

Martin T. O'Connell

Current Position

Director - Nekton Research Laboratory
Pontchartrain Institute for Environmental Sciences
and
Assistant Professor - Department of Earth and Environmental Sciences
University of New Orleans
New Orleans, LA 70148

Personal Data

Birth date: 9 February 1966; Stamford, Connecticut Family Status: Married

Education

B.Sc. (1988) Siena College, Loudonville, NY
M.Sc. (1991) Virginia Polytechnic Institute and State University
Ph.D. (2000) University of Southern Mississippi

Recent Professional Experience

- Assistant Professor – Department of Earth and Environmental Sciences (2006 - present)
- Director - Nekton Research Laboratory, Pontchartrain Institute for Environ. Sciences (present)
- Post-Doctoral Researcher - University of New Orleans (June 2000 - May 2003)
- Instructor and Teaching Asst. - University of Southern Mississippi (Sept.1994 - June 2000)
- Curatorial Associate - Mississippi Museum of Natural Sciences (May 1996 - June 2000)
- Research Assistant - University of Southern Mississippi (August 1993 - September 1994)

Courses Taught

- Introduction to Environmental Sciences (undergraduate level) - Univ. New Orleans
- Connectivity in Aquatic Environments (online undergraduate course) - Univ. New Orleans
- Fisheries Administration: Ecological Approaches (undergraduate level) - Univ. New Orleans
- Biology of Fishes Lecture (graduate and undergraduate level) - Univ. New Orleans
- Biology of Fishes Laboratory (graduate and undergraduate level) - Univ. New Orleans
- Independent Research in Biological Sciences (undergraduate level) - Univ. New Orleans
- Animal Behavior Laboratory (graduate and undergraduate level) - Univ. Southern Mississippi
- Freshwater Biology Lecture (graduate and undergraduate level) - Univ. Southern Mississippi
- Freshwater Biology Laboratory (graduate and undergraduate level) - Univ. Southern Miss.
- Ichthyology Laboratory (graduate and undergraduate level) - Univ. Southern Mississippi
- Populations & Communities Lab (graduate and undergraduate level) - Univ. Southern Miss.

Professional Membership

- American Fisheries Society
- American Society of Ichthyologists and Herpetologists
- Association of Southeastern Biologists
- Ecological Society of America
- Society for Conservation Biology
- Southeastern Fishes Council
- Southeastern Louisiana Ecology and Evolutionary Biology Group
- Estuarine Research Federation

Reviewing Activities

- Copeia
- Environmental Biology of Fishes
- Transactions of the American Fisheries Society
- American Fisheries Society, Book Chapter Review
- Southeastern Fishes Council, Book Review
- Southeastern Naturalist
- Ecology
- Gulf and Caribbean Research
- Gulf of Mexico Science
- Estuaries

Skills and Technical Training

- Collection and identification of freshwater fishes, freshwater insects, and freshwater mussels
- Collection, transfer, treatment, and laboratory maintenance of fishes
- Curation of fishes including data base management, specimen maintenance, and loan processing
- Collection of fish blood for serological analysis
- Spatial and land-use analyses (including digitizing and ground-proofing with GPS)
- Operation and maintenance of hydrological data loggers including retrieval and analysis of data
- Operation and maintenance of fish electro-shocking equipment
- Trained as a writing tutor and worked at a university-level writing center
- Water quality analyses: operation of dissolved oxygen, salinity, and current velocity meters
- Software experience: ArcInfo, ArcView, ArcExplorer, BlackBoard, CANOCO, Dbase, EcoSim, JMP, Matlab, MSAccess, MSEXcel, MSWord, MSPowerPoint, MVSP, Primer, QuattroPro, SAS, and SPSS
- Completed USEPA training programs in Quality Assurance Management, Data Quality Objectives, and Quality Management Plans/Quality Assurance Project Plans (December 2002)

