

CARL MESICK CONSULTANTS

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Carl F. Mesick, Ph.D.

SUMMARY:

I have a doctorate in fisheries science and I specialize in habitat restoration, habitat assessments, and population trend analyses for salmonids in California. I own my own business as a fisheries consultant from 1992 to the present. During this period, I worked intermittently as a U.S. Fish and Wildlife Service employee for the Energy and Instream Flow Branch in Sacramento and Anadromous Fish Restoration Program in Stockton. Prior to 1992, I was a senior project manager with EA Engineering, Science and Technology, which was a large consulting firm based in Lafayette, California. My most recent duties include evaluating instream flow requirements for the Tuolumne River. I have also managed river restoration projects in the San Joaquin River Basin to meet the goals of the Anadromous Fish Restoration Program and developing plans to restore Chinook salmon to the San Joaquin River to meet the goals of the San Joaquin River Restoration Program. I have a total of 28 years of experience as a fisheries scientist evaluating the effects of stream restoration projects, water diversions, hydroelectric operations, timber harvest, and mine operations on trout, salmon, non-game species of fish, and invertebrates in California, Oregon, Montana, Arizona, and New Zealand.

EDUCATION AND TRAINING:

Ph.D., Fisheries Science, University of Arizona, Tucson	1984
M.S., Fisheries Science, University of Arizona, Tucson	1979
B.A., Biology, State University of New York, Buffalo	1976
Applied Fluvial Geomorphology workshop, David L. Rosgen, Colorado	1991
IF310 Class on using PHABSIM model, U.S. Fish & Wildlife Service	1990
Certified SCUBA Diver and Swiftwater Rescue Technician	

PROFESSIONAL EXPERIENCE

HABITAT RESTORATION: For the San Joaquin River Restoration Program, I was a primary author of several key planning documents including: (a) *Conceptual models of stressors and limiting factors for San Joaquin River Chinook Salmon*; (b) *San Joaquin River Fisheries Management Plan*; and (c) the *Program Management Plan*. As a Habitat Restoration Coordinator for the U.S. Fish and Wildlife Service Anadromous Fish Restoration Program, I managed and coordinated restoration projects on the Tuolumne, Merced, Yuba, Feather, American, and Bear rivers and their tributaries. I implemented an experimental restoration project for CALFED that investigated the importance of gravel size and source for restoring spawning habitat for fall-run Chinook salmon in the Stanislaus River. I managed a restoration team for this CALFED project that included hydraulic engineers, surveyors, general constructors

specialized in earth moving and gravel processing, and biologists specialized in listed species surveys. I prepared the environmental documentation for National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and all other required permits for two restoration projects. I helped evaluate the feasibility of reintroducing anadromous fish in the Yuba River upstream of Englebright Dam. I helped develop restoration and monitoring plans for the lower Stanislaus River, lower Yuba River, lower Tuolumne River, and Rush and Lee Vining creeks, tributaries of Mono Lake, California. I developed three watershed restoration plans for the Eldorado National Forest, Placerville, California. I completed the "Applied Fluvial Geomorphology" workshop taught by David L. Rosgen, Wildland Hydrology Consultants, Colorado in 1990 and a restoration workshop taught by Dr. William Weaver and sponsored by the Humboldt Chapter of the American Fisheries Society in March 1994.

EXPERT TESTIMONY: I provided expert testimony to Federal Energy Regulatory Commission regarding the high risk of extinction of the fall-run Chinook salmon population due to inadequate instream flow releases in the lower Tuolumne River on behalf of the U.S. Fish and Wildlife Service in September and October 2009. I was an expert witness for the Department of the Interior regarding the litigation over restoring the fish populations below Friant Dam on the San Joaquin River. I gave expert testimony to the El Dorado County Superior Court of California regarding the design of fish population monitoring programs for tributaries to the Mono Basin in California Trout v. City of Los Angeles Department of Water and Power in February 1993. I submitted a written declaration on the effects of streamflow in the Stanislaus River on the spawning activities of fall-run Chinook salmon to the U.S. District Court for the Eastern District of California in Stockton East Water District v. U.S. Bureau of Reclamation; U.S. Fish and Wildlife Service; Bruce Babbitt, Secretary of the Interior; Oakdale Irrigation District; South San Joaquin Irrigation District; and Tri-Dam Project Joint Board (November 1994). I gave presentations to the State Water Resources Control Board on three occasions regarding: (1) the status of the trout population in Green Creek, Mono County (1990); (2) the status of trout populations of lower Rush and lower Lee Vining creeks (1993-1994); and (3) correlations between Delta flows and exports on escapement of fall-run Chinook salmon in the Stanislaus and Tuolumne rivers (1994).

