

**PAUL J. HEARTY, PH.D.**  
***Scientist, Educator, and Environmental Consultant***

**CONTACT INFORMATION:**

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Current residence: Wilmington, NC 28403

**SCOPE OF EXPERIENCE**

Hearty has a diverse scientific background in the natural sciences, with specialization in coastal processes involving sedimentology, paleoenvironmental reconstruction, and ecology. He has extensive experience in environmental consulting for governmental and private organizations, and has supervised a spectrum of projects over the past decades.

**ACADEMIC HISTORY:**

B.A. (Human and Cultural Geography) AND M.Sc. 1978 (Geography and Geomorphology): Department of Geography. University of Nebraska Omaha, Nebraska. M.Sc. Thesis topic: *“The biogeography and geomorphology of the Niobrara River Valley, Nebraska.”*

**PH.D. DEGREE:** 1987 Institute of Arctic and Alpine Research (INSTAAR) and Department of Geology, University of Colorado, Boulder. PhD Thesis: *“Age and Aminostratigraphy of Quaternary shoreline deposits in the Mediterranean basin”*.

**EMPLOYMENT OBJECTIVES:**

To be employed by Federal, State, or private organizations or consulting companies in the area of coastal and island geology and/or ecology. Hearty is well qualified to initiate, plan, implement, and supervise projects in the interdisciplinary realm of the shoreline including sediment transport and erosion, groundwater, pollution, and conservation.

**ACADEMIC AND CONSULTING HISTORY:**

- Research Associate Professor and Adjunct RAP, Department of Environmental Studies, University of North Carolina at Wilmington, Aug 2008 - present.
- Consultant for Village of Bald Head Island on barrier island dynamics and conservation, groundwater development, and wetland protection. Director of Conservation, Bald Head Island Conservancy (1 yr contract 8/2008- 7/2009).
- Associate Professor and Principal Fellow, School of Earth and Environmental Sciences, University of Wollongong, NSW 2522, Australia, 2005-2009.
- Lecturer in Marine Sciences, School of Earth Sciences, James Cook University, Queensland, Australia 2001- 2005.
- Director, Ainakai Environmental Consulting, Kaua’i, Hawaii USA, 1998-2000.
- Co-Director, EnviroLogic Environmental, Inc. Consultant, Government and private coastal development (buildings, roads, groundwater pollution-remediation) in the Bahama Islands, 1992-1998.
- Assistant Professor, College of the Bahamas, 1992-1994.
- Assistant Professor (post-doc), University of South Florida, 1990 to 1992.

- Assistant Professor (post-doc), Duke University, July 1988-August 1990. (Holocene Climate Change, African Rift Valley Lakes, East Africa).
- Environmental Consultant and Research Geologist, ENEA Rome. (Nuclear Energy Commission, 1982-1989. Earthquake hazard/risk of nuclear plants in coastal areas).

**AWARDS AND FELLOWSHIPS:**

- Secretary's Research Prize, Smithsonian Institution, Jan 2011.
- Nomination for the Mawson Medal, Australian Academy of Sciences, 2005.
- Queensland-Smithsonian Fellowship, 2001-2003.
- Bermuda Biodiversity Project Grant (Bermuda Gov.) to reexamine fossil material from Eldredge and Gould's (1972) theory of "punctuated equilibrium", 1998.
- Bradley Fellow, Duke University: Rift Valley Lakes, 1988-1990.
- American Chemical Society, Petroleum Research Fund, Type "G", 1989.
- Sigma Xi, The Scientific Research Society Grant, 1982; 1983.
- National Science Foundation Doctoral Dissertation Fellowship, 1982.
- American Association of Petroleum Geologists Scholarship, 1983; 1984.
- Exxon Corporation Scholarship, 1981.
- Geology Development Foundation Grant, University of Colorado, 1980.
- Fulbright-Hayes Fellowship (Afghanistan), 1976-1977.

