

## VITAE

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**POSITION:** Director      Marine Laboratory, Sanibel-Captiva  
Conservation Foundation  
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### EDUCATION

<u>University</u>	<u>Major</u>	<u>Dates</u>	<u>Degree</u>
Humboldt State University	Biology	1997	B.S.
University of Oregon	Biology	2003	Ph.D.

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### AWARDS

1996. NSF Research Experience for Undergraduates (REU) Fellow  
1998-2001. NOAA Graduate Research Fellow, South Slough National Estuarine Research Reserve  
2002. University of Oregon Doctoral Research Fellowship, Dept. of Biology Nominee.  
2002. American Society for Limnology and Oceanography student poster award, Victoria, B.C.

### PROFESSIONAL EXPERIENCE

<u>Dates (yrs.)</u>	<u>Position</u>	<u>Employer/Affiliation</u>
2011-present	Director	SCCF Marine Laboratory
2006-2007	Interim Director	SCCF Marine Laboratory
2003-2011	Research Scientist	SCCF Marine Laboratory
2008-present	Affiliate Member	Coastal Watershed Institute, FGCU
2005-present	Adjunct Graduate Faculty	Florida Gulf Coast University
2005-present	Courtesy Faculty	Florida Gulf Coast University

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### GRANT RELATED RESEARCH

Developing Sanibel Specific Runoff Coefficients and Nutrient Concentrations, City of Sanibel, 2014, PI: Milbrandt with M. Thompson, \$19K.  
Development of a nutrient management plan for the City of Sanibel, 2013, PI: Milbrandt with M. Thompson, R. Bartleson, \$12K.  
Lake and nutrient management and monitoring, 2012-2014, The Dunes Golf and Tennis Club, PI: Milbrandt with M. Thompson, \$10K.  
Measuring and forecasting ecosystem services from habitat condition analyses of habitats in Pine Island Sound, Sanibel Island, and Captiva Island, 2012-2013, Dunn Foundation and Charlotte Harbor National Estuary Program, \$50K PI: Milbrandt with J. Beever, R. Wessel.

Landscape-scale assessment of water quality and seagrasses within the J.N. Ding Darling National Wildlife Refuge, 2008-2014, USFWS \$215K, PI: Milbrandt with R. Bartleson, M. Thompson.

Real time sea state information in the Gulf of Mexico, WCIND/Lee County, \$81K PI: Milbrandt with A. Martignette.

Continued development of the Gulf of Mexico Coastal Ocean Observing System, NOAA, 2010-2015, Subaward \$385K, PI: Jochens with E. Milbrandt.

Real-time weather information for Lee County Boaters, WCIND/Lee County, \$79K, 2011-2012, PI: Milbrandt with A. Martignette.

Assistance for a New 'Local Data Node' as a Non-Federal Provider of Data, SCCF Marine Laboratory, to Initiate and Maintain Activities Associated with the GCOOS Data Portal DMAC-compliant data delivery and workshop, 2009-2012, Texas A&M Research Fnd. \$25K, PI: Rybak with E. Milbrandt.

Enhancement of mangrove shorelines in Clam Bayou, FL, 2010-2013, Gulf of Mexico Foundation, EPA, \$43,367, PI: Milbrandt with A. Rybak.

Comprehensive planning for a sustainable marine research laboratory and educational center on Sanibel Island, Florida, 2009-2012, NSF, \$18,825, PI: Milbrandt with R. Bartleson, A. Rybak.

Restoration of critical marine habitats (mangrove, SAV, oysters), 2008-2010, NaCO/NOAA, \$70,500, PI: Milbrandt with L. Coen.

Reopening a tidal pass: implications for changes in water column optical properties and seagrass habitats, 2008-2010, PI: Coen with R. Bartleson, E. Milbrandt, A. Rybak, Florida SeaGrant \$6,593.

