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Kenneth M. Cerreto
Senior Scientist

Professional Profile

Mr. Kenneth M. Cerreto is a Senior Scientist in Exponent's EcoSciences practice. Mr. Cerreto has more than 10 years of experience evaluating the effects of contaminants on aquatic and terrestrial ecosystems and providing technical support in biology, limnology, ecology, field sampling, and chemistry. Mr. Cerreto contributes to ecological risk assessments in compliance with state and/or federal program regulatory requirements, develops work plans, field sampling plans, and quality assurance project plans. He develops conceptual models, toxicity reference values, and exposure models for ecological receptors. Mr. Cerreto conducts bioassessments of rivers and streams according to state and/or federal protocols and can perform fishery, vegetation, and benthic invertebrate surveys. He collects, manages, and analyzes various types of data (e.g., bioassay and chemistry data) in support of ecological and environmental impact studies, and ecological risk assessments. He also collects and analyzes biological data (e.g., benthic invertebrate community data), performs TMDL calculations (e.g., historical data sets of water quality data), and is skilled at database construction and use. Mr. Cerreto has a wealth of field sampling experience in aquatic and terrestrial systems, has managed field sampling programs, and is skilled at sampling both environmental media and biota. His other areas of expertise include benthic invertebrate taxonomy (particularly the fauna of the Rocky Mountains) and the effects of pharmaceuticals and personal care products (PPCPs) on aquatic organisms.

In his graduate research, Mr. Cerreto measured the effects of field applications of the piscicides antimycin A and rotenone on the benthic invertebrate assemblages of high elevation streams in Wyoming. The research included *in situ* toxicity tests and assessment of benthic invertebrate assemblages before, during, and after piscicide treatments. Mr. Cerreto's research also included an extensive literature review of previous laboratory and field studies that measured the effects of piscicides on invertebrates. During his research and graduate studies, Mr. Cerreto worked closely with the Wyoming Game and Fish Department.

Prior to joining Exponent, Mr. Cerreto was an Aquatic Ecologist at ENSR, an Ecologist at AMEC Earth & Environmental, and a Research Assistant at the University of Wyoming, Laramie. He was also an Assistant Scientist at Menzie-Cura & Associates, Inc, where he worked with a number of his present colleagues at Exponent.

Mr. Cerreto has previously been a member of the North American Benthological Society (NABS), the Society of Environmental Toxicology and Chemistry (SETAC), and the American Fisheries Society (AFS).

Academic Credentials and Professional Honors

M.S., Zoology and Physiology, University of Wyoming, 2004
B.A., Biology and Pre-Med, College of the Holy Cross, 1999

Licenses and Certifications

OSHA Certified Eight-Hour HAZWOPER Annual Refresher Training in Hazardous Waste Operations and Emergency Response, updated 2000–2007

American Red Cross Certified for Adult CPR and Standard First Aid

Presentations

Cerreto KM. et al. Weight of evidence approach for assessing the toxicity of creosote-derived PAH in sediments. North Atlantic Chapter of the Society for Environmental Toxicology and Chemistry 2007 Meeting, Milwaukee, WI, November 2007.

Cerreto KM., Hall RO, Sexauer H. Short-term effects of piscicides on invertebrates in first-order, high-elevation streams. North American Benthological Society Annual Conference, Vancouver, BC, June 2004.

Cerreto KM., Hall RO, Sexauer H. Antimycin and Rotenone: Short-term effects on invertebrates in first-order, high-elevation streams. American Fisheries Society Western Division Annual Meeting, Salt Lake City, UT, March 2004.

Cerreto KM., Hall RO, Sexauer H. Short-term effects of antimycin and rotenone on invertebrates in first-order, high elevation streams. North American Benthological Society Annual Conference, Athens, GA, May 2003.

Menzie CA, Fogarty KA, Cerreto KM. Using water lilies (*Nuphar* spp.) to evaluate metals bioavailability and exposure. Society for Environmental Toxicology and Chemistry Annual Meeting, Nashville, TN, November 2000.

Cerreto KM, Menzie CA. Evaluating the benthic community at hazardous waste sites: a multiple line of evidence approach. North American Benthological Society Annual Conference, Keystone, CO, May 2000.

Project Experience

Kanawha River, Nitro, WV—Performed surficial sediment and sub-surface vibrocore sampling along a 14-mile stretch of river. Activities included sampling, sampling oversight/management, and processed sediment cores.

Hudson River, Albany, NY—As part of an ecological risk assessment for an industrial client, performed surficial sediment and vibrocore sampling for chlorinated solvents, metals, PCB, PAH, and radiological analyses. Assisted in producing a screening assessment, used radio-dating results to establish a timeline of contamination. Used screening results, bathymetric survey data, and historical Corps dredging data to assist in writing a work plan for a more detailed sampling program and baseline ecological risk assessment. Provided guidance to the field, database, and GIS teams.

