

JAMES E. CLOERN

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Professional web page <https://www.usgs.gov/staff-profiles/james-cloern>

Project web page <http://sfbay.wr.usgs.gov/access/wqdata>

EDUCATION

University of Wisconsin-Madison, B.S. 1970, Zoology

University of Wisconsin-Milwaukee, M.S. 1973, Zoology (fisheries biology, limnology)

Washington State University, Ph.D. 1976, Zoology (limnology, ecological modeling)

RESEARCH AND PROFESSIONAL EXPERIENCE

2019- Adjunct Fellow, Public Policy Institute of California

2019- Editor in Chief, *Limnology and Oceanography Letters*

2019- Senior Scientist Emeritus, U.S. Geological Survey, Menlo Park, CA

2017 - 2018 Adjunct Professor, Stanford University, Department of Civil & Env. Engineering

1997-2016 Consulting Professor, Stanford University, Department of Civil & Env. Engineering

2005 Chercheur Associé, Centre National de la Recherche Scientifique, Brest, France

2005 Instructor, Ecole Doctorale, Université de Bretagne Occidentale, Brest, France

2000 Visiting Scientist, National Environmental Research Institute, Roskilde, Denmark

1999-2019 Senior (ST) Research Scientist, U.S. Geological Survey, Menlo Park, CA

1976-1999 Research Scientist, U.S. Geological Survey, Menlo Park, CA

1997-1998 Lecturer, University of California-Santa Cruz, Department of Earth Sciences

1996 Visiting Lecturer, Second Institute of Oceanography, Hangzhou, China

1993 Distinguished Visiting Scientist, National Institute of Water and Atmospheric Research, Hamilton, New Zealand

1993-1994 Directeur de Recherche, Université d'Aix-Marseille II, France

RESEARCH INTERESTS

Ecology and biogeochemistry of estuaries, directed to understand how they respond as ecosystems to climate variability and human disturbance. Research is focused around comparative analyses across coastal ecosystems and long-term (43 year) investigation of San Francisco Bay that has included study of primary production, nutrient cycling, algal and zooplankton dynamics, ecosystem metabolism, food web dynamics, disturbance by introduced species, Bay-Ocean connectivity, ecosystem responses to multidecadal climate oscillations, habitat restoration, and projected responses to global change.

AWARDS AND HONORS

Wiese Distinguished Lecturer, 2019, Dauphin Island Sea Lab <https://www.disl.org/events/wiese-lecture-2019-james-cloern-us-geological-survey>

Odum Lifetime Achievement Award, Coastal and Estuarine Research Federation, 2017

<http://www.erf.org/2017-scientific-award-recipients#Odum>

U.S. Department of Interior Distinguished Service Award, 2017

Fellow, American Geophysical Union, 2016 <https://eos.org/agu-news/2016-class-of-agu-fellows-announced>

Sustaining Fellow, Association for the Sciences of Limnology and Oceanography, 2015

<http://aslo.org/announce/fellows2015.html>

Ruth Patrick Award, Association for the Sciences of Limnology and Oceanography, 2015

<http://www.aslo.org/awards/2015/cloern.html>

Brown-Nichols Achievement Award, Delta Science Program, 2012

<http://scienceconf2016.deltacouncil.ca.gov/content/previous-brown-nichols-science-award-recipients>

Ian Morris Scholar in Residence, Horn Point Laboratory, University of Maryland Center for Environmental Science, 2012 <http://www.umces.edu/hpl/ian-morris-scholar-residence>
B.H. Ketchum Award, Woods Hole Oceanographic Institution, 2010
<http://www.whoi.edu/page.do?pid=7545&tid=3622&cid=72786>
Laura Randall Schweppe Endowed Lecturer, University of Texas Marine Science Institute, 2009
Golden Screen Award, National Association of Government Communicators, 2003
U.S. Department of Interior Distinguished Service Award, 2000
USGS Shoemaker Communications Award, 1998
Fulbright Research Scholar, 1993-94
NATO Collaborative Research Grant Award, 1993
U.S. Department of Interior Meritorious Service Award, 1991