PUBLIC PRESENTATIONS: I gave five technical presentations at conferences of the California-Nevada Chapter of the American Fisheries Society, the CALFED Bay Delta Program Science Conference, and the Salmonid Restoration Conference since 2000. I have given numerous presentations on fish habitat evaluations and restoration to the Stanislaus River Fish Group, the Tuolumne River Technical Advisory Committee, and the Upper Yuba River Study Program technical committees.

EXPERIMENTAL FISHERIES: I conducted experimental studies of (1) the importance of size and origin of gravel used to restore spawning habitat for Chinook salmon; (2) the relationship between winter carrying capacity of brown trout and measurements of instream cover; (3) the effects of different levels of streamflow and substrate composition on abundance of brown trout and invertebrates (benthic and drift); (4) the physical and hydraulic characteristics of brown trout feeding stations; (5) the relationship between the Instream Flow Incremental Methodology results (Weighted Usable Area) and abundance of brown trout; (6) mortality rates of Chinook salmon fry passing through a rollgate dam on the McKenzie River, Oregon; (7) the effects of

food and cover on the numbers of Apache and brown trout establishing residency in artificial stream channels; and (8) the effects of electrofishing on stream invertebrates.

SALMONID POPULATION STUDIES: I conducted ten long-term studies of the effects of hydroelectric operations, water diversions, and mine operations on brown, rainbow, brook, bull and cutthroat trout populations in California, Montana, and New Zealand. These studies included annual and biannual population surveys conducted over several years to evaluate survival probabilities, growth rates, and spawning limitations relative to project operations. Capture-reduction and mark-recapture techniques were used to estimate population abundance and backpack and boat electrofishing units were used to capture fish. A population model for fall-run Chinook salmon was developed for the San Joaquin Drainage based on statistical correlations between escapement and habitat conditions including streamflow, water temperature, Delta exports, and ocean conditions. I sampled trout redds with emergence traps and McNeil type sediment samplers and trout stomach contents using flushing techniques. I used fyke nets to assess the effects of unscreened intakes on downstream migrating trout.

INSTREAM FLOW ANALYSIS: I helped develop a biologically-based Physical Habitat Simulation (PHABSIM) model by evaluating the ability of 32 combinations of suitability curves, which included experimental characterizations of focal points and cover, to predict the response of a brown trout population to changes in flow over a seven year period. A population response model was used to convert time series results of the PHABSIM models to trout abundance. I collected data for instream flow incremental methodology studies at the North Fork Kings River, the Clavey River, Reed Creek, Walker Creek, Parker Creek, lower Lee Vining Creek, the North Fork and the Middle Fork Stanislaus River, and the Owens River Gorge; a total of 320 transects were surveyed and two habitat suitability studies were conducted. I supervised model analyses for three confidential studies. I completed the IF310 class on using the computer based PHABSIM taught by the U.S. Fish and Wildlife Service National Ecology Research Center in 1990.

LIMNOLOGICAL STUDIES: I studied the effects of winter drawdown on brook trout, brown trout, and rainbow trout populations and their food resources in 13 east-side Sierra Nevada lakes. Analyzed productivity levels of largemouth bass fisheries in Arizona reservoirs.

PROJECT MANAGEMENT: I have 28 years of experience designing studies, working cooperatively with stakeholders, supervising field crews, conducting data analyses, producing reports, and managing budgets. I managed large projects for the U.S. Fish and Wildlife Service, CALFED, The City of Los Angeles Department of Water and Power, Southern California Edison, and the Electric Power Research Institute.

