



Joseph Famely, M.E.M., B.A.

Project Manager/Environmental Scientist

Expertise

Environmental management, environmental impact analyses, ecological risk assessment, geospatial analysis, land use planning, sustainable design, greenhouse gas accounting, sustainability reporting, systems modeling, shoreline change analysis, climate change vulnerability assessment and adaptation planning.

Qualification Summary

- 15 years of experience in the environmental sciences
- Climate change vulnerability analysis and adaptation planning
- Land use sustainability planning and metrics
- Carbon footprinting and greenhouse gas accounting
- Environmental impact statements
- Ecological risk assessment – fieldwork, database design and management, exposure and risk analysis
- Geospatial analysis
- Shoreline change analysis
- Proficient in data visualization and technical writing for diverse audiences
- ESRI ArcGIS; ETGeowizards; MatLab; SimaPro Life Cycle Assessment; StatSoft Statistica; SigmaPlot; Vensim; Microsoft Office; Adobe Photoshop and Illustrator.

Education

M.E.M., - 2009 Yale School of Forestry & Environmental Studies
B.A., - 2000 Bowdoin College

Licenses and Registrations

- OSHA 40-Hour HAZWOPER

Publications and Presentations

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Work Experience

2014-Present	Woods Hole Group, Inc. (Project Manager)
2009-2014	Woods Hole Group, Inc. (Environmental Scientist)
2011-2012	Except Integrated Sustainability (Associate)
2009-2012	Anthroecology (Sustainability Consultant)
2008	Yale Urban Design Workshop (Sustainability Fellow)
2006-2007	Exponent (Environmental Scientist)
2000-2006	Menzie-Cura & Associates (Environmental Scientist)

Key Projects

Climate Change Vulnerability Assessment for Essex County (MA), National Wildlife Federation. Technical Lead – Geospatial Analysis

Prepared vulnerability maps, based on results of a highly resolved sea level rise and extreme weather model, for six Essex County communities. Vulnerability maps were then used to support emergency preparedness and adaptation planning, with specific emphasis on nature-based adaptation.

Climate Change and Extreme Weather Vulnerability Assessments for Massachusetts Communities, Kleinfelder. Technical Lead – Geospatial Analysis

Prepared vulnerability maps, based on results of a highly resolved sea level rise and extreme weather model, for a number of Massachusetts North Shore and South Shore communities. Vulnerability maps were then used to support emergency preparedness and adaptation scoping over various planning horizons – present day, 2030, and 2070.

MassDOT – FHWA Pilot Project for Climate Change and Extreme Weather Vulnerability Assessments and Adaptation Options of the Central Artery, Massachusetts Department of Transportation. Technical Lead – Geospatial Analysis

GIS analyst on a technically advanced, leading-edge pilot project for the Federal Highway Administration evaluating vulnerability to sea level rise and extreme weather events for the Central Artery in Boston, MA using a highly resolved, numerical processes model. Contributed to the development of a geodatabase of infrastructure assets for vulnerability assessment and evaluation of adaptation options. Performed model post-processing and QA/QC, and prepared asset vulnerability maps to support vulnerability assessment, emergency response planning, and adaptation planning.

SEIS for the Designation of Dredged Material Disposal Site(s) in Eastern Long Island Sound, Connecticut Department of Transportation. Project Manager

Collaborated with partners at Louis Berger and the University of Connecticut to develop the Supplemental EIS evaluating dredged material disposal site alternatives in Eastern Long Island Sound. Developed analyses of sediment toxicity and bioaccumulation, calculated a dilution criterion for ocean disposal suitability from suspended particulate phase toxicity tests, and authored relevant sections of the SEIS.

Sesuit Harbor Use and Capacity Study. Town of Dennis. Project Manager

Lead a team of engineers, marina development advisors, and landscape architects in the preparation of a master plan for a municipal marina within a harbor on Cape Cod Bay. Analyzed current use and capacity, land and water assets, harbor regulations and by-laws, fee structure, and marina operations and maintenance. Provided the Town with recommendations and cost estimates for land and water improvement design alternatives, and recommendations for changes to administrative and capital processes, to support the safe and efficient operation of the harbor.

