

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

- 2017-Present *Professor, Chancellor's Faculty Excellence Fellow, North Carolina State University*
- 2013-Present *Associate Professor, Chancellor's Faculty Excellence Fellow, North Carolina State University*
- 2012-13 *Associate Professor, Florida International University*
- 2006-2012 *Assistant Professor, Florida International University*
- 2004-2006 *Gaylord Donnelley Postdoctoral Fellow, Yale University*
- 2003-2004 *Fulbright Fellow, Venezuela*

GRANTS

Current

National Science Foundation, "Fish aggregations and biogeochemical hot spots across regional environmental gradients", \$657,849 (OCE 1405198, 2014-2018).

Previous

National Science Foundation, "RAPID: An interdisciplinary approach to elucidating the causes of widespread mangrove die-off", \$75,187 (OCE 1405198, 2015-2016).

U.S. Fish and Wildlife Service, "Integrated methods for controlling invasive lionfish", \$15,482 (205-2016).

National Science Foundation, "CAREER: Assessing effects of ecosystem fragmentation using novel measures of trophic structure as part of a broad educational outreach program", \$803,449 (OCE 0746164, 2008-13).

Loxahatchee River District, "Oyster reef fauna monitoring", \$177,000 (2007-2013).

FIU Faculty Support Research program, “Evolutionary change in The Bahamas mosquitofish: anthropogenic drivers of divergent selection environments”, \$19,554. (2012-2013).

National Science Foundation, “Collaborative Research: Human-induced phenotypic variation in an endemic livebearing fish”, \$393,996 (DEB 0842196, 2009-12, with Brian Langerhans, North Carolina State University).

CSA International, “Oyster reef restoration monitoring”, \$84,000 (2009-2011).

Perry Institute of Marine Science, “Development of a West Andros Marine Reserve”, \$33,000 (2007-9).

Bonefish-Tarpon Unlimited, “Identifying bonefish spawning migration routes”, \$15,350 (2008).

Florida International University, Developing the capacity to analyze RNA-DNA ratios as a means to evaluate implications of intraspecific niche variation, \$17,000 (2008-9).

Acorn Alcinda Foundation Conservation Grant, \$2,500 (annual, 2002-present).

South Florida Water Management District, “Developing ecological indicators for managing freshwater inflows to the Loxahatchee River”, \$35,000 (2009).

South Florida Water Management District, “Monitoring snook movement patterns in the Loxahatchee River”, \$20,000 (2008)

Association for the Coral Environment, “Nassau grouper research program”, \$25,000 (2007-2008).

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

Selected Student Fellowships/Awards

Andrew Maurer, Fulbright Fellowship in Antigua, 2018.

Andrew Maurer, National Science Foundation Graduate Research Fellowship (2017-present).

April Lamb, National Science Foundation Graduate Research Fellowship (2017-present).

Sean Giery, National Science Foundation, Doctoral Dissertation Improvement Grant, "Divergent sexual selection and behavioral isolation due to anthropogenic ecosystem fragmentation" (2014-2016).

Ryann Rossi, National Science Foundation Graduate Research Fellowship (2014-present).

Elizabeth Stoner, Environmental Protection Agency STAR Fellowship (2011-2014).

Lauren Yeager, National Science Foundation Graduate Research Fellowship (2009-2012).

PUBLICATIONS

118. Olds, A.D., Vargas-Fonseca, E., Connolly, R.M., Gilby, B.L., Huijbers, C.H., Hyndes, G.A., Layman, C.A., Whitfield, A.K., and Schlacher, T.A. 2017. Ecology of fish in surf zones of beaches: a global review. *Fish and Fisheries*. 00:1–12. <https://doi.org/10.1111/faf.12237>.

