

RACHEL JOLLEY

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671-487-8275

EDUCATION

- 2008 **Ph.D. Forest Ecology, Biogeochemistry.** Dissertation: Effects of sedimentation on productivity, nutrient cycling, and community composition in riparian forests associated with ephemeral streams at Ft. Benning, GA, US. Auburn University, Auburn, AL, 36849. May 2008.
- 2000 **M.S. Botany and Range Sciences.** Thesis: *Veratrum californicum*: the effectiveness of mechanical and chemical control treatments and their effect of the residual tall forb community. Brigham Young University, Provo, UT, 84601. August 2000.
- 1998 **B.S. Zoology (Conservation Biology), Wildlife Management emphasis.** Brigham Young University, Provo, UT, 84601. April 1998.

WORK EXPERIENCE

Assistant Professor, College of Natural and Applied Sciences, University of Guam. Jan 2023-present. Western Pacific Tropical Research Center, Restoration Ecology

- Integrative Control Techniques to Restore Sites Invaded by Exotic Vine Species
- Implementation of Forest Enhancement Site (Caigat FES)
- Creating protocols for safeguarding ecosystem services post-disturbance
- Limestone forest recovery following ungulate removal

Brown treesnake Research group, University of Guam. Project Manager. Oct 2021-present

- Project Manager for the following projects:
 - Brown Treesnake trapping in Andersen AFB Housing with mouse vs. bird live lures
 - Scaling of Brown Treesnake body size and ability to ingest native birds
 - Influence of artificial bait and snake size on effectiveness of acetaminophen for lethal control of Brown Treesnakes

Adjunct Instructor, University of Guam. August 2019-2022

- Development and teaching of the following courses:
 - Plant Biology, online (ALS 102)
 - Developed online lab exercises for ALS 102L
 - Plant Taxonomy and Lab (BI365 and BI365L)
 - Scientific Arguments (BI321)
 - Scientific Writing (BI320)
 - Principles of Biology II (BI158)

Guam Plant Extinction Prevention Program, University of Guam. Associate Project Director. Feb 2019-2021

- Designed and performed natural resource surveys to fulfill Scope of Work contracts.
- Development of proposals, work plans, budgets, and cost estimates for CESU projects:
 - Plant and Invertebrate Surveys
 - *Serianthes nelsonii* Outplanting and Monitoring
 - Cycad Monitoring and Management
 - Implementation Plan for Phase I of the North Finegayan Forest Enhancement Site
 - Invasive Plant Control within Joint Region Marianas Area of Responsibility
- Coordinate personnel for field visits and data collection at survey sites, management plots on AAFB, and in military-leased area in Tinian
- Supervise pesticide applications, maintenance of plants, seed collection and propagation, and general maintenance of plot areas
- Develop monthly and annual status reports for the Navy and FWS, including environmental and natural resource impacts of current management techniques and recommendations for Navy's T&E species stewardship
- Create maps and data analysis using GIS
- Development of management plans for T&E species and Restoration Areas

Biological Sciences, Mississippi State University, MS. Adjunct faculty, distance education program. May 2015-2023.

- Courses taught: Ecology and the Environment, Biostatistics.
- On-line instructor for Master's of Biological Sciences program.
- Develop and teach courses, conduct live sessions via Canvas interface.

Arts and Sciences, Columbia Southern University, Orange Beach, AL. Adjunct Faculty, Earth Science, Biology, and Ecology. March 2010-May 2020.

- On-line Instructor for courses in Earth Science, Biology, and Ecology.
- Course writer for Earth Science and Ecology courses.
- Position includes providing instruction, interaction, and learning activities for students; reviewing and revising courses; interaction through discussion boards, email, and phone.
- Courses taught using the Blackboard interface.

General Education, Brigham Young University-Idaho, Rexburg, ID. Online instructor, Foundations of Science. September 2016-2018.

