

TO: MANSFIELD INLAND WETLANDS AGENCY

FROM: ATTORNEY DAVID F. SHERWOOD

RE: INTERVENTION PURSUANT TO THE CONNECTICUT ENVIRONMENTAL PROTECTION ACT,
GENERAL STATUTES §§ 22a-14 to 22a-20

DATE: SEPTEMBER 6, 2016

MEMORANDUM

The purpose of this memorandum is to summarize the law regarding the duties and responsibilities that an inland wetlands and watercourses agency has upon the filing of a verified intervention petition by a citizen intervening in its proceedings under Section 22a-19 (a) of the Connecticut Environmental Protection Act.

In Nizzardo v. State Traffic Commission, 259 Conn. 131, 788 A.2d 1158 (2002), the court held that § 22a-19(a) permits a party to intervene in an administrative proceeding to raise environmental issues when two conditions are met. First, "§ 22a-19 grants standing to intervenors to raise only those environmental concerns that are within the jurisdiction of the particular administrative agency conducting the proceeding into which the party seeks to intervene." Nizzardo, 259 Conn. 148. Second, in order to qualify as a "verified pleading" under § 22a-19, an intervention petition must "contain specific factual allegations setting forth the environmental issues that the intervenor intends to raise." Id., 164-165. Additionally, "[t]he facts contained therein should be sufficient to allow the agency to determine from the face of the petition whether the intervention implicates an issue within the agency's jurisdiction." Id., 165.

An intervenor is limited to raising environmental issues only. In Mystic Marinelife Aquarium, Inc. v. Gill, 175 Conn. 483 (1978), Mystic Seaport intervened in the hearing before the commissioner of environmental protection on the Mystic Aquarium's permit application to erect a dock and other structures on the Mystic River. Mystic Seaport claimed that once having intervened, it was allowed to raise all issues, both environmental and non-environmental. The Supreme Court rejected its argument, holding that standing under the Environmental Protection Act is conferred only to protect the natural resources of the state from pollution or destruction. 175 Conn. 499.

"General Statutes § 22a-19 does not expand the jurisdictional authority of an administrative body acting pursuant to a separate act of title 22a to hear any and all environmental matters, but rather, limits an intervenor to the raising of those environmental matters which impact on the particular subject of the act pursuant to which the commission is acting." Connecticut Water Co. v. Beausoleil, 204 Conn. 38, 46, 526 A.2d 1329 (1987).

Section 22a-41(a) (2) of the General Statutes directs that in proceedings on an inland wetlands permit application, an inland wetlands and watercourses agency shall consider:

The applicant's purpose for, and any feasible and prudent alternatives to, the proposed regulated activity which alternatives would cause less or no environmental impact to wetlands or watercourses

In determining what is “feasible” or “prudent” in the context of a proceeding on a wetlands permit application, the statutory definitions contained in General Statutes § 22a-38 (17) and (18) must be considered:

“Feasible” means able to be constructed or implemented consistent with sound engineering principles

“Prudent” means economically and otherwise reasonable in light of the social benefits to be derived from the proposed regulated activity provided cost may be considered in deciding what is prudent and further provided a mere showing of expense will not necessarily mean an alternative is imprudent.

“The evidentiary burden imposed on the applicant [for an inland wetlands and watercourses permit] to demonstrate that its proposal is the only feasible and prudent alternative will ordinarily require an affirmative presentation to that effect. If only one alternative is presented, the inland wetlands agency can approve the application for a permit only if no other feasible and prudent alternatives exist. In practical terms, this will usually require that the applicant present evidence of more than one alternative to the local agency.” Tarullo v. Inland Wetlands and Watercourses Commission, 263 Conn. 572, 580, 821 A.2d 734 (2003).

It is sufficient for a commission to consider as many alternatives as necessary until the balance between economic development and wetlands and watercourses protection has been achieved. “[F]or a wetlands permit to issue, the local inland wetlands agency must determine that the alternative presented by the applicant is not only sound from an engineering standpoint but is also economically reasonable in light of the social benefits derived from the activity. . . . An alternative will be deemed to be a feasible and prudent alternative only if it meets both criteria.” Samperi v. Inland Wetlands Agency, 226 Conn. 579, 592–93, 595, 628 A.2d 1286 (1993). A developer also is not required to submit plans or drawings for all alternatives proposed. Red Hill Coalition, Inc. v. Conservation Commission, 212 Conn. 710, 726, 563 A.2d 1339 (1989).

