawn in gravel
16 nests called redds that are dug by the female, and the female covers the eggs with gravel
17 after they are fertilized. The embryos develop in the gravel and hatch as "alevins," larval
18 fish attached to a substantial quantity of egg yolk. The alevins remain and grow in the
19 gravel until they have nearly depleted the yolk, and enclosed the remainder within their
20 bellies. The emerging fish, about an inch long, are called fry. As they grow and develop
21 scales and dark vertical marks on their sides, they are called parr. A year or more later,
22 they go through various physiological changes in preparation for life in the ocean, and at
23 this stage are called smolts. The fish spend a year or more in the ocean, and then return
24 to their natal stream to spawn. Unlike most Pacific salmon, some steelhead, especially
25 females, survive spawning, return to the ocean, and return to freshwater to spawn again;
26 while these post-spawning fish are still in the river, they are called kelts.

27 10. The Carmel River once had a substantial steelhead population. Estimating
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1 numbers is speculative, and presumably the population varied a good deal from year to
2 year, but probably the average was in the tens of thousands. I base this estimate on
3 information I have gathered over the years, mainly when I was working on the Carmel
4 River Watershed Management Plan (Williams 1983) and the Carmel River Lagoon
5 Restoration Plan (Williams 1989).

6 11. The number of mature fish returning from the ocean is not precisely known,
7 because fish are counted when they pass over San Clemente Dam, and some fish spawn
8 in the river downstream from the dam or in tributaries such as Garzas Creek that join the
9 river below the dam. Counts at San Clemente Dam are highly variable, and were zero
10 during the years when the river did not reach the ocean, 1988-90. The counts increased
11 rapidly (from zero) after 1990 to reach a peak of 800 in 1997, but have declined again
12 since 2001. Only 95 adults were counted at San Clemente Dam in 2009, and only 21
13 adults were passed over Los Padres Dam (Figure 1). These numbers are the lowest since
14 1994. Biologists on the MPWMD staff also observed 39 redds below San Clemente,
15 down from 135 redds in 2008 (See April 2009 Report to MPWMD Board of Directors,
16 <http://www.mpwmd.dst.ca.us/asd/board/boardpacket/2009/20090521/21/item21.htm>),
17 which suggests that the total adult steelhead population was less than 200 in 2009.
18 Returns improved in 2010, with 153 fish passing San Clemente Dam by March 30. There
19 is a strong relationship between the ladder count by March 30 and the total count for the
20 year (Figure 2), and on that basis I project a total count for the year (2010) of about 170.
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Figure 1. "Adult Steelhead in the Carmel River, showing the numbers of adult steelhead passing upstream over San Clemente and Los Padres dams" The San Clemente estimate for 2010 is estimated. Data for the figure were obtained from the MPWMD website.

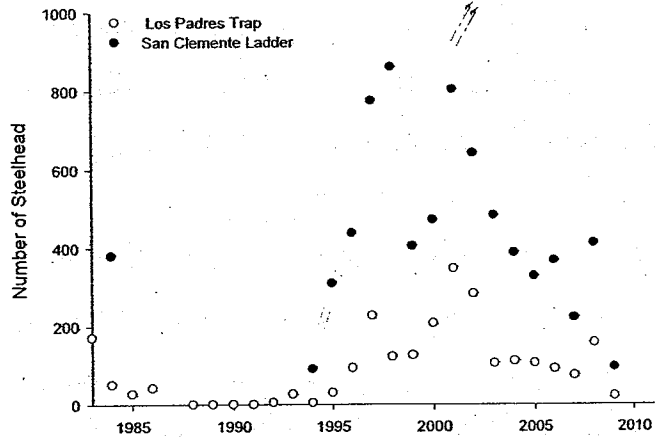
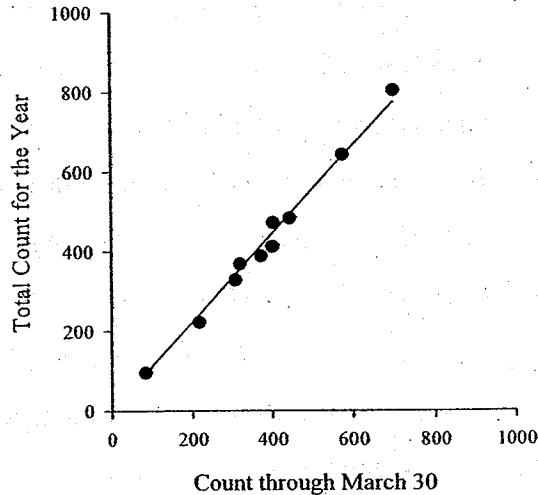


