

December 16, 2016



BY ELECTRONIC MAIL & HAND DELIVERY

John M. Morin, P.E.
THE MORIN-CAMERON GROUP, INC.
66 Elm Street, Danvers, MA 01923
978.777.8586
john@morincameron.com

167 Main Street
P. O. Box 716
Rowley Massachusetts
USA

978.948.7717 Office

derosaenvironmental.com

RE: Supplemental Information

**Sullivan Residence
81A Stiles Pond Road | Boxford, Massachusetts**

MassDEP File No.: 114-1240

Dear Mr. Morin:

Our office has prepared the following to address concerns about the proposed development of 81a Stiles Pond Road in Boxford Massachusetts. We were authorized to prepare this letter at the request of Mr. Gilbert Sullivan, owner of property at 81a Stiles Pond Road in Boxford, Massachusetts. The property is known as Assessor's Map 18, Block 1, Lot 4, in the Town of Boxford, Massachusetts (the "Site").

PROJECT SUMMARY

As the Commission is aware the owner of the property, Mr. Gilbert Sullivan, has proposed the following elements to his property that require an Order of Conditions from the Conservation Commission prior to state of work:

- Addition to existing home
- Second story deck above existing patio
- Paved driveway; including retaining walls, boulder slope, infiltration trench, guardrail and associated buried utilities
- Patio
- Covered stairs and walkway
- Detached garage
- Restoration of wall associated with existing concrete patio

Portions of these proposed activities occur within the 100 foot buffer zone to Stiles Pond as well as previously degraded areas of the property (Figure 1). The local bylaw regulates work within the 100 foot buffer zone to Stiles Pond and establishes rules and regulations regarding work within the 100 foot

buffer zone. The majority of the proposed garage is located outside the 100 foot buffer zone to Stiles Pond and therefore meets the requirements of the local bylaw setbacks.

LOCAL BYLAW CONSIDERATIONS

The Preamble to the Buffer Zone section (Subsection 375-98(A)) of the Boxford Wetland Protection Regulations (the Regulations) establishes that buffer zones to wetland resource areas are important for a number of credible reasons and that the 100 foot buffer zone should be protection from adverse impacts to preserve



View of existing driveway looking towards the Sullivan home and Stiles Pond beyond.

the ecological integrity of the downgradient resource areas. The Regulations further establish the presumptions of significance (Subsection 375-98(B) for the buffer zone resources in the Town of Boxford. These Regulations at 375-98(B-2) allow the presumption to be overcome when the work is proposed within "...lawn or other significantly altered land to a structure...." (see below).

Sub-section 375-98

B. *Presumption.*

(1) Based on experience to-date with projects in the buffer zone, the Commission presumes that alterations listed in the Minimum Setback Distance Chart below and closer than the stated setbacks, will result in alteration of the wetland resource area. Therefore, all proposed buffer zone alterations must comply with the stated minimum setbacks. These regulations consist of more than a single chart, and greater setbacks than the stated minimums can be and often are required for a project to comply with all sections of these regulations. For this reason, permit applicants are strongly encouraged to review all regulations contained herein prior to designing a project.

(2) This presumption is rebuttable and may be overcome only for the conversion of lawn or other significantly altered land to a structure requiring a building permit when said structure is accessory to an existing single-family dwelling legally in existence as of May 19, 1994 (the original issue date

of these regulations), or when a wetlands permit application was filed for said single-family dwelling on or before May 19, 1994, by a finding by the Commission, supported by a preponderance of the credible evidence, showing that the work proposed within the buffer zone, closer than the tabulated minimum setback distances, will not result in the alteration of any wetlands resource area. The burden for overcoming this presumption is upon the applicant; however, the Commission may include consideration of credible evidence from any source presented at a public meeting or public hearing in weighing the preponderance of the credible evidence. The proposed design shall comply as much as possible with the minimum setback distances specified in the Minimum Setback Distance Chart.