Bioavailability and sources of nutrients and the linkages to nuisance drift algae, subaward: Distribution and productivity of attached macroalgal biomass and the conditions that are favorable for uncontrolled growth, including the examination of substrate attachment, 2007-2010 City of Sanibel, \$152K, PI: Loh with R. Bartleson, E. Milbrandt, M. Parsons, D. Fugate, E. Everham.

Bioavailability and sources of nutrients and the linkages to nuisance drift algae, subaward: Hydroacoustic survey of macroalgae, 2007-2010, City of Sanibel, \$93K, PI: Loh with L. Coen, R. Grizzle, E. Milbrandt, B. Riegl.

Effect of water quality on seagrasses in the Caloosahatchee River/Estuary and Pine Island Sound using optical properties to predict light levels and thresholds, 2007-2008, SFWMD, \$25K, PI: Milbrandt.

Identification of microbes critical to the enhancement of seagrass restoration, 2007-2008, CHNEP, \$18,458, PI: Milbrandt.

Methods manual for *Vallisneria americana* restoration, 2006-2007, Seagrass Recovery, \$15K. Subaward, PI: Milbrandt.

Restoration of propeller scars in seagrass habitats of Charlotte Harbor, 2005-2006, WCIND, \$10K, PI: Milbrandt with J. Anderson.

Impact and Response to Lake Okeechobee discharges, 2005-2006, PI: Bortone with E.

Milbrandt, R. Alberte, SFWMD, \$100K.

## PUBLICATIONS

- Milbrandt, E.C. and J.J. Siwicke, submitted. Leaf emergence rates (*Thalassia testudinum*, Banks ex Koning) as an indicator of seagrass responses to regulated freshwater releases. *Estuaries and Coasts*.
- Milbrandt, E.C. and R. Grizzle, 2013. Benthic Offshore. *In* Integrated Conceptual Ecosystem Model Development for the Southwest Florida Shelf Coastal Marine Ecosystem, W.K. Nuttle and P.J. Fletcher (eds.). NOAA Technical Memorandum, OAR-AOML-102 and NOS-NCCOS-162. Miami, Florida. 37-44.
- Provost, K., A.J. Martignette, E.C. Milbrandt, J. Siwicke, 2013. Quadrat versus video assessment of macroalgae cover: a methods comparison. *Florida Scientist* 76: 249-258.
- Martin, N., L. Coen, A.J. Martignette, E.C. Milbrandt, M. Thompson, 2013. Effectiveness of anti-fouling coatings in Southwest Florida's estuarine and marine waters with emphasis on Real-time observing systems. *Florida Scientist* 76: 259-274.
- Thompson, M.A., E.C. Milbrandt, R.B. Bartleson, and A. Rybak, 2012. Evaluation of bacteriological and nutrient concerns in nearshore waters of a barrier island in SW Florida. *Marine Pollution Bulletin* 64:1425-1434.
- Milbrandt, E.C., R.D. Bartleson, L.D. Coen, A. Rybak, M.A. Thompson, P. Stevens, 2012. Local and regional effects of reopening a tidal inlet on estuarine water quality, seagrass habitat, and fish assemblages. *Continental Shelf Research* 41:1-16.
- Coen, L.D., E.C. Milbrandt, 2011. A Brief History of the Sanibel-Captiva Conservation Foundation (SCCF)'s Marine Laboratory, Sanibel, Florida: Not to be confused with Doc Ford's Sanibel Biological Supply Company. *Gulf of Mexico Science* 28:200-214.
- Milbrandt, E.C., P.G. Coble, R.M. Comny, A.J. Martignette, J. Siwicke, 2010. Evidence for the production of marine fluorescent dissolved organic matter in coastal environments and a possible mechanism for formation and dispersion. *Limnology and Oceanography* 55:2037-2051.
- Harris, R.J., E.C. Milbrandt, B. Brovard, E. Everham, 2010. The effects of reduced tidal flushing on mangrove structure and function across a disturbance gradient. *Estuaries and Coasts* 33(5): 1176-1185.
- Milbrandt, E.C. 2009. The effects of root zone manipulations on turtle grass (*Thalassia testudinum*) transplants. *Florida Scientist* 72: 406-419.
- Milbrandt, E.C., J.M. Greenawalt, P.D. Sokoloff, 2008, Short-term indicators of seagrass transplant stress in response to rhizosphere and bacterial community disruption. *Botanica Marina* 51: 103-111.
- Milbrandt, E.C., J.T. Evans, 2007, Hydrological restoration and ecological response in an impounded mangrove lagoon. Ecosystem Restoration and Creation Conference Proceedings.
- Milbrandt, E.C., J.M. Greenawalt, P.D. Sokoloff, S.A. Bortone, 2006, Impact and response of southwest Florida mangroves to the 2004 hurricane season, *Estuaries and Coasts* 29(6A): 979-984.
- Proffitt, C.E., E.C. Milbrandt, S.E. Travis, 2006, Reproduction and recruitment of *Rhizophora*