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**TOWN OF MANSFIELD
INLAND WETLANDS AGENCY**

19


AUDREY P. BECK BUILDING
FOUR SOUTH EAGLEVILLE ROAD
STORRS, CT 06268
(860) 429-3330

February 4, 2016

The Keystone Companies, LLC
P. Anthony Giorgio, Ph.D.
Re: Ponde Place LLC
30 Dorset Crossing
Suite 600
Simsbury, CT 06070

Re: Mansfield IWA Approval
IWA File #1559

Dear Mr. Giorgio:

At a meeting held on 2/1/2016, the Mansfield Inland Wetlands Agency approved the following motion:

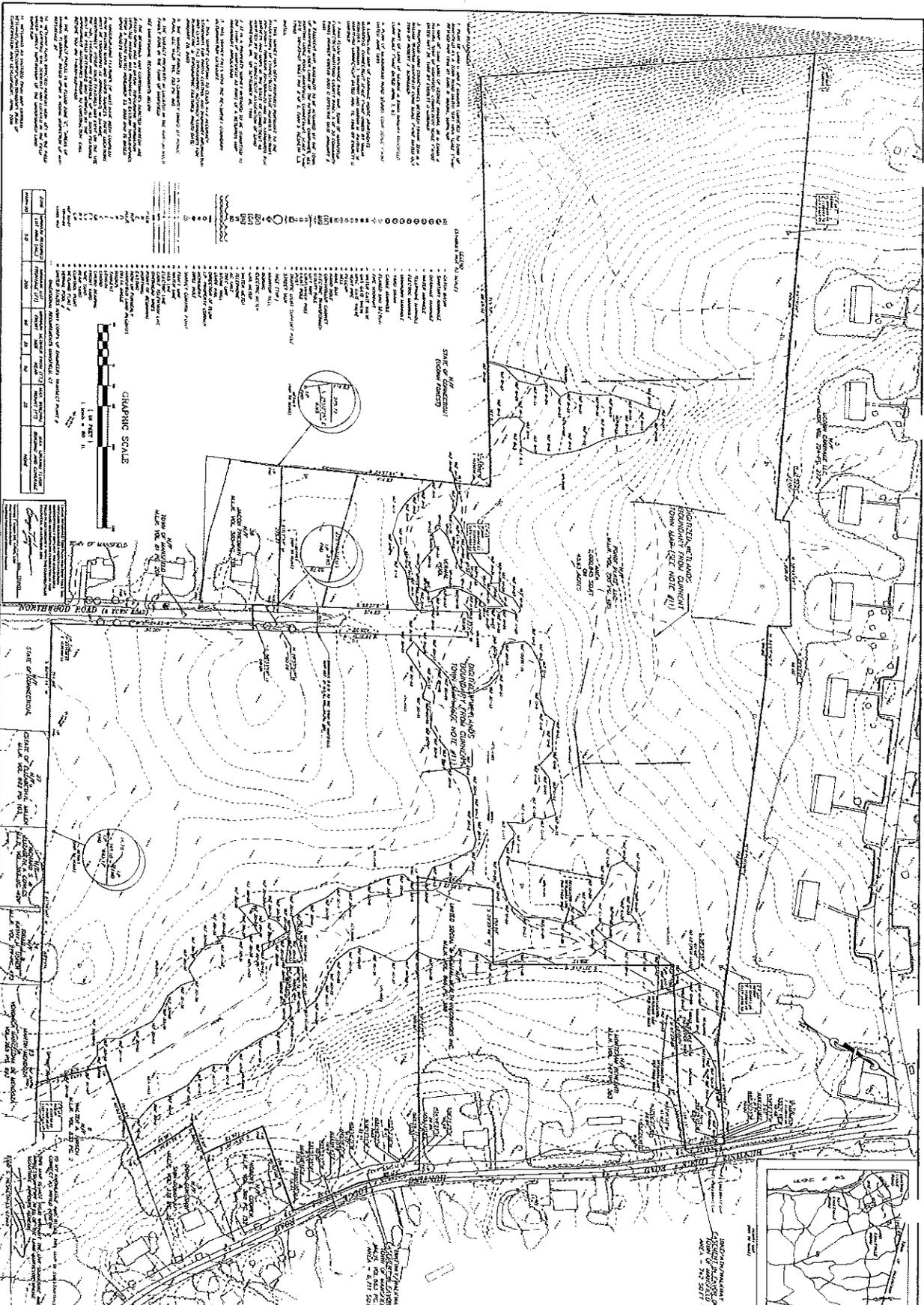
"to amend the Inland Wetlands and Water Courses Map, Mansfield, CT pursuant to section 15.0 of the Mansfield Inland Wetlands and Watercourses Regulations to reflect the wetland delineation on a parcel located on the west side of Hunting Lodge Road (assessor's parcel id 15.21.3) conducted by REMA Ecological Services and reviewed by Pietras Environmental Group and depicted on a map dated 2/8/2007 revised through 1/8/2016 (File # W1559)."

If you have any questions regarding this action, please call the Planning Office at 429-3330.

