

Curriculum Vitae

Patrick D. Biber, Ph.D.

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EDUCATION:

Post-doctoral Researcher - Institute of Marine Sciences, Univ. of North Carolina at Chapel Hill, 2002-present. Seagrass and Estuarine Ecology. Mentors: Hans W. Paerl, W. Judson Kenworthy.

Ph.D. Degree - Rosenstiel School of Marine and Atmospheric Science, Univ. of Miami, Coral Gables, FL, 2002. Marine Biology and Fisheries. Dissertation: "The Effects of Environmental Stressors on the Dynamics of Three Functional Groups of Algae in *Thalassia testudinum* Habitats of Biscayne Bay, Florida: A Modeling Approach". Advisor: Mark A. Harwell.

B.Sc. (Hons) Degree - Univ. of Queensland, Brisbane, Australia, 1993. Zoology / Marine Biology. Thesis: "Polyphenols in Tropical Brown Algae". Advisor: Craig R. Johnson.

PROFESSIONAL EXPERIENCE:

- **Jul. 2002-present:** Post-doctoral Researcher at Institute of Marine Science, University of North Carolina. Lead Researcher on EPA STAR funded ACE-INC seagrass indicators project: Duties include project design, data collection, and analysis; synthesis of results and dissemination through presentations and publications; supervision of interns and managing data between multiple collaborating labs; grant writing.
- **Aug. 1994-Jun. 2002:** Research Assistant at Rosenstiel School of Marine and Atmospheric Science, University of Miami, projects included:
 1. Characterization of Ecological Risks to Biscayne Bay, FL. Duties included literature searches and database construction for simulation models, aid in construction and maintenance of micro- and mesocosm facilities, assistance in field surveying, sampling and monitoring programs.
 2. Coral and soft coral surveys in Biscayne Bay and Fla. Keys. Support diver for long term population modeling project, some experimental work in mesocosms.
 3. Comparative Ecological Risk Assessment project evaluating ecological risks of a potential fuel oil, Orimulsion. Duties included co-ordination of project with P.I. and other research assistants, maintenance of mangrove plants, data collection and analysis, writing progress reports and publications.
 4. Teaching Assistant for Mangrove Ecology (graduate course). Developed and taught a short course "Intro. to Phycology" for NSF sponsored summer internship program.
 5. Operation and maintenance of automated nutrient analyzers - FISIONS CNO and Bran+Luebbe TRAACS 2000.
- **Nov. 1993:** Research Assistant on ENCORE Project, Great Barrier Reef, Australia. Duties included field work, data collection, and marine plant species identification.

- **Aug. 1993–Nov. 1993:** Teaching Assistant at Univ. Queensland Zoology Dep't – Intro to Vertebrate Anatomy Lab, Intro to Marine Ecology – Field Course.
- **Nov. 1991-Feb. 1992:** Intern at Ciba-Geigy (Novartis), Basel, Switzerland. Pilot study into effects of a new pesticide on the lepidopteran cotton-pest *Heliothis* spp. Duties included experimental design, implementation, data analysis, and final report.

SYNERGISTIC ACTIVITIES:

Reviewer for Aq. Ecol., Bull. Mar. Sci., Coral Reefs, J. Exp. Mar. Biol. Ecol., L&O, Mar. Poll. Bull., MASGC.

Session Co-Chair, Seagrass Workshop, Restore Americas Estuaries, Baltimore MD, April 2003.

Volunteer Scientist, Duke Marine Lab Sea-Turtle Farm, Fall 2002.

Treasurer, OZNZSO Club. Maintain club finances, organize fund-raising activities, 2000-2001.

Vice President, Univ. of Miami SCUBA Organization, 1997-1998

AWARDS:

Founders Fellowship for Academic Excellence (2001)

Astronaut Trail Shell Club Research Award (1999)

Bader Memorial Student Research Fund (1998)

MBF Student Research Awards (1996-97)

INTERNS MENTORED IN PAST YEAR:

Ryan McQuinn (Senior - Keuka College, NY)

Theresa Denault (Senior – West Carteret High, NC)

ADDITIONAL USEFUL SKILLS:

- Language skills: fluent in German and French, and knowledge of Spanish
- Computer skills: both Windows and Macintosh literate. Working knowledge of Microsoft Office, ArcGIS, Stella, JMP, Surfer, SAS; some MATLAB, Pascal, C++, and VBasic experience.
- Dep't of Interior Motorboat Operator Certification Course. Small boating skills in near-shore, marsh, and coral reef habitats
- AAUS certified SCUBA diver, NAUI Master and Rescue Diver ratings, approx. 450 dives logged. Research diving experience in coral reef diving, night diving, current and drift dives, deep dives (max. depth 45m/140ft), boat and shore dives. Nitrox certified.

