

Dr. Martha Sutula

Department Head

Biogeochemistry Department

Southern California Coastal Water Research Project

Education

Ph.D., coastal oceanography, Louisiana State University, 1999

M.S., public health, Tulane University School of Public Health & Tropical Medicine, 1994

B.S., chemistry, Purdue University, 1987

Professional Experience

Department Head, Southern California Coastal Water Research Project. Costa Mesa, CA. 2010-present

Senior Scientist, Southern California Coastal Water Research Project. Costa Mesa, CA. 2001-2010

Post-doctoral Research Associate, Tulane University Institute of Earth and Ecosystem Sciences. New Orleans, LA. 1999-2001

Research Assistant, Louisiana State University Department of Oceanography and Coastal Sciences. Baton Rouge, LA. 1995-1999

Research Assistant, Tulane University School of Public Health and Tropical Medicine. New Orleans, LA. 1993-1994

Project Manager, U.S. Environmental Protection Agency, Office of Pollution Prevention and Toxics, Risk Management Division. Washington, D.C. 1991-1993

Honors and Awards

Sigma Xi Scientific Honor Society (1999)

Gulf Estuarine Research Society Conference-Best Student Paper Award (1998)

Vice-President, Marine Environmental Researchers, Louisiana State University (1996-1997)

Chancellor's Fellowship for Doctoral Studies, Louisiana State University (1995)

Phi Beta Kappa (1986)

Chemical Industrial Society of Illinois Scholarship (1986)

Chemical Industrial Society of Illinois Scholarship for Outstanding Junior In Chemistry (1986)

Dean's List, Purdue University (1983-1987)

Professional Appointments

Associate Editor, *Elementa*, Ecology and Earth Systems Division

Science Program Co-Chair, Coastal and Estuarine Research Federation Conference, Richmond 2021

National Academy of Sciences, Everglades Restoration Evaluation

Science Advisory Panel, Southern California Wetland Recovery Project

Professional Societies and Certifications

American Society of Limnology and Oceanography

Coastal and Estuarine Research Federation

California Estuarine Research Society

Pacific Estuarine Research Society

Society of Wetland Scientists

American Geophysical Union

Journal Articles

Frieder, C.A., F. Kessouri, M. Ho, M. Sutula, D. Bianchi, J.C. McWilliams, C. Deutsch, E. Howard. 2024. *Effects of urban eutrophication on pelagic habitat capacity in the Southern California Bight. *Frontiers in Marine Science* 11:1392671.*

Kessouri, F., M. Sutula, D. Bianchi, M. Ho, P. Damien, J.C. McWilliams, C.A. Frieder, L. Renault, H. Frenzel, K. McLaughlin, C. Deutsch. 2024. *Cross-shore transport and eddies promote large scale response to urban eutrophication. *Scientific Reports* 14:7240.*

Gillett, D.J., R.D. Mazor, M. Sutula, A. Holt. 2024. *Reach-scale models show heterogeneity of stream benthic invertebrate responses to eutrophication stress. *Ecological Indicators* 160:111791.*

Ho, M., F. Kessouri, C.A. Frieder, M. Sutula, D. Bianchi, J.C. McWilliams. 2023. *Effect of ocean outfall discharge volume and dissolved inorganic nitrogen load on urban eutrophication outcomes*

in the Southern California Bight. *Scientific Reports* 13:22148.

McLaughlin, K., R.D. Mazor, M. Sutula, K.C. Schiff. 2023. Regional assessment of trash in Southern California coastal watersheds, United States. *Frontiers in Environmental Science* 11:1210201.

Sandoval-Belmar, M., J. Smith, A.R. Moreno, C. Anderson, R.M. Kudela, M. Sutula, F. Kessouri, D.A. Caron, F.P. Chavez, D. Bianchi. 2023. A cross-regional examination of patterns and environmental drivers of Pseudo-nitzschia harmful algal blooms along the California coast. *Harmful Algae* 126:102435.

Moreno, A.R., C. Anderson, R.M. Kudela, M. Sutula, C. Edwards, D. Bianchi. 2022. Development, calibration, and evaluation of a model Pseudo-nitzschia and domoic acid production for regional ocean modeling studies. *Harmful Algae* 118:102296.

Frieder, C.A., C. Yan, M. Chamecki, D. Dauhajre, J.C. McWilliams, J. Infante, M.L. McPherson, R.M. Kudela, F. Kessouri, M. Sutula, I.B. Arzeno-Soltero, K.A. Davis. 2022. A Macroalgal Cultivation Modeling System (MACMODS): Evaluating the Role of Physical-Biological Coupling on Nutrients and Farm Yield. *Frontiers in Marine Science* DOI:10.3389/fmars.2022.752951.

Walker, J.B., D.J. Gillett, M. Sutula. 2022. Establishing biologically relevant sediment organic matter thresholds for estuaries and embayments of the Southern California Bight, USA. *Ecological Indicators* 143:1-12.

Mazor, R.D., M. Sutula, S. Theroux, M. Beck, P.R. Ode. 2022. Eutrophication thresholds associated with protection of biological integrity in California wadeable streams. *Ecological Indicators* 142:109180.

Elko, N., D. Foster, G. Kleinheinz, B. Raubenheimer, S. Brander, J. Kinzelman, J.P. Kritzer, D. Munroe, C. Storlazzi, M. Sutula, A. Mercer, S. Coffin, C. Fraioli, L. Ginger, E. Morrison, G. Parent-Doliner, C. Akan, A. Canestrelli, M. DiBenedetto, J. Lang, J. Simm. 2022. Human and ecosystem health in coastal systems. *Shore & Beach* 90:64-91.