117. Archer, S.K., Stevens, J.L., Rossi, R.E., Matterson, K. and Layman, C.A. 2017. Abiotic conditions drive significant variability in nutrient processing by a common Caribbean sponge, *Ircinia felix*. *Limnology and Oceanography*.
116. Giery, S.T. and Layman, C.A. 2017. Dissolved organic carbon and unimodal variation in sexual signal coloration in mosquitofish: a role for light limitation? *Proceedings of the Royal Society of London B*. 284: 20170163.
115. Sweatman, J.L., Layman, C.A., and Fourqurean, J.W. 2017. Habitat fragmentation has weak impacts on aspects of ecosystem functioning in a sub-tropical seagrass bed. *Marine Environmental Research* 126:95-108.
114. Allgeier, J.E., Burkepile, D.E., and Layman, C.A. 2017. Animal pee in the sea: consumer-mediated nutrient dynamics in the world's oceans. *Global Change Biology*. doi: 10.1111/gcb.13625.
113. Pinheiro, I.E., Layman, C.A., Castello, J.P. and Leite, T.S. *In press*. Trophic role of demersal predators on rocky reefs in an Equatorial Atlantic Ocean Island. *Journal of Applied Ichthyology*.
112. Albo-Puigserver, M., Navarro, J., Coll, M., Layman, C.A., and Palomera, I. 2016. Trophic structure of pelagic fish species in the northwestern Mediterranean Sea. *Marine Environmental Research* 117:27-35.
111. Layman, C.A., Allgeier, J.E., and Montaña, C.G. 2016. Mechanistic evidence of enhanced production on artificial reefs: A case study in a Bahamian seagrass ecosystem. *Ecological Engineering*. 95:574-579.
110. Allgeier, J.E., Valdivia, A., Cox, C., Bruno, J.F., and Layman, C.A. 2016. Fishing down nutrients on coral reefs. *Nature Communications* DOI: 10.1038/ncomms12461.
109. Stoner, E.W., Sebilian, S.S., Layman, C.A. 2016. Zooxanthellae densities in upside-down jellyfish, *Cassiopea* spp., from coastal habitats of The Bahamas. *Revista de Biología Marina y Oceanografía*. 51:203-208.
108. Antón, A., Cure, K., Layman, C.A., Puntilla, R., Simpson, M.S., and Bruno, J.F. 2016. Prey naiveté to invasive lionfish (*Pterois volitans*). *Marine Ecology Progress Series* 544:257-269.
107. Yeager, L.A., Stoner, E.W., Peters, J.R. and Layman, C.A. 2016. A terrestrial-aquatic food web subsidy is potentially mediated by multiple predator effects on an arboreal crab. *Journal of Experimental Marine Biology and Ecology* 475:73-79.
106. Layman, C.A., Giery, S.T., Buhler, S., Rossi, R., Penland, T., Henson, M.N., Bogdanoff, A.K., Cove, M.V., Irizarry, A.D., Schalke, C.M., and Archer, S.K. 2015. A primer on the history of food web ecology: Fundamental contributions of fourteen researchers. *Food Webs* 4:14-24.
105. Riesch, R., Easter, T., Layman, C.A., and Langerhans, R.B. 2015. Rapid human-induced divergence of life history strategies in Bahamian live-bearing fishes (family Poeciliidae). *Journal of Animal Ecology* 84(6):1732-1743.
104. Giery, S.T. and Layman, C.A. 2015. Interpopulation variation in a condition-dependent signal: predation regime affects signal intensity and reliability. *American Naturalist* 186(2): 187-195.
103. Allgeier, J.E., Wegner, S., Rosemond, A.D., Schindler, D.E., and Layman, C.A. 2015. Metabolic theory and biodiversity, but not stoichiometry, best predict nutrient recycling in a diverse food web. *Proceedings of the National Academy of Sciences* 112(20):E2640-E2647.

102. Giery, S.T., Layman, C.A. and Langerhans, R.B. 2015. Anthropogenic ecosystem fragmentation drives shared and unique patterns of sexual signal divergence among three species of Bahamian mosquitofish. *Evolutionary Applications* 8(7):679-691.
101. Stoner, E.W. and Layman, C.A. 2015. Bristle worms attack: Benthic jellyfish are not trophic dead ends. *Frontiers in Ecology and the Environment* 13:226-227.
100. Peters, J.R., Yeager, L.A., and Layman, C.A. 2015. Comparison of fish assemblages in restored and natural mangrove habitats along urban shorelines of Biscayne Bay, Florida. *Bulletin of Marine Science* 91(2):125-139.
99. Huijbers, C.M., Nagelkerken, I. and Layman, C.A. 2015. Fish movement from nursery bays to coral reefs: a matter of size? *Hydrobiologia* 750:89-101.
98. Archer, S.K., Stoner, E.W., and Layman, C.A. 2015. Context dependent species interaction between a sponge (*Halichondria melanadocia*) and a seagrass (*Thalassia testudinum*). *Journal of Marine Biology and Ecology* 465:33-40.
97. Montaña, C., Layman, C.A., and Winemiller, K.O. 2015. Species-area relationship within benthic Habitat patches of a tropical floodplain river: an experimental test. *Austral Ecology* 40(3):331-336.
96. Heinen-Kay, J.L., Noel, H.G., Layman, C.A., and Langerhans, R.B. 2014. Human-caused habitat fragmentation drives rapid divergence of male genital morphology in Bahamian mosquitofish. *Evolutionary Applications* 7(10):1252-1267.
95. Fodrie, J.F., Yeager, L.A., Grabowski, J.H., Layman, C.A., Sherwood, G.D., and Kenworthy, M.D. 2015. Measuring individuality in habitat use across complex landscapes: approaches, constraints, and implications for assessing resource specialization. *Oecologia* 178(1):75-87.
94. Nifong, J.C., Layman, C.A., and Silliman, B.R. 2014. Size, sex, and individual-level behavior drive intra-population variation in cross-ecosystem foraging of a top-predator. *Journal of Animal Ecology* 84:35-48.
93. Layman, C.A., Newsome, S.D., and Crawford, T.G. 2015. Individual specialization within populations: emerging areas of study. *Oecologia* 178(1):1-4.
92. Chacin, D.H., Yeager, L.A., Giery, S.T., Layman, C.A., and Langerhans, R.B. 2015. Does hydrologic fragmentation affect coastal bird communities? A study from Abaco Island, The Bahamas. *Wetlands Ecology and Management* 23(3):551-557.
91. Stoner, E.W., Yeager, L.A., Sebilian, S.S., Sweatman, J.L. and Layman, C.A. 2014. Modification of a seagrass community by benthic jellyfish blooms and nutrient enrichment. *Journal of Experimental Marine Biology and Ecology* 461:185-192.
90. Zapata, M.J., Yeager, L.A., and Layman, C.A. 2014. Day-night patterns in natural and artificial patch reef fish assemblages of The Bahamas. *Caribbean Naturalist* 18:1-15.
89. Layman C.A., Jud, Z.R., and Nichols, P. 2014. Lionfish alter benthic invertebrate assemblages. *Marine Biology* 161(9):2179-2182.
88. Allgeier, J.E., Layman, C.A., Mumby, P.J., and Rosemond, A.D. 2015. Biogeochemical implications of biodiversity and community structure across multiple coastal ecosystems. *Ecological Monographs* 85(1):117-132.
87. Archer, S.K., Allgeier, J.E., Semmens, B.X., Heppell, S.A., Pattengill-Semmens, C.V., Rosemond,