EMPLOYMENT HISTORY

Carl Mesick Consultants	2008 to present
7981 Crystal Boulevard, El Dorado, California 95623	1992 to 2004
U.S. Fish and Wildlife Service	2009
Energy and Instream Flow Branch	

2800 Cottage Way, Suite W-2605
Sacramento, CA 95825

U.S. Fish and Wildlife Service	1998 to 1999
Anadromous Fish Restoration Program	2004 to 2008
Sacramento/San Joaquin Estuary Fishery Resource Office	
4001 N. Wilson Way, Stockton, CA 95295	
EA Engineering, Science, and Technology	1985 to 1992
3468 Mt. Diablo Blvd, Lafayette, California 94549.	
Arizona Cooperative Fishery Research Unit	1978 to 1981
The University of Arizona, Tucson, Arizona 85721	

SELECTED PROJECT EXPERIENCE

Central Valley Coded-Wire-Tag Database Development (2008-2009). I developed a database of coded-wire-tag releases and recoveries of fall-run Chinook salmon during the fall-run escapement surveys in the Central Valley rivers from 1979 to 2007. This work was partially funded by the California Department of Fish and Game. Contact: Dean Marston, Fresno.

Methods of Estimating Salmon Recruitment in the San Joaquin River Basin (2008-2009). I conducted analyses of age composition and ocean harvest rates that are needed to estimate salmon recruitment. This work was partially funded by the California Department of Fish and Game. Contact: Dean Marston, Fresno.

Lovers Leap Restoration Project, Stanislaus County, California (2001 to 2004). I supervised the design and permitting for the construction of 25 gravel beds and 1.1 miles of floodplain habitat intended to benefit Chinook salmon and Central Valley steelhead in the lower Stanislaus River near Lovers Leap. The approach was to harvest 22,187 cubic yards of gravel to enhance floodplain habitat and upland terrestrial sites, clean the gravel on-site, and use the cleaned gravel to restore gravel beds where past gravel mining destroyed the salmonid habitat. When I began work for the USFWS in 2004, the project was transferred to KDH. Funding is provided by the USFWS Anadromous Fish Restoration Program and the Four-Pumps Mitigation Agreement. Contact: J.D. Wikert, U.S. Fish and Wildlife Service, (209) 334-2968 extension 403.

Spawning Habitat Evaluations for the Upper Yuba River Studies Program, Nevada and Placer counties, California (2002 to 2004). I studied the quantity and quality of spawning habitat in the upper Yuba River watershed to determine whether it was sufficient to support populations of wild Chinook salmon and Central Valley steelhead. The project was a collaborative effort between the CALFED Ecosystem Restoration Program (ERP) and local stakeholders, including local water, business, and environmental interests. I gave several presentations to the stakeholders describing each phase of my work. I was a subcontractor to CH2M Hill, which was funded by the CALFED ERP. Contact: David Christophel, CH2M Hill, (916) 920-0212.

SELECTED PROJECT EXPERIENCE (Continued)

Restoration planning for the lower Stanislaus River, California (2002 to 2004). I assisted the development of a consensus-based plan to direct the long-term implementation of prioritized restoration and research in the Stanislaus River below Goodwin Dam. The plan is being developed for the Stanislaus River Fish Group, which includes the U.S. Fish and Wildlife Service, California Department of Fish and Game, California Department of Water Resources, National Marine Fisheries Service, U.S. Army Corps of Engineers, U.S. Bureau of Reclamation, S.P. Cramer and Associates, and the Fisheries Foundation. I was a subcontractor to S.P. Cramer and Associates and funding was provided by the U.S. Fish and Wildlife Service. Contact: J.D. Wikert, U.S. Fish and Wildlife Service, (209) 334-2968 extension 403.

Knights Ferry Gravel Replenishment Project, Stanislaus, Tuolumne, and Calaveras counties, California (1998-2004). As project manager I supervised the placement of 13,000 tons of gravel at 18 riffles in the lower Stanislaus River in 1999 and evaluated the effects of adding different sizes and sources of gravel, and different streambed configurations on the utilization of spawning habitat by fall-run Chinook salmon and the quality of incubation habitat. Spawner use, habitat quality, Chinook salmon egg-survival, and gravel mobility were evaluated. Phase I was funded by the CALFED Bay-Delta Program and Phase II was funded by the USFWS Anadromous Fish Restoration Program. Contact: J.D. Wikert, U.S. Fish and Wildlife Service, (209) 334-2968 extension 403.