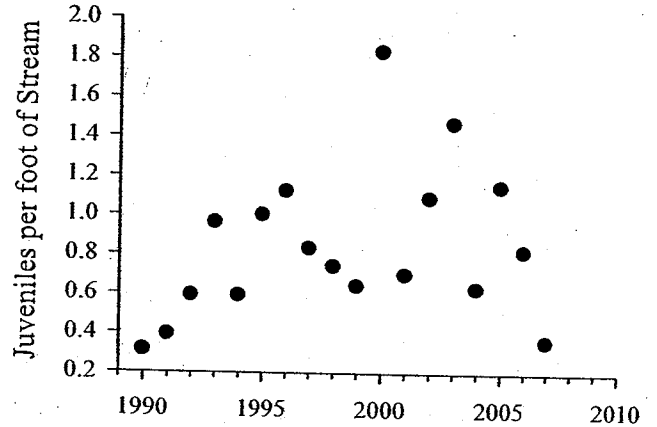
Figure 2. The relationship between the total annual counts of adult steelhead at San Clemente Dam and the counts through March 30 for the years 2000 – 2009. Data from the MPWMD website..



12. Data on juvenile steelhead also show a recent decline. Staff of the MPWMD have estimated the population density at study sites along the Carmel River since 1994. Not all of the sites have been sampled in each year, but review of the data for the individual sites shows generally the same trend as for the averages (Figure 3). Data for the most recent years are preliminary, and the MPWMD has not yet released the data for 2008. However, MPWMD biologists noted in their April 2009 Report on redd

1 observations, cited above, that only about 20 non-smolting juveniles were observed
 2 during the redd survey, and stated that "The lack of smolts continues an unexplained
 3 three-year pattern." The observation does not bode well for a recovery in the number of
 4 adult steelhead in the next few years.

6
 7 Figure 3. Average number of juvenile steelhead
 8 per foot of stream at sites sampled by the
 9 MPWMD. Data from MPWMD Annual
 10 Mitigation Program Reports
 11 ([http://www.mpwmd.dst.ca.us/programs/
 12 mitigation_program/annual_report/
 13 annual_reportrev1.htm](http://www.mpwmd.dst.ca.us/programs/mitigation_program/annual_report/annual_reportrev1.htm) (2007 Data from
 14 MPWMD, Carmel River Steelhead Annual
 15 Population Survey).

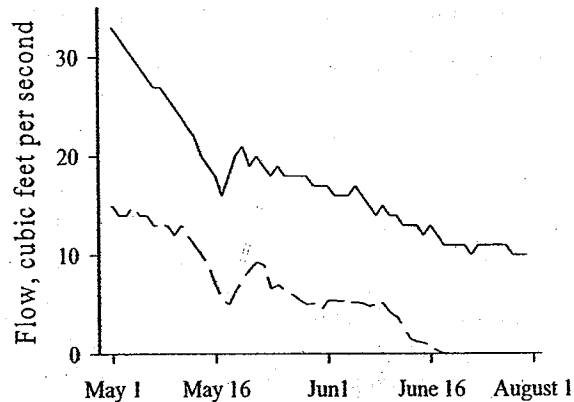


15 13. The MPWMD has conducted various activities intended to protect or increase
 16 the Carmel River steelhead population. Whatever the merits of these activities, the recent
 17 severe decline in the steelhead population shows clearly the activities have not been
 18 sufficient to protect the population.