Weymouth Naval Air Station, Weymouth, MA—Performed screening level and baseline ecological risk assessments, as part of a base closure program, on behalf of the U.S. Navy. Contributed to a geochemical investigation into the origins of large amounts of "iron floc" material present in a stream running through the station. Conducted bioassessments of streams. Assisted in a radio-tracking study of endangered Eastern box turtles living on the station.

Lower Passaic River, Newark, NJ—Conducted an extensive logistical reconnaissance of the lower 17 miles of the Passaic River in support of an upcoming sediment and surface water sampling program. The reconnaissance included water depths, sediment types, information on all bridges, underwater utilities, emergency egress locations, security concerns, locations of outfalls, access points, etc.

Lake Cochituate, Natick, MA—Conducted yearly invasive aquatic vegetation surveys on behalf of the Massachusetts Department of Conservation and Recreation. Project included estimating total plant cover and biovolume, identifying all species present at >150 locations, and estimating relative abundance and density of each species. Survey data were depicted on maps created in GIS and summarized in yearly monitoring reports. Invasive species included *Myriophyllum heterophyllum, M. spicatum, Potamogeton crispus,* and *Trapa natans*.

Red Boiling Springs, TN—Performed rapid bioassessment on spring-fed streams on behalf of a Nestle water-bottling facility in Tennessee. The bioassessment included habitat assessments, benthic invertebrate sampling and identification, electro-shocking, and fish identification.

Acid-Impaired and Aluminum-Impaired Lakes TMDL Project, New Hampshire—On behalf of the state of New Hampshire, total maximum daily loads (TMDLs) were calculated for more than 200 acid-impaired and/or aluminum-impaired lakes. Created an Access database that compiled all available historical water quality data from the state and calculated TMDLs for each lake based on user-defined criteria.

PhACT Database—Helped populate and maintain a database created for PhRMA, a consortium of pharmaceutical and biotech companies. Database contained results from peer-reviewed studies that measured the effects of pharmaceutical compounds on aquatic organisms. Read and summarized more than 200 peer-reviewed journal articles, summarized all relevant results, and entered them into the database.

Creosote Wood-treating Facilities, MA, NC, WI—Provided technical and field support for several ecological risk assessments of streams running through creosote wood-treating facilities. Conducted habitat assessments, sampled sediment and water, sampled fish via electro-shocking, sampled benthic invertebrates, sampled aerial invertebrates (e.g., aerial stages of benthic invertebrates) using light traps. Analyzed benthic invertebrate data and tissue data from fish and invertebrates.

INDSPEC, Stream Rapid Bioassessment, Petrolia, PA—Performed a baseline bioassessment of a stream using EPA's Rapid Bioassessment Protocols. The stream segment of interest ran through

the heart of a large, operational chemical production facility, which presented some unusual health and safety considerations for a stream assessment.

Potlatch Pulp & Paper, NPDES Water Quality Monitoring, Snake River, Lewiston, ID and Clarkston, WA—Led field sampling for water and sediment quality monitoring on more than 20 river miles on the Snake River. Sampling included high volume water sampling (400 L per sample) for dioxin/furan analysis as well as more conventional sampling. Other duties included coordinating with analytical laboratories and other subcontractors in the field, and preparing quarterly monitoring reports for submission to EPA.

Former W.R. Grace Facility, Acton, MA—Assisted and managed field sampling at a former W.R. Grace site with a wide variety of contaminants, including heavy metals, VOCs, and PAHs in a number of aquatic systems (wetlands, ponds, streams, river). Analyzed chemical, nutrient, toxicity, and benthic invertebrate community data in support of an ecological risk assessment.

Chemical Manufacturing Facility, Sauget, IL and Surrounding Area—Ecological risk assessment of several water bodies draining an industrial area, including the Mississippi River. Contaminants included PCBs, dioxin, pesticides, herbicides, heavy metals, elemental phosphorus, SVOCs, and VOCs. Coordinated a large field sampling project that involved up to 12 staff members. Coordinated transport of staff and field equipment from Massachusetts to Illinois. Performed extensive fish, invertebrate, and vegetation sampling and fish taxonomy, conducted habitat surveys of several streams.