- A.D., Bush, P.G., McCoy, C.M., Johnson, B.C., and Layman, C.A. 2015. Hot moments in spawning aggregations: implications for ecosystem-scale nutrient cycling. *Coral Reefs* 34:19-23.
86. Layman C.A., Jud, Z.R., Archer, S.K. and Riera, D. 2014. Provision of ecosystem services by artificial structures in a highly impacted estuary. *Environmental Research Letters* 9 (2014) 044009.
85. Yeager, L.A., Stoner, E.W., Zapata, M.J., and Layman, C.A. 2014. Does landscape context mediate the nature of density dependence for a coral reef fish? *Ecological Applications* 24:1833-1841.
84. Winemiller, K.O., Roelke, D.L., Cotner, J.B., Montoya, J.V., Sanchez, L., Castillo, M.M., Montaña, C. and Layman, C.A. 2014. Pulsing hydrology determines top-down control of basal resources by fish and meiofauna in a tropical river-floodplain ecosystem. *Ecological Monographs* 81:621-635.
83. Stoner, E.W., Yeager, L.A., and Layman, C.A. 2014. Effects of the epibenthic jellyfish, *Cassiopea* spp., on faunal community structure of Bahamian seagrass beds. *Caribbean Naturalist* 12:1-10.
82. Yeager, L.A., Layman, C.A. and Hammerschlag-Peyer, C.M. 2014. Diet variation of a generalist fish predator, Gray snapper *Lutjanus griseus*, across an estuarine gradient: trade-offs of quantity for quality? *Journal of Fish Biology* 85(2):264-277.
81. Araújo, M.S., Langerhans, R.B., Giery, S.T. and Layman, C.A. 2014. Ecosystem fragmentation drives increased diet variation in an endemic livebearing fish of The Bahamas. *Ecology and Evolution* 4(16):3298-3303.
80. Allgeier, J.E., Layman, C.A., Mumby, P.J., Rosemond, A.D. 2014. Consistent nutrient storage and supply mediated by diverse fish communities in coral reef ecosystems. *Global Change Biology* 20(8):2459-2472.
79. Côté, I.M., Darling, E.S., Malpica-Cruz, L., Smith, N.S., Green, S.J., Curtis-Quick, J., and Layman, C.A. 2014. What doesn't kill you makes you wary? What doesn't kill you makes you wary? Effect of repeated culling on the behaviour of an invasive predator. *PLoS One* 9(4): e94248.
78. Jud, Z.R., Layman C.A. and Nichols, P.K. 2015. Broad salinity tolerance in the invasive lionfish, *Pterois* spp., facilitates estuarine invasion. *Environmental Biology of Fishes* 98:135-143.
77. Layman C.A., Jud, Z.R., Arrington, D.A., and Sabin, D. 2014. Using fish behavior to assess habitat quality of a restored oyster reef. *Ecological Restoration* 32(2):140-143.
76. Bruno, J.F., Valdivia, A., Hackerott, S., Cox, C.E., Green, S.J., Côte, I.M., Akins, L., Layman, C.A., Precht, W.F. 2013. Testing the grouper biocontrol hypothesis: A response to Mumby et al. 2013. *Peer J Pre-prints* 1:e139v1.
75. Giery, S.T., Lemoine, N.P., Hammerschlag-Peyer, C.M., Abbey-Lee, R.N. and Layman, C.A. 2013. Bidirectional trophic linkages couple canopy and understory food webs. *Functional Ecology* 27(6):1436-1441.
74. Hackerott, S., Valdivia, A., Green, S.J., Côté, I.M., Cox, C.E., Akins, L., Layman, C.A., Precht, W.F., and Bruno, J.F. 2013. Native predators do not influence invasion success of Pacific lionfish on Caribbean reefs. *PLoS One* 8(7): e68259.
73. Hammerschlag-Peyer, C.M., Allgeier, J.E., and Layman, C.A. 2013. Predator effects on faunal community composition in shallow seagrass beds of The Bahamas. *Journal of Experimental Marine Biology and Ecology* 446:282-290.
72. Burkepille, D.E., Allgeier, J.E., Shantz, A.A., Pritchard, C.E., Lemoine, N., Bhatti, L., and Layman,