[Amended 2-23-2009]

ACTIVITIES WITHIN SIGNIFICANTLY ALTERED LAND

Certain elements of the proposed projects are located within areas that are considered "significantly altered land" as they included areas of existing pavement, patio space, gravel and or existing structures . Specifically, the following project elements are located within significantly altered land:

- Addition to existing home
- Second story deck above existing patio
- Portions of the proposed driveway
- Patio
- Covered stairs and walkway
- Restoration of wall associated with existing concrete patio

The proposed improvements that are located within the footprint of "significantly altered land" will serve to improve site conditions in relation to Stiles Pond and associated vegetated wetland but improving the condition of the site and provide appropriate stabilization to existing site conditions; thereby, reducing the risk of erosion and sedimentation to downgradient wetland resource areas into the future.

Several of these elements are an improvement over existing runoff surfaces including the conversion of driveway and walkway to a covered stairs and walkway, as well as, the proposed addition. This conversion from pavement to roof area results in cleaner roof runoff leaving the site as overland flow to Stiles Pond compared to the existing condition. This will result in fewer pollutants entering Stiles Pond; thereby, improving water quality in the pond.

PROPOSED DRIVEWAY AND BOULDER WALL

The proposed work associated with the proposed driveway and boulder wall as well as associated grading is located outside the 75 foot buffer zone. Accordingly, there is 75 feet of vegetated buffer

between the activity and Stiles Pond. This vegetated buffer will provide adequate erosion control and velocity attenuation to overland flow of surface water to protect and reduce erosion and sedimentation of downgradient wetland resource areas.

The majority of the proposed garage is located outside the 100 foot buffer zone to Stiles Pond and therefore meets the requirements of the local bylaw setbacks.

REPAIR OF WALL TO EXISTING CONCRETE PATIO

The cinder block wall associated with the existing concrete patio adjacent to Stiles Pond has become deteriorated and in need of repair. The following is a summary of the proposed activities from the contractor to repair the wall and manage any impacts to Stiles Pond:

- *The existing patio has a deteriorating hollow cinder block retaining wall that must be repaired.*
- *The contractor will replace the cinder block with solid Versa-Lok or equivalent modular retaining wall blocks.*
- *The removal & replacement process will involve micro excavating within the current patio footprint to allow placement of the modular wall block material.*
- *The existing concrete patio slab will be removed and replaced. While the required repair work is being completed, 5-foot precast footings will be put in place within the existing footprint to support the proposed second story deck, and the installation of a new ground floor patio slab.*

The work will be limited to the existing footprint and not extend into Styles Pond. The work is limited to repair and replacement of the existing structure. Accordingly, as long as appropriate BMPs are followed to limit erosion of sediments to the downgradient wetland resource areas, we do not foresee any adverse impacts to the adjacent bordering vegetated wetland or land under water associated with Stiles Pond.

WORK IN VERNAL POOL BUFFER ZONE

A small portion of the roadway, drip edge and grading occur within the 100 foot buffer zone to the vernal pool associated with the site. The pool is located off site, however the 100 foot buffer extends onto the subject parcel. This areas is previously degraded and associated with the existing gravel driveway and garage (Figure 1). We do not foresee any adverse impacts to the downgradient vernal pool understanding that the 100 foot vegetated buffer strip will provide adequate filtering services to attenuate any erosion or sedimentation associated with the construction of the project. Additionally, the project includes the installation of erosion control BMPs that will arrest any sediment from the proposed project. Accordingly, we do not foresee any adverse impacts from the project to the downgradient vernal pool.

Should you have any questions, please call or text any time at (978) 265-9298 or email me at michaelderosaj@gmail.com.

Respectfully submitted,

DeRosa Environmental Consulting, Inc.



