Marcus W. Beck, Ph.D.

Southern California Coastal Water Research Project
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Education

Ph.D., M.Sc., Conservation Biology, Fisheries and Aquatic Biology track   **Jun. 2013**
Statistics minor
Conservation Biology Graduate Program, University of Minnesota, Twin Cities, MN
Thesis title: Minnesota macrophytes: Linking aquatic plants, lake health, and human activities
Advisors: Drs. Bruce Vondracek, Lorin Hatch

B.Sc., Zoology *summa cum laude*   **Dec. 2006**
Department of Zoology, University of Florida, Gainesville, FL
Thesis title: Reproductive characteristics of the green treefrog *Hyla cinerea*: effects of agricultural contaminants.
Advisor: Dr. Krista McCoy

Professional Appointments

Scientist   **Sep. 2017 - Present**
Biology Department, Southern California Coastal Water Research Project

Post-Doctorate Researcher   **July. 2013 - Sep. 2017**
United States Environmental Protection Agency, Ecosystem Dynamics and Effects Branch, Gulf Ecology Division

Research Fellow   **Sep. 2012 - Jun. 2013**
Water Resources Center, Conservation Biology Graduate Program, Department of Fisheries, Wildlife, and Conservation Biology, University of Minnesota

Research Assistant, University of Minnesota   **Sep. 2007 - Sep. 2012**
Conservation Biology Graduate Program, Department of Fisheries, Wildlife, and Conservation Biology, University of Minnesota

Selected Publications

1. **Beck, M.W.**, Jabusch, T.W., Trowbridge, P.R., Senn, D.B. 2018. Four decades of water quality change in the upper San Francisco Estuary. *Estuarine, Coastal and Shelf Science.* 212:11-22. 10.1016/j.ecss.2018.06.021

2. Murrell, M.C., Caffrey, J.M., Marcovich, D.T., **Beck, M.W.**, Jarvis, B.M., Hagy, J.D. 2018. Seasonal oxygen dynamics in a warm temperate estuary: Effects of hydrologic variability on measurements of primary production, respiration, and net metabolism. *Estuaries and Coasts.* 41(3):690-707. 10.1007/s12237-017-0328-9

3. **Beck, M.W.**, Cressman, K., Griffin, C., Caffrey, J. 2018. Water quality trends following anomalous phosphorus inputs to Grand Bay, Mississippi, USA. *Gulf and Caribbean Research.* 29(1):1-14. gcr.2901.02

4. **Beck, M.W.**, Hagy, J.D., Le, C. 2018. Quantifying seagrass light requirements using an algorithm to spatially resolve depth of colonization. *Estuaries and Coasts.* 41(2):592-610. 10.1007/s12237-017-0287-1

5. Sutula, M., Kudela, R., Hagy, J.D., Harding, L.W., Senn, D., Cloern, J.E., Bricker, S., Berg, G.M., **Beck, M.W.** 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. 10.1016/j.ecss.2017.07.009

6. **Beck, M.W.**, Murphy, R. 2017. Numerical and qualitative contrasts of two statistical models for water quality change in tidal waters. *Journal of the American Water Resources Association.* 53(1):197-219. 10.1111/1752-1688.12489

7. **Beck, M.W.** 2016. SWMPr: An R package for retrieving, organizing, and analyzing environmental data for estuaries. *The R Journal.* 8(1):219-232.

8. **Beck, M.W.**, Hagy, J.D., Murrell, M.C. 2015. Improving estimates of ecosystem metabolism by reducing effects of tidal advection on dissolved oxygen time series. *Limnology & Oceanography: Methods.* 13(12):731-745. 10.1002/lom3.10062

9. **Beck, M.W.**, Hagy, J.D. 2015. Adaptation of a weighted regression approach to evaluate water quality trends in an estuary. *Environmental Modeling and Assessment.* 20(6):637-655. 10.1007/s10666-015-9452-8

Selected Software and Websites

1. **Beck, M.W.** 2018. WRTDStidal: Weighted regression for water quality evaluation in tidal waters, v1.1.1. CRAN R package. (link)

2. Payton, Q., Olsen, T., Weber, M., McManus, M., Kincaid, T., **Beck, M.W.** 2018. micromap: Linked micromap plots, v1.9.3. CRAN R package. (link)

3. **Beck, M.W.** 2018. NeuralNetTools: Visualization and Analysis Tools for Neural Networks, v1.5.1. CRAN R package. (link)

4. **Beck, M.W.** 2018. SWMPr: An R package for the National Estuarine Research Reserve System, v2.3.0. CRAN R package. (link)

5. **Beck, M.W.** 2016. Aggregation of SWMP parameters within/between reserves. Shiny Web Application. (link)

6. O'Brien, T.D., **Beck, M.W.** 2015. Time series and data analysis information and tool resource for NERRS/SWMP. Website. (link)

7. **Beck, M.W.** 2015. Trends in SWMP parameters. Shiny Web Application. (link)

8. **Beck, M.W.** 2015. Monthly and annual summary of SWMP parameters. Shiny Web Application. (link)

Teaching Experience

Workshop Co-Instructor   **May 2018**
Fundamentals of spatial data access and analysis in R, Annual meeting of the Society of Freshwater Science (link)

Workshop Co-Instructor   **Nov. 2017**
Introduction to R for analysis of coastal and estuarine data, Biennial meeting of the Coastal and Estuarine Research Federation (link)

Workshop Co-Instructor   **Nov. 2016**
R, SWMPr, SWMPrats for non-beginners, System Wide Monitoring Program, National Estuarine Research Reserve System, NOAA. (link)

Workshop Co-Instructor   **Oct. 2015**
An Introduction to SWMPr, System Wide Monitoring Program, National Estuarine Research Reserve System, NOAA. (link)