



CHARLOTTE M. COGSWELL
 CR Environmental, Inc., President 1994 to Present
 Years with Other Firms: 15

PROJECT MANAGER
SENIOR ESTUARINE/WETLAND ECOLOGIST
ENVIRONMENTAL RISK ASSESSOR
ENVIRONMENTAL PERMITTING

AREAS OF SPECIALIZATION

- Wetland Delineation/ Habitat Assessment, Replication & Restoration
- Environmental Permits and Impact Reports
- Estuarine/Limnological Studies and Site Characterization
- Ecological Risk Assessment

EDUCATION

1988-Present OSHA 40-hr HAZWOPER and Supervisor Training, annual 8-hr Refresher Courses
 1979-1993 M.S. Ecology, Ph.D. candidate, University of Connecticut, minor Statistics
 1987 HEP Certification, U.S. Fish and Wildlife Service
 1982 Tropical Biology, Organization for Tropical Studies, Costa Rica
 1976-77 Marine Chemistry, Bridgewater State Univ.; Marine Ecology, Boston Univ., M.B.L., Woods Hole
 1971-75 B.A. Botany, University of Vermont

PROFESSIONAL SOCIETIES/AFFILIATIONS

Society of Wetland Scientists	Marine & Ocean Technology Network
Coastal & Estuarine Research Federation	Society for Ecological Restoration
Society of Environmental Toxicology and Chemistry	Mass. Association of Conservation Commissioners
Association of Massachusetts Wetlands Scientists	Massachusetts LSP Association

WORK HISTORY

Owner and President, CR Environmental, Inc., Falmouth, MA	1994-present
EMCON/IT Corporation, Andover, MA (part-time consultant)	1994-2001
CRJA, Boston, MA (part-time consultant)	1993-2004
E.G.& G. W.A.S.C., Waltham, MA for Super Conducting Super Collider, TX	1992-1994
GZA GeoEnvironmental, Inc., Newton Upper Falls, MA	1988-1992
Sanford Ecological Services, Natick, MA	1985-1988
B.U. Marine Program, Marine Biological Laboratory, Woods Hole, MA	1975-1979

SUMMARY OF PROFESSIONAL EXPERIENCE

Ms. Cogswell is an ecologist with more than 30 years of experience in terrestrial and wetland ecosystems conducting studies involving freshwater, marine and estuarine ecology, the potential environmental effects of nutrients, toxic contaminants, and physical habitat alterations; plant-herbivore interactions, restoration ecology; benthic and wildlife habitat analysis. Her experience encompasses fieldwork, data reduction and statistical analysis, report preparation, environmental permit preparation, ecological risk assessment, and program management.

REPRESENTATIVE WORK EXPERIENCE

- Owner and President of CR Environmental, Inc., an ecological and oceanographic consulting firm certified as a WBE in MA, NY, and NY. Ms. Cogswell's graduate studies were in salt marsh plant ecology. Since graduate school she has held professional positions with geotechnical, environmental, and landscape architect firms where she served or serves as a senior ecologist/consultant in the areas of wetland assessment, delineation, permitting, ecological risk, habitat restoration and monitoring.
 - As a Consultant to the U.S. Army Corps of Engineers her projects include marine dredged disposal site monitoring, management of hydrographic/navigation field efforts, health & safety, and review of reporting for DAMOS and HARS; wetland assessment of proposed PCB-contaminated sediment disposal sites and management of archaeological investigators at intertidal/supratidal sites to be remediated at the New Bedford Superfund Site, MA; wetland restoration monitoring at the Nyanza Superfund site in Ashland, MA.

- Served as Project Ecologist assessing sediment quality at the Cape Cod Disposal Site for MADEM and mercury in Quabbin and Wachusett Reservoir fish for MDC; conducted a diving nearshore epifauna survey and developed a landscape plan for the closed McAllister Point Landfill, Narragansett Bay, RI; conducted ecorisk assessments/site characterizations at RCRA facilities in Colrain, Rutland, and Pepperell, MA, a number of General Dynamic facilities in CT, the former Putnam municipal landfill in CT for a CTDEEP submittal, and the Plainville Landfill, MA for a MADEP submittal; and restored and/or monitored wetlands in Braintree, Dedham and Ashland, MA.

