Maxwell Pepperdine

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EDUCATION

Master of Environmental Science and Management, GPA 4.0 (June 2025)
Bren School of Environmental Science & Management – University of California, Santa Barbara
Specialization: Conservation Planning | Emphasis: Geographic Information Systems (GIS) & Geospatial Analysis
Honors/Awards: 2023 Environmental Engineering and Science Foundation (EESF) Scholarship Recipient
Highlighted Coursework: Geospatial Analysis and Remote Sensing, Conservation Planning Practicum, Data Analysis for Environmental Science and Management (ESM), Advanced Data Analysis for ESM, Data and Database Management, GIS, Environmental Modeling, Big Data for Climate Modeling, Environmental Data Visualization, Monitoring and Evaluation, Applied Population Ecology, Planetary Health, Environmental Law and Policy

Bachelor of Science in Environmental Management and Protection, GPA 3.91 (June 2023)
California Polytechnic State University (Cal Poly), San Luis Obispo
Minor: Biology & Sustainable Environments
Honors/Awards: Presidents Honor List (2020, 2021, 2022, 2023)
Highlighted Coursework: Applied GIS, Environmental Impact Analysis, Spatial Ecology, Aerial Photogrammetry, Natural Resource and Habitat Ecology, Principles of Conservation Biology, Watershed Processes and Management

MASTER'S GROUP PROJECT

Integrating Climate Adaptation Strategies into Collaborative Forest Management in Colorado (4/24–5/25)
Client: The Nature Conservancy (TNC) | Role: Data Manager

- Developed a menu of climate adaptation strategies to facilitate the implementation of climate adaptation strategies and collaborative forest management with TNC and the Upper South Platte Partnership (USPP).
- Conducted interviews with 14 USPP stakeholders to assess barriers and potential solutions to barriers surrounding effective climate adaptation strategies.
- Performed qualitative analyses using NVivo software to synthesize interview and literature review results in a process-based workflow to facilitate decision-making for USPP Partners.

CONSERVATION PLANNING & GEOSPATIAL ANALYSIS EXPERIENCE

Arnhold Environmental Graduate Fellow – Environmental Markets Lab (emLab), Santa Barbara, CA (6/24–Present)

- Assisting collaborative research projects under the "Spatial Planning for Climate Change: Land Use for Conservation, Agriculture, and Energy" (SPARC) umbrella with the emLab and Conservation International (CI).
- Acquiring, managing, and processing spatial data related to land use/land cover, climate, and biodiversity.
- Developing and executing reproducible code to generate 4 maximum entropy (MaxEnt) models to predict the probability of present and future human-elephant conflict (HEC) in the northern Namibian landscape.
- Serving as second author on a manuscript for the HEC study (mentioned above) in preparation for submission to a peer-reviewed scientific journal.

Remote Sensing Research Assistant – Edge Hill University, Ormskirk, UK (6/24–9/24)

- Conducted independent research on the impacts of Hurricane Dorian upon bathymetry in the Bahamian Islands, including induced changes and recovery, while working closely under the guidance of a research advisor.
- Collected and pre-processed 100+ tracks of ICESat-2 data and 10 Sentinel-2 images with various data analyses, machine learning, and remote sensing applications in Python.
- Generated 7 oceanic depth models to analyze bathymetric changes following Hurricane Dorian in the study area.

Spatial Conservation Planning Intern – California Central Coast Joint Venture (C3JV), Santa Cruz, CA (11/23–4/24)

- Conducted research with the C3JV to continue previous research and identify areas of suitable nesting habitat for marbled murrelets, an endangered seabird that flies inland to nest.
- Built 2 spatial models using geospatial analysis and ModelBuilder in ArcGIS Pro to isolate patches of old-growth forest in the Santa Cruz Mountains that will be used to further conservation efforts for this declining species.
- Developed a 5-page written synopsis of research methodology and all GIS work conducted to aid in future grant applications and land acquisition efforts.