Michael J. DeRosa, Principal
Professional Wetland Scientist

MJD/mjd



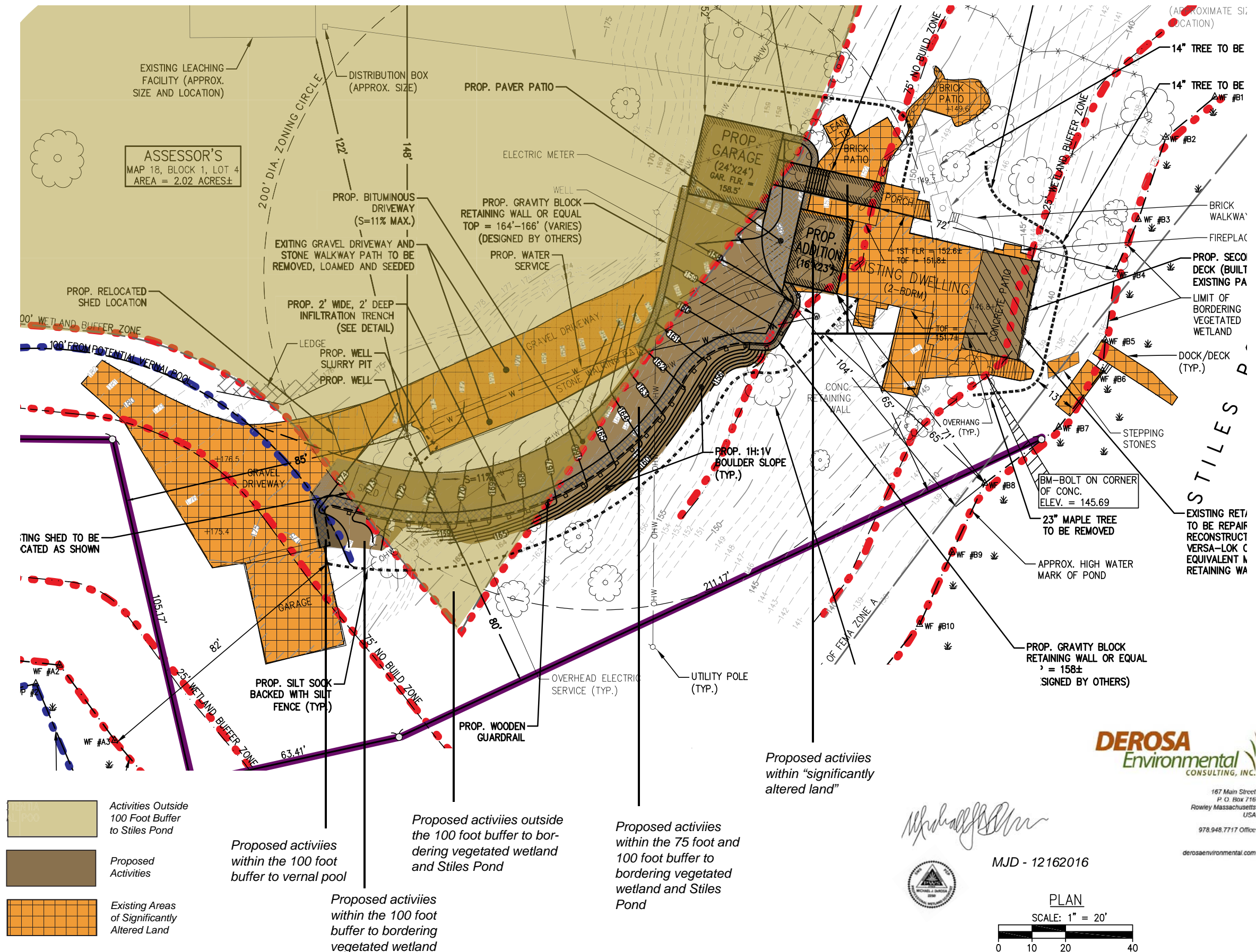
Cc: John Morin, PE, The Morin-Cameron Group (by email)

Attachments:

1. Figure 1. Summary of Limits of Activity.
2. Professional Qualifications

Figure 1. Summary of Limits of Activity

81A Stiles Pond Road | Boxford MA



Michael J. DeRosa

46 North Main Street
Ipswich, Massachusetts 01938

(978) 356-5408 – office
(978) 265-9298 – mobile

Education

Boston University MA, Energy and Environmental Studies with Water Resources Concentration (1993)	1987 to 1993
North Carolina State University MS Coursework in Ecology – Department of Entomology	1985 to 1986
Harvard University, School of Public Health Coursework in epidemiology and vector borne disease	1982 to 1985
University of Denver BA, Environmental Science with Ecology Emphasis, Philosophy Minor (1982)	1978 to 1982

Professional History

DeRosa Environmental Consulting, Inc. Principal, LSP, LEED AP BC&D	1994 to Present Ipswich, Massachusetts
--	--

- Founded and incorporated DeRosa Environmental Consulting, Inc., in May 1994.
- Provides environmental consulting services to engineers, architects, government agencies.
- Focus in three areas of inquiry: environmental consulting services, renewable energy & design services.