19 14. Cal-Am's diversion have been a major factor in the decline of Carmel River
 20 steelhead, by drying up the lower river. Comparison of spring 2008 flows at the USGS
 21 gages at Robles del Rio, at RM 14.3 and Near Carmel, at about RM 3.5, clearly shows
 22 the effects of the diversions on flow (Figure 4). Historical evidence indicates that before
 23 diversions began in the late 19th Century the Carmel River was perennial except perhaps
 24 in very dry years (Williams 1989). Typically, the river now goes dry around RM 9, near
 25 the upstream limit of Cal-Am's main well field. Even now, in very wet years, the Carmel
 26 River flows to the lagoon throughout the summer, so it is evident that increasing
 27 diversions have increased the proportion of years without continuous surface flow into
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1 the lagoon, as well as the duration of the seasonal dry periods.

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5 Figure 4. Flow at the Robles del Rio
6 gage (solid line) and the Near Carmel
7 gage (dashed line) for May and June,
8 2008. Data from USGS gages 11143200
9 and 11143250.



10
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12 The effect of groundwater pumping on surface flows, steelhead, and riparian
13 vegetation is documented in many MPWMD reports, as well as in the scientific literature,
14 for example in Kondolf and Curry (1986) and Kondolf *et al.* (1987). Regarding
15 steelhead, MPWMD (2008; Exhibit SC 8) noted that:

16 About 1.5 miles of habitat between Boronda Road and Robles del Rio and up
17 to nine miles of habitat below the Narrows may dry up, depending on the
18 magnitude of streamflow releases at San Clemente Dam, seasonal air
19 temperatures and water demand. Beginning as early as April or May of each
20 dry season, the District rescues juvenile steelhead from the habitat in these
21 reaches. The goal of this program is to help maintain a viable steelhead
22 population by transplanting juveniles to permanent river habitats downstream
23 of San Clemente Dam (if it is available), and/or rearing juvenile steelhead at
24 the Sleepy Hollow Steelhead Rearing Facility, located just downstream of San
25 Clemente Dam, if habitat is not available.

23 15. It is obvious that fish lose habitat when a stream dries up, or nearly so. The
24 State Water Resources Control Board has found that (Order WR 95-10, P. 28): "In recent
25 times, dry season surface flows below the Narrows at RM 10 have been depleted in most
26 years as a result of heavy ground water pumping. This results in the stranding and death
27 of many juvenile fish as surface flow recedes." Although the steelhead rescues referred
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1 to above save some fish, some perish during the rescues and presumably a much larger
2 number are not rescued and perish as the stream goes dry. //

3 16. It is less obvious how habitat changes with smaller reductions in flow. How
4 such changes should be assessed is a major unsolved problem in fisheries biology
5 (Castleberry et al. 1996; Exhibit SC 9). However, there is now empirical evidence that
6 moderate reductions in summer flow reduce the growth rate of juvenile steelhead, and
7 this seems likely to decrease their prospects for survival.

8 17. The effects of flow reduction on growth are being studied by Brett Harvey of
9 USFS. The results of the second year of work support the results of the first, as described
10 in the summary report from Dr. Harvey to the US Forest Service, (Exhibit SC 19B). The
11 summary report concludes:

12 "The two years of steelhead monitoring data indicate a consistent effect of
13 the diversion on the retention and production of steelhead. Fish grew
14 faster upstream of the diversion in both years, but the difference was
15 detectable statistically on in 2007. We hypothesize that higher minimum
16 stream flows in 2008 compared to 2007 created more favorable conditions
17 for growth that also increased the variance in growth among individuals."

18 18. The lower Carmel River has been designated by NMFS as critical habitat
19 for the SCCCS. The agency has determined that it contains "those physical and
20 biological features that are essential to the conservation of the SCCCS DPS." See 50
21 CFR 424.12(b). See 70 F.R. 52488 (2005). Joint NMFS/FWS regulations for listing
22 endangered and threatened species and designating critical habitat at 50 CFR 424.12(b)
23 state that the agency "shall consider those physical and biological features that are
24 essential to the conservation of a given species and that may require special
25 management considerations or protection." See 68 Fed. Reg. 55928.

