

MICHELLE L. WORKMAN

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EDUCATION

M.S., Biology (Biological Conservation), California State University, Sacramento, 1999.

B.S., Biology (Biological Conservation), CSU Sacramento, 1991, *cum laude*.

EXPERIENCE

Supervising Fisheries/Wildlife Biologist
East Bay Municipal Utility District
February 2014 - present

Ms. Workman is currently the Supervising Fisheries/Wildlife Biologist for EBMUD's Lodi Fisheries and Wildlife Office. In this capacity Ms. Workman oversees the activity and technical products of four biologists and four technicians. She is responsible for designing and overseeing fisheries research and monitoring as well as maintaining and fostering collaborative relationships with Mokelumne River stakeholders, fisheries agencies, and NGOs. Michelle manages the operating and capital budgets for her work unit, as well as the budget for the Mokelumne River Fish Hatchery. Michelle has primary responsibility for permitting and permit reporting for research and restoration projects on the Mokelumne River and the surrounding watershed lands.

Supervising Fisheries Biologist/Habitat Restoration Coordinator
United States Fish and Wildlife Service
April 2009 - February 2014

Ms. Workman worked for the Anadromous Fish Restoration Program of the US Fish and Wildlife Service (USFWS) for five years, 2009-2014, as a Supervising Fisheries Biologist and Habitat Restoration Coordinator in the Lodi Field Office. In her role as Habitat Restoration Coordinator, Ms. Workman managed habitat restoration projects on the Tuolumne and Merced rivers, and represented the USFWS in FERC proceedings on the Merced and the Tuolumne Rivers. She managed grants and cooperative agreements with consultant groups, working with stakeholder groups and other regulatory agencies to facilitate permitting, and provide technical guidance, and direction to

restoration projects, and conducted pre and post project monitoring. She conducted acoustic tagging studies on anadromous fishes in the San Joaquin River watershed, including the Stanislaus River, as well as the San Joaquin mainstem. Her FERC responsibilities included preparing study proposals for relicensing studies, participating in facilitated monthly FERC meetings, and providing technical input in FERC proceedings on the above named rivers regarding salmonid life history needs, including providing expert witness testimony on the Tuolumne River in federal court in Washington, D.C.

Ms. Workman provided expert written and oral testimony regarding the life history needs of steelhead. Ms. Workman received a letter of commendation from the USFWS for her participation in the Tuolumne FERC "expedited hearing process".

For the San Joaquin River Restoration Program (SJRRP) Ms. Workman led the Fish Management Work Group and acted as the USFWS lead on the Genetics, Hatchery Development, and HGMP technical teams. She provided written technical material aiding in compliance with the provisions of the Legal Settlement for the SJRRP. She represented the Fish Management Work Group on the Program Management Team, corresponded with the Settling Parties, Technical Advisory Committee, and all Implementing Agencies and concerned stakeholders in the San Joaquin River Restoration Program. Ms. Workman prepared the annual spending plan and budget reconciliation activities for fisheries monitoring actions for the SJRRP. She represented the USFWS's fisheries interests on the SJRRP regulatory team to facilitate the production of the 10a1A permit for reintroduction of salmon to the San Joaquin River. She was the primary author of the Reintroduction Strategy, and Steelhead Management Plans for the Program, and co-authored the Stock Selection strategy, and numerous other technical guidance documents. She provided public presentations as needed to stakeholders and other interested parties. She was the principle investigator on a number of San Joaquin Studies including: Juvenile Chinook Migration and Survival; Egg Survival and Emergence of Chinook Salmon; Predator Assessment in Captured Mine Pit Habitats; Fish Community Evaluations. As principle investigator responsibilities include: preparing, and presenting study proposals, developing study budgets, permitting projects, implementation and report preparation and data analysis.

