

Jennifer E. Smith, Ph.D.

CONTACT INFORMATION

Postdoctoral Scholar
National Center for Ecological Analysis and Synthesis
University of California, Santa Barbara
735 State St. Suite 300
Santa Barbara, CA 93101
Email: jsmith@nceas.ucsb.edu
Cellular: 805-265-7475
Office: 805-892-2522
Fax: 805-892-2510
Webpage: <http://www.nceas.ucsb.edu/~jsmith>

RESEARCH INTERESTS

My research focuses on understanding how humans impact marine systems by altering community structure and function in an effort to develop effective science-based management and conservation strategies.

EDUCATION

Ph.D. University of Hawai'i, Manoa, Honolulu, HI, December 2003
Department of Botany & Ecology, Evolution and Conservation Biology
Dissertation Title: *Algal Blooms on Coral Reefs: Assessing the impacts of nutrients, herbivores and invasive species on community structure.*
B.S. Humboldt State University, Arcata, CA, May 1997
Dual degree in Zoology & Biology

APPOINTMENTS

OCT 2005-PRESENT POSTDOCTORAL SCHOLAR

National Center for Ecological Analysis and Synthesis, University of California, Santa Barbara. Investigating the relative importance of overfishing and nutrient pollution & invasive species on coral reef communities.

2005 RESEARCHER

Scripps Institution of Oceanography, University of California, San Diego.
Benthic marine ecologist on the Line Islands Research Expedition.

2004-2005 JUNIOR FACULTY RESEARCHER

Department of Botany, University of Hawai'i. Investigating the causes and consequences of macroalgal blooms on Maui.

PUBLICATIONS

- Williams, S.L. and **J.E. Smith**. (2007, In Press) A global review of the distribution, taxonomy & ecological impacts of introduced seaweeds. *Annual Review of Ecology Evolution and Systematics* 38.
- Smith, J.E.**, M. Shaw, R.A. Edwards, D. Obura, D., O. Pantos, E. Sala, S. A. Sandin, S. Smriga, M. Hatay, F.L. Rohwer (2006) Indirect effects of algae on coral: algae-mediated, microbe-induced coral mortality. *Ecology Letters* 9: 835-845.
- Schaffelke, B., **J.E. Smith** & C.L. Hewitt (2006) Introduced macroalgae- a growing concern. Proceedings of the International Seaweed Symposium. *Journal of Applied Phycology* 18: 529-541.
- Zuccarello, G.C., A.T. Critchley, **J.E. Smith** & J.A. West (2006) Systematics and genetic variation in commercial *Kappaphycus* and *Euचेuma* (Solieriaceae, Rhodophyta). Proceedings of the International Seaweed Symposium. *Journal of Applied Phycology* 18: 643-651.
- Zemke-White, W.L. and **J.E. Smith** (2006) Environmental impacts of seaweed farming in the tropics. In: Editors A.T. Critchley, M. Ohno and D.B. Largo, *World Seaweed Resources: An authoritative reference system.*

