Nicholas James Depsky

(818) 522-3037 **|** njdepsky@berkeley.edu **|** www.linkedin.com/in/njdepsky

Education

University of California, Berkeley
Energy & Resources Group
Berkeley, California
May 2019 – Present

PhD, Energy and Resources
(in progress)

University of California, Berkeley
Energy & Resources Group
Berkeley, California
August 2017 – May 2019

Master of Science, Energy and Resources

University of California, Davis
Davis, California
September 2009 – June 2013

Major: **Bachelor of Science, Hydrology**
Minor: **Environmental Policy Analysis**

University of Ghana, Legon
Accra, Ghana
August 2012 – December 2012

Skills

Software
R (extensive), Python (extensive), PostgreSQL/PostGIS (extensive), ArcGIS/QGIS (extensive), Google Earth Engine (extensive), Machine Learning packages in R/Python (proficient), MATLAB (proficient), julia (proficient), Javascript (proficient), GitHub (proficient), Water Evaluation and Planning System (WEAP) (extensive), Adobe Photoshop (extensive), Policy Analysis (extensive)

Languages
English (native, fluent), Spanish (fluent)

Academic Research Experience

UC Berkeley – Goldman School of Public Policy
Global Policy Lab/Climate Impact Lab, Advisor: Dr. Solomon Hsiang
Graduate Student Researcher
May 2020 – Present
- Analysis of global coastal impacts of sea-level rise and tropical cyclones as part of a broader effort to estimate a multi-sectoral social cost of carbon

- Impacts and adaptation responses to climate threats assessed

UC Berkeley – Energy and Resources Group
Advisors: Dr. Lara Kueppers, Dr. Isha Ray
MS/PhD Student

August 2017 – Present

- MS thesis: analysis of past and projected drought patterns in Central America's Dry Corridor region using an ensemble of CMIP-5 global climate models (GCMs).
- Found worsening trends in predicted mean drought durations, intensities and frequencies throughout 21st century, with severe implications for agricultural and food security in the region.
- Continuing research aims to link assess the links between drought events and socioeconomic impacts in the region, including migration

Lawrence Berkeley National Lab – Climate and Ecosystem Sciences Division
Advisor: Dr. Andrew Jones
Graduate Student Researcher

May 2020 – Present

- Member of the Integrated, Multisectoral, Multiscale Modeling (IM3) project aimed at evaluation the pattern of climate extremes (e.g. droughts, heatwaves) across the CONUS region throughout the 21st century.

San Francisco State University - College of Health and Social Sciences
Health Education, Advisor: Dr. Lara Cushing
Staff Data Scientist/Researcher

May 2020 – Present

- Geospatial and data science analysis of traffic-related air pollution's effects on birth outcomes for a cohort of pregnancies across California. Effects are evaluated for evidence of inequalities and environmental injustices.

UC Berkeley - Environmental Science Policy and Management
Sustainability and Health Equity Lab, Advisor: Dr. Rachel Morello-Frosch
Graduate Student Researcher

January 2019 – May 2020

- Statistical and geospatial data analysis pertaining to the cumulative potential impacts of communities in close proximity to hazardous waste facilities throughout California in concert with California's Department of Toxic Substances Control (DTSC) and Air Resources Board (CARB) for the implementation of the state's environmental justice (EJ) legislation (AB 617 and SB 673).
- Geospatial data processing and analysis of nationwide facilities with toxic materials along US coastlines in conjunction with sea-level rise projections throughout the 21st century. The assessment is an evaluation of issues of disparate exposure to such hazards from an EJ perspective
- Evaluation of community exposure to methane 'super-emitters' in California from an EJ perspective.

- Created a high-resolution dasymetric map of population in California using census, parcel and building footprint data.

UC Berkeley – Institute of Governmental Studies
Urban Displacement Project, Advisor: Dr. Karen Chapple
Graduate Student Researcher
August 2019 – January 2020
- Conducted literature review pertaining to the intersection of climate shocks, stressors, adaptation strategies and displacement of populations within the United States. Wrote final literature review document as part of Strong, Prosperous, And Resilient Communities Challenge (SPARCC) initiative

UC Berkeley - Landscape Architecture and Environmental Planning
Advisor: Dr. Iryna Dronova
Graduate Student Researcher
January 2019 – July 2019
- Remote sensing, statistical data analysis and mapping of hundreds of wetlands across the United States as part of a study on remotely-sensed biodiversity metrics of wetland landscapes.