Hazardous Waste Consulting Services

- MA Licensed Site Professional (LSP License Number: 3452)
- Fully services MGL Chapter 21E and the Massachusetts Contingency Plan
- Phase 1 & Phase 2 Environmental Site Assessments: ASTM E1527 - 05
- Designs biological treatment systems for hazardous waste disposal sites and provides oversight for the installation, operation, and maintenance of soil and groundwater treatment systems

Ecological Consulting Services

- Environmental permitting, wetland delineation, presentation of project to review boards
- Designs and constructs wetland replication and landscape restoration projects
- Prepares wildlife impact assessments, vernal pool certifications, and ecological research
- Provides technical review services for permitting agencies during preconstruction review of proposed projects

Renewable Energy & Design Services

- LEED Accredited Professional BC&D
 - Assists engineers and architects in green building design
 - Assists with siting of large scale wind turbines
 - Design of Low Impact Development and LEED Site Design elements, rain gardens, water quality swales, constructed wetland basins
-

Web Engineering Associates, Inc.**1990 to 1994**

Technical Director, Environmental Engineering Division

Norwell, Massachusetts

- Developed quality control systems for field operations and division operations
- Prepared specifications and design plans for soil and groundwater treatment systems including pump and treat, air sparging, vapor extraction, and bioremediation treatment systems
- Responsible for business development and profitability of division
- Lead person for large remedial projects
- Principal corporate liaison with federal, state, and local regulatory agencies

Dennison Environmental, Inc.**1988 to 1990**

Operations Manager, Environmental Management Division

Woburn, Massachusetts

- Established and managed Environmental Management Services Division
- Full profit and loss responsibility
- Managed technical, marketing, financial, personnel, and accounting aspects of operations
- Managed corporate quality control for data collection, field operations, and report preparation
- Established cooperative teams with specialty consulting firms including bioremediation system design
- Prepared hazardous material site assessments for locations in all New England states

U. S. Environment Corporation**1988 to 1989**

Project Manager/Environmental Scientist

Hudson, New Hampshire

- Managed hazardous waste site assessments for real estate transfers
- Supervised hazardous materials site remediation projects for on and off site treatment methods
- Prepared reports and was principal liaison with clients and attorneys
- Trained and managed entry level personnel

Lelito Environmental Consultants, LLC**1987 to 1988**

Population Ecologist & Wetlands Specialist

North Falmouth, Massachusetts

- Assisted in the review of the wildlife habitat regulations under MA Wetlands Protection Act - 310 CMR 10.60
- Delineated wetlands under the MA Wetlands Protection Act and local bylaws
- Designed and constructed vegetated wetland replication projects
- Primary technical writer for wetland resource area reports, wetland replication plans, and, wildlife habitat assessments
- Prepared reports and presented findings at public hearings with regulatory agencies

North Carolina State University**1985 to 1987**

Research Assistant

Raleigh, North Carolina

- Conducted independent research regarding the role of migratory songbirds in the dissemination of the Lyme disease agent *Borellia burgdorferi* to new disease loci
 - Contributed to the writing of grant proposals to the U.S. Army, National Science Foundation, and World Health Organization
 - Co-authored articles published in reviewed scientific journals
-

Entropy Environmentalists, Inc.

Air Pollution Analyst

1985 to 1987

Research Triangle Park, North Carolina

- Sampled and analyzed air pollutants from stationary sources including nitrous oxides, sulfates and chlorides by USEPA Methods 1-8
- Performed USEPA quality assurance audits
- Compiled Laboratory Procedures Manual for EPA testing methodologies (92 pages)

Harvard University, School of Public Health

Senior Research Assistant

1983 to 1985

Boston, Massachusetts

- Independently researched the ecology/epidemiology of Lyme disease
- Organized and conducted field activities for data collected at study sites
- Collaborated with the Department of Biology at Boston University with similar research projects regarding small mammal ecology
- Applied research findings to the development of disease agent control programs
- Co-authored publications in reviewed scientific journals