*mangle* (Red Mangroves) in Charlotte Harbor following hurricane Charley, *Estuaries and Coasts* 29(6A): 972-978.

Milbrandt, E.C. and M.L. Tinsley, 2006, The role of saltwort (*Batis maritima*) in mangrove forest succession, *Hydrobiologia* 568: 369-377.

Milbrandt, E.C., 2005, Bacteria communities as an indicator of estuarine and sediment conditions, in Bortone, S.A., Estuarine Indicators, CRC Press, Boca Raton, 2004.

Milbrandt, E.C., 2003, Microbial Ecology of South Slough: community composition of bacteria and patterns of occurrence, Ph. D. dissertation, University of Oregon.

Milbrandt, E.C., 2003, Genetic Diversity of Bacteria in Restored and Mature Estuarine Wetland Sediments, Report to Sanctuary and Reserves Division, National Oceanic and Atmospheric Association, 18 pp.

Milbrandt, E.C., 2002. Comparing respiratory (ETS) activity of bacteria attached to phytoplankton and freely and suspended in surrounding seawater (abstract to PSA). *Journal of Phycology* 36:47.

Milbrandt, E.C., 2002. Communities of bacteria as a metric for gauging restoration success, *Earth Systems Monitor* 12(2): 5-8.

Nadeau, T-N., E.C Milbrandt, and R.W. Castenholz, 2001. Phylogeny of Antarctic oscillarian Cyanobacteria. *Journal of Phycology* 37:650-654.

## PRESENTATIONS

Neafsay, E.J., E.C. Milbrandt 2013. Evaluating mangrove stress in southwest Florida. GIS Symposium of southwest Florida. Rookery Bay NERR, Naples.

Milbrandt, E.C., R.D. Bartleson, A.J. Martignette, J.J. Siwicke, M. Thompson, (**invited**) 2013. Understanding diurnal, tidal and seasonal dynamics of a southwest Florida barrier island ecosystem through a multi-node sensor network. American Society for Limnology and Oceanography, New Orleans.

Jester, R. J.; Milbrandt, E. C. (**invited**) 2013. Scientists for a day: engaging community college students in field research and ecosystem restoration promotes science literacy. American Society for Limnology and Oceanography, New Orleans.

Milbrandt, E.C., R.D. Bartleson, A.J. Martignette, J.J. Siwicke, M. Thompson, (**invited**) 2012. Building and maintaining an autonomous observing network in Southwest Florida. Organization of Biological Field Stations, Archbold Field Station, Venus, FL.

Wertz, T., J. Evans, E. Milbrandt, 2012. Twenty years of restoration by a barrier island partnership in Southwest Florida: successes, lessons learned, and future directions. Restore Americas Estuaries, Tampa, FL.

Wertz, T., J. Evans, E. Milbrandt, 2012. Twenty years of restoration by a barrier island partnership in Southwest Florida: successes, lessons learned, and future directions. INTECOL and International Wetlands Conference, Orlando, FL.

Milbrandt, E.C., G. Foster, R. Grizzle, L.D. Coen, M. Parsons, 2011. Development of a tool for coastal zone managers to assess macroalgal distribution and abundances. Coastal and

Estuarine Research Federation, Daytona Beach, FL.