- Position included holding weekly class lectures, providing instruction, interaction, and learning activities.
- Interaction with students via live sessions, discussion boards, email, and phone.
- Courses taught through I-Learn 3 interface.

Biological Sciences, Mississippi State University, MS. Post-doctoral Research Associate II. Jun 2008-April 2010. Coordinator of EPA Region 4 grant: Linking Cultural, Biological, and Economic Values into Wetland Programs: Mississippi Band of the Choctaws Pearl River Wetland Demonstration Project.

- Design experiments and collect data on river restoration, seed germination, plant propagation, planting methods and techniques, growth and survival, and river hydrology.
- Oversee graduate students working on the project.
- Write supporting grants, reports, and manuscripts.
- Design and maintain website.
- Co-organized 2009 Rivercane Symposium.

Frontier Corporation USA, Providence, UT: Ecologist II. Aug 2007-Mar 2008.

- Delineated wetlands, performed stream classification and GPS surveys, and created GIS maps.
- Prepared technical reports, performed habitat and rare plant assessments
- Coordinated US Army Corps of Engineers Section 404 permitting
- Prepared mitigation design and monitoring plans, stormwater pollution prevention plans, Ecological Assessments, and routine NEPA documentation.

Forestry and Wildlife Sciences, Auburn University, Auburn, AL: Graduate Research Assistant. Jan 2004-Jul 2007.

- Oversaw research project investigating the effects of sediment deposition on the biological function of riparian forests at Ft. Benning, GA.
- Quantified above- and belowground forest productivity, decomposition rates, N mineralization rates, soil microbial biomass, nutrient-use efficiency, internal nutrient recycling, foliar and root nutrient concentrations, and the vegetative community composition.
- Collaborated on forestry and stream projects investigating impacts of urban expansion in the west Georgia area.

Utah Valley State College, Orem, UT: Botany Lab Manager/ Adjunct Instructor. Oct 2000-Jan 2004.

- Supervised the greenhouse and herbarium collections
- Ordered and maintained supplies for teaching and laboratory exercises
- Maintained budget
- Adjunct instructor for Biology and Botany lectures and labs as needed.
- Prepared grant proposals.
- Co-advisor for the Botany Club, and initiated and coached the Plant Identification Team.

Utah State Lands and Trust Division, St. George, UT. Private contractor. Mar -May 2003.

- Supervised field crews conducting inventories of five endangered plant species on Utah state lands in Washington County.

Utah Division of Wildlife Resources, Salt Lake City, UT. Information Technician. Mar-Oct 2000.

- Provided information to the public on wildlife laws and regulation.
- Licensing of hunting and fishing.
- Presented informational talks to school and community groups.
- Prepared articles for *Wildlife Review*.
- Wildland firefighter.

Brigham Young University, Provo, UT. Graduate Teaching Assistant. 1998

- Assisted in teaching classes at labs in Restoration Ecology, Natural Resource Planning, Wildland Plant ID, Rangeland Inventory Techniques, Biology I & II, and General Ecology. 1998.

Uinta National Forest Service, Heber, UT. Range technician. May-Oct 1999.

- Conducted rangeland inventories for grazing allotments.
- Wildland firefighter.

Brigham Young University, Provo, UT. Biological technician. 1998-1999.

- Assisted in classifying stream and river systems within the Ashley National Forest.

Brigham Young University, Provo, UT. Lab assistant. 1997-1998.

- Maintained the rangeland herbarium.
- Identified plants for collections and classes.

Missouri Department of Conservation, Ellington, MO. Biological technician. May-Oct 1995.

- Collected baseline data for the Missouri Ozark Forest Ecological Project (MOFEP).
- Inventories of vegetation plots, with an emphasis in soft mass production as wildlife food.

Utah Division of Wildlife Resources, Ephraim, UT. Range technician. May-Aug 1994.

- Surveyed long-term vegetation research plots.
- Conducting wildlife surveys throughout Central Utah.