RELEVANT PROJECTS

Wetland Ecologist, Blackburn & Union Privileges Superfund Site, Walpole, MA (September 2022-2023) Delineated and reported on wetlands for Woodard & Curran along reaches of the Neponset River and riparian zone for remediation efforts focused on the South Street culvert.

Ecologist, Eversource Cable Routes Martha's Vineyard to Falmouth, MA (2021-2022) As a subcontractor to Epsilon, conducted CMECS classifications for underwater video along two proposed electric cable corridors, edited and compiled CR's geophysical, sediment sampling and underwater video reports for the proposed cable routes.

Estuarine Ecologist, U.S. Army Corps of Engineers, New Bedford Harbor Superfund Site (2019-2021) Managing and conducting annual monitoring of the remediated and revegetated estuarine shoreline within the upper New Bedford Harbor. Developing salt marsh and upland restoration planting plans for newly remediated parcels within the upper harbor under contract with Jacobs Engineering.

Estuarine Ecologist, for HDR / NYCDEP, CW-EWQS, Jamaica Bay, NY (2017-2020) Served as project manager for CR's vessel and personnel supporting benthic studies and macroalgae and salt marsh grass sampling, and bathymetry in Jamaica Bay, NY under HDR's Citywide Ecological and Water Quality Studies contract with NYCDEP.

Deputy Program Manager, U.S. Army Corps of Engineers, DAMOS Program, ME to LI Sound and HARS, New York Bight (2003-2015) and team member under Inspire Environmental (2016-present) Served as Deputy Program Manager for DAMOSVision JV from 2003-2016 in support of the DAMOS Program of the New England District of the U.S. Army Corps of Engineers. Responsible for coordination of analytical laboratory subcontractors, and editor for CR's DAMOS reporting. Also provides management support for CR's multibeam monitoring efforts, reporting and health & safety for the Historic Area Remediation Site (HARS) in New York Bight for the NY District USACE initially as a DAMOSVision JV partner, and currently as a subcontractor to Inspire Environmental.

Wetland Ecologist/Project Manger, U.S. Army Corps of Engineers, New Bedford Harbor Superfund Site, Intertidal Archaeological Investigation, MA (2016-2020) Managed the archaeological investigation of intertidal wetlands to be remediated on the eastern shore of New Bedford Harbor with DSRA and PAL for Jacobs Engineering. Personal site history includes conducting environmental study for the New England Division to investigate the potential effects of PCB and heavy metal pollution on the inner harbor salt marsh ecosystem. At the time northern portions of the salt marsh were proposed sites for the disposal of contaminated harbor sediment. Work involved assessment of the condition of the salt marsh, including written and video documentation. Salt marsh plants, invertebrates, small mammals and waterfowl were collected and analyzed for PCBs to investigate contaminant levels in the salt marsh biota and their transfer through the food chain.

Wetland Ecologist, Milford Pond Sediment and Vegetation Sampling for Ecological Risk (2019-2020) Managed study to collect pond water for dissolved metals, hardness, CTD parameters; sediment push cores for metals, TOC and % solids, and the collection of plant rhizomes for metals analysis for an ecological risk assessment under contract with Woodard & Curran.

Project Manager/Ecological Risk Assessor, Electric Boat, Connecticut (1998, 2006, 2014, 2019) Manager of a team evaluating sampling needs and conducting ecological risk assessments at three Electric Boat facilities in Groton, Connecticut for US EPA RCRA and CT DEP review. Sites on the Thames River, Poquonock River, Mumford Cove, and Birch Plain Creek, have metals, SVOCs and VOC contaminant issues. Discharges of contaminated groundwater are entering freshwater as well as tidal systems. Work included the evaluation of the habitats and species of concern, sediment, surface water and sampling of biota to look at contaminant concentrations, as well as, toxicity testing. CR has continued to conduct vibracoring and bathymetry at the Thames River site under contract with Woodard & Curran for proposed expansion of the facility.