Coastal Climate Change Adaptation and Engineering Alternatives. Boston Harbor Association. Technical Lead – Geospatial Analysis

Developed a range of sea level rise and storm surge scenarios using LIDAR data and a customized GIS connectivity analysis to evaluate potential risk to property and critical infrastructure. Supported the development of preparedness plans and engineering adaptations for two sites in Boston – Long/Central Wharves and UMass Boston.

Coastal Climate Change Adaptation and Engineering Alternatives. Battelle. Technical Lead – Geospatial Analysis

Worked with Battelle Ocean Sciences and the University of Southern Maine on assessing the impacts of Climate Change on coastal communities of Groton, Connecticut. Specifically, the regions of Groton Long Point and the infrastructure surrounding the Mystic River were evaluated. The evaluation included the

Key Projects (continued)

impacts of sea level rise and storm events on potential flooding using LIDAR data and a customized GIS connectivity analysis. For each location, supported the development of conceptual designs for engineering adaptation alternatives. The alternatives ranged from management approaches (e.g., evacuation, flood-proofing of structures, etc.), to soft-engineering options (e.g., beach nourishment, creation of wetlands, etc.), to more significant hard engineering structures (e.g., modular seawalls, revetments, tide gates, hurricane barriers, etc.).

Seagrass Restoration Optimization Strategies in a Changing Climate – Southern New England and New York. The Nature Conservancy. Environmental Scientist

Evaluated the interactive effects of multiple stressors (eutrophication, climate-induced heat stress, sea-level rise-induced light reduction) on the potential success of future seagrass conservation and restoration efforts. Assisted in the development of a database cataloguing relevant characteristics of 170 embayments from Long Island to Cape Cod – including estuarine area and volume, estuarine flushing time, watershed nitrogen loading, sediment physical characteristics, and extent of current or historical seagrass. Contributed to nitrogen loading analyses for twenty selected embayments and ranked overall risk to stressors. The Nature Conservancy uses this tool to prioritize investments in restoration projects, adjoining land preservation, and local changes in policy and planning.

Ecological Risk Assessment in a Tidally Influenced Freshwater Wetland and Creek. Roux Associates. Environmental Scientist

Conducted a baseline ecological risk assessment for a former metals facility in Connecticut. Planned and led field investigations, managed data analysis, and authored risk characterization report. The analysis included modeling risks to ecological receptors in the wetland and creek from metals and polycyclic aromatic hydrocarbons.

Ecological Risk Assessment in a Riparian Environment. GeoInsight, Inc. Project Manager/Environmental Scientist

Conducted a Stage I and Stage II ecological risk characterization for a former rubber and vinyl tape facility in Massachusetts. Planned and led field investigations, managed data analysis, and authored risk characterization report. The analysis included modeling metals and polycyclic aromatic hydrocarbons in fish and plant tissue from sediment concentrations.

Town of Eastham Conservation Land Inventory and Analysis. Town of Eastham. Project Manager

Conducted an inventory of conservation land in Eastham, including private, municipal, and nonprofit land trust-owned parcels. Reviewed Registry of Deeds documents and relevant Massachusetts conservation law to supplement parcel data with information on the date, method and purpose of protection, the custodian of the protected land, the level of protection, and the existence of wetlands, unrestricted areas, or building envelopes. The work product included a database of conservation land which is hyperlinked to all Registry of Deeds and Town of Eastham documents relevant to the conservation restrictions and readily appended to the Town's GIS system. The analysis included recommendations for increasing the level of protection on conservation lands.

Yale Community Carbon Fund Calculator. Yale Office of Sustainability. Technical Lead – Transportation and Solid Waste

Developed a greenhouse gas emissions model to calculate emissions related to travel, commuting, and events associated with the Yale University community. The calculator is a web-based application which includes integrated explanatory text and a standalone report on methodology. The tool enables members of the community to determine the appropriate quantity of emissions to offset with an online donation to the Yale Community Carbon Fund, which supports carbon mitigation projects for organizations and low-income households in New Haven.