REFEREED PUBLICATIONS

Neal, D.M., B.S. Baldwin, G.E. Ervin, **R.L. Jolley**, J.J.N. Campbell, M. Certain, J. Seymour, J.W. Neal. 2012. Assessment of Seed Storage Alternatives for Rivercane (*Arundinaria gigantea*). *Seed Technology* 34(1): 119-126.

Jolley, R.L., B.G. Lockaby, and G.G. Cavalcanti. 2010. Community composition across a gradient of sedimentation rates in the Southeastern Coastal Plain. *Plant Ecology* 210(2): 317-330.

Jolley, R.L., B.G. Lockaby, R.M. Governo. 2010. Vegetation nutrient dynamics associated with sedimentation in headwater riparian forests. *Soil Science Society of America Journal* 74 (4):1389-1397.

Jolley, R.L., B.G. Lockaby, R.M. Governo. 2010. Biogeochemical influences associated with sedimentation in riparian forests of the Southeastern Coastal Plain. *Soil Science Society of America Journal* 74: 326-336.

Jolley, R.L., B.G. Lockaby, and G.G. Cavalcanti. 2009. Productivity of riparian forests impacted by sedimentation in the Southeastern Coastal Plain. *Journal of Environmental Quality* 38: 965-979.

Cosgriff, R.L., V.J. Anderson, and S. Monson. 2004. Restoration of communities dominated by false hellebore. *Journal of Range Management* 57 (4): 365-370.

PROCEEDINGS AND ARTICLES

Neal, Diana M., **Rachel Jolley**, Brian Baldwin, Gary Ervin, Margaret Certain, John Seymour, Julian Campbell, and J. Wesley Neal. 2010. Maximizing efficacy of seed storage methods to enhance Rivercane [*Arundinaria gigantea* L. (Walter) Muhl] seedling production for habitat restoration programs. In: Proceedings of the 7th Eastern Native Grass Symposium.

Jolley, R., Diana Neal, Brian Baldwin, and Gary Ervin. 2009. Restoring canebrakes to enhance water quality along the Upper Pear River, Neshoba County, MS. In: Proceedings of the Mississippi Water Resource Council, Jessie G. Schmidt (ed.), Tunica, MS.

Jolley, Rachel. "Canebrake restoration along the upper Pearl River." SE Section TWS Newsletter: December 11, 2008.

Jolley, R. and B.G. Lockaby. 2006. Impacts of sediment deposition on productivity and nutrient dynamics in riparian forests. In: Proceedings of the International Conference of Hydrology and Management of Forested Wetlands, D.M. Amatya and J. Nettles (eds). New Bern, NC. American Society of Agricultural and Biological Engineers, St. Joseph, MI. pp. 188-198.

Jolley, R. 2000. Waterfowl Preview. *Wildlife Review*. Utah Division of Wildlife Resources. Fall 2000.

Black, H, and **R. Cosgriff**. 1999. Spotted Bat/ *Euderma maculatum*. In: The Smithsonian Book of North American Mammals, D.E. Wilson and S. Ruff (eds). Smithsonian Institution Press, Washington, D.C. pp 118-119.

PRESENTATIONS

Jolley, Rachel. 2023. "Recovery of native limestone forest following ungulate removal". Society for Ecological Restoration World Conference, Darwin, Australia, Sept 26-30, 2023.

Taylor, Emily, Savannah Weaver, **Rachel Jolley**, Jeried Calaor, and Shane Siers. 2022. Metabolic evaluation of methemoglobinemia due to lethal and sublethal doses of acetaminophen in Brown Treesnakes. Brown Treesnake Technical Working Group Annual Meetings; Tumon, Guam, November 16, 2022.

Russell, D.P., D.M. Neal, J. Wright, **R.L. Jolley**, B.S. Baldwin, G.N. Ervin, N.A. Reichert. 2011. Riparian stabilization with *Arundinaria gigantea* in Choctaw land, Mississippi. Joint meeting of the Intern. and Amer. Bamboo Society. Lafayette, LA. 13-16 Oct.