Wetland Scientist, Lakeshore Center, Bridgewater, MA (2007-2018)

Managed wetland delineation, vernal pool assessment, and a nine week Eastern Box turtle radiotransmitter survey of a 150+ acre site in Bridgewater slated for retail/hospitality development. Filed an Abbreviated Notice of Resource Area Delineation, and assisted with the MEPA filing of a Notice of Project Change, Draft EIR and FEIR. Completed rare species (Eastern Box Turtle) protection for the Conservation Permit filing with the MA Natural Heritage and Endangered Species Program, and conducted shallow groundwater monitoring in the Hockamock Swamp ACEC wetland for construction permit compliance until 2018.

Wetland Ecologist, Blackburn and Union Privileges Superfund Site, Walpole, MA (2012-2017)

Wetland delineation and wildlife habitat characterization for reaches of the Neponset River and riparian zone for Woodard & Curran. Other CR efforts included bathymetric surveys, determination of sediment thickness, and river currents to assist with cleanup efforts and restoration design along the riparian corridor.

Wetland Scientist/Permitting, School Projects, Massachusetts (2002-2017)

Conducted wetland delineations, habitat evaluations, vernal pool monitoring and provided guidance and assisted with permitting needs for numerous school projects, many for CRJA and LPA in Massachusetts, including schools in Wilbraham, Worcester, Auburn, Rutland, Brockton, Arlington, Wellesley, Framingham, Sandwich, Shrewsbury, Groton, Hopkinton, Lexington, Ludlow, Northbridge, Plymouth, and Weston. In 2015-17, managed the wetland delineation, vernal pool assessment and permitting and monitoring for the Northborough Lincoln Street Elementary School and the City of Worcester Nelson Place Elementary School renovations for LPA.

Wetland Scientist/Risk Assessor - Former Cotton Bleachery, Colrain, MA (2008-2016).

Wetlands assessment, Stage I Environmental Risk Screening, and Stage II Ecological Risk Characterization of a tributary to the North River in Colrain, MA contaminated with dioxin/furans and PAHs for Sanborn Head & Associates. Work includes habitat evaluation, stream hydrology to assess sediment transport, benthic invertebrate kick sampling, sediment sampling, fish and invertebrate sampling for body burden and food chain modeling in the tailrace brook and upstream and downstream reaches of the North River. Manager and project ecologist for a Stage I ERS, and Stage II ERC of a tributary to the North River and former waste lagoons contaminated with dioxin/furans and PAHs. The North River tributary and former lagoons were remediated by SHA in 2014. CR is currently tasked with a post-remediation ecological risk assessment

Project Manager/Ecologist, Kensico Reservoir Alum Monitoring, Westchester County, NY (2014-2015)

Under contract to HDR managed a bathymetric survey and sediment core sampling and reporting effort for NYCDEP to identify the extent of alum deposition within Kensico Reservoir as mandated by EPA.

Ecologist, Permitting, National Park Service, Minuteman National Park and Delaware Water Gap (2012)

Working with CRJA provided ecological and environmental permitting assistance for proposed landscape restoration and park pathways.

Estuarine Scientist/Risk Assessor – Former Chadwick Lead Mill Superfund Site, Salem/Marblehead Harbor, MA (2011)

Review of permit requirements and site characterization for vegetation, salt marsh invertebrates, intertidal shellfish, and benthic grabs for infauna and grain size, in a salt marsh, sand/rubble beach, and intertidal and subtidal area that was contaminated with lead. Developed coastal resource restoration plan including salt marsh restoration following site remediation. Assistance with MEPA, and state and local environmental permits.

Ecologist, Spotted Turtle Surve - MBTA Greenbush Line Post-Construction Monitoring, Hingham, Cohasset, MA (2010-2011)

Managed a turtle monitoring effort to ensure that rare turtles and their critical habitats were protected, and to assess the post-construction viability of the various mitigation measures employed by the MBTA, including crossing structures, movement funneling barriers, and enhanced nesting sites.

Ecologist, Long Island Sound Coastal Park, Babylon, NY (2010)

Provided design and planting recommendations to landscape architects at CRJA-IBI Boston for the Town of Babylon to restore barrier beach for Oak Beach Park on the south side of Long Island, NY

Ecologist, Site Characterization Lake Quannapowitt, Wakefield, MA (2007)

Conducted an ecological site investigation and review of available documents to characterize the habitat, biology, and wetland resources of Lake Quannapowitt in Wakefield, Massachusetts. The investigation was conducted to support Brown and Caldwell, Inc.'s remedial investigation of sediments located in the Hartshorne Cove portion of the lake. Key aspects of CR's investigation included identification of ecological receptors and exposure pathways in support the BC Stage II Ecological Risk Characterization.