- C.A. 2013. Nutrient supply from fishes facilitates macroalgae and suppresses corals in a Caribbean coral reef ecosystem. *Scientific Reports* 3:1493 DOI 10.1038.
71. Heithaus, M.R., Vaudo, J.J., Kreicker, S., Layman, C.A., Krützen, M., Burkholder, D.A., Gastrich, K., Bessey, C., Sarabia, R., Cameron, K., Wirsing, A., Thomson, J.A., and Dunphy-Daly, M.M. 2013. Apparent resource partitioning and trophic structure of large-bodied marine predators in a relatively pristine seagrass ecosystem. *Marine Ecology Progress Series* 481:225-237.
70. Allgeier, J.E. Yeager, L.A., and Layman, C.A. 2013. Consumers regulate nutrient limitation regimes and primary production in seagrass ecosystems. *Ecology* 94(2):521-529.
69. Layman, C.A., Allgeier, J.E., Yeager, L.A., and Stoner, E.W. 2013. Thresholds of ecosystem response to nutrient enrichment by aggregating fishes. *Ecology* 94(2):530-536.
68. Yeager, L.A., Acevedo, C.L. and Layman, C.A. 2012. Effects of seascape context on abundance, condition and secondary production of a coral reef fish, *Haemulon plumierii*. *Marine Ecology Progress Series* 462:231-240.
67. Layman, C.A., Araújo, M.S., Boucek, R., Harrison, E., Jud, Z.R., Matich, P., Hammerschlag-Peyer, C.M., Rosenblatt, A.E., Vaudo, J.J., Yeager, L.A., Post, D.M., and Bearhop, S. 2012. Applying stable isotopes to examine food web structure: an overview of analytical tools. *Biological Reviews* 87(3):545-562.
66. Layman, C.A. and Allgeier, J.E. 2012. Characterizing trophic ecology of generalist consumers: a case study on the invasive lionfish *Pterois volitans* in The Bahamas. *Marine Ecology Progress Series* 448:131-141.
65. Hammerschlag-Peyer, C.M. and Layman, C.A. 2012. Mechanisms driving resource use variation in an abundant coastal fish predator. *Bulletin of Marine Science* 88(2):211-230.
64. Jud, Z.R. and Layman, C.A. 2012. Site fidelity and movement patterns in the invasive lionfish, *Pterois* spp. *Journal of Experimental Marine Biology and Ecology* 414-415:69-74.
63. Allgeier, J.E., Rosemond, A.D., and Layman, C.A. 2011. Variation in nutrient limitation and seagrass nutrient content in Bahamian tidal creeks. *Journal of Experimental Marine Biology and Ecology* 407:330-336.
62. Araújo, M.S., Bolnick, D.I., and Layman, C.A. 2011. The ecological causes of individual specialization. *Ecology Letters* 14:948-958.
61. Hammerschlag-Peyer, C.M., Yeager, L.A., Araújo, M.S. and Layman, C.A. 2011. A hypothesis-testing framework for studies investigating ontogenetic niche shifts using stable isotope ratios. *PLoS One* 6(11):e27104.
60. Valentine-Rose, L., Rypel, A.L., and Layman, C.A. 2011. Community secondary production as a measure of ecosystem function: a case study with aquatic ecosystem fragmentation. *Bulletin of Marine Science* 87(4):913-937.
59. Montaña, C.G., Layman, C.A. and Winemiller, K.O. 2011. Gape size influences seasonal patterns of piscivore diets in three Neotropical rivers. *Neotropical Ichthyology* 9(3):647-655.
58. Jud, Z.R., Layman, C.A., Lee, J.A., and Arrington, D.A. 2011. Recent invasion of a Florida estuarine/riverine system by the lionfish, *Pterois volitans*. *Aquatic Biology* 13:21-26.
57. Stoner, E.W., Layman, C.A., Yeager, L.A., and Hassett, H. 2011. Effect of anthropogenic