Russell, D. D. Neal, **R. Jolley**, B. Rushing, B. Baldwin. 2010. Rivercane response to light conditions. Seventh Eastern Native Grass Symp. Knoxville, TN. Oct 5-8.

Jolley, R. D. Neal, B. Baldwin, and G. Ervin. 2010. Optimizing rhizomal propagation of rivercane (*Arundinaria gigantea*). SE Soc. Ecol. Restor. Mtg. Chattanooga, TN 11-13 May.

Neal, D.M., **R. Jolley**, B. Baldwin, G. Ervin, M. Cirtain, John Seymour, and J. Campbell. 2010. Maximizing seed germination methods to enhance rivercane (*Arundinaria gigantea*) seedling production for habitat restoration programs. Assoc. Southern Biol. Mtg. Asheville, NC 7-10 Apr.

Mills, M.C., G. Ervin, B. Baldwin, **R. Jolley** and D. Neal. 2010. Response of rivercane (*Arundinaria gigantea*) to native and exotic grass competition and site preparation techniques for canebrake restoration. Assoc. Southeastern Biologists. Cullowhee, NC. 7-10th Apr. Abs Vol 57(3) 271.

Jolley, Rachel. Diana M. Neal, Brian Baldwin, and Gary Ervin. Optimizing rhizomal propagation of rivercane (*Arundinaria gigantea* (Walter) Muhl.). Presentation, 2009 Rivercane Symposium. Rivercane Restoration: Linking Cultural, Biological and Economic Values. Oct. 26-27, Choctaw, MS.

Mills, Mary C., **Rachel Jolley**, Diana M. Neal, Brian Baldwin, and Gary Ervin. Response of rivercane (*Arundinaria gigantea*) to native and exotic grass competition and site preparation techniques for canebrake restoration. Presentation, 2009 Rivercane Symposium. Rivercane Restoration: Linking Cultural, Biological and Economic Values. Oct. 26-27, Choctaw, MS.

Mills, Mary C., **Rachel Jolley**, Diana M. Neal, Brian Baldwin, and Gary Ervin. Evaluating physiological and growth responses of *Arundinaria gigantea* to inundation. Poster, 2009 Rivercane Symposium. Rivercane Restoration: Linking Cultural, Biological and Economic Values. Oct. 26-27, Choctaw, MS.

Ervin, Gary, **Rachel Jolley**, Diana M. Neal, and Brian Baldwin. Application of habitat modeling approaches for identifying potential rivercane restoration sites. Presentation, 2009 Rivercane Symposium. Rivercane Restoration: Linking Cultural, Biological and Economic Values. Oct. 26-27, Choctaw, MS.

Jolley, Rachel, Brian Baldwin, Diana Neal, and Gary Ervin. 2009. Restoring an endangered ecosystems: Canebrakes. Invited speaker, Symposium: Improving Wildlife Habitat through the Effective Use of Plants. The Wildlife Society Annual Conference, Monterey, CA, September 20-24, 2009.

Jolley, R., Diana Neal, Brian Baldwin, and Gary Ervin. 2009. Restoring canebrakes to enhance water quality along the Upper Pear River, Neshoba County, MS. Poster: Proceedings of the Mississippi Water Resource Council, MS, Aug 5-7, 2009.

Jolley, R., B. Baldwin, G. Ervin, and D. Neal. 2009. Optimizing rhizomal propagation of rivercane (*Arundinaria gigantea* (Walter) Muhl.). Association of Southeastern Biologists. Birmingham, April 1-4, 2009.

Neal, D.M., **R. Jolley**, B. Baldwin, and G. Ervin. 2009. Rivercane habitat restoration for wildlife enhancement. Poster. North Mississippi Research and Extension Center Annual Meetings, Verona, MS, February 19, 2009.