Awards and Grants

- Assessing nearshore nursery habitats for rare fishes and other nekton species at the Chandeleur Islands: are restored habitats as good as natural habitats? M. T. O'Connell and A.M. Uzee-O'Connell. \$86,433. National Oceanic and Atmospheric Administration (October 2005).
- Determining essential habitat for larval and juvenile blue crabs (*Callinectes sapidus*) using remote sensing and satellite data. L. A. Lyncker (student awardee) and M.T. O'Connell (advisor). \$24,000. National Aeronautics and Space Administration (July 2005).
- Asian Carp in the Mississippi River: Their impact on native fish species and predicted dispersal within the system. V.A. Barko, M.T. O'Connell, and J.H. Chick. \$36,662. United States Geological Service (January 2005).
- Analysis of spotted seatrout (*Cynoscion nebulosus*) feeding habits within Louisiana Bay Systems. M.T. O'Connell and Jason P. Turner. \$122,379. Louisiana Department of Wildlife and Fisheries (November 2004).
- A survey for aquatic organisms of Lake Pontchartrain. M.T. O'Connell. \$285,026 (two years). Louisiana Department of Wildlife and Fisheries (September 2004).

- Development and implementation of a comprehensive plan for mercury in the Lake Pontchartrain Estuary. M.T. O'Connell. \$91,924 (sub-contract to Tulane University). National Oceanic and Atmospheric Administration (October 2004).
- Quantifying the importance of Chandeleur Islands and Biloxi Marsh marine habitats to commercial and recreational fishery productivity in Lake Pontchartrain (Year 2). M.T. O'Connell and Jason P. Turner. \$109,000. National Oceanic and Atmospheric Administration (October 2004).
- Quantifying the importance of Chandeleur Islands and Biloxi Marsh marine habitats to commercial and recreational fishery productivity in Lake Pontchartrain. M.T. O'Connell. \$125,603. National Oceanic and Atmospheric Administration (October 2003).
- Total mercury, methylmercury, and other toxic metals in the Lake Pontchartrain Basin W.H. Patrick and M.T. O'Connell. \$85,648 (sub-contract to LSU). National Oceanic and Atmospheric Administration (October 2003).
- Movement and population expansion of an exotic cichlid along an artificial corridor: active travel or advection of "waif" individuals? M.T. O'Connell. \$700. Jordan Endowment Award, American Cichlid Association (August 2002).
- Sustainability and health of recreational and commercial fish species in the Lake Pontchartrain Basin. M.T. O'Connell and R.C. Cashner. \$82,370. National Oceanic and Atmospheric Administration (May 2002).
- Southeastern Division, American Society of Ichthyologists and Herpetologists Award for Student Presentation in Ichthyology. M.T. O'Connell. 1998 Annual Meeting of the Association of Southeastern Biologists, Monroe, Louisiana.
- Survey for the blackmouth shiner (*Notropis melanostomus*) in the Upper Pascagoula River Drainage, Mississippi. Ross, S.T. and M.T. O'Connell. \$2500. Mississippi Department of Wildlife, Fisheries, and Parks (May 1995).

Selected Publications

- O'Connell, M.T. with R.C. Cashner and C.S. Schieble. *in press*. Fish assemblage instability and hydrologic influences in Lake Pontchartrain, Louisiana (USA), a degraded oligohaline estuary. Book chapter in *Coastal Environment and Water Quality* (ISBN #1-887201-47-5).
- Barko, V.A. with D. P. Herzog and M.T. O'Connell. 2006. Response of fishes to re-established floodplain connectivity along a temperate North American River. *Wetlands* 26 (1).
- O'Connell, M.T. with C.D. Franze, E.A. Spalding, and M.A. Poirrier. 2005. Biological Resources of the Louisiana Coast: Part 2. Coastal Animals and Habitat Associations. *Journal of Coastal Research* 44: 146-161.
- O'Connell, M.T. with A.M.U. O'Connell and J. D. Williams. 2005. Assessment of rarity of the blackmouth shiner *Notropis melanostomus* (Cyprinidae) based on museum and recent survey data. *Southeastern Naturalist* 4(2): 246-260.
- Chávez-López, R., with J. Franco-López, A. Morán-Silva, and M.T. O'Connell. 2005. Long-term fish assemblage dynamics of the Alvarado Lagoon Estuary, Veracruz, Mexico. *Gulf and Caribbean Research* 17: 145-156.
- O'Connell, M.T. with R.C. Cashner and C.S. Schieble. 2004. Fish assemblage stability over fifty years in the Lake Pontchartrain Estuary; comparisons among habitats using Canonical Correspondence Analysis. *Estuaries* 27(5): 807-817.
- O'Connell, M.T. 2003. The direct exploitation of prey on an inundated floodplain by cherryfin