POSTDOCTORATES:

Dr. Linda Huzzey, Professor of Marine Science, U.S. Coast Guard Academy
Dr. Richard L. Miller, Research Scientist, NASA Stennis Space Center
Dr. Jane Caffrey, Assistant Professor, Center for Bioremediation and Diagnostics, University of West Florida
Dr. Joseph Rudek, Senior Scientist, Land, Water and Wildlife Programs, Environmental Defense Fund
Dr. Elizabeth Canuel, Professor of Marine Science, Virginia Institute of Marine Science
Dr. Lisa Lucas, Research Engineer, U.S. Geological Survey
Dr. William Sobczak, Associate Professor of Environmental Studies, College of Holy Cross
Dr. Jean-Marc Guarini, Professor of Oceanography, Université Pierre et Marie Curie (Paris VI)
Dr. Laurent Chauvaud, Directeur de Recherche, Institut Universitaire Européen de la Mer, Brest, France
Dr. Nancy Monsen, Research Associate, Dept. Civil & Environmental Engineering, Stanford University
Dr. Julien Thébault, Lecturer, Université de Bretagne Occidentale, Brest, France
Dr. Rochelle Labiosa, USEPA, Seattle WA
Dr. Mélanie Raimonet, Université Pierre et Marie Curie (Paris VI)

THESIS/DISSERTATION COMMITTEES:

Andrea Alpine, San Francisco State University, 1983 (MS)
Bertrand Millet, Université d'Aix-Marseille II, France, 1992 (Habilitation)
Anne Lefebvre, Université de Montpellier II, France, 1993 (MS)
Kedong Yin, University of British Columbia, Canada, 1993(PhD)
Frederic Jean, Université de Bretagne Occidentale, Brest, France, 1994 (PhD)
Olivier Ragueneau, Université de Bretagne Occidentale, Brest, France, 1994 (PhD)
Nabila Mazouni, Université d'Aix-Marseille II, France, 1995 (PhD)
Jody Edmunds, Moss Landing Marine Laboratories, 1997 (MS)
Lisa Lucas, Stanford University, 1997 (PhD)
Laurent Chauvaud, Université de Bretagne Occidentale, Brest, France, 1998 (PhD)
Anne Lorrain, Université de Bretagne Occidentale, Brest, France, 2002 (PhD)
Christopher Carter, University of Canterbury, New Zealand, 2004 (PhD)
Christine May, Stanford University, 2005 (PhD)
Stephanie Moore, University of New South Wales, Australia, 2005 (PhD)
Olivier Ragueneau, Université de Bretagne Occidentale, Brest, France, 2005 (Habilitation)
Christel Pinazo, Université d'Aix-Marseille II, France, 2005 (Habilitation)
Laurent Chauvaud, Université de Bretagne Occidentale, Brest, France, 2005 (Habilitation)
Sophie Martin, Université de Bretagne Occidentale, Brest, France, 2005 (PhD)
Julien Thebault, Université de Bretagne Occidentale, Brest, France, 2005 (PhD)
Diana Escobedo, Centro Interdisciplinario de Ciencias Marinas, La Paz, Mexico, 2007 (PhD)
Eric Goberville, Université de Bordeaux I, Bordeaux, France, 2010 (PhD)
Anthony Malkassian, Université d'Aix-Marseille, France, 2012 (PhD)

Cristina Perbelini Silva, University of Western Australia, 2013 (PhD)
Simret Yigzaw, San Jose State University, 2014 (MS)
Maeve Daugharty, San Francisco State University, 2014 (MS)
Violette Marchais, Université de Bretagne Occidentale, Brest, France, 2014 (PhD)
Julian Damashek, Stanford University, 2016 (PhD)

ADVISORY SERVICE (examples):