- disturbance on abundance and size of the benthic jellyfish *Cassiopea* spp. *Marine Pollution Bulletin* 62(5):1109-1114.
56. Yeager, L.A., Allgeier, J.A. and Layman, C.A. 2011. Effects of habitat heterogeneity at multiple spatial scales on fish community assembly. *Oecologia* 167(1):157-168. **Paper chosen as the best university-wide, graduate student-authored, paper at Florida International University in 2011.**
55. Yeager, L.A. and Layman, C.A. 2011. Energy flow to consumers in a sub-tropical oyster reef food web. *Aquatic Ecology* 45(2):267-277.
54. Montaña, C.G., Layman, C.A., and Taphorn, D.C. 2010. Inventario de la ictiofauna del Caño La Guardia, afluente del río Capanaparo (cuenca del Orinoco), estado Apure, Venezuela. *Biota Colombiana* 11:75-88.
53. Heithaus, E.R., Heithaus, P.A., Heithaus, M.R., Burkholder, D. and Layman, C.A. 2011. Trophic dynamics of a relatively pristine subtropical fringing mangrove community. *Marine Ecology Progress Series* 428:49-61.
52. Layman, C.A., Allgeier, J.E., Rosemond, A.D., Dahlgren, C.P., and Yeager, L.A. 2011. Marine Fisheries Declines Viewed Upside Down: Human Impacts on Consumer-Driven Nutrient Recycling. *Ecological Applications* 21(2):343-349.
51. Valentine-Rose, L. and Layman, C.A. 2011. Response of fish assemblage structure and function following restoration of two small Bahamian tidal creeks. *Restoration Ecology* 19(2):205-215.
50. Jud, Z.R., Shenker, J.M. and Layman, C.A. 2011. Dietary variation of age-0 tarpon (*Megalops atlanticus*) in anthropogenically-modified nursery habitats. *Environmental Biology of Fishes* 90(3):223-233.
49. Allgeier, J.E., Rosemond, A.D., and Layman, C.A. 2011. The frequency and magnitude of non-additive responses to multiple nutrient enrichment. *Journal of Applied Ecology* 48(1):96-101.
48. Grol, M.G.G., Nagelkerken, I., Rypel, A.L., and Layman, C.A. 2011. Simple ecological trade-offs give rise to emergent cross-ecosystem distributions of a coral reef fish. *Oecologia* 165:79-88.
47. Matich, P., Heithaus, M.R., and Layman, C.A. 2011. Contrasting patterns of individual specialization and trophic coupling in two marine apex predators. *Journal of Animal Ecology* 80: 294-305. **Paper chosen for the 2011 Elton Award for best young investigator paper published in the Journal of Animal Ecology.**
46. Layman, C.A., Arrington, D.A., Kramer, P.A., Valentine-Rose, L., and Dahlgren, C.P. 2010. Indicator taxa to assess anthropogenic impacts in Caribbean and Bahamas tidal creeks. *Caribbean Journal of Science* 46(1):12-18.
45. Allgeier, J.E., Rosemond, A.D., Mehring, A.S., and Layman, C.A. 2010. Synergistic nutrient co-limitation across a gradient of ecosystem fragmentation in subtropical mangrove-dominated wetlands. *Limnology and Oceanography* 55(6):2660-2668.
44. Hammerschlag-Peyer, C.P. and Layman, C.A. 2010. Specialization in individual-level movement patterns of snapper in Bahamian wetlands. *Marine Ecology Progress Series* 415:211-220.
43. Matich, P., Heithaus, M.R., and Layman, C.A. 2010. Size-based variation in inter-tissue comparisons of stable carbon and nitrogen isotopic signatures of bull sharks and tiger sharks. *Canadian Journal of Fisheries and Aquatic Sciences* 67(5):877-885.
42. Layman, C.A., Montaña, C.G., and Allgeier, J.E. 2010. Linking community assembly and rates of

