



*Normandie González-Orellana*

Data Scientist | Conservation Ecologist

[gonormandie.netlify.app](https://gonormandie.netlify.app)

gonormandie@gmail.com

## Academic Training:

- 2024-Present Curtin University, Bentley Campus, WA, Australia  
PhD Candidate, Environmental Sciences
- 2019-2023 University of Puerto Rico, Río Piedras Campus  
Biology, MSc
- 2013-2019 University of Puerto Rico, Humacao Campus  
General Biology, BS

## Certifications:

- 2025 First Aid  
St. John, WA, Australia
- 2023 Data Science & Analytics Professional Certificate  
Universidad del Sagrado Corazón
- 2022 Data Carpentries Instructor  
The Carpentries
- 2020 Data Science Professional Certificate  
University of Puerto Rico, Medical Sciences Campus

## Research Activities:

- 2024-Present *Burning Bridges: Early eradication and management of invasive species*  
Population Biology and Genomics Group, Curtin University, Bentley Campus  
P.I.: Prof. Ben Phillips, PhD, School of Molecular and Life Sciences  
Abstract: My current research aims to develop models for early eradication and management of invasive species to help with the advancement of informed biosecurity strategies in Australia.
- 2022-Present *Speciation and Pollination of Ghost Orchids in La Hispaniola*  
National Botanical Garden Dr. Rafael María Moscoso, Dominican Republic; University of Puerto Rico; Southern Illinois University  
P.I.: Eladio Fernández, James D. Ackerman, Kurt Neubig  
Abstract: Morphological differences in flowers of *Dendrophylax* sp. in the Dominican Republic suggest speciation and exploitation of different pollinators. We are conducting a floral fragrance composition analysis to detect further differences, as well as using light traps and visitation observations to identify the pollinators.
- 2021 *Debunking Myths: Can the fall of the Phyllophaga sp. Population in Puerto Rico during the 1930's be explained by precipitation?*-**Manuscript in Preparation**  
University of Puerto Rico, Río Piedras Campus  
Mentor: James D. Ackerman, Biology Department  
Abstract: Scientists in Puerto Rico introduced the cane toad (*Bufo marinus*) as a biocontrol of *Phyllophaga* sp. (may beetle) infestation in sugar cane plantations in the early 1900s. Although the may beetle problem receded, scientist question whether this was thanks to the toad. In 1984, Freeland, W. J., stated that the decline of the beetle population in Puerto Rico was due to extreme wet and dry seasons between 1930-1936. We use historical data of precipitation in Puerto Rico to evaluate if this statement is true.

2019-2023	<p><i>Limitations to Population Growth of the Epiphytic Psychilis kraenzlinii, an Endemic Puerto Rican Orchid</i> (Master's Thesis)</p> <p>University of Puerto Rico, Rio Piedras Campus</p> <p>Mentor: James D. Ackerman, Biology Department</p> <p>Abstract: The distribution of orchids is still not well understood, but the literature suggests that the distribution of epiphytic orchids might be influenced by the distribution of their phorophytes (host trees) and Orchid Mycorrhizal Fungi (OMF). My research studies phorophyte specificity and OMF of the endemic epiphyte <i>Psychilis kraenzlinii</i> to elucidate how these affect seed germination.</p>
2017-2019	<p><i>Estimates of Population Density of Feral Cats in Puerto Rico</i></p> <p>University of Puerto Rico, Humacao Campus</p> <p>Mentor: Raymond L. Tremblay, Biology Department</p> <p>Abstract: Puerto Rico has a high number of feral cats, still a reliable estimate of the population size has not been done. We used mark-recapture techniques in three municipalities of Puerto Rico to estimate feral cat population size in the area.</p>
<b>Awards:</b>	
2025-2028	<p><i>WAARC Postgraduate Research Scholarship Program</i></p> <p>Western Australia Agricultural Research Collaboration (WAARC)</p>
2024-2028	<p><i>Premier's Science Fellowship Program</i></p> <p>Department of Energy and Economic Diversification, Government of Western Australia</p>
2021-2023	<p><i>Conservation Committee Grant</i></p> <p>American Orchid Society</p>
2020-2022	<p><i>Bridge to the Doctorate Fellowship</i></p> <p>Puerto Rico Louis Stokes Alliance for Minority Participation/National Science Foundation</p> <p>University of Puerto Rico, Rio Piedras Campus</p> <p>P.I.: Eduardo Nicolau, PhD. (Grant Number: HRD-1906130)</p>
<b>Experience:</b>	
2023-Present	<p><i>Data Manager</i> (Independent Consulting)</p> <p>The Learning Partnership/Forward Learning</p> <p>(Data Management, Data Science, Spatial Analysis, Educational Material Development)</p>
2023	<p><i>ArcGIS Data Management Fellowship</i></p> <p>The Learning Partnership</p> <p>(Data Curation and Management, Map Creation, Educational Material Development)</p>
2023	<p><i>Data Manager</i> (Independent Consulting)</p> <p>The Learning Partnership</p> <p>(Data Management, Data Science, Educational Material Development)</p>
2022	<p><i>NSF Environmental Data Initiative (EDI) Data Management Fellowship</i></p> <p>University of Wisconsin-Madison, The Learning Partnership/Luquillo LTER-Data Jam Initiative</p> <p>(Data Management, Data Science, Educational Material Development)</p>
2020, 2022-2023	<p><i>Undergraduate Research Supervisor/Teaching Assistant</i></p> <p>Museum of Zoology, University of Puerto Rico, Rio Piedras Campus, Biology Department</p>

