

Section 4 Technical Capacity

1.0 PRIOR EXPERIENCE

The project team assembled to complete the Revised Oakfield Wind Project has experience in several utility-scale wind power projects, including electric collection and transmission lines. The project managers for Evergreen Wind Power II, LLC have successfully completed wind power projects in Hawaii, New York, Utah and Maine, and are in the construction phase of another project in Vermont. In Maine, the 42-megawatt (MW) Mars Hill Project, operational since March 2007, is the first large scale wind project (i.e., >10 MW) in Maine. The 57-MW Stetson Wind Project in Washington County began operation in January 2009. With the 26-MW Stetson II project completed in April 2010, the combined 83-MW Stetson project is the second largest operating wind project in New England. Other projects that First Wind and its subsidiaries have operating or under development can be found at www.firstwind.com/projects.

The project development team consists of Stantec Consulting (natural resource assessments, permitting); DeLuca Hoffman (civil design); RLC Engineering (electrical engineering design); Terrence DeWan Associates (visual impact analysis); Bodwell EnviroAcoustics LLC (sound assessment); TRC/Northeast Cultural Resources (prehistoric archaeological resources); Independent Archeological Consulting (historic archaeological resources), Public Archeology Lab (historic architectural resources); Albert Frick Associates, Inc. (soils); Integrated Forest Management (outreach); and Verrill-Dana and Bernstein-Shur (legal counsel). Each consultant was chosen because of their expertise and experience in their respective disciplines.

2.0 PERSONNEL

Resumes for key staff from Evergreen Wind Power II, LLC and the project team are included in Appendix 4-1.

Appendix 4-1



The First Wind Executive Team

Paul J. Gaynor

**President,
Chief Executive Officer**

Executive Summary

Paul J. Gaynor is responsible for the strategic direction and day-to-day management of First Wind projects in North America.

Career Highlights

Mr. Gaynor has more than 20 years of experience in the energy field, encompassing leadership and finance roles in the energy, power, and pipeline sectors. In addition, he has been engaged in several landmark energy and power financings across the globe.

Mr. Gaynor was formerly Chief Financial Officer of Noble Power Assets, LLC, a private equity-backed power acquisition company. Prior to that, he was the Senior Vice President and Chief Development Officer of Singapore Power Group (SP) and Chief Operating Officer of SP International (SPI).

Mr. Gaynor led a comprehensive restructuring of SP and oversaw project development and asset management at SPI. He joined SP as Senior Vice President and Chief Financial Officer, where he was responsible for all financial matters, including leading the initial public offering and introducing world-class finance practices into the organization.

From 1998 to 2000, Mr. Gaynor was the Senior Vice President and Chief Financial Officer of PSG International, a pipeline development company owned by GE Capital and Bechtel Enterprises. PSG developed, financed, built, owned, and operated gas, oil, and water pipeline systems across the globe. Mr. Gaynor assisted in the establishment of the company and oversaw financial matters. He was also responsible for acquiring a 32.5% interest in a natural gas system in Mexico and subsequently sat on the board of directors. In addition, he led the fundraising process for the \$3 billion TransCaspian Gas Pipeline project in Central Asia.

Before PSG, Mr. Gaynor was Vice President and Manager of Asia Pacific operations for GE Capital's Structured Finance Group (SFG). He was responsible for deal analysis, execution, and internal approvals, leading a team that evaluated over 20 power projects between 1994 and 1998. Mr. Gaynor also led the Group's \$400 million investment in Paiton Energy and Quezon Power, and he received internal approval for over \$1 billion of projects. He also worked at GE Capital SFG in the U.S. before moving to Asia, and he sold power plants for GE Power Systems prior to attending business school.

Education and Credentials

- Master of Business Administration, University of Chicago Graduate School of Business
- Bachelor of Science, Mechanical Engineering, Worcester Polytechnic Institute



Kurt Adams

**Executive Vice President,
Chief Development Officer**

Executive Summary

Kurt Adams oversees the development of all First Wind's projects nationwide.

Career Highlights

Prior to joining First Wind, Mr. Adams was Chairman of the Maine Public Utilities Commission from 2005 to 2008, where he served as Maine's primary regulator of transmission infrastructure. While chairman, he served as a member of the New England Conference of Public Utilities Commissions, the National Association of Regulatory Utility Commissions ("NARUC"), the NARUC Electricity Committee, the NARUC Competitive Procurement Committee and as Maine's representative on the New England State Committee on Electricity.

Prior to his position with the Maine PUC, Mr. Adams was Governor John Baldacci's chief legal counsel from 2003 to 2005.

Before joining the Governor's staff, Mr. Adams was a partner in the law firm of Bernstein, Shur, Sawyer & Nelson in Portland, Maine.

Education and Credentials

- Juris Doctor from the University of Maine School of Law
- M.A. in International Affairs from The George Washington University
- B.A. Skidmore College



Michael Alvarez
Executive Vice President,
Chief Operating Officer

Executive Summary

Michael Alvarez is responsible for First Wind operations and asset management, as well as the firm's commercial transactions and mergers and acquisitions.

Career Highlights

Mr. Alvarez joined First Wind from Edison International, where he was the Vice President of Strategic Planning. Prior to Edison, he served as Executive Vice President, Chief Financial Officer, and General Counsel at Nexant Inc., a privately held San Francisco-based company that provides software and advisory services to the global energy industry.

Before Nexant, Mr. Alvarez was at PSG International in London, where he managed the development of the \$2.3 billion, 1,700-kilometer TransCaspian natural gas pipeline.

Previously, he was a senior executive at Kenetech Energy Systems Inc., successfully managing the development of electric generation projects, as well as a global operating portfolio of wind, gas, biomass, and oil-fired projects.

Mr. Alvarez began his career with the San Francisco law firm of Thelen, Marrin, Johnson & Bridges (now Thelen, Reid & Priest), where he was a partner specializing in commercial and project finance.

Education and Credentials

- Juris Doctor, University of Virginia
- Bachelor of Art, Economics, University of Virginia
- Trustee, California State Parks Foundation
- Member of the Bar of California, New York and Washington, D.C.



Lori Erickson
Senior Vice President
Human Resources

Executive Summary

Lori Erickson has overall responsibility for strategic direction of human capital needs for First Wind's workforce of more than 150 employees.

Career Highlights

Ms. Erickson joined First Wind in 2008, bringing over 20 years of experience in driving the HR agenda of technology and services companies of varying size and scope. Prior to First Wind, Ms. Erickson served for 4 years as the Senior Vice President of Global Human Resources at Monster Worldwide. During her tenure with Monster her focus was on providing the company with the capabilities to attract, develop, and retain the highest caliber talent in the industry and to drive organizational effectiveness and employee engagement.

Prior to Monster Worldwide, Ms. Erickson was Senior Vice President of Human Resources for StorageNetworks where she provided strategic HR direction for the emerging company during a period of rapid organic growth. She has also held a variety of Human Resource roles at Honeywell Bull, Computervision, I-Cube/Razorfish and Shiva.

Education and Credentials

- Bachelor of Science, Computer Science and Business Management, Franklin Pierce College



Carol J. Grant
Senior Vice President,
External Affairs

Executive Summary

Carol J. Grant is responsible for external affairs at First Wind, including public affairs, public relations and communications.

