

STEVEN COGNAC

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EDUCATION

Master of Environmental Data Science (June 2022)

Bren School of Environmental Science & Management - University of California, Santa Barbara

Highlighted Coursework: Machine Learning in Environmental Science, Statistics for Environmental Data Science, Spatial Analysis, Modeling Environmental Systems, Remote Sensing, Data Visualization and Communication

Bachelor of Science in Environmental Science | Bachelor of Science in Sustainable Food & Farming (May 2014)

University of Massachusetts Amherst – Amherst, Massachusetts

Honors/Awards: Cum Laude, Dean's List (8 quarters), John and Abigail Adams Scholarship

Teaching: Introductory Geographic Information Systems (GIS) Teaching Assistant (1/14-5/14)

MASTER'S CAPSTONE GEOSPATIAL DATA SCIENCE PROJECT

An open-source pipeline for remote sensing of crop yields: a Zambia case study

Role: Project Manager | **Client**: Tamma Carleton, UCSB & Jonathan Proctor, Harvard (1/22–6/22)

- Developed an open-source tool in Python that combines machine learning methods to process satellite imagery to generate crop yield predictions (see [GitHub Organization](#)).
- Processed monthly Landsat and Sentinel 2 satellite imagery (2013-2021) using random convolutional features on the Microsoft Planetary Computer API.
- Presented project and its environmental implications at the Yale School of the Environment 2022 New Horizons in Conservation Conference through a poster, presentation, and expert panel review.

ENVIRONMENTAL EXPERIENCE

Biologist (1/19–5/21)

WRA, Inc., Emeryville, CA

- Managed budgets, designed, and executed turbidity monitoring for a 3,000-acre tidal habitat restoration project in the San Francisco Bay delta. Collaborated with the USGS to initiate a data-driven approach to set exceedance thresholds for environmental permit compliance.
- Conducted natural resource assessments including wetland delineations, special-status plant surveys, and vegetation mapping on urban properties and ranches up to 4,000 acres.
- Coordinate with clients, state and local agencies, and engineers on environmental regulatory compliance for development, biological community restoration, water quality enhancements, and biological compliance monitoring projects.
- Managed permitting processes with agencies such as U.S. Army Corps of Engineers, California's Regional Water Quality Control Boards, CA Department of Fish and Wildlife, and CA Coastal Commission.

Vegetation Ecology Intern (3/18–10/18)

National Park Service (NPS), Point Reyes Station, CA

- Planned and executed botanical surveys with mobile mapping units of 131 emerging invasive plants throughout the San Francisco Bay Area National Park system.
- Ensure proper data entry, management, and storage in the Calflora Weed Manager database and internal MS Access database.
- Sampled and inventoried federal and state-listed rare, threatened, and endangered species to assist NPS staff in annual population assessments.
- Perform herbarium work such as collecting, photographing, processing, scanning, and pressing plant specimens for digital and physical herbarium accession.

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ENVIRONMENTAL EXPERIENCE (Continued)

Research Assistant (8/17–1/18)

Everglades Wetland Research Park, Naples, FL

- Aided pilot development of a ArcGIS-based wetland restoration model targeting restoration hot-spots in the historic extent of the Great Black Swamp region in Ohio.
- Assisted MS and PhD candidates in researching how storm pulsing influences the dynamics of the hydrologic budget and water quality parameters within a tropical constructed stormwater wetland.

Wetland Scientist/Environmental Analyst (6/14–5/16, 9/16–6/17)

Vanasse Hangen Brustlin, Inc., Watertown, MA

- Developed ArcGIS protocols to aggregate field data and state geodatabase repositories to assess the impact of development on native grassland and vernal pool amphibian corridors. Received approval from state and federal agencies on assessment methodologies.
- Developed environmental permit applications in support of engineering projects for state and local transportation agencies and private development clients.
- Lead and organized natural resource surveys including wetland and stream delineations, invasive species mapping, habitat assessments, stormwater/groundwater monitoring, and wetland assessments.
- Analyzed MassDOT Highway transportation project plans/scopes of work to identify, document, and administer environmental compliance pertaining to federal/state environmental permitting.

Wetland Field Technician (5/16–9/16)

Midwest Biodiversity Institute, Hilliard, OH

- Executed EPA field sampling protocols at over 65 sites throughout the eastern seaboard for the 2016 National Wetland Condition Assessment.
- Analyzed and collected hydric soil and water samples, conducted botanical inventories, characterized hydrology, and led disposition of samples.
- Handled site reconnaissance, landowner and agency coordination, and pre-sample site visits to determine presence/absence of hydric soil and wetland flora.

SKILLS, CERTIFICATIONS, & AFFILIATIONS

Computer Languages: R, Python, Markdown, Bash, SQL

Computer Software: RStudio, JupyterLab, Microsoft Planetary Computer, Bash, Git, GitHub, ArcGIS, Google Earth Engine, Docker, pgAdmin, SQLite, Tableau, Google Earth Pro, Trimble Pathfinder

Field Skills & Equipment: wetland delineation, botanical dichotomous keys, Trimble GPS (Geo Explorer), YSI ProDSS/EXO2, pressure transducer setup and management

Project & Content Management: Microsoft Office Suite (Word, Excel, PowerPoint, Access), Google Suite, Slack

Certifications: 40-HR HAZWOPER, Basic Wetland Delineation, First Aid/CPR, SCUBA Open Water

Affiliations: Eco-Data Science, Association of State Wetland Managers, California Native Plant Society

VOLUNTEER EXPERIENCE

Rare Plant Volunteer - East Bay California Native Plant Society rare and unusual plant volunteer in Alameda and Contra Costa Counties (2/20-6/21)

Curatorial Volunteer - Jepson Herbarium, Berkeley, CA. Mounting specimens (11/18 - 1/19)

Plant Conservation Volunteer - New England Wildflower Society, Plant Conservation Volunteer (PCV) Program. Conducted surveys of rare and endangered species within Massachusetts (3/17 - 7/18)