- shiners, (*Lythrurus roseipinnis*) in a low order, blackwater stream. *Copeia* 2003 (3): 635–645.
- O’Connell, M.T. with R.C. Cashner and G.N. Fuentes. 2002. Application of a diffusion model to describe a recent invasion; observations and insights concerning early stages of expansion for the introduced Rio Grande cichlid, *Cichlasoma cyanoguttatum*, in southeastern Louisiana. *Aquatic Invaders* 13 (4): 13-21.
- O’Connell, M.T. 2002. Dangerous Wildlife in the Southeast: A Guide to Safe Encounters at Home and in the Wild, by F. Lynn Bachleda - Book Review. *Southeastern Fishes Council Proceedings* 43:20.
- Ross, S.T. with M.T. O’Connell, D.M. Patrick, C.A. Latorre, W.T. Slack, J.G. Knight, and S.D. Wilkins. 2001. Stream erosion and densities of *Etheostoma rubrum* (Percidae) and Associated riffle-inhabiting fishes – biotic stability on a variable habitat template. *Copeia* 2001 (4): 916-927.
- Ross, S.T. with W.M. Brenneman, W.T. Slack, M.T. O’Connell, and T.L. Peterson. 2001. *The Inland Fishes of Mississippi*. University Press of Mississippi. 624 pp.
- O’Connell, M.T. and R.C. Cashner. 2000. Drought conditions attract rare visitors in Lake Pontchartrain. *Lake Pontchartrain Basin Foundation Bulletin* 10 (2): 1-3.
- O’Connell, M.T. and R.J. Neves. 1999. Evidence of immunological responses by a host fish (*Ambloplites rupestris*) and two non-host fishes (*Cyprinus carpio* and *Carassius auratus*) to glochidia of a freshwater mussel (*Villosa iris*). *Journal of Freshwater Ecology* 14 (1): 71-78.
- O’Connell, M.T. with S.T. Ross, J.A. Ewing, and W.T. Slack. 1998. Distribution and habitat affinities of the blackmouth shiner (*Notropis melanostomus*) in Mississippi, including eight newly discovered localities in the Upper Pascagoula River Drainage. *Southeastern Fishes Council Proceedings* 36: 1-6.
- Slack, W.T. and M.T. O’Connell. 1998. Design for a portable, modular stream enclosure / enclosure device. *Journal of Freshwater Ecology* 13 (2): 193-206.
- Slack, W.T. with M.T. O’Connell, T. L. Peterson, J. A. Ewing and S.T. Ross. 1996. Ichthyofaunal and habitat associations of disjunct populations of southern redbelly dace, *Phoxinus erythrogaster* (Teleostei: Cyprinidae) in Mississippi. *American Midland Naturalist* 137 (2): 251-265.

