

ERIC D. STEIN, Principal Scientist

EDUCATION:

D.Env., Environmental Science and Engineering, University of California, Los Angeles, 1995
M.Ed., Science Education, University of California, Los Angeles, 1988
B.S., Biology, University of California, Los Angeles, 1987

AREAS OF EXPERTISE:

Dr. Stein is a Principal Scientist at the Southern California Coastal Water Research Project (SCCWRP), where he is head of the Watershed Department. Dr. Stein oversees a variety of projects related to stormwater and mass emissions monitoring, remote sensing, watershed and water quality model development, regional monitoring, and assessment of wetlands and other aquatic resources. Dr. Stein is currently the chair of the Science Advisory Panel for the southern California Wetlands Recovery Project (WRP), which is developing tools and approaches for regional monitoring and assessment of streams, wetlands, and watersheds.

Dr. Stein has research experience in a variety of disciplines related to environmental assessment, including multimedia distribution of environmental contaminants, human health risk and exposure assessment, wetland functional assessment, intestinal nutrient transport kinetics, and physiological ecology. His most recent work has involved water quality monitoring and assessment, source identification of storm water pollutants, hydromodification, watershed analysis, and functional assessment of aquatic ecosystems. Dr. Stein works with a variety of regional and statewide work groups on water quality and wetland issues, such as wetland mapping, regional wetland assessment, storm water monitoring, and TMDL development.

Before joining SCCWRP Dr. Stein worked as both a private consultant and for the Regulatory Branch of the Los Angeles District Corps of Engineers on issues related to wetlands and water quality management and regulation. Dr. Stein's experience includes wetland delineation, design of mitigation and restoration projects, development of monitoring programs, establishment of mitigation banks, and landscape-scale assessment.

PROFESSIONAL EXPERIENCE:

Principal Scientist, Southern California Coastal Water Research Project. 2002 - Present

Adjunct Associate Professor - California State University, Los Angeles, Department of Geography and Urban Analysis. 1998 – 2001

Principal Ecologist, Associate Principal - PCR Services Corporation. 1998 – 2002

Biologist, Senior Project Manager - U.S Army Corps of Engineers, Los Angeles District, Regulatory Branch. 1993 - 1998

Graduate Researcher - UCLA Environmental Science and Engineering Program. 1991 – 1993

Biology Teacher - Alhambra High School, Alhambra City School District. 1988 – 1991

Educational Technology Consultant - IBM Educational Instruction Division. 1990 – 1995

Research Associate - UCLA Department of Physiology. 1984 – 1991

PROFESSIONAL APPOINTMENTS:

- Southern California Wetlands Recovery Program Science Advisory Panel, Chair
- Ballona Wetland Restoration Scientific Advisory Committee, Co-chair
- NOAA National Estuary Eutrophication Workgroup, S. Pacific Coast Coordinator
- Society of Wetland Scientists, Western Chapter President
- Society of Wetland Scientists, Wetland Concerns Committee
- National Wetlands Awards, Selection Committee
- Riparian Habitat Joint Venture Working Group
- NOAA Water Quality Synthesis, Assessment, and Data Management (SAM) Technical Advisory Committee
- San Francisco Estuary Institute (SFEI) Sources Pathways and Loading Work Group
- Malibu Legacy Park Technical Advisory Committee
- US Army Corps of Engineers – National Workgroup on Arid Stream Assessment
- California Special Workgroup on Stream and Wetland Assessment

PROFESSIONAL AFFILIATIONS AND AWARDS:

- U.S. Army Achievement Medal for Civilian Service
- Member Society for Wetland Scientists
- Member American Water Resources Association
- Member American Geophysical Union
- Paul Douglas State Teaching Fellowship
- Pi Lambda Theta - Educational Honor Society

PEER-REVIEWED PUBLICATIONS:

Ackerman, D. and E.D. Stein (2008 in press). Evaluating the Effectiveness of Best Management Practices Using Dynamic Modeling. *Journal of Environmental Engineering*

Stein, E.D. and V.K. Yoon (2008 in press) Dry Weather Flow Contribution of Metals, Nutrients, and Solids from Natural Catchments. *Water Air and Soil Pollution*

Ackerman, D. and E.D. Stein. (2008 in press) Estimating the Confidence of Land Use and Imperviousness Relationships at a Regional Scale. *Journal of the American Water Resources Association*.

