CURRICULUM VITAE **Anna E. Braswell**

School of Forest Resources and Conservation, IFAS, University of Florida
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February 2021

EDUCATION

Duke University, Durham, NC 2012-2017
Ph.D. Environmental Science, Nicholas School of the Environment

University of Alabama, Tuscaloosa, AL 2008-2010
M.S. Biology, Department of Biological Sciences

Washington University in St. Louis, MO 2002-2006
B.A. Environmental Studies, College of Arts and Sciences

PROFESSIONAL APPOINTMENTS

Assistant Professor of Coastal Ecosystems and Watersheds 2020-Present
School of Forest Resources and Conservation, IFAS, University of Florida

Postdoctoral Research Associate 2018-2020
Earth Lab, CIRES, University of Colorado Boulder

Using Zillow geospatial real estate data to investigate the interactions between coastal wetlands and development of coastal communities. Collaborating with a team of geographers, demographers and data analytics experts.

Graduate Research Assistant 2012-2017
Nicholas School of the Environment, Duke University

Completed interdisciplinary work on understanding the drivers of wetland persistence, including geospatial analysis of estuarine morphology, watershed characteristics and vegetation/erosion feedbacks. Led a field project collecting sediment cores to elucidate the varied drivers of coastal wetland formation.

Graduate Research Assistant 2008-2010
Department of Biological Sciences, University of Alabama

Investigated the effects of multiple disturbances (fire and hurricanes) on coastal wetland soil building and biogeochemistry in a Gulf Coast marsh. Completed field and lab work to analyze nutrients, plant recovery and accretion.

PUBLICATIONS

Uhl, J.H., D.S. Connor, S. Leyk, and **A.E. Braswell**. (2021). A century of decoupling size and structure of urban spaces in the United States. *Nature Communications Earth and Environment*, 2(1): 1-14.

Uhl, J.H., S. Leyk, C. M. McShane, **A.E. Braswell**, D. S. Connor, and D. L. Balk. (2021). Fine-grained, spatiotemporal datasets measuring 200 years of land development in the United States. *Earth System Science Data*, 13(1): 119-153.

Braswell, A. E., Heffernan, J. B., & Kirwan, M. L. (2020). How old are marshes on the East Coast, USA? Complex patterns in wetland age within and among regions. *Geophysical Research Letters*, 47: e2020GL089415. https://doi.org/10.1029/2020GL089415

Balch, J.K., V. Iglesias, **A.E. Braswell**, M.W. Rossi, M.B. Joseph, A.L. Mahood, T. Shrum, C. White, V. Scholl, B. McGuire, C. Karban, M. Buckland, & W. Travis. (2020). Socio-

environmental extremes: rethinking extraordinary events as outcomes of interacting biophysical and social systems. *Earth's Future*, 8(7): p.e2019EF001319.

Leyk, S., J. Uhl, D. Connor, **A.E. Braswell**, N. Mietkiewicz, J. Balch, and M. Gutmann. (2020). Two centuries of settlement and urban development in the United States. *Science Advances*, 6(23): p.eaba2937.

Braswell, A.E., J. Cherry, and C. May. (2019). Spatially-dependent patterns of plant recovery and sediment accretion following disturbances in a Gulf Coast tidal marsh. *Wetlands Ecology and Management*, 27(2-3): 377-392.

Braswell, A.E., and J. Heffernan. (2019). Coastal wetland distributions: Delineating domains of macroscale drivers and local feedbacks. *Ecosystems*, 22(6): 1256-1270.

Heffernan, J.A., X. Dong, and **A.E. Braswell**. (2018). Multiple Stable States and Regime Shifts. *Oxford Bibliographies* in Environmental Science. Eds. E. Wohl. New York: Oxford University Press, March 28, 2018. http://www.oxfordbibliographies.com/view/document/obo-9780199363445/obo-9780199363445-0095.xml#firstMatch.

Ratliff, K., **A.E. Braswell**, and M. Marani. (2015). Spatial response of coastal marshes to increased atmospheric CO_2. *Proceedings of the National Academy of Sciences*, 112: 15580-15584.