Invited Seminars

- O’Connell, M.T. and O.T. Lorenz. 2006. Response of an invasive fish, the Rio Grande cichlid (*Herichthys cyanoguttatus*), to the impacts of hurricanes Katrina and Rita. Presentation for the Louisiana Aquatic Invasive Species Task Force, 7 March 2006, Baton Rouge, Louisiana.
- O’Connell, M.T. 2005. Freshwater invasive fishes in estuarine habitats. Symposium on Coastal Invasive Species: Impacts, Management and the Role of Modified Habitats. 18th International Conference of the Estuarine Research Federation, 19 October 2005, Norfolk, Virginia.
- O’Connell, M.T. 2005. Invasive fishes of southeastern Louisiana. Barataria-Terrebonne National Estuary Program Invasive Species Workshop, 17 April 2005, Algiers, Louisiana.
- O’Connell, M.T. 2004. Past, current, and future ecological research at UNO's Pontchartrain Institute for Environmental Sciences. Department of Biological Sciences Seminar Series, University of New Orleans.
- O’Connell, M.T. 2004. Saving the World with Fish Collection Data: evaluating long-term

- assemblage changes, modeling the expansion of invasive species, and assessing conservation status of rare fishes. Invited Seminar, Arkansas State University.
- O'Connell, M.T. 2003. An update on introduced fishes in Louisiana and the threat of invasional meltdown. Invited Plenary Seminar, Environmental State of the State Meeting VIII, University of New Orleans, 10 October 2003, New Orleans.
- O'Connell, M.T. 2003. The role of large river fish species in the spatial and temporal dynamics of estuarine fish assemblages. Invited Seminar, Fifth Bennett Symposium, 25 May 2003, University of Southern Mississippi, Hattiesburg.
- O'Connell, M.T. 2003. O cichlid, where art thou? An update on the distribution of the introduced Rio Grande cichlid, *Cichlasoma cyanoguttatum*, in southeastern Louisiana. Invited Seminar, Aquatic Nuisance Species Task Force Meeting, 13 May 2003, New Orleans.
- O'Connell, M.T. 2003. Fish Assemblage Dynamics in Lake Pontchartrain Over Fifty Years. Invited Seminar, Southeastern Louisiana University.
- O'Connell, M.T. 2002. Application of a diffusion model to describe a recent invasion; how habitat, advection, and anthropogenic factors influence the expansion of the introduced Rio Grande cichlid, *Cichlasoma cyanoguttatum*, in southeastern Louisiana. Invited Seminar, Southeastern Louisiana University.
- O'Connell, M.T. 2000. Test of an individual-based model to compare fish foraging efficiency between floodplain and low water habitats. Department of Biological Sciences Seminar Series, University of New Orleans.

Other Presentations

- Barko, V.A., D.P. Herzog, and M.T. O'Connell. 2006. Response of fishes to floodplain connectivity during and following a 500-year flood event in the unimpounded Upper Mississippi River. International Conference on Rivers and Civilizations, La Crosse, Wisconsin.
- Barko, V.A., D.P. Herzog, and M.T. O'Connell. 2006. Response of fishes to floodplain connectivity during and following a 500-year flood event in the unimpounded Upper Mississippi River. American Society of Ichthyologists and Herpetologists, New Orleans, Louisiana.
- Turner, J.P. and M.T. O'Connell (presenter). 2005. Retrospective determination of habitat use in juvenile pinfish (*Lagodon rhomboides*) using multi-tracers. 18th International Conference of the Estuarine Research Federation, 19 October 2005, Norfolk, Virginia.
- Lorenz, O.T. with M.T. O'Connell (presenter) and R.C. Cashner. 2005. Source-sink dynamics of the invasive species *Herichthys cyanoguttatus*: the role of abiotic factors. 18th International Conference of the Estuarine Research Federation, 19 October 2005, Norfolk, Virginia.
- O'Connell, M.T. 2005. Estuarine habitats as possible corridors for the dispersal of freshwater invasive fishes. Annual Meeting of the American Society of Ichthyologists and Herpetologists, Tampa, Florida.
- O'Connell, M.T. 2004. Occurrence of an introduced freshwater fish, the Rio Grande cichlid (*Cichlasoma cyanoguttatum*), in estuarine habitats of southeastern Louisiana, USA; can we assume that estuaries are effective barriers to expansion? 13th International Conference on Aquatic Invasive Species, Ennis, Ireland, September, 2004.
- O'Connell, M.T. 2004. Identifying anthropogenic sources of fish assemblage instability in Lake Pontchartrain, Louisiana (USA), a degraded oligohaline estuary. Estuarine and Coastal