Wetland Scientist/Risk Assessor - Nissitissit River, Pepperell, MA (2005-2006)

Wetland delineation and Stage I Environmental Risk Screening for an Oil Company site bordering on the Nissitissit River. The site was within an ACEC, and NHESP mapped habitat. LNAPL was found in shallow groundwater. Work involved surficial sediment sampling and analysis for SVOCs and TOC, and mapping of the extent of sheen releasing sediment Potential wetland permitting for site cleanup was also determined.

Restoration Specialist, Spy Pond Park – Arlington, Massachusetts (2003-2004)

Working with CRJA developed planting design using native plants for lake shoreline reestablishment of this city park. The design included bioengineering techniques for shoreline stabilization

Ecologist/Risk Assessor, Former Rutland State Hospital Stage II Ecological Risk Assessment (2003)

Characterization of unnamed perennial stream and bordering wetlands flora and fauna, sediment chemistry and biota, and collections for toxicity testing adjacent to a former ash landfill site in Rutland, MA. Stage II ERC completed for submission to OTO and the MA Division of Capital Management in little over a month.

Project Ecologist, Brownfields Site of TeleCom City, Malden River, Medford and Everett, MA (2001-2003)

Part of a project team with CRJA providing wetland assessment, permitting and wetland mitigation assistance for the proposed TeleCom City and Malden River Park development including restoration guidance for the litter strewn and *Phragmites* covered shoreline. River's Edge development incorporated the use of a living fence and management to contain *Phragmites* encroachment into newly restored shoreline.

Project Ecologist, Nyanza Superfund Site, Ashland, MA (2000-2002, followup 2007)

Subcontractor to Stone & Webster managing supervision of the wetland restoration effort and conducting monitoring of 6 acres of restored wetland at the Nyanza Superfund Site.

Ecologist, Upper Charles River Reservation Restoration, MA

Part of a project team with CRJA developing pathways and green corridor along a portion of the Upper Charles River Reservation from Auburndale to Watertown Square. Responsible for plant and wildlife community evaluation, wetland delineation and permits, and a wildlife habitat management plan. The pathways in Watertown and Newton were completed with exotic/nuisance species reduction, wetland replication and floodplain upland restoration.

Ecologist/Risk Assessor, Former Rutland State Hospital Stage II Ecological Risk Assessment (2003)

Characterization of unnamed perennial stream and bordering wetlands flora and fauna, sediment chemistry and biota, and collections for toxicity testing adjacent to a former ash landfill site in Rutland, MA. Stage II ERC completed for submission to OTO and the MA Division of Capital Management in little over a month.

Ecologist, Plainville Landfill and Lake Mirimichi Site Characterization

Characterization of the environs surrounding the Plainville Landfill for assessment of potential risk from organics in a groundwater plume. Work included fish and invertebrate sampling in Lake Mirimichi and a description of cover types and wildlife characteristics of the surrounding wetlands.

Larkin Road Dam, Parker River, Newbury, MA

Prepared report for the Town of Newbury including wetland delineation and wildlife habitat evaluation for an impoundment of the Parker River for permitting, and assessment of the potential effects of the proposed dam removal.

Wetland Scientist, Massachusetts Military Reservation, Army National Guard, Bourne, MA

Wetland delineation and DGPS survey of area of a former Rod & Gun Club on the MMR and assistance with filing of a Request for Determination of Applicability for the installation of monitoring wells by AMEC.

Ship Scientist, Remedial Investigation - Thames River, Connecticut

Collected surface water and sediment samples as part of a Remedial Investigation at the U.S. Naval Base on the Thames River. Sediment was collected for chemical, physical and biological characterization.

Plant Ecologist, Proposed Treatment Facility, Mashpee River, Mashpee, MA. Proposed 200,000 gallon per day subregional treatment facility located 1/2 mile from the Mashpee River. Impact assessment to determine the potential water quality impacts on the river and downgradient estuary due to nitrogen-rich groundwater

Project Ecologist, Restoration Investigation - Narragansett Bay, Rhode Island

Conducted a dive survey of nearshore epifauna and sediment characteristics off the U.S. Naval Education and Training Center McAllister Point landfill and other subtidal areas near landfills and reference sites in southern Narragansett Bay for a Restoration Investigation. Summarized findings for submission to EPA.