Streamflow and Habitat Requirements for fall-run Chinook salmon and steelhead in the Stanislaus River, Stanislaus County, California. For the Stockton East Water District (1994 to 1998), the effects of Delta exports, streamflow, water quality, ocean harvest, and El Nino conditions on fall-run Chinook salmon and steelhead in the Stanislaus and Tuolumne rivers were studied. I evaluated spawning habitat limitations for fall-run Chinook salmon in the Stanislaus River. I submitted a written declaration to the United States District Court for the Eastern District of California. Contact: Jeanne Zolezzi (209) 948-8200

Expert Testimony on the Environmental Factors Limiting the Brown Trout Populations and Methods of Restoring The Fisheries in Lower Rush and Lee Vining Creeks, Mono County, California. For California Trout (1992-1994), I testified at the El Dorado County Superior Court of California and the State Water Resources Control Board water rights hearing for the diversion of water from the Mono Lake tributaries. Contact: Richard Roos-Collins, Natural Heritage Institute (415) 288-0550.

Management Plan Development for the Mokelumne Wilderness. For the U.S. Department of Agriculture Forest Service, Eldorado National Forest, California (1994), I conducted a data review to describe the historical and existing fisheries in the Mokelumne Wilderness as part of a management plan. Contact: Jim Micheaels (916) 621-5293.

SELECTED PROJECT EXPERIENCE (Continued)

Restoration Planning for Fall-Run Chinook Salmon and Steelhead in the Stanislaus River, Stanislaus, Tuolumne, and Calaveras counties, California. For the Stanislaus River Council, which consisted of the Sierra Club, California Trout, Central Sierra Watershed Coalition, and the Natural Heritage Institute (1994 to 1995), I conducted studies on the effects of streamflow, water quality, Delta exports, ocean harvest, and El Nino conditions on fall-run Chinook salmon and steelhead in the Stanislaus and Tuolumne rivers. Presented findings at a workshop sponsored by the State Water Resources Control Board on Bay-Delta protection issues. I also worked with various resource agency biologists to develop restoration plans to double the production of salmon and steelhead in the San Joaquin River Basin as authorized by the Central Valley Project Improvement Act. Contact: Kevin Wolf (916) 758-4211.

Streamflow Recommendations and Restoration Planning for Fall-Run Chinook Salmon in the Tuolumne River, Stanislaus and Tuolumne counties, California. For the Tuolumne River Preservation Trust and the Friends of the Tuolumne River (1994 to 1995), I developed proposals for instream flow releases and habitat restoration for the New Don Pedro Project to protect fall-run Chinook salmon populations in the lower Tuolumne River. I participated in a mediation process to negotiate streamflow releases and habitat restoration measures with representatives of Federal Energy Regulatory Commission, Department of Fish and Game, US Fish and Wildlife Service, Turlock and Modesto Irrigation Districts, City and County of San Francisco, Tuolumne River Preservation Trust and the Friends of the Tuolumne River. Contact Richard Roos-Collins, Natural Heritage Institute (415) 288-0550.

Cumulative Watershed Effects Analyses For the Eldorado National Forest, California. For the U.S. Department of Agriculture Forest Service, Eldorado National Forest (1994), I reviewed historical data to assess cumulative watershed effects of timber harvest in 22 subwatersheds of the Eldorado National Forest. Contact: Chuck Mitchell (916) 622-5061.

Watershed Restoration and Monitoring Plans for Three Watersheds in the Eldorado National Forest. For the U.S. Department of Agriculture, Forest Service, Eldorado National Forest (1993), problematic sources of fine sediment were identified in the watersheds, including logging roads, skid trails, and grazing practices. Plans were designed to minimize these impacts. Contact: Chuck Mitchell (916) 622-5061.