Very truly yours,



Vera S. Ward, Secretary
Mansfield Inland Wetlands Agency



PROPERTY SURVEY

WETLAND MAP AMENDMENT
ON PROPERTY OF
PONDE PLACE, LLC.
HUNTING LODGE ROAD
WANSFIELD, CONNECTICUT

Date: 03-07-08 Drawn by: EM Scale: AS SHOWN
Scale: 1" = 60' Created by: TSH Sheet No: 1 OF 2

| No. | Date | Description |
|-----|----------|-----------------------------------|
| 1 | 03-07-08 | WMS |
| 2 | 03-07-08 | WETLANDS / FILL LOCATED |
| 3 | 11-01-03 | WETLANDS MAP AMENDMENT/FILE |
| 4 | 01-28-04 | PERMITS RELATING TO PER FIELD WMS |

F.A.H. F. A. Hesketh & Associates, Inc.
6 Greenway Brook, East Granby, CT 06026
Civil & Traffic Engineers - Surveyors - Planners - Landscape Architects

Phone: (860) 653-8300
Fax: (860) 644-8000
e-mail: info@fah.com

1. This map was prepared in accordance with the provisions of the Wetlands Protection Act of 1970 (Public Act 71-249) and the Regulations thereunder (26 CFR 1.101-1.101-10). It is intended to show the location and extent of wetlands on the property described in the title block of this map. The wetlands shown on this map were determined by field inspection and analysis of aerial photographs and other available data. The wetlands shown on this map are not intended to be a final determination of wetlands for purposes of the Wetlands Protection Act. The wetlands shown on this map are not intended to be a final determination of wetlands for purposes of the Wetlands Protection Act. The wetlands shown on this map are not intended to be a final determination of wetlands for purposes of the Wetlands Protection Act.

2. The wetlands shown on this map were determined by field inspection and analysis of aerial photographs and other available data. The wetlands shown on this map are not intended to be a final determination of wetlands for purposes of the Wetlands Protection Act. The wetlands shown on this map are not intended to be a final determination of wetlands for purposes of the Wetlands Protection Act. The wetlands shown on this map are not intended to be a final determination of wetlands for purposes of the Wetlands Protection Act.

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TABLE A: SITE VISITS TO LODGES AT STORRS PROPERTY BY REMA ECOLOGICAL SERVICES. LLC

| DATE | REMA STAFF | ESTIMATED IN-FIELD HOURS | SITE VISIT TASKS |
|------------|------------|--------------------------------|--|
| 9/24/2015 | GTL | 1.5 | Initial walk through |
| 9/29/2015 | SNG | 2.5 | Baseline inventory begins |
| 10/1/2015 | GTL | 1 | Wetland delineations begin |
| 10/6/2015 | SNG | 2.5 | Baseline inventory |
| 10/9/2015 | GTL, SNG | 4 | Wetland delineations, baseline inventory |
| 10/10/2015 | GTL | 3 | Wetland delineations, baseline inventory |
| 10/13/2015 | GTL | 3.5 | Wetland delineations, baseline inventory |
| 10/15/2015 | SNG, GTL | 5 | Baseline inventory |
| 10/23/2015 | GTL | 2 | Baseline inventory |
| 11/6/2015 | GTL | 1.5 | Baseline inventory |
| 11/20/2015 | SNG | 2 | Wetland delineations (federal) |
| 11/23/2015 | SNG | 3 | Wetland delineations (federal), baseline inventory |
| 12/9/2015 | GTL | 1 | Baseline inventory |
| 1/4/2016 | GTL | 1 | Baseline inventory (<i>after site visit with Town staff</i>) |
| 1/29/2016 | GTL | 2 | Baseline inventory |
| 2/27/2016 | GTL | 1 | Baseline inventory (<i>after project coord. meeting</i>) |
| 3/24/2016 | GTL | 2.5 | Vernal pool survey, surface water sampling |
| 4/13/2016 | GTL | 2.5 | Vernal pool survey, baseline inventory |
| 4/26/2016 | SNG, GTL | 5 | Site visit with 3rd party reviewer |
| 5/12/2016 | SNG, GTL | 6 | Baseline inventory, surface water sampling |
| 5/18/2016 | GTL | 1 | Downstream (off-site) baseline inventory |
| 5/25/2016 | GTL | 3.5 | Baseline inventory, soil testing |
| 5/27/2016 | GTL | 2.5 | Vernal pool survey, soil testing, baseline inventory |
| 6/13/2016 | GTL | 1 | Vernal pool survey |
| | | 60.5 | |

SNG = Sigrun Gadwa; GTL = George Logan

GUY A. HESKETH, P. E.
Chief Engineer
Manager of Civil Design Group
F.A. Hesketh & Associates, Inc.

BACKGROUND

More than 28 years of civil and environmental engineering experience: civil engineering experience with residential and commercial development, and environmental engineering experience with projects ranging from site assessments and investigations to remediation of hazardous waste sites. Experience with subdivision design, site layout and design, stormwater management, on-site sewage disposal and sanitary sewerage. Experience in on-site construction and remediation oversight and management and site environmental investigations.