Stein, E.D. and B. Bernstein. (2008 in press). Integrating Probabilistic and Targeted Compliance Monitoring for Comprehensive Watershed Assessment. *Environmental Monitoring and Assessment*.

Tiefenthaler, L.L., E.D. Stein, and K.C. Schiff. 2008. Watershed and Land Use-Based Sources of Trace Metals in Urban Storm Water. *Environmental Toxicology and Chemistry* 27(2):277-287.

Nezlin, N.P., K. Kamer, and E.D. Stein. 2007. Application of Color Infrared Aerial Photography to Assess Macroalgal Extent in an Eutrophic Estuary, Upper Newport Bay, California. *Estuaries and Coasts* 30(5):855-868.

Stein, E.D. and D. Ackerman. 2007. Dry Weather Water Quality Loadings In Arid, Urban Watersheds of the Los Angeles Basin, California, USA. *Journal of the American Water Resources Association* 43:398-413.

Stein, E.D. L.L. Tiefenthaler, and K. Schiff. 2006. Watershed-Based Sources Of Polycyclic Aromatic Hydrocarbons (PAH) In Urban Storm Water. *Environmental Toxicology and Chemistry* 25:373-385.

Sutula, M.A., E.D. Stein, J.N. Collins, and A.E. Fetscher. 2006. Key Considerations For Developing a Wetlands Rapid Assessment Method: California's Experience. *Journal of the American Water Resources Association* 42:157-175.

Ackerman, D., E.D. Stein, and K. Schiff. 2005. Dry-season Water Quality in the San Gabriel River Watershed. *Bulletin of the S. Ca. Academy of Sciences* 104:125-145.

Nezlin N.P., P.M. DiGiacomo, E.D. Stein, and D. Ackerman. 2005. Stormwater Runoff Plumes Observed by SeaWiFS Radiometer in Southern California Bight. *Remote Sensing of Environment* 98:494-510.

Stein, E.D., and L.L. Tiefenthaler. 2005. Dry-Weather Metals and Bacteria Loading in an Arid, Urban Watershed: Ballona Creek, California. *Water, Air, and Soil Pollution* 165:367-382.

Nezlin, N.P. and E.D. Stein. 2005. Spatial and Temporal Patterns of Remote-sensed and Field-measured Rainfall in Southern California. *Remote Sensing of the Environment* 96:228-245.

Stein, E.D., M. Mattson, A.E. Fetscher, and K.J. Halama. 2004. Influence of Geologic Setting on Slope Wetland Classification and Hydrodynamics. *Wetlands* 24:244-260.

Stein, E.D. and R.F. Ambrose. 2001. Landscape-Scale Analysis and Management. of Cumulative Impacts to Riparian Ecosystems: Past, Present, and Future. *Journal of the American Water Resources Association* 37:1597-1614.

Stein, E.D., F.T. Tabatabai, and R.F. Ambrose. 2000. Wetland Mitigation Banking: A Framework for Crediting and Debiting. *Environmental Management* 26:233-250.

Stein, E.D. 2000. Watershed-Scale Analysis and Management of Cumulative Impacts. *Proceedings of the American Water Resources Association International Conference on Riparian Ecology and Management in Multi-Land Use Watersheds*, (peer-reviewed proceedings). Portland, Oregon

Stein, E.D. 1999. Mitigation Banking: Challenges and Lessons Learned. *Society of Wetland Scientists Bulletin* 16.