Member, Florida Bay Science Oversight Panel, 1996-1998
Advisor, Swan River Science Program, Perth, Australia, 1998
Committee of International Experts, Programme Rade de Brest, France, 1998-2000
Panelist, NSF Cooperative Activities in Environmental Research between the National Science Foundation and the European Commission, 2003
Evaluator, Heinz Center's *State of the Nation's Ecosystems*, 2002-2003
Advisor, USEPA STAR Grant Program, 2004
Panelist, NOAA Coastal Ocean Research, Ecological Forecasting, 2004
Advisor, USGS Tampa Bay Studies Program, 2004-2005
Advisor, USEPA National Nutrient Criteria Program, 2005-2006
Chesapeake Bay Program, Scientific Advisory Committee Workshop, 2007
Gulf of the Farallones and Cordell Bank National Marine Sanctuaries *Climate Change Site Scenario Workshop* 2008
Maryland Sea Grant Workshop *Thresholds in the Recovery of Eutrophic Coastal Ecosystems*, Baltimore 2008
ARC-NZ Network for Vegetation Function Workshop *Reconstructing Past Estuarine Conditions: Linking Contemporary Indicators of Estuarine Health to Sediment Proxies*, Sydney, Australia 2008
Work Group Member, National Center for Ecological Analysis and Synthesis, 2008-2010
Full Member, Scientific Committee for Ocean Research Working Group 137 *Global Patterns of Phytoplankton Dynamics in Coastal Ecosystems: Comparative Analysis of Time Series Observations* 2009-2015
External Review Panel, Stazione Zoologica Anton Dohrn, Naples, Italy, 2009
Member, USGS Science Strategy Planning Team for Ecosystems, 2010-2012
Panelist, National Science Foundation, Long Term Ecosystem Research Program, 2012
Briefing on flow standards for San Francisco Bay, California Water Resources Control Board, 2012
International Scientific Advisory Committee, LabexMER (Marine Excellence Research), Brest, France, 2012-2015
Science Advisory Committee, Point Reyes Bird Observatory Conservation Science, 2012
Science Advisor to Bay Area Ecosystems Climate Change Consortium, 2012-2013
Science Advisor, Resilient Landscapes Program, San Francisco Estuary Institute, 2012-2016
Member, *International Group for Marine Ecological Time Series* of the Intergovernmental Oceanographic Commission, 2013-2015
Member, Advisory Group to the California State Water Resource Control Board's Estuarine Nutrient Numeric Endpoint Project, 2013-present
Center for Ocean Solutions and California Ocean Science Trust Workshop *Modeling Effects of Anthropogenic Nutrients on Coastal Hypoxia and Acidification in the California Current Ecosystem*, 2014
Member, Science Steering Committee, Delta Science Program, 2014-present
Member, *International Group for Marine Ecological Time Series* of the Intergovernmental Oceanographic Commission, 2014-present
Member, Water Center Research Advisory Group, Public Policy Institute of California, 2014-present
Panelist, National Science Foundation, Biological Oceanography Program, 2015
Panelist, National Science Foundation, Coastal SEES Program, 2016
Chair, external committee to evaluate the program *Écosystèmes Insulaires Océaniens*, Tahiti, for the French High Council for the Evaluation of Research and Higher Education, 2016

Member, *Working Group to Investigate Climate Change and Global Trends of Phytoplankton in the Oceans*, Intergovernmental Oceanographic Commission, 2016-
Panelist, National Science Foundation Long Term Ecosystem Research Program, 2016
Site Review Panel, NSF LTER Program - Moorea, 2019

SCIENTIFIC SOCIETIES (examples):