Restoration of the Brown Trout Fisheries in Rush and Lee Vining Creeks, Mono County, California. I helped design and supervise the restoration of the brown trout fisheries in lower Rush and Lee Vining creeks on behalf of the Restoration Technical Committee, which consisted of California Trout, Mono Lake Committee, Audubon Society, California Department of Fish and Game, and Los Angeles Department of Water and Power (1992 to 1994). I evaluated the historical and existing fisheries and habitat data to provide a basis for the restoration work. I studied the abundance, survival and growth of brown and rainbow trout to determine existing environmental limitations and to determine the fisheries' response to habitat restoration. Testimony was provided on the design of fish population monitoring programs to the El Dorado County Superior Court of California.

SELECTED PROJECT EXPERIENCE (Continued)

Chinook Salmon Passage at a Roller-Gate Dam on the McKenzie River, Oregon. For Eugene Water and Electric Board (1989 to 1991), the survival of juvenile Chinook salmon and steelhead passing through a roller-gate dam was experimentally studied. Contact: Max Smith (503) 484-2411.

Water Rights Application on the Clavey River, Tuolumne County, California. For Tuolumne County and Turlock Irrigation District (1986 to 1991), long-term fish population surveys were conducted at the Clavey River, Reed Creek, Hull Creek and Bear Creek for a proposed hydroelectric diversion. I evaluated the effects of natural fluctuations in streamflow and water temperature on the growth and survival of rainbow trout. I supervised data collection for an Instream Flow Incremental Methodology study to evaluate streamflow recommendations for the proposed project reservoirs. Contact: John Mills (209) 984-3011.

Instream Flow and Fish Population Studies for Rush, Lee Vining, Walker, and Parker Creeks, Mono County, California. I supervised long-term surveys of the wild brown and rainbow trout populations for the City of Los Angeles Department of Water and Power (1985 to 1992). I supervised the data collection for an Instream Flow Incremental Methodology Study to evaluate streamflow recommendations to maintain fisheries downstream of project reservoirs. Contact: Richard Nagel (213) 367-1075.

Instream Flow and Fish Population Studies for Bishop Creek, upper Rush Creek, upper Lee Vining Creek, and Mill Creek, Inyo and Mono Counties, California. For the Southern California Edison Company (1985 to 1988), the streamflow and habitat requirements of brown trout and aquatic invertebrates were studied in the project streams and 13 reservoirs. I also studied the effects of sluicing fine sediments from intake ponds, entrainment at unscreened intakes, and substrate composition on trout and invertebrates. Contact: Brian McGurty (818) 302-8947.

SELECTED PUBLICATIONS AND PRESENTATIONS:

Mesick, C.F. 2009. The High Risk of Extinction for the Natural Fall-Run Chinook Salmon Population in the Lower Tuolumne River due to Insufficient Instream Flow Releases. Report submitted to the State Water Resources Control Board. Revised draft 4 September 2009. Manuscript submitted to California Fish and Game Scientific Journal, October 2009.

Mesick, C.F., D. Marston, and T. Heyne. 2009. Estimating the total number of coded-wire-tagged adult fall-run Chinook salmon (*Oncorhynchus tshawytscha*) in California's Central Valley rivers. El Dorado, CA. Manuscript submitted to California Fish and Game Scientific Journal, October 2009.

Mesick, C.F., D. Marston, and T. Heyne. 2009. Estimating recruitment for fall-run Chinook salmon populations in the Stanislaus, Tuolumne, and Merced rivers. El Dorado, CA. Manuscript submitted to California Fish and Game Scientific Journal, October 2009.

SELECTED PUBLICATIONS AND PRESENTATIONS (CONTINUED):