EDUCATION

Master of Science - Civil and Environmental Engineering
Brigham Young University, Provo, Utah (1988)

Bachelor of Science - Civil Engineering
Brigham Young University, Provo, Utah (1986)

Associate in Engineering - Ricks College, Rexburg, Idaho (1981)

PROFESSIONAL QUALIFICATIONS

Licensed Professional Engineer

- Connecticut 00019394
- Massachusetts 42955
- Rhode Island 7347
- New Hampshire 10376

Certified Soil Evaluator – Commonwealth of Massachusetts

PROFESSIONAL EXPERIENCE

F. A. Hesketh & Associates, Inc.
East Granby, Connecticut

2003 – Present Chief Engineer
1995 – Present Manager of Civil Design and Planning Group

Responsible for overseeing office design professionals in the planning and design of a wide range of private and public projects, including residential subdivisions, commercial and industrial sites, developments and municipal and state roadway design projects. Assisting clients in preparation of local wetlands and zoning permits, Connecticut Department of Energy & Environmental Protection permits, including Water Discharge Permits and Waste and Materials Management Permits.

General Permits for the Discharge of Stormwater (Industrial, Commercial, and Construction Activities), Analysis and design of stormwater and sanitary sewer systems for residential subdivisions, industrial and commercial site developments, and preparation of construction plans and documents for these projects.

GUY A. HESKETH
(Continued)
(2 of 2)

International Technologies Corporation
Cincinnati, Ohio

1992 – 1995 Project Engineer

Responsible for managing on-site remediation of hazardous waste sites. Responsibilities included: coordinating efforts between the client and federal and local government agencies, analytical laboratories, and remediation contractors. Responsibilities also included remediation oversight, preparation of contract change orders, review of results of laboratory analysis, coordinating sampling efforts, data management, and preparation of reports.

Dames & Moore
Cincinnati, Ohio

1990 – 1992 Project Engineer

Project Engineer responsible for environmental sample collection, preparation of environmental permit applications, remedial design and preparation of bid documents and design drawings and specifications.

Bingham Engineering
Salt Lake City, Utah

1988 – 1990 Junior Staff Engineer

Engineer responsible for performing environmental site audits, geotechnical analysis of soils and wastes, and hydraulic and hydrogeologic computer modeling.

F.A. Hesketh & Associates, Inc.
Bloomfield, Connecticut

1979 – 1986 Survey and Junior Engineer

Junior staff engineer responsible for analysis and design of stormwater management facilities utilizing TR-55 computer modeling, layout and design of residential subdivisions and commercial site developments. Performed site soil analysis relating to the layout and design of on-site sewage disposal systems.

Survey party crew member. Performed boundary and topographic surveys, construction stakeout and generation of base mapping. Performed site soil analysis relating to the layout and design of on-site sewage disposal systems.

PROFESSIONAL RESUME

George T. Logan, MS, PWS, CSE

Principal Environmental Scientist/Senior Ecologist

EDUCATION:

M.S. Natural Resources, *Wildlife Management & Conservation Biology*,
University of Rhode Island, Kingston, R.I., 1989.

B.S. Natural Resources, *Wildlife Management & Wetlands Ecology*,
University of Rhode Island, Kingston, R.I., 1986.

Continuing Education

The Transportation Project Development Process: Training in the
PennDOT Environmental Impact Statement Handbook, Harrisburg,
PA, January 1994

Rapid Bioassessment Protocols of Aquatic Systems (EPA Protocols),
Wetland Training Institute, Williamsport, PA, August 3-6, 1993

CERTIFICICATIONS: (current)

Certified Senior Ecologist (2014) - The Ecological Society of America
Certified Professional Wetland Scientist (No. 581) (1994) - Society of
Wetland Scientists

Registered Soil Scientist (1989) - Society of Soil Scientists of Southern
New England

Certified Associate Wildlife Biologist (1989) - The Wildlife Society

EXPERIENCE:

Mr. Logan is the Co-Owner and *Principal Environmental Scientist* and *Senior Ecologist* for Rema Ecological Services, LLC. He specializes in tidal and inland wetland delineations and evaluation, permitting, wetland mitigation design, implementation and monitoring, and the preparation of environmental compliance documents in accordance with national (NEPA), state (e.g., CEPA, MEPA), and local criteria and guidelines. He also provides design, construction supervision and implementation for a wide variety of habitat restoration and enhancement projects. Mr. Logan performs watershed-wide and surface water quality evaluations and provides guidance in the design of stormwater Best Management Practices (BMPs), including stormwater wetlands and bioretention basins, as well as for LID (low impact development) practices.

Mr. Logan has nearly 27 years of experience as a wildlife biologist/ecologist conducting wildlife habitat evaluations and focused avian, mammalian, invertebrate, and herpetofaunal surveys using both active and passive methods. He frequently conducts targeted surveys for sensitive, rare, and "listed" species (i.e. endangered, threatened, special concern), and aquatic biosurveys to assess the biodiversity and biotic health of ponds, lakes, vernal pools, rivers, and streams. Mr. Logan has extensive experience in performing herpetological surveys, including over 185 vernal pool investigations and evaluations.