- Milbrandt, E.C., L.D. Coen, R. Bartleson, M. Parsons, K. Provost. 2011. A Two Year Assessment of Macroalgal Population Dynamics, Distribution and Habitat Characterization around Southwest FL Barrier Islands, with Special Attention to Past Macroalgal Bloom Events. Charlotte Harbor National Estuary Program Summit, Punta Gorda, FL.
- Milbrandt, E.C., S. Lartz, M. Thompson, L.D. Coen. 2011. Shoreline Enhancement of Clam Bayou in Southwest Florida: Combining Mangrove, Oyster reef and Seagrass Restoration. Charlotte Harbor National Estuary Program Summit, Punta Gorda, FL.
- Coen, L.D., Milbrandt, E.C., M. Thompson, H. Downing, S. Lartz. 2011. Restoration of marine habitats in Clam Bayou, a hydrologically restored estuary. Benthic Ecology Meeting, DISL, Mobile, AL.
- Milbrandt, E.C., L.D. Coen, R. Bartleson, A. Rybak, S. Lartz. 2010. Restoration of critical habitats in SW Florida. Restore America's Estuaries, Galveston, TX.
- Milbrandt, E.C., L.D. Coen, R. Grizzle, G. Foster, M. Parsons, B. Klement, A. Rybak. 2009. Determining the habitats and locations for attached and drifting macroalgae in southwest Florida. Coastal and Estuarine Research Federation, Portland, OR.
- Coen L.D., Milbrandt, E.C., A. Martignette, J. Siwicke, A. Rybak, R. Bartleson, M. Thompson. 2009. Monitoring and research of coastal habitats with RECON: River, Estuary, and Coastal Observing Network. Coastal Estuarine Research Federation, Portland, OR.
- Milbrandt, E.C., A.J. Martignette, A.R. Rybak, SCCF's River, Estuary and Coastal Observing Network (RECON) and related water quality research, 2009. Everglades Geological Society, Fort Myers, FL.
- Milbrandt, E.C., L. Coen, R. Bartleson, A. Rybak. 2009. SCCF's River, Estuary and Coastal Observing Network (RECON) and synergies with water quality and SAV research. Charlotte Harbor National Estuary Program Science Forum, FL.
- Milbrandt, E.C., J. Siwicke, 2008, The use of optical properties to predict SAV growth in the Caloosahatchee Estuary. South Florida Water Management District, West Palm Beach, Florida.
- Martignette, A.J., Milbrandt, E.C., J. Siwicke, L. Coen, 2008, Improving Seagrass and Ecosystem Management with High Resolution Water Quality Instrumentation. Everglades Coalition Conference, Captiva, Florida.
- Milbrandt, E.C., J. Greenawalt-Boswell, P. Sokoloff, 2007, Seagrass transplant success linked to sediment bacterial communities. Benedict Symposium, Naples, Florida.
- Milbrandt, E.C., J. Greenawalt-Boswell, P. Sokoloff, 2007. Seagrass transplant success linked to sediment bacterial community composition. Estuarine Research Federation, Providence, Rhode Island.
- Milbrandt, E.C., A.J. Martignette, J. Siwicke, R. Zimmerman, 2007, Improving Seagrass and Ecosystem Management with High Resolution Water Quality Instrumentation. Estuarine Research Federation, Providence, Rhode Island.
- Milbrandt, E.C. (**invited**), 2007, Response of mangrove populations to global climate change in a