- Carl Mesick Consultants and KDH Environmental Services. 2009. 2004 and 2005 Phase II Studies. Knights Ferry Gravel Replenishment Project. Produced for the Anadromous Fish Restoration Program, U.S. Fish and Wildlife Service. 5 January 2009.
- Mesick, C.F. 2008. Habitat Restoration in the Tuolumne River Watershed. Presentation to the Central Valley Project Independent Review Panel, Sacramento, California. June 2008.
- Mesick, C.F. Marston, D. and T. Heyne. 2007. Provisional Draft: San Joaquin River East-side Tributary Fall-run Chinook Salmon Age Cohort Reconstruction. Report submitted to the Federal Energy Regulatory Commission for the Don Pedro Project on the Tuolumne River. March 2007.
- Mesick, C.F. and D. Marston. 2007. Provisional Draft: Relationships between fall-run Chinook salmon recruitment to the major San Joaquin River tributaries and streamflow, Delta exports, the Head of the Old River Barrier, and tributary restoration projects from the early 1980s to 2003. Report submitted to the Federal Energy Regulatory Commission for the Don Pedro Project on the Tuolumne River. March 2007.
- Mesick, C.F. 2005. Designing restoration projects to benefit both Chinook salmon and Central Valley steelhead (*Oncorhynchus mykiss*). Presented at the Annual Meeting of the California-Nevada Chapter of the American Fisheries Society, Sacramento, California. 19 March 2005.
- Mesick, C.F. 2004. Learning opportunities in gravel augmentation projects: The Stanislaus River. Invited speaker at CALFED Science Program and Ecosystem Restoration Program's workshop: Rivers, Rocks, and Restoration: Learning from the Past and Questions for the Future. Sacramento, California. 13 July 2004.
- Carl Mesick Consultants. 2003. Lovers Leap Restoration Project: Initial Study/Environmental Assessment. Draft produced for the U.S. Fish and Wildlife Service's Anadromous Fish Restoration Program. December 2003.
- Mesick, C.F. 2003. Spawning habitat. In: Upper Yuba River Studies Program Study Team editor. Summary of current conditions in the Yuba River watershed. Draft report produced for CALFED Ecosystem Restoration Program by CH2M Hill, Sacramento, California, October 2003. Pages 18-26.
- Carl Mesick Consultants. 2003. Working draft: a summary of fisheries research in the lower Stanislaus River. Produced for the Stanislaus River Fish Group, June 2003.
- Mesick, C.F. 2002. The Knights Ferry Gravel Replenishment Project, Stanislaus River. Presented at the twentieth annual Salmonid Restoration Conference, Ukiah, California. 3 March 2002.

SELECTED PUBLICATIONS AND PRESENTATIONS (CONTINUED):

- Carl Mesick Consultants. 2002. Gravel mining and scour of salmonid spawning habitat in the lower Stanislaus River. Draft report produced for the Stanislaus River Fish Group, May 2002.
- Carl Mesick Consultants. 2002. Task 6, second year post-project evaluation report, Fall 2000, Knights Ferry Gravel Replenishment Project. Final report prepared for the CALFED Bay Delta Program and the Stockton East Water District. Project #97-N21.
- Carl Mesick Consultants. 2002. Task 5, initial post-project evaluation report, Knights Ferry Gravel Replenishment Project. Final report prepared for the CALFED Bay Delta Program and the Stockton East Water District. Project #97-N21.
- Mesick, C.F. 2001. The effects of San Joaquin River flows and Delta export rates during October on the number of adult San Joaquin Chinook salmon that stray. In: Brown, R.L., editor. Fish Bulletin 179: Contributions to the biology of Central Valley salmonids. Volume 2. Sacramento (CA): California Department of Fish and Game. Pages 139-161.
- Mesick, C.F. 2001. Studies of spawning habitat for fall-run Chinook salmon in the Stanislaus River between Goodwin Dam and Riverbank from 1994 to 1997. In: Brown, R.L., editor. Fish Bulletin 179: Contributions to the biology of Central Valley salmonids. Volume 2. Sacramento (CA): California Department of Fish and Game. Pages 217-252.
- Mesick, C.F. 2001. Factors that potentially limit the populations of fall-run Chinook salmon in the San Joaquin tributaries. Presentation and report given to the Stanislaus Fish Group, Stockton, California. Carl Mesick Consultants, El Dorado, California. 21 August 2001.
- Mesick, C.F. 2001. Egg incubation conditions in restored riffles in the Stanislaus River. Presented at the Annual Meeting of the California-Nevada Chapter of the American Fisheries Society, Santa Rosa, California. 31 March 2001.
- Carl Mesick Consultants. 2001. Task 3, pre-project evaluation report, Knights Ferry Gravel Replenishment Project. Report prepared for the CALFED Bay Delta Program and the Stockton East Water District. Project #97-N21. Revised 20 July 2001.
- Mesick, C.F. 2000. Spawning habitat restoration in the Stanislaus River. Presented at the CALFED Science Conference 2000, Sacramento, California. 3 October 2000.
- Carl Mesick Consultants. 1999. Task 4 construction report, Knights Ferry Gravel Replenishment Project. Report prepared for the CALFED Bay Delta Program. Project #97-N21.
- Mesick, C.F. 1998. Comprehensive Monitoring, Assessment, and Research Program for Chinook Salmon and Steelhead in the Central Valley Rivers. Draft report prepared for the CALFED Bay-Delta Program, Sacramento, California.

