

BIOGRAPHICAL SKETCH - JAMES E. CLOERN

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

2005 Chercheur Associé, Centre National de la Recherche Scientifique, Brest, France
2005 Instructor, Ecole Doctorale, Université de Bretagne Occidentale, Brest, France
1999-present Senior Research Scientist (ST3104), U.S. Geological Survey
1976-1999 Research Scientist, U.S. Geological Survey, Menlo Park, CA
1997-1998 Lecturer, University of California-Santa Cruz, Department of Earth Sciences
1997-present Consulting Professor, Stanford University, Department of Civil Engineering
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
1974-1976 Teaching Assistant, Washington State University.
1972-1973 Teaching Assistant, University of Wisconsin-Milwaukee

RESEARCH INTERESTS

Ecology and biogeochemistry of aquatic ecosystems, focused around a long term (31-year) investigation of San Francisco Bay that has included study of: primary production, algal and zooplankton community dynamics, plankton diversity, ecosystem metabolism, carbon budgets, resource limitation of algal growth, grazing by benthic suspension feeders, disturbance by introduced species, impacts of climatic/hydrologic variability, mechanisms and biogeochemical significance of algal blooms, benthic and pelagic nutrient regeneration, stable isotopes and lipid biomarkers to characterize sources of organic matter, coastal eutrophication, and ecosystem variability at time scales from hours to decades and spatial scales from thin layers to watersheds.

Awards

USGS Star Award for Performance Excellence, 2006
Golden Screen Award, National Association of Government Communicators, for the documentary "Delta Revival: Restoration of a California Ecosystem", 2003
U.S. Department of Interior Distinguished Service Award, 2000
U.S. Federal Senior Scientist ST3104, 1999
USGS Shoemaker Communications Award, 1998
Fulbright Research Scholar, 1993-94 (Centre d'Océanologie de Marseille)
NATO Collaborative Research Grant Award, 1993
U.S. Department of Interior Meritorious Service Award, 1991

Postdoctorates:

Dr. Linda Huzzey, currently Professor, U.S. Coast Guard Academy
Dr. Richard L. Miller, currently Research Scientist, NASA Stennis Space Center
Dr. Jane Caffrey, currently Assistant Professor, University of West Florida
Dr. Joseph Rudek, currently Staff Scientist, Environmental Defense

Dr. Elizabeth Canuel, currently Professor, Virginia Institute of Marine Science
Dr. Lisa Lucas, currently Research Engineer, U.S. Geological Survey
Dr. William Sobczak, currently Associate Professor, College of Holy Cross
Dr. Jean-Marc Guarini, currently Research Scientist, Université Pierre et Marie Curie (Paris VI). UI 938. Observatoire Océanographique de Banyuls sur Mer. France
Dr. Laurent Chauvaud, currently Research Scientist, CNRS, Institut Universitaire Européen de la Mer, Brest, France
Dr. Nancy Monsen, currently Research Scientist, U.S. Geological Survey
Dr. Rochelle Labiosa, currently NRC Postdoctoral Research Associate at USGS

Graduate Thesis Committees/External Examiner:

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)

Scientific/Technical Advisory Committees (examples):

Programme rade de Brest, Committee of International Experts, Brest, France 1992-1994
National Science Foundation, Panelist, Land-Margin Ecosystems and Research, 1992
Florida Bay Science Oversight Panel, 1996-1998
USGS, Strategic Change Team Workshop, Reston, VA 1999
National Science Foundation, Panelist, Cooperative Activities in Environmental Research between the National Science Foundation and the European Commission, 2003
Heinz Center, Reviewer, *State of the Nation's Ecosystems*, 2002-2003
California Coastal Conservancy, South Bay Salt Pond Restoration Project, 2004
USEPA STAR Grant Program, Environmental Indicators in the Estuarine Environment, Scientific Advisory Committee, 2004
NOAA, Coastal Ocean Research, Panelist, Ecological Forecasting, 2004
USGS, Tampa Bay Studies Program, Science Advisory Committee, 2004-2005
USEPA, National Nutrient Criteria Program, Experts Workgroup, 2005-2006
Network of Excellence EUR-OCEANS (www.eur-oceans.org), proposal evaluator 2005

Scientific Societies (examples):