Braswell, A.E., and B. Slusar. (2006). Effects of vegetation structure on diversity and abundance of bats in Northern Kruger National Park, South Africa. *Apex Journal* (Washington University in St. Louis).

MANUSCRIPTS IN REVIEW

Braswell, A.E., S. Leyk , D. Connor and J. Uhl. (in review). Creeping disaster along the U.S. coastline: Understanding exposure to sea level rise through historical development. *Environmental Research Letters*.

Iglesias, V., **A.E. Braswell**, M.B. Joseph, C. McShane, M.W. Rossi, M.Cattau, M.J. Koontz, J. McGlinchy, R.C. Nagy, J. Balch, S. Leyk, and W.R. Travis. (in review). Risky development: increasing exposure to natural hazards in the United States. *Earth's Future*.

Seybold, E., M. Fork, **A.E. Braswell**, J. Blaszczak, M. Fuller, K. Kaiser, J. Mallard and M. Zimmer. (in review). A classification framework to assess ecological, biogeochemical, and hydrologic synchrony and asynchrony. *Ecosystems*.

Kelleher, C. and **A.E. Braswell**. (in review). Introductory overview: Visualization recommendations for storytelling with large environmental datasets. *Environmental Modelling and Software*.

MANUSCRIPTS IN PREPARATION

Braswell, A.E., J. Mallard and M. Ross. (in prep). Novel Geomorphology: Anthropogenic change to geomorphic structures. *Nature Geosciences.*

Kelleher, C., J. Gardner, M. Fork, **A.E. Braswell,** M. Zimmer, J. Mallard, J. Blaszczak, K. Kaiser, C. Clifford, E. Seybold. (in prep). Urban Stream Gages. *WIRES*.

Kaiser, K., **A.E. Braswell**, and M. Fork. (in prep). The funding, destination, and impact of socio-environmental research. *Ecology and Society*.

Goldstein, E., **A.E. Braswell**, and C. McShane. (in prep). A collaborative curation service for coastline and people data science. *Anthropocene Coasts*.

DATASETS

Braswell, A. E., Heffernan, J. B., & Kirwan, M. L. (2020). Radiocarbon Dates - Braswell et al. https://doi.org/10.7910/DVN/KDXIRN, Harvard Dataverse, V1, UNF:6:cbAJ4dAPv92m3w2ZxHqP/w== [fileUNF]

Braswell, A. E., Heffernan, J. B., & Kirwan, M. L. (2020). Marsh Age Literature Database. https://doi.org/10.7910/DVN/GHK8AS, Harvard Dataverse, V1, UNF:6:zHftqw9X0I8ARsW2FgS9Jw== [fileUNF]

AWARDS

Current

Linking nutrient reactivity and transport in subsurface flowpaths along a terrestrial-estuarine continuum. Department of Energy- Environmental System Science. $599,939; $37,026 total costs for Co-PI Braswell. (September 2020 – August 2023) M. Zimmer (PI), B. Arora, A.E. Braswell, E. Seybold, C. Tatariw, and A. Visser.

The Creeping Disaster Along the Coast: Built Environment, Coastal Communities and Population Vulnerability to Sea Level Rise. NSF HDBE Grant. $450,000; $37,000 to support A. Braswell (September 2019 – August 2022). S. Leyk (PI), A. Braswell, and D. Connor

NSF Coastlines and People EAGER: Collaborative: COMET - the Coastlines and people Open data and MachinE learning sprinT. $289,522; $78,991 total direct costs for Co-PI Braswell (September 2019 – August 2021). E. Goldstein (PI) and A. Braswell.

Linking terrestrial pollution to estuarine water quality in Elkhorn Slough, CA. NOAA CA Sea Grant. $250,000 (December 2018 – November 2021). M. Zimmer (PI), A. Braswell and E. Seybold.

Measuring Vulnerability of the Built Environment in Coastal Communities of the United States: A Geospatial Framework. University of Colorado RIO Seed Grant. $49,138 (July 2019 – December 2020). S. Leyk (PI) and A. Braswell.

Completed

Understanding broadscale drivers of coastal wetland extent. NOAA NC Sea Grant. Project # R/MG-1504. $40,000 (2015). J. Heffernan (PI). Co-authored this state-wide NOAA grant with my doctoral advisor.