- Smith, J.E.**, J.W. Runcie and C.M. Smith (2005) Bloom dynamics and physiological ecology of the invasive green alga *Cladophora sericea* on West Maui. *Marine Ecology Progress Series* 302: 77-91.
- Conklin, E.J. and **J.E. Smith** (2005) Increases in abundance and development of management options for the invasive red alga *Kappaphycus* in Kane'ohe Bay, Hawai'i. *Biological Invasions* 7: 1029-1039.
- Friedlander, A. , G. Aeby, E. Brown, A. Clark, S. Coles, S. Dollar, D. Gulko, C. Hunter, P. Jokiel, **J.E. Smith**, B. Walsh, I. Williams and W. Wiltse (2005) The Status of the Coral Reef Ecosystems of the Main Hawaiian Islands. *In The Status of the Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2004.*
- Smith, J.E.**, C. Smith, P. Vroom, K. Beach, S. Miller (2004) Nutrient dynamics of the green alga *Halimeda tuna* on Conch Reef, Florida Keys: possible influence of internal tides on nutrient status and physiology. *Limnology and Oceanography*. 49(6): 1923-1936.
- Smith, J.E.**, R. Most, T. Sauvage, C. Hunter, C. Squair and E. Conklin (2004) Ecology of the invasive red alga *Gracilaria salicornia* in Waikiki and possible mitigation strategies. *Pacific Science* 58(2) 325-343.
- Vroom, P.S., C.M. Smith, J.A. Coyer, L.J. Walters, C.L. Hunter, K.S. Beach, **J.E. Smith** (2003) Field biology of *Halimeda tuna* (Bryopsidales, Chlorophyta) across a depth gradient: comparative growth, survivorship, recruitment, and reproduction. *Hydrobiologia* 501(1): 149-166.
- Runcie, J.W. and **J.E. Smith** (2003) Introduction to special issue: Nutrient dynamics in coastal ecosystems-linking physical and biological processes. *Journal of Marine Systems* 42(3-4): 81-82.
- Smith, J.E.**, C.L. Hunter and C.M. Smith (2002) Distribution and reproductive characteristics of nonindigenous and invasive marine algae in the Hawaiian Islands. *Pacific Science* 56(3): 299-315.
- Vroom, P. S., **J.E. Smith** and C.M. Smith (2001) Observations of reproduction in *Rhipidosiphon javensis* (Halimedineae, Bryopsidales) in Hawai'i. *Phycologia* 40(1): 97-100.
- Smith, J.E.**, C.L. Hunter and C.M. Smith (2001) The effects of herbivory and nutrient enrichment on benthic community structure and development on a Hawaiian Reef. *Coral Reefs* 19: 332-342.
- Elser, J.J., M.E. Bracken, E.E. Cleland, , D.S Gruner, W.S. Harpole, Hillebrand, H., J.T. Ngai, E.W. Seabloom, J.B. Shurin, **J.E. Smith** (Submitted) A global analysis of nitrogen and phosphorus limitation of primary producers in freshwater, marine, and terrestrial ecosystems. *Nature*
- Sala, E., **J.E. Smith**, S.A. Sandin, E.E. DeMartini, E.A. Dinsdale, A.F. Friedlander, M. Malay, J.E. Maragos, D. Obura, G. Paulay, J.B.C. Jackson, N. Knowlton (Submitted) Degradation of coral reef fish and benthic communities across a gradient of human disturbance. *Science*
- Jackson, J.B.C, N. Knowlton, S.A. Sandin, S.D. Donner, T. Konotchick, J.E. Maragos, O. Pantos, M. Richie, R. Schroeder, **J.E. Smith**, S. Walsh, E. Sala (Submitted) The northern line islands as an ecological time machine for coral reef conservation. *Science*
- Sandin, S.A., N. Knowlton, F. Angly, E.E. DeMartini, R.A. Edwards, A.F. Friedlander, J.B.C. Jackson, L. Krause, J.E. Maragos, D. Obura, F.L. Rohwer, E. Sala, P. Salamon, and **J.E. Smith** (Submitted). Unveiling intermediate disturbance on coral reefs. *Science*
- Diaz-Pulido, G.M., L.J. McCook, A.W.D. Larkum, H. Lotze, J.A. Raven, B. Schaffelke, **J.E. Smith**, R.S. Steneck (In Review) *Impacts of Global Climate Change on Macroalgae of the Great Barrier Reef: A Vulnerability Assessment.* In: Assessing Climate Change Vulnerability of the Great Barrier Reef

**MANUSCRIPTS
IN REVIEW OR
ADVANCED
PREPARATION**

Smith, J.E., H. Spalding, R. Okano & C. M. Smith (In Review). *Seaweed communities of Molokai*. In *An Atlas of Molokai's Marine Ecosystems*. USGS publication.

Smith, J.E. (In Prep) Top-down and bottom-up factors independently regulate benthic coral reef community structure. *Ecology*

Smith, J.E., E.J. Conklin, C.L. Hunter, C.M. Smith. (In Prep) Invasion dynamics on a coral reef: impacts and invasability. *Ecology Letters*

Hillebrand, H., D.S. Gruner, M.E. Bracken, E.E. Cleland, J.J. Elser, W.S. Harpole, J.T. Ngai, E.W. Seabloom, J.B. Shurin, **J.E. Smith**. (In Prep) Plant community structure and ecosystem productivity regulate the intrinsic control of plant diversity across major ecosystem types. *Proceedings of the National Academy of Sciences*

THESES & REPORTS

Smith, J.E. (2006) Algal blooms on Maui. A final report to the City and County of Maui and the Environmental Protection Agency. 75 pp.