- human altered landscape. International Association of Marine Science Libraries and Information Sites. Sarasota, Florida.
- Milbrandt, E.C., K. Cressman, J. Siwicke, R. Alberte, 2007, Land use, cDOM and light attenuation along the river-estuary-ocean interface. Conference on colored dissolved organic matter, Punta Gorda, Florida.
- Milbrandt, E.C., K. Cressman, J. Siwicke, R. Alberte, 2007, Seagrass stress responses resulting from Lake Okeechobee releases and watershed inputs to the Caloosahatchee River-Estuary, American Society for Limnology and Oceanography, Santa Fe, New Mexico.
- Milbrandt, E.C., J.T. Evans, 2006, Hydrological restoration and ecological response in an impounded mangrove lagoon. Ecosystem Restoration and Creation Conference, Plant City, Florida
- Milbrandt, E.C., K. Cressman, J. Siwicke, R. Alberte , 2006, Effects of Lake Okeechobee Releases on the Caloosahatchee Estuary, Greater Everglades Ecosystem Restoration Conference, Orlando, Florida.
- Milbrandt, Greenawalt-Boswell, P. Sokoloff, S. Bortone, 2005, Impact and response of SW Florida hurricanes on mangrove forests, Estuarine Research Federation, Norfolk, Virginia.
- Milbrandt, E.C., 2005, The influence of sediment microbial communities on *Thalassia testudinum* transplants: implications for seagrass restoration, Mote Charlotte Harbor, Sarasota, Florida.
- Milbrandt, E.C., 2005, Factors influencing bacteria community structure in a mangrove-lined estuary, Charlotte Harbor Summit, Punta Gorda, Florida
- Milbrandt, E.C. (**invited**), 2004, Changes in mangrove forests after Hurricane Charley, Wetland Ecology Branch, USGS, Lafayette, Louisiana.
- Milbrandt, E.C. (2004), 2004, Multiple Stressors and effects on mangrove and seagrass communities, Society for Ecotoxicology and Chemistry, Portland Oregon.
- Milbrandt, E.C., 2004, Sediment microbial communities to assess restoration success in mangrove and seagrass habitats, 1<sup>st</sup> National Conference on Ecosystem Restoration, Lake Buena Vista, Florida.
- Milbrandt, E.C., 2004, Bacterial phylotypes, community structure, and variability in Pacific Northwest mudflats, American Society for Limnology and Oceanography, Savannah, Georgia.
- Milbrandt, E.C. (**invited**), 2004, Microbial Ecology of South Slough: community composition of bacteria and patterns of occurrence, University of Florida, Gainesville, Florida.
- Milbrandt, E.C., 2003, Microbial Ecology of South Slough: community composition of bacteria and patterns of occurrence, Oregon Institute of Marine Biology, Charleston, Oregon.
- Milbrandt, E.C., 2003, Genetic diversity of bacteria in restored and mature estuarine sediments. American Society of Limnology and Oceanography, Salt Lake City, Utah.
- Milbrandt, E.C., 2002, Spatial variability and community composition patterns of Bacteria in South Slough Estuary, OR, USA, American Society of Limnology and Oceanography, Victoria, B.C., Canada.

Milbrandt, E.C., 2001, Estimation of Bacteria diversity and community composition at a restoration site and three reference sites in South Slough NERR, American Society for Microbiology, Orlando, Florida.

Milbrandt, E.C., 1997, Phase density of the intertidal red alga *Mazzaella splendens*. Senior Thesis, Humboldt State University.

Milbrandt, E.C., 1996, Sequence and phylogeny of the RUBISCO gene from *Poteroiochromonas malhamensis*. Humboldt State University, Arcata, California.

Milbrandt, 1996, Isolation and cloning of the RUBISCO gene from *Poteroiochromonas malhamensis*. University of Wisconsin-Milwaukee, Milwaukee, Wisconsin.

