

Tyler C. Coverdale

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EDUCATION

PhD	Ecology and Evolutionary Biology, Princeton University	2013-present (anticipated summer 2018)
MA	Ecology and Evolutionary Biology, Princeton University	2015
ScB	Biology, Brown University	2010

ACADEMIC POSITIONS

Graduate Student, Pringle Lab, Princeton University	2013-Present
Research Assistant and Lab Manager, Bertness Lab, Brown University	2010-2013
Undergraduate Researcher, Bertness Lab, Brown University	2009-2010
Undergraduate Researcher, Swartz Lab, Brown University	2006-2008

ACADEMIC HONORS AND AWARDS

Ecological Society of America Graduate Student Policy Award	2017
National Science Foundation Graduate Research Fellowship Program (GRFP) Award	2014-2017
Princeton University Centennial Fellowship	2013-2018
Honors in Biology, Brown University	2010
Magna Cum Laude, Brown University	2010
Senior Prize in Biology, Brown University	2010
Sigma Xi Society	2009

RESEARCH FUNDING

Garden Club of America Caroline Thorn Kissel Summer Environmental Studies Scholarship	2017
Princeton Institute for International and Regional Studies Research Grant	2017
National Science Foundation Doctoral Dissertation Improvement Grant (DDIG)	2016-2018
Lewis and Clark Fund for Exploration and Field Research Grant	2015
National Geographic Young Explorers Grant	2014
Princeton University Field Research Grant	2014
The Nature Conservancy Sander Buchman Memorial Long Island Sound Research Grant	2011-2012
Harold Ward Undergraduate Teaching and Research Fellowship	2009-2010

PUBLICATIONS

1. Tarnita, CE, JA Bonachela, E Sheffer, JA Guyton, **TC Coverdale**, RA Long and RM Pringle. 2017. A theoretical foundation for multi-scale regular vegetation patterns. *Nature* **541**: 398-401 [[Cover Article](#)] ([link](#)).
2. **Coverdale, TC**, TR Kartzinel, K Grabowski, RK Shriver, AA Hassan, JR Goheen, TM Palmer and RM Pringle. 2016. Elephants in the understory: opposing direct and indirect effects of consumption and ecosystem engineering. *Ecology* **97**: 3219-3230 ([link](#)).
3. Kartzinel, TR, PA Chen, **TC Coverdale**, DL Erickson, WJ Kress, ML Kuzmina, DI Rubenstein, W Wang and RM Pringle. 2015. DNA metabarcoding illuminates dietary niche partitioning by large African herbivores. *Proceedings of the National Academy of Science* **112**: 8019-8024. [[Cover Article](#)] ([link](#))
4. Bonachela, JA, RM Pringle, E Sheffer, **TC Coverdale**, JA Guyton, KK Caylor, SA Levin and CE Tarnita. 2015. Termite mounds can increase the robustness of dryland ecosystems to climatic change. *Science* **347**: 651-655. [[Cover Article](#)] ([link](#))
5. **Coverdale, TC**, EW Young, CP Brisson and MD Bertness. 2014. Indirect human impacts reverse centuries of carbon sequestration and marsh accretion. *PLoS One* **9**(3) e93296. ([link](#))
6. Bertness, MD, CP Brisson, **TC Coverdale**, MC Bevil, SM Crotty and ER Suglia. 2014. Experimental predator removal rapidly generates salt marsh die-off. *Ecology Letters* **17**: 830-835. ([link](#))
7. He, Q, MD Bertness, J Bruno, B Li, G Chen, **TC Coverdale**, AH Altieri, J Bai, T Sun, S Pennings, J Liu, P Ehrlich and B Cui. 2014. Economic development and coastal ecosystem change in China. *Scientific Reports* **4**: 5995. ([link](#))
8. Brisson, CP, **TC Coverdale** and MD Bertness. 2014. Salt marsh die-off and recovery reveal disparity between the recovery of ecosystem structure and service provision. *Biological Conservation* **197**: 1-5. ([link](#))
9. **Coverdale, TC**, MD Bertness and AH Altieri. 2013. Regional ontogeny of New England salt marsh die-off. *Conservation Biology* **27**(5): 1041-1048. ([link](#))
10. **Coverdale, TC**, EE Axelman, CP Brisson, EW Young, AH Altieri and MD Bertness. 2013. New England salt marsh recovery: opportunistic colonization of an invasive species and its non-consumptive effects. *PLoS One* **8**(8): e73823. ([link](#))
11. Altieri, AH, MD Bertness, **TC Coverdale**, EE Axelman, NC Herrmann and PL Szathmary. 2013. Facilitation drives the resilience of salt marshes and rapid reversal of die-off. *Ecology* **94**(7): 1647-1657. ([link](#))
12. Bertness, MD and **TC Coverdale**. 2013. An invasive species facilitates the recovery of salt marsh ecosystems on Cape Cod. *Ecology* **94**(9) 1937-1943. ([link](#))
13. **Coverdale, TC**, NC Herrmann, AH Altieri and MD Bertness. 2013. Latent impacts: the role of historical human impacts in coastal habitat loss. *Frontiers in Ecology and the Environment* **11**(2): 69-74. [[Cover Article](#)] ([link](#))
14. Altieri, AH, MD Bertness, **TC Coverdale**, NC Herrmann and C Holdredge. 2012. A trophic cascade triggers collapse of a salt-marsh ecosystem with intensive recreational fishing. *Ecology* **93**(6): 1402-1410. ([link](#))
15. **Coverdale, TC**, AH Altieri and MD Bertness. 2012. Belowground herbivory increases vulnerability of New England salt marshes to die-off. *Ecology* **93**(9): 2085-2094. ([link](#))