**INVITED SPEAKER/SCIENTIFIC VENUES:**

- North Carolina Museum of Natural Sciences, December 6, 2010.
- Academy of Natural Sciences of Philadelphia, September 2010.
- Invited speaker, US Geological Survey, Reston VA. 26 August 2009.
- Invited speaker, PALSEA workshop, Woods Hole Oceanographic Institute, Sept. 2009.
- Invited speaker, American Geophysical Union, Fall Meeting 2005, San Francisco. Session (PP03): "Plio- Pleistocene Extreme Warm Events (Warnke, Burckle, and Scherrer, Ldrs).
- Invited speaker, Smithsonian Institution, Zoology Division, Washington D.C., 2005.
- Keynote Speaker, Climate and Coastal Change Conference, Honolulu, HI, 1999, "Warm interglaciations, abrupt environmental change, and the Antarctic "Wild Card".
- Invited Speaker, American Geophysical Union, Fall Meeting, SF, CA 1999.
- SEPM/IAS Geological Conference, Wildhaus, Switzerland, 1996.
- Geographisches Institut, University of Cologne, Germany, 1996.
- Institut de Géologie, Université de Fribourg, Switzerland, 1991.
- Dept. de Géologie et Paléontologie, Université de Genève, Switzerland, 1991.
- ENEA, Energy and Environmental Dept., Italian Gov., Rome, Italy, 1991.
- SOEST Lecturer, Department of Oceanography, University of Hawaii, 1991.
- University College of Wales, Earth Sciences Department, 1990.
- Weizmann Institute, Rehovot, Israel, 1989.
- Duke University, Geology Department, 1989.

- University of London, Department of Geography, 1987.
- GSA Penrose Conference on Sea Level, St. Georges, Bermuda, 1987.
- University of Cagliari, Sardinia, 1986.
- Université de Liège, Belgique, Études Quaternarie, 1985.
- Université de Paris XII, Département de Géographie, 1985.

**INTERNATIONAL TRAVEL AND LANGUAGE:**

I have traveled to seven continents and published science and natural history articles related to six of them. I have led research and tourist expeditions in USA, Asia, Europe, Africa, Antarctica, and Australia. When in practice, I am conversational in French, Spanish and Italian, and have a good working knowledge of German and Latin.

**OTHER PROFESSIONAL SKILLS AND QUALIFICATIONS:**

- Nearly 10,000 hours of boat operation and crewing on seagoing vessels ranging from Zodiacs, 25 m SuperCat with 2x 160 hp diesel engines, and 75-100 m ice rated research vessels.
- Skilled at all aspects of computer operation, software, and skills including writing, graphics (PowerPoint, Corel Draw, Adobe Photoshop, Canvas).
- Professional photographer: long history of publications in professional journals, periodicals, and magazines (examples provided upon request).
- Power Point presentations on a variety of academic, tourism, and natural history subjects are available.
- Several thousand digital images of corals, birds, and exotic places around the world.
- Certified Advanced PADI SCUBA diver
- Certified Ocean Rescue
- Queensland (Australia) boat operator's license
- Queensland driver's license
- North Carolina driver's license

**PUBLICATIONS:** Hearty has published over 100 scholarly papers in high-impact, internationally recognized journals as well as dozens of human-interest articles in a variety of literary venues. Most of these papers are available in PDF format upon request. A selection of 12 of the more significant papers are referenced below.

Hearty, P.J., and Olson, S.L., 2011. Preservation of trace fossils and molds of terrestrial biota by intense storms in mid Last Interglacial (MIS 5c) dunes on Bermuda, with a model for the development of hydrological conduits. *Palaios* 2011.

Hearty, P.J. and Olson, S.L., 2010. Geochronology, biostratigraphy, and changing shell morphology in the land snail subgenus *Poecilozonites* during the Quaternary of Bermuda. *Palaeogeography Palaeoclimatology Palaeoecology*; 293, 9–29; doi:10.1016/j.palaeo. 2010.04.026.

Hearty, P.J., and Kaufman, D.S., 2009. A high-resolution chronostratigraphy for the central Bahama Islands based on AMS <sup>14</sup>C ages and amino acid ratios in whole-rock and *Cerion* land snails. *Quaternary Geochronology* 4, 148-159.