SELECTED PUBLICATIONS AND PRESENTATIONS (CONTINUED):

- Carl Mesick Consultants. 1997. A fall 1996 study of spawning habitat limitations for fall-run Chinook salmon in the Stanislaus River between Goodwin Dam and Riverbank. Report prepared for Neumiller & Beardslee and the Stockton East Water District.
- Mesick, C.F. 1996. The effects of minimum instream flow requirements, release temperatures, Delta exports, and stock on fall-run Chinook salmon production in the Stanislaus and Tuolumne rivers. Report prepared for Thomas R. Payne & Associates, Neumiller & Beardslee and the Stockton East Water District.
- Mesick, C.F. 1995. Response of brown trout to streamflow, temperature, and habitat restoration in a degraded stream. *Rivers* 5(2):75-95.
- Mesick, C.F. 1995. Workshop on the concept, design, implementation and monitoring of stream restoration projects. Presented two days of lectures and field tours on the evaluation of aquatic habitat and fish populations. The workshop was sponsored by the California-Nevada Chapter of the American Fisheries Society, 8-11 May, Lee Vining, CA.
- Mesick, C.F. 1994. Fish population studies in lower Rush and Lee Vining creeks, Mono County, California, 1985 through 1993. Draft report prepared for Trihey & Associates and the Restoration Technical Committee that consisted of representatives of the Audubon Society, California Trout, Los Angeles Department of Water and Power, the Mono Lake Committee and California Department of Fish and Game.
- Mesick, C.F. 1993. Chapter 8. Fish populations in summary comparison of pre-1941 and post-1941 conditions affecting fish populations in lower Rush Creek, Mono County, California. Report prepared for Trihey & Associates and the Restoration Technical Committee.
- Morhardt, J.E., C.F. Mesick, S.P. Smith, and E.F. Cheslak. 1991. Use of information from IFIM transects to predict locations and frequency of use of focal points by brown trout (*Salmo trutta*). Report prepared for the Electric Power Research Institute, Palo Alto, CA.
- Mesick, C.F. 1990. Leaburg dam roller gate mortality study. Report prepared for the Eugene Water and Electric Board, Eugene, Oregon.
- Mesick, C.F. 1988. Effects of food and cover on numbers of Apache and brown trout establishing residency in artificial stream channels. *Trans. Amer. Fish Soc.* 117:421-431.
- Morhardt, J.E., and C.F. Mesick. 1988. Testing instream flow models: behavioral carrying capacity as a possible short term response variable. *Hydro Review* 7(2):32-40.

SELECTED PUBLICATIONS AND PRESENTATIONS (CONTINUED):

Mesick, C.F. 1988. East-side Sierra hydroelectric relicensing studies: the effects of streamflow on fish populations in Bishop Creek between 1984 and 1988. Report prepared for The Southern California Edison Company, Rosemead, CA.

Mesick, C.F. 1987. East-side Sierra hydroelectric relicensing studies: impacts of intake pond cleaning on Bishop Creek fish populations. Report prepared for Southern California Edison Company, Rosemead, CA.

Mesick, C.F. 1986. The importance of habitat structure in instream flow models. Presented at seminars in Washington, D.C. and Seattle for the Electric Power Research Institute.

Tash, J.C., C.D. Ziebell, B. Wanjala, E. Bianchi, and C. Mesick. 1986. The origin of an unusual survivorship curve for largemouth bass (*Micropterus salmoides*) in an Arizona reservoir. Report 86-1. Arizona Cooperative Fishery Research Unit, Tucson.

Mesick, C.F. and J.C. Tash. 1980. Effects of electricity on some benthic stream insects. *Trans. Am. Fish. Soc.* 109(4):417-422.