Kessouri, F., K. McLaughlin, M. Sutula, D. Bianchi, M. Ho, J.C. McWilliams, L. Renault, J. Molemaker, C. Deutsch, A. Leinweber. 2021. Configuration and validation of an oceanic physical and biogeochemical model to investigate coastal eutrophication in the Southern California Bight. *Journal of Advances in Modeling Earth Systems* 13:e2020MS002296.

Bednarsek, N., R. Ambrose, P. Calosi, R.K. Childers, R.A. Feely, S.Y. Litvin, W.C. Long, J.I. Spicer, J. Strus, J. Taylor, F. Kessouri, M. Roethler, M. Sutula, S.B. Weisberg. 2021. Synthesis of Thresholds of Ocean Acidification Impacts on Decapods. *Frontiers in Marine Science* 8:651102.

McLaughlin, K., M.D.A. Howard, G. Robertson, C.D.A. Beck, M. Ho, F. Kessouri, N.P. Nezlin, M.

Sutula, S.B. Weisberg. 2021. Influence of anthropogenic nutrient inputs on rates of coastal ocean nitrogen and carbon cycling in the Southern California Bight, United States. *Elementa: Science of the Anthropocene* 9:00145.

Sutula, M., M. Ho, A. Sengupta, F. Kessouri, K. McLaughlin, K. McCune, D. Bianchi. 2021. A baseline of terrestrial freshwater and nitrogen fluxes to the Southern California Bight, USA. *Marine Pollution Bulletin* DOI:10.1016/j.marpolbul.2021.112669 .

Kessouri, F., J.C. McWilliams, D. Bianchi, M. Sutula, L. Renault, C. Deutsch, R.A. Feely, K. McLaughlin, M. Ho, E.M. Howard, N. Bednarsek, P. Damien, J. Molemaker, S.B. Weisberg. 2021. Coastal eutrophication drives acidification, oxygen loss, and ecosystem change in a major oceanic upwelling system. *Proceedings of the National Academy of Sciences of the United States of America* DOI:10.1073/pnas.2018856118.

Bednarsek, N., P. Calosi, R.A. Feely, R.F. Ambrose, M. Byrne, K.Y. Chan, S. Dupont, J.L. Padilla-Gamino, J.I. Spicer, F. Kessouri, M. Roethler, M. Sutula, S.B. Weisberg. 2021. Synthesis of Thresholds of Ocean Acidification Impacts on Echinoderms. *Frontiers in Marine Science* DOI:10.3389/fmars.2021.602601.

Sutula, M., M. Ho, A. Sengupta, F. Kessouri, K. McLaughlin, K. McCune, D. Bianchi. 2021. Dataset of terrestrial fluxes of freshwater, nutrients, carbon, and iron to the Southern California Bight, U.S.A.. *Data in Brief* DOI:10.1016/j.dib.2021.106802.

Theroux, S., R.D. Mazor, M.W. Beck, P.R. Ode, E.D. Stein, M. Sutula. 2020. Predictive biological indices for algae populations in diverse stream environments. *Ecological Indicators* DOI:10.1016/j.ecolind.2020.106421.

Paul, M.J., B. Jessup, L.R. Brown, J.L. Carter, M. Cantonati, D.F. Charles, J. Gerritsen, D.B. Herbst, R. Stancheva, J. Howard, B. Isham, R. Lowe, R.D. Mazor, P.K. Mendex, P.R. Ode, A. O'Dowd, J. Olson, Y. Pan, A.C. Rehn, S. Spaulding, M. Sutula, S. Theroux. 2020. Characterizing benthic macroinvertebrate and algal biological condition gradient models for California wadeable Streams, USA. *Ecological Indicators* DOI:10.1016/j.ecolind.2020.106618.

Howard, E.M., J.L. Penn, H. Frenzel, B.A. Seibel, D. Bianchi, L. Renault, F. Kessouri, M. Sutula, J.C. McWilliams, C. Deutsch. 2020. Climate-driven aerobic habitat loss in the California Current System. *Science Advances* DOI:10.1126/sciadv.aay3188 .

Beck, M., R.D. Mazor, S. Johnson, K. Wisenbaker, J. Westfall, P.R. Ode, R. Hill, C. Loflen, M. Sutula, E.D. Stein. 2019. Prioritizing Management Goals for Stream Biological Integrity Within the Developed Landscape Context. *Freshwater Science* DOI:10.1086/705996.

Bednarsek, N., R.A. Feely, E.L. Howes, B.P.V. Hunt, F. Kessouri, P. Leon, R. Lischka, A.E. Maas, K.

