

# Helen Kesting

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## RESEARCH EXPERIENCE

**Allen Ecohydrology Lab**, Reno, NV

*Aug 2021 - Present*

- Use long-term isotope hydrology time-series and **remotely sensed ecological data** to trace and predict seasonal precipitation routing into runoff and evapotranspiration
- Use **ArcGIS Pro** including **ModelBuilder** and Python in **ArcGIS Notebooks** for data analysis, including database querying, quality assessment and control, model development and fitting, figure generation, and statistical methods (beyond pre-packaged functions)
- Focus on strategy development for persuasive and **technical writing**

**Geospatial Ecology and Remote Sens. Lab**, Reno, NV *Jan - May 2022*

- Created a climate downscaling model for the state of California to predict future fuel loading for state agency partners
- Researched novel methods for calculating cold air pooling and solar insolation from remote sensing data
- Used ArcGIS Pro to **develop algorithms** that build upon existing techniques and are scalable for large spatial extents

## WORK EXPERIENCE

**Sierra Field Tech**, Trout Unlimited, Truckee, CA

*Oct 2020 - Jul 2021*

- Analyzed road networks, DEMs, and data collected via **Survey123** to create maps of sediment loading in streams in ArcMap
- Collected data on runoff, water temperature, groundwater level, and greenhouse gas fluxes

**Vector Control Tech**, Placer Ctrl. Dist., Truckee, CA

*May - Sep 2020*

- Used an interactive GIS app to identify mosquito habitat and record treatment data

**GIS Lab Assistant**, Univ. of WA, Seattle, WA

*Oct 2018 - Mar 2019*

- Taught students how to use **ArcMap**, **ArcGIS Online**, and **StoryMaps**

## UNIVERSITY SERVICE

**Peer Review Cmte.**

*Aug 2022 - May 2023*

- Provide feedback on manuscripts submitted by graduate students

**Justice, Equity, Diversity & Inclusion Cmte.**

*Aug 2022 - May 2023*

- Host an indigenous speaker to present on tribal issues in Nevada
- Work with faculty to develop procedures that make our academic programs more equitable and inclusive

## PUBLICATIONS AND PRESENTATIONS

"Partitioning of seasonal precipitation into runoff and evapotranspiration across wetter and drier years" *manuscript in preparation for peer-review*

"Predicting seasonal precipitation partitioning into discharge and evapotranspiration as a function of climate and vegetation indices"

- poster, American Association of Geographers Meeting *Mar 2023*
- oral presentation, Nevada Water Resources Association *Sep 2022*

## TECHNICAL SKILLS

Programming languages and packages:

- Python
  - geopandas
  - ArcPy
  - GDAL
  - OGR
  - scikit-learn
  - statsmodels
  - seaborn
  - matplotlib
- R
  - sf
  - terra
  - raster
  - maptools
  - spatstat
  - ggplot2

Geospatial software:

- Esri ArcGIS products
- Survey123
- SAGA GIS
- Google Earth Engine
- Pix4Dmapper

Other technical skills:

- GitHub
- SQL
- Amazon Web Services
- Machine learning
- Remote sensing
- Point cloud analysis

## EDUCATION

Univ. of Nevada, Reno

**M.S. Ecology, Evolution and Conservation Biology** *May 2023*

- 4.0 GPA
- Funded by the Nevada NASA Space Grant Consortium
- Outstanding Graduate Researcher Award
- Outstanding Master's Student Award

Univ. of Washington, Seattle

**B.S. Environmental Science**

Minor in Marine Biology *Jun 2019*

- Departmental honors
- Magna cum laude