26 19. Essential features for the listed DPS's of steelhead include sites essential
27 to support one or more life stages of a population necessary to the conservation of the
28 DPS. Specific types of sites and their generic features include:(1) Freshwater spawning

1 sites with sufficient water quantity and quality and adequate substrate to support
2 spawning, incubation and larval development;(2) Freshwater rearing sites with
3 sufficient water quantity and flood plain connectivity to form and maintain physical
4 habitat conditions and allow salmonid development and mobility; sufficient water
5 quality to support growth and development; food and nutrient resources such as
6 terrestrial and aquatic invertebrates, and forage fish; and natural cover such as shade,
7 submerged and overhanging large wood, log jams, beaver dams, aquatic vegetation,
8 large rocks and boulders, side channels and undercut banks;(3) Freshwater migration
9 corridors free of obstruction and excessive predation, with adequate water quantity to
10 allow for juvenile and adult mobility; cover, shelter and holding areas for juveniles and
11 adults; and adequate water quality to allow for survival;(4) Estuarine areas that provide
12 uncontaminated water and substrates; food and nutrient sources to support growth and
13 development; and connected shallow water areas and wetlands to cover and shelter
14 juveniles; and(5) Marine areas with sufficient water quality to support salmonid
15 growth, development, and mobility; food and nutrient resources such as marine
16 invertebrates and forage fish; and near shore marine habitats with adequate depth,
17 cover, and marine vegetation to provide cover and shelter. 68 Fed. Reg. 55929.

18 20. Cal-Am's diversions destroy rearing habitat in parts of the lower Carmel
19 River by drying it up, and degrade the rearing habitat in other parts of the river, or at
20 other times of year, by reducing the quantity of flow. The reduced flow can be
21 expected to reduce the growth and survival of juveniles in the affected reaches, as
22 described above.

23 21. Cal-Am's diversions affect the Carmel River lagoon by reducing the
24 surface and subsurface flow of the river into the lagoon. Lagoons can provide very
25 important habitat for juvenile steelhead in coastal streams (Bond 2006; Boughton et al.
26 2007; Hayes et al. 2008).

1 22. The current risk of extinction of the Carmel River population of
2 anadromous steelhead can be evaluated using criteria given in Lindley et al. (2007), of
3 which I am a co-author. Note that Lindley et al. are essentially the NMFS Central Valley
4 Technical Recovery Team, so these criteria are the NMFS population viability criteria for
5 listed Central Valley Chinook and steelhead. The criteria are summarized in Table 1 of
6 Lindley et al. (2007), which is set out below; the most relevant criteria are population
7 size and population decline.

8 23. Population size: Although the current population size in the Carmel River
9 is not known precisely, as explained above, the census population N is certainly less than
10 2,500. This is true even though, for purposes of this table, the census population is for a
11 generation, which on average includes the spawners for about 3 years, since steelhead
12 mature at different ages (Shapovalov and Taft 1954). Using this criterion, the risk of
13 extinction is moderate.

14 24. Population decline: In pertinent part, Table 1 of Lindley et al. (2007)
15 defines "precipitous decline" as "decline within the last two generations to annual run
16 size less than or equal to 500 spawners, or run size greater than 500 but declining at
17 greater than or equal to 10% per year." Under this criterion, the risk of extinction is high.
18 Since Lindley et al. (2007) classify a population's risk of extinction as high if the
19 population ranks as high for any of the criteria, the risk of extinction of the Carmel
20 Valley steelhead population ranks as high.
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Criterion	Risk of Extinction		
	High	Moderate	Low
Extinction risk from PVA	> 20% within 20 years – or any ONE of –	> 5% within 100 years – or any ONE of –	< 5% within 100 years – or ALL of –
Population size ^a	$N_e \leq 50$ –or– $N \leq 250$	$50 < N_e \leq 500$ –or– $250 < N \leq 2500$	$N_e > 500$ –or– $N > 2500$
Population decline	Precipitous decline ^b	Chronic decline or depression ^c	No decline apparent or probable
Catastrophe, rate and effect ^d	Order of magnitude decline within one generation	Smaller but significant decline ^e	not apparent
Hatchery influence ^f	High	Moderate	Low

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

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

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

^d Catastrophes occurring within the last 10 years.