Career Highlights

Ms. Grant served as Chief of Operations for Mayor David Cicilline in the City of Providence from 2003 to 2007, leading ten departments and two strategic initiatives in the areas of neighborhood services and economic growth. She was previously vice president of human resources for Textron. From 1983 to 1997, Ms. Grant held executive positions in law, external affairs, and operations for NYNEX, including leadership of the entire business in Rhode Island. She also served as the founding Chair of the Rhode Island Airport Corporation during the period that the quasi-public organization was created and the new terminal at T.F. Green Airport was built.

Ms. Grant has held a wide variety of civic leadership roles, including Chair of the Greater Providence Chamber of Commerce and membership on the Governor's Economic Policy Council and the Board of the Rhode Island Foundation.

Education and Credentials

- Juris Doctor from University of Michigan School of Law
- B.A. from University of Missouri
- HONORS: Athena Award, the New England Council's Women in Leadership Award

Mr. Barnes is a recognized expert in environmental regulations and permitting, with more than 20 years experience in the regulatory field. As a former Deputy Commissioner of the Maine Department of Environmental Protection (Maine DEP), Mr. Barnes offers Stantec clients unparalleled practical expertise in evaluating critical permitting issues for projects, developing permit applications, conducting negotiations with state and federal agencies, and assisting in expert witness testimony preparation.

Mr. Barnes' 15 years of experience at the Maine DEP included extensive work in enforcement, policy analysis, compliance monitoring, policy development and implementation, licensing, rulemaking, leadership development, and organizational change. In addition to his regulatory experience, he served on the Governor's Alternative Dispute Resolution Task Force, as Acting Chief Counsel to Governor King and was a Leadership Instructor for the Maine Management Institute, building professional leaders and managers in state government.

PROFESSIONAL EXPERIENCE

- Stantec Consulting. 2007-present. Senior Project Manager.
- Woodlot Alternatives, Inc. 2006-2007. Project Manager.
- Maine DEP. 1998-2003. Deputy Commissioner.
- Office of Governor Angus S. King, Jr., Maine. 2002. Acting Chief Legal Counsel.
- Maine DEP. 1995-1998. Director, Policy Development & Implementation.
- Maine DEP. 1990-1995. Director, Enforcement and Procedures.
- Maine DEP. 1988-1990. Chief Policy Analyst.
- Sherman, Sandy and Lee. 1987-1988. Associate Attorney.

EDUCATION

JD, University of Maine School of Law, Portland, Maine, 1986

BA, Sociology, University of Southern Maine, Portland, Maine, 1983

REGISTRATIONS

Attorney #3347, Maine State Bar Association

PROFESSIONAL ASSOCIATIONS

Member, Maine Management Service

Board of Directors, Environmental & Energy Technology Council of Maine

PROJECT EXPERIENCE

Facility Siting and Permitting

Bangor Landing Coal Tar Cap, Bangor, Maine

Senior Project Manager responsible for overseeing preparation of environmental surveys and a Section 7 biological assessment for salmon and shortnosed sturgeon. These work products were prepared for applications to the Maine Department of Environmental Protection and the U.S. Army Corps of Engineers for dredging and capping coal tar deposits in the Penobscot River. He provided regulatory contact and strategic management of the permitting and natural resources agency review. This project was completed in late-2009.

Brooke E. Barnes

Senior Project Manager, Regulatory Specialist

Line 56 Project, Maine

Senior Project Manager responsible for completing all siting and natural resource permitting simultaneously with the Stetson Wind Project for a 38-mile long, 115-kilovolt transmission line running through 6 townships. The purpose of the Line 56 Project was to connect the (then) proposed Stetson Wind Project with an existing substation in Chester, Maine. Permitting efforts included drafting and submitting Maine Department of Environmental Protection, U.S. Army Corps of Engineers, Land Use Regulation Commission, and local permit applications and answering all regulatory agency questions regarding these applications. He participated in all public meetings to address comments and questions from local citizens; provided strategic regulatory advice to the client; and oversaw the extensive natural resource surveys necessary to acquire information for inclusion in the permit applications. Following acquisition of the necessary permits, he oversaw resource demarcation (i.e., marking previously identified wetlands, vernal pools, and other significant natural resources) and provided environmental compliance support during the construction process. Line 56 is fully operational.

Lowes Home Improvement Centers, Ellsworth, Thomaston, and Brewer, Maine

Senior Project Manager responsible for coordinating all wetland permitting, wetland mitigation design, and wetland mitigation monitoring for three commercial developments resulting in nearly 10 acres of wetland impacts. Annual monitoring is conducted in order to determine the success of three mitigation sites. Monitoring efforts include providing reports to state and federal regulatory agencies as a condition of the three permits issued. Permits from the Maine Department of Environmental Protection and the U.S. Army Corps of Engineers were obtained in 2006, the stores were constructed in 2007, and the second of five monitoring years was successfully completed.

Penobscot River Module Facility, Brewer, Maine

Senior Project Manager responsible for developing an Endangered Species Act-compliant biological assessment and mitigation plan and completing natural resource permitting in association with a 10-acre area of sediment containing visible tar at a paper mill demolition site in Bangor, Maine. The purpose of the assessment and mitigation plan was to remediate the site in order to obtain permits for the construction of a module facility at this site. Permitting efforts including submitting Maine Department of Environmental Protection and U.S. Army Corps of Engineers permit applications. He was instrumental in reducing the typical turn-around time for application review, as permits were obtained in mid-2009 within 30 days of application submittal.

Cabela's Commercial Development, Scarborough, Maine

Senior Project Manager responsible for natural resource permitting associated with a mixed-use retail and commercial development on 73 acres, anchored by a 130,000-square foot Cabela's retail store, the first in the State of Maine. Permitting efforts included drafting and submitting Maine Department of Environmental Protection, U.S. Army Corps of Engineers, and local permit applications and answering all regulatory agency questions regarding these applications. Cabela's, as well as the restaurants, banks, and hotel on-site, have been operational since 2007.

Wind Farm Development

Oakfield Wind Project, Oakfield, Maine

Senior Project Manager responsible for all siting and natural resource permitting for a 34-turbine wind project encompassing 600 acres, including 12 miles of collector line, capable of generating 51 megawatts of renewable energy. Permitting efforts included drafting and submitting Maine Department of Environmental Protection, U.S. Army Corps of Engineers, and local permit applications and answering all regulatory agency questions regarding these applications. He also participates in all public meetings to address comments and questions from local citizens; provides strategic regulatory advice to the client; oversees the extensive natural resource surveys necessary to acquire information for inclusion in the permit applications; and manages a budget in excess of 1.1 million. The project is expected to be fully operational in 2011.

