

PAUL JULIAN, PHD



EDUCATION

2018

University of Florida

Ph.D. in Soil and Water Science

📍 Gainesville, Florida

Dissertation: Biogeochemical controls of water column productivity and nutrient cycling in semitropical wetlands – A case study from the Everglades Stormwater Treatment Areas.

2010

Florida Gulf Coast University

M.Sc in Environmental Science

📍 Fort Myers, Florida

Thesis: Habitat Selection by the Florida Panther in Response to Melaleuca Removal within Big Cypress National Preserve.

2005

Benedictine College

B.Sc. in Biochemistry

📍 Atchison, Kansas

Senior Project: The Quantitative Study of Mercury in Atchison Area Water Sources.



PROFESSIONAL EXPERIENCE

Present
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Aug. 2011

Environmental Consultant, Everglades Technical Lead

Florida Department of Environmental Protection

📍 Fort Myers/Tallahassee, Florida

- Participate in multi-agency regulatory and science review team.
- Perform water quality compliance calculations.
- Conduct data mining and analysis of environmental data.
- Synthesize and author technical reports.
- Technical review of submittals consistent with the Clean Water Act.
- Support federal and state restoration planning efforts.

Aug. 2016
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Aug. 2018

Graduate Research Assistant

University of Florida

📍 Gainesville/Fort Pierce, Florida

- Analysis of water quality and soil nutrient data.
- Aid in writing quarterly and annual reports.
- Participate in project workshops and present project related finds at national and international conferences.

Jan. 2015
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May 2015

Adjunct Faculty

Florida Gulf coast University

📍 Fort Myers, Florida

- Taught weekly lectures.
- Graded exams and assignments
- Instructor for ISC 3120: Scientific Process



CONTACT INFO

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✉ pjulian@ufl.edu

🔗 SwampThingPaul.github.io

🔗 github.com/SwampThingPaul

📞 407-729-8192

SKILLS

Experienced in statistical analysis of environmental data including chemical, hydrologic and ecological data.

Computing Skills

Expertise: ArcGIS, R/RStudio, Markdown, Git/Github, LaTeX

Familiarity: QGIS, Python, HTML, Inkscape

Last updated on 09 April 2019.

Jan. 2010 Aug. 2011	Biological Scientist III Florida Fish and Wildlife Research Institute Saint Petersburg, Florida <ul style="list-style-type: none"> • Operation of boats in marine and estuarine environments. • Collect optical water quality samples and associated data. • Collect seagrass, macroalgae, and sediment for analysis according to US Environmental Protection Agency (USEPA) protocols and/or National Oceanic and Atmospheric Administration (NOAA) Natural Resource Damage Assessment (NRDA) protocols. • Geostatistical analysis, photo-interpretation, spatial analysis, and writing reports/summaries
Feb. 2008 Dec. 2009	Lab Manager University of Florida Immokalee, Florida <ul style="list-style-type: none"> • Analysis of plant samples for agricultural pathogens including Huanglongbing (HLB; Citrus Greening). • Analyses include advanced molecular biological techniques including DNA/RNA isolations, RFPL, PCR, RT-PCR and qPCR. • Field sampling, data entry and report writing. • Maintain everyday laboratory operation.
Dec. 2007 Dec. 2008	Graduate Research Assistant Florida Gulf Coast University Fort Myers, Florida <ul style="list-style-type: none"> • Analysis of existing water quality data to aid in the selection of water quality targets for southwest Florida.
Mar. 2007 Feb. 2008	Technical Director/Chemist HBEL Inc. (Formerly Harbor Branch Environmental Lab Inc.) Lehigh Acres/Fort Myers, Florida <ul style="list-style-type: none"> • Analyze drinking water, waste water and environmental samples according approved protocols. • Writing technical reports and grants, data entry and field sampling. • Maintain everyday laboratory operation. • Interact with current and potential clients.
Dec. 2005 Mar. 2007	Staff Chemist II Mote Marine Laboratory Sarasota, Florida <ul style="list-style-type: none"> • Operation of boats in marine and estuarine environments. • Collect and analyse sediment and water samples from marine, estuarine and freshwater environments. • Maintain a variety of instruments, manage field operations, and data entry.