Editorial Board, *Limnology and Oceanography*, 1989-1992
Editorial Board, *Estuaries*, 1989-1994
Program Chair, Estuarine Research Federation Meeting, 1991, San Francisco
Steering Committee, American Society of Limnology and Oceanography, 1997 Aquatic Sciences Meeting
Outstanding Reviewer, *Limnology and Oceanography*, 2004
Session Organizer, 2004 ASLO/TOS Ocean Research Conference, Honolulu
Associate Editor, *Limnology and Oceanography*, 2004-2005
Scientific Program Committee, 8th International Conference on Shellfish Restoration, Brest, France, 2005
Co-Editor in Chief, *Estuaries and Coasts*, 2008-2012
Convener and Organizer, AGU Chapman Conference on phytoplankton time series, Rovinj, Croatia, 2007
Session Organizer, 2009 Coastal and Estuarine Research Federation Meeting, Portland
Session Organizer, 2013 Coastal and Estuarine Research Federation Meeting, San Diego
Review Editor, *Frontiers in Marine Science*, 2013-2018
Co-Editor, special issue of *Estuarine Coastal and Shelf Science*: "Global Patterns of Phytoplankton Variability", 2014-2015
Senior Editor, *Limnology and Oceanography Letters*, 2016-2019
Editor in Chief, *Limnology and Oceanography Letters*, 2019-
ASLO Ruth Patrick Award selection committees, 2016-2018, 2018-2020

KEYNOTE TALKS (examples):

University of Connecticut, Dedication of the Marine Sciences Building, 2001
Forum Québécois en Sciences de la Mer, Québec, Canada, 2002
CALFED Science Conference 2003 and 2008
National Water Quality Monitoring Council 2005
State of the San Francisco Estuary Conference 2009, 2013, 2019
Brazilian Congress of Oceanography, Rio Grande, Brazil 2010
International Symposium on Research and Management of Eutrophication in Coastal Ecosystems, Nyborg, Denmark 2010
California Water Environment Association 2011
International Council for Exploration of the Sea, Annual Science Conference, Gdansk, Poland 2011
Phenology 2015 Conference, Kusadasi, Turkey
9th US Symposium on Harmful Algae, Baltimore 2017

OTHER INVITED TALKS (examples):

Marine Biological Laboratory, Woods Hole MA, Distinguished Scientist Seminar 2006
Estuarine Research Federation Meeting, Providence RI, 2007
AGU Meeting, San Francisco CA, 2008
CSIRO Marine and Atmospheric Research, Hobart, Australia 2008
ASLO Ocean Sciences Meeting, Nice, France, 2009
AAAS Pacific Division Symposium, San Francisco CA, 2009
National Environmental Research Institute, Roskilde, Denmark 2010
Centro Interdisciplinario de Ciencias Marinas, La Paz, Mexico 2010
Scientific Committee for Ocean Research, WG 137 workshop, Hangzhou, China, 2010
Ketchum Award acceptance lecture, Woods Hole Oceanographic Institution, 2010

NRC Committee on Sustainable Water and Environmental Management in the California Bay-Delta, Sacramento CA, 2010

Scientific Committee for Ocean Research, WG 137 workshop, Sorrento, Italy, 2011

Stazione Zoologica Anton Dohrn, Naples, Italy, 2011

Coastal and Estuarine Research Federation Meeting, Daytona FL, 2011

California Coastal Commission *Workshop on Projecting Climate Change Effects on San Francisco Bay*, 2011

North American Congress for Conservation Biology, 2012

IMBIZOIII, International Conference on Marine Biogeochemistry, Goa, India, 2013

Workshop *Ecological Design of Dams: The Diquis and Savegre Hydroelectric Projects in Costa Rica*, Stanford University, 2013

Coastal and Estuarine Research Federation Conference, San Diego, 2013 (session to honor Scott Nixon)

San Francisco Exploratorium Summer Institute for Teachers, 2014

Chesapeake Research Consortium Scientific and Technical Advisory Committee Workshop *Enhancing Approaches to Explain Management Effects on Water Quality Trends* 2014

University of California-Davis and Delta Stewardship Council Science Seminar *New Approaches for Responding to Climate Change in the San Francisco Bay-Delta*, 2015

Delta Science Program *Delta Challenges Workshop*, 2015

San Francisco Exploratorium Evening Lecture Series *Living Liquid: Celebrating the Power and Beauty of Microscopic Plankton*, 2015

Aquatic Sciences Meeting, Granada Spain, acceptance lecture for Ruth Patrick Award, 2015