- McLaughlin, N.P. Nezhlin, M. Sutula, S.B. Weisberg. 2019. Systematic Review and Meta-Analysis Toward Synthesis of Thresholds of Ocean Acidification Impacts on Calcifying Pteropods and Interactions With Warming. *Frontiers in Marine Science* 6:227.
- Bittick, S.J., M. Sutula, P. Fong. 2018. A tale of two algal blooms: Negative and predictable effects of two common bloom-forming macroalgae on seagrass and epiphytes. *Marine Environmental Research* 140:1-9.
- Sutula, M., R. Kudela, J.D. Hagy III, L.W. Harding Jr, D. Senn, J.E. Cloern, S. Bricker, G.M. Berg, M. Beck. 2017. Novel analyses of long-term data provide a scientific basis for chlorophyll-a thresholds in San Francisco Bay. *Estuarine, Coastal and Shelf Science* 197:107-118.
- Howard, M.D.A., C. Nagoda, R.M. Kudela, K. Hayashi, A. Tatters, D.A. Caron, L. Busse, J.S. Brown, M. Sutula, E.D. Stein. 2017. Microcystin Prevalence throughout Lentic Waterbodies in Coastal Southern California. *Toxins* 9:231.
- Weisberg, S.B., N. Bednarsek, R.A. Feely, F. Chan, A.B. Boehm, M. Sutula, J.L. Ruesink, B. Hales, J.L. Largier, J.A. Newton. 2016. Water quality criteria for an acidifying ocean: Challenges and opportunities for improvement. *Ocean and Coastal Management* 126:31-41.
- Magrann, T., M.D.A. Howard, M. Sutula, D.S. Boskovic, W.K. Hayes, S.G. Dunbar. 2015. Screening Assessment of Cyanobacteria and Cyanotoxins in Southern California Lentic Habitats. *Macrothink Institute Environmental Management and Sustainable Development* 4:91-111.
- Fetscher, A.E., M.D.A. Howard, R. Stancheva, R.M. Kudela, E.D. Stein, M. Sutula, L.B. Busse, R.G. Sheath. 2015. Wadeable streams as widespread sources of benthic cyanotoxins in California, USA. *Harmful Algae* 49:105-116.
- Boehm, A.B., M.Z. Jacobson, M.J. O'Donnell, M. Sutula, W.W. Wakefield, S.B. Weisberg, E. Whiteman. 2015. Ocean acidification science needs for natural resource managers of the North American west coast. *Oceanography* 28:170-181.
- Booth, J.A.T., C.B. Woodson, M. Sutula, F. Micheli, S.B. Weisberg, S.J. Bograd, A. Steele, J. Schoen, L.B. Crowder. 2014. Patterns and potential drivers of declining oxygen content along the Southern California coast. *Limnology and Oceanography* 59:1127-1138.
- Sutula, M., L. Green, G. Cicchetti, N. Detenbeck, P. Fong. 2014. Thresholds of Adverse Effects of Macroalgal Abundance and Sediment Organic Matter on Benthic Habitat Quality in Estuarine Intertidal Flats. *Estuaries and Coasts* 37:1532-1548.
- Howard, M.D.A., M. Sutula, D.A. Caron, Y. Chao, J.D. Farrara, H. Frenzel, B. Jones, G. Robertson, K. McLaughlin, A. Sengupta. 2014. Anthropogenic nutrient sources rival natural sources on small scales in the coastal waters of the Southern California Bight. *Limnology and Oceanography*

59:285-297.

McLaughlin, K., M. Sutula, L. Busse, S. Anderson, J. Crooks, R. Dagit, D. Gibson, K. Johnston, L. Stratton. 2014. A regional survey of the extent and magnitude of eutrophication in Mediterranean estuaries of Southern California, USA. *Estuaries and Coasts* 37:259-278.

Green, L., P. Fong, M. Sutula. 2014. How much is too much? Identifying benchmarks of adverse effects of macroalgae on the macrofauna in intertidal flats. *Ecological Applications* 24:300-314.

Solek, C.W., M. Sutula, E.D. Stein, C. Roberts, R. Clark, K. O'Connor, K.J. Ritter. 2012. Determining the health of California's coastal salt marshes using rapid assessment. *Wetland Science and Practice* 29:8-28.

Nezlin, N.P., M. Sutula, R.P. Stumpf, A. Sengupta. 2012. Phytoplankton blooms detected by SeaWiFS along the central and southern California coast. *Journal of Geophysical Research* 117:C07004.

Solek, C.W., E.D. Stein, M. Sutula. 2011. Demonstration of an integrated watershed assessment using a three-tiered assessment framework. *Wetlands Ecology and Management* 19:459-474.

Brown, J.S., M. Sutula, C. Stransky, J. Rudolph, E. Byron. 2010. Sediment contaminant chemistry and toxicity of freshwater in urban wetlands in southern California. *Journal of the American Water Resources Association* 46:367-384.

Fetscher, A.E., M. Sutula, J.C. Callaway, V.T. Parker, M.C. Vasey, J.N. Collins, W.G. Nelson. 2010. Patterns in estuarine vegetation communities in two regions of California: Insights from a probabilistic survey. *Wetlands* 30:833-846.

Stein, E.D., A.E. Fetscher, R.P. Clark, A. Wiskind, J.L. Grenier, M. Sutula, J.N. Collins, C. Grosso. 2009. Validation of a wetland rapid assessment method: Use of EPA's Level 1-2-3 Framework for method testing and refinement. *Wetlands* 29:648-665.

Sutula, M., E.D. Stein, J.N. Collins, A.E. Fetscher, R. Clark. 2006. A practical guide for the development of a wetland assessment method: the California experience. *Journal of the American Water Resources Association* 42:157-175.

Sanders, B.F., F. Arega, M. Sutula. 2005. Modeling the dry-weather tidal cycling of fecal indicator bacteria in surface waters of an intertidal wetland. *Water Research* 39:3394-3408.

Schiff, K.C., M. Sutula. 2004. Organophosphorus Pesticides in Storm-Water Runoff from Southern California (USA). *Setac Press* 23:1815-1821.

Sutula, M., T. Bianchi, and B. McKee. 2004. Effect of seasonal sediment storage and diagenesis in

the lower Mississippi River on bio-availability of particulate phosphorus flux to Gulf of Mexico. *Limnology and Oceanography* 49:2223-2235.