The Trustees of Reservations

Naturalist – Crane Beach Reservation

1983 to 1985

Ipswich, Massachusetts

- Independently investigated and researched colonial nesting piping plovers, least terns and common terns at the Crane Beach Reservation
- Provided educational signage and literature regarding beach ecology
- Implemented management methods to protect birds from predation and human impact

Training & Educational Speaking

- *Massachusetts Wetland Compliance (2010)* Halfmoon Seminars LLC., Eau Claire, Wisconsin. Wetland Preservation, Restoration, Creation and Enhancement.
- *Environmental Compliance in Massachusetts*. Webinar for the Property Managers of The Roman Catholic Archdiocese of Boston. (2009, 2010).
- *Invasive Species Control. (2010)*. Informational Seminar for regulatory agencies and public interest. Ipswich Town Hall with Bartlett Tree Company.
- *The Ecology of Invasive Species. (2011)*. North Shore Garden Club. Ipswich MA.
- Assist in science classes at Glen Urquhart School. Lectured on invasive species management, ecology, evolution. Conducted field trips and taught classes in vegetation sampling, identification, and basic population ecology.
- The Boston Architectural College. Assist with studio for The Fruitlands Museum in Harvard MA. Attend classroom lectures and field trips to study site. Discuss invasive plant impacts to landscape and ecological importance of site design considerations.

Certifications and Special Training

- Licensed Site Professional (LSP) Lic. No. 3452
 - LEED Accredited Professional (10342989)
 - Professional Wetland Scientist (PWS) Cert. No. 2250
 - Certified Ecologist, The Ecological Society of America (June 2002 – May 2007)
 - CERCLA 40 Hour Hazardous Materials Safety Training (OSHA 29 CFR 1910.120)
 - Confined Space Entry Training (OSHA 29 CFR 1910.146)
 - Management Training Workshop (Dun and Bradstreet)
 - Hazardous Materials Chemistry Seminar (University of Toledo)
-

Professional Memberships/Affiliations

- Affiliate to the Conservation Commission, Town of Ipswich (1995, 1996)
- National Ground Water Association (Active)
- Association of Ground Water Scientists and Engineers (Active)
- Massachusetts Association of Conservation Commissioners (Active)
- Association of Massachusetts Wetlands Scientists (Active)
- Society of Wetland Scientists (Active)

Community Service

- **Manager, World Computer Exchange, Solar Technologies Initiative.**
 - Five years of developing Computer Literacy programs at schools in Ejisu, Ghana.
 - Raised money to purchase and ship 100 desktop computers to Model School to populate two (2) computer classrooms.
 - Conduct training in basic computer operation, MS Word, MS Excel.
 - Continuing to develop fundraising and hardware acquisition to implement programs, training, and renewable energy systems.
 - Currently working to secure and ship solar panels to Ejisu Ghana to power the new Community Computer Center and Model School with solar energy.
 - **The Food Project, Boston MA.**
 - Designed containment barrier to isolate residually contaminated soils in greenhouse to allow The Food Project to work with local schools in the propagation of seeds for transplanting to their fields on the North Shore of Boston.
 - Volunteered time to provide permitting services to establish a new 7 acre agricultural field in Ipswich MA which expanded the regional footprint of The Food Project.
 - **The Town of Ipswich, MA**
 - Member of the Clark Pond Study Group to assess the current ecological health of local 20 acre freshwater pond.
 - Conduct a bathymetry study, water quality sampling, and document preparation.
 - Report results to Town in summary presentation and report.
 - **Cuvilly Arts and Earth Center, Ipswich MA**
 - Volunteered time to various projects on campus including permitting of new agricultural barn, permitting of additional out buildings, delineation of wetland resource areas.
 - Assist with the siting of wind turbine to generate electricity for campus and agricultural buildings
 - **Glen Urquhart School, Beverly MA**
 - Co-sponsored grant application with Audubon Society, Glen Urquhart School, and Endicott College to raise loosestrife beetles for release to invaded wetland areas. Successfully raised and released beetles to control purple loosestrife in local wetland areas. Program was funded for 5 consecutive years.
 - **Mentoring to High School and College Students**
 - Provide internship opportunities for high school and college students interested in environmental careers
 - Mentor and provide advice and guidance to students as they develop their course of study and college/university selection
-