Editorial Board, *Limnology and Oceanography*, 1989-1992
Associate Editor, *Estuaries*, 1989-1994
Associate Editor, *Oceanologica Acta*, 1999-2004
Estuarine Research Federation, Program Chair, Biennial Meeting, 1991, San Francisco
American Society of Limnology and Oceanography, Steering Committee Aquatic Sciences Meeting, Santa Fe NM 1997
Limnology and Oceanography, Outstanding Reviewer, 2004
American Society of Limnology and Oceanography, Session Organizer, ASLO/TOS Ocean Research Conference, Honolulu, HI 2004
Limnology and Oceanography, Associate Editor, 2004-2005
8th International Conference on Shellfish Restoration, Scientific Program Committee and Session Chair, Brest, France, 2005
Co-Editor In Chief, *Estuaries and Coasts*, 2007-
Convener and Organizer, AGU Chapman Conference “Long Time-Series Observations in Coastal Ecosystems: Comparative Analyses of Phytoplankton Dynamics on Regional to Global Scales”, Rovinj, Croatia, 2007

Invited Talks & Workshops (examples):

National Institute of Water & Atmospheric Research, Distinguished Visiting Scientist, Hamilton, New Zealand 1992
Second Institute of Oceanography, State Oceanic Administration, Visiting Lecturer, Hangzhou, China 1993
National Environmental Monitoring and Research Workshop, National Science and Technology Council Committee on Environment and Natural Resources, Washington DC, 1996
Workshop on Coastal Eutrophication, Centrum voor Estuariene en Mariene Oecologie, Yerseke, Netherlands, Keynote Speaker, 1996
National Research Council, Committee on Future Roles, Challenges, and Opportunities for the U.S. Geological Survey, Menlo Park, California, Invited Presentation, 1998
Swan River Science Program, Perth, Australia, Keynote Talk, 1998
National Research Council, Committee on Causes and Management of Coastal Eutrophication, Irvine CA, Invited Presentation 1999
Lawrence Berkeley National Laboratory, Winter-Spring Seminars, Berkeley CA 1999
Netherlands Institute of Sea Research, 125th Anniversary Symposium, Texel, Netherlands, Invited Talk, 2001
American Association for the Advancement of Science, Symposium Role of Science in the Water Issues of Northern California, San Francisco, Invited Talk, 2000
University of Connecticut, Symposium to Dedicate the Marine Sciences Building, Groton, Connecticut, Keynote Talk, 2001
Forum Québécois en Sciences de la Mer, Québec, Canada, Invited Keynote Lecture, 2002
Stazione Zoologica Anton Dohrn, Naples, Italy, Invited Lectures, 2002
European Commission, Workshop “Thresholds of Environmental Sustainability: The Case of Nutrients”, Brussels, Belgium, 2002
Virginia Institute of Marine Science, Gloucester Pt., Virginia, Invited Seminar 2003
USGS Chief Hydrologist’s Seminars, Reston Virginia, Invited Seminar 2003
University of Georgia, School of Marine Programs, Athens, Georgia, Invited Seminar

2003

CALFED Science Program, Sacramento, California, Plenary Talk 2003

Western Society of Naturalists, Santa Rosa, California, Invited Talk 2004

Estuarine and Coastal Sciences Association, Symposium “Changes in Land Uses:

Consequences on Estuaries and Coastal Zones”, Rouen, France, Invited Talk 2004

USGS Public Lecture, Menlo Park, CA “Delta Revival – Restoration of a California

Ecosystem” 2004 (lecture online: <mms://video.wr.usgs.gov/science/may04.wmv>)

National Water Quality Monitoring Council, San Jose, CA, Invited Talk 2005

Ecole Doctorale, Université de Bretagne Occidentale, Brest, France, Invited Seminar 2005

Université de Rennes, France, Invited Seminar 2005

9th Entretiens Science & Ethique, Urban Community of Brest, France, Invited Talk & Round

Table Participant 2005 (lecture online: <http://www.canalc2.fr/video.asp?idVideo=4109&voir=oui>)

Université de la Méditerranée, Marseille, France, Invited Seminar, 2005

Marine Biological Laboratory, Woods Hole, Distinguished Scientist Seminar 2006

USGS Tutorial, “A Brief Guide to Scientific Writing and Publishing”, 2006 (lecture online:

<mms://video.wr.usgs.gov/wrd/15Nov2006.wmv>)

Chesapeake Bay Program Scientific Advisory Committee, Workshop “Thresholds in Recovery of Eutrophic Coastal Ecosystems”, Invited Presentation 2007

University of North Carolina Institute of Marine Sciences, Invited Seminar 2007

BIBLIOGRAPHY – JAMES E. CLOERN

(recent papers are available at: <http://water.usgs.gov/nrp/proj.bib/cloern.html>)