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

^f See Figure 1 for assessing hatchery impacts.

Table 1. [also Table 1 of Lindley *et al.* 2007] Criteria for assessing the level of risk of extinction for populations of Pacific salmonids. Overall risk is determined by the highest risk score for any category. (Modified from Allendorf *et al.* 1977)

25. Cal-Am's diversions from the subsurface flow of the Carmel River have at least four effects on steelhead habitat in the river: they decrease the number of days that flow reaches the lagoon; they increase the risk that steelhead will be stranded; they increase the portion of the river that goes dry in the summer and the period that it is dry, and they reduce flow in the river some distance upstream from the point at which the river goes dry.

1 26. Quantifying the benefits from reductions in Cal-Am's diversions would
2 require answers to three questions: how much farther down the valley the river would
3 flow before it went dry, how much less the flow upstream from the drying front would be
4 depleted , and how much ecological benefit would the increased flows provide? The first
5 two questions are hydrological, and would require sophisticated and expensive modeling
6 to answer accurately. This modeling has not been done. The third question is ecological,
7 and probably cannot be answered quantitatively (Castleberry et al. 1996). However, it
8 can be answered qualitatively. Decreasing the length of river that goes dry will result in
9 decreased mortality. In the part of the river where flow is affected by the pumping but
10 does not go to zero, growth will be reduced, as shown by the studies by Dr. Harvey,
11 discussed above. Because the mortality rate of juvenile salmonids generally decreases as
12 they get larger, this will result in indirect mortality. Therefore, increasing the flow by
13 curtailing diversions will result in decreased mortality.

14 27. It is my professional judgment that the decline in the number of steelhead
15 passing over San Clemente Dam provides very strong evidence that current conditions in
16 the Carmel River put the steelhead population there at high risk of being reduced to a
17 remnant, and of suffering deleterious genetic change that would make the population less
18 capable of increasing in response to improved environmental conditions. The evidence
19 described above indicates that the habitat benefits from reductions in Cal-Am's
20 unpermitted diversions will increase in proportion to the reductions raised to some power
21 greater than 1.

22 28. In Board Order 2009-0060, the SWRCB ordered Cal-Am to curtail
23 diversion in water year 2010 by 5%, or 549 acre-feet, from an adjusted production
24 ceiling, with increased reductions in future years, until illegal diversions cease. It also
25 ordered Cal-Am not to provide water service to new connections. I agree with the
26 Board's finding that the CDO would provide habitat benefits to steelhead because there
27 would be more water in the River during dry periods.

28 29. It is my opinion that staying the implementation of or preliminary
enjoining the CDO will harm the steelhead in that not having the CDO in place during
low flow periods in the River will prevent the habitat improvement intended by the Order

1 from taking place. I have pointed out that the current conditions in the Carmel River put
2 the steelhead population there at high risk of being reduced to a remnant. Without the
3 habitat improvements attributable to the Board's curtailment of diversions (including its
4 requirement that ASR water be used beginning June 1 to serve existing connections) and
5 the moratorium on new connection the chances of recovery – and even maintenance of
6 the status quo – will not be in any manner enhanced, and the Carmel River population of
7 returning spawning adults may further decline.

8 30. Based on my experience as Director of the MPWMD, I believe that
9 increasing the number of connections to the Cal-Am system will, as a practical matter,
10 lead to increased diversions. Therefore, the moratorium on connections ordered by the
11 CDO will tend to reduce diversions and protect steelhead, as well as other public trust
12 resources in the Carmel River.

