

Craig A. Layman

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EDUCATION

- 2004 Ph.D. Texas A & M University, Section of Ecology and Evolutionary Biology;
Minor Concentration in Philosophy
- 1999 M.S. University of Virginia, Environmental Sciences
- 1996 B.A. University of Virginia, Triple Major: Biology, Economics, and Environmental Sciences

PROFESSIONAL APPOINTMENTS

- To begin August 2006 *Assistant Professor*, Florida International University
- 2004-2006 *Gaylord Donnelley Postdoctoral Fellow*, Yale University
- 2003-2004 *Fulbright Fellow*, Venezuela

TEACHING POSITIONS

- 2003-2005 *Assistant Instructor* - Bahamas Field Course in Stream Restoration (BSC 467/567), Joint course between students of the College of the Bahamas and University of Alabama.
- 2004 *Instructor* - "Índices de Integridad Biótica" (Indexes of Biotic Integrity), M.S. Course at Universidad Experimental de Los Llanos, Guanare, Venezuela. Course taught in Spanish.
- 2003 *Instructor* - "Ideas Nuevas en Ecología" (New Ideas in Ecology), M.S. Course at Universidad Experimental de Los Llanos, Guanare, Venezuela. Course taught in Spanish.
- 2002 *Instructor* - Current Philosophical Issues in Science Seminar (WFSC 681), Texas A&M University. Created and taught course.
- 2000 *Teaching Assistant* - Evolutionary Ecology (WFSC 610), Texas A & M University. Created and taught lab component of course.
- 1997, 1998 *Teaching Assistant* - Biology of Fishes Laboratory (BIOL 330), University of Virginia.
- 1996-1998 *Teaching Assistant* - Introduction to Ecology Laboratory (EVSC 320), University of Virginia; Head Teaching Assistant 1998.
- 1998 *Teaching Assistant* - Coastal Ecology for High School Teachers, University of Virginia.

SELECTED FELLOWSHIPS AND AWARDS

2004	National Science Foundation Doctoral Dissertation Improvement Grant
2004	Texas A & M Agriculture and Life Sciences Graduate Research Award
2003-2004	Fulbright Fellowship (Venezuela)
2000-2003	Science to Achieve Results Fellowship, Environmental Protection Agency
2002	Tom Slick Senior Graduate Research Fellowship
1999-2001	Regents Fellowship, Texas A & M University
2000	First Place Oral Presentation, Biological Sciences, Texas A & M Graduate Student Research Week
2000	Top Student Presentation, Department of Wildlife and Fisheries Sciences Graduate Symposium, Texas A & M University
1999	Robert Ellison Interdisciplinary Award for Teaching Excellence, University of Virginia
1998	Fred Holmsley Moore Research Award, Department of Environmental Sciences, University of Virginia
1998	Top Graduate Student Paper, Atlantic Estuarine Research Society Meeting
1992-1996	Echols Scholar, University of Virginia

PUBLICATIONS

In press

Winemiller, K.O., Montoya, J., **Layman, C.A.**, Roelke, D., and Cotner, J. Seasonal variation in fish effects on benthic ecology of a Neotropical floodplain river. *Journal of the North American Benthological Society*.

Montaña, C.G., Taphorn, D.C., **Layman, C.A.** and Lasso, C. Ecología y conservación de *Cichla* (Cichlidae, Perciformes) en el río Ventuari, estado Amazonas, Venezuela. *Memorias de la Fundación La Salle*.

Hoeinghaus, D.J., Winemiller, K.O., **Layman, C.A.**, Arrington, D.A., and Jepsen, D.B. Effects of seasonality and migratory prey on body condition of *Cichla* species in a tropical floodplain river. *Ecology of Freshwater Fish*.

Arrington, D.A., Davidson, B.K., Winemiller, K.O., and **Layman, C.A.** Influence of life history and seasonal hydrology on lipid storage in three Neotropical fish species. *Journal of Fish Biology*.

Dahlgren, C.P., Kellison, G.T., Adams, A.J., Gilanders, B.M., Kendall, M.S., **Layman, C.A.**, Ley, J.A., Nagelkerken, I., and Serafy, J.E. Marine nurseries and effective juvenile habitats: concepts and applications. *Marine Ecology Progress Series*.

2005 **Layman, C.A.**, Winemiller, K.O., Arrington, D.A., and Jepsen, D.B. 2005. Body size and trophic position in a diverse tropical food web. *Ecology* 86(9):2530-2535.