Fisheries Biologist II
East Bay Municipal Utility District
June 2001 - March 2009

As a Biologist II, Ms. Workman managed the fish migration monitoring task of the Fisheries and Wildlife Division through rotary screw trapping, digital video passage monitoring and carcass surveys for seven years. General responsibilities included: Evaluating monitoring protocols and incorporate new technologies for monitoring as

they develop; producing annual reports for distribution to state and federal agencies; presenting data findings at biennial Mokelumne River Technical Advisory Committee meetings; representing the District on numerous multi-agency committees for data sharing (Juvenile Monitoring PWT; Salmonid Escapement PWT; Steelhead PWT); and developing and maintaining an Oracle database for fisheries data storage and coordinating data sharing with the Interagency Ecological Program.

For two years Ms. Workman had the lead responsibility for fish community surveys, gravel augmentation, and steelhead acoustic surveys. This included: planning, scheduling field crews, working with outside agencies, University affiliates, and vendors to complete projects; meeting the goals of the Water Quality and Resource Monitoring Plan; completing all project permitting (Army Corps Nationwide 27 Permit Preconstruction Notification for Gravel Project, CEQA and NEPA for Gravel Project, etc.).

Fisheries Biologist I *June 2000 - June 2001*

Fisheries and Wildlife Technician *November 1993 - May 2000*

East Bay Municipal Utility District

Prior to promoting to the Biologist II level, Ms. Workman worked as both Biologist I and Fisheries and Wildlife Technician for East Bay Municipal Utility District conducting both fisheries and wildlife monitoring in the Mokelumne River, and associated watershed. In total, Ms. Workman has over 17 years of experience on the Mokelumne River working in every aspect of fisheries management, research, and monitoring.

CERTIFICATIONS AND TRAINING

- Identification of Central Valley Fishes. Peter Moyle, UC Davis. EBMUD Workshop. *August 1999*. Refresher course *2002* (Dr. Scott Mattern).
- Introduction to Biocriteria and Standardized Procedures for Rapid Biological Assessment. AFS workshop. *August 16-18, 1999*
- Applied Statistical Data Analysis for Biologists. AFS Workshop. *2002*
- Principles and Techniques of Electrofishing. USFWS. NCTC Correspondence Course. *2004*
- Principles of Environmental Sampling – Study Design, Data Reporting. *September 2008*
- Introduction to Statistics I: Inferences for a Single Variable. *January 2007*

- Introduction to Statistics II: Working with Bivariate Data. *February 2007*
- Introduction to Statistics II: ANOVA and Multiple Regression. *November 2007*
- Introduction to Grants and Agreements for Federal Employees. *February 2010*
- Managing Grants and Agreements for Federal Employees. *February 2010*
- Leadership At All Levels in AFS. *April 2010*
- Aquatic Habitat Restoration and Enhancement. BLM. DOI course. Boise, ID. *June 2010*
- Introduction to Management Skills. NCTC/DOI Course. Stockton CA. *July 2010*
- Integrating NEPA into FWS Activities. *May 2011*
- River Morphology and Restoration Overview. Short Course. Seattle, WA. *August 2011*
- Facilitation Skills for Environmental Professionals. *October 2012*
- Supervisory Skills Workshop (BLM/FWS/NPS)- San Francisco, CA. *December 2012*
- Leadership Challenge Workshop. *May 2013*

AFFILIATIONS & HONORS

- American Fisheries Society Parent Organization *1994-present*
- California-Nevada Chapter American Fisheries Society *1994-present*
Chapter President *2009-2011*
- Interagency Ecological Program Salmonid Escapement Project Work Team
- Interagency Ecological Program Juvenile Monitoring Project Work Team
- Interagency Ecological Program Steelhead Project Work Team
- Interagency Ecological Program Hatchery Project Work Team – Co-Lead
- Central Valley Project Improvement Act Science Integration Team *2015-present*

PROFESSIONAL PUBLICATIONS, PRESENTATIONS & REPORTS

Publications

Merz, J., D. G. Delaney, J.D. Setka, and **M. L. Workman**. 2015. Seasonal rearing habitat in a large Mediterranean climate river: management implication at the southern extent of Pacific salmon (*Oncorhynchus spp.*). River Res. Applic. (2015). Wylie and Sons.

