

CURRICULUM VITAE

Miles A. Moore

PhD Student

Institute of Arctic and Alpine Research

Department of Ecology and Evolutionary Biology, University of Colorado Boulder

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EDUCATION

- 01/2022 – 12/2023 B.A., Ecology & Evolutionary Biology, *summa cum laude*, *With distinction*
Certificate in Geographic Information Systems & Computational Science,
University of Colorado, Boulder
Research Advisors: Dr. Nancy Emery, Dr. Pieter Johnson, Dr. Sarah Elmendorf
GPA: 4.0
Honors Thesis: “Satellite eyes on alpine skies: A comparative study of modeled and
remotely sensed vegetation indices using 21 years of field data.”
- 08/2019 – 12/2021 A.S., Front Range Community College, Westminster, CO

RESEARCH & WORK EXPERIENCE

- 12/2023 – Present Visiting Scientist, *National Center for Atmospheric Research* – Climate & Global
Dynamics (Terrestrial Science Section), NCAR Mesa Lab, Boulder, CO
- Use high performance computing with statistical and geospatial libraries such as python’s *xarray*, *sci-kit learn*, *tensorflow*, *PyStan*, and *rasterio* to evaluate candidate forcing datasets for a novel gridded regional climate simulation (via Community Earth System Model) over the Rocky Mountain West using a recently developed 3-dimensional Hill Slope Hydrology module.
- 12/2023 – 8/2024 Professional Scientist I, *Institute of Arctic and Alpine Research*, University of
Colorado, Boulder, CO
- Process and analyze Eddy Covariance flux data from tundra ecosystem, develop statistical and machine learning algorithms to clean and gap fill high resolution spatiotemporal datasets, use global climate model and remotely sensed data in conjunction with genomic analyses to forecast vegetation productivity.
- 05/2023 – 12/2023 Remote Sensing Intern, *National Aeronautics and Space Administration* Arctic-
Boreal Vulnerability Experiment (ABOVE), Goddard Space Flight Center,
Greenbelt, MD
- Worked with NASA ABOVE Airborne Science Team to integrate ground validation data from 2017-2022 into a single database.
 - Evaluated models of synthetic aperture radar derived soil moisture and active layer thickness measurements against field data.

- Presented findings at the NASA Biospheric Science Brown Bag Seminar Series
- 08/2021 – Present Data Science Research Technician, *Institute of Arctic and Alpine Research*, University of Colorado, Boulder, CO
 - Spearheaded the redesign and migration of data Exchange-Transfer-Load pipeline from MATLAB to R and python for the Niwot Ridge LTER’s processing of ongoing and new long term climatological datasets.
 - Developed QAQC algorithms to process eddy-covariance flux tower data for AmeriFlux submission.
 - Generated EML (XML) metadata and published data to EDI.
- 05/2021 – 08/2021 Field Research Technician, *Niwot Ridge Long Term Ecological Research (LTER) Site*, University of Colorado, Boulder, CO
 - Assisted PI’s, graduate students, and other staff members with alpine tundra field research in the fields of vegetation ecology, evolution, limnology, hydrology, snow science, meteorology, atmospheric science.
 - Wrote novel QA/QC Algorithms for *in situ* climate and soil loggers in the R programming language.
 - Analyzed lake and stream samples using ion chromatography.

TEACHING, OUTREACH, & VOLUNTEER EXPERIENCE

- 08/2024 – 12/2024 Graduate Teaching Assistant, Dept. of Ecology and Evolutionary Biology, Biological Statistics (EBIO 4410/5410), University of Colorado Boulder, Boulder, CO
- 09/2024 Co-Instructor, *Front Range Field Immersion* for Denver high school students, Mountain Research Station, Nederland, CO
- 01/2021 – 12/2021 Student Teaching Assistant, Biology Department, Front Range Community College, Westminster, CO
- 05/2019 – 08/2019 AmeriCorps Member, Rawah Wilderness Backcountry Trail Crew, Rocky Mountain Conservancy, Estes Park, CO

GRANTS, AWARDS, HONORS, & SCHOLARSHIPS

- 2024 **Jacob Van Ek Scholars Award**, College of Arts & Sciences, University of Colorado Boulder.
- 2023 **Summa cum laude**, College of Arts & Sciences Honors Program, University of Colorado Boulder
- 2023 National Aeronautics and Space Administration’s Arctic Boreal Vulnerability Experiment, Goddard Space Flight Center “Proposal to extend the project: Integrating field data and ground validating remotely sensed and modeled data in support of the ABoVE Airborne Campaign.”