Mr. Logan has participated in nearly 2,400 individual projects in New England and the Mid-Atlantic States and in 158 of 169 municipalities in Connecticut.



Professional Resume: *(continued)*

George T. Logan, MS, PWS, CSE

PROFESSIONAL AFFILIATIONS:

Society of Soil Scientists of Southern New England
Society of Wetland Scientists
Association of Massachusetts Wetland Scientists
Ecological Society of America
The American Birding Association
The Wildlife Society
Soil & Water Conservation Society
Connecticut Association of Wetland Scientists (CAWS) *(Past-President,
Charter member)*

PUBLICATIONS: *(selected)*

Logan, G.T. & S.N. Gadwa. 1999. Quinnipiac River Watershed Association Stream Study. Water Quality in the Quinnipiac River. Proceedings of a Symposium on the Impact of Nonpoint Source Pollution in the Quinnipiac River Watershed, pp. 66-70.

Logan, G.T. & S.N. Gadwa. 1998. Stream Biosurveys: *A Primer*. Quinnipiac River Watershed Association Educational Series for the Adopt-the-River Programs.

Pawlak, E.M. & G.T. Logan. 1996. Town of Cromwell Wetland Evaluation Project. Connecticut Association of Conservation and Inland Wetlands Commissions. *The Habitat*, Vol. 10:1

Logan, G.T., F.B. Titlow & D.G. Schall. 1995. The Scientific Basis for Protecting Buffer Zones. Proceedings of the 16th Annual Meeting of the Society of Wetland Scientists.

Pawlak, E.M. & G.T. Logan. 1995. Town of Cromwell Wetland Buffer Zone Designation Methodology. Proceedings of the 16th Annual Meeting of the Society of Wetland Scientists.

Logan, G.T., J.H. Brown, Jr., T.P. Husband & M.C. Nicholson. 1994. Conservation Biology of the Cretan Agrimi (*Capra aegagrus cretensis*). *Biologia Gallo-Hellenica*, Vol. 21, pp. 51-57.

Nicholson, M.C., T.P. Husband, J.H. Brown, Jr. and G.T. Logan. 1994. Implications of behavior on the management of the Cretan Agrimi (*Capra aegagrus cretensis*). *Biologia Gallo-Hellenica*, Vol. 21, pp. 45-50.

WORKSHOPS & CONFERENCES: *(selected)*

Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region. Corps Training Workshop. May 2011. *(sponsor, participant)*

Vernal Pools: *The Jewels of the Forest*. Technical Workshop for the Town of Southwick Conservation Commission. January 2005. *(Guest Lecturer)*

Professional Resume: *(continued)*

George T. Logan, MS, PWS, CSE

WORKSHOPS & CONFERENCES: *(selected)*

The Importance of Habitat Edges. Riverside Landscaping Conference. The Rivers Alliance of Connecticut. June 1998. *(Guest Lecturer)*

Riparian Buffer Function, Performance & Limitations. Urban Riparian Buffers Conference & Technical Training Session. April 1999. *(Guest Lecturer)*

Sedimentation and Erosion Control Review Session. USDA. Natural Resource Conservation Service and CPESC (Certified Professionals in Erosion Control), Concord, NH. September 2001.

Buffer Strips as Storm Water Quality Controls. EnviroExpo, Boston. May 1999. *(Guest Speaker)*

Identifying Wetland Soils, Fauna and Flora. Municipal Inland Wetland Staff Technical Workshops. June 1999. *(Guest Speaker)*

Water Quality in the Quinnipiac River: A Symposium on the Impact of Non Point Source Pollution in the Quinnipiac River Watershed. November 1998. *(Presenter)*

Our Hidden Wetlands: Vernal Pools in Connecticut. Co-sponsored by CT DEP and the Center for Coastal and Watershed Systems. November 1997 and January 1998 *(Workshop Leader)*

Aquatic Invertebrate & Stream Ecology Workshop. Quinnipiac River Watershed Association Workshop Series. September 1997, May 1998, June 1999, January 2000 *(Workshop Leader)*

The Massachusetts Association of Conservation Commissions Third Annual Conference: Wetland Buffer Zones, March 1996 *(Guest Lecturer)*

16th Annual Conference of the Society of Wetland Scientists: Wetland Understanding, Wetland Education, May 1995 *(Presenter)*

Quinnipiac River Watershed Association Forum on Non-Point Pollution: Significance of Wetlands and Wetland Buffers, October 1992 *(Guest Lecturer)*

The Massachusetts Association of Conservation Commissions Second Annual Conference, April 1995 *(Guest Lecturer)*

The Society of Soil Scientists of Southern New England Riparian Buffer Zone Conference, November 1994 *(Presenter)*

Professional Resume: *(continued)*

George T. Logan, MS, PWS, CSE

SUPPLEMENTARY INFORMATION:

