LISA V. LUCAS

U.S. Geological Survey
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Research Interests

Use numerical models and field observations to understand how coupled physical-biological processes influence (1) the food web base (phytoplankton), (2) water quality, (3) inter-habitat connectivity, and (4) the ways in which aquatic ecosystem functions and services may shift in future decades in response to changes in climate, management, or physical configuration.

Education

Ph.D. 1997 Stanford University, Palo Alto, California
Civil and Environmental Engineering (Environmental Fluid Mechanics)

M.S. 1992 Stanford University, Palo Alto, California
Civil Engineering (Environmental Fluid Mechanics)

B.S. 1989 University of Notre Dame, South Bend, Indiana
Civil Engineering, Graduated with Honors

Research & Professional Experience

RESEARCH ENGINEER/ECOHYDRODYNAMICIST 2000-Present, U.S. Geological Survey, Menlo Park, CA

CONSULTING ASSOCIATE PROFESSOR 2007-Present
CONSULTING ASSISTANT PROFESSOR 2002-2007
VISITING SCIENTIST1997-2002
Stanford University, Dept. of Civil and Environmental Engineering, Palo Alto, CA

EDITORIAL BOARD 2014-present *Estuary News Magazine*

ASSOCIATE EDITOR 2005-2012 *Estuaries and Coasts* (formerly *Estuaries*)

NRC POSTDOCTORAL RESEARCH ASSOCIATE 1998-2000, U.S. Geological Survey, Menlo Park, CA

HYDROLOGIST 1997-1998, U.S. Geological Survey, Menlo Park, CA

RESEARCH ASSISTANT 1992-1997
TEACHING ASSISTANT 1992-1996
Stanford University, Dept. of Civil and Environmental Engineering, Palo Alto, CA

STRUCTURAL ENGINEER 1989-1991, Badger Engineers, Inc., Cambridge, MA

Highlights

Co-coordinate CASCaDE II Project (2009-present)
U.S. Dept. of Interior Superior Service Award (2010)
Chair, Donald W. Pritchard Award Committee, Coastal & Estuarine Research Federation (CERF) (2009, 2011)
Recipient (with co-authors), CERF Donald W. Pritchard Award, for best estuarine geophysics paper in the journal *Estuaries & Coasts* during previous 2 years (2007)
Recipient, CERF Outstanding Reviewer (2007, 2012, 2013)
Invited Lecturer, Pan-American Advanced Studies Institute, Puerto Morelos, Mexico (2007)
Lecturer, USGS Water Resources Lecture Series (2005)
Recipient, CERF Cronin Award, for accomplishments of an early-career estuarine scientist (2003)
Secretary, Estuarine Research Federation (2003-2005)
NRC Postdoctoral Fellowship (1998-2000)
U.S. Dept. of Agriculture Postdoctoral Fellowship (declined – 1998)
Josephine de Karman Fellowship (1995)
Stanford Fellowship for Masters Study (1991-1992)
McCarthy Scholarship (1988) and Sidney-Kelsey Outstanding Scholar Award (1989), for top Notre Dame Civil Engineering Junior and Senior, respectively
Notre Dame Scholar (1985)

Publications

Lucas, L.V., J.E. Cloern, J.K. Thompson, M.T. Stacey, and J.R. Koseff. 2016. Bivalves can shape phytoplankton communities. Frontiers in Marine Science 3: Article 14
http://journal.frontiersin.org/article/10.3389/fmars.2016.00014/full

Lucas, L.V. 2016 (published online 2015). "Timescale." In: Encyclopedia of Estuaries, M.J. Kennish (Ed.). Springer Netherlands, pp 712-713. DOI: 10.1007/978-94-017-8801-4_199
http://link.springer.com/referenceworkentry/10.1007/978-94-017-8801-4_199#

Lucas, L.V. 2016 (published online 2015). "Residence time." In: Encyclopedia of Estuaries, M.J. Kennish (Ed.). Springer Netherlands, pp 502-503. DOI: 10.1007/978-94-017-8801-4_198
http://link.springer.com/referenceworkentry/10.1007/978-94-017-8801-4_198

Lucas, L.V. 2016 (published online 2015). "Age." In: Encyclopedia of Estuaries, M.J. Kennish (Ed.). Springer Netherlands, pp 3-4. DOI: 10.1007/978-94-017-8801-4_200
http://link.springer.com/referenceworkentry/10.1007/978-94-017-8801-4_200

Lucas, L.V. and J.K. Thompson. 2012. Changing restoration rules: Exotic bivalves interact with residence time and depth to control phytoplankton productivity. Ecosphere 3(12):117.
http://www.esajournals.org/doi/pdf/10.1890/ES12-00251.1

Lucas, L.V. 2010. Implications of estuarine transport for water quality, in: Contemporary Issues in Estuarine Physics, ed. A. Valle-Levinson. Cambridge University Press.
http://www.cambridge.org/us/catalogue/catalogue.asp?isbn=0521899672

Lucas, L.V., J.K. Thompson, and L.R. Brown. 2009. Why are diverse relationships observed between phytoplankton biomass and transport time? Limnology and Oceanography 54(1):381-390. http://www.aslo.org/lo/toc/vol_54/issue_1/0381.pdf