Smith, J.E. (2003) Factors influencing the formation of algal blooms on tropical reefs with an emphasis on nutrients, herbivores and invasive species. Doctoral Dissertation, University of Hawai'i, Manoa, 425 pp.

Coles, S.L., R.C. DeFelice, **J.E. Smith**, D. Muir & L.G. Eldredge (1998) Determination of baseline conditions for introduced marine species in near shore waters of the island Kaho'olawe, Hawai'i. Bishop Museum Technical Report No. 14.

GRANTS

2002-2006 CO-AUTHOR/RESEARCHER

NOAA, Harmful Algal Bloom Program. Assessing linkages between land-based nutrients and algal blooms on Maui.
\$900,000

2003-2005 PRINCIPAL INVESTIGATOR

Environmental Protection Agency and the City and County of Maui. Assessing the links between nutrients and algal blooms, Maui.
\$50,000

2004 PRINCIPAL INVESTIGATOR

US Fish and Wildlife Service, Inventory of coastal resources around the Kane'ohe Marine Base.
\$10,000

2001 CO-AUTHOR/RESEARCHER

Hawai'i Sea Grant Project Development Grant. Co-author. Dynamics of the bloom forming green alga *Cladophora sericea*.
\$10,000

1999-2003 CO-AUTHOR/RESEARCHER

Hawai'i Coral Reef Initiative Research Program, NOAA. Co-author, various projects. Yearly grants ranging from:
\$50,000-130,000

AWARDS & HONORS

2006 BEST PAPER FOR JUNIOR SCIENTISTS **\$150**
 International Society for Reef Studies (ISRS) Conference, Bremen, Germany

2005-2007 POSTDOCTORAL FELLOWSHIP **~\$45,000/yr**
 National Center for Ecological Analysis and Synthesis, funded by NSF

2004 INVITED PARTICIPANT OF THE DIALOG SYMPOSIUM

Doctoral Initiatives for the Advancement of Limnology and Oceanography Graduates, Dauphin Island Sea Laboratory, AL, Organized by ASLO & AGU

2003 BEST PAPER IN CONSERVATION & ECOLOGY	\$200
Mia Tegner Award, Western Society of Naturalists, Long Beach, CA	
2003 COASTAL AMERICA PARTNERSHIP AWARD, NOAA	
For development and implementation of a community-based management program for the control and removal of invasive algae from Hawai'i's reefs	
2003 BEST PAPER AWARD	\$1,000
Harold C. Bold Award, Phycological Society of America, OR	
2003 TRAVEL AWARD	\$200
Phycological Society of America	
2003 TRAVEL AWARD	\$1,500
University of Hawai'i Ecology, Evolution & Conservation Biology Program	
2003 TRAVEL AWARD	\$1,500
Hawai'i Coral Reef Initiative Travel Award	
2002 TRAVEL AWARD	\$1,500
Hawai'i Coral Reef Initiative Travel Award	
2002 ARCS AWARD	\$5,000
Achievement Rewards for College Scientists for outstanding predoctoral research	
2001 TRAVEL AWARD	\$500
International Phycological Congress	
2000 BEST PAPER AWARD	\$1,000
Albert L. Tester Symposium, University of Hawai'i	
1996-1997 SCHOLARSHIP	\$600
Howard Hughes Medical Institute (HHMI)	
1995-1997 PRESIDENTIAL SCHOLAR	
Humboldt State University, Arcata, CA	

RESEARCH EXPERIENCE

1999-2003 GRADUATE RESEARCH ASSISTANT

Waikiki Aquarium & Department of Botany, University of Hawai'i. Various projects studying the impacts, interactions, mechanisms and management of invasive marine species in the Hawaiian Islands. Supervised by: Celia Smith, Cynthia Hunter and Isabella Abbott.

2003-2005 PROJECT COORDINATOR AND PRINCIPAL RESEARCHER

City and County of Maui & EPA. Investigating the linkages between land-based nutrients and algal blooms on south Maui.

2001-2002 RESEARCHER

Hawai'i Sea Grant. Characterization of a large-scale ephemeral bloom of the green alga *Cladophora* in Hawai'i.

1998-2000 RESEARCHER

Natural history of *Halimeda*. National Undersea Research Center (NURC, UNCW/NOAA), Key Largo, FL.

