

Christopher Stevens

Scientist



Education and Credentials

B.A., Biology, University of Maine at Farmington, Farmington, Maine, 2009

Continuing Education and Training

Hazardous Waste Operations and Emergency Response 40-Hour Certification (2011; refresher 2018)

First Aid and CPR Certified (2018)

Professional Profile

Mr. Christopher Stevens has 7 years of professional work experience in environmental consulting, risk and exposure assessment, and data management and analysis. He has completed large-scale computational and graphical analysis of collected and modeled data, including risk and exposure assessment for human and ecological receptors. Mr. Stevens also has extensive experience in the creation and management of databases and database tools for a wide range of projects and exposure applications. In addition to his analytical experience, Mr. Stevens has performed air quality monitoring and field data collection, including marine and freshwater vertebrate collection, and extensive work in collection and identification of terrestrial and aquatic insects. Mr. Stevens is experienced with theoretical and applied ecology, data management and analysis, and quality assurance and quality control procedures and techniques.

Relevant Experience

Database Development and Management

Risk Tool Development, Kao USA Inc.—Developed an exposure and risk screening tool built using a Microsoft Access framework. The tool allows the extraction and storage of chemical data and associated exposure, fate, and toxicology data, along with the development of screening values and data reports.

TSCA-Reform Data Collection, Problem Formulation, and Scoping Support, EPA Office of Pollution Prevention and Toxics—Managed and organized data of a screening process for more than 72,000 studies. Developed Microsoft Access and Excel based reports of study data and screening results.

Air Toxics Health Effects Database, EPA Office of Air Quality and Planning Standards—Reorganized, restructured, and managed relational data tables as well as redesigned the front-end for a database consisting of inhalation benchmarks used to support exposure and risk assessment for EPA's Office of Air Quality Planning and Standards Residual Risk Program.

Dose Response Analytical Generator and Organization Network (DRAGON)—Conducted maintenance, development, and support of DRAGON for multiple chemical assessments. DRAGON consists of



a suite of Microsoft Access based tools designed to improve transparency and objectivity in literature searches, hazard identification, and dose-response assessment.

Environmental and Biological Sampling

Pulp Mill, Maine—Conducted effluent and water sampling of mill outflow and intake, respectively, for the purpose of conducting aquatic bioassays to inform the development of site-specific water effects ratios.

Berry's Creek Superfund Site, Meadowlands, New Jersey—Completed multiple field surveys of Berry's Creek and surrounding tributaries of the Hackensack River, including aquatic fauna surveys, marsh invertebrate surveys, and air quality monitoring. Efforts included extensive coordination with colleagues and teaming partners, as well as refinement to standard operating procedures.

Bear Brook Mountain Watershed, Maine—Assisted in collection of mid-canopy foliage for use in a study on the impacts of long-term nitrogen addition on tree phenology.

Sampling Regimes for Damselfly Diversity, Maine—Coordinated and conducted extensive field collection of both larval and adult damselflies at more than 25 ponds in the state of Maine. Performed substantial species-level identification in the laboratory.

Environmental Assessment

Historical Site Review, Confidential Location, East Coast, United States—Assisted in the development of an expert report detailing the history of contamination and possible discharges at a historical manufacturing facility. Effort required reviewing documents as old as 130 years as well as current data and reports, assisting with development of an expert report, and generating figures and statistical analyses representing contamination in sediments spatially through time.

Database Development and Analysis, Multiple Confidential Locations, West Coast, United States—Developed databases of sediment and biota data compiled by another consulting firm. Developed queries and conducted quality assurance on the compiled data. Conducted spatial and numerical analyses of the data in support of the development of multiple expert reports.

Fate, Transport, and Loading Evaluation, Former Manufacturing Facility and RCRA Landfill, Ohio—Assisted in an evaluation of former groundwater contamination fate and transport and loading to a nearby creek. Managed collected data and data analyses. Conducted graphical and statistical analyses of groundwater well data and modeling of associated stream flow and contaminant concentrations.

Fish Tissue Analysis, Confidential, United States—Conducted an analysis of fish tissue data from multiple sources in support of expert report development.

Mining Site, Confidential Location—Assisted in the development and quality assurance of hazard calculations for multiple human receptor scenarios. Developed code to conduct a sensitivity analysis for the outdoor worker exposure scenario.



