

**Curriculum Vitae
Matthew E.S. Bracken**

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Education:

1997-2003 Ph.D. in Zoology, Oregon State University (Advisors: Jane Lubchenco and Bruce Menge)
1993-1997 B.S. in Biology (Mathematics Minor), University of Puget Sound (Cum Laude)

Professional Experience:

2007- Assistant Professor, Department of Biology, Northeastern University
2005-2007 Postdoctoral Scholar, Bodega Marine Laboratory, University of California, Davis (Advisor: Susan Williams)
2004-2005 Postdoctoral Scholar, Section of Evolution and Ecology, University of California, Davis (Advisor: Jay Stachowicz)
2003-2004 Visiting Postdoctoral Researcher, Edward Percival Field Station, Kaikoura, New Zealand (Advisor: Dave Schiel)
2003 Postdoctoral Research Associate, Department of Zoology, Oregon State University (Advisors: Jane Lubchenco and Bruce Menge)
2001-2003 Graduate Research Assistant, Partnership for Interdisciplinary Studies of Coastal Oceans, Oregon State University
1999, 2002 Graduate Fellow, Marine Ecosystem Dynamics Consortium, University of Canterbury, Christchurch, New Zealand
1998-2001 Graduate Research Fellow, National Science Foundation
1997-2000 Graduate Teaching Assistant, Department of Zoology, Oregon State University
1995-1996 Undergraduate Teaching Assistant, Department of Biology, University of Puget Sound

Peer-Reviewed Papers:

Hillebrand, H., E.T. Borer, M.E.S. Bracken, B.J. Cardinale, J. Cebrian, E.E. Cleland, J.J. Elser, D.S. Gruner, W.S. Harpole, J.T. Ngai, S. Sandin, E.W. Seabloom, J.B. Shurin, J.E. Smith, and M.D. Smith. 2009. Herbivore metabolism and stoichiometry each constrain herbivory at different organizational scales across ecosystems. *Ecology Letters* 12: 516-527. (cover photo)
Altieri, A.H., G.C. Trussell, P.J. Ewanchuk, G. Bernatchez, and M.E.S. Bracken. 2009. Consumers control diversity and functioning of a natural marine ecosystem. *PLoS ONE* 4: e5291.

