CURRICULUM VITAE
William E. Fleenor

Civil & Environmental Engineering Department
2001 EU III
University of California, Davis
One Shields Avenue
Davis, CA 95616 USA

Office: (530) 752-5669
FAX: (530) 752-7872
Email: wefleenor@ucdavis.edu
Cell: (530) 219-2351
Home: (530) 758-5906

EDUCATION:

2001	Ph.D. (Civil Engineering), University of California, Davis
1993	M.S. (Civil Engineering), University of California, Davis
1970	B.S. (Mechanical Engineering), Rose-Hulman Institute of Technology

POSITIONS:

2007 -	Professional Research Scientist, C&EE Dept., Univ. of California, Davis
2003-2007	Professional Research Engineer, C&EE Dept., Univ. of California, Davis
2001-2003	Postdoctoral Research Engineer, C&EE Dept., Univ. of California, Davis
1993-2001	Postgraduate Research Engineer, C&EE Dept., Univ. of California, Davis

RECENT PUBLICATIONS:

Moyle, P.B., W. A. Bennett, Wm. E. Fleenor and J. R. Lund, *Habitat Variability and Complexity in the Upper San Francisco Estuary*, 2009 (submitted to the SF Estuary Journal).

Lund, J., E. Hanak, Wm. E. Fleenor, B. Bennett, R. Howitt, J. Mount, and P. Moyle, *Comparing Futures for the Sacramento-San Joaquin Delta*, 2009, 284 pg., UC Press (in press, edited, expanded and updated from PPIC publication).

Lund, J., Hanak, E., Fleenor, Wm., Bennett, W., Howitt, R., Mount, J., and P. Moyle, *Comparing Futures for the Sacramento-San Joaquin Delta*, Public Policy Institute of California, Appendix J, 2009.

Fleenor, Wm., Hanak, E., Lund, J., and J. Mount, *Delta Hydrodynamics and Water Salinity with Future Conditions*, Public Policy Institute of California, Appendix C, 2009.

Lund, J., Hanak, E., Fleenor, Wm., Bennett, W., Howitt, R., Mount, J., and P. Moyle, *Decision Analysis of Delta Strategies*, Public Policy Institute of California, Appendix J, 2009.

Behrens, D., Wm. E. Fleenor, J. DeGeorge and F. Bombardelli, “Instruction Manual for the Water Analysis Module (WAM)”, Documentation of the hydrodynamic and water quality model used by the delta Risk Management Study and the Delta Solutions Program. 69 pg., Center for Watershed Sciences publication, 2009

Florsheim, J.L.; J. Mount; C. Hammersmark; Wm. E. Fleenor; and S.G. Schladow, *Geomorphic Influence on Flood Hazards in a Lowland Fluvial-Tidal*

Transitional Area, Central Valley, California, Natural Hazards Review, Vol. 9, No. 3, August 1,2008. ASCE, ISSN 1527-6988/2008/3-116–124

Dietrich, J., D. Boylen, Wm. E. Fleenor, J. Groph, G. Hutchinson, J. Osborn, S. Strickland, D. Thompson, A. Van Gaest, T. Collier, M. Arkoosh and F Lodge, *Estimation of Hydrosystem Delayed Mortality Associated with Barge and In-River Outmigration Life-History Strategies of Snake River Spring/Summer Chinook Salmon*, 122 pg., Army Corp of Engineers, Walla Walla District, 2008

Lund, J., E. Hanak, Wm. E. Fleenor, R. Howitt, J. Mount, and P. Moyle, *Envisioning Futures for the Sacramento-San Joaquin Delta*, Public Policy Institute of California, 2007, 284 pg., ISBN: 98-1-58213-126-9.

Rueda, F.J., Wm. E. Fleenor, and I. de Vicente, *Pathways of river nutrients towards the euphotic zone in a deep-reservoir of small size: Uncertainty analysis*, *Ecological Modelling*, 202 (3), Apr 2007, pg.345-361.

Henson, S.S., D.S. Ahearn, R.A. Dahlgren, E. Van Nieuwenhuyse, K.W. Tate, and Wm. E. Fleenor, *Water Quality Response to a Pulsed-Flow Event on the Mokelumne River, California*, River Research and Applications, Vol. 23, 2007, pg 185-200.