Watershed, estuarine, and local drivers of coastal marsh establishments and resilience. NSF Geomorphology and Landuse Dynamics Grant. Project #1530233. $350,000 (2015). J. Heffernan (PI), M. Kirwan, M. Marani, and B. Murray. Collaborated and contributed to a proposal with my doctoral adviser and dissertation committee.

Wetland Center Student Grant, Duke University. $5,000 (2015). Braswell (PI).

Pending

Collaborative Research: Linking Landscapes: Unraveling the connection between sediment delivery and coastal marsh persistence with big data and machine learning. NSF Frontier Research in Earth Sciences. $667,989 total costs for PI Braswell (August 2021-July 2026). A. Braswell (P.I.), C. Esposito, J. Gardner, E. Goldstein, M. Ross, and M. Zimmer.

DISES: The impact of the Clean Water Act on wetland distribution, urbanization, and population change. NSF Dynamics of Integrated Socio-Environmental Systems. $295,718 total costs for Co-PI Braswell (September 2021 – August 2024). A. Braswell (P.I.), D. Connor and S. Leyk.

Collaborative Research: Persistence, patterns, and biogeochemical impacts of agricultural legacies in urban waters. NSF Division of Environmental Biology. $421,351 total costs for Co-PI Braswell (June 2021 – May 2024). E. Seybold (P.I), A. Braswell, and M. Fork.

Linking hydrologic and ecological impacts of tidal variability on subsurface biogeochemical processes at coastal terrestrial-aquatic interfaces. Department of Energy- Environmental System Science (Pre-proposal: DE-FOA-0002392). $1,000,000; $280,000 total costs for Co-PI Braswell. (September 2021 – August 2024) M. Zimmer (PI), B. Arora, A.E. Braswell, E. Seybold, C. Tatariw, and A. Visser.

Declined (2020)
Untangling Paradoxical Relationships Between Lost Ecosystem Services and Increased Human Well-Being in Urbanized Estuary Regions. UF WIGF proposal. S. Smidt (P.I.), M.J. Deitch, M.G. Lusk, A.R. Smyth, A.J. Reisinger, Y.G. Her, J. Loizzo, T.R. Wade, H. D. Laughinghouse IV, P.N. Adams. K. Serafin, S. Baker, **A.E. Braswell**, E.V. Camp, J. Qiu, and M. Clarke. Support for a shared PhD student with K. Serafin.

HONORS

Coastal and Estuarine Research Federation – Early Career Travel Award	2019
Postdoctoral Association of Colorado Boulder Travel Award	2018
Best Student Poster Presentation Award, Society of Wetland Scientists	2017
Graduate Summer Research Fellowship, Duke Graduate School	2017
Dean's Award for Outstanding Ph.D. Student Paper, Nicholas School of the Environment	2016
Garden Club of America Coastal Wetland Scholarship	2013
Graham Prize for Outstanding Achievement in Biology, University of Alabama	2010
Chimes Honorary Society, Washington University in St. Louis	2004

INVITED SEMINARS AND PRESENTATIONS

Braswell, A.E. Conceptualizing coastal wetlands in a macroscale framework. University of Florida, The Water Institute of the Gulf, 2021.

Braswell, A.E. Conceptualizing coastal wetlands in a macroscale framework. University of Florida, Water, Wetlands, and Watersheds Seminar, 2020.

Braswell, A.E. Disentangling the complex connections between coastal wetlands, watersheds and people. University of Florida, Fisheries and Aquatic Science Seminar, 2020.

Braswell, A.E. Conceptualizing coastal wetlands in a macroscale framework: How and why do coastal wetlands form, persist and degrade? University of Florida, SFRC, 2019.

Braswell, A.E. Internal feedbacks between vegetation and coastal marsh persistence: What happens when the system is altered? Society of Freshwater Scientists, 2019.

Braswell, A.E. Conceptualizing coastal wetlands as biogeomorphic macrosystems. Regis University, 2018.

