

Samantha J. Worthy
 Department of Evolution and Ecology
 University of California Davis
 U.S.A.

Email: sjworthy@ucdavis.edu
 Website: samanthajworthy.weebly.com

Education & Training

Postdoctoral Researcher (2021 – ongoing)

Department of Evolution and Ecology, University of California Davis
 Advisors: Jennifer Gremer, Johanna Schmitt, Sharon Strauss, Julin Maloof

Ph.D. (2021)

Behavior, Ecology, Evolution and Systematics Concentration of the Biological Sciences Graduate Program.
 University of Maryland, College Park, Maryland, U.S.A.

Dissertation: *How does phenotypic variation within and between tree species interact with abiotic and biotic factors to contribute to differential demography and community structure?*

M.Sc. (2016)

Natural Science: Biology track. Columbus State University, Columbus, Georgia, U.S.A.

Thesis: *Phylogenetic analyses of Andean and Amazonian tree communities in Ecuador*

B.S. (2014)

Biology. Columbus State University, Columbus, Georgia, U.S.A.

Thesis: *Confirmation of Herbal Plant Medicines using Plant DNA Barcodes*

B.A. (2014)

Chemistry. Columbus State University, Columbus, Georgia, U.S.A.

Thesis: *Assessment of Heavy Metals in Lake Walter F. George in Georgia and Alabama*

A.S. (2010)

Pre-Medicine. Darton College, Albany, Georgia, U.S.A.

Academic & Research Positions

Graduate Teaching Assistant, 2016-2017, 2020-2021, College of Computer, Mathematical, and Natural Sciences, University of Maryland.

Research Assistant, 2018-2020, NSF grant of Dr. Nathan G. Swenson at the University of Maryland and Stuart Davies and Sean McMahon at the Smithsonian: Forest function from genes to canopies: disentangling the fine scale spatio-temporal variation in gene expression and tree growth.

Graduate Teaching Assistant, 2014-2016, Departments of Biology and Chemistry, Columbus State University.

Research Assistant, 2015-2016, grant of Dr. Rima Lucardi at the US Forest Service, Dr. Travis Marsico at Arkansas State University, and Dr. Kevin S. Burgess at Columbus State University: Implementing a DNA barcoding pipeline for the identification and prevention of invasive plant propagules entering the port of Savannah.

Program Assistant, 2015, Center for Global Engagement, Columbus State University.

Field Research Technician, 2014, NSF grant of Dr. Laura F. Galloway at the University of Virginia:
Evaluating the contribution of maternal effects to population differentiation in an herbaceous plant.

Peer Instructor, 2013-2014, Department of Biology, Columbus State University

Peer Instructor, 2009-2010, Darton College

Academic Awards, Honors, & Scholarships

2019-2020 Biology Department Research Award, University of Maryland

2019 Best Student Research In Progress talk Fall 2019 for Behavior, Ecology, Evolution, and Systematics
Concentration

2019 NEON-ESA Early Career Scholar

2019 Graduate Assistance in Areas of National Need (GAANN) Fellowship in the area of “Mathematics in
Biology”, University of Maryland

2018 Dean’s Fellowship Award, University of Maryland

2017 Dean’s Fellowship Award, University of Maryland

2016 Tropical Biology Best Student Presentation Award, Botany Conference

2016 M.S. in Natural Science, Biology Track Award, Columbus State University

2015 Dr. Gregory P. Domin Graduate Research Conference Oral Presentation Winner

2015 Study Abroad Scholarship, Columbus State University

2014 Tower Inc. Scholar, Columbus State University

2013 Gerald and Linne Coady Scholar, Columbus State University

2013 Tower Day Oral Presentation Winner, Columbus State University

2013 Study Abroad Scholarship, Columbus State University

2013 William Fort Endowment, Columbus State University

2012 James and Gladys Smith Honors Scholarship, Columbus State University

2012 Study Abroad Scholarship, Columbus State University

2010 Academic All-American, National Junior College Athletic Association, Darton College

2009 Wine and Spirit Wholesalers of Georgia Scholarship, Darton College

2008 HOPE Scholarship, Georgia Department of Education

2008 Dean Scholarship, Darton College

Publications

Peer-Reviewed Journal Articles

Worthy SJ, Umaña MN, Zhang C, Lin L, Cao M, Swenson NG. (2024) Intraspecific alternative phenotypes contribute to variation in species’ strategies for growth. **Oecologia**.

