Maxwell Pepperdine

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EDUCATION

Master of Environmental Science and Management, GPA 4.0 (Expected 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, Conservation Planning Practicum, Data Analysis for Environmental Science and Management (ESM), Advanced Data Analysis for ESM, Data and Database Management, Geographic Information Systems (GIS), Environmental Modeling, A Climate Modeling Perspective on 'Big Data' Techniques, Environmental Data Visualization, Monitoring and Evaluation, Financial Management and Environmental Accounting, Applied Population Ecology, Planetary Health, Environmental Law and Policy, Economics of Environmental Management

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

MASTER'S GROUP PROJECT

Integrating Climate Adaptation Strategies into Collaborative Forest Management in Colorado (4/1–Present)
Client: The Nature Conservancy (TNC) | Role: Data Manager

- Developing 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).
- Conducting interviews with 14 USPP stakeholders to assess barriers and potential solutions to barriers surrounding effective climate adaptation strategies.
- Performing 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 and frequency of human-elephant conflict (HEC) in the northern Namibian landscape.

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 archipelago, including induced changes and recovery, while working closely under the guidance of my research advisor.
- Collected and pre-processed over 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.

Graduate Student Research Fellow – California Central Coast Joint Venture (C3JV), Santa Cruz, CA (11/23–4/24)

- Conducted research with the C3JV, a partnership-based conservation organization, to continue previous research and identify areas of suitable nesting habitat for marbled murrelets, an endangered seabird that flies inland to nest.
- Created 2 primary 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.

Conservation Planning Intern – Frost Summer Undergraduate Research Program, 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 annual/perennial 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 environmental 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 – Environmental Studies Program, Santa Barbara, CA (3/25–Present)
Instructing two, 3-hour lab sessions weekly with 20+ students for a Form, Process, and Human Use of Rivers course. Grading and providing feedback on 40+ assignments each week and offering support for students through weekly office hours.
Graduate Teaching Assistant – Environmental Studies Program, Santa Barbara, CA (1/25–3/25)
Instructed two, 1-hour sections weekly with 20 students each for a GIS for Environmental Applications course. Graded and provided feedback on 40+ assignments each week and offered technical support for students through weekly office hours.
Graduate Teaching Assistant – Environmental Studies Program, Santa Barbara, CA (9/24–12/24)
Led three 1-hour discussion sections weekly with 25 students each for an Introduction to Environmental Studies course. Graded and provided feedback on 90+ assignments each week and offered support for students through weekly office hours.
Graduate Teaching Assistant – Department of Ecology, Evolution, & Marine Biology, Santa Barbara, CA (4/24–6/24)
Led one, 4-hour discussion and lab session weekly with 20 students for an Ethology & Behavioral Ecology course. Graded and provided feedback on 25+ assignments each week and offered support for students through weekly office hours.
Graduate Teaching Assistant – Environmental Studies Program, Santa Barbara, CA (1/24–3/24)
Taught two, 3-hour lab sessions weekly with 30+ students for a Form, Process, and Human Use of Rivers course. Graded and gave feedback on 40+ assignments each week and provided support for students through weekly office hours.
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