- 2019 *General Biology Laboratory Teaching Assistant*  
University of Puerto Rico, Rio Piedras Campus  
Biology Department
- 2019 *R Quantitative Analysis Workshops and Tidyverse Workshops Teacher's Assistant*  
UPR-IPERT Program (P.I.: Isar Godreau, Mariluz Franco and Raymond L. Tremblay)  
With Dr. Denny S. Fernández Del Viso

### Languages:

- ✓ Spanish (Fluent)
- ✓ English (Fluent)

### Personal Skills:

- ✓ Independent Work
- ✓ Writing
- ✓ Leadership
- ✓ Empathy
- ✓ Adaptable
- ✓ Quick Learner
- ✓ Literature Research
- ✓ Eloquence
- ✓ Intuition
- ✓ Critical Thinking

### Software Skills:

- ✓ R (tidyverse, rmarkdown, quarto, shiny, base)
- ✓ RStudio, Anaconda
- ✓ Python
- ✓ SQL
- ✓ Git & GitHub
- ✓ Microsoft Office
- ✓ Google Suit
- ✓ PowerBi
- ✓ ArcGIS (ArcGIS Online, QGIS, ArcGIS Pro)

### Data and Statistical Skills:

- ✓ Data Mining
- ✓ Data Management
- ✓ Relational Databases
- ✓ Data Visualization
- ✓ Descriptive Statistics
- ✓ GLMs and Regression
- ✓ Spatial Data Analysis
- ✓ Qualitative and Quantitative Analysis
- ✓ Data Modelling

### Oral Presentations:

- 2024 *Un Día en la Vida de una Ecóloga*  
Data Jam Students Symposium 2024  
Invited by: The Learning Partnership/LUQ-LTER Schoolyard
- 2023 *Una Carrera en Ciencia de Datos*  
Data Jam Students Symposium 2023  
Invited by: The Learning Partnership/LUQ-LTER Schoolyard
- 2022 *Second Life of Data: Developing Educational Data for Data Jam Initiative*  
LTER All Scientists Meeting 2022  
Participated Virtually
- 2019 *Estimates of Population Density of Feral Cats in Puerto Rico*  
University of Puerto Rico, Mayagüez Campus  
38<sup>th</sup> Puerto Rico Interdisciplinary Scientific Meeting and the 53<sup>rd</sup> Junior Technical Meeting

2018 *Estimates of Population Density of Feral Cats in Puerto Rico*  
University of Puerto Rico, Río Piedras Campus  
Invasive Biology Class  
Invited by Dr. James D. Ackerman