Coastal and Estuarine Research Federation Conference, Portland OR, 2015

Annual Meeting of the Central and Northern California Ocean Observing System, session *Observing San Francisco Bay* 2016

Invited talk in “The Ecosystems of California Symposium”, California Academy of Sciences, 2016

Coastal and Estuarine Research Federation Conference, Providence RI, 2017

Invited talk in workshop “What Does Ecosystem Based Management Look Like?”, Public Policy Institute of California, 2018

Invited talk in workshop “Ecological and physiological impacts of salinization of aquatic systems from human activities”, University of California – Davis, Coastal and Marine Sciences Institute, 2018

Invited seminar, Stanford University Global Ecology program, 2018

Invited keynote, Interagency Ecological Program Annual Workshop, Folsom CA 2019

University Lectures (examples): Ecole Doctorale, Université de Bretagne Occidentale, Brest, France; Université de Rennes, France; Université de la Méditerranée, Marseille, France; College of Holy Cross; University of Washington; University of North Carolina; University of Wisconsin; University of Texas at Austin; University of California - Santa Cruz, Davis, Berkeley; State University of New York – Stony Brook; Stanford University; Scripps Institute of Oceanography; Griffith University-Gold Coast, Australia; University of Georgia; University of British Columbia; Griffith University, Brisbane, Australia; McQuarie University, Sydney, Australia; Virginia Institute of Marine Science; University of Aarhus, Denmark; University of Texas – Austin; Chesapeake Biological Laboratory; Horn Point Laboratory; University of California-Davis, Bodega Bay Marine Lab; University of Southern California; University of Wisconsin-Milwaukee; University of South Alabama

OUTREACH, COMMUNICATION and SERVICE (examples)

Organizer and Instructor, International Summer School: *Facing Climate Change*, Brest, France 2010

R package wq0.2-2: *Exploring water quality monitoring data* <http://cran.r-project.org/web/packages/wq/vignettes/wq-package.pdf>

Briefings on the value of long term monitoring for staff members to the US Senate Committee on Environment and Public Works, Office of Management and Budget, House Science Committee, and Congressional Research Service, Washington DC, May 2012

<http://www.compassonline.org/policy/May15/ScienceBriefing>

Tutorial on Scientific Writing and Publishing (for graduate students): Estuarine Research Federation Meetings 2007, 2009, 2013, 2015, 2017; Woods Hole Oceanographic Institution 2010; Horn Point Laboratory 2012; National Institute of Oceanography, Goa, India 2013; Coastal and Estuarine Research Federation webinar 2015; Dauphin Island Sea Laboratory, 2019

Public Lectures: USGS 2004 <https://media.wr.usgs.gov/science/2004/may04.mp4> ; University of Texas Marine Science Institute 2009; USGS 2011 <http://online.wr.usgs.gov/calendar/2011/jul11.html>; Horn Point Laboratory 2012; DC Science Café, Washington DC 2012 <http://www.dcswa.org/dc-science-cafe-11--two-bays>; University of South Alabama 2019

Briefings sponsored by Compass on restoration of the nation's large ecosystems for: Council on Environmental Quality; Office of Management and Budget; Congressional Research Service; House Natural Resources Committee. Washington DC, October 2012

San Francisco's Exploratorium developed exhibits about plankton based on our work <http://www.exploratorium.edu/visit/east-gallery/plankton-population>

Co-author, Public Policy Institute of California briefing about the Sacramento-San Joaquin Delta, targeted to policymakers <http://www.ppic.org/main/publication.asp?i=1130>

An e-book describes our long-term research as a component of the San Francisco Bay Regional Monitoring Program <http://ebooks.sfei.org/update2014/#page/26>

Our research has been featured in the San Francisco Estuary Partnership's quarterly *Estuary News* multiple times

<http://www.sfestuary.org/PDF/newsletters/October2011ESTUARYNEWS.pdf>
<http://www.sfestuary.org/wp-content/uploads/2015/03/Estuary-MAR2015-v8a-finalWEB.pdf>
<http://www.sfestuary.org/wp-content/uploads/2016/03/Est-Mar2016-v6web.pdf>