- Stein, E.D. and R.F. Ambrose. 1998. A Rapid Impact Assessment Method for Use in a Regulatory Context. *Wetlands* 18:379-392.
- Stein, E.D. and R.F. Ambrose. 1998. Cumulative Impacts of Section 404 Clean Water Act Permitting on the Riparian Habitat of the Santa Margarita, CA Watershed. *Wetlands* 18:393-408.
- Stein, E.D. and V. Vartanian. 1997. Killing the Beast: A Cooperative Approach for Control of *Arundo donax* in the Santa Ana River Watershed. *California Exotic Pest Plant Council News* 5. Reprinted in *Engineer Update* 21.
- Stein, E.D., Y. Cohen, and A.M. Winer. 1996. Environmental Distribution and Transformation of Mercury Compounds. *Critical Reviews in Environmental Science and Technology* 26:1-43.
- Secor, S.M., E.D. Stein, and J.M. Diamond. 1994. Rapid Up-Regulation of Snake Intestine in Response to Feeding: A New Model of Intestinal Adaptation. *American Journal of Physiology* 266:G695-G705.
- Hammond, K.A., E.D. Stein, and J.M. Diamond. 1990. Capacities for Energy Uptake in Intestines of Lactating Mice. *American Zoologist* 30:A67-A67.
- Stein, E.D. and J.M. Diamond. 1989. Do Dietary Levels of Pantothenic Acid Regulate its Intestinal Uptake in Mice? *Journal of Nutrition* 119:1973-1983.
- Stein, E.D., S.D. Chang, and J.M. Diamond. 1987. Comparison of Different Dietary Amino Acids as Inducers of Intestinal Amino Acid Transport. *American Journal of Physiology* 252:626-635.
- Karasov, W.H., D.H. Solberg, S.D. Chang, M. Hughes, E.D. Stein, and J.M. Diamond. 1985. Is Intestinal Transport of Sugars and Amino Acids Subject to Critical Period Programming? *American Journal of Physiology* 249:770-785.

TECHNICAL REPORTS:

- Stein, E.D., M. Sutula, R. Clark, A. Wiskind, and J. Collins. 2007. *Improving Monitoring and Assessment of Wetland and Riparian Areas in California through Implementation of a Level 1, 2, 3 Framework*. Southern California Coastal Water Research Project Technical Report #555.
- Ackerman, D. and E.D. Stein. 2007. *Hydrodynamic Modeling of the San Gabriel River Estuary*. Southern California Coastal Water Research Project Technical Report #511.
- Stein E.D., L.L. Tiefenthaler, and K. Schiff. 2007. *Understanding Sources, Patterns and Mechanisms of Pollutant Loading from Urban, Arid Watersheds and Land Uses of the Greater Los Angeles, California, USA*. Southern California Coastal Water Research Project Technical Report #510.
- Stein, E.D. and V.K. Yoon. 2007. *Assessment Of Water Quality Concentrations And Loads From Natural Landscapes*. Southern California Coastal Water Research Project Technical Report #500.

Stein, E.D., S. Dark, T. Longcore, N. Hall, M. Beland, R. Grossinger, J. Casanova, and M. Sutula. 2007. *Historical Ecology And Landscape Change of the San Gabriel River and Floodplain*. Southern California Coastal Water Research Project Technical Report #499.

Rosenberger, K.J., J. Xu, E.D. Stein, M.A. Noble, and A.L. Gartner. 2007. *Circulation and Physical Processes Within the San Gabriel River Estuary During Summer 2005*. U.S. Geological Survey Open-file Report #2007-1011, Southern California Coastal Water Research Project Technical Report #501.

Collins, J.N., M. Sutula, E.D. Stein, M. Odaya, E. Zhang, and K. Larned. 2006. *Comparison of Methods to Map California Riparian Areas. Final report prepared for the California Riparian Habitat Joint Venture (RHJV)*. San Francisco Estuary Institute Report #522, Southern California Coastal Water Research Project Technical Report #502

Collins, J.N., E.D. Stein, M. Sutula, R. Clark, A.E. Fetscher, L. Grenier, C. Grosso, and A. Wiskind. 2006. *California Rapid Assessment Method (CRAM) for Wetlands and Riparian Areas*.