13 31. Without implementation of the moratorium on new connections, to the
14 extent Cal-Am production from the Carmel River remains below the Order 95-10
15 production limits, Cal-Am could use Carmel River water to service new connections.
16 This would contribute to reduced flows in the River that would further harm the
17 steelhead.

18 Executed and signed this 7th day of April, 2010 in Davis, California.

19 DATED 4-7-2010

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22 By: 

23 Dr. John Williams
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2 **References:**

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Curriculum vitae

EDUCATION

- 1978-1979: Postdoctoral Scholar with Dr. Park Nobel, Environmental Biology Section, Laboratory of Nuclear Medicine and Radiation Biology, University of California, Los Angeles.
- 1978: Ph.D., Geography, University of California, Los Angeles, with emphasis on climatology, soils, and agricultural geography; thesis title: A method for obtaining more climatological information from short observational records.
- 1966: B.A., History, University of California, Berkeley.

PROFESSIONAL EXPERIENCE

- 1990-present: Independent consultant
- 1997-2003 Executive Director, Bay-Delta Modeling Forum (part time).
- 1990-1996 Special Master, *Environmental Defense Fund v. East Bay Municipal Utility District*.
- 1985-1990: Senior Associate, Philip Williams & Associates, Ltd., San Francisco.
- 1984-1985: Principal, Williams, Kondolf and Swanson, Carmel, California.
- 1982-1983: Environmental Analyst, Monterey Peninsula Water Management District.
- 1982: Visiting Professor, Department of Geography, Kent State University, Kent, Ohio.

VOLUNTEER TEACHING

- 1997: Co-taught graduate seminar on instream flow issues with Dr. Peter Moyle, Department of Wildlife, Fish and Conservation Biology, University of California, Davis (WFC 291).

PUBLIC SERVICE

- 1978-1981 and 1983-1987 Director, Monterey Peninsula Water Management District (elected).

OTHER EXPERIENCE

- 2005-06 Member, CALFED Technical Review Panel for the NMFS Biological Opinion on the Long-Term Central Valley Project and State Water Project Operations Criteria and Plan.
- 2003-06 Member, NOAA Fisheries Technical Recovery Team for Central Valley salmonids.
- 2000-02 Member, advisory panel, NSF incubation grant: linking large-scale hydrological and biological processes in restoring riparian forest ecosystems.
- 2000-01 Member, peer review panel for EPA Region 10, regarding development of temperature criteria guidance for Clean Water Act implementation in the Pacific Northwest.
- 2000 Staff, expert review of instream flow issues in coastal watersheds for the (California) State Water Resources Control Board.
- 1998: Chair, geomorphology and riparian issues work team, Comprehensive Assessment and Monitoring Program (CMARP) of the CALFED Bay-Delta Program.
- 1988-Present: Representative, Ventana Chapter of the Sierra Club, in State Water Resources Control Board hearings regarding the Carmel River and other water rights proceedings.

OTHER WORK EXPERIENCE

1980-1981: Owner/Manager, Pacific Mushroom Company, San Francisco.
 1963-1971: Commercial fisherman, Alaska and California (occasional)

AWARDS

Ventana Chapter of the Sierra Club, 1999 Outstanding Service Award.

PROFESSIONAL ORGANIZATIONS

American Fisheries Society
 American Association for the Advancement of Science
 California Water and Environmental Modeling Forum

PROFESSIONAL SERVICE

Reviewer for Fisheries, Canadian Journal of Fisheries and Aquatic Sciences, San Francisco
 Estuary and Watershed Science, Biological Conservation, and California Fish and Game.

PUBLICATIONS

Papers published in refereed journals:

Williams, J. G. In press. Comment on Gard (2009): Comparison of spawning habitat predictions of PHABSIM and River2D models. *International Journal of River Basin Management*.