Lucas, L.V., J.R. Koseff, S.G. Monismith, and J.K. Thompson. 2009. Shallow water processes govern system-wide phytoplankton bloom dynamics: A Modeling Study. Journal of Marine Systems 75:70-86. http://www.sciencedirect.com/science/article/pii/S092479630800167X

Thompson, J.K., J.R. Koseff, S.G. Monismith, and L. V. Lucas. 2008. Shallow water processes govern system-wide phytoplankton bloom dynamics: A Field Study. Journal of Marine Systems 74:153-166. http://www.sciencedirect.com/science/article/pii/S0924796307002692

Brown, L.R., J.K. Thompson, K. Higgins, and L.V. Lucas. 2007. Population density, biomass, and age-class structure of an invasive clam Corbicula fluminea in rivers of the lower San Joaquin River watershed, California. Western North American Naturalist 67(4):572-586. https://ojs.lib.byu.edu/ojs/index.php/wnan/article/view/1610/1936

Lucas, L. V., D. M. Sereno, J. R. Burau, T. S. Schraga, C. B. Lopez, M. T. Stacey, K. V. Parchevsky, V. P. Parchevsky. 2006. Intra-daily variability of water quality in a shallow tidal lagoon: mechanisms and implications. Estuaries and Coasts 29(5): 711-730. http://link.springer.com/article/10.1007/BF02786523 *(This paper received the Coastal and Estuarine Research Federation's 2007 Pritchard Award as the best estuarine geophysics paper published in the journal Estuaries and Coasts in the previous two years.)*

Lopez, C. B., J. E. Cloern, T. S. Schraga, A. J. Little, L. V. Lucas, J. K. Thompson, and J. R. Burau. 2006. Ecological values of shallow-water habitats: implications for restoration of disturbed ecosystems. Ecosystems 9: 422-440. http://sfbay.wr.usgs.gov/publications/pdf/lopez_2006_shallowwater.pdf

May, C., J. R. Koseff, L. V. Lucas, J. E. Cloern, and D. H. Schoellhamer. 2003. Effects of spatial and temporal variability of turbidity on phytoplankton blooms. Marine Ecology Progress Series 254: 111-128. http://www.int-res.com/articles/meps2003/254/m254p111.pdf

Lucas, L.V., J.E. Cloern, J.K. Thompson, and N. E. Monsen. 2002. Functional variability of habitats in the Sacramento-San Joaquin Delta: restoration implications. Ecological Applications 12(5): 1528-1547. http://sfbay.wr.usgs.gov/publications/pdf/lucas_2002_restoration.pdf

Lucas, L.V., T. Schraga, C.B. Lopez, J.R. Burau, and A.D. Jassby. 2002. Pulsey, Patchy Water Quality in the Delta: Implications for Meaningful Monitoring. Newsletter, Interagency Ecological Program for the Sacramento-San Joaquin Estuary 15(3): 21-27. http://www.water.ca.gov/iep/newsletters/2002/IEPNewslettersummer2002.pdf

Lucas, L.V. and J.E. Cloern. 2002. Effects of tidal shallowing and deepening on phytoplankton production dynamics: a modeling study. Estuaries 25(4A): 497-507. http://sfbay.wr.usgs.gov/publications/pdf/lucas_2002_tidal_shallowing.pdf

Monsen, N. E., J. E. Cloern, L. V. Lucas, and S. G. Monismith. 2002. A comment on the use of flushing time, residence time and age as transport time scales. Limnology and Oceanography 47(5): 1545-1553. http://www.aslo.org/lo/toc/vol_47/issue_5/1545.pdf

Lucas, L.V., J.R. Koseff, J.E. Cloern, S.G. Monismith, and J.K. Thompson. 1999. Processes Governing Phytoplankton Blooms in Estuaries. I: The Local Production-Loss Balance. Marine Ecology Progress Series 187: 1-15. http://www.int-res.com/articles/meps/187/m187p001.pdf

Lucas, L.V., J.R. Koseff, S.G. Monismith, J.E. Cloern, and J.K. Thompson. 1999. Processes Governing Phytoplankton Blooms in Estuaries. II: The Role of Horizontal Transport. Marine Ecology Progress Series 187: 17-30. http://www.int-res.com/articles/meps/187/m187p017.pdf

Lucas, L.V., J.E. Cloern, J.R. Koseff, S.G. Monismith, and J.K. Thompson. 1998. Does the Sverdrup Critical Depth Model Explain Bloom Dynamics in Estuaries? Journal of Marine Research 56: 375-415. http://sfbay.wr.usgs.gov/publications/pdf/lucas_1998_sverdrup.pdf

Lucas, L.V. 1997. A Numerical Investigation of Coupled Hydrodynamics and Phytoplankton Dynamics in Shallow Estuaries. Ph.D. Dissertation, Stanford University.

Cloern, J.E., C. Grenz, and L. Vidergar- Lucas. 1995. An empirical model of the phytoplankton chlorophyll/carbon ratio – the conversion factor between productivity and growth rate. Limnology and Oceanography 40(7): 1313-1321. http://www.aslo.org/lo/toc/vol_40/issue_7/1313.pdf

Vidergar, L.L., J.R. Koseff , and S.G. Monismith. 1993. Numerical models of phytoplankton dynamics for shallow estuaries, in: Hydraulic Engineering '93, ed. H.W. Shen, S.T. Su, and F. Wen. ASCE, 1025-1030.