Schladow, S. Geoffrey, Wm. E. Fleenor, Fabian A. Bombardelli, and Eu Gene Chung, "Quantifying sediment resuspension linkages to nutrient enrichment in the existing and future Salton Sea" (December 1, 2007). *University of California Water Resources Center. Technical Completion Reports*. Paper 998. http://repositories.cdlib.org/wrc/tcr/998

Hammersmark, C. T., Wm. E. Fleenor and S. G. Schladow**,** "Simulation of Flood Impact and Habitat Extent for a Tidal Freshwater Marsh Restoration". Ecological Engineering, Feb 2005, 905 pg 1-16

Fleenor, Wm. E**.**, and S. Geoffrey Schladow, "Mike 11 Numerical Modeling Study of the North Delta", in fulfillment of first supplement of CALFED grant #99-B193 EDL Data Report 2005-017, July 2005.

Fleenor, Wm. E., and S. Geoffrey Schladow, "Sediment Flux Variation in Two Central Valley Rivers", CALFED grant #99-B193 Report to CALFED Bay-Delta Authority, 2004.

Hammersmark, Chris, Fleenor, Wm. E., and S. Geoffrey Schladow, "Restoration Alternatives for McCormack-Williamson Tract", Report to CALFED Bay-Delta Authority and The Nature Conservancy, 2003.

Fleenor, Wm. E., and S. Geoffrey Schladow, "Lake Almanor – ICP-MS Investigation into Groundwater Budget", Report to Bechtel Engineering and PG&E, 2003.

Fleenor, Wm. E., and S. Geoffrey Schladow, "Lake Almanor – Acoustic Doppler Current Profiler Investigation of Flow Velocities near Outflow Tower", Report to Bechtel Engineering and PG&E, 2003.

Moughamian, Raffi, Wm. E. Fleenor, S. Geoffrey Schladow, "Tracer Study to Examine Bubbler Destratification - Pilot Study in a Closed-End Estuary", Report for HDR Engineering and the City of Stockton, 2003.

Fleenor, Wm. E., S. Geoffrey Schladow, "Lake Almanor – A Field Study into

Outflow Mixing Problems", Report to Bechtel Engineering and PG&E, 2002

Bowersox, Randy, Fleenor, Wm. E., Schladow, S. Geoffrey, "Tracer Study of Hydrodynamic Mixing in a Closed-End Estuary", Report to HDR Engineering and the City of Stockton, 2001

Lund, J.R., Lawver, R.A., Anex, R.P., Tchobanoglous, G., Saska, L., Alaniz, V., Booher, C., Edgar, E., Fleenor, Wm. E., Freeman, W., Irving, K., Kear, T., Lindenauer, K., Wright, W. and Parker, J., "GIGO: A Spreadsheet Program for Integrated Municipal Solid Waste Management, Version 1.0." model documentation and software for public release, Department of Civil and Environmental Engineering, University of California, Davis, November, 1993.

Fleenor, Wm E., and Ian P. King, "Identifying Limitations on Use of the HELP Model", *Landfill Closures - Environmental Protection and Land Recovery*, Edited by Dunn, Jeffrey R., and Udai P. Singh, A.S.C.E. Geotechnical Special Publication No. 53, 1995.

RECENT RESEARCH:

Serve as expert supervisor for tracer injection in a lake in Spain to study the pathways of river water distribution in stratified reservoirs and to evaluate the influence that river-borne nutrients have on the nutrient dynamics of the surface layers of these systems and, hence, on their phytoplankton (focusing on the part of the community with the smallest cell size and the shortest response time to changes in environmental factors). Funding is through the Science Foundation of Spain. Collaborative study with the University of Granada, Granada, Spain 2009-current.

PI and project manager of modeling contract with DWR for examination of rehabilitation of McCormack-Williamson Tract for ecological and flood control benefits. Contract involves extending Mike 11 modeling work done under CALFED grant #99-B193 to include use of HEC-RAS model and incorporating the current NAVD88 vertical datum. 2007-current.

Project manager for numerical modeling development for 3-D hydrodynamic and water quality analysis model. The model will be made available to the larger modeling community to investigate Delta issues, including sea level rise. Funded by S. D. Bechtel, Jr. Foundation, and the David and Lucile Packard Foundation under contract through Watershed Sciences Center 2009-current.

Collaboration involving study of "In-Delta Recreation and Agricultural Economic Study", Results will bring to light the actual economic impact that a peripheral canal would impose on the Delta. Funded by S. D. Bechtel, Jr. Foundation, and the David and Lucile Packard Foundation under contract through Watershed Sciences Center 2009-current.

Project manager for numerical modeling study of "Virtual Flooded Island Hydrodynamics and Ecological Assessment", Results will be development of guidelines for beneficial management of potential flooded Delta islands. Funded by S. D. Bechtel, Jr. Foundation, and the David and Lucile Packard Foundation under contract through Watershed Sciences Center 2008-current.