Key Projects (continued)

Long Island Sound Dredged Materials Management Planning. U.S. Army Corps of Engineers. Environmental Scientist

Conducted a review of literature on dredge materials management and environmental data for Long Island Sound. Reviewed potential sites throughout the Sound for alternative placement of dredge materials – including beach nourishment via direct placement, upland beneficial use, shoreline confined disposal, and nearshore placement for beach nourishment and shoreline protection. Reviews of alternatives included site visits and desktop review (in an ArcGIS environment) based on spatial analysis of environmental/physical/cultural/infrastructure impacts of project development. Prepared a synthesizing report in support of the Dredged Materials Management Plan for Long Island Sound.

Delaware Estuary Regional Sediment Budget. U.S. Army Corps of Engineers. Technical Lead – Geospatial Analysis

Performed an estuary-wide analysis of historical shoreline change to derive a sediment source term for the fine sediment budget. Using synoptic historical shoreline data and sediment properties data for the wetland coast, calculated the surface area of the estuarine shore lost and gained between the 1880s and 2008, as well as the mass of mineral or organic sediment produced through time. The time-averaged rate of sediment production by shore erosion was then used for the sediment budget analysis.

Shoreline Change Analyses for Private Properties on Long Island. Inter-Science Research Associates. Technical Lead – Geospatial Analysis

Conducted numerous quantitative spatial analyses of shoreline and dune movement over time in support of Coastal Erosion Hazard Area evaluations in New York. Analyzed multiple historical aerial photographs to digitize the shoreline and calculate long-term rates of change along transects through the beach and dune. Summarized results and recommended changes in the delineation of resource areas based on review of the data with respect to the New York State Coastal Erosion Management Regulations.

New Bedford Harbor Superfund Site. U.S. Army Corps of Engineers. Environmental Scientist

Data analysis and technical reporting in support of Remedial Investigation and Feasibility Study for New Bedford Harbor Operable Unit #3. Analyzed sediment and tissue chemistry data along with toxicity tests and benthic community data to support management decisions in areas outside the harbor.

Greenhouse Gas Impacts Modeling for a Real Estate Development Environmental Review. Private Client. Project Manager/Technical Lead

Developed a greenhouse gas model to evaluate the impacts of multiple development alternatives for a proposed socially- and environmentally-conscious resort and residential community development's Environmental Impact Statement under the New York State Environmental Quality Review process. Prepared summary tables and text for the EIS submittal as well as a full report documenting the methodology and results.

Neighborhood-Scale Sustainability Master Plan. Greater Dwight Development Corporation. Project Manager/Technical Lead

In collaboration with the Yale Urban Design Workshop, developed a neighborhood-scale sustainability plan for a nonprofit community-based development organization in New Haven, CT. The master plan included spatially-informed sustainability metrics (carbon, water, air pollution, greenspace, social, etc.) and suggested projects for continuous improvement.

Key Projects (continued)

Materials Flow Analysis on the Island of O’ahu. Hawaii Community Foundation. Environmental Scientist

Researched and prepared report on material flows in the sectors of imports, exports, and natural resource extraction on the island of O’ahu in Hawaii. Research combined aggregation of available public data with phone and field interviews. The report summarized findings and proposed strategies for the optimization of material flows on an isolated island.

Publications and Presentations

Bain, A., N. Caruso, J. Famely, R. Herzl, and J. Wu. 2009. Master Plan for Nusajaya / Zone B, Iskandar, Malaysia. Yale School of Architecture Retrospecta 08-09.

Famely, J. 2008. Adapting Vernacular Architecture for Sustainable and Restorative Environmental Design Elements. Presented Urban Villages, Inc.

Famely, J., E. Gladek, and C. Ziemba. 2008. Material flows on the island of Oahu: Imports, exports, and resource extraction. New Haven: Yale Center for Industrial Ecology.

Von Stackleberg, K., C. Amos, C. Butler, T. Smith, J. Famely, M. McArdle, B. Southworth, and J. Steevens. 2006. Screening Level Ecological Risk Assessments of Some Military Munitions and Obscurant-related Compounds for Selected Threatened and Endangered Species. ERDC-TR-06-11. Engineer Research and Development Center – Construction Engineering Research Laboratory. Champaign, IL.

Famely, J., W.T. Wickwire, and C.A. Menzie. 2005. Assessment and planning approaches in watershed assessment: The embayment eutrophication case study. New England Estuarine Research Society, Spring, 2005 Meeting, Eastham, MA, April 27, 2005.