- Total Amount Awarded: \$3,300
- 2023 **Undergraduate Research Opportunities Program**, University of Colorado, Boulder, CO, “Environmental effects on the resource acquisition strategies of a native facultative root hemiparasite, *Castilleja occidentalis*”
- Total Amount Awarded: \$3,000
- 2023 **John W. Marr Research Grant**, Colorado Native Plant Society, Denver, CO “Ecological and environmental stress effects on the resource acquisition strategies of a native facultative root hemiparasite, *Castilleja occidentalis*”
- Total Amount Awarded: \$280
- 2022 **Alice Eastwood Scholarship**, Colorado Native Plant Society, Denver, CO
- Total Amount Awarded: \$950
- 2022 **Undergraduate Research Opportunities Program**, University of Colorado, Boulder, CO, “Effects of environmental heterogeneity on the distribution of a hemiparasitic plant in the alpine tundra”
- Total Amount Awarded: \$3,000

PEER-REVIEWED PUBLICATIONS

- 2024 **Miles A. Moore**, S.C. Elmendorf, N.C. Emery. *Decadal remote sensing reveals browning trends in the Southern Rocky Mountain alpine tundra. (In prep for Feb 2025 submission)*
- 2024 **Miles A. Moore**, E.H. Hoy, K. Schaefer, L.L. Bourgeau-Chavez, et al. *Soil Moisture and Active Layer Thickness observations across Alaska, USA and Northwest Territories, Canada. (In prep for Feb 2025 submission)*

PUBLISHED DATASETS

- 2024 Kittel, T., White, C., Hartman, M., Chowanski, K., Ackerman, T., Williams, M., Losleben, M., & **Moore, M.** (2024a). *Infilled daily air temperature data for C1 chart recorder, 1952—Ongoing.* [Dataset]. Environmental Data Initiative. <https://doi.org/10.6073/PASTA/8DFC895515C1B049FAC72C0F7BEA8830>
- Kittel, T., White, C., Hartman, M., Chowanski, K., Ackerman, T., Williams, M., Losleben, M., & **Moore, M.** (2024b). *Infilled daily air temperature data for D1 chart recorder, 1952—Ongoing.* [Dataset]. Environmental Data Initiative. <https://doi.org/10.6073/PASTA/3BA20E45E4A8831890999D42BD174B69>
- Kittel, T., White, C., Hartman, M., Chowanski, K., Ackerman, T., Williams, M., Losleben, M., & **Moore, M.** (2024c). *Infilled daily precipitation data for C1 chart recorder, 1952—Ongoing.* [Dataset]. Environmental Data Initiative. <https://doi.org/10.6073/PASTA/BDB20120E59C7685AEA1D6197E6B2ABA>

Kittel, T., White, C., Hartman, M., Chowanski, K., Ackerman, T., Williams, M., Losleben, M., & **Moore, M.** (2024d). *Infilled daily precipitation data for D1 chart recorder, 1952—Ongoing*. [Dataset]. Environmental Data Initiative.

<https://doi.org/10.6073/PASTA/1926C66BA90BA9EE2E3A241940C5C418>

White, C. T., Morse, J. F., Brandes, H., Chowanski, K., Kittel, T., Losleben, M., & **Moore, M.** (2024). *Homogenized, gap-filled, daily air temperature data for Saddle, 1986—Ongoing*. [Dataset]. Environmental Data Initiative.