Chemical Manufacturing Facility, Mississippi River, Vicinity of St. Louis, MO—Performed an ecological risk assessment addressing point source contamination of the Mississippi River. Contracted and coordinated with several local fishermen and boat captains familiar with the commercial traffic and other potential hazards associated with work on a large river to obtain surface water, sediment, and invertebrate samples. Assessed the local fish assemblage and sampled numerous species for tissue analysis. Performed in-situ bioassays using invertebrates and fish to determine acute effects. Performed onsite identification, dissections, and pathology examinations of fish collected from the river. Managed database and contributed to analysis of data for ecological risk assessments.

Salem Power Station, Salem, MA—Project involved an ecological risk assessment of a tidal flat receiving historical MGP constituents (DNAPL) and more recent fuel spills. Performed a monitoring study of a microbial bioremediation program and measured effects of remediation processes on benthic invertebrates.

Former Manufactured Gas Plant Site, Ripon, WI—Helped lead a baseline ecological risk assessment for a small pond adjacent to a former MGP site in Wisconsin. The risk assessment focused on PAHs, heavy metals, and VOCs entering sediment and surface water. Facilitated discussions between client and Wisconsin Department of Natural Resources.

Industriplex Superfund Site, Woburn, MA—Provided technical and field support for ecological risk assessment of several water bodies located within a large industrial/urban site. Constituents of concern included arsenic, other metals, PAHs, VOCs and SVOCs. Designed and managed

databases used for the risk assessment. Also contributed to the Natural Resource Damage Assessment for this site.

Apartment Complex, Long Island, NY—Led a team of field scientists to inspect a large apartment complex (200+ Units) in New York for structural damage and evidence of toxic mold. Inspections were performed on behalf of an insurance agency as part of a claims investigation. Tasks included extensive inspections of each apartment unit, taking moisture readings on drywall and wood surfaces, scanning walls for wet areas using an infrared camera, and inspecting the external plywood sheathing for degree of mold growth. Project included a collaboration among Exponent's EcoSciences, Health Sciences, and Buildings and Structures practices.

Incinerator Decommissioning, KS—Provided oversight for an incinerator decommissioning project performed under radiological control practices (Radiological Work Permit). On behalf of the client and the client's counsel, observed and duplicated sampling performed by representatives of a plaintiff. Sampling included wipe sampling for radiological analysis, ash samples, water samples, and photo documentation of all activities on site.

Soil Gas Project, FL—Led field investigation of elevated levels of methane in surficial soils in a housing development in Florida. Conducted a survey of soil gas levels in surficial soils throughout the development, measuring for methane, carbon dioxide, hydrogen sulfide, carbon monoxide, hydrogen, and oxygen with a Landtech GEM 2000 landfill gas monitor and an AMS soil vapor probe. Investigated sediment conditions in several ponds and wetlands in the development to determine degree of methane contribution from sediments to groundwater. Coordinated with vapor intrusion mitigation contractors to address vapor intrusion potential in homes. Coordinated with pond management contractors to address aeration of ponds to reduce organic matter buildup in sediments.

ESTCP/SERDP Research Grant, Aberdeen Proving Ground, MD and Ft. Eustis, VA—Assisted in the preparation of an Environmental Security Technology Certification Program grant proposal for *in situ* treatment of mercury-contaminated sediment at Department of Defense sites in Maryland and Virginia. Joined several sediment, surface water, and benthic invertebrate sampling events in tidal creeks and wetlands to collect samples supporting laboratory testing. These military installations are active and require an unexploded ordnance (UXO) liaison to conduct field work.

Exxon Valdez Oil Spill Monitoring Program, Prince William Sound, AK—Assisted in coordinating several research cruises in Prince William Sound as part of a monitoring and survey team. Conducted oil geomorphology surveys, collected water and biota samples from rocky intertidal zone, installed passive SPMD samplers. Coordinated field work in remote parts of Alaska, managing and maintaining custody of samples; produced several sampling permit reports required by the state of Alaska at the end of field activities.

Pesticide Impacts on Wildlife Study—Constructed and currently maintaining a database on incidents of non-target wildlife impacts from a specific class of pesticide. Performed numerous qualitative and statistical analyses on data, obtained and analyzed "background" mortality rates

for numerous impacted species, produced comparisons among the two data sets to determine if a potential effect exists. Project is ongoing as new incident data are obtained from state and federal agencies.

Delta Park, Chicopee, MA—Performed sediment sampling at an impacted site on the Chicopee River in Massachusetts. Led a survey team, which included the client, to examine locations upstream of site and on the Connecticut River to identify the local conditions in both rivers outside the influence of the site. Performed habitat, substrate, flow regime, and bank surveys at numerous sites on both rivers in order to define local conditions and identify areas upstream of the site that were physically similar to the site and not under the influence of other point source impacts. Reported results to client and to MA DEP and recommended the most suitable areas to investigate to determine local conditions.