LICENSES & CERTIFICATIONS

2018	Professional Wetland Scientist Society of Wetland Scientists
2013	Florida Stormwater Management Inspector Florida Department of Environmental Protection
2009	PADI Open Water Diver Professional Association of Diving Instructors



HONORS & AWARDS

2016	Sam Polston Award University of Florida
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PWS # 2905

Credential ID 28265

- 2015 • **Wetland Biogeochemistry Laboratory Graduate Fellowship**
University of Florida
- 2015 & 2016 • **Institute of Food and Agricultural Sciences Travel Awards**
University of Florida
- 2005 • **Chemistry Department Service Award**
Benedictine College
- 2004 & 2005 • **Discovery Scholar**
Benedictine College
- 2001 • **Athletic Scholarship**
Benedictine College

SYNERGISTIC ACTIVITIES

EXTRACURRICULAR

- Present | 2018 • **Florida Coastal Everglades Long Term Ecological Research.**
- 2017-2018 • **Long Term Ecological Research.**
[All Scientist Meeting](#) Program Committee.
- 2017 | 2018 • **Florida Coastal Everglades Long Term Ecological Research**
Student Organization, Off-Campus Representative.
- 2017 & 2015 • **Greater Everglades Ecosystem Restoration Conference, Mercury and Sulfur Special Session co-organizer**

PEER AND TECHNICAL REIVEW

• **Peer Review**

- Wetlands
- Journal of Agriculture
- Ecotoxicology
- Lake and Reservoir Management
- Environmental Management
- Ecological Engineering
- Science of the Environment
- Ecology and Evolution
- and many more

• **Technical Review**

- South Florida Environmental Report
- Everglades Technical Oversight Committee
- Aquifer Storage and Recover Pilot Project Technical Data Review

WORKING GROUPS AND SUBTEAMS

- **Western Everglades Restoration Planning Project**
Water Quality Subteam
- **Lake Okeechobee Watershed Restoration Planning Project**

- **Loxahatchee River Restoration Planning Project**
Water Quality Subteam
- **Everglades Combined Operation Plan**
Water Quality and Adaptive Management Subteams
- **Florida Coastal Everglades Long Term Ecological Research**
Biogeochemistry Working Group



SCIENCE COMMUNICATION

Aug. 2018

- **Biotweeps Curator (Archive)**
- **Content contributor to “#MacrophyteMonday” and “#WetlandWednesday”.**
Twitter
- **Blog content (Topics: ecology, biogeochemistry, statistics, etc.)**
<https://swampthingpaul.github.io/blog/>



INFORMATICS AND PROGRAMMING

2019

- **Creator and maintainer of the R package AnalystHelper**
[AnalystHelper](#) (on GitHub)



PUBLICATIONS



IN PREPARATION

- **Evaluation of nutrient stoichiometric relationships amongst ecosystem compartments of a subtropical treatment wetland. Do we have “Redfield Wetlands”?**
Ecological Processes. *(Submitted)*
Julian, P., et al.
- **A tale of two storms: effects of sea level rise and pre-existing conditions on biogeochemical response to tropical storms.**
Frontiers in Marine Science Marine Biogeochemistry.
Julian, P., et al.
- **Thousand bandages for a thousand cuts. Perspective of water management for the Murray-Darling River.**
Environmental Management.
Julian, P.
- **Nutrient homeostasis and mechanisms related to nutrient retention by wetland macrophytes in a subtropical wetland.**
Aquatic Processes
Julian, P., et al.

A complete list of publications can be found on my webpage ([link](#)).

- **Translating stream spiraling concepts to wetland nutrient uptake and transport mechanisms in a subtropical treatment wetland.**
Environmental Monitoring and Assessment.
Julian, P., S. Gerber and A.J. Reisinger.
- **Reduced soil nutrient enrichment and *Typha domingensis* expansion due to restoration efforts. A temporal analysis of Taylor Slough in Everglades National Park.**
Journal of Environmental Management
August, K.A., L.T. Simpson, P. Julian and T.Z. Osborne.