Brooke E. Barnes

Senior Project Manager, Regulatory Specialist

Stetson II Wind Project, Washington County, Maine

Senior Project Manager responsible for obtaining all federal, state, and local permits for a 60-million dollar wind project consisting of 17 turbines along mountain ridgelines and a 32,183-linear foot collector line connecting this project to the Stetson Wind Project. Permitting efforts included drafting and submitting Land Use Regulation Commission, Maine Department of Environmental Protection, and Maine Department of Transportation permit applications. He participated in all public meetings to address comments and questions from local citizens; managed subcontractors, provided strategic regulatory advice to the client, oversaw the natural resource surveys for the siting and permitting of the project, and handled a nearly half-million dollar budget. This project is currently under construction and is expected to be fully operational in early 2010.

Rollins Wind Project, Penobscot County, Maine

Senior Project Manager and Prime Subcontractor Manager responsible for permitting and design of an extensive 60-megawatt wind project consisting of 40 turbines, 2 transmission lines, an electrical substation, and an operations and maintenance building. Permitting efforts included drafting and submitting Maine Department of Environmental Protection, Maine Department of Transportation, U.S. Army Corps of Engineers, and local permit applications; and addressing agency questions and concerns, including those of the U.S. Fish and Wildlife Service regarding impacts to eagles. The results of these discussions in turn influenced the siting and permitting efforts of future wind projects. He participated in all public meetings to address comments and questions from local citizens; provided strategic regulatory advice to the client, oversaw the natural resource surveys for the siting and permitting of the project, and managed a 1.4-million dollar budget. Permits for the Rollins Wind Project were obtained in 2009, and the project expects to be operational in 2011.

Stetson Wind Project, Washington County, Maine

Senior Project Manager responsible for all siting and natural resource permitting for a 38-turbine, 57-megawatt wind project located along the Stetson Ridgeline. Permitting efforts included drafting and submitting Maine Department of Environmental Protection, U.S. Army Corps of Engineers, Land Use Regulation Commission, and local permit applications and answering all regulatory agency questions regarding these applications. He participated in all public meetings to address comments and questions from local citizens; provided strategic regulatory advice to the client; oversaw the extensive natural resource surveys necessary to acquire information for inclusion in the permit applications; and managed a budget in excess of 1.5 million. Following acquisition of the necessary permits, he oversaw resource demarcation (i.e., marking previously identified wetlands, vernal pools, and other significant natural resources) and provided environmental compliance support during the construction process. The Stetson Wind Project is fully operational.

Adam J. Gravel

Project Manager, Certified Wildlife Biologist



Mr. Gravel is a Project Manager at Stantec responsible for coordinating ecological inventories and environmental resource evaluations, including wildlife surveys, avian and bat impact evaluations, and habitat studies. Mr. Gravel has most recently been involved in organizing and conducting large-scale natural resource investigations associated with wind power and transmission projects. He has provided permitting and expert testimonial support to several New England wind projects and managed Stantec's New England based wildlife biologists. His field biology experience has allowed him to conduct avian radar surveys, breeding-bird surveys, winter track surveys, bat surveys, raptor surveys, and natural community surveys in Maine, New Hampshire, Vermont, Pennsylvania, Ohio, West Virginia, Virginia, and New York. Mr. Gravel takes an innovative, solution oriented approach to survey design and implementation which has enabled Stantec to conduct ecological surveys in some of the Northeast's most remote and challenging locations.

PROFESSIONAL EXPERIENCE

- Stantec Consulting. 2007-present. Project Manager.
- Woodlot Alternatives, Inc. 2004-2007. Project Manager.
- New Hampshire Division of Forests and Lands. 2003. Field Research Technician.
- University of New Hampshire. 2002-2003. Research Lab Technician.
- University of New Hampshire. 2002. Field Research Assistant.

EDUCATION

BS, Wildlife Management, University of New Hampshire, Durham, New Hampshire, 2003

40-hour HAZWOPER Certified, OSHA, Topsham, Maine, 2009

REGISTRATIONS

Certified Wildlife Biologist, The Wildlife Society

PROJECT EXPERIENCE

Natural Resource Services

Wind Farm Development Bird and Bat Surveys and Impact Studies, Mid-Atlantic, New England, Pennsylvania, Ohio, and New York

Mr. Gravel has managed and conducted pre-construction wildlife impact assessments at proposed wind energy projects at multiple sites in the Mid-Atlantic, New England, Pennsylvania, Ohio, West Virginia and New York. These assessments include habitat analyses, critical issues analyses, nocturnal migration surveys using marine radar, acoustic bat surveys, breeding bird surveys, raptor migration surveys, and ecological community characterizations. Mr. Gravel has effectively served as liaison between clients and regulatory agencies to ensure that studies and monitoring plans are in accordance with federal and state guidelines. Study results and determinations of risk have been provided to clients to assist with their project planning and permit applications in compliance with applicable local, state, and federal natural resource regulations. Mr. Gravel has also provided expert witness testimony for projects in Vermont and New Hampshire.

Adam J. Gravel

Project Manager, Certified Wildlife Biologist

Georgia Mountain Community Wind Project, Milton, Vermont

As Project Manager for this proposed 4.5 megawatt wind project, Mr. Gravel coordinated a nocturnal migration study using X-band radar. He also provided support for the Section 248 process, including participation in meetings with Vermont Agency of Natural Resources biologists and development of a work scope for nocturnal radar surveys. Mr. Gravel prepared and submitted pre-filed testimony and responses to discovery requests, and he provided expert witness testimony during subsequent evidentiary hearings before the Vermont Public Service Board.

Groton Wind Project, Grafton County, New Hampshire

Mr. Gravel is Project Manager for the proposed Groton Wind Project, which will consist of up to 25 2.0 MW turbines on the forested ridges of Tenney and Fletcher Mountains in the Sunapee Uplands of New Hampshire. He has coordinated numerous studies to address wildlife-related issues present in the vicinity of the project, including avian radar studies, acoustic bat surveys, and Breeding Bird Surveys (BBS) using the United States Fish and Wildlife Service BBS methods. Mr. Gravel worked with the New Hampshire Fish and Game Department to develop protocol and perform spring and fall raptor surveys, and collaborated with New Hampshire Audubon to conduct monitoring of peregrine falcons near the project area. He was involved in the drafting of an avian risk assessment that evaluated the potential impacts to birds and bats as a result of the project and provided expert witness testimony and support during the New Hampshire Site Evaluation Committee process.

Stetson Mountain Wind Farm, Washington County, Maine

Stetson is a 57 MW generation facility consisting of 38 turbines on a 6.5-mile, low-elevation ridge in Washington County, Maine. Mr. Gravel acted as Technical Lead responsible for avian and bat studies during the planning process and assisted in the design of a post-construction avian and bat monitoring program.

Highland Wind Project, Somerset County, Maine

Highland is a proposed wind energy facility consisting of 48 turbines. Mr. Gravel acted as Technical Lead during the planning process and was responsible for wildlife studies including nocturnal radar migration surveys, acoustic bat surveys, raptor migration surveys, and rare threatened or endangered species surveys. He acted as a liaison between the client and state and federal resource agencies to develop work plans and avoidance and minimization measures during the planning phase of the project. Mr. Gravel also assisted in generating permit application materials for the project.