Frost Summer Undergraduate Research Program – Cal Poly, San Luis Obispo, Santa Cruz, CA (5/22–9/22)

- Directed research informing spatial conservation planning for an endangered marbled murrelet population in the Santa Cruz Mountains to inform future land protection and conservation efforts.
- Developed 5 models using spatial analysis in ArcGIS Pro to produce a map and shapefile portraying unprotected, suitable nesting habitat within our study area.
- Presented project findings in a 15-minute talk to 60 peer researchers and faculty at a research symposium.

GIS PROJECT EXPERIENCE

Project Lead/Student – Applied GIS Course, San Luis Obispo, CA (4/23–6/23)

- Organized a task schedule for a 5-person team to establish more accurate land boundaries, zoning compliance, and property valuations for the Templeton Community Service District (CSD).
- Created 6 feature classes (each containing 15-25 parcels) of updated parcel layers and boundaries using coordinate geometry in ArcGIS Pro and measurements from recent surveying reports.
- Managed synthesis of each individual line layer into a final geodatabase that the GIS Supervisor for the City of San Luis Obispo used to update existing parcel layers.

Geospatial Lead/Student – Nature-Based Solutions (NbS) Senior Capstone Project, San Luis Obispo, CA (1/23–3/23)

- Directed the geospatial analysis (primarily with ArcGIS and Google Earth Engine) on a 6-person team that implemented a nature-based solutions (NbS) project in the Chorro Creek Ecological Reserve (CCER).
- Managed the inventory of all geospatial data to inform fieldwork, geospatial analysis, and statistical analysis.
- Executed 2 primary analyses: 1) spatial variation of mean NPP for forbs and grasses throughout CA and the CCER; 2) evaluation of how spatial variation in mean NPP correlates with changes in temperature and precipitation.

GIS Specialist/Student – Applied Research Analysis and Assessment Course, San Luis Obispo, CA (9/22–12/22)

- Developed an 80-page Environmental Constraints Analysis (ECA) for the San Simeon Wastewater Treatment Plant to identify the project's constraints and permitting needs under CEQA and NEPA with a 6-person team.
- Performed all the spatial analyses and map making in ArcGIS Pro that was needed for the report.
- Completed technical writing for the following sections of the ECA: biological resources and hydrology and water quality environmental constraints, permits and processes, and the project description.

ADDITIONAL EXPERIENCE

Graduate Teaching Assistant – University of California, Santa Barbara (UCSB), Santa Barbara, CA (1/24–6/25)
Supported undergraduate instruction for 5 courses at UCSB: *Form, Process, and Human Use of Rivers* (Winter 2024, Spring 2025); *GIS for Environmental Applications* (Winter 2025); *Introduction to Environmental Studies* (Fall 2024); *Ethology & Behavioral Ecology* (Spring 2024). Led lab or discussion sections (1-3 per course), each with 20-40 students, adapting teaching methods to suit varied subject matter. Provided technical and conceptual guidance to students during weekly office hours and graded and gave feedback on 25-90+ assignments per week, depending on course enrollment.

Busser/Food Runner – Novo Restaurant & Lounge, San Luis Obispo, CA (4/22–6/23)
Adapted to a wide range of tasks to enhance guests' experiences in a fast-paced environment.

Veterinary Assistant – Pacific and Santa Cruz Veterinary Specialists, Santa Cruz, CA (6/21–8/21)
Provided attentive and compassionate care to 15-20 patients daily. Assisted doctors and technicians with the administration of medication, patient restraint, and any other duties as requested.

SKILLS

Data Science and Management: R/RStudio, Python, GitHub, SQL, DuckDB, Google Drive
GIS and Geospatial Analysis: R/RStudio, ArcGIS Pro, Python, ArcPy, Field Maps, Google Earth Engine
Other Technical: Microsoft Office Suite (Word, Excel, PowerPoint), NVivo, OpenLCA
Writing: Technical writing of scientific research manuscripts, policy memos, and CEQA and NEPA reports/assessments
Stream Measurement: Water quality, streamflow discharge, bankfull cross-section, channel dimensions (width to depth ratio, floodprone width, entrenchment, slope, channel), canopy cover, riparian conditions by RipRAM, % pool/riffle habitat