Layman, C.A., Langerhans, R.B., and Winemiller, K.O. 2005 Do species traits characterize changes in fish assemblage composition following commercial netting? *Canadian Journal of Fisheries and Aquatic Sciences* 62:1-9.

Layman, C.A. and Winemiller, K.O. 2005. Patterns of habitat segregation among large fishes in a Neotropical floodplain river. *Neotropical Ichthyology* 3(1):103-109.

Layman, C.A., Arrington, D.A., and Blackwell, M. 2005. Community-based collaboration restores tidal Flow to an island estuary (Bahamas). *Ecological Restoration* 23(1):58-59.

- Arrington, D.A., Winemiller, K.O., and **Layman, C.A.** 2005. Community assembly at the patch scale in a species-rich tropical river. *Oecologia* 144(1):157-167.
- Langerhans, R.B., **Layman, C.A.**, and DeWitt, T.J. 2005. Bigger is not always better in the evolution of male genitalia. *Proceedings of the National Academy of Sciences* 102(21): 7618-7623.
- *Paper was featured in hundreds of international media outlets, including The London Times, Chicago Tribune, Los AngelesTimes, National Public Radio, MSNBC, Canadian Broadcasting Company, and Yahoo News.*
- 2004** **Layman, C.A.** and Winemiller, K.O. 2004. Size-based responses of prey to piscivore exclusion in a Neotropical river. *Ecology* 85(5):1311-1320.
- Layman, C.A.**, Arrington, D.A., Langerhans, R.B and Silliman, B.R. 2004. Degree of fragmentation affects assemblage structure in Andros Island (Bahamas) estuaries. *Caribbean Journal of Science* 40(2):232-244.
- Layman, C.A.**, Jepsen, D.B., and Winemiller, K.O. 2004. Erratum: Structure of tropical river food webs revealed by stable isotope ratios. *Oikos* 107(1):222.
- Layman, C.A.**, Arrington, D.A., Langerhans, R.B and Silliman, B.R. 2004. Effects of Estuarine Fragmentation on Fish Assemblage Structure. *Bahamas Journal of Science* 12:29-38.
- Langerhans, R.B., **Layman, C.A.**, Shokrollahi, A.M. and DeWitt, T.J. 2004. Predator-driven phenotypic diversification in *Gambusia affinis*. *Evolution* 58(10):2305-2318.
- Silliman, B. R., **Layman, C. A.**, K. Geyer and Zieman, J.C. 2004. Predation by the black clawed mud crab, *Panopeus herbstii*, in mid-Atlantic salt marshes: further evidence for top-down control of community structure. *Estuaries* 27(2):188-196.
- 2003** **Layman, C.A.**, Arrington, D.A., and Silliman, B.R. 2003. Underwater Visual Census Provides “Snapshot” Assessment for Tidal Connectivity Restoration (Bahamas). *Ecological Restoration* 21(12):132-133.
- Langerhans, R.B., **Layman, C.A.**, Langerhans, A.K, and DeWitt, T.J. 2003. Habitat-associated morphological divergence in two Neotropical fish species. *Biological Journal of the Linnean Society* 80:689-698.
- Hoeinghaus, D., **Layman, C.A.**, Arrington, D.A. and Winemiller, K.O. 2003. Spatiotemporal variation in fish assemblage structure in tropical floodplain creeks. *Environmental Biology of Fishes* 67(4):379-387.
- Hoeinghaus, D., **Layman, C.A.**, Arrington, D.A. and Winemiller, K.O. 2003. Movement of *Cichla* spp. (Cichlidae) in a Venezuelan floodplain river. *Neotropical Ichthyology* 1(2):121-126.
- Silliman, B. R., **Layman, C. A.**, and Altieri, A.. 2003. Potential mutualism between a Xanthid crab and *Alpheus* shrimp in Mid-Atlantic salt marshes. *Journal of Crustacean Biology* 23(4):876-879.
- 2002** **Layman, C.A.** and Silliman, B.R. 2002. Preliminary survey and diet analysis of juvenile fishes of an estuarine creek on Andros Island, Bahamas. *Bulletin of Marine Science* 70(1):199-210.
- 2001** **Layman, C.A.** and Smith, D.E. 2001. Sampling bias of minnow traps in shallow aquatic habitats on the Eastern Shore of Virginia. *Wetlands*. 21(1):145-154.