Publications and Reports

Wetlands/Hydrology

- Madeja, J. B., M. J. DeRosa, 2010. Massachusetts Wetlands Compliance. Halfmoon Seminars, LLC., 754 Bartlett Avenue, Altoona, WI 54720
- DeRosa, M. J., C. H. Sham, E. Pritham, and E. Ettinger. 1992. Responses to the 1991 proposed revisions to the Federal Method for delineating jurisdictional wetland areas. Center for Energy and Environmental Studies, Boston University. January 1992. (33 pages).
- DeRosa, M. J. 1991. Protecting Wetlands: A case study of vernal pool protection. *Agora*. 5(3):28-29.
- DeRosa, M. J. 1990. Use of Vegetated Wetlands for the attenuation of stormwater runoff pollutants: Plant species communities and their capacity to attenuate pollutants. Center for Energy and Environmental Studies, Boston University. December, 1990. (23 pages).
- DeRosa, M. J. 1990. An Environmental Career. *Agora*. 4(3):24-25.
- DeRosa, M. J. 1989. Use of vegetated wetlands for the attenuation of stormwater runoff pollutants. Center for Energy and Environmental Studies. Boston University. April, 1989. (29 pages).
- DeRosa, M. J., and P. R. Lelito. 1988. Wildlife habitat and the Massachusetts Wetlands Protection Act Regulations. *MCLPA Newsletter*.

Ecology and Population Biology

- Adler, G.H., M.L. Wilson, and M.J. DeRosa. 1986. Influence of island area and isolation on population characteristics of (*Peromyscus leucopus*). *Journal of Mammalogy*. 67:406-409.
- Adler, G.H., M.L. Wilson, and M.J. DeRosa. 1987. Effects of adults on survival and recruitment of *Peromyscus leucopus*. *Canadian Journal of Zoology*. 65:2519-2523.
- DeRosa, M.J. 1982. Interspecific competition between red-winged and yellow-headed blackbirds during the breeding season. Senior Thesis, Department of Biology, University of Denver, Colorado.
- DeRosa, M.J. 1983. The 1983 tern progress report: Richard T. Crane, Jr., Memorial Reservation, Ipswich, Massachusetts. The Trustees of Reservations, Milton, Massachusetts.
- DeRosa, M.J. 1984. The 1984 tern progress report: Richard T. Crane, Jr., Memorial Reservation, Ipswich, Massachusetts. The Trustees of Reservations, Milton, Massachusetts.
- DeRosa, M.J. 1985. The 1985 tern progress report: Richard T. Crane, Jr., Memorial Reservation, Ipswich, Massachusetts. The Trustees of Reservations, Milton, Massachusetts.
- DeRosa, M.J. Microhabitat characteristics of least tern (*Sterna albafrons*) nest sites in Ipswich, Massachusetts.
- DeRosa, M. J. 1987. The evolution of interspecific avian brood parasitism in altricial birds. Department of Biology. North Carolina State University, Raleigh, NC
- Monahan, M.W., D.W. Cameron, and M.J. DeRosa. 1987. Male survivorship, female habitat selection, and nest success of red-winged blackbirds on the Lafayette Marsh, Boulder County, Colorado, in 1982: a final report. Denver Wildlife Research Center, Denver, Colorado.
- Wilson, M.L., M.J. DeRosa, J.F. Levine, and A. Spielman. 1985. Transport of deer tick (*Ixodes dammini*, Acari: Ixodidae) by fall migrating birds. In: Population Ecology of the Deer Tick, *Ixodes dammini*, by Mark L. Wilson, A Thesis Submitted to the Faculty of The Harvard School of Public Health. June 1985.
-

Various Topics

- DeRosa, M. J., and Paula A. Cutillo. 1993. Gaian Theory and Ecological Economics: Common ground for a sustainable economy. Center for Energy and Environmental Studies, Boston University. August 1993. (25 pages)
- DeRosa, M. J. 1990. Geochemistry of acid mine drainage and groundwater quality. Center for Energy and Environmental Studies. May 1990. (20 pages).
- DeRosa, M.J., M.E. Jackson, and J.F. Jones. 1986. Laboratory Procedures Manual. Entropy Environmentalists, Inc., Research Triangle Park, Raleigh, North Carolina (92 pages).
-