1998 RESEARCH TECHNICIAN

Assessment of the lobster fishery in the Northwestern Hawaiian Islands. National Marine Fisheries Service, NOAA, Honolulu, HI.

1998 FIELD BIOLOGIST

Invasive species inventories. Bernice P. Bishop Museum, Honolulu, HI.

1995-1997 SCIENTIFIC SCUBA DIVER

Numerous projects. Humboldt State University, Arcata, CA.

**TEACHING
EXPERIENCE****1998-2006 FACULTY MEMBER, LECTURER, UNIVERSITY OF HAWAI'I, HILO**

Participated as a faculty member, lecturer and safety SCUBA diver in a team-taught intensive coral reef ecology field course (Quantitative Underwater Ecological Surveying Techniques); taught general coral reef ecology, phycology, experimental design, statistics; supervised and advised students in the classroom and in a remote field setting.

1997-2005 WORKSHOP CONVENER, MARINE OPTION PROGRAM, UNIVERSITY OF HAWAI'I.

Prepared and convened workshops on the taxonomy and field identification of marine algae in the Hawaiian Islands twice yearly at the University of Hawai'i Hilo and Manoa campuses.

1999-2004 WORKSHOP CONVENER, WAIKIKI AQUARIUM, UNIVERSITY OF HAWAI'I.

Prepared and convened workshops across the state of Hawai'i at schools, federal and state agencies and community groups on identification of alien and invasive macroalgae in Hawai'i and on seaweed & coral reef ecology.

1997-1998 GRADUATE TEACHING ASSISTANT, UNIVERSITY OF HAWAI'I

Biology 101: Introductory Biology, Botany 101: Introductory Botany, Botany 362: Plant Taxonomy and Systematics

**INVITED
SCHOLARLY
TALKS**

- 2007 Ecological Society of America, San Jose, CA
- 2007 Society for Conservation Biology, Special Session on the Effects of Predator Removal on Ecosystem Structure and Function, South Africa
- 2007 Biological Sciences Seminar Series, Humboldt State University
- 2007 Scripps Institute of Oceanography, Marine Biology Seminar Series
- 2006 Coral Reef Discussion Group, San Diego State University
- 2006 Ecology, Evolution and Marine Biology Seminar, UC Santa Barbara
- 2006 John and Mary Louise Riley Seminar Series, Bodega Marine Lab, UC Davis
- 2005 National Center for Ecological Analysis and Synthesis, UC Santa Barbara
- 2004 Seminar Series, Department of Botany, University of Hawai'i
- 2004 Plenary Lecture co-authored with Britta Schaffelke and Chad Hewitt, Invasive Seaweeds, International Seaweed Symposium, Bergen, Norway
- 2004 World Aquaculture Society, Honolulu, HI,
- 2003 Keynote Address for the University of Hawai'i Marine Option Program Graduation
- 2003 Hawai'i Aquatics Conference
- 2002 Coordinating Group on Alien Pest Species: Hawai'i State Capitol Auditorium, Honolulu, HI
- 2002 United States Aquatic Nuisance Species Task Force (ANSTF) Meeting, Honolulu, HI
- 2001 Hawai'i Aquatics Conference
- 2001 Hawai'i Department of Land and Natural Resources, Honolulu, HI

**CONTRIBUTED
PAPERS AT
SCIENTIFIC
MEETINGS**

- 2006 Western Society of Naturalists, Tacoma, WA
- 2006 International Society for Reef Studies, Bremen, Germany
- 2006 American Society of Limnology & Oceanography Ocean Sciences Meeting, Honolulu, HI
- 2005 Western Society of Naturalists, Monterey, CA

- 2004 Western Society of Naturalists, Sonoma, CA
- 2004 DIALOG (Dissertation Initiatives for the Advancement of Limnology and Oceanography), Dauphin Island Sea Lab, AL
- 2004 13th International Aquatic Invasive Species Conference, Ireland, September
- 2004 10th International Coral Reef Symposium, Okinawa
- 2003 Western Society of Naturalists, Long Beach, CA
- 2003 Annual Meeting of the Phycological Society of America, Gleneden Beach, OR
- 2003 3rd International Marine Bioinvasions Conference, Scripps Institution of Oceanography, La Jolla, CA
- 2002 American Society of Limnology & Oceanography Ocean Sciences Meeting, Honolulu, HI
- 2001 7th International Phycological Congress, Thessaloniki, Greece
- 2001 25th Annual Albert L. Tester Symposium. University of Hawai'i, Honolulu, HI
- 2001 9th International Coral Reef Symposium, Bali, Indonesia
- 1999 International Conference on Scientific Aspects of Coral Reef Assessment, Monitoring, and Restoration: Ft. Lauderdale, FL