- Aquilino, K.M., M.E.S. Bracken, M.N. Faubel, and J.J. Stachowicz. 2009. Local-scale autochthonous nutrient inputs in an upwelling ecosystem facilitate seaweed growth on wave-exposed rocky shores. *Limnology and Oceanography* 54: 309-317. (*Limnology and Oceanography* "Featured Article").
- Stachowicz, J.J., R.J. Best, M.E.S. Bracken, and M.H. Graham. 2008. Complementarity in marine biodiversity manipulations: reconciling divergent evidence from field and mesocosm experiments. *Proceedings of the National Academy of Sciences, USA* 105:18842-18847.
- Stachowicz, J.J., M. Graham, M.E.S. Bracken, and A.I. Szoboszlai. 2008. Diversity enhances cover and stability of seaweed assemblages: the role of heterogeneity and time. *Ecology* 89: 3008-3019.
- Gruner, D.S., J.E. Smith, E.W. Seabloom, S.A. Sandin, J.T. Ngai, H. Hillebrand, W.S. Harpole, J.J. Elser, E.E. Cleland, M.E.S. Bracken, E.T. Borer, and B.M. Bolker. 2008. A cross-system synthesis of consumer and nutrient resource control on producer biomass. *Ecology Letters* 11: 740-755. (cover photo)
- Bracken, M.E.S., S.E. Friberg, C.A. Gonzalez-Dorantes, and S.L. Williams. 2008. Functional consequences of realistic biodiversity changes in a marine ecosystem. *Proceedings of the National Academy of Sciences, USA* 105: 924-928. (featured in *Science* "Editor's Choice" and highlighted in a *Trends in Ecology and Evolution* "Research Focus")
- Bracken, M.E.S., B.E. Bracken, and L. Rogers-Bennett. 2007. Species diversity and foundation species: potential indicators of fisheries yields and marine ecosystem functioning. *California Cooperative Oceanic Fisheries Investigations Reports* 48: 82-91.
- Elser, J.J., M.E.S. Bracken, E.E. Cleland, D.S. Gruner, W.S. Harpole, H. Hillebrand, J.T. Ngai, E.W. Seabloom, J.B. Shurin, and J.E. Smith. 2007. Global analysis of nitrogen and phosphorus limitation of primary producers in freshwater, marine, and terrestrial ecosystems. *Ecology Letters* 10: 1135-1142. (featured in *Nature* "News and Views," rated "Exceptional" in *Faculty of 1000 Biology*, and identified by Thompson Reuters as a highly-cited "Emerging Front" paper)
- Bracken, M.E.S., C.A. Gonzalez-Dorantes, and J.J. Stachowicz. 2007. Whole-community mutualism: associated invertebrates facilitate a dominant habitat-forming seaweed. *Ecology* 88: 2211-2219. ("Recommended" in *Faculty of 1000 Biology*)
- Hillebrand, H., D.S. Gruner, E.T. Borer, M.E.S. Bracken, E.E. Cleland, J.J. Elser, W.S. Harpole, J.T. Ngai, E.W. Seabloom, J.B. Shurin, and J.E. Smith. 2007. Consumer versus resource control of producer diversity depends on ecosystem type and producer community structure. *Proceedings of the National Academy of Sciences, USA* 104: 10904-10909. ("Recommended" in *Faculty of 1000 Biology*)
- Bracken, M.E.S. and J.J. Stachowicz. 2007. Top-down modification of bottom-up processes: selective grazing reduces macroalgal nitrogen uptake. *Marine Ecology Progress Series* 330: 75-82.
- Bracken, M.E.S. and J.J. Stachowicz. 2006. Seaweed diversity enhances nitrogen uptake via complementary use of nitrate and ammonium. *Ecology* 87: 2397-2403. ("Recommended" in *Faculty of 1000 Biology*)

- Bracken, M.E.S. 2004. Invertebrate-mediated nutrient loading increases growth of an intertidal macroalga. *Journal of Phycology* 40: 1032-1041.
- Bracken, M.E.S. and K.J. Nielsen. 2004. Diversity of intertidal macroalgae increases with nitrogen loading by invertebrates. *Ecology* 85: 2828-2836.
- Menge, B.A., J. Lubchenco, M.E.S. Bracken, F. Chan, M.M. Foley, T.L. Freidenburg, S.D. Gaines, G. Hudson, C. Krenz, H. Leslie, D.N.L. Menge, R. Russell, and M.S. Webster. 2003. Coastal oceanography sets the pace of rocky intertidal community dynamics. *Proceedings of the National Academy of Sciences, USA* 100:12229-12234.

Book Chapters:

- Gamfeldt, L. and M.E.S. Bracken. 2009. The role of biodiversity for the functioning of rocky reef communities. Pages 361-373 in M. Wahl, editor. *Marine Hard Bottom Communities: Patterns, Dynamics, Diversity, and Change*. Springer-Verlag, Heidelberg, Germany.
- Olyarnik, S.V., M.E.S. Bracken, J.E. Byrnes, A.R. Hughes, K.M. Hultgren, and J.J. Stachowicz. 2009. Ecological factors affecting community invasibility. Pages 215-240 in G. Rilov and J.A. Crooks, editors. *Biological Invasions in Marine Ecosystems: Ecological, Management, and Geographic Perspectives*. Springer-Verlag, Heidelberg, Germany.
- Bracken, M.E.S. 2008. Monocultures versus polycultures. Pages 2446-2449 in S.E. Jørgensen and B. D. Fath editors. *Encyclopedia of Ecology*. Elsevier, Oxford, UK.
- Bracken, M.E.S. 2007. Excretion. Pages 215-217 in M.W. Denny and S.D. Gaines, editors. *Encyclopedia of Tidepools and Rocky Shores*. University of California Press, Berkeley, California, USA.