Nezlin, N., K. Kamer, E.D. Stein, A. Carr, and J. Hyde. 2006. *Relationships Between Dissolved Oxygen and Macroalgal Distribution in Upper Newport Bay*. Southern California Coastal Water Research Project Technical Report #494.

Sutula, M., E.D. Stein, and E. Inlander. 2006. *Evaluation of a Method to Cost-Effectively Map Riparian Areas in Southern California Coastal Watersheds*. Southern California Coastal Water Research Project Technical Report #480.

Stein, E.D. and S. Zaleski. 2005. *Managing Runoff to Protect Natural Streams: The Latest Developments on Investigation and Management of Hydromodification in California*. Southern California Coastal Water Research Project Technical Report #475.

Coleman, D., C. MacRae, and E.D. Stein. 2005. *Effect Of Increases In Peak Flows And Imperviousness on the Morphology of Southern California Streams*. Southern California Coastal Water Research Project Technical Report #450.

Stein, E.D. and L.L. Tiefenthaler. 2004. *Characterization of Dry Weather Metals and Bacteria in Ballona Creek*. Southern California Coastal Water Research Project Technical Report #427.

Stein, E., D. Ackerman, and K. Schiff. 2003. *Watershed-based Sources of Contaminants to San Pedro Bay and Marina del Rey: Patterns and Trends*. Southern California Coastal Water Research Project Technical Report #413.

Busse, L., J. Simpson, S. Cooper, K. Kamer, and E. Stein. 2003. *A Survey of Algae and Nutrients in the Malibu Creek Watershed*. Southern California Coastal Water Research Project Technical Report #412.

Kamer, K. and E. Stein. 2003. *Dissolved Oxygen Concentration as a Potential Indicator of Water Quality in Newport Bay: A Review of Scientific Research, Historical Data, and Criteria Development*. Southern California Coastal Water Research Project Technical Report #411.

Sutula M. and E. Stein. 2003. *Habitat Value of Natural and Constructed Wetlands Used to Treat Urban Runoff: A Literature Review*. Southern California Coastal Water Research Project Technical Report #388.

Cohen, Y., A.M. Winer, and E.D. Stein. 1993. *Development of Intermedia Transfer Factors for Mercury*. Report Prepared for the California Air Resources Board, Contract No. A032-170.

Cohen, Y., A.M. Winer, and E.D. Stein. 1993. *Development of Intermedia Transfer Factors for Methylene Chloride*. Report Prepared for the California Air Resources Board, Contract No. A032-170.

SELECTED RECENT PRESENTATIONS AND PUBLICATIONS IN CONFERENCE PROCEEDINGS:

Stein, E.D. and V.K. Yoon. 2007. *Assessment of Water Quality Concentrations and Loads from Natural Landscapes*. Paper presented at the American Water Resources Association Annual Conference, Albuquerque, NM.

Stein, E.D., L.L. Tiefenthaler, and K. Schiff. 2007. *Land-Use-Based Sources of Pollutants in Urban Storm Water*. Paper presented at the 80th Annual WEFTEC Technical Exhibition and Conference, San Diego, CA.

Stein, E.D. and G.S. Lyon. 2007. *How Effective Has The Clean Water Act Been at Reducing Pollutant Mass Emissions to The Southern California Bight Over The Past 30 Years?* Paper presented at the Headwaters to Oceans Conference, Long Beach, CA.

Stein, E.D. and B. Bledsoe. 2007. *Development of Tools for Hydromodification Assessment and Management*. Paper presented at the Floodplain Management Association Annual Meeting, Lake Tahoe, NV.

Stein, E.D., M. Sutula, and A.E. Fetscher. 2007. *Demonstration of an Integrated Watershed Assessment Using the Level 1, 2, 3, Framework*. Paper presented at the Society of Wetland Scientists Annual Meeting, Sacramento, CA.