<https://doi.org/10.6073/PASTA/7890C3264EB71BB992F0237844B02667>

White, C. T., Morse, J. F., Brandes, H., Chowanski, K., Kittel, T., Williams, M., Losleben, M., & **Moore, M.** (2024). *Infilled daily precipitation data for Saddle, 1981—Ongoing*. [Dataset]. Environmental Data Initiative.

<https://doi.org/10.6073/PASTA/2CFCF2DF7695B4EBA7569080F2650164>

PEER REVIEW ACTIVITIES

2024 **Copernicus Biogeosciences**, European Geophysical Union, Research Article Referee

ACADEMIC SERVICE

2024 - Present **Colloquium Committee**, University of Colorado Boulder, Department of Ecology and Evolutionary Biology Graduate Program

PRESENTATIONS & NON-TECHNICAL PUBLICATIONS

2024 **Miles A. Moore**, S.C. Elmendorf, N.C. Emery. “Decadal remote sensing reveals browning trends in the Southern Rocky Mountain alpine tundra” *Guild of Rocky Mountain Ecologists and Evolutionary Biologists (GREEBs) Conferences*, Mountain Research Station, UCB, Nederland, Colorado

2024 **Miles A. Moore**, E.E. Hoy, K. Schaefer, L.L. Bourgeau-Chavez, P.C. Griffith. “From Field to Air: Integrating Airborne Synthetic Aperture Radar and Field Data in Support of the NASA ABoVE Airborne Campaign” *NASA Arctic Boreal Vulnerability Experiment – ABoVE Science Team Meeting 10*, NCAR East Campus, Boulder, Colorado

2023 **Miles A. Moore**, E.E. Hoy, K. Schaefer, L.L. Bourgeau-Chavez, P.C. Griffith. “From Field to Air: Integrating Airborne Synthetic Aperture Radar and Field Data in Support of the NASA ABoVE Airborne Campaign” *American Geophysical Union (AGU), Biogeosciences, Fall Meeting*, San Francisco, CA. *Invited Oral Presentation*.

2023 **Miles A. Moore**, and E.E. Hoy. “From Field to Air: Integrating Field Data in Support of the NASA ABoVE Airborne Campaign” *NASA Biospheric Sciences Brown Bag Seminar*, Goddard Space Flight Center, Greenbelt, MD.

2022 **Miles A. Moore**, and L.M. Brigham. “Trends in Alpine Ecology: The Role of Microclimates in Determining Alpine Plant Response to Climate Change” *Aquilegia: Magazine of the Colorado Native Plant Society*, 46(3), 20-23.

TECHNICAL SKILLS

Programming R, Python, bash, JavaScript, Fortran, awk
Applications & APIs ArcGIS Pro, Google Earth Engine, ENVI, git, bfast, maxent, spacetim, gstat, PyKrig, statsmodels, scikit-learn, TensorFlow, Pandas, Polars, GDAL
Quantitative Skills Bayesian hierarchical models, Remote sensing, Synthetic Aperture Radar, Multilevel modeling, Phenological modeling, Spatiotemporal statistics, Machine learning, High Performance Computing, Parameter optimization, algorithms, Data structures, *de novo* genome assembly

CONFERENCES & CAREER DEVELOPMENT

2024 Research Presentation (Talk), *Guild of Rocky Mountain Ecologists and Evolutionary Biologists*, Mountain Research Station, University of Colorado, Boulder
2024 Research Presentation (Poster), NASA Arctic Boreal Vulnerability Experiment – *ABOVE Science Team Meeting 10*, NCAR East Campus, Boulder, Colorado
2023 Invited Panelist, *Fall Leadership Summit*, Center for Leadership, University of Colorado, Boulder
2023 Attendee, *Environmental Data Science Inclusion and Innovation Laboratory*, Center for Interdisciplinary Research in Environmental Science, University of Colorado, Boulder
2022 Attendee, *Guild of Rocky Mountain Ecologists and Evolutionary Biologists*, Mountain Research Station, University of Colorado, Boulder