Submitted Manuscripts:

- Sorte, C.J.B., A. Fuller, and M.E.S. Bracken. *in review*. Increase in non-native species dominance triggered by a simulated heat wave. *Ecology*.
- Byrnes, J.E., C.M. Bowles, M.E.S. Bracken, M.C. Ferner, J.B. Grace, D.S. Gruner, C.G. Hays, D.J. Kushner, K.J. Nickols, K. Ram, C.J.B. Sorte, and S.L. Williams. *in review*. Top-down and bottom-up forces jointly control kelp forest communities in the California Channel Islands. *Ecology*.
- Ngai, J.N., E.E. Cleland, W.S. Harpole, E.W. Seabloom, E.T. Borer, M.E.S. Bracken, J.J. Elser, D.S. Gruner, H. Hillebrand, J.B. Shurin, and J.E. Smith. *in revision*. Multiple resource limitation of primary production: embracing the interaction. (for *Oikos*).
- Bracken, M.E.S., B.A. Menge, M.M. Foley, C.J.B. Sorte, J. Lubchenco, and D.R. Schiel. *in revision*. Context-dependency of species' roles as mediators of marine ecosystem functions. (for *Ecology*).

Grants, Honors, and Awards:

2006-2010	National Science Foundation: Influences of nonrandom biodiversity change on marine ecosystem functioning (S. Williams & M. Bracken)	\$512,219
2001-2002	Markham Endowment Award, Hatfield Marine Science Center	\$7,450
2000	Best Student Paper Award, Western Society of Naturalists	\$100
1999	Hopkins Marine Station Summer Course Scholarship	\$1,825
1998-2001	National Science Foundation Graduate Research Fellowship	\$78,500
1998-2001	Oregon Laurels Scholarship, Oregon State University	\$13,000
1998	Zoology Research Fund, Oregon State University	\$500
1996	Simpson-Kraft Tacoma Summer Science Research Grant	\$2,000
1996	University Enrichment Committee Grant, University of Puget Sound	\$450
1993-1997	National Merit Scholarship, University of Puget Sound	\$4,000
1993-1997	Robert C. Byrd Congressional Scholarship, U.S. Dept. of Education	\$10,000
1993-1996	National Science Scholarship, U.S. Dept. of Education	\$4,500

Invited Presentations, Working Groups, and Symposia:

2009	Symposium and workshop on the <i>Effect of global change on carbon sequestration and food web structure across ecosystems</i> . Institute for Chemistry and Biology of the Marine Environment, Oldenburg and Wilhelmshaven, Germany
2009	Spring-Summer Colloquium Series, Dauphin Island Sea Lab
2009	Special Seminar, Green Mountain College
2009	Biology Colloquium, University of Rhode Island
2008	Summer Science Series, Petersburg Marine Mammal Center, Alaska
2008	Organismic and Evolutionary Biology Seminar Series, University of Massachusetts, Amherst
2008	Evening Lecture Series, Marine Science Center, Northeastern University
2008	Cramer Seminar Series, Dartmouth College
2006	Symposium on <i>Ecological interactions useful for marine ecosystem-based management</i> . California Cooperative Oceanic Fisheries Investigations (CalCOFI) Annual Conference
2006	Three Seas Colloquium, Marine Science Center, Northeastern University
2006	Biology Colloquia, Northeastern University
2005-2008	Working Group Member, <i>Comparing trophic structure across ecosystems</i> . National Center for Ecological Analysis and Synthesis (NCEAS), Santa Barbara, California
2005	Participant, Dissertations Initiative for the Advancement of Limnology and Oceanography (DIALOG VII) Symposium, Dauphin Island Sea Lab, Alabama
2005	Weekly Seminar, Moss Landing Marine Laboratories, California State Universities
2005	Special Seminar, Bodega Marine Laboratory, University of California, Davis
2004	Biology Colloquium, Sonoma State University