CONTRIBUTED PRESENTATIONS (*denotes poster presentation)

Grande, E., M. Zimmer, E.C. Seybold, A.E. Braswell, C. Tatariw, A. Greene, M. Montalvo, F. Birgand, and A. Visser. 2020. Using high spatiotemporal nitrate measurements to assess nutrient transport and transformations at the terrestrial-marine interface of a tidal watershed. American Geophysical Union Fall Meeting, Virtual.

Mc Shane, C., **A.E. Braswell**, S. Leyk, D. Connor, and J. Uhl. 2020. Understanding the built environment's contribution to vulnerability. AGU Fall Meeting, Virtual.*

Zimmer, M, E. Grande, A. Greene, E. Seybold, and **A.E. Braswell**. 2019. Spatiotemporal Nitrate concentration dynamics in a salt marsh system. Elkhorn Slough Science Symposium, Santa Cruz, CA.

Braswell, A.E. and S. Leyk. 2019. Built environment vulnerability: How does coastal development affect response and resilience to coastal hazards? Coastal and Estuarine Research Federation, Mobile, AL.

Greene, A.P., M.A. Zimmer, E.C. Seybold, **A.E. Braswell**. 2019. Identifying the complex pathways of nitrate transport and removal in an agriculturally dominated estuary. Coastal and Estuarine Research Federation, Mobile, AL.*

Seybold, E., M.A. Zimmer, and **A.E. Braswell**. 2019. Using high-frequency sensor networks to quantify terrestrial nitrogen sources to a coastal estuary. Coastal and Estuarine Research Federation, Mobile, AL.*

Braswell, A.E. and S. Leyk. 2019. Growth of coastal communities in the United States: Using a novel Zillow dataset to understand development trajectories and vulnerability to sea level rise. Scenarios Forum: Forum on Scenarios for Climate and Societal Futures, Denver, CO.

Braswell, A.E. and S. Leyk. 2018. Settlement of sea level rise zones in the United States: Using Zillow data to investigate historical development patterns. American Geophysical Union, Washington, D.C.*

Braswell, A.E. and S. Leyk. 2018. Historic trajectories of Human Settlement in the 100-year floodplains of the United States. National Socio-Environmental Synthesis Center, Annapolis, MD.

Braswell, A.E. and J. Heffernan. 2017. How old are marshes along the East Coast, USA? Understanding the temporal drivers of marsh formation. Society of Wetland Scientists, San Juan, PR.*

Braswell, A.E. and J. Heffernan. 2016. Understanding scale: Local biogeomorphic feedbacks and macro-scale drivers shape coastal wetland distributions. American Geophysical Union, San Francisco, CA.

Braswell, A.E. and J. Heffernan. 2016. North Carolina Wetland Resilience Symposium, Durham, NC.

Braswell, A.E. and J. Heffernan. 2015. Where do coastal wetlands form?: Understanding the broadscale drivers of coastal wetland extent. Coastal and Estuarine Research Federation, Portland, OR.

Braswell, A.E. and J. Heffernan. 2014. Understanding broadscale drivers of coastal wetland extent. American Geophysical Union, San Francisco, CA.*

Marani, M., R.M. Ratliff, and **A.E. Braswell.** 2014. Climate change impacts on coastal marsh survival mediated by vegetation-geomorphology feedbacks. American Geophysical Union, San Francisco, CA.*

Braswell, A.E. and J. Heffernan. 2014. Understanding the broad-scale and local drivers of coastal wetland extent and persistence: A macroscale GIS study. Joint Aquatics Sciences Meeting, Portland, OR.*

Braswell, A.E. and J. Cherry. 2012. Spatial variation of resilience along an elevation gradient in a coastal wetland. American Geophysical Union - Chapman Meeting, Reston, VA.*

Braswell, A.E., J. Cherry and C. May. 2010. Interactive effects of hurricanes and fire along an elevation gradient in a *Juncus roemerianus* marsh. Society of Wetland Scientists, Salt Lake City, UT.

Braswell, A.E., J. Cherry and C. May. 2009. The role of hurricane and fire disturbance on plant productivity and accretion in a saltwater marsh in Grand Bay National Estuarine Research Reserve, MS. Society of Wetland Scientists, Denton, TX.

