

# Peter Menzies

(919) 623-9987 | [petermenzies@bren.ucsb.edu](mailto:petermenzies@bren.ucsb.edu) | [petermenzies.github.io](https://petermenzies.github.io) | Santa Barbara, CA

## EDUCATION

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**Master of Environmental Data Science**, 4.0 GPA (June 2022)

**Bren School of Environmental Science & Management** – University of California, Santa Barbara

Highlighted Coursework: Machine Learning in Environmental Science, Data Visualization and Communication, Remote Sensing, Spatial Analysis, Statistics for Environmental Data Science

**Bachelor of Science in Environmental Studies**, 3.7 GPA (June 2016)

**University of North Carolina at Asheville**, Asheville, NC

Honors/Awards: Cum Laude, Honors Program graduate, Laurel Scholar, Departmental Distinction in Environmental Studies

Leadership/Involvement: Undergraduate Researcher, Ecology Department Tutor

## DATA SCIENCE EXPERIENCE

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**Data Science Fellow – National Center for Ecological Analysis and Synthesis**

**5/22 – 9/22**

- Updating data layers and scoring methods for the Ocean Health Index
- Acquiring, wrangling, and analyzing data in R on a remote linux server
- Improving data workflows with newer packages and increased automation

**Machine Learning Engineer – Master's Capstone Project**

**1/22 – 6/22**

- Developed a reproducible workflow for applying machine learning techniques to explore ecohydrologic model output
- Built models using random forest and gradient boosting in R, and LSTM recurrent neural networks in Python
- Visualized results with an interactive R Shiny app

## ENVIRONMENTAL EXPERIENCE

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**Environmental Educator – Asheville GreenWorks**

**1/19 – 7/21**

- Led environmental education programs for K-12 and community groups
- Co-chaired the leadership committee for Asheville's Bee City initiative
- Filmed and edited educational videos

**Research Technician – North Carolina State University**

**6/18 – 10/18**

- Identified and mapped over 3000 trees to assess regeneration trends in forest gaps
- Processed spatial data in QGIS
- Assisted with LiDAR mapping of study sites

**Field/Lab Technician – US Forest Service**

**10/15 – 8/16**

- Collected data on eastern hemlocks and hemlock woolly adelgids
- Input, analyzed, and visualized data using Excel and SAS
- Processed foliage, bark, and soil samples to assess chemical trends in woolly adelgid resistance

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## SKILLS

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### Data Science

- **Languages:** R, Python, SQL, Bash
- **Data processing:** importing, cleaning, and wrangling large datasets in R and Python
- **Data visualization:** creating static and interactive visualizations using R (ggplot2, Shiny), Python (Matplotlib, Plotly), and Tableau.
- **Machine learning:** data preprocessing, feature selection, and model tuning experience with supervised learning techniques including logistic regression, random forest, gradient boosting, and neural networks in R (caret, XGBoost) and Python (TensorFlow, Keras, scikit-learn). Some familiarity with clustering and principal component analysis.
- **Statistics:** conducting and interpreting linear regressions in R. Some experience with spatial interpolation.
- **Spatial analysis:** analyzing raster and vector data in R (SF, SP, raster, terra) and Python (GeoPandas, Google Earth Engine). Some experience with QGIS and PostGIS databases.
- **Versioning and collaboration:** git, GitHub, ZenHub, Google Colab

### Scientific Writing

- Co-authored two papers published in *Journal of the Torrey Botanical Society and Southeastern Naturalist* (cited below)

Irene M. Rossell, Tyler T. Clabby, and Peter Menzies "The habitat and abundance of two wintergreen orchids (*Aplectrum hyemale* and *Tipularia discolor*) in western North Carolina," *The Journal of the Torrey Botanical Society* 144(4), 417-422, (13 September 2017). <https://doi.org/10.3159/TORREY-D-16-00039.1>

Peter F. Menzies and Irene M. Rossell "Potential Herbivory on the Wintergreen Orchids *Aplectrum hyemale* and *Tipularia discolor* by the Spur-Throated Grasshopper *Melanoplus acrophilus*," *Southeastern Naturalist*, 16(3), (1 September 2017). <https://doi.org/10.1656/058.016.0317>