Stein, E.D., S. Dark, T. Longcore, N. Hall, M. Beland, R. Grossinger, J. Casanova, and M. Sutula. 2007. *Historical Ecology and Landscape Change of the San Gabriel River and Floodplain*. Paper presented at the Society of Wetland Scientists Annual Meeting, Sacramento, CA.

Stein, E.D. 2006. *Southern California's Urban Watersheds: Baselines, Impacts, and Solutions*. Invited Presentation at NOAA - Northwest Fisheries Science Center Seminar Series, Seattle, WA.

Stein, E.D., D. Ackerman, and L.L. Tiefenthaler. 2006. *Modeling and Managing Land-Based Sources of Runoff on Estuarine and Near-shore Resources*. Symposium presented at the California World Oceans Conference, Long Beach, CA

Stein, E.D., M. Sutula, J. Collins, R. Clark, and A.E. Fetscher. 2006. *Calibration of a Wetland Rapid Assessment Method: the California Experience*. Paper presented at the American Geophysical Union/American Society of Limnology and Oceanography Ocean Sciences Meeting, Honolulu, HI.

Tiefenthaler, L.L. and E. D. Stein. 2005. *Watershed Loading and Source Attribution of Polycyclic Aromatic Hydrocarbons (PAHs) to Southern California Coastal Environments*. Paper presented at the Third Annual Headwaters to Ocean Conference, Huntington Beach, CA.

Stein, E.D. 2005. *Effect of Increases in Peak Flows and Imperviousness on Stream Morphology of Ephemeral Streams in Southern California*. Paper presented at the American Geophysical Union Joint Assembly, New Orleans, LA.

Stein, E.D., K. Schiff, D. Ackerman, and L.L. Tiefenthaler 2005. *Sources and Patterns of Pollutant Washoff in Urban Storm Water*. Paper presented at the American Geophysical Union Joint Assembly, New Orleans, LA.

Stein, E.D., M. Sutula, and A.E. Fetscher. 2005. *Development of an Integrated Regional Assessment Program for Southern California Wetlands*. Paper presented at the California Estuarine Research Society, Santa Barbara, CA.

Stein, E.D. 2004. *Watershed Condition Assessments: What are They & Why are They Important to Natural Resource Management?* Invited plenary presentation at the National Park Service Water Professionals' Meeting 2004, Fort Collins, CO.

Stein, E.D., A. Steinberger, D. Ackerman, L. Tiefenthaler, and K. Schiff. 2003. *Comparison of Stormwater Monitoring Practices for Homogenous and Mixed Land Use Types*. Paper presented at the American Water Resources Association Annual Meeting, San Diego, CA

Stein, E.D., D. Ackerman, A. Steinberger, and K. Schiff. 2003. *Assessing Dry Weather Loading In Urbanized, Arid Watersheds*. Paper presented at the American Water Resources Association Annual Meeting, San Diego, CA

Stein, E.D. 2003. *Role of Watershed-scale Physical Processes in Shaping Habitat Requirements of Wetland Dependent Fauna*. Paper presented at the Society of Wetland Scientists Annual Meeting, New Orleans, LA

Stein, E.D., M.L. Mattson, and A.E. Fetscher. 2003. *Influence of Hydroperiod and Water Chemistry on the Distribution of Vernal Pool Flora and Fauna*. Paper presented at the Society of Wetland Scientists Annual Meeting, New Orleans, LA

Stein, E.D., K.M. Schwarz, and B. Hecht. 2002. *Baseline Hydrologic and Geomorphic Assessments as Tools for Watershed and Floodplain Management*. Paper presented at the Annual Conference of the Floodplain Management Association, San Diego, CA.

Stein E.D. and M.C. Lee. 2001. *California Slope Wetlands: a Functional Assessment for Future Management in an Urban Setting*. Paper presented at the Society of Wetland Scientists Annual Conference, Chicago, Illinois.