#### Poster Presentations:

2021 *Highly Vagile but Rare: What Limits the Local Distribution of an Epiphytic Orchid*  
Online Symposiums  
39<sup>th</sup> Puerto Rico Interdisciplinary Scientific Meeting and the 54<sup>th</sup> ACS Junior Technical Meeting  
[Botany2021 Symposium](#)

2020 *Debunking Myths: Can the fall of the Phyllophaga sp. Population in Puerto Rico during the 1930's be explained by weather conditions?*  
Online Symposium  
43<sup>rd</sup> Senior Technical Meeting, 54<sup>th</sup> Junior Technical Meeting & PR-LSAMP Fall Meeting

2019 *Estimates of Population Density of Feral Cats in Puerto Rico*  
University of Puerto Rico, Río Piedras Campus  
Puerto Rico's Invasive Species Awareness Symposium  
Puerto Rico Department of Natural and Environmental Resources

#### Workshops & Webinars:

2022 *Introducción a R y Manejo de Datos con el Paquete Tidyverse*  
Workshop at the Jardín Botánico Nacional Dr. Rafael M. Moscoso, República Dominicana  
Invited by Betsaida Cabrera

2022 *Introduction to R, Descriptive and Inferential Statistics with R*  
Workshop for REU Students at the University of Puerto Rico, Río Piedras Campus  
Invited by Dr. James D. Ackerman

2021 *Creación de Mapas Interactivos con Leaflet*  
Webinar  
Analítica Fundación  
Available at: <https://www.youtube.com/channel/UC1gdCGTHxlbBAiY21GHH39A>

2021 *Manejo de Datos: Un vistazo al paquete dplyr*  
Webinar  
Analítica Fundación  
Available at: <https://www.youtube.com/channel/UC1gdCGTHxlbBAiY21GHH39A>

2020, 2021, 2022, 2023 *Descriptive Statistics with R*  
Zoology Museum, University of Puerto Rico, Río Piedras Campus  
BIOL4990-Introduction to Research (Undergraduate Course)

2020 *CATastrophe: Estimating Cat Population Sizes in Islands using R*  
Webinar, Universidad de San Carlos de Guatemala  
Bioremediation (Undergraduate Course)  
Invited by Alejandro Ruiz

## Publications:

- Ackerman, J. D., & González-Orellana, N. (2021). Explosive range expansion of *Eulophia graminea* (Orchidaceae) in Puerto Rico and the West Indies. *Lankesteriana: International Journal on Orchidology*, 21(3), 307–312. <https://doi.org/10.15517/lank.v21i3.48871>
- González-Orellana, N., Salazar-Mendoza, A., Numan, Y. & Ackerman, J.D. (2022). Understanding Orchid Conservation: One Species at a Time. *Orchids*, 91(12), 914–919.
- González-Orellana, N., Salazar Mendoza, A., Tremblay, R. L., & Ackerman, J. D. (2024). Host suitability for germination differs from that of later stages of development in a rare epiphytic orchid. *Lankesteriana: International Journal on Orchidology*, 24(1), 93–114. <https://doi.org/10.15517/lank.v24i1.59617>
- McGee, S., Báez-Rodríguez, N., Castro-Rivera, C., González-Orellana, N., McGee-Tekula, R., & Rubin, A. (2024). Luquillo Data Jam: A powerful model for broadening participation in science. *The Earth Scientist* 41(2), 6-18. <https://nestanet.org/TES>
- McGee, S., Zimmerman, J. K., Tekula, R. M., González-Orellana, N., & Báez Rodríguez, N. (2024). Scientific communities of practice: A K12 outreach model that supports authentic scientific inquiry around very long-term studies. *Online Journal of Ecology and Environmental Science*, 2(1). <https://irispublishers.com/ojees/pdf/OJEES.MS.ID.000533.pdf>

## Volunteer Experience:

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|------|---|
| 2022 | The Learning Partnership<br>Contributions: Data Management, Educational Material Development, Translator  |
| 2021 | Analítica Fundación, Inc.<br>Contributions: Imparting and planning webinars<br>Webpage: <a href="https://analiticafundacion.wordpress.com/">https://analiticafundacion.wordpress.com/</a> |