Schiff, K. and M. Sutula. 2004. Organophosphorus pesticides in stormwater runoff from Southern California watersheds. *Water Resources Management* 23:1815-1821

Sutula, M., B. Perez, E. Reyes, J.W. Day Jr., and D. Childers. 2003. Spatio-temporal variability in material exchange between the Southeastern Everglades Wetlands and Florida Bay. *Estuarine, Coastal, and Shelf Science* 57:757-781.

Mitra, S., T. Bianchi, B. McKee, and M. Sutula. 2002. Black Carbon in the Mississippi River: Quantities and Sources. *Environmental Science and Technology* 11:2296-2302.

Sutula, M., J. Day, and J. Cable. 2001. Hydrological and nutrient budgets of freshwater and estuarine wetlands of Taylor Slough in Southern Everglades, Florida (USA). *Biogeochemistry* 56:287-310.

Book Chapters

Reed, D.J., C. Brown, A.D. Steinman, M. Sutula, D.H. Wardrop. 2022. Restoration in the Context of Climate Change. in: D.H. Wardrop, W.G. Boggess, C. Brown, C.B. Burke, P.M. Dixon, C.T. Driscoll, K.R. Reddy, D.J. Reed, A.D. Steinman, M. Sutula, J.R. Walters (eds.), *Progress Toward Restoring the Everglades: The Ninth Biennial Review—2022* pp. 137-168. National Academies of Sciences, Engineering and Medicine. Washington, D.C..

Cloern, J.E., P.J. Barnard, E. Beller, J.C. Callaway, L. Grenier, E.D. Grosholz, R. Grossinger, K. Hieb, J.T. Hollibaugh, N. Knowles, M. Sutula, S. Veloz, K. Wasson, A. Whipple. 2016. Estuaries: Life on the edge. in: H. Mooney, E. Zavaleta (eds.), *Ecosystems of California* pp. 133-137. University of California Press. Berkeley, CA.

Day, J., F. Sklar, J. Cable, D. Childers, C. Coronado-Molina, S. Davis, S. Kelly, C. Madden, B. Perez, E. Reyes, D. Rudnick, M. Sutula. 2013. The salinity transition zone between the Southern Everglades and Florida Bay. in: J.W. Day, A. Yanez-Arancibia (eds.), *Gulf of Mexico: Origin, Waters, and Biota - Volume 4: Ecosystem-Based Management* pp. 1-24. Texas A&M University Press. College Station, TX.

Collis, H., J. Cable, M. Sutula. 2006. Evaluating Sediment Depositional Patterns Using Be-7 in Upper Newport Estuary, California. in: V.P. Singh, Y.H. Xu (eds.), *Coastal Hydrology and Processes* pp. 369-382. Water Resources Publications. Lone Tree, CO.

Technical Reports

Sutula, M., J. Butcher, S. Sarkar, S. Roy. 2022. Science Supporting Decisions on Management of Eutrophication in Elkhorn Slough Estuary. Technical Report 1259. Southern California Coastal Water Research Project. Costa Mesa, CA.

Sutula, M., J. Butcher, M. Schmidt, C. Boschen, R.D. Mazor, D.J. Gillett, K.T. Taniguchi-Quan, K. Irving, D. Shultz. 2022. Science Supporting Decisions on Biostimulatory Targets and Management of Eutrophication in the Main Stem of the Santa Margarita River Watershed. Technical Report 1185. Southern California Coastal Water Research Project. Costa Mesa, CA.

Sutula, M., D. Senn, L. Fono, M. Ho, F. Karimpour, F. Kessouri, A. King, A. Latker, P. Markle. 2021. Approaches to Quantifying Uncertainty in Coastal Eutrophication Numerical Modeling: A Workshop Summary. Technical Report . Southern California Coastal Water Research Project. Costa Mesa, CA.

Smith, J., M. Sutula, K. Bourma-Gregson, M. Van Dyke. 2021. California Water Boards' Framework and Strategy for Freshwater Harmful Algal Bloom Monitoring: Full Report with Appendices. Technical Report 1141.B. California State Water Resources Control Board. Sacramento, CA.

Smith, J., M. Sutula, K. Bourma-Gregson, M. Van Dyke. 2021. California Water Boards' Framework and Strategy for Freshwater Harmful Algal Bloom Monitoring: Executive Synthesis. Technical Report 1141.A. California State Water Resources Control Board. Sacramento, CA.

Driscoll, C.T., W.G. Boggess, C. Brown, R.K. Craig, T. Dunne, M.S. Fennessy, J.W. Jawitz, E.A. Meselhe, D.J. Reed, J. Saiers, E.P. Smith, M. Sutula, J.R. Walters, D.H. Wardrop. 2021. Progress Toward Restoring the Everglades: The Eighth Biennial Review - 2020. Technical Report 1198. National Academies of Sciences, Engineering, and Medicine. Washington, DC.

Lowe, J., E.D. Stein, E. Beller, J. Collins, M. Cooper, J. Crooks, H. Dennis, C. Doughty, G. Gauthier, J. Gonzalez, K. Kalchmayr, S. Kelly, K. McKnight, A. Richey, A. Robinson, E. Sloane, M. Sutula, C. Whitcraft. 2018. Wetlands on the Edge: The Future of Southern California's Wetlands: Regional Strategy 2018. Technical Report 1055. California State Coastal Conservancy. Oakland, CA.

Sutula, M., D. Senn. 2017. Scientific Basis to Assess the Effects of Nutrients on San Francisco Bay Beneficial Uses. Technical Report 864. Southern California Coastal Water Research Project. Costa Mesa, CA.