- 1 Cloern, J.E., 1976. The survival of coho salmon (*Oncorhynchus kisutch*) eggs in two Wisconsin tributaries of Lake Michigan: *American Midland Naturalist*, v. 96, page 451-461.
- 2 Cloern, J.E., 1976. Recent limnological changes in southern Kootenay Lake, British Columbia: *Canadian Journal of Zoology*, v. 54, page 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*, v. 13, page 389-395.
- 4 Cloern, J.E., 1978. Simulation model of *Cryptomonas ovata* population dynamics in southern Kootenay Lake, British Columbia: *Ecological Modeling*, v. 4, page 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*, v. 1, page 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*, v. 35, page 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.
- 8 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.
- 9 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*, v. 12, page 83-100.
- 10 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.
- 11 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.
- 12 Cloern, J.E., 1982. Does the benthos control phytoplankton biomass in South San Francisco Bay (USA)?: *Marine Ecology-Progress Series*, v. 9, page 191-202.
- 13 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.
- 14 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.
- 15 Cloern, J.E., Cole, B.E., and Oremland, R.S., 1983. Chemistry and microbiology of a sewage spill in South San Francisco Bay: *Estuaries*, v. 6, page 399-406.
- 16 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*, v. 16, page 415-429.
- 17 Cloern, J.E., Cole, B.E., and Oremland, R.S., 1983. Autotrophic processes in meromictic Big Soda Lake, Nevada: *Limnology and Oceanography*, v. 28, page 1049- 1061.
- 18 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*, v. 105, page 195-206.
- 19 Cloern, J.E., 1984. Temporal dynamics and ecological significance of salinity stratification in an estuary: *Oceanologica Acta*, v. 7, page 137-141.
- 20 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*, v. 15, page 15-24.
- 21 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*, v. 6, page 1685-1706.
- 22 Alpine, A.E., and Cloern, J.E., 1985. Differences in *in-vivo* fluorescence yield between three phytoplankton size classes: *Journal of Plankton Research*, v. 7, page 381-390.
- 23 Ambler, J.W., Cloern, J.E., and Hutchinson, A., 1985. Seasonal cycles of zooplankton from San Francisco Bay: *Hydrobiologia*, v. 129, page 177-197.
- 24 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*, v. 129, page 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*, v. 129, page 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*, v. 231, page 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*, v. 9, page 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*, v. 36, page 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*, v. 21, page 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.
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- 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*, v. 32, page 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*, v. 32, page 815-824.
- 31 Cloern, J.E., 1987. Turbidity as a control on phytoplankton biomass and productivity in estuaries: *Continental Shelf Research*, v. 7, page 1367-1381.
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- 33 Alpine, A.E., and Cloern, J.E., 1988. Phytoplankton growth rates in a light- limited environment, San Francisco Bay. *Marine Ecology Progress Series*, v. 44, page 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*, v. 28, p. 307- 325.
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- 36 Powell, T.M., Cloern, J.E., and Huzzey, L.M., 1989. Spatial and temporal variability in South San Francisco Bay. I. Horizontal distributions of salinity, suspended sediments, and phytoplankton biomass and productivity: *Estuarine, Coastal and Shelf Science*, v. 28, p. 583-597.
- 37 Cloern, J.E., Powell, T.M., and Huzzey, L.M., 1989. Spatial and temporal variability in South San Francisco Bay. II. Temporal changes in salinity, suspended sediments, and phytoplankton biomass and productivity over tidal time scales: *Estuarine, Coastal and Shelf Science*, v. 28, p. 599-613.
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- 39 Cloern, J.E., 1991, Annual variations in river flow and primary production in the South San Francisco Bay Estuary, *in* Elliott, M. and Ducrotoy, D., eds., *Estuaries and Coasts: Spatial and Temporal Intercomparisons*: Olsen and Olsen Publishers, Denmark, p. 91-96.
- 40 Cloern, J.E., 1991, Tidal stirring and phytoplankton bloom dynamics in an estuary: *Journal of Marine Research*, v. 49, p. 203-221.
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- 41 Alpine, A.E., and Cloern, J.E., 1992, Trophic interactions and direct physical effects control phytoplankton biomass and production in an estuary: *Limnology and Oceanography*, v. 37, p. 946-955.
- 42 Cole, B.E., Thompson, J.K., and Cloern, J.E., 1992, Measurement of filtration rates by infaunal bivalves in a recirculating flume: *Marine Biology*, v. 113, p. 219-225.
- 43 Cloern, J.E., Alpine, A.E., Cole, B.E., and Heller, T., 1992, Seasonal changes in the spatial distribution of phytoplankton in small, temperate-zone lakes: *Journal of Plankton Research*, v. 14, p. 1017-1024.
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- 44 Jassby, A.D., Cloern, J.E., and Powell, T.M., 1993, Organic carbon sources and sinks in San Francisco Bay: variability induced by river flow. *Marine Ecology Progress Series*, v. 95, p. 39-54.
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- 45 Koseff, J.R., Holen, J.K., Monismith, S.G., and Cloern, J.E., 1993, Effects of vertical mixing and benthic grazing on phytoplankton populations in shallow, turbid estuaries: *Journal of Marine Research*, v. 51, p. 843-868.
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- 46 Cloern, J.E., Cole, B.E. and Hager, S.W. 1994. Notes on a *Mesodinium rubrum* Red Tide in South San Francisco Bay (USA): *Journal of Plankton Research*, v. 16, p. 1269-1276.
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- Caffrey, J.M., Cole, B.E., Cloern, J.E., Rudek, J.R., Tyler, A.C., and Jassby, A.D., 1994, Studies of the plankton and its environment in the San Francisco Bay Estuary, California. Regional Monitoring Results, 1993: U.S. Geological Survey Open-File Report 94-82, 411 p.
- 47 Cloern, J.E. and Jassby, A.D., 1995, Yearly fluctuation of the spring phytoplankton bloom in South San Francisco Bay: An example of ecological variability at the land-sea interface, *in* Steele, J.H, Powell, T.M., and Levin, S., eds., *Ecological Time Series*, Chapman Hall, p. 139-149.
- 48 Canuel, E.A., Cloern, J.E., Ringelberg, D., Guckert, J., and Rau, G., 1995, Molecular and isotopic tracers used to understand sources of organic matter and trophic relationships in the San Francisco Bay estuary: *Limnology and Oceanography*, v. 40, p. 67-81.
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- Cloern, J.E., Luoma, S.N., and Nichols, F.H., 1995, The United States Geological Survey San Francisco Bay Program: Lessons Learned for Managing Coastal Water Resources: U.S. Geological Survey, Fact Sheet FS-053-95
- 49 Jassby, A.D., Kimmerer, W.J., Monismith, S., Armor, C., Cloern, J.E., Powell, T.M., Schubel, J.R., and Vendilinski, T. 1995, Isohaline position as a habitat indicator for estuarine resources: San Francisco Bay-Delta, California, U.S.A.: *Ecological Applications*, v. 5, pp. 272-289..