Mills, M. C., **R. L Jolley**, D. M. Neal, B. S. Baldwin, and G. N. Ervin. Response of giant cane (*Arundinaria gigantea*) to native and exotic grass competition and site preparation techniques for canebrake restoration. Poster presentation. Southeastern Ecology and Evolution Conference, Gainesville, FL, March 27-29, 2009.

Jolley, R and B.G. Lockaby. 2008. Effects of sedimentation on forest productivity and biogeochemical processes in riparian forest in the Southeastern Coastal Plain. Society of Wetland Scientists Annual Meeting. Washington D.C., May 26-30, 2008.

Jolley, R and B. G. Lockaby. 2007. Impacts of urbanization in sediment deposition of riparian forests. Emerging Issues Along Urban/Rural Interfaces II. Atlanta, GA. April 9-12, 2007.

Mulholland, P., J. Feminella, B. G. Lockaby, J. Houser, B. Roberts, **R. Jolley**, K. Maloney, R. Mitchell, L. Heck, and G. Hollon. 2006. Effects of Restoration of Riparian and Stream Ecosystems at Fort Benning, Georgia (SI-1186). Poster. SERDP Symposium Poster Session, December 2006.

Jolley, R. and B.G. Lockaby. 2006. Effects of restoration on native vegetation and biogeochemistry of ephemeral riparian forests. ESA 91st Annual Meeting, Memphis, TN. Aug. 6-11.

Jolley, R. and B.G. Lockaby. 2006. Effects of sedimentation on riparian forest health and productivity. Poster. Earth Day Poster Forum. Auburn University, Auburn, AL April 20, 2006.

Jolley, R. and B.G. Lockaby. 2006. Impacts of sediment deposition on productivity and nutrient dynamics in riparian forests. Invited speaker. International Conference of Hydrology and Management of Forested Wetlands. New Bern, North Carolina. April 8-12, 2006.

Jolley, R. and B.G. Lockaby. 2006. Impacts of sediment deposition of riparian forest nutrient cycling and productivity. Auburn University Graduate Research Forum. Auburn, AL. March 12, 2006.

Jolley, R., B.G. Lockaby, and G. Cavalcanti. 2005. The effect of sedimentation on forest health and productivity in riparian forests associated with ephemeral streams. Poster: Society of Wetland Scientists 26th Annual Meetings. (Awarded Honorable Poster Presentation) Charleston, South Carolina, June 5-10, 2005.

Lockaby, B.G., G. Cavalcanti, and **R. Jolley**. 2005. Effects of sedimentation on productivity and nutrient dynamics in riparian forests associated with ephemeral streams. Society of Wetland Scientists 26th Annual Meetings. Charleston, South Carolina, June 5-10, 2005.

Feminella, J., B.G. Lockaby, B. Roberts, **R. Jolley**, K. Malony, S. Miller, R. Mitchell, and G. Hollon. 2005. Restoration of streams impacted by erosional deposition. Poster. SERDP Symposium Poster Session, December 2005.

Jolley, R., B.G. Lockaby, and G. Cavalcanti. 2005. Restoring riparian forests impacted by sediment deposition. Poster. Earth Day Research Poster Forum. Auburn University, Auburn, AL. April 21, 2005.

Jolley, R., B.G. Lockaby, and G. Cavalcanti. Riparian forest restoration project. Poster: First National Conference on Ecosystem Restoration. Lake Buena Vista, FL. December 5-10, 2004.

Cosgriff, R., V.J. Anderson, and S. Monson. *Veratrum californicum*: the effectiveness of mechanical and chemical control treatments and their effects on the residual tall forb community. The Society of Range Management 53rd Annual Meetings. Boise, ID. February 12-15, 2000.