2000 **Layman, C.A.** 2000. Fish assemblage structure of the shallow ocean surf-zone on the Eastern Shore of Virginia barrier islands. *Estuarine Coastal and Shelf Science*. 51:201-213.

Layman, C.A., Smith, D.E. and Herod, J.D. 2000. Seasonally varying importance of abiotic and biotic factors in marsh pond fish communities. *Marine Ecology Progress Series*. 207:155-169.

In review

Layman, C.A., Arrington, D.A., Montaña, C.G., and Allgeier, J.E. Water level change drives colonization rates of tropical floodplain river littoral habitats. Submitted to *Freshwater Biology*.

Layman, C.A., Arrington, D.A., Kramer, P.A., Valentine, L.M., Dahlgren, C.P., and Burke, L. Indicator Taxa of Human Impacts in Caribbean Tidal Creeks. Submitted to *Bulletin of Marine Science*.

Adams, A.J., Dahlgren, C.P., Kellison, G.T., Kendall, M.S., **Layman, C.A.**, Ley, J.A., Nagelkerken, I., and Serafy, J.E. The Juvenile Contribution Function of Tropical Backreef Systems. Submitted to *Marine Ecology Progress Series*.

Valentine, L.M, Cherry, J.A., Culp, J.J., Perez, K.E., Pollock, J.B., Arrington, D.A., and **Layman, C.A.** Floral, faunal, and abiotic differences between fragmented and unfragmented Bahamian tidal creeks. Submitted to *Caribbean Journal of Science*.

In prep

Layman, C.A., Arrington, D.A., Post, D.M., and Montaña, C.G.. Stable isotope ratios as a community-level measure of trophic diversity. To be submitted to *Ecology*.

Layman, C.A. Silliman, B.R., Post, D.M., and Palkovacs, E.P. Theory dependence in ecology. To be submitted to *Oikos*.

Post, D.M., **Layman, C.A.**, and Winemiller, K.O. Herbivore body size and food chain length. To be submitted to *Nature*.

Post, D.M., **Layman, C.A.**, Arrington, D.A., Takimoto, G., Montaña, C.G., and Quattrochi, J. Getting to the fat of the matter: models, methods and assumptions for dealing with lipids in stable isotope analyses. To be submitted to *Oecologia*.

Rypel, A., Arrington, D.A., **Layman, C.A.**, and Valentine, L.M. Critical water depth influences predation rates in Bahamian tidal creeks. To be submitted to *Estuaries*.

BOOK CHAPTERS

Layman, C.A., Winemiller, K.O., and D.A. Arrington. Describing the structure and function of a Neotropical river food web using stable isotopes, stomach contents, and functional experiments. In: *Dynamic Food Webs: Multispecies Assemblages, Ecosystem Development, and Environmental Change*. Elsevier/Academic Press.

Winemiller, K.O. and **Layman, C.A.** Pattern, Process and Scale in the Food Web Paradigm: Moving on the Path from Abstraction to Prediction. In: *Dynamic Food Webs: Multispecies Assemblages, Ecosystem Development, and Environmental Change*. Elsevier/Academic Press.

Scharler, U.M., Hulot, F.D., Baird, D.J., Cross, W.F., Culp, J., **Layman, C.A.**, Raffaelli, D., Vos, M. and Winemiller, K.O. What drives the dynamics of aquatic food webs? In: *Dynamic Food Webs: Multispecies Assemblages, Ecosystem Development, and Environmental Change*. Elsevier/Academic Press.

Montaña, C.G., Taphorn, D.C., **Layman, C.A.** and Lasso, C.A. Ecology and Conservation of Peacocks Cichlids (*Cichla* spp.) in lower Ventuari River, Amazonas State, Venezuela. In: *Rapid assessment of the biodiversity of the aquatic ecosystems of the Ventuari and its confluences with the Orinoco River, Amazonas State, Venezuela. RAP Bulletin of Biological Assessment*. Conservation International. Washington D.C.

INVITED TALKS

- 2006 University of Florida, Department of Fisheries and Aquatic Sciences
Yale Institute for Biospheric Studies
- 2005 Perry Institute for Marine Science, Jupiter, Florida
Florida International University, Department of Biological Sciences
- 2004 Yale University, Department of Ecology and Evolutionary Biology
- 2002 Cornell University, Department of Ecology and Evolutionary Biology

OTHER SELECTED PRESENTATIONS

Layman, C.A., Arrington, D.A., and Post, D.M. 2005. Food web structure in fragmented and restored Bahamian tidal creeks. *Ecological Society of America*.