Underline denotes mentored undergraduate student

INVITED LECTURES AND SEMINARS

Brown University (Departmental Seminar)

2017

Brown University (Coastal Ecology and Conservation Course)	2017
Wheaton College (Freshwater and Marine Botany Course)	2013

TEACHING, MENTORSHIP, AND INCLUSION

Mentor, Princeton Environmental Institute Summer Internship Program in Kenya (5 students)	2014-2017
• <i>Two month field trips; worked alongside students daily on several field and laboratory projects</i>	
Mentor, Princeton University ReMatch Program	2015-2016
• <i>Met with first-generation undergraduates to discuss research careers and independent projects</i>	
Member, Princeton University Women in Science Partnership	2016-2017
• <i>Met in small groups to discuss issues of inclusion and discrimination in STEM fields</i>	
Mentor, Princeton University Graduate/Undergraduate Mentoring Programs (5 students)	2015-2017
• <i>Provided career advice to early career graduate students and senior undergraduates</i>	
Guest Speaker, Skype a Scientist Program (K-12 classrooms)	2017
Advisor, Princeton University Honors Thesis Program in Kenya (2 students)	2014-2016
• <i>Two month field trips; submission of both theses to peer-reviewed journals expected in 2018</i>	
Guest speaker, The Ratner School (African Ecology for Pre-K and Kindergarten classes)	2015-2016
Group leader, Daraja Academy for Girls Discovery Day at Mpala Research Centre	2014
• <i>Led field trip for local students to see wildlife and learn about ongoing research projects</i>	
Teaching Assistant, Ecology and Conservation of African Landscapes, Princeton University	2014
• <i>Three week field course in Kenya; students developed field projects and interviewed stakeholders</i>	
Teaching Assistant, Ecology: Species Interactions, Biodiversity and Society, Princeton University	2013
• <i>Developed lab activities, including group stop-motion video project highlighted here</i>	
Teaching Assistant, Marine Biology, Brown University	2012
• <i>Led field trip to Sapelo Island, GA; students worked with resident scientists</i>	
Teaching Assistant, Coastal Ecology and Conservation (three semesters), Brown University	2010-2012
• <i>Led field trip to Cape Cod, MA; lectured on salt marsh die-off and overfishing</i>	
Teaching Assistant and University Tutor, Principles of Ecology, Brown University	2009
• <i>Led field trip to Haffenreffer Woods; students collected data for long-term class dataset</i>	