- Sciences Association and Estuarine Research Federation International Conference, Ballina, Australia.
- O'Connell, M.T. 2004. Fish assemblage dynamics and ecological instability in Louisiana's Lake Pontchartrain: 'Eco-triage' for a degraded estuary. Annual Meeting of the American Society of Ichthyologists and Herpetologists, Norman, Oklahoma.
- O'Connell, M.T. with G.N. Fuentes and R.C. Cashner. 2002. Application of a diffusion model to describe a recent invasion; introduced Rio Grande cichlids, *Cichlasoma cyanoguttatum*, in southeastern Louisiana. Annual Meeting of the American Society of Ichthyologists and Herpetologists, Kansas City, Missouri.
- O'Connell, M.T. with G.N. Fuentes and R.C. Cashner. 2002. The Rio Grande Cichlid (*Cichlasoma cyanoguttatum*) an invasive species established in Southeastern Louisiana. 11th International Conference on Aquatic Invasive Species, Washington, D.C., February, 2002.
- Cashner, R.C. with M.T. O'Connell, M.A. Poirrier, and J. H. Humphries. 2001. Impact of a prolonged period of low rainfall on the aquatic community in the Lake Pontchartrain Estuary, Louisiana, USA. International Symposium on the Role of Drought in Aquatic Ecosystems, Albury, Australia.
- O'Connell, M.T. 2000. Small streams and forests: the direct benefits of a forested floodplain to fishes of a low order, blackwater stream. Annual Meeting of the American Fisheries Society, St. Louis, Missouri.
- Ross, S.T. with M.T. O'Connell, W.T. Slack and D. M. Patrick. 2000. Habitat and the Conservation of Riffle Inhabiting Fishes: Population and Assemblage Responses to Temporal and Spatial Habitat Change. AFS-SD/SFC Symposium: Conservation of the Freshwater Nongame Aquatic Fauna in the Southeast—Challenges for the New Millennium, Savannah, Georgia.
- O'Connell, M.T. 1999. Brief seasonal floods as direct sources of increased food for fishes in low order, blackwater streams. Annual Meeting of the American Society of Ichthyologists and Herpetologists, University Park, Pennsylvania.
- O'Connell, M.T. and R.J. Neves. 1999. Immunoelectrophoretic analysis of the immunological responses of host and non-host fishes to glochidia and juveniles of a freshwater mussel. Annual Meeting of the Association of Southeastern Biologists, Wilmington, North Carolina.
- O'Connell, M.T. 1998. Does the temporary habitat of an inundated floodplain offer increased food resources to fishes in a low order, blackwater habitat? Annual Meeting of the Association of Southeastern Biologists, Monroe, Louisiana.
- O'Connell, M.T. with S. T. Ross, J. A. Ewing, and W.T. Slack.. 1996. Habitat affinities of blackmouth shiners (*Notropis melanostomus*) from eight newly discovered localities in the Upper Pascagoula River Drainage, Mississippi. Annual Meeting of the American Society of Ichthyologists and Herpetologists, New Orleans, Louisiana.
- O'Connell, M.T. and S.T. Ross. 1995. Population dynamics of the endangered Bayou Darter (*Etheostoma rubrum*) in Bayou Pierre, Mississippi. Annual Meeting of the American Fisheries Society, Tampa, Florida.

