

Alex Ehrens

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EDUCATION

Master of Environmental Science and Management, 3.97 GPA (expected June 2021)

Bren School of Environmental Science & Management – University of California, Santa Barbara (UCSB)

Specialization: Water Resources Management

Focus: Environmental Data Science

Awards: Sustainable Water Markets (SWM) Fellowship (\$28,190 awarded)

Highlighted Coursework: Water Policy, Groundwater Management, Watersheds Analysis, Environmental Modeling, Advanced Data & Statistics, Advanced GIS

Bachelor of Science in Hydrological Sciences, 3.73 GPA (June 2016)

College of Letters and Science – University of California, Santa Barbara (UCSB)

Honors/Awards: Outstanding Academic Achievement in Environmental Studies 2016; Gaucho Tour Association Hall of Fame Inductee

Student Project: Field Hydrology at Sagehen Creek Field Research Station, Truckee, CA

Leadership/Involvement: Gaucho Tour Association, Spirit Guide; Environmental Affairs Board; member

MASTER'S GROUP PROJECT

Understanding Multiple Benefits of Floodplain Restoration from Flood-Managed Aquifer Recharge in California's Central Valley (1/20 – Present)

Clients: Environmental Defense Fund (EDF) & California Department of Water Resources (DWR)

Role: External Project Manager

- Developing a framework for assessing priority locations for floodplain restoration project siting for achieving flood risk reduction, ecosystem enhancement, and groundwater recharge benefits in Madera and Chowchilla groundwater subbasins
- Coordinating project meetings, communicating progress and requests, and maintaining professional relationships with clients and external advisors from EDF, DWR, Sustainable Conservation, and County of Madera in role as External Project Manager
- Collaborating with group of 4 colleagues, ensuring that project deliverables and deadlines are being met
- Creating a Shiny application using RStudio to communicate project findings in interactive online format

WATER RESOURCES EXPERIENCE

Research Associate (9/20 – Present)

Keller Research Team, Santa Barbara, CA

- Assist Dr. Arturo Keller with data wrangling and processing for various watershed modeling projects in San Juan, Wabash, and Allegheny watersheds
- Download data on meteorology, hydrology, water quality, and point sources of pollution and use RStudio to process data into a format suitable for Watershed Area Resource Management Framework (WARMF) and Soil & Water Assessment Tool (SWAT) models
- Project meteorology and hydrology data out to the year 2099 by determining and utilizing the most suitable downscaled Global Climate Models (GCMs) for each HUC10 subwatershed
- Produce finalized maps of watershed characteristics using ArcGIS, including topography, climate, land use, stream networks, soil characteristics, and stream gage locations
- Create plots and statistics of climate, hydrology, and water quality results from observed and projected data for selected subwatersheds of interest using RStudio
- Prepare data inputs and run watershed models (WARMF & SWAT) independently for Allegheny watershed

Sustainable Groundwater Management Intern, (6/20 – 9/20)

Water Policy Center, Public Policy Institute of California, San Francisco, CA

- Conducted research on how implementation of the Sustainable Groundwater Management Act (SGMA) will impact agricultural water users in Sacramento Valley

WATER RESOURCES EXPERIENCE continued

Sustainable Groundwater Management Intern, (6/20 – 9/20)

Water Policy Center, Public Policy Institute of California, San Francisco, CA

- Compiled data quantifying surface water sources, entitlements, and annual deliveries from 1993 to 2019 for 588 agricultural water users across 19 groundwater subbasins in Sacramento Valley to determine where SGMA groundwater pumping reductions will be most impactful
- Calculated average annual surface water deliveries per acre of agricultural land for each water user and used ArcGIS and RStudio to produce finalized maps and figures of the results
- Compared surface water availability results with a spatial land use dataset to determine which crop types were being grown in areas lacking sufficient surface water supplies
- Created PowerPoint presentation of research findings and delivered a 15-minute presentation to all PPIC staff, including members of other research groups (60 participants)

Field Technician & Data Analyst, (6/16 – 5/19)

Blue Tomorrow, LLC., Santa Barbara, CA

- Prepared project deliverables for clients on time and under budget – including final reports, PowerPoint presentations, progress reports, Excel databases, informational pamphlets, and user's manuals
- Supervised field crews of up to 4 during stream condition survey projects in Los Padres National Forest, Angeles National Forest, and on the Santa Ynez Chumash reservation
- Designed, constructed, calibrated, and maintained a network of 10 remote air quality monitoring devices that provided real-time air pollutant data for disadvantaged communities in the Central Valley
- Collected physical, chemical, and biological stream data on 20+ streams using modified versions of Stream Condition Inventory (SCI) and Surface Water Ambient Monitoring Program (SWAMP) protocols
- Sampled stormwater to assess the impacts of oil and natural gas operations on water quality in over 10 watersheds in the Sespe Wilderness and along the Northern Ventura coast

Operations Department Intern, (9/15 – 6/16)

Goleta Water District, Goleta, CA

- Maintained an organized database of backflow prevention devices for the 87,000+ water users in the district paying close attention to detail and using a unique software tracking program
- Created the first detailed Operations Manual and Maintenance Log for facilities management of the dual-plumbed recycled water system at UCSB's San Joaquin residence hall
- Analyzed water samples from 6 sites to determine total trihalomethane (TTHM) levels for public safety

Watershed Restoration Assistant, (3/15 – 9/15)

South Coast Habitat Restoration, Carpinteria, CA

- Performed riparian habitat restoration at 6 sites along streams in the Santa Ynez mountain range
- Removed non-native plants and planted seeds, acorns, and tree stakes from native plants to maintain the health and diversity of native vegetation at project sites
- Educated children on the importance of preserving endangered species by leading interactive creative art activities at the Santa Barbara Earth Day Festival

ADDITIONAL EXPERIENCE

University Tour Guide – UCSB Admissions (1/14 – 6/16)

Delivery Biker & In-shop Employee – Jimmy John's Sandwiches, Isla Vista, CA (7/14 – 3/15)

SKILLS AND ACTIVITIES

Computer: Microsoft (Word, Excel, PowerPoint), RStudio, ArcGIS, BASINS, WordPress, Google Earth, Python

Writing: Co-authored Los Padres National Forest stream condition survey report for US Forest Service (USFS); published work in UCSB Writing department's *Starting Lines*

International Travel: Switzerland, Italy, Greece, Germany, Czech Republic, Denmark, France (5/19 – 9/19)

Activities: Long-distance hiking and backpacking; backcountry camping; kayaking; sports (baseball)