Project manager for documentation and testing of the Water Analysis Module which was used extensively in Delta hydrodynamic and salinity analysis. Published work in report . Funded by S. D. Bechtel, Jr. Foundation, and the David and Lucile Packard Foundation under contract through Watershed Sciences Center 2008-2009.

Collaboration involving modeling study to support investigation of "Variability and Complexity in the Delta", Results will be development of guidelines for beneficial management of Delta habitat. Funded by State Water Resources Control Board, S. D. Bechtel, Jr. Foundation, and the David and Lucile Packard Foundation under contract through Watershed Sciences Center 2008-2009.

Project manager for ongoing remote data collection system on and around Lake Tahoe (http://remote.ucdavis.edu/tahoe_location.asp). Data are collected for the Tahoe Environmental Research Center (TERC) and used by a wide variety of UCD and off-campus agencies. The REMOTE system is done in coordination with other UCD departments. The work includes assisting other REMOTE units with data collection systems. 2001-current.

Coast to Mountain Environmental Transect project (COMET). A multidisciplinary project involving Bodega Bay Marine Lab, UC Davis and TERC in developing cyber-infrastructure to investigate how multiple environmental factors, in particular climate variability, impact ecosystems across a wide geographical transect that includes major ecosystems in California. Funding is being provided by the National Science Foundation ($2,100,000.00). 2006-2009

"Comparing Futures for the Sacramento-San Joaquin Delta". A project to examine the possible solutions to Delta water supply and quality determined from a previous contract. Perform hydraulic modeling to support the ecological, agricultural and economic analysis of the California water system. Funded by S. D. Bechtel, Jr. Foundation, and the David and Lucile Packard Foundation under contract through Watershed Sciences Center ($252,977.00). 2008-2009.

"Envisioning Futures for the Sacramento-San Joaquin Delta". Examined the hydraulic and ecological aspects of the Sacramento-San Joaquin Delta and determine viable solution possibilities for the California water system. Funded by a Public Policy Institute of California contract through Watershed Sciences Center. ($93,347.00). 2006-2007.

Co-PI and project manager of modeling contract with DWR through Reclamation District 348. Contract involves extending Mike 11 modeling work done under CALFED grant #99-B193 to include use of HEC-RAS model. 2005-2006.

Project manager for California Bay-Delta Authority grant ERP-02D-P51, Hydrodynamic and Oxygen Modeling of the Stockton Deep Water Ship Channel. Responsibilities include coordination with subcontractors (Stanford and USGS), planning and managing field work for use in calibrating and verifying the model, and attending and presenting at required CALFED group meetings. 2004-2006.

PROCEEDINGS PAPERS POSTERS AND/OR PRESENTATIONS:

Fleenor, Wm. E. and J. R. Lund, "Estimation of Flow Needs for Native Fishes of the San Francisco Bay and Sacramento-San Joaquin Delta", San Francisco Estuary Conference, Oakland, CA, 2009

Fleenor, Wm. E., J. R. Lund, E. E. Hanak and J. F. Mount, "Hydrodynamics and Salinity of the Sacramento-San Joaquin Delta", 13th Physical Processes in Natural Waters Conference, Palermo, Italy, 2009

Fleenor, Wm. E. and J. R. Lund, "Assessing the Future of the California Water Distribution System: The Sacramento-San Joaquin Delta", American Water Resources Association Conference, Seattle, WA, 2009

Doyle, L., J. Durand and Wm. E. Fleenor, "Physical Drivers of Biological Productivity following Levee Breaches on Islands in the Sacramento-San Joaquin Delta", Coastal and Estuarine Research Federation, 20th Biennial Conference, Portland, OR, 2009

Monismith, S., J. Hench, N. Nidzieko, D. Fong, Wm. E. Fleenor, L. Doyle and S. G. Schladow, "Stratification Dynamics in a Tidal River", Coastal and Estuarine Research Federation, 20th Biennial Conference, Portland, OR, 2009

Fleenor, Wm. E., J. R. Lund, E. E. Hanak and J. F. Mount, "Hydrodynamics and Salinity of the Future Delta", CALFED Science Conference, Sacramento, CA, 2008

Rueda, F. J., Schladow, S. G., Chung, E. G., and Fleenor, Wm. E**.**, "Mixing and stratification in lakes of varying horizontal length scales: the present and the future of the Salton Sea, USA", 11th Physical Processes in Natural Waters Conference, Warnemuende, Germany, 2007

Schladow, S. G., Chung, E. G., Fleenor, Wm. E. and Rueda, F. J. 2007. "The Hydrodynamic consequences of reducing the surface area of a lake: the present and future Salton Sea, USA", The Fifth International Symposium on Environmental Hydraulics. University of Arizona, Tempe, AZ, December 2007