Granite Reliable Wind Park, Coos County, New Hampshire

Mr. Gravel has acted as the Project Manager on this long-term project, supervising and conducting a variety of natural resource surveys to assess potential concerns raised by the proposed project. Surveys included several seasons of nocturnal radar surveys, wetland and vernal pool reconnaissance surveys, multiple seasons of acoustic bat surveys, rare plant surveys, a raptor migration survey, and a Natural Community Characterization. A winter track survey was also conducted within the project site to document occurrence of American marten (State Threatened) and Canada Lynx (Federally Threatened). Mr. Gravel gave several agency presentations to summarize the multiple seasons of environmental surveys and their implications for the project and he has provided expert witness testimony regarding the work conducted at the site.

Hounsfield Wind Farm, Galloo Island, New York

As Project Manager for the nocturnal migration surveys conducted to determine site suitability for this proposed wind energy project located on Galloo Island in Lake Ontario. Mr. Gravel negotiated and designed a marine radar survey reflective of the unique location of this island site. Solutions to transport, maintenance, and site coverage were carefully determined in order to produce one of the most extensive migration surveys to date, successfully documenting avian abundance, flight patterns, and flight altitudes surrounding the site. Mr. Gravel and his project team were praised for their thoroughness and insights provided to state agencies.

Adam J. Gravel

Project Manager, Certified Wildlife Biologist

Mars Hill Wind Farm, Aroostook County, Maine

Mars Hill is a 28 turbine wind energy facility situated on a low-elevation ridge in Aroostook County, Maine. Mr. Gravel acted as Technical Lead during the planning process and was responsible for avian and bat studies including nocturnal radar migration surveys, acoustic bat surveys, raptor migration surveys, and morning bird stopover surveys. He also assisted in the design of a post-construction avian and bat monitoring program.

Lempster Wind Project, New Hampshire

As the Project Manager, Mr. Gravel was responsible for coordinating and conducting environmental surveys and providing permitting support for this 24 MW wind project, the first in New Hampshire. Tasks included developing and negotiating work plans with agencies, performing avian and bat studies, rare species investigations, vernal pool surveys, and providing testimonial support. Mr. Gravel was also involved in the initial development of post-construction bird and bat monitoring protocols for the project.

Record Hill Wind Farm, Maine

Mr. Gravel acted as Project Manager for the Record Hill wind project, which is a 22-turbine, 55 MW wind project on a forested ridge environment in the western mountains of Maine. For this project, he coordinated planning and feasibility studies, wetland delineations, wildlife impact studies, noise and visual impact assessments, and helped to coordinate all state and Federal environmental permitting.

Adam J. Gravel

Project Manager, Certified Wildlife Biologist

PUBLICATIONS

Giumarro, G. and A. Gravel. Assessing The Risk Of Avian And Bat Mortality At Commercial Wind Farms. *Presentation at the Windpower 2009 Conference and Exhibition, Chicago, IL, 2009.*

Pelletier, S.K., A.J. Gravel, and T.S. Peterson. Nocturnal avian flight heights relative to risk of collision with wind turbines. *Poster presentation at the National Wind Coordinating Collaborative conference in Wind Wildlife Research Meeting VII in Milwaukee, Wisconsin. October, 2008.*

Pelletier, S.K., C.W. Meinke, T.S. Peterson, and A.J. Gravel. 2008. Radar and acoustic bat surveys in pre and post-construction bird and bat mortality monitoring. *Poster presentation at the 2008 American Wind Energy Association conference in Los Angeles, California., 2008.*

Gravel, A. Windpower and Wildlife an Overview of Pre-construction Survey Methods and Results. *Presentation to State and Federal Natural Resource Agencies., 2008.*

Dale F. Knapp

Senior Project Manager, Wetland Scientist, Soil Scientist



Mr. Knapp is a Senior Project Manager and the Director of the Water Resources Division at Stantec. His primary responsibilities include staff management, project administration and management, ecological field surveys, strategic planning for permitting, and report preparation. In addition to managing and implementing large scale permitting and restoration projects, Mr. Knapp has conducted a variety of field biological sampling efforts to determine risk to ecological receptors and water quality determinations. He has also provided expert witness testimony regarding the findings of various ecological field surveys. Mr. Knapp also has extensive experience in soil mapping, morphology, and subsurface wastewater design.

Under Mr. Knapp's direction, the Water Resources Division performs wetland delineations, vernal pool surveys, threatened and endangered species surveys, ecological community characterizations, permitting, biological assessments, environmental planning, fish and wildlife surveys, wetland mitigation and compensation, project management and document preparation in accordance with the state and federal regulatory agencies.

PROFESSIONAL EXPERIENCE

- Stantec Consulting. 2007-present. Senior Project Manager, Director of Water Resources.
- Woodlot Alternatives, Inc. 2005-2007. Project Manager.
- Corinne Leary. 2002-2005. Field Scientist.
- Leary Soil Works. 2001-2002. Construction.

EDUCATION

BA, University of Maine, Orono, Maine, 2003

Preserving the Wetland Landscape - Tools for Successful Mitigation, Grappone Center, Concord, New Hampshire, 2006

Subsurface System Inspector, Joint Environmental Training Coordination Committee, Portland, Maine, 2006

Hydric Sandy Soils Workshop, Maine Association of Professional Soil Scientists, Scarborough, Maine, 2006

Basic and Advanced Erosion Control Practices, Maine Non-point Source Training and Resource Center, Portland, Maine, 2007

40-Hour HAZWOPER Certification, OSHA, Topsham, Maine, 2010

REGISTRATIONS

Onsite Sewage Disposal System Inspector #523, State of Maine, An Office of the Department of Health and Human Services - Subsurface Wastewater Program

Apprentice Wetland Scientist #WSA-18, New Hampshire Joint Board

Licensed Site Evaluator #386, State of Maine, An Office of the Department of Health and Human Services - Subsurface Wastewater Program

Enviro-Septic Certified #5058MEES, Presby Environmental Inc.

PROFESSIONAL ASSOCIATIONS

Vice President, Maine Association of Site Evaluators

Dale F. Knapp

Senior Project Manager, Wetland Scientist, Soil Scientist

Member, New Brunswick Environment Industry Association

Member, Society of Wetland Scientists

Professional Member, Society of Soil Scientists of Southern New England

President, Maine Association of Wetland Scientists

Recognized Wetland Delineator, New Brunswick Department of Environment

Member, Association of State Wetland Managers

Member, Maine Association of Professional Soil Scientists

PROJECT EXPERIENCE

Natural Resource Services

Pine Tree Landfill Restoration Project, Hampden, Maine

Senior Project Manager responsible for conducting natural resource surveys and developing and implementing a restoration plan to repair and rehabilitate habitat affected by an incidental release of liquid material of unknown composition from a gas-to-energy recovery system at the Pine Tree Landfill.

Rollins Wind Project, Penobscot County, Maine

Senior Project Manager responsible for organizing and managing all natural resource surveys for an extensive 60-megawatt wind project consisting of 40 turbines, 2 transmission lines, an electrical substation, and an operations and maintenance building. He also helped address agency questions and concerns, including those of the U.S. Fish and Wildlife Service regarding impacts to eagles and oversaw the QA/QC of natural community mapping and permitting efforts, which included Maine Department of Environmental Protection, U.S. Army Corps of Engineers, and local permit applications. The project is expected to be fully operational in 2010.

