# SIMON J. MARKS

I am a recent MS in Environmental Sciences and Management graduate looking to apply myself in water resource science and/or planning. I possess a sound knowledge of hydrology and the technical proficiencies needed to perform hydrologic analysis. I also have a robust educational background surrounding NEPA, CEQA, and permitting needed to support water resource decision makina.

### **EDUCATION**

Dec. 2021 Sep. 2019

M.S., Environmental Sciences and Management (emphasis hydrology)

California Polytechnic State University San Luis Obispo

· Thesis: Estimating and modeling transpiration of a mountain meadow encroached by conifers using sap flow measurements (copy available upon request)

Jun. 2019 Sep. 2015

B.S., Environmental Management and Protection (minor statistics)

California Polytechnic State University San Luis Obispo

- · Concentration: Watershed management and hydrology
- · Summa cum laude



# RESEARCH EXPERIENCE

current Sep. 2019 **Graduate Research Assistant** 

California Polytechnic State University Dr. Chris Surfleet's Lab

- · Primarily worked with sap flow field data to quantify and model transpiration of a conifer encroached meadow near Chester, CA in a meadow restoration research context
- · Managed maintenance of field instruments at meadow restoration study sites and developed R scripts designed to streamline compilation of soil moisture, groundwater, sap flow, and climate field data
- · Performed regression analysis (MLR) to study hydrologic and suspended sediment effects of forest roads at the Caspar Creek Watershed near Fort Bragg, CA

Summer 2018

#### Summer Undergraduate Researcher

Dr. Chris Surfleet's Lab

- California Polytechnic State University
- · Completed sub-surface soil sampling, performed soil particle size distribution lab analysis, and computed soil hydraulic properties in support of meadow restoration research- presented results with a poster at an on campus research symposium to conclude the summer
- · Cleaned and analyzed storm event peak flow and sediment discharge data collected at the Caspar Creek Experimental Watershed needed for distributed hydrology soil vegetation model (DHSVM) development

#### CONTACT

- ✓ sjmarks@calpoly.edu
- **2** 209-747-9697
- github.com/simarks
- in linkedin.com/in/sjmarks97
- Academic Portfolio

### TECHNICAL SKILLS

R			
ArcMap/ArcGIS Pro			
Microsoft Excel			
SAS			
MATLAB			
LaTeX			
Git			

The source code used to create this CV is available on github .com/sjmarks/datadriven\_cv.

Last updated on 2021-12-16.



# INDUSTRY EXPERIENCE

Summer 2017

# **Natural Resource Damage Assessment Intern**

California Department of Fish and Wildlife

Sacramento, CA

· Worked within the Office of Spill Prevention and Response on tasks related to injury assessment and environmental sampling including development of environmental reports, field documentation, checklists, and operating procedures

# ♣☐ TEACHING EXPERIENCE

current Sep. 2021

## Watershed Processes and Management Lecturer

Cal Poly NRES Dept.

San Luis Obispo, CA

- · Instructed ArcGIS Pro based labs focused on watershed management problems including water budgets, runoff calculation, and culvert sizing
- · Led a weekend field trip giving students experience with stream and riparian condition analysis toward watershed health and regulatory implementation

Jun. 2021 Sep. 2019

#### Watershed Processes and Management TA

Cal Poly NRES Dept.

San Luis Obispo, CA

- · Covered (all field based) streamflow measurement, stream channel and riparian assessment, road erosion hazard rating, and water quality measurement
- · Assisted in GIS-based labs, troubleshooting spatial analyst tools

Dec. 2018 Jan. 2017

#### Supplemental Workshops in Science Facilitator

Cal Poly Student Academic Services

San Luis Obispo, CA

· Facilitated medium groups of undergraduate students, providing instruction in chemistry and biology coursework and promoting community/collaboration



#### ACADEMIC PUBLICATIONS

2021

Hydrologic and suspended sediment effects of forest roads using field and DHSVM modelling studies<sup>1</sup>

Forest Ecology and Management

· Co-authored with Chris Surfleet of the Cal Poly State University San Luis Obispo NRES Dept.

# PARTICION NO PROPERTO DE LA PROJECTS PROJECTS

Spring 2020 Evaluation of Lower Scotts Creek Floodplain and Habitat Enhancement Project in HEC-RAS<sup>2</sup>

CE 536: Computer Applications in Water Resources with GIS

• Ran steady flow analysis at lower Scotts Creek (near Davenport, CA) to compare floodplain activation between pre and post-restoration states in the context of salmonid habitat improvement

Spring 2020

# 1-Way ANOVA- Model Representations, Power, and Sample Size Tutorial<sup>3</sup>

STAT 431: Advanced Statistical Computing in R

- Authored tutorial using the bookdown package, showcasing the means and effects models including their manual implementation via matrix algebra
- Demonstrated data viz skills using ggplot2 and gganimate packages, creating static and dynamic figures communicating the role of power and sample size in ANOVA

Fall 2018

#### Erosion and Sediment Control Plan<sup>4</sup>

ERSC 303: Soil Erosion and Water Conservation

- Prepared an abbreviated erosion plan for a proposed stream restoration project focused on mitigating bank erosion
- · Identified project regulatory requirements, BMPs/conservation measures, and maintenance/monitoring procedures

Spring 2018

#### Froom Ranch Specific Plan Draft EIR<sup>5</sup>

NR 425: Applied Resource Analysis and Assessment

- Worked with a team to write an abbreviated DEIR for a proposed project local to San Luis Obispo, CA
- Detailed environmental impacts and mitigation measures for the hydrology, aesthetics, public services, and recreation impact areas relevant to the project; identified project alternatives and other CEQA considerations (e.g., cumulative impacts)

Fall 2017

#### Morro Bay Water Reclamation Facility Proposal to Prepare EIR6

NR 416: Environmental Impact Analysis and Management

- Collaborated with peers to author a proposal to prepare EIR for a project in Morro Bay, CA
- $\cdot$  Gained familiarity with CEQA and the EIR process, specifically the hydrologic, geologic, biologic, and aesthetic impact areas

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### AWARDS AND HONORS

2019

**Hull Graduate Assistantship** 

2019 | 2015 Cal Poly San Luis Obispo Dean's List



#### Christopher Surfleet, Ph.D.

Associate Professor Watershed Management and Hydrology; Graduate Coordinator

- · Email (preferred): csurflee@calpoly.edu
- · Phone: (805) 756-2743

#### Bwalya Malama, Ph.D.

Associate Professor Groundwater and Soil Biophysics

- · Email (preferred): bmalama@calpoly.edu
- · Phone: (805) 756-2971

#### Lydia Keema

Cal Poly Supplemental Workshops Coordinator

· Email (preferred): lkeema@calpoly.edu



- 1: https://www.sciencedirect.com/science/article/pii/S0378112721007222
- 2: https://portfolium.com/entry/eval-of-scotts-creek-habitat-restoration-project
- 3. https://sjmarks.github.io/anovatutorial/
- 4: https://portfolium.com/entry/stream-restoration-erosion-sediment-control-plan
- 5: https://portfolium.com/entry/froom-ranch-specific-plan-deir
- 6: https://portfolium.com/entry/proposal-to-prepare-eir