Zhang Y, **Worthy SJ**, Xu S, He Y, Wang X, Song X, Cao M, Yang J. (2024) Phytochemical diversity, endemism and their adaptations to abiotic and biotic pressures in fine roots across a climatic gradient. **Science of the Total Environment** 927:172051.

Sezen UU, Shue JE, **Worthy SJ**, Davies SJ, McMahon SM, Swenson NG. (2024) Leaf gene expression trajectories during the growing season are consistent between sites and years in American beech. **Proceedings of the Royal Society B** 291:20232338.

Worthy SJ, Gremer JR. (2023) Understanding the drivers of intraspecific demographic variation: Needs and opportunities. **American Journal of Botany** 110:e16176.

Flood MC[^], Burgess KS, Kruse LM, Ballenger J, **Worthy SJ***. (2023) Comparison of phylogenetic and taxonomic diversity of pitcher plant bogs in Georgia' Coastal Plain. **Plant Ecology** 224:523-537. [^]M.Sc. mentee, *Senior author

Worthy SJ, Marsico TD, Lucardi RD, Whitehurst LE, Burgess KS (2022) Variation in plant traits and phylogenetic structure associated with native and nonnative species in an industrialized flora. **NeoBiota** 77:101-123.

Asefa M, **Worthy SJ**, Min C, Song X, Lozano YM, Yang J. (2022) Above and belowground plant traits are not consistent in response to drought and competition treatments. **Annals of Botany** 130:939-950.

Wang F, Mi X, Chen L, Xu W, Durka W, Swenson NG, Johnson DJ, **Worthy SJ**, Xue J, Zhu Y, Schmid B, Liang Y, Ma K. (2022) Differential impacts of adult trees on offspring and non-offspring recruits in a subtropical forest. **Science China Life Sciences** 65:1905-1913.

Sezen UU, **Worthy SJ**, Umaña MN, Davies SJ, McMahon SM, Swenson NG. (2022) Comparative transcriptomics of tropical woody plants supports fast and furious strategy along the leaf economics spectrum in lianas. **Biology Open** 11:bio059184.

Worthy SJ, Bucalo KS, Perry E*, Reynolds A, Cruse-Sanders J, Pérez ÁJ, Burgess KB. (2022) Ability of *rbcL* and *matK* DNA barcodes to discriminate between montane forest orchids. **Plant Systematics and Evolution** 308:1-9. *Undergraduate mentee

Jiménez-Paz R, **Worthy SJ**, Valencia R, Pérez ÁJ, Reynolds A, Barone J, Burgess KB. (2021) Floristic composition, structure and diversity along an elevational gradient in an Andean forest of Northern Ecuador. **Journal of Mountain Science** 18:2315-2347.

Worthy SJ, Rubio VE, Staiger K, Ngouajio B, Yang J, Swenson NG. (2021) Site-specific impacts of a major hurricane on alpha and beta diversity in tropical forest seedling communities. **Ecosphere** 12:e03651.

Worthy SJ, Laughlin DC, Zambrano J, Umana MN, Zhang C, Lin L, Cao M, Swenson NG. (2020) Alternative designs and tropical tree seedling growth performance landscapes. **Ecology** 101:e03007.

Lucardi RD, Bellis ES, Cunard CE, Gravesande JK, Hughes SC, Whitehurst LE, **Worthy SJ**, Burgess KS, Marsico TD. (2020) Seeds attached to refrigerated shipping containers represent a substantial risk of nonnative plant species introduction and establishment. **Scientific Reports** 10:15017-15026.

Lucardi RD, Cunard CE, Hughes SC, Burgess KS, Reed JN, Whitehurst LE, **Worthy SJ**, Marsico TD. (2020) An initial industrial flora: a framework for botanical research in cooperation with industry for biodiversity conservation. **PLoS One** 15:e0230729.

Whitehurst LE, Cunard CE, Reed JN, **Worthy SJ**, Marsico TD, Lucardi RD, Burgess, KS (2020) Preliminary application of DNA barcoding toward the detection of viable plant propagules at an initial international port-of-entry in Georgia, USA. **Biological Invasions** 22:1585-1606.