Oakfield Wind Project, Oakfield, Maine

Senior Project Manager responsible for organizing and managing all natural resource surveys for a 34-turbine wind project encompassing 600 acres, including 12 miles of collector line, capable of generating 51 megawatts of renewable energy. Survey efforts included wetland delineations, vernal pool surveys, and rare, threatened and endangered species plant and wildlife surveys. He also oversaw the QA/QC of natural community mapping and permitting efforts, which included Maine Department of Environmental Protection, U.S. Army Corps of Engineers, and local permit applications. The project is expected to be fully operational in 2010.

Old Port Village Peer Review, Kennebunkport, Maine

Senior Project Manager. Reviewed documents filed by the applicant as they pertained to natural resource impacts associated with a proposed subdivision and the presence or absence of rare, threatened, and endangered (RTE) species that may occur within the proposed project area. Work done on behalf of an abutting property owner to the proposed development.

Penobscot River Restoration Natural Resource, Penobscot County, Maine

Technical Lead. Coordinated and participated in natural resource assessment of three dam impoundments along a 10-mile stretch of the Penobscot and Piscataquis Rivers. Characterized existing ecological resources and collected existing infrastructure information. Tasks included wetland reconnaissance, site specific delineation and Function Value Assessments along the backwater of all three impoundments. In addition, coordination of invasive/exotic plant management and supporting development of ecological changes post removal.

Wind Farm Development Surveys and Risk Assessments, Maine

As Senior Project Manager, Mr. Knapp has managed preconstruction wind farm development surveys and assessments at multiple sites throughout Maine. These assessments include site prospecting for wind farm sites, landscape analyses, fatal flaws, and ecological community characterization.

Dale F. Knapp

Senior Project Manager, Wetland Scientist, Soil Scientist

Hoosac Wind Project, Massachusetts

Field Manager/Senior Project Manager. Conducted a series of wetland delineations in concert with other environmental team members. Field surveys included confirming mapped wetlands and other natural communities and delineating the boundaries of wetlands, streams, and other natural resource features. He also conducted extensive botanical field surveys within the project area to determine if any state- or federal-listed rare plant species were present.

Cabelas Retail Development, Scarborough, Maine

Wetland Scientist. Conducted wetland delineations and vernal pool surveys. Completed a systematic mitigation site search through several counties in support of permitting efforts.

Highland Wind, Maine

Senior Project Manager responsible for the organization and management and oversaw the QA/QC of the wetland delineations, vernal pool surveys, natural community mapping, and RTE plant and wildlife surveys conducted on an approximately 1,500-acre project area.

Line 56, Maine

Senior Project Manager responsible for organization and management of all natural resource work along more than 50 miles of transmission line corridor.

Maine Power Connection Transmission Corridor, Maine

Senior Project Manager responsible for the organization and management and oversaw the QA/QC of the wetland delineations, vernal pool surveys, natural community mapping, and RTE plant and wildlife surveys conducted along over 140 miles of existing and proposed power line corridor between Haynesville and Chester, Maine.

Grand Manan Wind Farm Phase I, New Brunswick

Senior Project Manager responsible for organization and management of all wetland delineations and impact assessments for a 20 MW wind project covering 250 acres on the island of Grand Manan.

Stetson Wind Farm, Maine

Field Manager and Permitting Support. Responsible for completing natural resource surveys on a 1,300-acre project area for this 24 MW wind project. Mr. Knapp functioned as field leader responsible for leading teams of 4-6 person crews. Studies included wetland delineations, vernal pool surveys, natural community mapping, and RTE plant and wildlife surveys. Assisted in the completion of required state and federal permit applications filed in support of the project.

Record Hill Wind Farm, Roxbury, Maine

Senior Project Manager supporting the Record Hill wind project, which is a 22-turbine, 55 MW wind project on a forested ridge environment in the western Maine mountains. This project has included planning and feasibility studies, wetland delineations, wildlife impact studies, noise and visual impact assessments, and coordination of all state and Federal environmental permitting.

Redington Wind Farm, Maine

Field Manager and Permitting Support. Responsible for completing natural resource surveys on a 1,700-acre project area. Functioned as field leader responsible for leading teams of 4-6 person crews. Studies included wetland delineations, vernal pool surveys, natural community mapping, and RTE plant and wildlife surveys. Assisted in the completion of required state and federal permit applications filed in support of the project.

Dale F. Knapp

Senior Project Manager, Wetland Scientist, Soil Scientist

PUBLICATIONS

Emerson, B., D. Knapp, and G. Carpentier. Potential Alteration of Wetland Functions and Values from Dam Removal. *Poster presented at New England Water Environment Association 2010 Annual Conference, Boston, Massachusetts, 2010.*

Emerson, B., D. Knapp, J.D. DeGraaf, and G. Carpentier. Potential Impacts to Wetland Functions and Values from Dam Removal. *Poster presented at The Diadromous Species Restoration Research Network Science Meeting, University of Maine, Orono, Maine, 2009.*

Presentation: The Dirty Side of Wetland Science. *Distinguished Speaker Series: University of Maine Fort Kent, Fort Kent, Maine, 2009.*

Guest Lecturer: College Level Course PSE 413/PSE 533 Wetland Delineation and Mapping. *University of Maine, Orono, Maine, 2009.*

Guest Lecturer: College Level Course PSE 413/PSE 533 Wetland Delineation and Mapping. *University of Maine, Orono, Maine, 2008.*

Workshop: Hydric Soil Determination. *Stantec Consulting, 2007.*

Guest Lecturer: College Level Course PSE 413/PSE 533 Wetland Delineation and Mapping. *University of Maine, Orono, Maine, 2007.*

Workshop: Intro to Soil Science. *Stantec Consulting, 2006.*

Ms. Dyer is a Project Scientist responsible for leading large-scale wetland delineations, vernal pool surveys and rare, threatened and endangered species surveys, including data collection, natural community surveys, habitat studies, and data analysis. She has most recently been involved in wind power developments as large-scale wetland delineation, vernal pool surveys, associated data management and reporting as preparation for state and federal permitting requirements. Prior experience includes monitoring loon nesting territories and conducting land bird vegetation and rare plant surveys.

PROFESSIONAL EXPERIENCE

- Stantec Consulting. 2007-present. Botanist and Project Scientist.
- Woodlot Alternatives, Inc. 2006-2007. Project Technician.
- Lake Umbagog National Wildlife Refuge. Summer 2006. Loon Monitor Intern.
- New England Wild Flower Society. May 2005-November 2005. Lovejoy Conservation Fellow.
- The Nature Conservancy/SCA, New Paltz, NY. June 2004-November 2004. Stewardship Assistant Intern.
- Vermont Dept. of Environmental Conservation, Water Quality Division. May 2003-August 2003. Intern.