SELECTED PUBLICATIONS:

- Biber, P.D.**, H.W. Paerl, C.L. Gallegos, W.J. Kenworthy, and M.S. Fonseca. (in review). Evaluating indicators of seagrass stress to light limitation in North Carolina. In S.A. Bortone (ed). Proceedings of Estuarine Indicators Workshop, Sanibel, FL. Oct 29-31, 2003.
- Irlandi, E.A., B.A. Orlando, and **P.D. Biber**. (in review). Drift Algae-Epiphyte-Seagrass Interactions: Potential Positive Impacts of Drift Algae on Seagrass. Mar. Ecol. Progr. Ser.
- Biber, P.D.**, M.A. Harwell, and W. P. Cropper, Jr. 2003. Modeling the dynamics of three functional groups of macroalgae in tropical seagrass habitats. Ecological Modeling (in press).
- Lirman, D., B. Orlando, S. Macia, D. Manzello, L. Kaufman, **P. Biber**, and T. Jones 2003. Coral communities of Biscayne Bay, Florida and adjacent offshore areas: Diversity, abundance, distribution, and environmental correlates. Aquatic Conservation 13:121-135.
- Biber, P.D.** 2002. The Effects of Environmental Stressors on the Dynamics of Three Functional Groups of Algae in *Thalassia testudinum* Habitats of Biscayne Bay, Florida: A Modeling Approach. Ph.D. Dissertation, University of Miami, Coral Gables, FL. 367p.
- Irlandi, E.A., B. Orlando, S. Macia, **P. Biber**, T. Jones, L. Kaufman, D. Lirman, and E. T. Patterson. 2001. The influence of freshwater runoff on biomass, morphometrics, and production of *Thalassia testudinum*. Aquatic Botany 72:67-78.
- Snedaker, S.C., S.M. Smith, **P.D. Biber** and R.J. Araujo. 2001. Comparative effects of Orimulsion and Fuel Oil No. 6 on floating and stranded propagules, and established seedlings of *Rhizophora mangle* L. Mangrove Ecosystems: Natural Distribution, Biology and Management. Edited by Narajana R. Bhat, Faisal K. Taha and Afaf Y. Al-Nasser. Kuwait Institute for Scientific Research.
- Lirman, D. and **P.D. Biber**. 2000. Seasonal dynamics of macroalgal communities of the Northern Florida Reef Tract. Botanica Marina 43: 305-314.
- Snedaker, S.C., **P.D. Biber** and R.J. Araujo. 1997. Oil spills and mangroves: an overview. Pages 1-18 in C.E. Proffitt (ed.) Managing Oil Spills in Mangrove Ecosystems: Effects, Remediation, Restoration and Modeling. OCS MMS 97-0003. US Dept of the Interior. Minerals Management Service, Washington, DC.
- Snedaker, S.C. and **P.D. Biber** 1996. Restoration of mangroves in the United States of America: a case study in Florida. Pages 170-188 in C.D. Field (ed) Restoration of Mangrove Ecosystems. ISME, Okinawa, Japan.

RECENT PRESENTATIONS:

- Biber, P.D.**, H.W. Paerl, C.L. Gallegos, W.J. Kenworthy, and M.S. Fonseca. 2003. Evaluating Indicators Of Seagrass Stress To Light Limitation. Abstract-Estuarine Indicators Workshop, Sanibel Captiva Conservation Foundation, Sanibel, Florida.
- Biber, P.D.**, H.W. Paerl, W.J. Kenworthy, M.S. Fonseca, and C.L. Gallegos. 2003. Linking water quality to SAV health: indicators of estuarine condition. Abstract-ERF 17th Biennial Conference, Seattle, Washington.
- Biber, P.D.**, H.W. Paerl, W.J. Kenworthy, and M.S. Fonseca. 2003. Linking water quality and SAV health: the NC perspective. Abstract-Restore Americas Estuaries, Baltimore MD.
- Biber, P.D.** 2003. Linking water quality and SAV health. Abstract-Water Resources Research Institute, NCSU, Raleigh NC.
- Biber, P.D.** 2002. Using tropical macroalgae as indicators of environmental stress in seagrass habitats. 31st Annual Benthic Ecology Meeting, Orlando, Florida (Poster).