UPCOMING PRESENTATIONS

SYNERGISTIC ACTIVITIES

Co-Chair, Fisheries and Aquatic Sciences Seminar	Ongoing
Contributing Scientist, Letters to a Pre-Scientist	Ongoing
Chair and Creator, Earth Lab Twensday	2019-2020
Chair and Creator, Earth Lab Incubator	2018-2020
Postdoc Liaison, Earth Lab Leadership Team	2018-2020
Contributing Scientist, Skype a Scientist	2019
Group Leader, Earth Lab Extremes Collider and Extremes Codefest	2018
NSF Scoping Workshop – Coasts and People	2018
Invited Presenter, Society of Wetland Scientists Twitter Conference	2018
Assistant Stage Manager, March for Science – Denver	2018
Invited Panelist, Women in Science and Engineering	2016
Chair and Organizer, North Carolina Wetland Resilience Symposium	2015-2016
Faculty-Student Liaison, Nicholas Ph.D. Advocacy Council, Duke University	2015-2016
Special Events Coordinator, SWS, Duke University - Student Chapter	2015-2016
Mentor and Volunteer, MEDMentors, Duke University	2014-2015
Treasurer, SWS, Duke University - Student Chapter	2013-2015
Co-Chair and organizer, Graduate Afternoon Seminar, Duke University	2013-2014

Founder, SWS, Alabama - Student Chapter 2009-2011

Manuscript Review: *Ecosystems; Hydrology and Earth System Sciences; Wetlands; Anthropocene Coasts; Science; Population and Environment; Sustainability; Earth's Future; Science Advances; Ecosphere; Natural Hazards and Earth System Sciences.*
Proposal Review: *NSF Geomorphology and Land Use Dynamics*
Member: Society of Wetland Scientists (SWS), American Geophysical Union, Coastal and Estuarine Research Federation, Women in Wetlands – SWS, Earth Science Women's Network

TEACHING

University of Florida
FAS4933: Seminars in Fisheries and Aquatic Sciences Fall 2020

Regis University (instructor of record)
BL664A: Wetland Delineation Spring 2019
BL668/691: Environmental Biology Externship Spring 2019

Duke University (as Teaching Assistant)
ENV 102: Introduction to Environmental Science and Policy Spring 2014, Spring 2015
ENV 621: Water Resources, Finance and Planning Fall 2013
ENV 823: Ecosystem Resilience and Ecosystem Management Spring 2013, Fall 2014
ENV 823: Ecosystem Resilience and Ecosystem Management Fall 2016
Substitute lecturer while advisor was on paternity leave

University of Alabama (as Teaching Assistant)
BSC 115: (Instructor of two lab sections) Biology I Laboratory Fall 2009
BSC 117: (Instructor of two lab sections) Biology II Laboratory Spring 2010

MENTORING

Master Student Research Assistants:
Kelley Robbins-Thompson (MEM; Duke University)
Diego Calderon-Arrieta (MEM; Duke University)
Sara Cleaver (MEM; Duke University)
Alaurah Moss (MEM; Duke University)
Rebecca Cope (MEM; Duke University)
Sarah Ludwig-Monty (MEM; Duke University)

Undergraduate Research Assistants:
Danilo Meyer-Arrivillaga (B.S.; Juanita College)
Sarah Masterson (B.S.; University of Alabama)
Diana Schneider (B.S.; University of Alabama)
Ryan Cooper (B.S.; University of Alabama)
Mason Overstreet (B.S.; University of Alabama)

High School Research Assistants:
Natalie Sherman-Jollis (North Carolina School of Science and Math)

OTHER COURSES TAKEN

Leadership Skills for Success, Earth Science Women's Network 2018
Data Carpentry, Durham, NC 2014
PALEON Pollen Analysis Short Course, University of Maine 2014

Organization of Tropical Studies, South Africa 2005

NONACADEMIC WORK

Biologist 2010-2012

U.S. Fish and Wildlife Service, Recovery Branch, CA

Worked with stakeholders to recover species and restore habitat in southern California. Negotiated with US Navy to come to consensus on protection of endangered species on Navy land.

Biologist 2008

U.S. Fish and Wildlife Service, Listing Branch, CA

Synthesized and distilled research to determine species listings as threatened or endangered. Wrote technical listing documents for the *Federal Register*.