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Kondolf, G.M., J.G. Williams, T. Horner, and D. Milan. 2008. Assessing physical quality of spawning habitat. In D. Sear, P. DeVries, and S. Greig (eds.), Salmon spawning habitat in rivers: Physical controls, biological responses, and approaches to remediation. American Fisheries Society Symposium 65:

Papers published in symposium proceedings:

Williams, J.G. and G. M. Matthews. 1990. Willow ecophysiology: implications for riparian restoration. Pages 196-202 in Environmental Restoration, J. Berger (ed.) Island Press, Washington, DC.

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Invited book reviews:

Williams, J.G. 1996. California Water, by A.L. Littleworth and E.L. Garner. Estuaries (Journal of the Estuarine Research Federation) 19:753

Abstracts:

Williams, J.G. and G. Matthews. 1987. The 1983 erosion event on Tularcitos Creek, Monterey County, California, and its aftermath. Proceedings of the California Watershed Management Conference, Nov. 18-20, West Sacramento, Calif. University of California Wildlands Resources Center Report No. 11.

McNeish, C., G. Matthews, and J.G. Williams. 1984. Effects of groundwater pumping on water stress in riparian trees in Carmel Valley, California. *Agronomy Abstracts*.

Letters in professional journals

Science 300:2032 2003, regarding sardine fishing in the early 20th Century.

Fisheries 20(9):38, 1995, regarding the temperature tolerance of juvenile chinook salmon.

Edited works:

Williams, J.G., ed. 1997. Transcript of Workshop on instream flow standards, University of California-Davis, April 7, 1995. Water Resources Center Report No. 89, Centers for Water and Wildlands Resources, University of California, Davis, CA 95616.

Williams, J.G. 1993. Notes and selected abstracts from the workshop on Central Valley chinook salmon, UC Davis, January 4-5.

Williams, J.G., G.M. Kondolf, D. Lindquist, and B. Laclergue. 1989. Politics and practices of restoration. Guidebook for symposium and field tour, Carmel River watershed, October 6-7, sponsored by the Watershed Management Council.

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Significant works of limited distribution:

Williams, J.G., J. J. Anderson, S. Greene, C. Hanson, S. T. Lindley, A. Low, B. P. May, D. McEwan. Monitoring and research needed to manage the recovery of threatened and endangered Chinook and steelhead in the Sacramento-San Joaquin basin, M. S. Mohr, R. B. MacFarlane and C. Swanson. 2007. NOAA Tech. Memo. NMFS-SWFSC-399.

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Anderson, J., M. Deas, A. Georgi, J. Lichatowich, K. Rose, and J. Williams. 2005. Review of the Biological Opinion of the Long-Term Central Valley Project and State Water Project Operations Criteria and Plan. Report to CalFed.

Moyle, Peter, B., G. Mathias Kondolf, and John G. Williams. 2000. Fish bypass flows for coastal watersheds: a review of proposed approaches for the State Water Resources Control Board.

Williams, J.G. 1998. Thoughts on adaptive management. Newsletter, Interagency Ecological Program for the Sacramento-San Joaquin Estuary 11(3):5-11.

Williams, J.G. 1995. Report of the Special Master, Environmental Defense Fund v. East Bay Municipal Utility District, Alameda County (California) Action 425955.

MEETINGS AND SYMPOSIA ORGANIZED

Lower American River Science Conference. June 5-6, 2003, California State University Sacramento (as part of a committee).

River Ecosystems: New Directions and Challenges in Setting Instream Flows. August 1997. Symposium at the 1997 National Meeting of the American Fisheries Society, Monterey, California. (with W. Lifton and S. Williamson.)

Workshop on Instream Flow Standards: April 7, 1995. (sponsored by the Centers for Water and Wildlands Resources, University of California, Davis.) Davis, California.

Biology of the Sacramento-San Joaquin river system: life in the new regulatory environment. June 29, 1993. Special session, joint conference of the Western Association of Fish and Wildlife Agencies and Western Division, American Fisheries Society. Sacramento, California.