UC Berkeley - Environmental Science Policy and Management
Advisor: Dr. Ted Grantham
Graduate Student Researcher
May 2018 – August 2018
- Watershed modeling of environmental water reserve basins located in western Mexico

UC Davis – Dept. of Environmental Science and Policy
Advisor: Dr. Mark N. Lubell
Independent Undergraduate Researcher
November 2011 – May 2012
County-Level Compliance to California's Surface Mining & Reclamation Act
- Led a research group aimed at understanding the varying degrees of compliance exhibited by each of California's 58 counties to The Surface Mining and Reclamation Act (SMARA), the state's primary legislature regulating surface mining
- Performed linear regression analysis for various independent county-level metrics in attempts to discern causal relationships between such metrics and compliance to SMARA

UC Davis – Dept. of Land, Air and Water Resources
Advisor: Dr. Gregory Pasternack
Undergraduate Research Assistant
January 2012 – August 2012 & January 2013 – June 2013
Geomorphic Assessment of the Lower Yuba River, California
- Conducted a spatial analysis of hydraulic and geomorphic characteristics of the Lower Yuba River, CA, a major spawning site for anadromous salmonid fish species (e.g. Chinook Salmon)

- Performed a literature review about the phenomenon of velocity-reversal in rivers and streams, and contributed to research regarding its occurrence throughout the Lower Yuba

Professional Experience

Energy and Resources Group
Graduate Student Instructor
UC Berkeley
August 2018 – December 2018

- Teaching assistant for Energy and Society, a joint ERG/Public Policy course for undergraduate and graduate students that covers the technical, economic, and political components of our modern energy system
- Prepare problem sets, weekly section material, and lecture material, lead discussion sections, hold guest lectures

StreetLight Data
Data Science Consultant
San Francisco
May 2018 – August 2018

- Analysis of large datasets pertaining to the use of electric vehicle charging station use across the state of California. Included extensive geospatial analysis, computational programming, and reporting
- Predictive modeling using various statistical and machine learning methods

The Nature Conservancy – Colombia (TNC)
Contract Hydrologist and Spatial Analyist
Bogotá, Colombia
January – July 2017

Analysis of Potential Hydropower Infrastructure Reoperation in the Magdalena River Basin
- Integrated water resources computer-modeling of the Magdalena River as it relates to the "Sistema de apoyo a la toma de decisions de la macrocuenca Magdalena Cauca" (SIMA) web-based modeling application.
- Water balance calculation for major hydropower reservoirs in the basin
- Modeling of operations rules and energy demand of each reservoir in order to explore potential for reoperation to achieve improved flow conditions for downstream ecosystems
- Facilitation of capacity-building workshops, specific to water modeling, with the National Environmental Licensing Agency (ANLA).

Evaluation and Creation of Future Climate-Change Scenarios in the Magdalena Basin

- Analysis and selection of general circulation models (GCMs) for use in climate change scenario exploration in the Magdalena River basin.
- Continued development of an R-based tool for the processing, selection, and creation of future, downscaled climate time-series based on GCM data for the region as part of a broader Magdalena-based climate and water study funded by the International Climate Initiative (IKI).
- Facilitation of capacity-building workshops with national-level government agencies (IDEAM) and partners regarding the use and implementation of this climate-series generation and analysis tool.

Stockholm Environment Institute (SEI)
Staff Hydrologist and Spatial Analyst
May 2013 – November 2016

Climate change vulnerability study of Quito, Ecuador
- Integrated water resources computer-modeling of the Quito basin
- Spatial analysis of various water, agricultural, ecological, public-health, and natural hazard-related metrics
- Analysis of numerous future climate scenarios using projections from Global Circulation Models (GCMs)
- Participation in various workshops with academic and civic agency partners in Quito

Robust Decision Support in the following river basins:
Yuba River, California
Chira-Piura Rivers, Peru
Quilca-Chili River, Peru
- Integrated water resources computer-modeling incorporating climate, surface water, groundwater, and infrastructural conditions of the watershed
- Spatial analysis of the basin's hydrologic, land-use, climatic, and ecological characteristics
- Assessment of the basin's vulnerability to climatic and non-climatic threats by modeling a suite of potential future climate, socio-economic, and political scenarios in the region in conjunction with proposed projects and policies in order to identify robust planning strategies
- Facilitation of recurring workshops with a diverse array of local stakeholders and water managers geared towards the design of modeling scenarios, interpretation of results, and discussion of proposed policies for adaptation to future threats
- Facilitation of capacity-building workshops In the Chira-Piura and Quilca-Chili basins in Peru with local stakeholders and project partners
- Contribution to the state-mandated Integrated Regional Water Management Planning (IRWMP) process for Yuba County, working with the Yuba County Water Agency and local stakeholders
- Collaboration with a large network of private-sector, non-profit, and government partners both in the U.S. and Peru as part of USAID's PARA-Agua initiative in Latin America. Primary local partners were branches of the Autoridad Nacional del Agua (ANA) in Piura, Peru and Arequipa, Peru