Aminzadeh, S., M. Armsby, N. Bednarsek, J. Bishop, A. Boehm, C. Braby, F. Chan, R. Dunbar, R. Feely, B. Gaylord, L. Jewett, C. Krembs, K. Kroeker, R. Labiosa, T. Maloney, J. Phillips, B. Rappoli, M. Sakashita, D. Sivas, G. Somero, M. Sutula, D. Thomas, G. Waldbusser, S.B. Weisberg. 2016.

Ocean Acidification: Setting Water Quality Goals. Technical Report 961. Stanford University. Stanford, CA.

Sutula, M., D.J. Gillett, A. Jones. 2016. Status of Eutrophication in San Elijo Lagoon and its Relevance for Restoration. Technical Report 938. Southern California Coastal Water Research Project. Costa Mesa, CA.

Boehm, A., F. Chan, J. Barth, E. Chornesky, A. Dickson, R. Feely, B. Hales, T. Hill, G. Hofmann, D. Ianson, T. Klinger, J. Largier, J. Newton, T. Pedersen, G. Somero, M. Sutula, W. Wakefield, G. Waldbusser, S.B. Weisberg, E. Whiteman. 2016. The West Coast Ocean Acidification and Hypoxia Science Panel: Major Findings, Recommendations, and Actions. Technical Report 926. California Ocean Science Trust. Oakland, CA.

Sutula, M., J. Butcher, C. Boschen, M. Molina. 2016. Application of Watershed Loading and Estuary Water Quality Models to Inform Nutrient Management in the Santa Margarita River Watershed. Technical Report 933. Southern California Coastal Water Research Project Authority. Costa Mesa, CA.

Tiefenthaler, L.L., M. Sutula, J.F. Griffith, M.R. Raith. 2016. Microbiological Water Quality at Reference Beaches and an Adjoining Estuary in Southern California during a Prolonged Drought. Technical Report 936. Southern California Coastal Water Research Project Authority. Costa Mesa, CA.

Moore, S.L., M. Sutula, T.V. Bitner, G. Lattin, K.C. Schiff. 2016. Southern California Bight 2013 Regional Monitoring Program: Volume III. Trash and Marine Debris. Technical Report 928. Southern California Coastal Water Research Project Authority. Costa Mesa, CA.

Tiefenthaler, L.L., M. Sutula, Y. Cao, J.F. Griffith, M.R. Raith, C. Beck, R. Christoph, J. Shrake. 2015. Wet and Dry Weather Natural Background Concentrations of Fecal Indicator Bacteria in San Diego, Orange, and Ventura County, California Streams. Technical Report 862. Southern California Coastal Water Research Project. Costa Mesa, CA.

Tiefenthaler, L.L., M. Sutula, Y. Cao, J.F. Griffith, M.R. Raith, C. Beck, R. Christoph, J. Shrake. 2015. Wet and Dry Weather Natural Background Concentrations of Fecal Indicator Bacteria in San Diego, Orange, and Ventura County, California Streams (Appendix A). Technical Report 862.A. Southern California Coastal Water Research Project. Costa Mesa, CA.

Tiefenthaler, L.L., M. Sutula, Y. Cao, J.F. Griffith, M.R. Raith, C. Beck, R. Christoph, J. Shrake. 2015. Wet and Dry Weather Natural Background Concentrations of Fecal Indicator Bacteria in San Diego, Orange, and Ventura County, California Streams (Appendix B). Technical Report 862.B. Southern California Coastal Water Research Project. Costa Mesa, CA.

Tiefenthaler, L.L., M. Sutula, Y. Cao, J.F. Griffith, M.R. Raith, C. Beck, R. Christoph, J. Shrake. 2015. Wet and Dry Weather Natural Background Concentrations of Fecal Indicator Bacteria in San Diego, Orange, and Ventura County, California Streams (Appendix C). Technical Report 862.C. Southern California Coastal Water Research Project. Costa Mesa, CA.

Tiefenthaler, L.L., M. Sutula, Y. Cao, J.F. Griffith, M.R. Raith, C. Beck, R. Christoph, J. Shrake. 2015. Wet and Dry Weather Natural Background Concentrations of Fecal Indicator Bacteria in San Diego, Orange, and Ventura County, California Streams (Appendix D). Technical Report 862.D. Southern California Coastal Water Research Project. Costa Mesa, CA.

Boyer, K., M. Sutula. 2015. Factors Controlling Submersed and Floating Macrophytes in the Sacramento-San Joaquin Delta. Technical Report 870. Southern California Coastal Water Research Project Authority. Costa Mesa, CA.

Berg, M., M. Sutula. 2015. Factors Affecting Growth of Cyanobacteria With Special Emphasis on the Sacramento-San Joaquin Delta. Technical Report 869. Southern California Coastal Water Research Project Authority. Costa Mesa, CA.

Fetscher, E., M. Sutula, A. Sengupta, N. Detenbeck. 2014. Linking Nutrients to Alterations in Aquatic Life in California Wadeable Streams. Technical Report 834. Southern California Coastal Water Research Project Authority. Costa Mesa, CA.

Sutula, M., M.D.A. Howard, L. Crowder, S. McAfee. 2014. Modeling in Support of Management of Coastal Hypoxia and Acidification in the California Current Ecosystem. Technical Report 829. Southern California Coastal Water Research Project Authority. Costa Mesa, CA.

Bailey, H., C. Curran, S. Poucher, M. Sutula. 2014. Science Supporting Dissolved Oxygen Objectives for Suisun Marsh. Technical Report 830. Southern California Coastal Water Research Project Authority. Costa Mesa, CA.

McLaughlin, K., M. Sutula. 2014. Estimating Wet and Dry Deposition of Nitrogen to Southern California Streams. Technical Report 837. Southern California Coastal Water Research Project Authority. Costa Mesa, CA.