Swenson NG, **Worthy SJ**, Eubanks D, Iida Y, Monks L, Petprakob K, Rubio VE, Staiger K, Zambrano J. (2020) A reframing of trait-demographic rate analyses for ecology and evolutionary biology. **International Journal of Plant Science** 181:33-43.

Worthy SJ, Jiménez Paz RA, Pérez AJ, Reynolds A, Cruse-Sanders J, Valencia R, Barone JA, Burgess KS. (2019) Distribution and community assembly of trees along an Andean elevational gradient. **Plants** 8:326-343.

Worthy SJ, Swenson NG. (2019) Functional perspectives on tropical tree demography and forest dynamics. **Ecological Processes** 8:1-11.

Zambrano J, Fagan WF, **Worthy SJ**, Thompson J, Uriarte M, Zimmerman JK, Umana MN, Swenson NG. (2019) Tree crown overlap improves predictions of the functional neighborhood effects on tree survival and growth. **Journal of Ecology** 107:887-900.

Swenson NG and **Worthy SJ**. (2018) Phylogenetic resolution and metrics of biodiversity and signal in conservation. In: Scherson R., and D. Faith (eds.), *Phylogeny-Based Biodiversity Assessments for Conservation*, Springer. pp. 93-110.

Patel M*, **Worthy SJ**, Burgess KS. (2018) Evaluation of standard DNA barcoding techniques to verify the composition of herbal medicines. **BIOS** 89:74-82. *Undergraduate mentee

Pérez AJ, González F, Cevallos D, Zapata N, Santillán W, Whitehurst L, **Worthy SJ**, Romoleroux K, Burgess KS. (2018) *Aristolochia mishuyacensis* (Aristolochiaceae), a new record for Ecuador, with taxonomic notes. **Neotropical Biodiversity** 4:78-82.

Shao X, Brown C, **Worthy SJ**, Liu L, Cao Q, Lin L, Swenson NG. (2018) Intra-specific relatedness, spatial clustering and reduced demographic performance in tropical rainforest trees. **Ecology Letters** 21:1174-1181.

Zambrano J, Lida Y, Howe R, Lin L, Umaña M, Wolf A, **Worthy S**, Swenson NG. (2017) Neighborhood defense gene similarity effects on tree performance: a community transcriptomic approach. **Journal of Ecology** 105:616-626.

Manuscripts in Review

Worthy SJ, Miller A, Ashlock SR, Ceviker E, Maloof JN, Strauss SY, Schmitt J, Gremer JR. (*In Revision*) Germination responses to changing rainfall timing reveal potential climate vulnerability in a clade of wildflowers. **bioRxiv** doi: 10.1101/2023.03.22.533835

Worthy SJ, Ashlock SR, Miller A, Maloof JN, Strauss SY, Gremer JR, Schmitt J (*In Review*) Accelerated phenology fails to buffer fitness loss from delayed rain onset in a clade of wildflowers. **American Naturalist**

Worthy SJ. Trait – performance relationships: contexts and complexity. (*In Review*) In: Kumar M, Bussmann RW, Swenson NG (eds.), *Plant Functional Traits – linking climate and ecosystem functional*, Elsevier.

Datta D, **Worthy SJ**, Liu J-Y, Zheng Z, Cao M, Yang J, Swenson NG. (*In Review*) Cavities and the demographic performance of tropical rainforest trees. **Ecology Letters**

Non-Peer Reviewed Publications

Rea E, Burgess KS, Zapata N, Lasso D, Jarrín RD, **Worthy SJ**, Whitehurst L, Tobar F, Coello F, Santillán W, Burgess R, Persson C, Rova J, Cevallos D, Pérez Á. 2022. Flora of Yasuní River Basin, Yasuní National Park, Orellana, Ecuador. **Field Museum Rapid Color Guides**.
fieldguides.fieldmuseum.org/guides/guide/1471

Manuscripts in Preparation

Worthy SJ, Luong JC, Wainwright BE, Barcu A, Elwood E, Gujral AK, Drought Net collaborators, Philips RP, Funk JL. Functional group mediates the role of traits in short-term drought response: A global study on herbaceous species.

Presentations

Worthy SJ, Moseley-McCloud A, Smith W, Magalang P, Bontrager M, Maloof JN, Strauss SY, Schmitt J, Gremer JR. (2023) Responses of thermal germination niches to seasonal timing and temperature. Ecological Society of America Meeting.