GRANTS AWARDED

- Creating Protocols for safeguarding ecosystem services post-disturbances. REPI (DOD) \$749,438
- From Learning to Leading: Cultivating the Next Generation of Diverse Food and Agriculture Professionals (*funded by the National Institute of Food and Agriculture, United States Department of Agriculture*), "Creation of a Cooperative BS Degree Program for the Marianas Islands and Beyond, 2023-2028, \$10,000,000.
- Distance Education Grant: Development of Online Courses in Tropical Wildlife Management, 2022-2025, UOG, \$200,000
- Plant Collection, Northern Utah, 2002, Utah Valley State College, \$1,500.
- Plant ID Team Travel Award, 2002, Utah Valley State College, \$3,000
- Plant ID Team Travel Award, 2003, Utah Valley State College, \$2,500

TEACHING EXPERIENCE

University of Guam

- Biometrics, Fall 2024
- Invertebrate Zoology Lab, Spring 2023
- Principles of Biology II 2022
- Scientific Arguments, SummerA 2022, 2023, 2024
- Scientific Writing, SummerC 2022, Spring 2025
- Plant Systematics, Spring 2022
- Introduction to Plant Science (online), 2019-present
- Experimental Design 2020

Mississippi State University, Adjunct Faculty (online)

- Ecology and the Environment (Distance Education, on-line), 2015-2023
- BioStatistics (Distance Education, on-line), 2016-2023

Columbia Southern University, Adjunct Faculty (online)

- Ecology and the Environment, 2017-2020
- Non-majors Biology, 2015-2020
- Biology I, 2015-2020
- Biology II, 2015- 2020
- Earth Science, March 2010-2015

Brigham Young University-Idaho, Adjunct Faculty (online)

- Foundations of Science (on-line), August 2016-2018

Utah Valley State College, Instructor

- Introductory Biology Lab, 2001-03
- Biology I Lab, 2002-03
- Biology II Lab, 2002-03
- Vertebrate Zoology Lab, Fall 2002-03
- Field Botany Lab, Spring 2001-03
- Wildland Shrubs Lab, Fall 2000-03
- Ecology Lab, Spring 2002-03
- Grass Systematics Lab, Fall 2002-03
- Grass Systematics, Fall 2003

GRADUATE STUDENT COMMITTEE MEMBER

Russell II, David Pierce, 2012. Establishment methods of *Arundinaria* species for restoration purposes. Master's Thesis, Plant and Soil Sciences, Mississippi State University.

Davis, Jonathan. 2022. Investigation understory response to overstory forest gaps. Master's Thesis, Sustainable Agriculture, Food, and Natural Resources. University of Guam.

McCormick, Caylin. 2024. Assessing and Mitigating Human, Pet, and Other Nontarget Species Exposure to Acetaminophen used for Brown Treesnake Control in Residential Areas Before and After a Major Typhoon. Master's Thesis, Environmental Science. University of Guam.

Keeler, Patrick. 2025. Evaluating the Effects of Biochar on *Acacia auriculiformis* and *Pterocarpus indicus* Seedling Health and Survivorship in Southern Guam. Master's Thesis, Environmental Science. University of Guam.

Barasi, Serena. Investigating the role of non-native plantations on forest succession and savanna-forest state shifts in Guam and across Micronesia. PhD student, Ecology and Evolutionary Biology, University of California, Santa Cruz.

Fujihira, Juliette. Assessing the impact of forest restoration on the concentration of total suspended solids in Guam's surface and marine water. Master's Thesis, Environmental Science. University of Guam.

Thesis advisor:

Taitingfong, Raina. 2025. An Update of the Sihek Recovery Program. Professional internship track, Master's of Science in Environmental Science. University of Guam.

Valera, Cyan. Survival outcomes following translocation of Guam's endangered orchid species. Master's Thesis, Environmental Science. University of Guam.

Paulino, RoCelia. Using deep learning CNN to identify brown treesnake presence in photos. Master's Thesis, Environmental Science. University of Guam.

Johnny, Stewart. Analysis of understory vegetation community following ungulate removal in a limestone forest on Guam. Master's Thesis, Sustainable Agriculture, Food, and Natural Resources. University of Guam.