Merz, J., **M. Workman**, D. Threlhoff, B. Cavallo. 2013. Salmon Lifecycle Considerations to Guide Stream Management: Examples from California's Central Valley. San Francisco Estuary and Watershed Science 11(2). <http://www.escholarship.org/uc/item/30d7b0g7>.

Del Real, Severaino, **M.L. Workman**, and J.E. Merz, PhD. 2011. Migration characteristics of hatchery and natural-origin *Oncorhynchus mykiss* from the lower Mokelumne River, California. Environmental Biology of Fishes.

Barnett-Johnson, R., P. K. Weber, J. D. Wikert, **M. L. Workman**, R. B. MacFarlane, M. J. Grove, and A. K. Schmitt. 2010. Do salmon hatchery 'sources' lead to in-river 'sinks' in conservation? In Press, Conservation Biology.

Robert C. Kaufman, Ann G. Houck, Joseph J. Cech, Jr., and **M.L. Workman**. 2009. A Chinook salmon length/fecundity model for the Mokelumne River, California. (In Review) California Dept. of Fish and Game Publication.

Merz, J.E., J.R. Smith, **M.L. Workman**, J.D. Setka and B. Mulchaey. 2008. Aquatic macrophyte encroachment in Chinook salmon spawning beds - Lessons learned from gravel enhancement monitoring in the lower Mokelumne River, California. North American Journal of Fisheries Management. Vol. 28(5):1568-1577.

Workman, M.L. and J.E. Merz. 2007. Introduced yellowfin goby, *Acanthogobius flavimanus*: Diet and habitat use in the lower Mokelumne River. San Francisco Estuary and Watershed Science. Vol. 5. Issue 1. Article 1.

Poster/Oral Presentations

Blumenshine, S., K. Griffiths, **M. Workman**, and Z. Jackson. 2015. Assessment of non-native predator movements, diets, and consumption rates: a threat to Chinook Salmon reintroduction? 1st Annual San Joaquin River Restoration Program Science Meeting, Los Banos, CA, June 12.

Goodell, J., **M. Workman**, Z. Jackson, and J. Kirsch. 2015. Juvenile Chinook Salmon survival and migration using acoustic tags. 1st Annual San Joaquin River Restoration Program Science Meeting, Los Banos, CA, June 12.

Castle, C., J. Kirsch, Z. Jackson, A. Shriver, and **M. Workman**. 2015. Egg survival-to-emergence of fall-run Chinook Salmon within the San Joaquin River Restoration Area. 1st Annual San Joaquin River Restoration Program Science Meeting, Los Banos, CA, June 11.

Meyers, M., **M. Workman**, J. Kirsch, and A. Shriver. Physical factors and Chinook salmon egg survival: A study to determine the primary Controls. 1st Annual San Joaquin River Restoration Program Science Meeting, Los Banos, CA, June 11.

Hutcherson, J., J. Goodell, **M. Workman**, J. Kirsch, S. Root, and D. Portz, Fish Assemblage Inventory and Monitoring Study. 1st Annual San Joaquin River Restoration Program Science Meeting, Los Banos, CA, June 12

Workman, M.L. 2013. Past, Present and Future River Restoration Efforts on the Merced River. Salmonid Restoration Federation. Lodi, CA.

Workman, M.L. and P. Adelizi. 2013. Status of Broodstock Development for the San Joaquin River Restoration Program. Salmonid Restoration Federation. Lodi, CA.

Workman, M.L. 2012. Implementing Fisheries Studies to Inform Reintroduction Activities. San Joaquin River Conference. Fresno, CA.

Workman, M.L. and M. Bigelow. 2012. Juvenile Chinook Survival and Migration through the San Joaquin River Restoration Area during flood operations, Spring 2011. Salmonid Restoration Federation.

Workman, M.L. and J. Netto. 2012. Meeting the information needs for restoration: fisheries studies for water year 2011/2012 on the San Joaquin River. Salmonid Restoration Federation.