Project Ecologist, Peters Pond, Sharpville, IN. Conducted a post-remediation ecological risk assessment for a site with low levels of VOCs, SVOCs and PHCs remaining in site media. Study focused on PHCs in Mud Creek sediment which borders the site and the potential effect of these remaining petroleum constituents on riparian vegetation and biota.

Project Ecologist, Acushnet River Estuary, New Bedford Harbor Superfund Site, MA.

Conducted environmental study for the New England Division of the U.S. Army Corps of Engineers to investigate the potential effects of PCB and heavy metal pollution on the inner harbor salt marsh ecosystem. Northern portions of the salt marsh were proposed sites for the disposal of contaminated harbor sediment. Work involved assessment of the condition of the salt marsh, including written and video documentation. Salt marsh plants, invertebrates, small mammals and waterfowl were collected and analyzed for PCBs to investigate contaminant levels in the salt marsh biota and their transfer through the food chain. Recommendations were made regarding remedial alternatives proposed by NUS.

Project Manager, Ecological Risk Assessment, Merrimack River, Nashua, New Hampshire

Conducted an ERA for a RCRA facility on the Merrimack River for submission to EPA. Contaminants of concern included cyanide, formaldehyde and ammonia.

Chief Scientist, Mercury Study - Quabbin and Wachusett Reservoirs, MA

Part of a GZA project team conducting a study of the Quabbin and Wachusett Reservoirs triggered by the elevated levels of mercury detected in larger fish. Provided advice concerning the parameters to sample at various sediment sample locations. Gathered data on reservoir fisheries and the levels of mercury in their tissue. Helped coordinate and reviewed an assessment of the potential risk to ecological communities in the Quabbin and Wachusett Reservoirs due to mercury, and other metals and organic compounds of concern.

Project Ecologist, Super Conducting Super Collider, Texas

Surveyed ecological characteristics of streams draining the West Complex and Northern Arc of the SSC. Prepared a stream characterization report for the West Complex for submission with NPDES and Texas Water Commission permits.

Project Ecologist/Risk Assessor, Ipswich River Wetlands, Wilmington, Reading, North Reading, MA.

Wetland assessment and ecological risk assessment to evaluate the potential effects of VOC-laden groundwater on the biota of Ipswich River wetlands. The risk assessment included a characterization of surface water hydrology, soils, vegetative cover types, habitat features, and signs of wildlife upgradient and downgradient of the contaminant source. Risk to the environment was assessed based on a comparison of the contaminant levels in various media to water quality criteria and the toxicological literature on the chemicals of concern.

Ecologist/Risk Assessor, Lockheed Martin Facilities, Wilmington and Burlington, Massachusetts

Wetland delineation, permit preparation, and habitat evaluation for two former Lockheed Martin Facilities being investigated by EMCON. Conducted a stream invertebrate survey at a metal contaminated site to evaluate the potential effect of sediment contaminant levels on the stream community at the Burlington site.

CONTRIBUTED POSTERS AND PAPERS

- 2014 NE Transportation Conference, Burlington, VT. *MBTA Greenbush Line wildlife crossing structure study - focus on Spotted Turtles*. Adrianna Ortiz, Kenneth Thomson, Charlotte Cogswell (CR Environmental, Inc.) and Lars Carlson (Jacobs Engineering Group)
- 2007 Estuarine Research Federation Annual Meeting, Providence, RI. *"Nitrogen input-output dynamics in a shallow tidal estuary on Cape Cod"* M. Hayn, R.W. Howarth R., Marino, P. Berg, K. Foreman, A. Giblin, K.J. McGlathery, J. Tucker, C.Funk, E. Perrone, C. Cogswell
- 2002 USGS, NOAA, ASF and ESA Symposium on the Effects of Fishing Activities on Benthic Habitats: Linking Geology, Biology, Socioeconomics and Management, Tampa, FL. *"Effects of Smooth Bottom Trawl Gear on Soft Bottom Habitat"*. C. Cogswell, C., B. Hecker, A. Michael, F. Mirarchi, J. Ryther, Jr., D. Stevenson, R. Valente, and C. Wright
- 2001 CZM Gulf of Maine Marine Habitat Conference. *"Near Term Observations of the Effects of Smooth Bottom Net Trawling on the Seabed NOAA/NMFS Cooperative Research Project"*. CR Environmental, Inc. and Boat Kathleen A. Mirarchi, Inc. Sebasco, ME
- 1997 Oceans 97, Halifax, Nova Scotia *"The Conversion of Fishing Vessels and Training of Fishermen for Oceanographic Surveys, Research and Resource Assessment"*