SERVICE

2005-PRESENT NCEAS WORKING GROUP MEMBER

Trophic Structure across systems. Principal Investigators: Dan Gruner, Helmut Hildebrand and Jon Shurin

2005-PRESENT MEMBER OF THE ICUN WORLD CONSERVATION UNION INVASIVE SPECIES SPECIALIST GROUP

2000-2005 PUBLIC EDUCATION & OUTREACH

Led seminars and workshops for numerous venues including the Hawai'i State Capitol & Legislature, Waikiki Aquarium, Northwestern Hawaiian Islands Education Center, Hawai'i Department of Land and Natural Resources, Hawai'i Environmental Protection Agency, the Coordinating Group on Alien Pests, Department of Agriculture, Hanauma Bay Educational Center, National Marine Sanctuary

2003 STUDENT REPRESENTATIVE

University of Hawai'i College of Natural Sciences Re-organization Committee

2003-2005 VOLUNTEER COORDINATOR

Multi-agency collaboration to remove alien algae from the Waikiki Marine Life Conservation District

2002-2005 MEMBER, HAWAI'I INVASIVE SPECIES PLANNING COMMITTEE

Helped to draft the invasive species management plan in conjunction with the Nature Conservancy and the State of Hawai'i

2002-2003 STUDENT REPRESENTATIVE

Phycological Society of America, Prescott Award Committee

SELECTED HIGHLIGHTS OF RESEARCH IN THE MEDIA

Coral, Algal, Microbe Interactions
Science Magazine, Research in the News, *New Scientist*, National Public Radio, University of California Office of the President, Numerous Newspaper Articles Northern Line Islands
 Numerous Newspaper Articles
 Hawai'i Research
 Numerous Newspaper Articles & Local TV News Interviews

PEER REVIEW**AD-HOC GRANT REVIEW:**

Environmental Protection Agency, Great Barrier Reef Marine Park Authority,
National Oceanic and Atmospheric Administration, National Science Foundation,
National Undersea Research Center

PUBLICATIONS:

Microbial Ecology, Bulletin of Marine Science, Estuarine and Coastal Shelf Science,
Coral Reefs, Hydrobiologia, Journal of Experimental Marine Biology and Ecology,
Marine Biology, Marine Ecology Progress Series, Marine Pollution Bulletin, Aquatic
Botany, Botanica Marina, Cryptogamic Algologie

REFERENCES**GENERAL REFERENCES:**

Dr. Celia Smith, Phone: (808) 956-6947 or (808) 227-1186, Email: celia@hawaii.edu,
Professor, University of Hawai'i, Manoa, Department of Botany, 3190 Maile Way,
Honolulu, HI 96822

Dr. Susan L. Williams, Phone: (707) 875-2211, Email: slwilliams@ucdavis.edu
Director, Bodega Marine Laboratory, University of California at Davis, P.O. Box
247, Bodega Bay, CA 94923-0247

Dr. Brian Tissot, Phone: (360) 546-9611, Email: tissot@wsu.edu, Director,
Science Program, Associate Professor of Environmental Science & Regional
Planning, Washington State University Vancouver, 14202 NE Salmon Creek Ave.,
Vancouver, WA 98686

Dr. Larry Basch, Phone: (808) 956-8820 or (808) 228-9517,
Email: lbasch@hawaii.edu, Associate Professor, Ecology, Evolution and
Conservation Biology Program, University of Hawai'i Manoa and Senior Scientist,
National Park Service Pacific Islands Coral Reef Program

APPLIED SCIENCE & SOCIOLOGY:

Dr. Michael Hamnett, Phone: (808) 956-7469, Fax: (808) 956-2884,
Email: mhamnett@rcuh.com, Director, Social Science Research Institute and
Professor of Sociology, Director of the Hawai'i Coral Reef Initiative Research
Program, University of Hawai'i, 2424 Maile Way, Honolulu, HI, 96822