OUTREACH AND PROFESSIONAL ACTIVITY

Graduate student representative, ESA Congressional Visits Day	2017
Reviewer, <i>Annals of Botany, Ecology and Evolution, Ecosystems, Estuaries and Coasts, Journal of Arid Environments, Journal of Experimental Marine Biology and Ecology, Journal of Vector Ecology, Marine Community Ecology and Conservation, Nature Climate Change, Oikos</i>	2011-2017
Judge, Hopewell Elementary School Science Fair	2017
Co-organizer, Princeton University Scientific Communication Workshop	2014

SELECTED CONFERENCE TALKS

T. Coverdale. *Ecosystem engineering by elephants: canopy damage benefits understory plants by creating associational refuges.* 2016 Princeton, Penn, Rutgers, Columbia Graduate Symposium, Philadelphia PA.

T. Coverdale, C. Brisson and M. Bertness. *Fear of being eaten drives salt marsh recovery from consumer-driven die-off.* 2013 Benthic Ecology Meeting, Savannah GA.

T. Coverdale, N. Herrmann, A. Altieri and M. Bertness. *Synergistic, delayed effects of multiple human impacts on ecosystems.* 2011 Benthic Ecology Meeting, Mobile AL.

T. Coverdale, A. Altieri, M. Bertness, N. Herrmann, and C. Holdredge. *Recreational fishing triggers salt marsh die-off on Cape Cod, MA.* 2011 NEERS Spring Meeting, Port Jefferson NY.

T. Coverdale and M. Bertness. *Overfishing triggers runaway herbivory and salt marsh die-off in New England.* Narragansett Bay National Estuarine Research Reserve. 2011.

T. Coverdale, N. Herrmann, A. Altieri and M. Bertness. *Historical development of Cape Cod salt marshes triggers current runaway herbivory and marsh die-off.* 2010 Benthic Ecology Meeting, Wilmington NC.

SELECTED PRESS AND MEDIA

Meetings on the Hill, GSPA Recipient Works to Put a Face on Science Funding+ July, 2017. Ecological Society of America ([link](#))

Fishing for Clues to Solve Namibia's Fairy Circle Mystery+ January, 2017. The New York Times ([link](#))

Fairy circles could be the handiwork of hungry termites and thirsty plants+ January. 2017. Science ([link](#))

African mammals, foodwebs, and coexistence+ June, 2015. PNAS ([link](#))

How do African grasslands support so many plant-eaters?+ June, 2015. National Geographic ([link](#))

Termites are Guardians of the Soil+ March, 2015. The New York Times ([link](#))

Return of the African elephant+, January, 2015. Gorongosa National Park Documentary Video ([link](#))

The many sides of Africa's elephants+, January, 2015. E.O. Wilson Biodiversity Foundation ([link](#))

When Predators Vanish, So Does the Ecosystem+, May, 2014. The New York Times ([link](#))

Walking in Tinley's footsteps+, August, 2013. Gorongosa National Park Bush Diaries Blog ([link](#))

Going back in time four decades+August, 2013. Gorongosa National Park Documentary Video ([link](#))

Salt marsh equilibrium+ March, 2013. *Sunday Journal*, Cape Cod Broadcasting ([link](#))

Depression-era drainage ditches emerge as sleeping threat to Cape Cod salt marshes+ January, 2013. Ecological Society of America ([link](#))

Saving Cape Cod's salt marshes, one fish at a time+ July, 2012. The Providence Journal Op-ed

Pressures on predators lead to marshland die-offs+ June, 2012. The New York Times. ([link](#))

Crabs put the pinch on marshlands+ September, 2011. NSF Science Nation ([link](#))

Crabs may be killing Cape Cod's marshes+ July, 2010. The Boston Globe ([link](#))