Workman, M.L. 2012. Results of 2012 Fisheries Studies and 2013 Proposed Fisheries Studies for the San Joaquin River Restoration Program. Restoration Goal Technical Feedback Group Meeting. Fresno, CA.

Workman, M.L. 2012. Juvenile Chinook Survival and Migration through the San Joaquin River Restoration Area during flood operations, Spring 2011. Cal Neva AFS. San Diego, CA.

Workman, M.L. 2011. Developing a strategy to reintroduce spring-run Chinook salmon into the San Joaquin River. CalNeva AFS Annual Meeting.

Workman, M.L. 2011. Chinook Salmon Reintroduction Strategies for the San Joaquin River. Salmonid Restoration Federation.

Workman, M.L., C. Del Real, and J.E. Merz. 2010. Characterization of the migration patterns of Hatchery and natural origin *Oncorhynchus mykiss* from the Mokelumne River, Ca. Western Division American Fisheries Society Meeting, Salt Lake City, UT. April 2010. (Poster)

Workman, M.L. 2010. Opportunities and challenges of working in FERC regulated rivers in the Central Valley: implications for Chinook salmon and steelhead populations. California/Nevada Chapter American Fisheries Society Annual Meeting. March 2010. Redding, CA.

Workman, M.L., J.E. Merz., and W. Heady. 2008. Hatchery and natural *Oncorhynchus mykiss* emigration from the lower Mokelumne River, California . Distance traveled, migration rates and paths to the Pacific Ocean. 2008 Calfed Science Conference. Sacramento, CA. (Poster)

Casey Del Real and **Michelle Workman.** 2008. Using Acoustic Telemetry to Evaluate Release Strategies on Migration Patterns of Mokelumne River Hatchery Steelhead Smolts. 2008 Calfed Science Conference. Sacramento, CA. (Poster)

Michelle L. Workman, and Joseph E. Merz. 2008. Evaluation of a Volitional Release Strategy for Hatchery-produced Fall-run Chinook Salmon in The Lower Mokelumne River, California. Salmonid Restoration Federation Annual Meeting March 5-8, 2008. Lodi, CA.

Workman, M.L., J.E. Merz., and W. Heady. 2008. Lower Mokelumne River Steelhead Acoustic Studies 2007-2008. 2008 Calfed Science Conference. Sacramento, CA.

Michelle L. Workman. 2005. Observations of Pacific Lamprey (*Lampetra tridentata*) during video monitoring, rotary screw trapping and fish community surveys of the lower Mokelumne River, California. California Nevada Chapter American Fisheries Society Annual Meeting.

Michelle L. Workman. 2004. Fish Response to a Controlled Spring Flood Release on the Lower Mokelumne River. Salmonid Restoration Federation Annual Meeting. Davis, CA.

Michelle Workman, Tim Heyne, and Andrea Fuller. 2004. Comparison of chinook salmon, (*Oncorhynchus tshawytscha*), carcass survey estimates to counts at weirs on the Stanislaus and Mokelumne Rivers, California. California Nevada Chapter, American Fisheries Society Annual Meeting.

Michelle L. Workman. 2002. Use of a Pool and Weir Fishway by Native Stream Fishes in the Lower Mokelumne River. California Nevada Chapter American Fisheries Society Annual Meeting.

Unpublished Reports

Workman, M.L. 2012. Predation Assessment in Captured Mine Pit Habitat. Annual Technical Report for the San Joaquin River Restoration Program.

Workman, M.L. 2012. Juvenile Survival and Migration of Chinook Salmon. Annual Technical Report for the San Joaquin River Restoration Program.

Workman, M.L. 2011. Qualitative Assessment of the Chowchilla Bypass. San Joaquin River Restoration Program.

Workman, M.L., P. Adelizi and M. Gordus. 2011. Reintroduction Strategy for the San Joaquin River Restoration Program. Unpublished report for the Fisheries Management Work Group of the San Joaquin River Restoration Program.