- 1984 Ecological Society of America/A.I.B.S., Colorado State University, Fort Collins, CO. *"The influence of elevation, competition, and herbivory on the distribution of salt marsh chenopods"*
- 1983 New England Estuarine Research Society, Portland, ME and Estuarine Research Federation, Virginia Beach, VA
"The importance of herbivory and plant competition in structuring a New England salt marsh"
- 1983 Ecological Society of America/A.I.B.S., University of North Dakota, Grand Forks, ND
"The influence of soil nitrogen, herbivory, and plant competition on secondary succession in a New England salt marsh"
- 1982 Population Biologists of New England, W.H.O.I., Woods Hole, MA
- 1981 Population Biologists of New England, Clark University, Worcester, MA
"Interaction of the herbivore Erynephala maritima with salt marsh chenopods"

INVITED LECTURES

- 2004 Society of Environmental Toxicology and Chemistry
Roger Williams University Conference Center, Portsmouth, RI
"Using Ocean Technology in Freshwater and Coastal Marine Site Investigations"
- 1999/2000 Build Boston Architecture Society
World Trade Center, Boston, Massachusetts
"Understanding Site Development Permitting"
- 1990 Massachusetts Association of Land Surveyors and Civil Engineers, Inc.,
Plymouth Plantation, Massachusetts
"Potential effects of development on the coastal zone."
- 1984 Marine Biological Laboratory, Ecosystems Center, Woods Hole, Massachusetts
"Herbivory in New England salt marshes"
- 1981-83 Marine Biological Laboratory, B.U.M.P./W.H.O.I.,
Woods Hole, MA
"The effect of fertilization and herbivory on salt marsh vegetation"
"Interactions of a herbivorous beetle and salt marsh chenopods"
"Salt marsh plant populations"

AWARDS

First Student Ketchum Award, New England Estuarine Research Society, 1983.

PUBLICATIONS

- Valiela, I. T. Bowyer, J. Lloret, Simon Miner, D. Remsen, E. D. Elmstrom, C. Cogswell, and R. Theiler. 2018. *Transient coastal landscapes: rising sea level threatens salt marshes*. Science of the Total Environment 640-641: 1148-1156. Elsevier. <https://doi.org/10.1016/j.scitotenv.2018.05.235>
- C. Cogswell, B. Hecker, A. Michael, F. Mirarchi, J. Ryther, Jr., D. Stevenson, R. Valente and C. Wright. 2005. *Effects of Smooth Bottom Trawl Gear on Soft Bottom Habitat*. In: Benthic Habitats and the Effects of Fishing, Eds. P.W. Barnes and J.P. Thomas, American Fisheries Society, Bethesda, Maryland: 890 pp.
- Valiela, I., J.M. Teal, C.M. Cogswell, J. Hartman, S. Allen, and R. Van Etten. 1985. *Some long-term consequences of sewage contamination in salt marsh ecosystems*. In: Ecological considerations in wetlands treatment of municipal wastewaters. Eds. P.J. Godfrey, E.R. Kaynor, S. Pelczarski and J. Benforado. Van Nostrand Reinhold Company, NY.
- Schatz, G.E., G.B. Williamson, C.M. Cogswell, and A.C. Stam. 1985. *Stilt roots and growth of arboreal palms*. Biotropica 17 (3).
- Valiela, I., J.M. Teal, S.B. Volkmann, C.M. Cogswell, and R. Harrington. 1980. *On the measurement of tidal exchanges and groundwater flow in salt marshes*. Limnology and Oceanography 25 (1): 187-92.
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