Hench, J.L., Nidzieko, N.J., Fong, D.A., Monismith, S.G., DiPalermo, L., Fleenor, Wm. E., Schladow, S.G., Observations of Circulation, Stratification, and Turbulence in a Freshwater Tidal River. CALFED Science Conference, Sacramento CA, 2006

Hench, J.L., Nidzieko, N.J., Fong, D.A., Monismith, S.G., DiPalermo, L., Fleenor, Wm. E., Schladow, S.G., Observations of circulation, stratification, and turbulence in a freshwater tidal river. 13th Physics of Estuaries and Coastal Seas Conference, Astoria, OR, 2006

Hench, J. L., Fong, D. A., Smith, P. E., Fleenor, Wm. E., Nidzieko, N. J., Schladow, S. G. and S. G. Monismith, "Three-dimensional modeling of

circulation, stratification, and turbulence in the Stockton Deep Water Shipping Channel", CALFED Science Meeting, Sacramento, CA, 2006

Schladow, S. G., Rueda, F. J., Fleenor, Wm. E. and Chung, E. G., Three-Dimensional Hydrodynamic Modeling of the Salton Sea. California Water and Environmental Modeling Forum Annual Conference, Asilomar, CA, 2006

ACADEMIC SERVICE:

Currently serving on the Committee on Research in the Academic Federation, 2007-2008

Taught Freshman Seminar class, winter 2007, in Appropriate Engineering Technology in

Developing Communities (Sanitation Household Implementation Technologies)

Served on the review committee for the Ecosystem Restoration Program of the California

Bay-Delta Authority. Review of a numerical model for which they had

contracted of the San Joaquin River. May 2006

Served on the Technical Selection Panel for the CALFED Science Program's 2006 Proposal Solicitation Package. November 2006

Taught Freshman Seminar class, winter 2006, in Appropriate Engineering Technology in Developing Communities (Drinking Water Quality for Health)

Reviewed the manuscript "Spatial and temporal scales of transport during the cooling phase of the ice-free period in a small high-mountain lake" for the journal *Aquatic Sciences*, May 2006

Reviewed draft report entitled "Flooded Islands Feasibility Report" for the Project Review Office for the California Bay-Delta Authority's Ecosystem Restoration Program, June 2006

Reviewed the manuscript "ADCP Measurements of Gravity Currents in the Chicago River, Illinois" for the *Journal of Hydraulic Engineering*, August 2006

Participated in development of curriculum for charter school established by Education Department in West Sacramento for socio-economically disadvantaged students to provide a college-track educational environment, 2006-2007

AWARDS, ACCOMPLISHMENTS & ASSOCIATIONS:

Founding Faculty Adviser, Engineers Without Borders – UCD, 2004 - current
American Society of Civil Engineers (ASCE)
Air and Waste Management Association (A&WMA)

American Geophysical Union (AGU)
American Water Resource Association (AWRA)
American Water Works Association (AWWA)
California Water and Environmental Modeling Forum
California EIT

RECENT COLLABORATORS (NON-UC DAVIS):
John DeGeorge; RMA Engineering; Fairfield, CA
Derek Fong; Stanford University; Palo Alto, CA
Jim Hench; Stanford University; Palo Alto, CA
Chris Luecke; Utah State University; Logan, Utah
Stephen Monismith; Stanford University; Palo Alto, CA
Francisco Rueda; University of Granada, Spain
Pete Smith; USGS; Sacramento, CA
Ellen Hanak; Public Policy Institute of California; SF, CA
Anthony Saracino; The Nature Conservancy; Sacramento, CA
Leo Winternitz; The Nature Conservancy; Sacramento, CA
Maurice Hall; The Nature Conservancy; Sacramento, CA

RECENT STUDENTS AND POSTDOCS:
B.G. Heiland (M.S. 2000) Department of Water Resources, Sacramento, CA
Randy Bowersox (M.S. 2002) Carlton Engineering, Grass Valley, CA
Amy Krich-Brinton (M.S. 2004) Larry Walker Associates, Davis, CA
Raffi Moughamian, (M.S. 2005) Central Contra Costa Sanitary District, CA
Jehan Sohoo Fugit (M.S. 2006) West-Yost Engineering, Davis CA
Alexa LaPlante (M.S. 2008) MHB Engineering, Sacramento, CA
Simone Sebalo (M.S. 2008) Zender Environmental, San Rafael, CA
Laura (DiPalermo) Doyle (Ph.D. 2009)
Temitope Ogunyoku (M.S. 2009)
Matthew Bates (M.S. 2009)
David Corderi (Ph.D. 2010, Agriculture and Natural Resources Department)