Fisheries and Aquatic Habitat Collaborative Effort implementation, Santa Clara

County, California

- Worked with the Santa Clara Valley Water District to improve the implementation of their Fisheries and Aquatic Habitat Collaborative Effort (FAHCE) legal settlement, aimed at improving in-stream habitat for anadromous fish populations
- WEAP modeling and spatial analysis of the Stevens Creek, Coyote Creek, and Guadalupe River basins, representing climate, surface water, groundwater, urban storm-water routing, and operations of infrastructure
- Hydraulic modeling (using HEC-RAS) of these streams to determine various rating curves (e.g. flow-stage, flow-velocity) for a given suite of stream cross-sections
- Determined geomorphic characteristics of stream cross-sections in order to classify them as morphological units (e.g. riffle, run, pool), and assessed them in the context of fish habitat requirements
- Regularly presented and discussed results with a large technical working group comprised of private-sector, non-profit, local and federal agency stakeholders.

Pacific Agroecology & Economics LLC
Assistant Research Scientist
September 2013 – January 2014
Climate Smart Agriculture Initiative

- Helped conduct a literature review and construct a reference database of hundreds of academic journal articles related to "climate-smart" agricultural practices around the world, with an emphasis on developing countries.

Honors and Awards

Integrated Studies Honors Program	*September 2009 – June 2011*
College of Agricultural and Environmental Sciences - Henry A. Jastro Scholarship (4-year, merit-based scholarship offered to undergraduates)	*Recipient during all school quarters from September 2009 – June 2013*
Association of California Water Agencies - Clair A. Hill Scholarship (Annual scholarship offered to one undergraduate junior or senior in California enrolled in a water-related field of study)	*2012 Winner*
College of Agricultural and Environmental Sciences - Graduate with High Honors	*June 2013*
College of Agricultural and Environmental Sciences Departmental Citation – Outstanding Undergraduate Accomplishment	*June 2013*

in Hydrology

American Meteorological Society Graduate
Fellowship Award

2017 – 2018 Academic Year

Volunteer Experience

UC Davis Center for Watershed Sciences
Field Volunteer
Sierra Nevada Mountains, California
June 2015 – September 2015

- Assisted in a project between UC Davis and the USFS aimed at assessing the dynamics of alpine meadows, specifically with respect to their suitability as amphibian habitat.

CHF International
Field Volunteer
Accra, Ghana
September 2012 – December 2012 (2 hrs/week)

- Conducted photo surveys of complete latrine and compost toilet construction sites throughout various neighborhoods of central Accra, as part of USAID's WASH-UP community sanitation program.

A Place Called Home
After-School Tutor
Los Angeles, California
January 2016 – June 2016 (4 hrs/week)

- After-school, all subjects-tutor for elementary and middle-school children in Los Angeles' South-Central neighborhood.
- Music classroom assistant, primarily instructed piano and drums.

Chrysalis, Los Angeles
Classroom Instructor
Los Angeles, California
January 2016 – December 2016 (3 hrs/week)

- Weekly instructor for a basic computer skills class offered to Chrysalis clients, the majority of which are unemployed and living below the poverty line in downtown Los Angeles.

Academic Publications

Peer-Reviewed Articles:

Depsky, N. and Pons, D., 2020. Meteorological droughts are projected to worsen in Central America's Dry Corridor throughout the 21st century. Environmental Research Letters, 16(1), p.014001.

Taddeo, S., Dronova, I. and **Depsky, N**., 2019. Spectral vegetation indices of wetland greenness: Responses to vegetation structure, composition, and spatial distribution. Remote Sensing of Environment, 234, p.111467.

Forni, L.G., Galaitsi, S.E., Mehta, V.K., Escobar, M.I., Purkey, D.R., **Depsky, N.J.** and Lima, N.A., 2016. Exploring scientific information for policy making under deep uncertainty. *Environmental Modelling & Software*, *86*, pp.232-247.

Purkey, D., Escobar Arias, M., Mehta, V., Forni, L., **Depsky, N.,** Yates, D. and Stevenson, W., 2018. A Philosophical Justification for a Novel Analysis-Supported, Stakeholder-Driven Participatory Process for Water Resources Planning and Decision Making. *Water*, 10(8), p.1009.

In Review:

Pace, C., Balazs, C., Bangia, K., **Depsky, N**., Renteria, A., Morello-Frosch, R., Cushing, L., 2021. Advancing California's Human Right to Water: Characterizing inequities in drinking water quality among domestic well communities and community water systems. *American Journal of Public Health*

Casey, J., Cushing, L., **Depsky**, **N**., Morello-Frosch, R., 2020. Climate justice and California's methane super-emitters: An environmental equity assessment of community proximity and exposure intensity. *Environmental Science and Technology*

Other Publications:

Yates, D., Purkey, D., Flores-Lopez, F., Forni, L., Estacio, J., **Depsky, N**. and Tehelen, K., 2013. Distrito Metropolitano de Quito: Análisis Integrado de Amenazas Relacionada con el Cambio Climático, aspectos naturales y socioeconómicos. Retrieved November, 17, p.2016.