PEER-REVIEWED (LAST FIVE-YEARS)

2018

- **Balancing Wetland Restoration Benefits to People and Nature.**
The Solutions Journal. 9(3) [Link](#)
Marazzi, L., M. Finlayson, P.A. Gell, P. Julian, J.S. Kominoski and E.E. Gaiser.
- **From lake to estuary, the tale of two waters: a study of aquatic continuum biogeochemistry.**
Environmental Monitoring and Assessment. 190:96
Julian, P and T.Z. Osborne.
- **Letter to editor regarding Surratt D, Shindle D, Yongshan W, et al. Letter to the Editor Regarding: Julian P, 2017. Assessment of Upper Taylor Slough water quality and implications for ecosystem management in Everglades National Park.**
Wetland Ecology and Management. 26(3):249 - 251.
Julian, P.

2017

- **Carbon pool trends and dynamics within a subtropical peatland during long-term restoration.**
Ecological Processes. 6(1):43 – 57
Julian, P., S. Gerber, A.L. Wright, B. Gu and T.Z. Osborne.
- **Assessment of Upper Taylor Slough water quality and implication of ecosystem status in Everglades National Park.**
Wetlands Ecology and Management. 25(2):191-209
Julian, P.
- **Iron and pyritization in wetland soils of the Florida Coastal Everglades.**
Estuaries and Coasts. 40(3): 191-209
Julian, P., R. Chambers and T. Russell.

2016

- **Mercury stoichiometric relationships in a subtropical peatland.**
Water, Air & Soil Pollution. 227(12):472
Julian, P., B. Gu and A. Wright.

- **Commentary on “Mitsch et al 2015, Protecting the Florida Everglades wetlands with wetlands: Can stormwater phosphorus be reduced to oligotrophic conditions?”**
Ecological Engineering. 108:333-337
Julian, P.
- **Iron and Sulfur porewater and surface water biogeochemical interactions in a subtropical peatlands.**
Soil Science Society of America Journal. 80(3):794-802.
Julian, P.
- 2015 ● **South Florida Coastal Sediment Ecological Risk Assessment.**
Bulletin of Environmental Contamination and Toxicology. 95(2):188-193
Julian, P.
- **Mercury accumulation in Largemouth Bass (*Micropterus salmoides* Lacépède) within marsh ecosystems of the Florida Everglades, USA.**
Ecotoxicology. 24(1):202-214
Julian, P. and B. Gu.
- **Comment on and reinterpretation of Gabriel et al., (2014) ‘Fish mercury and surface water sulfate relationships in the Everglades Protection Area.’**
Environmental Management. 55(1):1-5
Julian, P., B. Gu and G. Redfield.
- 2014 ● **Reply to “Mercury Bioaccumulation and Bioaccumulation Factors for Everglades Mosquitofish as Related to Sulfate: A Re-Analysis of Julian II (2013).”**
Bulletin of Environmental Contamination and Toxicology. 93(5):517-521



TECHNICAL (LAST FIVE-YEARS)

- 2013
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2019 ● **Chapter 3A: Status of water quality in the Everglades Protection Area**
[South Florida Environmental Report](#)
Julian, P., et al.
- 2014
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2019 ● **Chapter 3B: Mercury and sulfur environmental assessment for the Everglades.**
[South Florida Environmental Report](#)
Julian, P., et al.
- 2017 ● **Numeric Interpretation of Narrative Standards for the L-28 Interceptor Canal and Big Cypress National Preserve.**
Technical Support Document: Western Everglades Planning Project.
Julian, P., et al.



PRESENTATIONS





ORAL (LAST FIVE-YEARS)

2018

- **Don't wave the river red gums goodbye. The role of environmental flows in restoring river water quality and riparian zones along the Wimmera River.**
Society of Wetland Scientist Annual Meeting  Denver, Colorado
Julian, P. and G. Fletcher.
- **Let's take a ride downstream. Translating nutrient spiraling concepts to wetland ecosystems.**
Society of Wetland Scientist Annual Meeting  Denver, Colorado
Julian, P., S. Gerber, A.J. Reisinger, K. Larios.
- **Did you guess which thing was not like the others? Evaluation of wetland nutrient stoichiometry and homeostasis in a subtropical treatment wetland.**
Society of Wetland Scientist Annual Meeting  Denver, Colorado
Julian, P., et al.
- **Translating the effects of sea-level rise in urban systems to the coastal ecosystem interface.**
12th International Symposium on Biogeochemistry of Wetlands  Coral Springs, Florida
Osborne, T.Z., M.W. Clark, P. Julian, N. Ward, R. Collins, E.J. Philips and P. Fletcher.
- **Biogeochemical response of selected STA flow-ways to different flow scenarios.**
12th International Symposium on Biogeochemistry of Wetlands  Coral Springs, Florida
Villapando, O., J. King, R.K. Bhomia and P. Julian.
- **One of these things is not like the other. Evaluation of wetland nutrient stoichiometry and homeostasis in a subtropical treatment wetland.**
12th International Symposium on Biogeochemistry of Wetlands  Coral Springs, Florida
Julian, P., et al.