Wang, P.F., M. Sutula, B. Chadwick, W. Choi. 2013. Watershed Loading, Hydrodynamic, and Water Quality Modeling in Support of the Loma Alta Slough Bacteria and Nutrient TMDL. Technical Report 666. Southern California Coastal Water Research Project. Costa Mesa, CA.

McLaughlin, K., M. Sutula, J. Cable, P. Fong. 2013. Eutrophication and Nutrient Cycling in Santa Margarita River Estuary: A Summary of Baseline Studies for Monitoring Order R9-2006-0076. Technical Report 635. Southern California Coastal Water Research Project. Costa Mesa, CA.

Sutula, M., H. Bailey, S. Poucher. 2013. Science Supporting Dissolved Oxygen Objectives in

California Estuaries. Technical Report 684. Southern California Coastal Water Research Project. Costa Mesa, CA.

Howard, M.D.A., G. Robertson, M. Sutula, B.H. Jones, N.P. Nezlin, Y. Chao, H. Frenzel, M.J. Mengel, D.A. Caron, B. Seegers, A. Sengupta, E. Seubert, D.W. Diehl, S.B. Weisberg. 2013. Southern California Bight 2008 Regional Monitoring Program: VII. Water Quality. Technical Report 710. Southern California Coastal Water Research Project. Costa Mesa, CA.

Howard, M.D.A., G. Robertson, M. Sutula, B.H. Jones, N.P. Nezlin, Y. Chao, H. Frenzel, M.J. Mengel, D.A. Caron, B. Seegers, A. Sengupta, E. Seubert, D.W. Diehl, S.B. Weisberg. 2013. Southern California Bight 2008 Regional Monitoring Program: VII. Water Quality (Appendix A). Technical Report 710.A. Southern California Coastal Water Research Project. Costa Mesa, CA.

Howard, M.D.A., G. Robertson, M. Sutula, B.H. Jones, N.P. Nezlin, Y. Chao, H. Frenzel, M.J. Mengel, D.A. Caron, B. Seegers, A. Sengupta, E. Seubert, D.W. Diehl, S.B. Weisberg. 2013. Southern California Bight 2008 Regional Monitoring Program: VII. Water Quality (Appendix B). Technical Report 710.B. Southern California Coastal Water Research Project. Costa Mesa, CA.

Howard, M.D.A., G. Robertson, M. Sutula, B.H. Jones, N.P. Nezlin, Y. Chao, H. Frenzel, M.J. Mengel, D.A. Caron, B. Seegers, A. Sengupta, E. Seubert, D.W. Diehl, S.B. Weisberg. 2013. Southern California Bight 2008 Regional Monitoring Program: VII. Water Quality (Appendix C). Technical Report 710.C. Southern California Coastal Water Research Project. Costa Mesa, CA.

Howard, M.D.A., G. Robertson, M. Sutula, B.H. Jones, N.P. Nezlin, Y. Chao, H. Frenzel, M.J. Mengel, D.A. Caron, B. Seegers, A. Sengupta, E. Seubert, D.W. Diehl, S.B. Weisberg. 2013. Southern California Bight 2008 Regional Monitoring Program: VII. Water Quality (Appendix D). Technical Report 710.D. Southern California Coastal Water Research Project. Costa Mesa, CA.

Howard, M.D.A., G. Robertson, M. Sutula, B.H. Jones, N.P. Nezlin, Y. Chao, H. Frenzel, M.J. Mengel, D.A. Caron, B. Seegers, A. Sengupta, E. Seubert, D.W. Diehl, S.B. Weisberg. 2013. Southern California Bight 2008 Regional Monitoring Program: VII. Water Quality (Appendix E). Technical Report 710.E. Southern California Coastal Water Research Project. Costa Mesa, CA.

Fetscher, A.E., M. Sutula, L.B. Busse, E.D. Stein. 2013. Condition of California perennial wadeable streams based on algal indicators. Technical Report 781. Southern California Coastal Water Research Project. Costa Mesa, CA.

McLaughlin, K., M. Sutula, L. Busse, S. Anderson, J. Crooks, R. Dagit, D. Gibson, K. Johnston, N.P. Nezlin, L. Stratton. 2012. Southern California Bight 2008 Regional Monitoring Program: VIII. Estuarine Eutrophication. Technical Report 711. Southern California Coastal Water Research Project. Costa Mesa, CA.

McLaughlin, K., M. Sutula, L. Busse, S. Anderson, J. Crooks, R. Dagit, D. Gibson, K. Johnston, N.P. Nezlin, L. Stratton. 2012. Southern California Bight 2008 Regional Monitoring Program: VIII. Estuarine Eutrophication (Appendix A). Technical Report 711.A. Southern California Coastal Water Research Project. Costa Mesa, CA.

McLaughlin, K., M. Sutula, L. Busse, S. Anderson, J. Crooks, R. Dagit, D. Gibson, K. Johnston, N.P. Nezlin, L. Stratton. 2012. Southern California Bight 2008 Regional Monitoring Program: VIII. Estuarine Eutrophication (Appendix B). Technical Report 711.B. Southern California Coastal Water Research Project. Costa Mesa, CA.

McLaughlin, K., M. Sutula, L. Busse, S. Anderson, J. Crooks, R. Dagit, D. Gibson, K. Johnston, N.P. Nezlin, L. Stratton. 2012. Southern California Bight 2008 Regional Monitoring Program: VIII. Estuarine Eutrophication (Appendix C). Technical Report 711.C. Southern California Coastal Water Research Project. Costa Mesa, CA.