- water level change in river littoral habitats. *Aquatic Ecology* 44:269–273.
41. Adams, A.J., Wolfe, R.K., and Layman, C.A. 2009. Preliminary examination of how human-driven freshwater flow alteration affects trophic ecology of juvenile snook (*Centropomus undecimalis*) in Estuarine Creeks. *Estuaries and Coasts* 32(4):819-828.
 40. Roach, K.A., Winemiller, K.O., Layman, C.A., and Zeug, S.C. 2009. Consistent trophic patterns among fishes in lagoon and channel habitats of a tropical floodplain river: evidence from stable isotopes. *Acta Oecologica* 35(4):513-522.
 39. Montaña, C.G., Layman, C.A., and Taphorn, D.C. 2008. Comparison of fish assemblages in two littoral habitats in a Neotropical morichal stream in Venezuela. *Neotropical Ichthyology* 6(4):577-582.
 38. Layman, C.A. and Post, D.M. 2008. Can stable isotope ratios provide for community-wide measures of trophic structure?: Reply. *Ecology* 89(8):2358-2359.
 37. Rypel, A.L. and Layman, C.A. 2008. Degree of hydrologic connectivity loss determines population-level characteristics of gray snapper in tidal creeks. *Canadian Journal of Aquatic and Fisheries Sciences* 65:335-339.
 36. Layman, C.A., Quattrochi, J.P., Peyer, C.M., and Allgeier, J.E. 2007. Niche width collapse in a resilient top predator following ecosystem fragmentation. *Ecology Letters* 10:937-944.
 35. Valentine-Rose, L., Cherry, J.A., Culp, J.J., Perez, K.E., Pollock, J.B., Arrington, D.A., and Layman, C.A. 2007. Floral and faunal differences between fragmented and unfragmented Bahamian tidal creeks. *Wetlands* 27(3):702-718.
 34. Rypel, A.L., Layman, C.A., and Arrington, D.A. 2007. Water depth modifies relative predation risk for a motile fish taxa in Bahamian tidal creeks. *Estuaries and Coasts* 30(3):1-8.
 33. Haney, R.A., Silliman, B.R., Fry, A.J., Layman, C.A., and Rand, D.M. 2007. The Pleistocene history of the sheepshead minnow (*Cyprinodon variegatus*): Non-equilibrium evolutionary dynamics within a diversifying species complex. *Molecular Phylogenetics and Evolution* 43(3):743-54.
 32. Layman, C.A. 2007. What can stable isotope ratios reveal about mangroves as fish habitat? *Bulletin of Marine Science* 80(3):513-527.
 31. Valentine-Rose, L.M., Layman, C.A., Arrington, D.A. and Rypel, A.L. 2007. Habitat fragmentation affects fish secondary production in Bahamian tidal creeks. *Bulletin of Marine Science* 80(3):863-878.
 30. Layman, C.A., Arrington, D.A., Montaña, C.G., and Post, D.M. 2007. Can stable isotope ratios provide for community-wide measures of trophic structure? *Ecology* 88(1):42-48.
 29. Post, D.M., Layman, C.A., Arrington, D.A., Takimoto, G., Montaña, C.G., and Quattrochi, J. 2007. Getting to the fat of the matter: models, methods and assumptions for dealing with lipids in stable isotope analyses. *Oecologia* 152:179-189.
 28. Montaña, C.G., Taphorn, D.C., Layman, C.A., and Lasso, C. 2006. Distribución, alimentación, y reproducción de tres especies de pavones *Cichla* spp. (Perciformes, Cichlidae) en la cuenca baja del río Ventura, Estado Amazonas, Venezuela. *Memorias de la Fundación La Salle* 165:83-102.
 27. Layman, C.A., Dahlgren, C.P., Kellison, G.T., Adams, A.J., Gillanders, B.M., Kendall, M.S., Ley, J.A., Nagelkerken, I., and Serafy, J.E. 2006. Reply Comment: Marine nurseries and effective juvenile habitats. *Marine Ecology Progress Series* 318:307-308.

26. Winemiller, K.O., Montoya, J., Layman, C.A., Roelke, D., and Cotner, J. 2006. Seasonally varying impact of detritivorous fishes on the benthic ecology of a tropical floodplain river. *Journal of the North American Benthological Society* 25(1):250-262.
25. Hoeinghaus, D.J., Winemiller, K.O., Layman, C.A., Arrington, D.A., and Jepsen, D.B. 2006. Effects of seasonality and migratory prey on body condition of *Cichla* species in a tropical floodplain river. *Ecology of Freshwater Fish* 15: 398-407.
24. Arrington, D.A., Davidson, B.K., Winemiller, K.O., and Layman, C.A. 2006. Influence of life history and seasonal hydrology on lipid storage in three neotropical fish species. *Journal of Fish Biology* 68:1-16.
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20. Layman, C.A., Langerhans, R.B., and Winemiller, K.O. 2005. Body size, not other morphological traits, characterizes cascading effects in fish assemblage composition following commercial netting *Canadian Journal of Fisheries and Aquatic Sciences* 62:1-9.
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17. 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.
16. Langerhans, R.B., Layman, C.A., and DeWitt, T.J. 2005. Male genital size reflects a tradeoff between attracting mates and avoiding predators in two live-bearing fish species *Proceedings of the National Academy of Sciences* 102(21): 7618-7623.
15. 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.
14. 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.
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12. 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.
11. 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.