Professional Service

Managing Editor for *Proceedings of the Southeastern Fishes Council* – Southeastern Fishes Council (July 2005 – present)

Elected member of Nominating Committee - American Society of Ichthyologists and Herpetologists (July 2004 – present)
President - Southeastern Division of the American Society of Ichthyologists and Herpetologists (June 2003 – June 2004)
Vice President - Southeastern Division of the American Society of Ichthyologists and Herpetologists (June 2002 – June 2003)
Secretary-Treasurer - Southeastern Division of the American Society of Ichthyologists and Herpetologists (June 2001 – June 2002)

Public Service

- 2001 – Served on Lake Pontchartrain Conservation Area Planning Team (Nature Conservancy)
- 2002 – Volunteered services/fisheries expertise in assessment of City Park fishery resources
- 2003 to 2004 – Served on Louisiana Governor's Aquatic Nuisance Species Task Force
- 2003 to 2004 – Advised Lake Pontchartrain Basin Foundation's Artificial Reef Working Group
- 2004 – Volunteered to survey fish diversity on Nature Conservancy lands near Talisheek Bay
- 2004 – Lectured fourth-graders on Louisiana fishes at Louise S. McGehee School
- 2004 – Served as judge for Louisiana Board of Regents High School Science Fair, New Orleans
- 2004 to 2006 – Currently serving on Restoration of Bayou St. John Technical Subcommittee
- 2004 to 2006 – Currently serving on Restoration of Bayou St. John Education Subcommittee
- 2005 to 2006 – Currently serving on BTNEP Invasive Species Action Plan Team
- 2006 – Served on CREST research proposal review panel

Undergraduate and High School Students Advised in Independent Research (names – project titles)

- Christina Kemp – Life history aspects of the invasive Rio Grande cichlid
- Daniel Sambola – Temperature responses of the Rio Grande cichlid in canals of the GNOMA
- Jeffrey Van Vrancken – Spawning and salinity tolerance of the invasive Rio Grande cichlid
- Cynthia Lagos – Assessment of fishing activity data from Lake Pontchartrain, 2000 - 2001
- Mariel Lusco – Life history aspects of blue catfish occurring in estuarine habitats
- Melanie Jackson – Preliminary assessment and computerization of the UNO Vertebrate Collection (Australian exchange student)
- Brad O'Connell – Ecology of the green turtle; assessment of coastline and marine habitats (Australian exchange student)
- Susan Griffiee – Comparison of brown shrimp, white shrimp, and blue crab densities collected from the Biloxi Marshes and the Chandeleur Islands
- Laura Alexander – Ecology and population density of the invasive monk parakeet in the GNOMA
- Cassie O'Dell – Diet, parasite load, and other life history aspects of blue catfish in an urban fishery
- Dannielle Grimes – Observations of invasive fish species and their behavior
- Jen Sun (high school student) – Comparison of fish health among five Lake Pontchartrain localities

Graduate Students Co-Advised in the Department of Biological Sciences (names – project titles)

- O. Thomas Lorenz (Ph.D. student) – Abiotic effects, intraspecific aggression, and source-sink dynamics of the introduced Rio Grande cichlid (*Herichthys*)

cyanoguttatus) in Louisiana

- Kenneth G. Blanke (M.Sc. student) – Does diversity, abundance, and resilience of aquatic organisms differ among seagrass species at the Chandeleur Islands, Louisiana?
- Lissa A. Lyncker (M.Sc. student) – Assessing essential habitat for larval and juvenile blue crabs (*Callinectes sapidus*) using remote sensing data
- Jeffrey M. Van Vrancken (M.Sc. student) – Temporal and spatial changes in freshwater fish assemblages of the Pontchartrain Basin
- Molly J. Dillender (M.Sc. student) – Analysis of spotted seatrout (*Cynoscion nebulosus*) feeding habits within Louisiana bay systems

Off-Campus Graduate Student Committees (names – project titles – university)

- John P. Spaeth (M.Sc. student) – Competition and resource use among ecologically similar fish species in south Mississippi – University of Southern Mississippi

References

Dr. Robert C. Cashner
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