McLaughlin, K., M. Sutula, L. Busse, S. Anderson, J. Crooks, R. Dagit, D. Gibson, K. Johnston, N.P. Nezlin, L. Stratton. 2012. Southern California Bight 2008 Regional Monitoring Program: VIII. Estuarine Eutrophication (Appendix D). Technical Report 711.D. Southern California Coastal Water Research Project. Costa Mesa, CA.

McLaughlin, K., M. Sutula, J. Cable, P. Fong. 2011. Eutrophication and Nutrient Cycling in Buena Vista Lagoon, Carlsbad, California. Technical Report 638. Southern California Coastal Water Research Project. Costa Mesa, CA.

McLaughlin, K., M. Sutula, J. Cable, P. Fong. 2011. Eutrophication and Nutrient Cycling in Loma Alta Slough, Oceanside, California. Technical Report 630. Southern California Coastal Water Research Project. Costa Mesa, CA.

McLaughlin, K., M. Sutula, J. Cable, P. Fong. 2011. Eutrophication and Nutrient Cycling in San Elijo Lagoon, Encinitas, California. Technical Report 636. Southern California Coastal Water Research Project. Costa Mesa, CA.

McKee, L., M. Sutula, A. Gilbreath, J. Beagle, D. Gluchowski, J. Hunt. 2011. Numeric Nutrient Endpoint Development for San Francisco Bay Estuary: Literature Review and Data Gaps Analysis. Technical Report 644. Southern California Coastal Water Research Project. Costa Mesa, CA.

Bernstein, B., K. Merkel, B. Chesney, M. Sutula. 2011. Recommendations for a Southern California Regional Eelgrass Monitoring Program. Technical Report 632. Southern California Coastal Water Research Project. Costa Mesa, CA.

Sutula, M. 2011. Review of Indicators for Development of Nutrient Numeric Endpoints in California Estuaries. Technical Report 646. Southern California Coastal Water Research Project.

Costa Mesa, CA.

McLaughlin, K., M. Sutula, J. Cable, P. Fong. 2010. Eutrophication and Nutrient Cycling in Famosa Slough: A Summary of Baseline Data for Monitoring Order R9-2006-0076. Technical Report 629. Southern California Coastal Water Research Project. Costa Mesa, CA.

Sutula, M., J.N. Collins, A. Wiskind, C. Roberts, C. Solek, S. Pearce, R. Clark, A.E. Fetscher, C. Grosso, K. O'Connor, A. Robinson, C. Clark, K. Rey, S. Morrisette, A. Eicher, R. Pasquinelli, M. May, K. Ritter. 2008. Status of perennial estuarine wetlands in the state of California: Final Report to the Surface Water Ambient Monitoring Program and State Water Resources Control Board. Technical Report 571. Southern California Coastal Water Research Project. Costa Mesa, CA.

Sutula, M., J.N. Collins, R. Clark, C. Roberts, E.D. Stein, C. Grosso, A. Wiskind, C. Solek, M. May, K. O'Connor, E. Fetscher, J.L. Grenier, S. Pearce, A. Robinson, C. Clark, K. Rey, S. Morrisette, A. Eicher, R. Pasquinelli, K. Ritter. 2008. California's Wetland Demonstration Program Pilot - A Final Project Report to the California Resources Agency. Technical Report 572. Southern California Coastal Water Research Project. Costa Mesa, CA.

Sutula, M., J.N. Collins, R. Clark, C. Roberts, E.D. Stein, C. Grosso, A. Wiskind, C. Solek, M. May, K. O'Connor, E. Fetscher, J.L. Grenier, S. Pearce, A. Robinson, C. Clark, K. Rey, S. Morrisette, A. Eicher, R. Pasquinelli, K. Ritter. 2008. California's Wetland Demonstration Program Pilot - A Final Project Report to the California Resources Agency (Appendix 1). Technical Report 572.1. Southern California Coastal Water Research Project. Costa Mesa, CA.

Sutula, M., J.N. Collins, R. Clark, C. Roberts, E.D. Stein, C. Grosso, A. Wiskind, C. Solek, M. May, K. O'Connor, E. Fetscher, J.L. Grenier, S. Pearce, A. Robinson, C. Clark, K. Rey, S. Morrisette, A. Eicher, R. Pasquinelli, K. Ritter. 2008. California's Wetland Demonstration Program Pilot - A Final Project Report to the California Resources Agency (Appendix 2). Technical Report 572.2. Southern California Coastal Water Research Project. Costa Mesa, CA.

Sutula, M., J.S. Brown, E. Fetscher, M. Mattson, S. Madon, G. Santolo, E. Byron, C. Stransky. 2008. Habitat value and treatment effectiveness of freshwater urban wetlands. Technical Report 559. Southern California Coastal Water Research Project. Costa Mesa, CA.

Stein, E.D., M. Sutula, R. Clark, A. Wiskind, J. Collins. 2007. Improving monitoring and assessment of wetland and riparian areas in California through implementation of a Level 1, 2, 3 framework. Technical Report 555. Southern California Coastal Water Research Project. Costa Mesa, CA.

Stein, E.D., S. Dark, T. Longcore, N. Hall, M. Beland, R. Grossinger, J. Casanova, M. Sutula. 2007. Historical ecology and landscape change of the San Gabriel River and floodplain. Technical Report 499. Southern California Coastal Water Research Project. Costa Mesa, CA.

Stein, E.D., S. Dark, T. Longcore, N. Hall, M. Beland, R. Grossinger, J. Casanova, M. Sutula. 2007. Historical ecology and landscape change of the San Gabriel River and floodplain (Appendices A-C). Technical Report 499.A. Southern California Coastal Water Research Project. Costa Mesa, CA.