Worthy SJ (2023) Integrating plant form, function, and demographic variation to understand emergent patterns in plant ecology. Oklahoma State University's Department of Plant Biology, Ecology, and Evolution. (*Invited*)

Worthy SJ, Moseley-McCloud A, Smith W, Magalang P, Bontrager M, Maloof JN, Strauss SY, Schmitt J, Gremer JR. (2023) Intraspecific variation in germination functional traits and niche suggest differential climate vulnerability. American Society of Naturalists Meeting.

Worthy SJ, Bontrager M, Maloof JN, Strauss SY, Schmitt J, Gremer JR. (2022) Variation in germination functional traits within and across species suggests climate vulnerability in a clade of native wildflowers. Ecological Society of America Meeting.

Worthy SJ. (2021) Integrating plant form, function, and demographic variation to understand emergent patterns of species distributions and forest compositions. Michigan State University's Ecology, Evolution, and Behavior. (*Invited*)

Worthy SJ. (2021) Integrating plant form, function, and demographic variation to understand emergent patterns of species distributions and forest compositions. University of California Davis, Center for Population Biology. (*Invited*)

Worthy SJ. (2021) Plant form, function, and demographic variation. University of California, Berkeley. Dr. David Ackerly's Lab. (*Invited*)

Worthy SJ, Umaña MN, Swenson NG. (2020) Decomposing intraspecific alternative designs: implications for coexistence. Ecological Society of America Meeting.

Worthy SJ, Laughlin DC, Zambrano J, Umaña MN, Zhang C, Lin L, Cao M, Swenson NG. (2019) Alternative designs and tropical tree seedling growth performance landscapes. Ecological Society of America Meeting, Louisville, KY, USA.

Worthy SJ, Laughlin DC, Zambrano J, Umaña MN, Zhang C, Lin L, Cao M, Swenson NG. (2019) Alternative designs and tropical tree seedling growth performance landscapes. Botany Conference, Tucson, AZ, USA.

Worthy SJ, Jiménez R, Pérez A, Valencia R, Reynolds A, Cruse-Sanders J, Barone JA, Burgess KS. (2016) Phylogenetic analysis of Andean and Amazonian tree communities in Ecuador. Pontificia Universidad Católica de Ecuador, Quito, EC. (*Invited*)

Worthy SJ, Jiménez R, Pérez A, Valencia R, Reynolds A, Cruse-Sanders J, Barone JA, Burgess KS. (2016) Phylogenetic analysis of Andean tree communities along an elevational gradient in Ecuador. Botany Conference, Savannah, GA, USA.

Worthy, SJ. (2016) Phi Kappa Phi Induction Ceremony Plenary Speaker. Columbus State University, Columbus, GA, USA. (*Invited*)

Worthy SJ, Cruse-Sanders J, Reynolds A, Pérez A, Burgess KS. (2015) Evaluation of the relation between phytochemical composition and genetic diversity in tropical plant species. Dr. Gregory P. Domin Graduate Research Conference, Columbus State University, Columbus, GA, USA.

Burgess KS, and Worthy SJ. (2015) DNA barcoding research and applications at Columbus State University. Valdosta State University, Valdosta, GA, USA. (*Invited*)

Worthy SJ, Cruse-Sanders J, Reynolds A, Pérez A, Burgess KS. (2015) Evaluation of the relation between phytochemical composition and genetic diversity in tropical plant species using DNA barcodes. 6th International Barcode of Life Conference, University of Guelph, Guelph, ON, Canada.

Worthy SJ. (2015) Undergraduate and graduate research at Columbus State University. Tower Day Plenary speaker. Columbus State University, Columbus, GA, USA. (*Invited*)

Burgess KS, Worthy SJ, Bucalo K. (2014) Graduate research at Columbus State University. Tower Donor Gala. (*Invited*)

Burgess KS and Worthy SJ. (2014) Barcoding local floras: applications in medicinal plants and orchids. Atlanta Botanical Garden, Atlanta, GA, USA. (*Invited*)

Burgess KS, Worthy SJ, Bucalo K. (2014) Barcoding local floras for assessing medicinal plants and orchid diversity. 5th Annual International Orchid Conference, Quito Botanical Garden, Quito, EC. (*Invited*)

Worthy SJ, Ballenger J, Burgess KS (2014) Confirmation of herbal medicines using plant DNA barcoding. Beta Beta Beta, Spartanburg, SC, USA.