USGS issued a Press Release about our 2011 Plos One paper that projects responses of the San Francisco Bay Delta to a century of global warming http://www.usgs.gov/newsroom/article.asp?ID=3022#.T8JX_1ORA4 . Numerous radio, television and press interviews (e.g., KQED and KRCB radio, PBS.org, Sacramento Bee, San Jose Mercury News, The Tribune, The Telegraph, ClimateWire, The Sun Herald, The Miami Herald, Scientific American, Central Valley Business Times, Kansas City Star, McClatchy-Tribune News Service)

Front-page story about trends of algal increase in San Francisco Bay published in the Oakland Tribune and San Jose Mercury News, 1 December 2013 http://www.mercurynews.com/bay-area-news/ci_24630366/san-francisco-bay-waters-are-becoming-clearer-but# and picked up in the Huffington Post http://www.huffingtonpost.com/2013/12/03/san-francisco-bay-algae_n_4380186.html

Featured in Public Policy Institute of California blogs about nutrient pollution of California's waters <http://www.ppic.org/blog/the-great-nutrient-pollution-challenge/> and the myth of water wasted to sea <http://www.ppic.org/blog/myth-water-wasted-sea/>

Public radio KALW story about our work broadcast December 2016 <http://kalw.org/post/hey-area-meet-team-who-monitors-water-quality-bay>

Keynote address at the 2017 (25th) anniversary meeting of the Regional Monitoring Program is available online <http://www.sfei.org/projects/rmp-annual-meeting#sthash.6zEp5s6e.SEnQDXbr.dpbs>

A news story about the value of our long-term research was published in March 2019 <https://www.sfestuary.org/estuary-news-feds-coastal-research-crew-bucks-headwinds/>