2017

- **Examining the effects of hurricanes Matthew and Irma on water quality in the inter-coastal waterway, St. Augustine, FL.**
American Geophysical Union  New Orleans, Louisiana
Ward, N., T. Dye, P. Julian and T.Z. Osborne.
- **Stoichiometric relationships amongst ecosystem compartments of a treatment wetland.**
Southeastern Ecology and Evolution Conference  Fort Myers, Florida
Julian, P., R Bhomia, S. Gerber, and A.L. Wright.

Multiple technical presentations not listed here have been presented at meetings including technical, environmental policy, restoration project planning and general public audiences.

- **Pyrite formation in the Coastal Everglades: Can a fool's gold indicate sea-level rise?**
Society of Soil Scientist of America Annual Meeting 📍 Tampa, Florida
Julian, P., R. Chambers, J. Kominoski, T. Troxler, A. Wright, and T.Z. Osborne.
- **Aquatic Productivity in Subtropical Marsh along a soil nutrient gradient – An assessment of the Everglades Stormwater Treatment Areas.**
Society of Soil Scientist of America Annual Meeting 📍 Tampa, Florida
Julian, P., R. Bhomia, A. Wright, and T.Z. Osborne.
- **Spatial Distribution of Soil Biogeochemical Properties in Stormwater Treatment Area 3/4 Cells 3A and 3B.**
Society of Soil Scientist of America Annual Meeting 📍 Tampa, Florida
Osborne, T.Z., R. Bhomia, P. Julian and K.R. Reddy.
- **Aquatic Productivity in Subtropical Marsh – Observations from the Everglades Stormwater Treatment Areas.**
Society of Wetland Scientist Annual Meeting 📍 San Juan, Puerto Rico
Julian, P.
- **Limiting Factors in Mercury Methylation Hotspot Development: The Tangled Web.**
Greater Everglades Ecosystem Restoration 📍 Coral Spring, Florida
Julian, P., B. Gu and A. Freitag.
- **Data Integration and Synthesis Framework for Understanding the Phosphorus Cycling and Reduction Mechanisms in STA Flowways.**
Greater Everglades Ecosystem Restoration 📍 Coral Spring, Florida
Gerber, S., K. Larios and P. Julian.
- **High Biotic Mercury in South Florida Wetlands: Fish Trophic Position and Wading Bird Redistribution.**
Greater Everglades Ecosystem Restoration 📍 Coral Spring, Florida
Gu, B and P. Julian.
- **Water Quality Along inflow to Outflow Gradient of the Everglades Stormwater Treatment Areas.**
Greater Everglades Ecosystem Restoration 📍 Coral Spring, Florida
Villapando, O., R. Bhomia, J. King and P. Julian.
- **Status and Trends of Landscape-Scale Mercury in South Florida and the Everglades.**
7th SETAC World Congress/SETAC North America 37th Annual Meeting 📍 Orlando, Florida
Julian, P., B. Gu, K. Weaver and A. Wright

- **Alteration of hydrology by mangrove encroachment in saltmarsh ecosystems and potential impacts to ecosystem services.**
Ecological Society of America 📍 Fort Lauderdale, Florida
Osborne, T.Z., L.T. Simpson, T.B. Schafer, M. Camacho, **P. Julian II**, N.D. Ward, and L. Laplaca.

- **Carbon biogeochemical processes along a Mangrove-Salt Marsh ecotone.**
Mangrove & Macrobenthos Meeting 4 📍 Saint Augustine, Florida
Osborne, T.Z., L.T. Simpson, T.B. Schafer, M. Camacho, **P. Julian II**, N.D. Ward, and L. Laplaca.