Workshop on Central Valley chinook salmon: Jan. 4-5, 1993. (sponsored by UC Davis Dept. of Wildlife and Fisheries Biology, organized with Joe Cech, Peter Moyle, Keith Marine, and Dan Castleberry) Davis, California.

Rivers in the city: design and management in the age of public trust. Nov. 2-3, 1990, at UC Berkeley. (sponsored by the UC Berkeley Dept. of Landscape Architecture, organized with G.M. Kondolf) Berkeley, California.

Politics and practices of restoration: symposium and field tour, Carmel River Watershed. Sponsored by the Watershed Management Council. October 6-7, 1989. (organized with G. M. Kondolf, D. Lindquist, and B. Laclergue). Carmel, California.

Channel stability and fish habitat, Carmel River, California. June 16-18, 1983. (sponsored by CDFG, Packard Foundation, and MPWMD, organized with G.M. Kondolf). Monterey, California.

INVITED TALKS

Monitoring salmon and their habitat in the Central Valley: evolution or intelligent design? 2005.. Salmonid Monitoring Workshop, Romberg Tiburon Center, Sausalito, CA, August 23-25.

Thoughts on monitoring Central Valley salmon and steelhead. 2004. CALFED Science Conference, October 14-16, Sacramento, California.

Coded-wire tag studies of the Delta Cross-Channel: results and complications. 2003 Environmental Water Account Workshop, July 16 and 17, California State University, Sacramento.

Variation in the life cycles of salmon and steelhead and the Delta's persistent questions. Science Symposium on Environmental and Ecological Effects of Proposed Long-Term Water Project Operations, June 19-20, 2003. California State University, Sacramento.

The Hodge Decision as adaptive management. 14th Annual Environmental Law Conference, Exploring the Confluence of Environmental Law and Science. University of California, Davis, March 17, 2000.

Invited participant, Instream Flow Methods Conference, Water Resources Inventory Area 1 (Northwestern Washington State), September 15-17, 1999.

Uncertainty and instream flow assessments: lessons from the American River Experience. Assessment Methods Workshop, Water Use Planning Process. B.C. Hydro. Vancouver, Canada. June 25-26, 1999.

Invited participant, International Workshop on Ecosystem-Based Management in the Coastal Zone, University of British Columbia, Vancouver, Canada. May 26-28, 1999.

Thoughts on adaptive management and its application to Clear Creek, Shasta County, California. American Fisheries Society, California-Nevada Chapter, 1999 annual meeting. March 26, Redding, California.

Future scenarios: water in and from the Carmel River. Salmonid Restoration Federation, 1999 annual meeting, session on Coordinated Basin Management for the Carmel River. February 19, Brookdale, California.

Subsurface flow and percolating groundwater: Carmel River case study. Groundwater Resources Association of California annual meeting, Walnut Creek, California, 23 October 1998.

Setting instream flows in the face of uncertainty: adaptive management, the precautionary principle, and the public trust. California-Nevada Chapter of the American Fisheries Society, 1998 annual meeting, symposium on stream flow conditions below dams: biology and law. April 23, Sacramento, California.

Determining instream flows for large rivers: the American River experience. 1997 National Meeting of the American Fisheries Society, symposium on instream flows. August 27. Monterey, California.

PHABSIM is a broken compass. Northeast Division of the American Fisheries Society, 1997 annual meeting, special session on instream flows. April 28, Framingham, Mass.

Research needed for effective implementation of the Central Valley Project Improvement Act. 1993 Joint conference of the Western Association of Fish and Wildlife Agencies and the Western Division, American Fisheries Society. June 29. Sacramento, California.

OTHER AREAS OF EXPERIENCE

Consulting experience with instream flow assessment, stream and wetland restoration, fluvial geomorphology, flood management, water rights, and water supply. Recent consulting projects include developing an adaptive management plan for implementing license conditions for the pending Federal Energy Regulatory Commission license for Oroville Dam, and several geomorphic assessments of Sacramento River and its tributaries that provide a framework within which to assess proposed restoration projects at specific sites.