Worthy SJ, Ruehl C. (2013) A test of the multiplicative risk model using a freshwater food-web fragment. Georgia Academy of Science, Valdosta State University, Valdosta, GA, USA.

Worthy SJ, Abegaz S, Jackson F, Ticknor C. (2012) Assessment of heavy metals in Lake Walter F. George in Georgia and Alabama. National Collegiate Honors Council, Boston, MA, USA.

Worthy SJ, Abegaz S. (2012) Reaching out with research. Georgia Collegiate Honors Council Conference, University of North Georgia, Dahlonega, GA, USA.

Worthy SJ, Abegaz S. (2011) Assessment of heavy metals in Lake Walter F. George in Alabama and Georgia. American Chemical Society Southeastern Regional Meeting, Virginia Commonwealth University, Richland, VA, USA.

Worthy SJ, Jones T, Abegaz S. (2011) Encouraging and supporting undergraduate research. University Systems of Georgia, Athens, GA, USA. (*Invited*)

Grants

National Science Foundation Postdoctoral Research Fellowship in Biology: Plant Genome Track (2021-2024) Linking environmental and genomic cues facilitating the timing of flowering in tropical trees (*Offered but declined for postdoctoral position at UC Davis*).

Worthy SJ. (2019) The genomics of Beech tree defense and the spread of Beech bark disease in Maryland. Maryland Native Plant Society \$1500.

Worthy SJ, Cruse-Sanders J, Reynolds A, Pérez A, Burgess KS. (2015) Evaluation of the relation between phytochemical composition and genetic diversity in tropical plant species using DNA barcodes. William S. Birkhead Fund for Biology \$200.

Worthy SJ. (2015) Evaluation of the relation between phytochemical composition and genetic diversity in tropical plant species. Student Research and Creative Endeavors Grant, Columbus State University \$300.

Worthy SJ. (2013) Isolation and identification of plant derivatives in naturopathic medicines. Beta Beta Beta Research Foundation \$500.

Worthy SJ. (2013) Isolation and identification of plant derivatives in naturopathic medicines. Research Scholarship from the Flora M. Clark Foundation \$400.

Worthy SJ. (2013) Isolation and identification of plant derivatives in naturopathic medicines. Undergraduate Research and Scholarly Activity Grant, sponsored by Columbus State University Student Research and Creative Endeavors (SRACE) Committee \$345.

Worthy SJ. (2013) A test of the multiplicative risk model using a freshwater food-web fragment. Undergraduate Research and Scholarly Activity Grant, sponsored by Columbus State University Student Research and Creative Endeavors (SRACE) Committee \$150.

Worthy SJ. (2010-2013) Assessment of heavy metals in Lake Walter F. George in Alabama and Georgia. Student Research and Creative Endeavors Grant, sponsored by Columbus State University Student Research and Creative Endeavors (SRACE) Committee \$1260.

Worthy SJ. (2012) Characterizing the role of Oca2p (Y-STYX) in phosphatase activity. Student Research and Creative Endeavors Grant, sponsored by Columbus State University Student Research and Creative Endeavors (SRACE) Committee \$300.

Worthy SJ. (2011) Assessment of heavy metals in Lake Walter F. George sponsored by Columbus State University Chemistry Department \$471.

Teaching

Graduate Teaching Assistant

University of Maryland (August 2016 – 2021)

- Plant Biology for Non-Majors
- Principles of Ecology
- Principles of Evolution
- Principles of Ecology and Evolution

Columbus State University (August 2014 – May 2016)

- Biology I for Majors
- Introductory Biology

- Conservation Genetics
- Core Genetics
- Survey of Chemistry
- Oxford Study Abroad Program: Darwin and Evolution

Peer Instructor

Columbus State University (August 2013 – May 2014)

- Principles of Biology
- Anatomy and Physiology

Darton College (2009-2010)

- Basic Mathematics
- English Composition I

Other Teaching

- Co-Instructor, Undergraduate R Club, University of California, Davis (2023 – continued)
- Guest Lecturer, Root Traits and Drought Response, University of California, Davis (2023)
- Workshop leader, R Markdown, University of California, Davis (2023)