- Jassby, A.D., Cloern, J.E., Cole, B.E., and Caffrey, J.M., 1995, Choosing optimum station configurations for summarizing water quality characteristics, *in* 1994 Annual Report, San Francisco Estuary Regional Monitoring Program for Trace Substances: San Francisco Estuary Institute, p. 157-169.
- 50 Cloern, J.E., Grenz, C., and Vidregar-Lucas, L., 1995. An empirical model of the phytoplankton chlorophyll/carbon ratio -- the conversion factor between productivity and growth rate: *Limnology and Oceanography*, v. 40, p. 1313-1321.
- Edmunds, J.L., Cole, B.E., Cloern, J.E., Caffrey, J.M., and Jassby, A.D., 1995, Studies of the San Francisco Bay, California, Estuarine Ecosystem. Pilot Regional Monitoring Program Results, 1994: U.S. Geological Survey Open-File Report 95-378, 436 p.
- 51 Canuel, E.A., and Cloern, J.E., 1996, Regional differences in the origins of organic matter in the San Francisco Bay ecosystem. Evidence from lipid biomarkers, *in* J.T. Hollibaugh, editor, San Francisco Bay: The Ecosystem, Pacific Division, AAAS, San Francisco, p. 305-324.
- 52 Rudek, J., and Cloern, J.E., 1996, Planktonic respiration rates in San Francisco Bay, *in* J.T. Hollibaugh, editor, San Francisco Bay: The Ecosystem, Pacific Division, AAAS, San Francisco, p. 289-304.
- 53 Cloern, J.E., 1996. Phytoplankton bloom dynamics in coastal ecosystems: A review with some general lessons from sustained investigation of San Francisco Bay, California: *Reviews of Geophysics*, Vol. 34 , No. 2 , p. 127-168 (invited review article).
- Cole, B.E., Cloern, J.E., and Alpine, A.E., 1997, The photosynthetic response of phytoplankton in Shingobee Lake and Williams Lake: USGS Water-Resources Investigations Report 96-4215, pages 105-110.
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