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5. Silliman, B. R., Layman, C. A., and Altieri, A. 2003. Symbiosis between an alpheid shrimp and a xanthoid crab in salt marshes of mid-Atlantic states, USA. *Journal of Crustacean Biology* 23(4):876-879.
4. 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.
3. 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.
2. 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.
1. 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.

Manuscripts in review

- Allgeier, J.E., Layman, C.A., Montaña, C.G., Stephanie Buhler, S., Appaldo, R., and Rosemond, A.D. *In review*. Independent and interactive effects of resource ratios on seagrass community diversity and function. *Ecology*.
- Archer, S.K., Bulher, S. and Layman, C.A. *In review*. Ambient nutrient availability drives the outcome of an interaction between a sponge (*Halichondria melanadocia*) and a seagrass (*Thalassia testudinum*). *Journal of Ecology*.
- Archer, S.K. and Layman, C.A. *In review*. Sponges act as foundation species and initiate positive feedback loops in seagrass beds. *Ecosystems*.
- Araújo, M.S., R. B. Langerhans, R.B., Layman, C.A. *In review*. Body streamlining is related to higher growth rates in Bahamian mosquitofish. *Evolutionary Ecology*.
- Buhler, S., Wenclawski, S., and Layman, C.A. *in review*. Testing effects of shoreline development on marine megafauna abundance with the use of a small drone. *Latin American Journal of Aquatic Research*.

- Giery, S.T. and Layman, C.A. *In review*. Ecological consequences of sexual selection. *Biological Reviews*.
- Henson, M.N., Aday, D.D., Rice, J.A. and Layman, C.A. *In review*. Assessing the influence of tilapia on sport species in North Carolina reservoirs. *Transactions of the American Fishery Society*.
- Layman, C.A. and Allgeier, J.E. *In review*. Artificial reefs viewed from the bottom-up: an ecosystem ecology perspective. *Fish and Fisheries*.
- Peake, J., Bogdanoff, A.K., Layman, C.A., Castillo, B., Reale-Munroe, K., Chapman, J., Dahl, K., Patterson, W., Eddy, C., Faletti, K., Higgs, N., Johnston, M.A., Muñoz, R.C., Sandell, V., Villasenor-Derbez, J.C., and Morris, J.A. Jr. *In review*. Feeding ecology of invasive lionfish (*Pterois volitans* and *Pterois miles*) in the temperate and tropical western Atlantic. *Biological Invasions*.
- Rossi, R.E., Archer, S.K. and Layman, C.A. *In review*. Potential role of biotic stressors in a dwarf red mangrove (*Rhizophora mangle*) die-off. *Estuaries and Coasts*.
- Rossi, R.E., Giery, S.T., Bonnema, E.W., Todd, A.L., and Layman, C.A. *In review*. Characterizing trophic ecology of the checkered puffer (*Sphoeroides testudineus*). *Latin American Journal of Aquatic Research*.
- Stoner, E.W. and Layman, C.A. *In review*. Does nutrient loading affect growth of a benthic jellyfish species? *Thalassas*.

BOOK CHAPTERS AND REVIEWS

- Layman, C.A. (Book Review): *The Biology of Mangroves and Seagrasses*. Hogarth, P.J., Oxford University Press.
- Faunce, C.H. and Layman, C.A. 2009. Sources of variation that affect perceived nursery function of mangroves. In: *Ecological Connectivity among Tropical Coastal Ecosystems*, Springer, pp. 401-421.
- Layman, C.A., Winemiller, K.O., and D.A. Arrington. 2005. 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, pp. 395-406.
- 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, pp. 10-23.
- 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. 2005. What drives the dynamics of aquatic food webs? In: *Dynamic Food Webs: Multispecies Assemblages, Ecosystem Development, and Environmental Change*. Elsevier/Academic Press, pp. 451-462.