Service & Outreach

Peer Reviewer For: *Acta Oecologica, Basic and Applied Ecology, Biodiversity and Conservation, Conservation Physiology, Ecology, Ecology and Evolution, Ecology Letters, Ecological Monographs, Forests, Forest Ecology and Management, Geology, Ecology, and Landscapes, Global Ecology and Biogeography, Journal of Ecology, Journal of Nature Conservation, Journal of Vegetation Science, Land, Methods in Ecology and Evolution, New Phytologist, Oecologia, Plant Diversity, Plant and Soil, PNAS, Sustainability.*

Vice President, Behavior, Ecology, Evolution, and Systematics student taskforce (BEESst), University of Maryland (Fall 2017 – Spring 2019)

Volunteer, Maryland Day (Spring 2017 – 2021).

Volunteer, National Consortium for Graduate Degrees for Minorities in Engineering and Science's Getting Ready for Advanced Degrees (GRAD) Laboratory (Fall 2017)

Committee Member, Behavior, Ecology, Evolution, and Systematics student taskforce (BEESst) Research Award Committee (2017 – 2019)

Committee Member, Behavior, Ecology, Evolution, and Systematics student taskforce (BEESst) Service Award Committee (2018 – 2019)

Student member, Behavior, Ecology, Evolution, and Systematics student taskforce (BEESst), University of Maryland (Fall 2016 – 2021).

Board Member, Trees Columbus (Spring 2015 – Summer 2016).

Volunteer, Center for Global Engagement, Columbus State University (2012 – 2016).

Volunteer, Uptown Columbus, Columbus, Georgia (2012 – 2016).

Vice President, Honors Program, Columbus State University (2012 – 2013).

Student Representative, Columbus State University Day at the Capital, Atlanta, Georgia, Columbus State University, (January 31, 2012).

Student Representative, Faculty Search Committee: Organic Chemistry, Columbus State University (2011 – 2012).

Chair, Honors Program Service Committee, Columbus State University, (2010 – 2011).

Student Government Association Representative, Darton College, (2009 – 2010).

Co-President, Chi Xi Chapter, Phi Theta Kappa International Honors Society for Two-Year Colleges, (2009 – 2010).

Board Member, General Outcomes Assessment Committee, Darton College, (2009 – 2010).

Board Member, Intercollegiate Athletics Advisory Committee, Darton College, (2009 – 2010).

Board Member, Student Services Committee, Darton College, (2009 – 2010).

Workshops and Specialized Training

- Statistical Quantification of Individual Differences (SQuID) workshop (2023)
- Evolutionary Modeling in SLiM workshop (2023)
- Intersections: Preventing Harassment and Sexual Violence (2022)
- Responsible Conduct of Research Series (2021 – 2022)

Mentoring

Undergraduate Mentoring

Thesis Advisor

- Aadia V. Moseley-McCloud, Howard University (2022), “Investigating the impacts of climate change on germination in populations of *Streptanthus tortuosus*”
- Davis An, Davis Young Scholars Program (2022), “Functional trait differences between *Streptanthus* and *Caulanthus* and their relationships with climate”
- Karen Vo, Davis Young Scholars Program (2022), “Functional trait differences between *Streptanthus* and *Caulanthus* and their relationships with gene expression”
- Erin Perry, Columbus State University (2020 – 2021), “Confirming the genetic identification of Andean montane forest orchids using DNA barcoding”.
- Mital Patel, Columbus State University (2014 – 2016), “Evaluation of standard DNA barcoding techniques to verify the composition of herbal medicines”

Research Advisor

- Nur Sulaiman, University of Maryland (2019 – 2020)
- Thea Bliss, University of Maryland (2019 – 2020)
- Chloe Abbasi, University of California, Davis (2022 – 2023)
- Samantha Swan, University of California, Davis (2022 – 2024)

Graduate Mentoring

- Debit Datta, University of Notre Dame (2023 – ongoing)
- Anjum Gujral, University of California, Davis (2022 – ongoing)
- Danielle De La Pascua, University of California, Davis (2021 – ongoing)
- Elena Suglia, University of California, Davis (2021 – 2023)

Committee Member

- Melanie Flood, Columbus State University (2019 – 2021), “Taxonomic and phylogenetic diversity of pitcher plant bogs in Georgia’s Coastal Plain”