1996 to present

Rema Ecological Services, LLC
Principal Environmental Scientist/Ecologist, Co-Owner

- Founded the company to provide natural resources management, environmental planning, compliance and permitting services, and client advocacy throughout the Northeast.
- Has participated in over 1,900 individual projects since the company's inception, including five gas-fired, combined-cycle power plant projects, numerous municipal projects, including over 20 new schools, several higher education projects, numerous wetland replacement projects, several new golf courses, and many large residential, industrial and commercial endeavors.
- Was the Interim Environmental Planner for the Town of Waterford, Connecticut, during a ten-month tenure. Responsibilities included providing procedural and technical support to the town's Conservation Commission (a.k.a. Inland Wetlands and Watercourses Agency), and working closely with Planning Department staff.

1994 to 1996

Fugro East, Inc. *(Currently AECOM)*
Senior Project Manager/Environmental Scientist

- Office Manager for the firm's Connecticut office, responsible for day-to-day operations, marketing, and business development.
- Wetland delineations in accordance with state and federal criteria.
- Natural resource inventories of upland, wetland and aquatic ecosystems, specializing in wildlife habitat assessments.
- Preparation of environmental compliance documentation for over 100 projects including large-scale commercial development.

1993 to 1994

A.D. Marble & Company, Inc.
Senior Environmental Planner/Wildlife Biologist

- Participated in the management of major transportation improvement projects and in the preparation of environmental documents in accordance with the National Environmental Policy Act (NEPA) while continuing involvement in the collection of baseline field data.
- Application of the Pennsylvania Department of Environmental Resources (PADER) hierarchical methodology for the selection of suitable wetland replacement sites.
- Field verification of Threatened, Endangered or Special Concern species listed by the Pennsylvania Game Commission.
- Wetland boundary identification in accordance with the unified PADER and U.S. Army Corps of Engineers (USACOE) methodology.
- Participated in nearly 30 projects, mostly for major transportation corridors, such as the rehabilitation of the I-95 corridor in PA.

Professional Resume: (continued)

George T. Logan, MS, PWS, CSE

SUPPLEMENTARY INFORMATION (continued):

1989 to 1993

Soil Science & Environmental Services, Inc. Wildlife Biologist-Ecologist & Soil Scientist

- Project Manager responsible for field operations and report preparation for nearly 300 individual projects in over 75 towns in New England, including one town-wide wetland mapping, inventory and evaluation project (Town of Cromwell).
- Wetland boundary delineation according to state and federal criteria (e.g., Connecticut and Massachusetts Statutes, U.S. Army Corps of Engineers methodologies).
- Ecosystem analyses and biological inventories of upland areas, tidal and inland wetlands, estuaries, streams, rivers, ponds and lakes.
- Environmental impact evaluations, including site plan review, analyses of proposed impacts and design of mitigation strategies.
- Local, state and federal permitting for impacts to natural resources, including wetlands.
- Implementation of water quality monitoring programs for streams and rivers.
- Design, construction supervision, and monitoring of wetland enhancement, restoration and creation.
- Aquatic biosurveys of streams and rivers utilizing standardized methods (e.g. EPA Rapid Bioassessment Protocols).
- Detailed faunal surveys and censuses using both active and passive methods (e.g. direct and indirect observation, live-trapping, point count avian censuses, pellet counts, etc.).
- Expert witness testimony for court and administrative proceedings.

1988 to 1989

Independent Contracts Soil & Wetland Scientist

- Summer of 1988: Was hired by the Town of Canton, CT to identify, inventory, and evaluate wetlands and watercourses within the entire municipality. Was responsible for amending the municipality's *Official Wetland and Watercourses Map*.
- Spring of 1988: Was hired by the Connecticut Chapter of the Nature Conservancy to determine and report on the historic expansion of invasive plants (*Phragmites australis*, *Lythrum salicaria*) on eight TWC preserves. Scope included site visits, remote sensing using archived aerial photographs, and report.

TECHNICAL REPORTS:

Mr. Logan has completed several hundred comprehensive studies (e.g. Wetlands Assessments, Ecological Evaluations, Environmental Impact Analyses/Statements, Vernal Pool Investigations, Listed-Species Surveys & Management Plans, aquatic vegetation surveys, and a variety of other specialized studies. A representative list of these technical reports can be provided upon request.

PROFESSIONAL RESUME

Sigrun N. Gadwa, MS, PWS

Principal Ecologist

EDUCATION:

M.S., Plant Ecology, Natural Resources, University of Connecticut, Storrs, CT, 1997.

B.A., Biology, Brown University, Providence, R.I., 1975.

Continuing Education

16 credit hours in Soil Science and Geology, 1993 – 2001
University of Connecticut, Storrs

Graduate course in Phycology, Pan American University, Brownsville, Texas, 1982

Arboriculture course, Quinnipiac College, Hamden, CT, 1984

Five Plant Pathology courses, Cook College, Rutgers University, New Brunswick, N. J. 1978 - 1979

Series of CT DEEP training workshops: Rapid Bioassessment techniques, & Stream Ecology Training Workshops. Bethany Laboratory & Field Sites. 1996 and 1997.