- Hearty, P.J., Webster, J., Clague, D.A., Kaufman, D.S., Bright, J., and Renema, W., 2010. A pulse of ooid formation in Maui Nui (Hawaiian Islands) during Termination I. *Marine Geology*, 268, 152–162. doi:10.1016/j.margeo.2009.11.007.
- Hearty, P.J., Hollin, J.T., Neumann, A.C., O’Leary, M.J., and McCulloch, M., 2007. Global sea-level fluctuations during the last interglaciation (MIS 5e). *Quaternary Science Reviews*, v. 26, p. 2090-2112.
- Hearty, P.J., James, H., and Olson, S.L., 2005. The geological context of paleo-lakes and Pleistocene birds at Ulupau Head, O’ahu, Hawaiian Islands. Pages 113-128, in J. A. Alcover and P. Bover, eds. *Insular Vertebrate Evolution: the Palaeontological Approach. Monografies de la Societat d’Història Natural de les Balears*. September 2003, Mallorca, Spain. 390 pp.
- Hearty, P.J., Olson, S.L., Kaufman, D.S., Edwards, R.L., and Cheng, H., 2004. Stratigraphy and geochronology of pitfall accumulations in caves and fissures, Bermuda. *Quaternary Science Reviews* 23, 1151-1171.
- Olson, S., and Hearty, P.J., 2003. Probable extirpation of a middle Pleistocene breeding colony of Short-tailed Albatross (*Phoebastria albatrus*) on Bermuda by a +20 m interglacial sea-level rise. *Proceedings of the National Academy of Sciences* 100:(22)12825-12829.
- Hearty, P.J., and Kaufman, D.S., 2000. Whole-Rock Aminostratigraphy and Quaternary Sea-Level History of the Bahamas *Quaternary Research*, 54, 163-173.
- Hearty, P.J., 1997. Boulder deposits from large waves during the last interglaciation at North Eleuthera, Bahamas. *Quaternary Research* 48(3): 325-337.
- Hearty, P.J., Vacher, H.L., and Mitterer, R.M., 1992. Age and Aminostratigraphy of Pleistocene Limestones in Bermuda. *Geological Society of America Bulletin* 104(4): 471-480.
- Hearty, P.J., Miller, G.H., Stearns, C., and Szabo, B.J., 1986. Aminostratigraphy of Quaternary shorelines around the Mediterranean basin. *Geological Society of America Bulletin* 97: 850-858.

#### **REVIEWER FOR SCHOLARLY JOURNALS AND SCIENTIFIC FUNDING ORGANIZATIONS**

Hearty is a regular reviewer for over 20 professional, international journals and funding agencies.

#### **EDUCATION AND OUTREACH: SCIENCE FOR PUBLIC CONSUMPTION**

- Elderhostel educator and guide, Antarctica 1993-1995
- Shipboard and Expedition Scientist (Antarctica (26 return voyages), South Georgia, Malvinas, South Pacific Islands, Papua New Guinea, South and North Atlantic Islands, Newfoundland), 1992-2000, 2010.
- Children’s science tutor, Nassau Bahamas, 1992-1997
- Field trip leader, Great Barrier Reef Australia, 2000-2005
- Presentations of Scientific Material in Public Venues
  - Bahamas Historical Society, 1992.
  - Bahamas National Trust, 1993.
  - Bermuda Undersea Exploration Institute (BUEI), Bermuda, 2005.
  - Reef HQ, Townsville, Queensland, 2007

- “Antarctica” at Kirwan Elementary School, Townsville, Queensland, 2007
- Bald Head Island Conservancy, numerous public lectures on barrier island geology and processes, 2008-2009.
- Daufuskie Island Conservancy, Hilton Head, SC 2008-2009.
- Kid’s Geology, Childcare Network, 41<sup>st</sup> St. Wilmington, 2009
- Kid’s Geology, Alderman Elementary School, Wilmington, 2010

**REFERENCES:**

*Personal and professional references are available upon request.*