BIBLIOGRAPHY – JAMES E. CLOERN

- 1 Cloern, J.E., 1976. The survival of coho salmon (*Oncorhynchus kisutch*) eggs in two Wisconsin tributaries of Lake Michigan: *American Midland Naturalist*, 96:451-461.
- 2 Cloern, J.E., 1976. Recent limnological changes in southern Kootenay Lake, British Columbia: *Canadian Journal of Zoology*, 54:1571-1578.
- 3 Cloern, J.E., 1977. Effects of light and temperature on the growth and nutrient-uptake kinetics of *Cryptomonas ovata*: *Journal of Phycology*, 13:389-395.
- 4 Cloern, J.E., 1978. Simulation model of *Cryptomonas ovata* population dynamics in southern Kootenay Lake, British Columbia: *Ecological Modeling*, 4:133-149.
- 5 Cloern, J.E., 1978. Empirical model of *Skeletonema costatum* photosynthetic rate, with applications in the San Francisco Bay estuary: *Advances in Water Resources*, 1:267-274.
- 6 Cloern, J.E., and Nichols, F.H., 1979. A von Bertalanffy growth model with a seasonally varying coefficient: *Journal of the Fisheries Research Board of Canada*, 35:1479-1482.
- 7 Cloern, J.E., 1979. Phytoplankton ecology of San Francisco Bay: The status of our current understanding, in Conomos, T.J., ed., *San Francisco Bay: The Urbanized Estuary*: Pacific Division, AAAS, San Francisco, page 247-264.
Cloern, J.E., and Cole, B.E., 1979. Water quality of South San Francisco Bay and Coyote Creek after failure of the San Jose-Santa Clara Water Pollution Control Plant. I. 17 September-10 October 1979: U.S. Geological Survey Open- File Report 79-16000. 25 p.
- 8 Cloern, J.E., and Cheng, R.T., 1981. Simulation model of *Skeletonema costatum* population dynamics in northern San Francisco Bay: *Estuarine and Coastal Shelf Science*, 12:83-100.
Alpine, A.E., Cloern, J.E., and Cole, B.E., 1981, Plankton studies in San Francisco Bay. I. Chlorophyll distributions and hydrographic properties of the San Francisco Bay estuary, July 1977-December 1979: U.S. Geological Survey Open- File Report 81-213.150 p.
Wong, R.L.J., and Cloern, J.E., 1981. Plankton Studies in San Francisco Bay. II. Phytoplankton abundance and species composition, July 1977 - December 1979: U.S. Geological Survey Open-File Report 81-214, 103 p.
- 9 Cloern, J.E., 1982. Does the benthos control phytoplankton biomass in South San Francisco Bay (USA)?: *Marine Ecology-Progress Series*, 9:191-202.
- 10 Luoma, S.N., and Cloern, J.E., 1982. The impacts of waste water discharge on biological communities in San Francisco Bay, in Kockelman, W.J., Conomos, T.J., and Leviton, A.E., eds., *San Francisco Bay: Use and Protection*: Pacific Division, AAAS, San Francisco, page 137-161.
Wong, R.L.J., and Cloern, J.E., 1982. Plankton studies in San Francisco Bay. IV. Phytoplankton abundance and species composition, January 1980 -February 1981: U.S. Geological Survey Open-File Report 82-443, 152 p.
- 11 Cloern, J.E., Cole, B.E., and Oremland, R.S., 1983. Chemistry and microbiology of a sewage spill in South San Francisco Bay: *Estuaries*, 6:399-406.
- 12 Cloern, J.E., Alpine, A.E., Cole, B.E., Wong, R.L.J., Arthur, J.F., and Ball, M.D., 1983. River discharge controls phytoplankton dynamics in the northern San Francisco Bay estuary: *Estuarine, Coastal and Shelf Science*, 16:415- 429.
- 13 Cloern, J.E., Cole, B.E., and Oremland, R.S., 1983. Autotrophic processes in meromictic Big Soda Lake, Nevada: *Limnology and Oceanography*, 28:1049- 1061.
- 14 Cloern, J.E., Cole, B.E., and Oremland, R.S., 1983. Seasonal changes in the chemical and biological nature of a meromictic lake (Big Soda Lake, Nevada, USA): *Hydrobiologia*, 105:195-206.
- 15 Cloern, J.E., 1984. Temporal dynamics and ecological significance of salinity stratification in an estuary: *Oceanologica Acta*, 7:137-141.
- 16 Cole, B.E., and Cloern, J.E., 1984. Significance of biomass and light availability to phytoplankton productivity in San Francisco Bay: *Marine Ecology- Progress Series*, 15:15-24.

