

HEATHER E. DEESE

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PROFESSIONAL EXPERIENCE:

Marine Program Director, Island Institute (Rockland, Maine, USA) *11/2009-present*
Lead the Institute's marine programs by designing and implementing projects that respond to coastal and island communities' priorities including: human and environmental dimensions of ocean energy, impacts of climate change on island communities, and marine spatial planning. Actively contribute to and communicate new and emerging information on the ocean and fishing community sustainability. Oversee marine program personnel and budget and work collaboratively across program areas at the Institute.

Independent Marine Science & Policy Consultant (Union, Maine, USA) *10/2003-6/2005*
Provided scientific, policy, and communication advice and services for marine conservation and fisheries.

Northwest Atlantic Marine Alliance (Saco, Maine, USA)
Science Director *8/2003-6/2005*
Designed, acquired funding for, and implemented research on marine ecosystems and fisheries. Nurtured dialogue between scientists, fishermen, local communities, and environmentalists. Developed organizational priorities and relationships with private foundations and scientific funding agencies.

Australian National Oceans Office, Commonwealth Government (Hobart, Tasmania, Australia)
Acting Project Manager - Science *8/2002-5/2003*
Acting Chief Scientist *12/2002-1/2003*
Oceans Planning Officer - Science *7/2001-8/2002*
Designed and managed \$2 Million AUD research program to define bioregions for the Australian EEZ (developed methodology, negotiated and managed contracts for scientific products, managed expert advisory committee, designed communication strategy). Provided in-house expert advice in collaboration with Chief Scientist on use of scientific information for marine spatial planning including: Marine Protected Area design, risk assessment methodologies, and planning for ocean industry.

Oceanographic field and laboratory research *6/1997-5/2007*
Undertook oceanographic research off Antarctica, Australia, the Caribbean, Iceland, and United States. Designed and implemented fluid dynamics experiments at Georgetown University and WHOI.

EDUCATION:

Ph.D. candidate Oceanography, University of Maine *degree expected 12/2009*

- Thesis: "Salinity and Stratification in the Gulf of Maine: 2001-2009".
- Analyzing in situ oceanographic and meteorological data, investigating the processes that control hydrography, developing analysis and visualization tools for extracting discrete events from time series
- Teaching Assistant, graduate level Physical Oceanography course (fall 2005).

M.S. Physical Oceanography, MIT & Woods Hole Oceanographic Institution (WHOI). *1/2001*

- Thesis: "Chaotic Advection and Mixing between a Western Boundary Current and Flanking Horizontal Recirculations: A Laboratory Study." Published in peer-reviewed scientific journal (JPO, v.32, 2002).
- Investigated and co-authored study on internal waves in the Bab al Mandab (JPO v.30, 2000).

B.S. Physics, Minor: English, Georgetown University, *Magna Cum Laude, Phi Beta Kappa* *6/1998*

SELECTED PUBLICATIONS:

- K. Beard, H.E. Deese, N.R. Pettigrew. "A Framework for Visualization and Exploration of Events." *Information Visualization* (2008) 7, 133–151. doi:10.1057/palgrave.ivs.9500165
- N.R. Pettigrew, C.S. Roessler, F.Neville, H.E. Deese. "An Operational Real-Time Ocean Sensor Network in the Gulf of Maine". In *Proceedings Geosensor Networks (GSN'06)*, ed. S. Nittel, A. Labrinidis, A. Stefanidis. Springer-Verlag. Boston, USA, October 1-3, 2006.
- H.E. Deese, L.J. Pratt, K.R. Helfrich, "A Laboratory Model of Exchange and Mixing between Western Boundary Layers and Sub-Basin Recirculation Gyres." *Journal of Physical Oceanography* v. 32 June 2002, p. 1870-1889
- L.J. Pratt, H.E. Deese, S.P. Murray, and W. Johns, "Continuous Dynamical Modes of Straits having Arbitrary Cross-Sections with Application to the Bab al Mandab." *Journal of Physical Oceanography* v.30 October 2000, p. 2515-2534

SELECTED PRESENTATIONS:

- H. Deese, "Climate Change in the Gulf of Maine: Anticipate Physical Changes in the Marine Environment". Maine Coastal Waters Conference. November 2009 (invited)
- H. Deese, N.R. Pettigrew, K. Beard, "Seasonal and Inter-annual Variability in Stratification in the Gulf of Maine: Salinity and Temperature Contributions and Climatic Forcing". American Geophysical Union (AGU). December 2008.
- H. Deese, "Climate Variability in the Gulf of Maine - changes in temperature, salinity, and stratification 1924-3006", University of Maine Climate Change 21 conference, October 2008.
- H. Deese, K. Beard, N.R. Pettigrew, "An Event Based Approach for Ocean Observing Data: A Case Study on Stratification Processes in the Gulf of Maine". *Ocean Sciences*. March, 2008.
- H. Deese, N.R. Pettigrew, and K. Beard, "Event-Oriented Analysis of Ocean Observing System Data: Insights Into Annual and Interannual Change in the Gulf of Maine" (poster). AGU. December 2006.
- H. Deese, "Australia's Oceans Policy and Regional Marine planning". Gulf of Maine conference on U.S. Oceans Commissions reports. March 2004 (invited).
- H. E. Deese and L.J. Pratt, "Chaotic Transport in a Laboratory Model of a Deep Western Boundary Current" (poster). AGU. December 2000.
- H. E. Deese, L.J. Pratt, S.P. Murray, and W. Johns, "Continuous Dynamical Modes in the Bab al Mandab and their Hydraulic Interpretation". *International Union of Geology and Geophysics*. July 1999.

RESEARCH EXPERIENCE

- Watch leader, CTD operator, and volunteer scientist on research cruises on R/V Knorr, RRS Discovery, Marion Dufresne, L'Astrolabe, R/V Endeavor, R/V Argo, total of ~ 22 weeks at sea, 2000-2007.
- Graduate Research Assistant, University of Maine, Physical Oceanography Group, 2005-present.
- Graduate Research Assistant, (1998-2000) & Summer fellow (1998), WHOI, Physical Oceanography.
- Undergraduate Research Assistant, Georgetown University, Fluid Dynamics Laboratory, 1997-1998.

AWARDS:

- 2008-2009 University of Maine Graduate Dissertation Research Fellowship
- 1999-2000 National Defense Science and Engineering Graduate Fellowship
- 1996-1998 Clare Boothe Luce Fellowship (for study of physics)
- 1998 Traedo award (Georgetown University undergraduate physics award)

PROFESSIONAL ASSOCIATIONS and SERVICE:

- American Geophysical Union, Member 1998-2001, 2005-present
- Maine Bay Management Steering Committee, 2004-2006
- Island Institute' project, Climate Change and the Lobster Fishery, Scientific Advisory Committee, 2007