### **REVIEWING ACTIVITIES**

National Science Foundation, Field Stations and Marine Lab (FSML) Panel Review 2012-2013  
Estuaries and Coasts

Journal of Environmental Management

Limnology & Oceanography

Wetland Ecology and Management

Ecological Indicators

Florida Scientist

Botanica marina

African Journal of Biotechnology

NERR Graduate Fellowship reviewer, FY09

Charlotte Harbor National Estuary Program, Research and Restoration Partners Grant Reviewer, FY08

Charlotte Harbor National Estuary Program, Summit Abstract Review Committee, 2013

Fishery Research Program Proposal Reviewer for the Great Lakes Fishery Commission, FY08

Louisiana Experimental Program to Stimulate Competitive Research (EPSCoR), FY07, FY06

Department of Energy Office of Science Graduate Fellowship program, FY10, FY11, FY12

Environmental Protection Agency External Reviewer (Gulf Breeze, FL), 2011

Texas Sea Grant External Reviewer, 2011

Research Advisory Committee, Rookery Bay National Estuarine Research Reserve, 2012

### **GRADUATE COMMITTEES**

Brad Smith, 2008, Masters of Science, Florida Gulf Coast University

Rachel Harris, 2008, Masters of Science, Florida Gulf Coast University

Falon Cartwright, 2012, Masters of Science, Florida Gulf Coast University

Chris Lechowicz, in progress, Masters of Science, Florida Gulf Coast University

Susan Denham, in progress, Masters of Science, Florida Gulf Coast University

## **PROFESSIONAL RELATED ACTIVITIES**

Serves on the SAML Nominating Committee, 2014-present.

Invited panelist for a discussion of Coastal Algae Blooms organized by Dr. W. Mitch at Naples Botanical Garden with H. Paerl and D. Hay, Naples, FL, 2014.

Member of the Estero Bay Seagrass Protection and Restoration Steering Committee; 2014 to present.

Invited panelist to Our Global Estuary: Strategy for a Science-Based Estuarine Observing, Observation & Prediction Network, Oct. 21-23, 2013.

Invited to LTER/NSF workshop on data management from multi-node sensor networks, Albuquerque, NM, 2013.

City of Sanibel Natural Resources Search Committee for Environmental Specialist.

Designated SCCF representative for Florida Institute of Oceanography (FIO) Council.

Invited participant in NSF Field Stations and Marine Labs (FSML) strategic planning workshop. Pre-workshop conference calls and cross-cutting discussions about Ecosystem Dynamics and the role of FSMLs in the future of science. Workshop held in Denver, CO, Nov. 17-18, 2011.

Chief Scientist on Florida Institute of Oceanography vessel R/V Bellows for a one-day offshore cruise. Led CTD cast, 500 um plankton net tow, ponar sediment samples, and otter trawl. Instructed upper-level oceanography undergraduates and graduate students in techniques, natural history and oceanography of Southwest Florida.

Member of Florida Seagrass Lee County Extension's Advisory Committee with fishing guides, local resource managers and other researchers.

Participated in a workshop on, "Adaptive Management of Estuarine Resources in Anticipation of Climate Change" held at the Restore America's Estuaries conference in Galveston, TX

Chief Scientist on FGCU vessel *SeaHawk* for multi-institution project investigating abundances and distribution of macroalgae, plus collecting samples for other investigators.

Lead author for the benthic offshore sub-model for MARES in SW Florida (Marine and Estuarine Goal Setting for South Florida)

Conducted a national search to fill Research Associate position

Conducted a national search to fill Marine Laboratory Director position

ISUS Quality Assurance Technical Report, Lead Author

Contributed to the Northern Everglades Research and Protection Plan

Alternate member of the CHNEP Technical Advisory Committee

Participant and presenter at SW Florida Seagrass Working Group meetings

Grant Development (submitted 4-6 pre-proposals, 1-2 full proposals per year)

Lectures (presented 8-10 to lay audiences, 4-6 to technical audiences)



Newsletter Articles (provided 10-12 short essays per year on marine science)

Website Development (provided written materials and pictures)

Member of the Coastal and Estuaries Research Federation

Featured in Environmental Monitoring Journal in 2013

**RESEARCH INTERESTS**

Seagrass ecosystem ecology

Sources and sinks of DOM in subtropical coastal areas

Mangrove ecology and restoration, including interactions with shellfish and SAV

Estuarine and nearshore phycology including taxonomy

## **REFERENCES**

Dr. Paula Coble  
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College of Marine Science  
University of South Florida  
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Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute,  
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