Layman, C.A., Winemiller, K.O., Arrington, D.A., Jepsen, D.B., and Montaña, C. 2004. Body-size and seasonal hydrology drive predator-prey dynamics in a complex river food web. *Ecological Society of America*.

Layman, C.A. and Winemiller, K.O. 2003. Describing Food Web Structure in a Speciose Neotropical River with Stable Isotope Analysis. *Food-web Symposium 2003*.

Layman, C.A. and Winemiller, K.O. 2003. Small-scale piscivore exclusion experiments predict impacts of fishing on speciose tropical river fish assemblages. *Ecological Society of America*.

Layman, C.A. 2003. Using small-scale exclusion experiments to predict impacts of fishing on a tropical floodplain river fish assemblage. *World Large River Symposium*.

Layman, C.A., Arrington, D.A., and Silliman, B.R. 2002. Assessment of tidal creek degradation and restoration on Andros Island, Bahamas, using underwater visual census. *Ecological Society of America*.

Layman, C.A. and Winemiller, K.O. 2002. Size-specific behavioral response of prey fishes to multiple predator exclusion in a speciose neotropical river. *Ecological Society of America*.

Layman, C.A. 2000. Seasonal cycle of abiotic and biotic structuring mechanisms in marsh pond fish communities. *American Society of Ichthyology and Herpetology*.

Layman, C.A. 1999. Long-term ecological research at the Virginia Coast Reserve. *US/Japan Long-term Ecological Research International Collaboration*, Sapporo, Japan.

Layman, C.A., Herod, J.D., and D.E. Smith. 1999. The relative importance of abiotic and biotic factors in structuring marsh pond communities: a seasonal cycle determining observed fish assemblages. *American Society of Limnology and Oceanography*.

GRANTS

RJ/Kose in conjunction with The Nature Conservancy. 2004-2005. “Developing indicators for conservation and restoration of critical nursery habitats in the tropical Western Atlantic”, \$100,000.

National Science Foundation Doctoral Dissertation Improvement Grant. 2004. “Complex effects of humans and piscivores on fish assemblages in a species-rich tropical river”, \$8,030.

Acorn Alcinda Foundation Conservation Grant. 2002-present. \$2,000 annually.

Environmental Protection Agency Science to Achieve Results Graduate Fellowship. 2000-2003. Role of predation in structuring fish assemblages of a species-rich Neotropical river”, \$102,000.

Baab Conservation Grant. 2000. \$10,000.

Pending:

PI: Layman, C.A. National Oceanic and Atmospheric Administration. “MPA Effectiveness: How important are tidal creeks in the export of fish biomass to other MPA habitat types?”, \$127,176.

PI: Arrington, D.A., **Co-PI: Layman, C.A.** National Science Foundation. “REU Site: Evaluating the effects of meta-population dynamics and connectivity on community- and ecosystem-level processes in the marine environment”, \$487,735.

PI: Sorensen, L.G. **Collaborator: Layman, C.A.** Restoration and Sustainable use of Ashton Lagoon. \$37,840.

OTHER PROFESSIONAL ACTIVITIES

Reviewer for:

Aquatic Living Resources, Ecology, Environmental Biology of Fishes, Estuaries, Estuarine, Coastal and Shelf Science, Hydrobiologia, Journal of Animal Ecology, Journal of Fish Biology, Journal of Tropical Ecology, Marine and Freshwater Research, Marine Ecology Progress Series Neotropical Ichthyology, Oecologia, Oikos, Transactions of the American Fisheries Society

Guest Lecturer: Yale University (EEB 220)
Texas A&M University (WFSC 624; WFSC 610)
University of Virginia (BIOL 330; EVSC 796)

Graduate Committee: Lori Valentine, Ph.D. student, University of Alabama

Selected Synergistic Activities:

Science Advisor for: Bahamas Sportfishing and Conservation Association (On-going)
Friends of the Environment, Abaco Island, Bahamas (On-going)
ESPN BASS Adventure Series (2001, 2003)
Peacock Bass Conservation Symposium (1999-2001)

Organizer and outreach/education coordinator for a series of community-based tidal creek restoration initiatives in the Bahamas. Involves an extensive series of classroom/field activities with students from the elementary to high school level, including work with the learning disabled.

Organizer and instructor for the cross-departmental seminar series “Philosophical Issues in Science” at Texas A&M University.

Direct integration of Venezuelan and Bahamas students and community members and sport fishermen into science research, including fish tagging and recapture programs.