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

PROJECT MANAGER
SENIOR ECOLOGIST
ENVIRONMENTAL RISK ASSESSOR
BOTANIST
ENVIRONMENTAL PERMITTING

AREAS OF SPECIALIZATION

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

EDUCATION

1988-Present	OSHA 40-hr Health & Safety Training and annual 8-hr Refresher Courses
1979-1993	Ecology, Ph.D. candidate Plant Ecology, 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

American Institute of Biological Sciences	Marine & Ocean Technology Network
Boston Risk Assessment Group	Society of Wetland Scientists
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	1994-2001
CRJA, Boston, MA	1993-2005
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 25 years of experience in terrestrial and wetland ecosystems conducting studies involving plant population and community 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, program management and expert testimony.

REPRESENTATIVE WORK EXPERIENCE

- Owner and President of CR Environmental, Inc., an ecological and oceanographic consulting firm certified as a WBE in MA and NY. Ms. Cogswell's graduate studies were in salt marsh plant ecology and 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. She has prepared or managed the preparation of a number of Environmental Impact Assessments, and Environmental Permit applications for federal, state, local and private organizations including developers of mixed use 150+ acre sites in Holbrook and Bridgewater; the PRP's of a lead-contaminated coastal site on Salem Harbor, MA; Federal Bureau of Prisons, Ft. Devens, MA; the U.S. Fish & Wildlife Service, Parker River Headquarters, MA; the CT Department of Transportation Route 6 & I-91; GTE Products, Salem, MA; several schools in Massachusetts, and for MDC parks on the Charles and Neponset Rivers, MA.

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- As a Consultant to the New England Division of the U.S. Army Corps of Engineers her projects included dredged disposal site monitoring (DAMOS); wetland restoration monitoring at the Nyanza Superfund site in Ashland, MA; wetland assessment of proposed PCB-contaminated sediment disposal sites in New Bedford, MA, Inner Harbor salt marsh; functional evaluation of 22 wetlands along a 12 mile proposed Central Connecticut Expressway in Bolton, Coventry, and Andover; 401(b)(1) evaluations for proposed dredging; and beach nourishment projects.

- 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 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, and the Plainville Landfill, MA for a MADEP submittal; and restored and/or monitored wetlands in Braintree, Dedham and Ashland, MA.

RELEVANT PROJECTS

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.

Restoration Specialist, Spy Pond Park – Arlington, Massachusetts
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
.
Project Ecologist, Former GTE Facility, Salem, Massachusetts. Assisted in the restoration and monitoring of a salt marsh which had been buried under several meters of glass and other manufacturing wastes. Work included determination of acceptable elevations for high and low marsh areas, connective channels and elimination of existing stands of the invasive Common Reed (*Phragmites spp*.).

Long Island Sound Coastal Park
Provide design and planting recommendations to landscape architects for the Town of Babylon to restore barrier beach for an ecological park on the south side of Long Island, NY.

MBTA Home Meadows Tidal Marsh Restoration, Hingham, MA
Conducted baseline and long-term monitoring of Home Meadows a mixture of salt and freshwater marsh in which tidal inundation was increased with the goal of decreasing the extent of *Phragmites australis* growth. Work includes monitoring of several plots for elevation, hydrologic regime, plant cover and vigor, and soil salinity over 5 years

Wetland Scientist, Lakeshore Center, Bridgewater, MA
Managing 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. Currently working on rare species (Eastern Box Turtle) protection for the Conservation Permit filing with the MA Natural Heritage and Endangered Species Program.

Project Ecologist, Brownfields Site of TeleCom City, Malden River, Medford and Everett, MA
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.

National Park Service, Minuteman National Park and Delaware Water Gap
Working with Kyle Zick provided ecological and environmental permitting assistance for proposed landscape restoration and park pathways.

Wetland Ecologist, Malden River Wetland Restoration, Everett, MA
Wetland restoration design, construction and monitoring of wet meadow habitat along the Malden River using fiber rolls and plant plugs to compensate for filled wetland.

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Project Ecologist, Nyanza Superfund Site, Ashland, MA
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.

Wetland Scientist/Risk Assessor - Former Cotton Bleachery, Colrain, MA.
Wetlands assessment, Stage I Envrionmental Risk Screening, and Stage II Ecological Risk Characterization of a tributary to the North River in Colrain, MA contaminated with dioxin/furans and PAHs. 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.

Wetland Scientist/Risk Assessor - Nissitissit River, Pepperell, MA
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.

Ecologist/Risk Assessor, Former Rutland State Hospital Stage II Ecological Risk Assessment
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.

Estuarine Scientist/Risk Assessor – Former Chadwick Lead Mill, Salem/Marblehead Harbor, MA
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 has been contaminated with lead. Development of coastal resource restoration plan including salt marsh restoration following site remediation. Assistance with MEPA, and state and local environmental permits.

Larkin Road Dam, 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, Restoration 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.

Project Manger, First Year Monitoring of the MADEM Cape Cod Bay Disposal Site, Cape Cod Bay, MA
Project manager and final report preparation on the first year monitoring in 1996 of the Cape Cod Disposal Site in Cape Cod Bay.

Estuarine Scientist/Risk Assessor – Former Chadwick Lead Mill, Salem/Marblehead Harbor, MA
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 has been contaminated with lead. Development of coastal resource restoration plan including salt marsh restoration following site remediation. Assistance with MEPA, and state and local environmental permits.

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

Wetland Scientist, School Projects, Massachusetts
Conducted wetland delineations, habitat evaluations and provided guidance and assisted with permitting needs for numerous school projects, many for CRJA in Massachusetts, including schools in Wilbraham, Worcester, Auburn, Rutland, Brockton, Arlington, Wellesley, Framingham, Sandwich, Shrewsbury, Groton, Hopkinton, Lexington, Ludlow, Northbridge, Plymouth, and Weston.

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, 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 Assessement, 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, Peters Pond, Sharpsville, 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, 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.

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.

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.

Project Manager/Ecorisk Assessor, Electric Boat, Connecticut
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 includes 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.

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"

CONTRIBUTED POSTERS

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

CONTRIBUTED PAPERS

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"

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AWARDS

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

PUBLICATIONS

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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