EDUCATION

BS, Wildlife Conservation, Unity College, Unity, Maine, 2005

Rapanos Workshop, Maine Association of Wetland Scientists, Augusta, Maine, 2008

Identifying Sedges and Rushes, UNH Cooperative Extension, Durham, New Hampshire, 2008

Plant Systematics, New England Wild Flower Society, Framingham, Massachusetts, 2008

Basic and Advanced Soil Erosion Control Practices, Maine Nonpoint Source Training and Resource Center, Portland, Maine, 2007

Motorboat Operator Certification, USFWS, Errol, New Hampshire, 2006

40-hour HAZWOPER Certified, OSHA, Topsham, Maine, 2009

Identifying Grasses, Delta Institute of Natural History, Bowdoin, Maine, 2009

Wilderness Advanced First Aid, Wilderness Medical Associates, Wiscasset, Maine, 2010

PROFESSIONAL ASSOCIATIONS

Volunteer, Maine Butterfly Survey

Member, Josselyn Botanical Society

Plant Conservation Volunteer, New England Wildflower Society

Membership Chair, Maine Association of Wetland Scientists

Member, Association of State Wetland Managers

PROJECT EXPERIENCE

Natural Resource Services

New England Wild Flower Society, Plant Conservation Volunteer Corps, Maine and New England

Volunteer responsible for conducting rare plant surveys, botanical inventories, and submitting data to state natural heritage programs.

Danielle M. Dyer

Botanist, Project Scientist

Loon Population Survey, Lake Umbagog National Wildlife Refuge, Errol, New Hampshire

Loon Monitor responsible for monitoring the nesting success of loon populations and the presence or absence of loons in particular territories on the lake. Provided educational presentations to visitors and camp organizations about loon behavior and population status.

Wind Project Migratory Bird Surveys and Impact Studies, Western New York and Northern New Hampshire

Provided ecological evaluations and avian impact assessments associated with three proposed wind power projects. Studies for these projects included migratory bird and bat surveys by conducting ground and aerial observation surveys, customized marine surveillance radar surveys, ceilometers, weather radar, remote acoustic receivers, and computer analysis of migration.

Stetson Wind Project, Penobscot County, Maine

Project Technician responsible for collecting global positioning system (GPS) points to accurately represent natural resource boundaries on a low elevation ridge and over 30 miles of transmission line.

Record Hill Wind Farm, Maine

Project Technician responsible for collecting global positioning system (GPS) points to accurately represent natural resource boundaries.

Rare, Threatened, and Endangered Species and Critical Habitat Surveys, Eastern United States

Project Technician performing numerous surveys for state and federal listed species and sensitive habitats for proposed development sites. Through landscape analysis, Stantec was able to obtain federal and state agency concurrence on findings in a cost-effective and timely manner. The landscape analysis process relied on a combination of remote sensing, field surveys, and known information on ecological communities and species life history requirements to make determinations regarding potential for rare, threatened, and endangered species or critical habitats to occur on commercial development sites.

Oakfield Wind Project, Oakfield, Maine

Project Scientist and Field Leader responsible for organization, progress, and safety of field staff through the field work phase of large-scale wind power development. Responsible for data management and associated reporting of findings to accompany NRPA and Army Corps permits.

Highland Wind Project, Highland Plantation, Maine

Project Scientist and Field Leader responsible for organization, progress, and safety of field staff through the field work phase of large-scale wind power development. Responsible for data management and associated reporting of findings to accompany NRPA and Army Corps permits.

Mr. Emerson is a Project Manager responsible for conducting and coordinating a variety of natural resource projects, including wetland delineations, vernal pool surveys, wetland mitigation planning and design, and wildlife monitoring and habitat assessments. He has direct field experience working on a variety of natural community survey projects ranging from general reconnaissance observations to quantitative, community- and species-specific surveys. These projects have involved natural community mapping, data analysis, and report writing. He is also experienced in designing wetland mitigation projects, preparing compensation plans, providing construction oversight, and conducting long-term monitoring of mitigation sites. He has also assisted clients in the preparation of federal and state permit applications.

Prior experience includes designing, managing and installing wetland and stream restoration projects. Projects included native plant installation, invasive species control, stream channel modifications, bank and slope stabilization, and wetland creation and restoration. Mr. Emerson has led conservation crews doing trail work, carpentry, streambank stabilization, and historic cemetery restoration. He has also conducted field and laboratory studies on the impact to aquatic environments by non-native zebra mussels.

PROFESSIONAL EXPERIENCE

- Stantec Consulting. 2007-present. Project Manager.
- Woodlot Alternatives, Inc. 2006-2007. Project Technician.
- Restoration Logistics. 2003–2005. Project Manager.
- VT Youth Conservation Corps. 2001 and 2002. Crew Leader.

EDUCATION

BS, Environmental Science, Chemistry Minor, University of Vermont, Burlington, Vermont, 2000

40-Hour Hazwoper Certification, OSHA, Topsham, Maine, 2010

REGISTRATIONS

Certified Wetland Scientist #276, State of New Hampshire Board of Natural Scientists

Commercial Master Applicator #CMA44218/5 6D, Maine Board of Pesticides Control

PROFESSIONAL ASSOCIATIONS

Recognized Wetland Delineator, New Brunswick Department of Environment

Member, Association of State Wetland Managers

Member, Maine Association of Wetland Scientists

PROJECT EXPERIENCE

Natural Resource Services

Natural Resource Surveys, Chester to TDR2 WELS, Maine

Project Manager. Coordinated all field survey efforts for natural resource surveys along 68 miles of proposed transmission line. Performed vernal pool surveys and wetland delineations throughout various portions of the project. Conducted landscape analysis of significant wildlife habitat along the proposed line and presented these findings to state wildlife agencies. Served as the primary contact for surveyors, engineers, and the client for environmental issues, and assisted with aspects of the permitting process.

Bryan P. Emerson

Project Manager, Wetland Scientist

Granny Hole Natural Resource Surveys and Permitting, Topsham, Maine

Project Manager. Performed a wetland delineation for a proposed parking lot expansion associated with a new wellness center. Attended meetings with the client and state and federal regulatory agencies to develop a design that would minimize natural resource impacts. Assisted the client with preparing state and federal permit applications.

Pond 197, Stream Restoration Project, Bellevue, Washington

Project Manager. Managed all aspects of a stream restoration project, including coordination of the work crew and heavy equipment operators and consultation with city inspectors, on Valley Creek in Bellevue, WA. The crew excavated a side channel to route high flows through an existing wetland/pond, and installed stream gravel, log weirs, bank logs, and numerous other pieces of large woody debris in the stream. The project was intended to improve fish passage and high flow refuge for fish in the creek while improving water quality.

Valley Stream Restoration Project, Bellevue, Washington

Project Technician. Worked with a crew to install approximately 100 pieces of large woody debris in lower Valley Creek as log polygons, bank logs, and other structures, to stabilize the creek and provide fish habitat. No heavy equipment was allowed on the project site, and the logs were moved and installed using overhead lines, rigging, and hand labor.

Glacier NW Wetland Mitigation, Everett, Washington

Project Manager. Managed and assisted with the construction of the wetland and wetland buffer restoration and enhancement required as compensation for filling of wetlands done when Glacier NW created an Aggregate Sales Yard on the project site. Restoration included soil grading and amendment, planting over 1500 native trees and shrubs, and removing invasive plant species. Coordinated the design and installation of a six-zone overhead irrigation system over the 3-acre site to irrigate the installed shrubs and trees.