Workman, M.L., P. Adelizi, and M. Gordus. 2010. Stock Selection Strategy for the San Joaquin River Restoration Program. Unpublished report for the Fisheries Management Work Group of the San Joaquin River Restoration Program.

Workman, M.L. 2008. Lower Mokelumne River Fall run Chinook salmon prespawning mortality summary report. 2003-2007. Unpublished Report prepared for East Bay Municipal Utility District. 7pp.

Workman, M.L. 2007. Lower Mokelumne River Fall-run Chinook Salmon Escapement Report. October 2006 through January 2007. Unpublished EBMUD report. Lodi, CA 14 pp + Appendix.

Workman, M. L. 2007. Downstream fish migration monitoring at Woodbridge Irrigation District Dam. Lower Mokelumne River, December 2006 through July 2007. EBMUD unpublished report. 19pp + appendices.

Workman, M.L. 2006. Lower Mokelumne River Fall-run Chinook Salmon Escapement Report. October 2005 through January 2006 Unpublished EBMUD report. Lodi, CA 17 pp + Appendix.

Workman, M.L. 2006. Downstream Migration Monitoring at Woodbridge Dam on the Lower Mokelumne River, Ca. December 2005 through July 2006. EBMUD unpublished report. 15pp + appendix.

Workman, M.L. 2005. Lower Mokelumne River Upstream Fish Migration Monitoring conducted at Woodbridge Irrigation District Dam August 2004 through July 2005. Unpublished EBMUD report. Lodi, CA 1pp + Appendix.

Workman, M.L. 2005. Downstream Migration Monitoring at Woodbridge Dam on the Lower Mokelumne River, Ca. January 2005 through July 2005. EBMUD unpublished report. 15pp + appendix.

Workman, M.L. 2004. Lower Mokelumne River Upstream Fish Migration Monitoring conducted at Woodbridge Irrigation District Dam August 2003 through July 2004. Unpublished EBMUD report. Lodi, CA 23pp + Appendix.

Workman, M.L. 2004. Downstream Migration Monitoring at Woodbridge Dam on the Lower Mokelumne River, Ca. January 2004 through July 2004. EBMUD unpublished report. 15pp + appendix.

Workman, M.L. 2003. Lower Mokelumne River Upstream Fish Migration Monitoring conducted at Woodbridge Irrigation District Dam August 2002 through July 2003. Unpublished EBMUD report. Lodi Fisheries and Wildlife Division. 18pp + Appendix.

Workman, M.L. 2003. Downstream Migration Monitoring at Woodbridge Dam on the Lower Mokelumne River, Ca. December 2002 through July 2003. EBMUD unpublished report. 24pp + appendix.

Workman, M.L. 2002. Lower Mokelumne River Upstream Fish Migration Monitoring conducted at Woodbridge Irrigation District Dam August 2001 through July 2002. Unpublished EBMUD report. Lodi Fisheries and Wildlife Division. 20pp + Appendix.

Workman, M. L. 2002. Downstream migration monitoring at Woodbridge Dam on the lower Mokelumne River, Ca. December 2001 through July 2002. EBMUD unpublished report. 23pp + appendices.

Workman, M.L. 2001. Lower Mokelumne River Upstream Fish Migration Monitoring conducted at Woodbridge Irrigation District Dam August 2000 through April 2001. Unpublished EBMUD report. Lodi Fisheries and Wildlife Division. 20pp + Appendix.

Workman, M. 1999. An assessment of the downstream migration of juvenile Chinook salmon (*Oncorhynchus tshawytscha*) in the lower Mokelumne River. California State University, Sacramento. Masters Thesis. 47pp.

Smith, J.R. and **M.L. Workman**. 2008. Escapement, ocean harvest and straying of hatchery and naturally reared Chinook salmon in the Mokelumne River, California. Unpublished report prepared for East Bay Municipal Utility District. 16pp.

Smith, J.R. and **M.L. Workman**. 2006. Lower Mokelumne River Fall-run Chinook Salmon Size at Age. Unpublished report prepared for East Bay Municipal Utility District. 9pp.