CERTIFICATIONS:

Registered Soil Scientist,
Society of Soil Scientists of Southern New England
Certified Professional Wetland Scientist
Society of Wetland Scientists

EXPERIENCE:

An ecologist specializing in the assessment, monitoring, and delineation of wetlands and water resources, in assessment and control of invasive plant species, in botanical and habitat inventories of ecological communities, listed plants, and turtle populations. Nearly twenty five years of experience in site plan reviews, water quality testing and data analysis, preparation of comprehensive mitigation plans and habitat restoration/management plans, open space acquisition planning, highway alternatives analyses, delineation of jurisdictional wetland boundaries (CT and U.S. Army Corps of Engineers), wetland functional assessment & impact analyses, permitting, & low-impact landscaping/ IPM plans. Specialties in stream bio-assessments & wetland mitigation design.

PROFESSIONAL AFFILIATIONS:

Connecticut Botanical Society (Board of Directors)
Long Island Native Plant Initiative (Advisory Board)
Connecticut Invasive Plant Working Group (CIPWG)
Connecticut Association of Wetland Scientists
Society of Soil Scientists of Southern New England
Connecticut Ornithological Society
Ecological Society of America



Professional Resume: (continued)

Sigrun N. Gadwa, M.S., PWS

- PUBLICATIONS:** Lefor, M.W. Barklay, J.S. Cooke, R.S. Craig, S.N. Gadwa, T.S. Murray, April 1990. *Annotated Bibliography for Wetland Mitigation*. M.W.
- P.H. Rich & R.S. Siegel. Dept. Civil Engineering. Joint Highway Research Council. Report NO. FHWA-CYT-RD-JH87-6-FAB-90-2. 112 pp.
- August 1990. *Patterns of Herb Layer Species Association*. In Lefor, M.W. et al *Wetland Mitigation: Interim Report* No. CT-RD-JHR-90-8, The Transportation Institute, Storrs, Conn. 97 pp.
1994. *Forests*. In Chesanow et al. *Trails*. The Cheshire Land Trust and the Cheshire Environment Commission, Cheshire, CT 96 pp.
- May 1995. *Wetland Mitigation: Botany*. Volume 1 of 6. Lefor, M.W. and S.N. Gadwa. Report No. JR95-241. Dept. Civil Engineering, Joint Highway Research Council, Transportation Institute, Storrs, Conn. 259 pp.
- River Resources Education Series, Quinnipiac River Watershed Association, Meriden, CT.
- | | |
|-------------|--|
| May 1995 | <i>New Haven Oysters</i> . |
| June 1996 | <i>What Good are Streamside Woods</i> |
| August 1996 | <i>Taking a Close Look at Streamside Woods</i> |
| June 1997 | <i>Foraging in the Quinnipiac Estuary</i> |
| March 1998 | <i>Stream Biosurveys</i> (G.T. Logan & S. Gadwa) |
| Sept. 2000 | <i>Muddy Waters</i> |
- December 1997. *Plant Colonization Processes and Patterns along Shorelines of Man-made Mitigation Basins in Relation to Reproductive and Life History Traits*. MS Thesis. Dept. Ecology & Evolutionary Biology. Univ. of Connecticut, Storrs, CT. 181 pp.
1999. Logan, G.T. & S.N. Gadwa. *Quinnipiac River Watershed Association Stream Study*. Water Quality in the Quinnipiac River. Proceedings of a Symposium on the Impact of Nonpoint Source Pollution in the Quinnipiac River Watershed, pp. 66-70.
- October 2000. *A Report on the Water Quality of the Quinnipiac River*. M. Tyrell, C. Cappannari, D. Galt, S. Gadwa, L. MacMillan, R. Walters. Report to the Steering Committee of the Quinnipiac River Watershed Partnership. Q.R.W.P. Water Quality Workgroup, New Haven, CT. 19 pp.
- Winter 2003. *Management of Invasive Plants: On-Site Open Space Management*. The Habitat 15(2):3-4. Connecticut Association of Conservation and Inland Wetland Commissions, Inc.
- Spring 2003. *Management of Invasive Plants: Protecting Open Space and Wetlands, Tools for Land Use Boards and Town Staff*. The Habitat 15(3):4-5. Connecticut Association of Conservation and Inland Wetland Commissions, Inc.

Professional Resume: *(continued)*

Sigrun N. Gadwa, MS, PWS

PUBLICATIONS:

July 2003. Interpreting Quinnipiac Songbird Surveys: Effects of Landscape Setting on Avian Community Composition. *The Connecticut Warbler*. 23(3):81-114.