Line 56 Transmission Line, Maine

Project Technician. Performed wetland delineations, vernal pool surveys, and other natural resource mapping for transmission line in northern Maine. Assisted with permit preparation by coordinating wetland delineation and vernal pool survey results and processing them into a final report.

Stetson Wind Farm, Maine

Project Technician. Performed wetland delineations, vernal pool surveys, and other natural resource mapping for a 38-turbine wind farm in eastern Maine.

Herbicide Applications, Southern Maine

Herbicide Applicator and Project Manager. Performed applications of herbicides to control invasive plant species at various sites around southern Maine. Utilized foliar spray and cut-and-paint techniques to treat both herbaceous and woody plant species.

Wildlife Habitat Assessment, Leeds, Maine

Project Manager. Conducted an assessment of mapped significant wildlife habitat, specifically Deer Wintering Area and Inland Waterfowl/Wading Bird Habitat. Surveys were performed to assist the landowner with settling a state permit violation. Met with state natural resource agencies to discuss results and coordinated with the agencies to resolve the issues by finding a solution that satisfied both the client and the state. Assisted the client with preparing state environmental permit.

Bald Eagle Monitoring, Skowhegan and Old Town, Maine

Project Manager and Field Lead. Conducted aerial monitoring of bald eagle nests in two survey areas in Maine. Aerial surveys were performed to monitor breeding success and egg hatching. Performed ground surveys to retrieve unhatched bald eagle eggs from nests and assisted in processing the eggs to be shipped out for contaminant analysis. Coordinated all aspects of field and lab work and regularly corresponded with state agencies to adjust field survey efforts.

Bryan P. Emerson

Project Manager, Wetland Scientist

Topsham Trails Natural Resource Surveys and Permitting, Topsham, Maine

Project Manager. Managed all aspects of field surveys for a 1-mile bike path, including wetland delineation; vernal pool survey; and rare, threatened, and endangered species survey. Assisted the client in developing a final design that would minimize natural resource impacts. Prepared state and federal permit applications.

Mitigation Site Search and Mitigation Planning, Bangor, Maine

Project Manager. Conducted a mitigation site search to find a location to compensate for wetland impacts associated with the construction of a commercial building. Designed a conceptual mitigation project and presented the results to federal regulatory agencies.

Bryan P. Emerson

Project Manager, Wetland Scientist

PUBLICATIONS

Emerson, B., D. Knapp, and G. Carpentier. Potential Alteration of Wetland Functions and Values from Dam Removal. *Poster presented at New England Water Environment Association 2010 Annual Conference, Boston, Massachusetts, 2010.*

Emerson, B., D. Knapp, J.D. DeGraaf, and G. Carpentier. Potential Impacts to Wetland Functions and Values from Dam Removal. *Poster presented at The Diadromous Species Restoration Research Network Science Meeting, University of Maine, Orono, Maine, 2009.*

Matthew P. Arsenault

Certified Ecologist, Botanist, Project Manager



Mr. Arsenault is a Certified Ecologist and expert Botanist responsible for performing ecological and botanical assessments and characterizations; natural resource inventories including rare, threatened, and endangered species surveys; wetland delineations and function and value assessments; wildlife population surveys; long-term biological monitoring; and water quality monitoring surveys.

Mr. Arsenault has worked on numerous ecological projects, including natural community and rare plant and wildlife survey projects throughout the northeastern and mid-Atlantic United States. These projects have ranged from general reconnaissance observations to quantitative, community- and species-specific surveys. These projects have involved detailed natural community mapping and analysis. He has provided expert witness testimony regarding the findings of various ecological field studies.

Mr. Arsenault has taught many workshops and led field trips on plant identification and ecology. Continuing education and training has included many workshops with the New England Wildflower Society, Josselyn Botanical Society, Maine Association of Wetland Scientists, and Delta Institute of Natural History.

PROFESSIONAL EXPERIENCE

- Stantec Consulting. 2007-present. Project Manager.
- Woodlot Alternatives, Inc. 2005-2007. Project Scientist.
- Delorme Mapping. 2004-2005. Map Technician.
- Maine Natural Areas Program. 2003-2004. Assistant Ecologist.
- Shenandoah National Park. 2003. Biological Science Technician (Exotic Survey Crew).
- University of Maine. 2001-2003. Biological Research Assistant

EDUCATION

BS, Botany, summa cum laude honors, University of Maine, Orono, Maine, 2003

Wetland Delineation Methods, University of New Hampshire, Durham, New Hampshire, 2005

10-Hour Construction Safety & Health Certified, OSHA, Topsham, Maine, 2009

40-hour HAZWOPER Certified, OSHA, Topsham, Maine, 2010

Wilderness First Aid Certified, SOLO, Topsham, Maine, 2010

Heartsaver CPR Certified, SOLO, Topsham, Maine, 2010

REGISTRATIONS

Ecologist, Ecological Society of America

PROFESSIONAL ASSOCIATIONS

Survey-approved Botanist, Massachusetts Division of Fisheries & Wildlife, Natural Heritage and Endangered Species Program

Plant Conservation Program Task Force, New England Wildflower Society

Matthew P. Arsenault

Certified Ecologist, Botanist, Project Manager

Member, Maine Natural Areas Program (Botanical Advisory Group)

Member, New England Wildflower Society

Member, New England Botanical Club

Member, Friends of the Maine Herbarium, The University of Maine Herbaria

Member, Josselyn Botanical Society

Recognized Wetland Delineator, New Brunswick Department of Environment

Member, Ecological Society of America

Member, Maine Association of Wetland Scientists

PROJECT EXPERIENCE

Natural Resource Services

Blanding's Turtle Survey, Galloo Island, New York

Project Scientist responsible for performing surveys for Blanding's turtles at a proposed development site. Survey methods included binocular surveys, nesting surveys, and trapping.

Rare Plant Survey, Lower Chichester, Pennsylvania

Lead Project Scientist responsible for performing a rare plant survey and natural community characterization of a proposed development site.

Rare Plant Survey, Londonderry, New Hampshire

Lead Project Scientist responsible for performing a rare plant survey and natural community characterization of a proposed development site.

Moresville Wind Power Project, Delaware County, New York

Lead Project Scientist. Conducted a broad-spectrum survey and characterization of the existing natural resources including natural communities, rare plants, and rare wildlife along an approximately 5-mile ridgeline in south central New York. Provided a detailed report of the results of the field surveys.

Ecological Characterizations, Windham and Westbrook, Maine

Field Manager and Lead Project Scientist. Responsible for leading field surveys including surveys for rare, threatened, and endangered species of plants and wildlife; assessments of existing wildlife habitat values; and mapping of wetland and stream resources. Provided detailed reports of the findings as well as an analysis on the overall landscape value of each parcel and mitigation potential.

Wetland Mitigation Monitoring, Kennebunkport, Maine

Project manager responsible for conducting and coordinating annual wetland monitoring of a created wetland mitigation site in southern Maine. Prepared annual reports that were submitted to state regulatory agencies describing the existing wetland conditions as well as functions and values. Assessments were made regarding the overall success of the wetland mitigation site.