- 17 Catts, G., Khorram, S., Cloern, J.E., Knight, A.W., and DeGloria, S.D., 1985. Remote sensing of tidal chlorophyll *a* variations in estuaries: *International Journal of Remote Sensing*, 6:1685-1706.
- 18 Alpine, A.E., and Cloern, J.E., 1985. Differences in *in-vivo* fluorescence yield between three phytoplankton size classes: *Journal of Plankton Research*, 7:381-390.
- 19 Ambler, J.W., Cloern, J.E., and Hutchinson, A., 1985. Seasonal cycles of zooplankton from San Francisco Bay: *Hydrobiologia*, 129:177-197.
- 20 Cloern, J.E., Cole, B.E., Wong, R.L.J., and Alpine, A.E., 1985. Temporal dynamics of estuarine phytoplankton: A case study of San Francisco Bay: *Hydrobiologia*, 129:153-176.
- 21 Cloern, J.E., and Nichols, F.H., 1985. Time scales and mechanisms of estuarine variability - a synthesis from studies of San Francisco Bay: *Hydrobiologia*, 129:229-237.
- 22 Cloern, J.E., and Nichols, F.H., eds., 1985. *Temporal dynamics of an estuary - San Francisco Bay: Developments in Hydrobiology* No. 30, Kluwer Academic Publishers, Dordrecht, 237 pages.
- Alpine, A.E., Wienke, S.M., Cloern, J.E., and Cole, B.E., 1985. Plankton studies in San Francisco Bay. VIII. Chlorophyll distributions and hydrographic properties in South San Francisco Bay, 1983: U.S. Geological Survey Open-File Report 82-443, 152 p.
- 23 Nichols, F.H., Cloern, J.E., Luoma, S.N., and Peterson, D.H., 1986. Modification of an estuary: *Science*, 231:567-573.
- 24 Cole, B.E., Cloern, J.E., and Alpine, A.E., 1986. Biomass and productivity of three phytoplankton size classes in San Francisco Bay: *Estuaries*, 9:117-126.
- 25 Powell, T.M., Cloern, J.E., and Walters, R.A., 1986. Phytoplankton spatial distribution in South San Francisco Bay -- mesoscale and small-scale variability, *in* D.A. Wolfe, ed., *Estuarine Variability*: Academic Press, N.Y., page 369-383.
- 26 Cole, B.E., and Cloern, J.E., 1987. An empirical model of phytoplankton productivity in estuaries: *Marine Ecology Progress Series*, 36:299-305.
- 27 Wienke, S.M., and Cloern, J.E., 1987. The phytoplankton component of seston in San Francisco Bay: *Netherlands Journal of Sea Research*, 21:25-33.
- 28 Khorram, S., Catts, G.P., Cloern, J.E., and Knight, A.W., 1987. Modeling of chlorophyll *a* from an airborne scanner: *IEEE Transactions on GeoScience and Remote Sensing*, v. GE-25, page 662-669.
- Cloern, J.E., 1987. Review of the book "Synthesis and Modeling of Intermittent Estuaries", by W.R. Cuff and M. Tomczak, Jr.: *Marine Geology*, 76:332-333.
- 29 Zehr, J.P., Harvey, R.W., Oremland, R.S., Cloern, J.E., George, L., and Lane, J.L., 1987. Big Soda Lake (Nevada). 1. Pelagic bacterial heterotrophy and biomass: *Limnology and Oceanography*, 32:781-793.
- 30 Cloern, J.E., Cole, B.E., and Wienke, S.M., 1987. Big Soda Lake (Nevada). 4. Vertical fluxes of particulate matter - seasonality and variations across the chemocline: *Limnology and Oceanography*, 32:815-824.
- 31 Cloern, J.E., 1987. Turbidity as a control on phytoplankton biomass and productivity in estuaries: *Continental Shelf Research*, 7:1367-1381.
- 32 Powell, T.M., Willmot, S., Murray, J.D., Manoranjan, V.S., and Cloern, J.E., 1988. Transient spatial patterns in plankton communities: blooms and traveling waves of phytoplankton in estuaries, *in* Hallam, T.G., Gross, L.J. and Levin, S.A., eds., 1986 *Proceedings of Trieste Research Conference on Mathematical Ecology*: World Scientific Publishing, page 236-267.
- 33 Alpine, A.E., and Cloern, J.E., 1988. Phytoplankton growth rates in a light- limited environment, San Francisco Bay. *Marine Ecology Progress Series*, 44:167-173.
- 34 Oremland, R.S., Cloern, J.E., Sofer, Z., Smith, R.L., Culbertson, C.W., Zehr, J., Miller, L., Cole, B.E., Harvey, R., Iversen, N., Klug, M., Des Marais, D.J., and Rau, G., 1988. Microbial and biogeochemical processes in Big Soda Lake, Nevada, *in* A.J. Fleet, K. Kelts, and M.R. Talbot, eds., *Lacustrine Petroleum Source Rocks*: Geological Society Special Publication no. 40, page 59-75.
- Alpine, A.E., Wienke, S.M., Cloern, J.E., and Cole, B.E., 1988. Plankton studies in San Francisco Bay. IX. Chlorophyll distributions and hydrographic properties in South San Francisco Bay, 1984-1986: U.S. Geological Survey Open-File Report 88-319, 86 p.

- 35 Kuwabara, J.S., Chang, C.C.Y., Cloern, J.E., Fries, T.L., Davis, J.A., and Luoma, S.N., 1989. Trace metal associations in the water column of South San Francisco Bay, California: *Estuarine, Coastal and Shelf Science*, 28:307- 325.
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