- 2004 Symposium on *Linking community and ecosystem approaches in coastal systems*. Western Society of Naturalists Annual Meeting
- 2004 Participant in *Managing for resilience: an integrated approach to coastal marine science and conservation*. Friday Harbor Laboratories, University of Washington
- 2004 John and Mary Louise Riley Seminar Series, Bodega Marine Laboratory, University of California, Davis
- 2003 Thompson Hall Math and Science Seminar, University of Puget Sound
- 2003 Symposium on *Linking algae, oceanography, and marine ecology*. Phycological Society of America Annual Meeting

Contributed Presentations:

- 2008 Bracken, M.E.S., S.L. Williams, E.M. Jones, A. Carranza, and R.C. Rockwood. Herbivores, thermal stress, and nutrients combine to determine intertidal algal diversity. Western Society of Naturalists Annual Meeting.
- 2008 Bracken, M.E.S., S.E. Friberg, C.A. Gonzalez-Dorantes, and S.L. Williams. Functional consequences of realistic biodiversity changes in a marine ecosystem. Benthic Ecology Meeting.
- 2007 Bracken, M.E.S., C.A. Gonzalez-Dorantes, and J.J. Stachowicz. Whole-community mutualism: associated invertebrates facilitate a dominant habitat-forming seaweed. Benthic Ecology Meeting.
- 2005 Bracken, M.E.S. and J.J. Stachowicz. Top-down modification of bottom-up processes: herbivory reduces macroalgal nitrogen uptake. Western Society of Naturalists Annual Meeting.
- 2005 Bracken, M.E.S. and J.J. Stachowicz. Seaweed diversity enhances nitrogen uptake via complementary use of nitrate and ammonium. ESA Annual Meeting.
- 2004 Bracken, M.E.S., B.A. Menge, M.M. Foley, D.R. Schiel, and J. Lubchenco. Species' roles in ecosystem functioning change along productivity gradients. ESA Annual Meeting.
- 2003 Bracken, M., B.A. Menge, M.M. Foley, D.R. Schiel, and J. Lubchenco. Variation in benthic-pelagic coupling along productivity gradients. International Temperate Reef Symposium.
- 2002 Bracken, M.E. Nitrogen loading by invertebrates increases growth of intertidal seaweeds. Western Society of Naturalists Annual Meeting.
- 2002 Bracken, M.E. and K.J. Nielsen. Diversity of intertidal seaweeds increases with nitrogen loading by invertebrates. ESA Annual Meeting.
- 2002 Bracken, M. Local-scale nutrient inputs to intertidal communities. PISCO Public Symposium, Seaside, California.
- 2001 Bracken, M.E., S. Wood, B.A. Menge, M. Foley, and D.R. Schiel. Nutrient inputs into coastal waters: causes and consequences. Centre for Excellence in Aquaculture and Marine Ecology: Marine Science Research for Integrated Coastal Management, Kaikoura, New Zealand.

- 2000 Bracken, M.E. Invertebrate-excreted ammonium as a nitrogen source for intertidal seaweeds. Western Society of Naturalists Annual Meeting.
- 2000 Bracken, M.E., B.A. Menge, and M.M. Foley. Potential influences of nearshore oceanographic conditions on mussel physiological ecology and benthic algal biomass accumulation in New Zealand intertidal communities. Pacific Ecology Conference.
- 1996 Bracken, M.E. Modification of behavior in sea anemones by symbiotic unicellular algae. Regional Conference on Undergraduate Research, Tacoma, Washington.