Berry's Creek Superfund Site, Meadowlands, New Jersey—Co-authored a report appendix submitted to EPA. Assisted in revisions and updates to reports, work plans, and sampling procedures. Performed extensive statistical and graphical analysis of collected data. Efforts included database creation and management and coordination with field and office staff.

Escambia Bay, Florida—Assisted in preliminary evaluation and human health risk assessment of possible contamination in the Pensacola Bay system.

S&W Sawmill Facility, Montana—Assisted with data entry and quality assurance for a baseline risk assessment.

San Jacinto River Waste Pits Superfund Site, Texas—Assisted with multiple data efforts and calculations in conjunction with a risk assessment. Performed quality assurance of multiple work products, including risk calculations, and efforts involving raw data.

Bonafide Landfill, Maine—Reviewed benthic invertebrate data to determine whether any adverse effects were present using Maine Department of Environmental Protection's "Methods for Biological Sampling and Analysis of Maine's Rivers and Streams."

Centredale Manor Restoration Project Superfund Site, Rhode Island—Assisted in compiling data from previously conducted chemical analyses.

Bear Brook Mountain Watershed, Maine—Conducted laboratory studies on forest soils, including exchangeable and total acidity, analysis for cations and anions, and carbon nitrogen analysis. In addition, participated in sample processing, data entry, and quality assurance and handled hazardous materials.

Exposure Assessment

Integrated Indoor–Outdoor Air Calculator, EPA Office of Pollution Prevention and Toxics—Developed a Microsoft Excel based tool intended to quickly process new and existing chemicals for release and exposure potential in support of TSCA reform efforts. The tool estimates outdoor and indoor air concentrations, as well as wet and dry particle deposition from chemical releases to air through facility (stack, incinerator, and fugitive), area soil, and area water sources.

Consumer Exposure Model (CEM), EPA Office of Pollution Prevention and Toxics—Developed a Microsoft Access based modeling tool, including the addition and coding of new exposure models and scenario options in response to comments and peer review. Developed a module that interfaces with a compiled Python executable for complex mathematical analysis. CEM assesses exposure to semivolatile and volatile organic compounds in residential/commercial products and articles.

Assessment of Livestock Carcass Disposal Options, EPA National Homeland Security Research Center—Conducted multiple exposure assessments of various carcass disposal options for simulated chemical exposures using previously developed modeling tools.



Exposure Factors Interactive Resource and Scenarios Tool (ExpoFIRST), EPA Office of Research and Development—Revised the ExpoFIRST tool based on responses to beta testing and peer review. Developed an export-to-Excel module that dynamically creates the formulas generated in the tool and exports them in a report format.

Human Health Risk Assessment

Development of a Database of Liver Toxicity Case Report and Pharmacokinetic Data, National Toxicology Program Office of Health Assessment and Translation—Developed a Microsoft Access database complete with data extraction forms, user interface, and reports to collate human exposure data in support of high-throughput transcriptomic analysis.

Systematic Review of the Developmental Effects of PCBs, Nationwide—Reviewed more than 100 studies on the developmental effects of PCBs in multiple human media with multiple effects. Performed quality assurance of study summary tables.

Presentations/Posters

Ferhenbacher, C., C. Bevington, X. Liu, M. Lee, Z. Guo, H. Hubbard, A. Williams, C. Stevens, and T. Hong. 2017. Overview of OPPT consumer exposure models, use descriptors, and related indoor exposure data. International Society of Exposure Science.

Ferhenbacher, C., C. Bevington, E. Wong, D. Tobias, J. Kwon, H. Hubbard, C. Henning, J. Wignall, C. Stevens, and J. Cleland. 2015. Comparison of consumer exposure models and indoor exposure pathways. International Society of Exposure Science.

Stevens, C., and A. Harris. 2009. DNA sequencing as a method for larval identification in odonates. UMaine Farmington Symposium. University of Maine at Farmington.

Stevens, C. 2008. Aspen heart rot fungus (*Phellinus tremulae*) distribution in aspen forests in relation to open meadows: Implications for red-naped sapsucker (*Sphyrapicus nuchalis*) nesting habitat. Student/REU Symposium. Rocky Mountain Biological Lab.

Butler, R.G., C. Stevens, A. Potvin, and A. Giguere. 2008. Sampling regimes for damselfly diversity: Implications for long-term monitoring and conservation. UMaine Farmington Symposium. University of Maine at Farmington.

Stevens, C., and A. Harris. 2008. DNA sequencing for larval identification in odonates. UMaine Farmington Symposium. University of Maine at Farmington.