- **Interpreting effects of water management on soil nutrient cycling in an oligotrophic subtropical wetland.**
Society of Wetland Scientist Annual Meeting 📍 Corpus Christi, Texas
Julian, P., T.Z. Osborne, J. Castro, J. Sadle and L.R. Ellis. 2016.

- **Can soil nutrient stoichiometry determine mercury hotspot formation in a subtropical peatland? An Everglades case study.**
Society of Wetland Scientist Annual Meeting 📍 Corpus Christi, Texas
Julian, P. and A. Wright.

- **Hydrologic restoration of the Taylor Slough Region of Everglades National Park. Changes in water quality and implications for ecosystem management.**
5th University of Florida Water Institute Symposium 📍 Gainesville, Florida
Julian, P.

- 2015
- **An Overview of Everglades Mercury Issues: Critical Questions Remain.**
Greater Everglades Ecosystem Restoration 📍 Coral Springs, Florida
Julian, P., B. Gu, G. Redfield, and K. Weaver.

- **Spatial and Temporal Variation of Total Mercury in Mosquitofish from Everglades Marshes.**
Greater Everglades Ecosystem Restoration 📍 Coral Springs, Florida
Gu, B., **P. Julian** and G. Redfield.

- 2014
- **2014. Large-Scale Water Quality Improvement Projects: An Everglades Perspective.**
SLER Con 📍 Orlando, Florida
Julian, P.

📌 POSTER (LAST FIVE-YEARS)

- 2018
- **Is the Everglades Ecosystem a stoichiometric deviant? An investigation of ecological stoichiometry along the aquatic continuum of the Everglades ecosystem.**
Florida Coastal Everglades Long Term Ecological Research Annual Scientist Meeting 📍 Miami, Florida
Julian, P., J.S. Kominoski, E.E. Gaiser and A. Wymore.

- **Effects of Hurricane Irma on dissolved organic carbon fluxes along a salinity gradient.**
12th International Symposium on Biogeochemistry of Wetlands
Coral Springs, Florida
Schafer, T.B., N. Ward, **P. Julian**, K.R. Reddy and T.Z. Osborne.
- **Soil nutrient enrichment post hydrologic management: A temporal analysis of Taylor slough.**
12th International Symposium on Biogeochemistry of Wetlands
Coral Springs, Florida
August, K., **P. Julian** and T.Z. Osborne. 2018.
- **River runs through it. Evaluation of groundwater and surface water connectivity and its implications on riparian biogeochemistry and ecology.**
12th International Symposium on Biogeochemistry of Wetlands
Coral Springs, Florida
Julian, P., G. Fletcher and A.L. Wright.
- 2017 ● **Pyrite in the Coastal Everglades, It's more than Fool's Gold.**
Florida Coastal Everglades Long Term Ecological Research Annual Scientist Meeting
Miami, Florida
Julian, P., R. Chambers, J. Kominoski and T. Troxler.
- **Key Factors Controlling Wetland Aquatic Productivity in the Everglades Stormwater Treatment Areas.**
Greater Everglades Ecosystem Restoration
Coral Spring, Florida
Julian, P., M. Powers, R. Bhomia, A. Wright and J. Dombrowski.
- **Spatial Distribution of Soil Biogeochemical Properties in Stormwater Treatment Area 3/4 Cells 3A and 3B.**
Greater Everglades Ecosystem Restoration
Coral Spring, Florida
Osborne, T.Z., R. Bhomia, **P. Julian** and K.R. Reddy.
- 2016 ● **Removal of Mercury from Surface Water by Constructed Wetlands in South Florida, USA.**
7th SETAC World Congress/SETAC North America 37th Annual Meeting
Orlando, Florida
Gu, B., N. Niemeyer and **P. Julian**.
- 2015 ● **Total Phosphorus and Total Nitrogen trends in Upper Taylor Slough, Everglades National Park, Florida.**
24th Annual Southwest Florida Water Resources Conference
Fort Myers, Florida
Julian, P., G. Redfield and A. Wright.
- 2014 ● **Ecosystem Sampling Suitability: Do my monitoring locations represent the water body?**
Rookery Bay GIS Symposium
Naples, Florida
Julian, P.