Courses Taught:

- 2009 *Marine Biology*, Northeastern University
- 2008-2009 *Marine Ecology*, Northeastern University
- 2008 *Topics in Integrative Biology: Classics and Neoclassics in Ecology*, Northeastern University
- 2005 *Graduate Student Participatory Seminar: Ecological Stoichiometry*, University of California, Davis
- 1998 *Marine Ecology Laboratory*, Oregon State University

Guest Lectures:

- 2008 *Biology/Biochemistry at Northeastern*, Northeastern University
- 2008 *Topics in Integrative Biology: Evolution of Life Histories*, Northeastern University
- 2007 *Marine Invertebrate Zoology*, Northeastern University
- 2006-2007 *Population Biology & Ecology of Marine Organisms*, University of California, Davis
- 2003 *Ecology*, University of Puget Sound
- 2001-2004 *Marine Biology*, Oregon State University

Service:

- 2009-2011 Ph.D. Qualifying Exam Committee, Biology Department, Northeastern University
- 2009 Panel on careers in biology, Green Mountain College, Poultney, Vermont
- 2008-2009 Presentations on marine life, YMCA Early Learning Center, Marblehead, Massachusetts
- 2007-2006 Marine Science Center faculty advisory board, Northeastern University
- 2006 Co-organizer, California Cooperative Oceanic Fisheries Investigations (CalCOFI) Conference Symposium
- 2005-2007 Library Committee member, Cadet Hand Library, Bodega Marine Laboratory
- 2005-2006 Coordinating committee, John and Mary Louise Riley Seminar Series, Bodega Marine Laboratory
- 2005 Coordinator, student paper competition, Western Society of Naturalists Annual Meeting

- 2004-2008 Judge, student paper and poster competition, Western Society of Naturalists Annual Meeting
- 2004 Field trip leader, Western Society of Naturalists Annual Meeting
- 2001 Presentation on careers in marine biology, Montessori School, Mesa, Arizona
- 1999-2000 Field trip leader, Oregon State University Life Sciences Club
- 1998-2000 Organizer, Biology Graduate Student Symposium, Oregon State University
- 1998-1999 Co-President, Zoology Department graduate students, Oregon State University
- 1998 Presentation on "What is marine ecology?" Petersburg High School, Petersburg, Alaska
- 1997 Presentation on threats to oceans, Crescent Valley High School, Corvallis, Oregon
- 1996-1997 President, Phi Sigma Biology Honor Society, University of Puget Sound

Students Mentored:

- 2009- Kylla Benes (Northeastern University Ph.D. student)
- 2009 Marcy Cockrell (Northeastern University Professional M.S. in Marine Biology)
- 2009 Robyn Zerebecki (Northeastern University Professional M.S. in Marine Biology)
- 2008 Adam Fuller (Northeastern University Professional M.S. in Marine Biology) *Temperature impacts on benthic marine invertebrate assemblages*
- 2008 Alexander Ramsower (Bodega Marine Lab REU) *Upwelling responses and algal dynamics*
- 2006 Sara Friberg (Bodega Marine Lab REU) *Functional consequences of realistic species losses in a marine ecosystem*
- 2005 Ambre Chaudoin (UC Davis undergraduate intern) *Habitat selectivity by invertebrates links seaweed and consumer diversity in intertidal communities*
- 2005 Melinda Faubel (UC Davis undergraduate intern) *Mutualisms between seaweeds and mussels in intertidal communities*
- 2005 Cirse Gonzalez-Dorantes (Bodega Marine Lab REU) *Microscopic heterotrophs ameliorate nutrient limitation in the fast-growing seaweed Cladophora columbiana*

Reviewer:

Journals: *Biological Invasions, Conservation Biology, Ecography, Ecology, Ecology Letters, Ecological Applications, Frontiers in Ecology and the Environment, Functional Ecology, Journal of Applied Phycology, Journal of Coastal Conservation, Journal of Experimental Marine Biology and Ecology, Journal of Phycology, Journal of Sea Research, Marine Biology, Marine Ecology Progress Series, Oecologia, Oikos, PLoS ONE, and Trends in Ecology and Evolution*

Book Chapter: *Science for Ecosystem-Based Management: Narragansett Bay in the 21st Century*

Grant Proposals: Oregon Sea Grant, Washington Sea Grant, and the National Science Foundation (Division of Ocean Sciences and Division of Integrative & Organismal Systems)