McLaughlin, K., M. Sutula. 2007. Developing nutrient numeric endpoints and TMDL tools for California estuaries: An implementation plan. Technical Report 540. Southern California Coastal Water Research Project. Costa Mesa, CA.

Sutula, M., C. Creager, G. Wortham. 2007. Technical approach to develop nutrient numeric endpoints for California estuaries. Technical Report 516. Southern California Coastal Water Research Project. Costa Mesa, CA.

Dark, S., D.L. Bram, M. Quinones, L.D. Duong, J. Patananan, J. Dooley, M. Antos, F. Bashir, J. Mejia, M. Sutula, E. Blok. 2006. Wetland and riparian mapping within the rivers and mountains conservancy territory: a landscape profile. Technical Report 519. Southern California Coastal Water Research Project. Costa Mesa, CA.

Sutula, M., E.D. Stein, E. Inlander. 2006. Evaluation of a method to cost-effectively map riparian areas in southern California Coastal Watersheds. Technical Report 480. Southern California Coastal Water Research Project. Westminster, CA.

Collins, J.N., M. Sutula, E.D. Stein, M. Odaya, E. Zhang, K. Larned. 2006. Comparison of methods to map California riparian areas. Technical Report 502. San Francisco Estuary Institute. Oakland, CA.

Sutula, M., K. Kamer, J. Cable, H. Colis, W. Berelson, J. Mendez. 2006. Sediments as an internal source of nutrients to Upper Newport Bay, California. Technical Report 482. Southern California Coastal Water Research Project. Westminster, CA.

Sutula, M., S.M. Bay, G. Santolo, R. Zembal. 2005. Organochlorine and trace metal contaminants in the food web of the light-footed clapper rail, Upper Newport Bay, California. Technical Report 467. Southern California Coastal Water Research Project. Westminster, CA.

Sutula, M., K. Kamer, J. Cable. 2004. Sediments as a non-point source of nutrients to Malibu Lagoon, California. Technical Report 441. Southern California Coastal Water Research Project. Westminster, CA.

Sutula, M., E.D. Stein. 2003. Habitat value of natural and constructed wetlands used to treat urban runoff: A literature review. Technical Report 388. Southern California Coastal Water Research Project. Westminster, CA.

Schiff, K.C., M. Sutula. 2001. Organophosphorous pesticides in stormwater runoff from Southern California. Technical Report 356. Southern California Coastal Water Research Project.

Westminster, CA.

Annual Report Articles

Sengupta, A., M. Sutula, K. McLaughlin, M.D.A. Howard, L.L. Tiefenthaler, T. Von Bitner. 2013. Terrestrial nutrient loads and fluxes to the Southern California Bight, USA.

McLaughlin, K., M. Sutula, L. Busse, S. Anderson, J. Crooks, R. Dagit, D. Gibson, K. Johnston, L. Stratton. 2013. A regional survey of the extent and magnitude of eutrophication in Mediterranean estuaries of southern California, USA.

Green, L., M. Sutula, P. Fong. 2012. How much is too much? Identifying benchmarks of adverse effects of macroalgae on the macrobenthic community in estuarine intertidal flats.

Sutula, M., L. Green, G. Cicchetti, N. Detenbeck, P. Fong. 2012. Thresholds of adverse effects of macroalgal abundance and sediment organic matter on benthic habitat quality in estuarine intertidal flats.

Howard, M.D.A., M. Sutula, D. Caron, Y. Chao, J.D. Farrara, H. Frenzel, B. Jones, G. Robertson, K. McLaughlin, A. Sengupta. 2012. Comparison of natural and anthropogenic nutrient sources in the Southern California Bight.

Solek, C.W., M. Sutula, E.D. Stein, C. Roberts, R. Clark, K. O'Connor, K.J. Ritter. 2011. Determining the health of California's coastal salt marshes using rapid assessment.

Nezlin, N.P., M. Sutula, R.P. Stumpf, A. Sengupta. 2011. Phytoplankton blooms detected by SeaWiFS along the central and southern California coast.

Lyon, G.S., M. Sutula. 2011. Effluent discharges to the Southern California Bight from large municipal wastewater treatment facilities from 2005 to 2009.

Sutula, M., K. Kamer, J. Cable. 2009. The importance of benthic nutrient flux in supporting eutrophication in an intermittently tidal coastal lagoon.

Fetscher, A.E., M. Sutula, J.C. Callaway, V.T. Parker, M. Vasey, J.N. Collins, W.G. Nelson. 2009. Patterns in vegetation communities of estuarine wetlands in two California regions: Insights from a probabilistic survey.

Solek, C.W., E.D. Stein, M. Sutula. 2009. Demonstration of an integrated watershed assessment using a three-tiered assessment framework.

Stein, E.D., A.E. Fetscher, R.P. Clark, A. Wiskind, J.L. Grenier, M. Sutula, J.N. Collins, C. Grosso.

2008. Validation of a Wetlands Rapid Assessment Method: Application of the EPA's Level 1-2-3 Framework for method testing and refinement.

Brown, J.S., M. Sutula, C. Stransky, J. Rudolph. 2008. Sediment contaminant chemistry and toxicity of freshwater urban wetlands.

Sanders, B.F., F. Arega, M. Sutula. 2006. Modeling the dry-weather tidal cycling of fecal indicator bacteria in surface waters of an intertidal wetland.

Schiff, K.C., M. Sutula. 2003. Organophosphorous pesticides in stormwater runoff from southern California.