Facilitated Training Workshops & Presentations

Facilitated Training Workshops:

1) "Taller de Entrenamiento en WEAP Partnering for Adaptation and Resilience – Agua (USAID - PARA-Agua) Project Chira-Piura", WEAP software 3-day training workshop. April 22-24, 2014. Piura, Peru. Facilitator.

2) "WEAP Beginner's Course". Online WEAP Tutorial (9 hours). September 16 – 18, 2014. Instructor:

3) "WEAP Beginner's Course". Online WEAP Tutorial (9 hours). October 7 – 9, 2014. Instructor:

4) "Tratamiento de Datos de Clima y Hidrologia – Aplicaciones en Modelacion". Climate and Hydrology Data Processing Workshop as part of the USAID – PARA-Agua project in the Quilca-Chili basin in Peru. December 12, 2014. Facilitator**.**

5) WEAP software, GIS, and R Studio 3-day training workshop. "Capacitación y Diseño experimental – en WEAP Partnering for Adaptation and Resilience – Agua (USAID - PARA-Agua) Project". March 24 – 26, 2015. Arequipa, Peru. Facilitator.

6) Workshop on global climate model assessment, model selection and statistical methods in R Studio for the Magdalena River watershed. Instituto de Hidrología, Meteorología y Estudios Ambientales (IDEAM). Bogotá, Colombia. August 2, 2017. Instructor.

Presentations & Invited Lectures:

1) Strom, M., **Depsky, N.J.**, Wyrick, J.R. and Pasternack, G.B., 2012, December. Spatially Explicit Regions Of Peak Velocity Are Highly Differentiated At Different Discharges Ranging from 0.2 to 20 Times Bankfull In A Dynamic Gravel/Cobble Bed River. In *AGU Fall Meeting Abstracts* (Vol. 1, p. 0989).

2) **Depsky, N.J.** and Flores-Lopez, F., 2014, December. Vulnerability of the Metropolitan District of Quito's Water Resources in the face of Climatic and Anthropogenic Uncertainties. In *AGU Fall Meeting Abstracts* (Vol. 1, p. 0758).

3) Flores-Lopez, F. and **Depsky, N.J.**, 2014, December. Vulnerability of the Ecuador's Agricultural Sector as part of an Integrated Climate Change Vulnerability Study. In *AGU Fall Meeting Abstracts* (Vol. 1, p. 0757).

4) **Depsky, N.J.**, and R. Merk, Spring 2012. Understanding Compliance through the California Surface Mining and Reclamation Act, UC Davis 23rd Annual Undergraduate Research Conference, Davis, CA

5) **"***Apoyo de Decisiones Robustos en el Proceso de Gestión de Recursos Hidricos – El Mecanismo de PARA-Agua".* 2014, September. A conference presentation of robust decision support techniques in water resources as applied to USAID's PARA-Agua initiative in Latin America. Lima, Peru.

6) "*Robust Decision Support in the Management of Water Resources using the Water Evaluation and Planning System (WEAP)".* 2015, April. Guest lecture for an undergraduate UC Davis course - Water Science and Management (ESM 121).

7) *"Understanding science-policy boundaries: framing, informing, and shaping decision-making".* 2016, May. Participated in a debate panel at the SEI annual Science Forum. Stockholm, Sweden.

References

Dr. Solomon Hsiang
Chancellor's Professor of Public Policy, Goldman School of Public Policy, Global Policy Lab
UC Berkeley, 2607 Hearst, Room 303
Office Phone: (510) 643-5751
Email: shsiang@berkeley.edu

Dr. Rachel Morello-Frosch
Professor, Environmental Science, Policy and Management
UC Berkeley, 128B Giannini Hall
Office Phone: (510) 643-6358
Email: rmf@berkeley.edu

Dr. Lara Cushing
Assistant Professor, College of Health and Social Sciences
San Francisco State University, 328 HSS
Office Phone: (415) 338-1415
Email: lcushing@sfsu.edu
Dr. Iryna Dronova

Asstistant Professor, Landscape Architecture and Environmental Planning
UC Berkeley, 304 Wurster Hall
Office Phone: (510) 642-2930
Email: idronova@berkeley.edu

Dr. Isha Ray
Associate Professor, Energy and Resources Group
UC Berkeley, 310 Barrows Hall
Office Phone: (510) 642-1640
Email: isharay@berkeley.edu