TEACHING

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|---------|--|
| 2015-17 | <i>Instructor</i> – Introduction to Biological Research (AEC 502), North Carolina State University |
| 2014-17 | <i>Instructor</i> – Applied Ecology (AEC 400), North Carolina State University |
| 2014 | <i>Instructor</i> – Food Web Ecology (AEC 592), North Carolina State University |

- 2007-13 *Instructor* - Coastal Marine Conservation (BSC 4934/6926), Florida International University
- 2009-12 *Instructor* - Ecology (PCB 3043 and PCB3043L), Florida International University
- 2009-11 *Instructor* – Introduction to Stable Isotopes in Food Web Ecology (Seminar, BSC 6926), Florida International University
- 2007-8 *Instructor* - Introduction to Marine Biology (OCB2003 and OCB2003L), Florida International University
- 2007 *Instructor* – Otoliths and Fish Age Estimation (Seminar, BSC 6926), Florida International University
- 2003-2005 *Assistant Instructor* - Bahamas Field Course in Stream Restoration (BSC 467/567), Joint between students of the College of the Bahamas and University of Alabama.
- 2004 *Instructor* - “Índices de Integridad Biótica” (Indexes of Biotic Integrity), M.S. Seminar at Universidad Experimental de Los Llanos, Venezuela. Course taught in Spanish.
- 2003 *Instructor* - “Ideas Nuevas en Ecología” (New Ideas in Ecology), M.S. Seminar at Universidad Experimental de Los Llanos, 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

OTHER PROFESSIONAL ACTIVITIES

Editor in Chief: *Food Webs*

Editor: *Caribbean Naturalist*

Previous Reviewer for:

American Naturalist, Animal Behaviour, ANR Blanc Programme (France), Aquatic Living Resources, Austral Ecology, Axios, Behavioral Ecology, Biological Conservation, Biological Invasions, Biological Journal of the Linnean Society, Biological Invasions, Biological Reviews, Biological Conservation, Bonefish and Tarpon Trust, Canadian Journal of Fisheries and Aquatic Sciences, Caribbean Journal of Science, Caribbean Naturalist, Conservation Biology, Current Biology, Conservation Letters, Deep Sea Research, Diversity and Distributions, Ecohydrology, Ecology, Ecological Applications, Ecology Letters, Ecosphere, Ecosystems, Environmental Biology of Fishes, Estuaries and Coasts, Environmental Management, Estuarine, Coastal and Shelf Science, Fisheries Management and Ecology, Fisheries, Fisheries Research, Frontiers in Zoology, Functional Ecology, Fundamental and Applied Limnology, Global Change Biology, Gulf Research Foundation, Hydrobiologia, International Ph.D. reviews (5 different countries), Israel National Science Foundation, Journal of Animal Ecology, Journal of Basic and Applied Ecology, Journal of Ecology, Journal of Fish Biology, Journal of the North American Benthological Society, Journal of Sea Research, Journal of Tropical Ecology, Netherlands Organization for Scientific Research, Limnology and Oceanography, Limnology and Oceanography: Methods, Marine and Coastal Fisheries, MARFIN, Marine and Freshwater Research, Marine Biology, Marine Biology Research, Marine Ecology Progress Series, Methods in Ecology and Evolution, National Geographic, National Science Foundation (3 different programs, also including a BIO-OCE Panel 2010 and 2014; Coastal SEES Panel 2013 and 2015), Natural Sciences and Engineering Research Council of Canada, National Environmental Research Center of the UK Nature Communications, Neotropical Ichthyology, Netherlands Organization for Scientific Research, NOAA, Oecologia, Oikos, PLoS One, Polar Biology, Proceedings of the Royal Society B, Rapid Communications in Mass Spectrometry, Qatar Science Foundation, Research Letters in Ecology, River Research and Applications, Royal Society of Open Science, Sea Grant (5 different state programs), Science of the Total Environment, Southeastern Naturalist (Guest Editor), Tenure packets (2 universities), The Biology of Mangrove and Seagrasses (Book Review), The Open Marine Biology Journal, The Science of the Total Environment, Transactions of the American Fisheries Society, Trends in Ecology and Evolution, United Arab Emirates Research Affairs Council.

Graduate Students: Stephanie Buhler (Ph.D.), Ryann Rossi (Ph.D.), Alex Bogdanoff (Ph.D.); Andrew Maurer (Ph.D.); Emilee Wooster (M.S.); April Lamb (M.S.); I currently serve on 14 other graduate student committees

Students Graduated: Sean Giery, Ph.D. 2016; Stephanie Archer Ph.D. 2015; Elizabeth Stoner, Ph.D. 2014; Zachary Jud Ph.D. 2014; Lauren Yeager, Ph.D. 2013; Jake Allgeier, Ph.D. 2013 (co-advised with Amy Rosemond, University of Georgia); Caroline Peyer, Ph.D. 2011; Vanessa Haley, M.S. 2009; Megan Seese, M.S., 2009 (co-advised with Jennifer Rehage, NOVA Southeastern University); Lori Valentine-Rose M.S., 2008 (co-advised with Amy Ward, University of Alabama)

Educational Outreach Program Information:

<http://appliedecology.cals.ncsu.edu/absci/>

<http://craiglaymanlab.com/outreach/>