June 2004. *Connecticut Turtles of Special Concern*. Quinnipiac River Watershed Association. 4pp. (with Tony Ianello)

Fall 2004, revised Fall 2005. S. N. Gadwa. *Preliminary Assessment of the Habitat & Historic Resources in North Cheshire, West of Route 10 & recommended Protection Measures*. The Cheshire Land Trust & the Habitat Workgroup of the Watershed Partnership.

October 2011 S. N. Gadwa & G.T. Logan. *The Scientific Basis for Wetland & Watercourse Buffer Zones*. 23 pp. White Paper. Rema Ecological Services, LLC.

WORKSHOPS & CONFERENCES *(selected):*

ESA Mid-Atlantic Chapter Symposium, Blacksburg Virginia
Lessons for Mitigation Design from Shoreline Seedling Colonization
Patterns April 12-14, 2012. *(Poster Presentation)*

New England Invasive Plant Summit, Framingham Massachusetts:
Wetlands permitting – a potentially powerful tool to control invasive
plants. September 19-20, 2003. *(Poster Presentation)*.

Freshwater Mussel Workshop. New Hampshire Department of
Environmental Conservation. August 2004.

Sedimentation and Erosion Control Review Session. USDA Natural
Resource Conservation Service and CPESC (Certified Professionals in
Erosion Control), Concord, NH, September, 2001.

Riparian Buffer Function, Performance & Limitations. Urban Riparian
Buffers Conference & Technical Training Session. April 1999.

Environmentally Sensitive Development along the Ten Mile River.
Riverside Landscaping Conference. The Rivers Alliance of Connecticut.
June 1998. *(Guest Lecturer)*

Water Quality in the Quinnipiac River: A Symposium on the Impact of
Non Point Source Pollution in the Quinnipiac River Watershed.
November 1998. *(Presenter)*

Our Hidden Wetlands: Vernal Pools in Connecticut. Co-sponsored by CT
DEP & Center for Coastal & Watershed Systems. November. 1997

Instructor: Quinnipiac River Watershed Association Workshop Series.
September 1997, May 1998, June 1999, January 2000.

Professional Resume: *(continued)*

Sigrun N. Gadwa, MS, PWS

EMPLOYMENT HISTORY:

1999 to present

Rema Ecological Services, LLC

(an environmental science collaborative in Manchester, CT)

Principal Ecologist/Wetland Scientist

Ecological fieldwork and reporting: vegetation, invasives, and wetland inventories, site plan reviews; listed plant species searches, baseline biological data collection, wetland impacts assessment, vernal pool surveys, wildlife habitat monitoring, stream bio-assessments (EPA family level macro-invertebrate RBA protocol); preparing wetland restoration & mitigation plans and low impact landscaping plans; water quality monitoring; wetland delineation & boundary verification (ACOE plots); sedimentation & erosion inspections; over 140 projects.

Contractor for **CTDEP Wildlife Division**: vegetation and wetland inventories & mapping of large Wildlife Management Areas (WMAs). For the **Quinnipiac River Watershed Association**, developed purple loosestrife biological control program, and advisor for turtle monitoring program. Active in the Habitat Work Group of the **Watershed Partnership**, directed project to identify and document Quinnipiac watershed habitats in need of protection or restoration 1998 to 2003.

2003 to present

Ships Hole Farm Partnership, Smithtown, Long Island, NY
Partner

Responsible for vegetation management & invasives control; growing seed and nursery stock of native species (small scale at present). Assisting with other farm management.

1995 to 1999

Quinnipiac River Watershed Association, Meriden, CT
Executive Director and Staff Scientist

Development & coordination of volunteer monitoring program, including stream bioassessments, turbidity monitoring, and bird and wildlife surveys; site plan reviews of projects impacting the watershed; writing testimony, publicity, educational materials, and grant reports and applications; organizing canoe trips, ecology workshops, and clean-ups; liaison with town and state officials.

1991 to 1995

De Leuw-Cather, Inc., East Haven, CT
Environmental Planner/Field Ecologist

Field data collection, analysis, and report preparation, primarily for large highway projects; specialties included listed plant searches, wetland functional assessments, mitigation design, vegetation monitoring, & wetland delineation (ACOE method).

Professional Resume: *(continued)*

Sigrun N. Gadwa, MS, PWS

EMPLOYMENT HISTORY:

(continued)

1987 to 1991

**University of Connecticut Department of Civil Engineering
Storrs, CT**

Wetlands Researcher

Part of an interdisciplinary team, studying man-made replication wetlands and natural reference wetlands. Took part in research design; collected vegetation, soils, & hydrologic data; literature searches; data analysis. Research used in producing a wetlands mitigation-related manual for the Connecticut Department of Transportation and for master's thesis.

1974 to 1975

Brown University, Teaching Assistant, Plant Systematics

1968 to 1975

Long Island Nature Conservancy, Stewardship Volunteer

Nature trail development & maintenance, botanical inventories, wrote preserve descriptions & self-guided nature trail brochures.