Wetland Delineation and Vernal Pool Survey, Madison, Maine

Project manager responsible for conducting and coordinating field efforts and report preparation for a wetland delineation and subsequent vernal pool survey of an approximately 100-acre parcel.

Blanding's Turtle Survey, Lyman, Maine

Field Manager and Lead Project Scientist. Conducted binocular and meander surveys targeting the state endangered Blanding's turtle at a project site in southwestern Maine. Prepared a detailed report describing the methodology and results of the field surveys.

Matthew P. Arsenault

Certified Ecologist, Botanist, Project Manager

MBTA Greenbush Line Ecological Monitoring, Scituate, Cohasset, and Hingham, Massachusetts

Project Scientist. Conducted annual monitoring of wetlands and vernal pools including quantitative sampling of vegetation, macroinvertebrates, and water quality. Responsible for conducting radio telemetry monitoring of spotted turtles to determine seasonal movement patterns. Conducted regional de novo surveys targeting spotted turtles. Survey methods included binocular surveys, meander surveys, and trapping.

Proposed Transmission Line Natural Resource Identification, Penobscot and Aroostook Counties, Maine

Project Scientist. Completed vernal pool surveys, wetland delineations, and rare plant surveys along over 40 miles of a proposed transmission line corridor in northern Maine. Coordinated with the State agencies regarding potential impacts to several species of rare plants that were identified within the project corridor.

Saddleback Maine Ski Area Expansion, Rangeley and Dallas Plantation, Maine

Field Manager and Lead Project Scientist. Completed landscape analyses and field surveys to identify and characterize the existing natural resources present on Saddleback Mountain in western Maine prior to construction of a proposed development. Provided detailed analyses and expert witness testimony relative to the potential effects of the proposed development on significant natural resources including plants and wildlife and their associated habitats.

Stetson Mountain Wind Power Project, Washington and Penobscot Counties, Maine

Project Scientist. Completed wetland delineations and rare, threatened, and endangered plant surveys of a low elevation ridgeline and over 30 miles of a proposed transmission line associated with a proposed wind power facility.

Commercial Spring Source Biological Monitoring, Southern and Western Maine

Field Manager and Lead Project Scientist. Developed and implemented biological monitoring plans designed to provide long-term monitoring of potential impacts as a result of groundwater withdrawal to significant natural resources including wetland and stream habitats. Field efforts include annual quantitative sampling of wetland and stream habitats as well as identification of rare, threatened, or endangered species of plants and wildlife. Responsible for providing detailed analyses of the potential effects of water withdrawal operations on significant natural resources.

Significant Ecological Resource Evaluations, Moosehead Lake Region, Piscataquis and Somerset Counties, Maine

Field Manager and Lead Project Scientist. Responsible for coordinating and conducting field efforts on over 300,000 acres of forest land in northern Maine. Efforts included completing a landscape analysis focused on identifying areas likely to support significant natural resources including large wetland systems, exemplary natural communities, and rare, threatened, and endangered species of plants and wildlife and their associated habitats. Subsequent field surveys targeted areas to identify and characterize the existing natural resources and their overall landscape significance. Species-specific targeted surveys were conducted for several species of sensitive wildlife including rusty blackbird, Bicknell's thrush, and Clayton's copper butterfly. Conducted detailed analyses and provided expert witness testimony relative to the potential effects of a proposed development and conservation easements on the significant natural resources present within the project area.

Matthew P. Arsenault

Certified Ecologist, Botanist, Project Manager

PUBLICATIONS

Workshop: Carex Identification. *Maine Association of Wetland Scientists*, 2009.

Workshop: Winter Twig Identification. *Stantec Consulting*. 2006, 2008.

Campbell, C.S., R.C. Evans, D.R. Morgan, T.A. Dickinson, and M.P. Arsenault. Phylogeny of subtribe Pyrinae (formerly the Maloideae, Rosaceae): Limited resolution of a complex evolutionary history. *Plant Systematics and Evolution*. 266. pp. 119-145, 2007.

Potter, D., T. Eriksson, R. Evans, S.-H. Oh, J. Smedmark, D. Morgan, M. Kerr, K. Robertson, M. Arsenault, and C. Campbell. Rosaceae phylogeny and classification. *Plant Systematics and Evolution*. 266. pp. 5-43, 2007.

Presentation: Natural Resource Inventories. *Maine Land Trust Conference, Maine Coast Heritage Trust*, 2007.

Presentation: The Genus Galium. *Plant Identification Workshop for Josselyn Botanical Society Annual Meeting*, 2006.

Campbell, C.S, W.A. Wright, M. Cox, T.F. Vining, C.S. Major, M.P. Arsenault. Nuclear ribosomal DNA internal transcribed spacer 1 (ITS1) in *Picea* (Pinaceae): Sequence divergence and structure. *Molecular Phylogenetics and Evolution*, 35: 165-185, 2005.

Arsenault, M. and A. Haines. Rediscovery of *Carex typhina* (Cyperaceae) in Maine. *Rhodora*, 106:52-54, 2004.

Presentation: Alpine Ecology. *Appalachian Mountain Club Ridge Runner Program*, 2004.

Arsenault, M. et al. Incongruence between three genomes in phylogenetic studies within *Picea* (Pinaceae). *Botany 2003 conference, Alabama*, 2003.



EDUCATION AND EXPERIENCE:

- DeLuca-Hoffman Associates, Inc. Since 1990
- BSCE – University of Maine Orono, ME
- MBA – University of New Hampshire, Durham, NH
- Licensed Professional Engineer, Maine #7429
- Certified Professional in Erosion & Sediment Control, #3087
- In Private Practice Since 1987



Mr. Bushey is a Senior Engineer with DeLuca-Hoffman Associates, Inc.'s Land Design and Engineering Services Group. He directs the preparation and review of preliminary and final design as well as permit applications for a variety of civil/site engineering projects. Mr. Bushey's expertise includes site feasibility/selection, civil/site design, street reconstruction and culvert design, hydraulic and hydrologic analysis.

Mercy Hospital Relocation, Portland, Maine:

Completed master planning, permitting and design for the proposed 450,000 s.f. Hospital relocation to the Fore River parcel in Portland. Completed state and local permitting for campus design that includes the hospital, multiple medical office buildings and both surface and structured parking. Responsible for public presentations and coordination between all review agencies and team members.

State Manufactured Homes, Scarborough, Maine:

Managed design and permitting for 175-unit retirement community expansion on a 185-acre property. The community layout includes over 11,000 linear feet of new street, public utilities extensions and drainage measures. Permitting involved local and state review.

Direct Mail of Maine, Scarborough, Maine:

Prepared site plans and Local and State permitting documents for over 25,000 SF building space. Design measures included stormwater management and utilities.

Southern Maine Medical Center, Biddeford, Maine:

Responsible for civil design and permitting related to building and parking expansions on the campus. Assisted the Owner and Architect with master planning and permitting effort associated with stormwater management and utilities layout.

Green Acres Phase 1 and Phase Drainage and Street Infrastructure, Scarborough, Maine:

Responsible for civil design and construction administration for over 3 miles of public street and infrastructure improvements including drainage design and sidewalks.

Westbrook Heights Business Park, Westbrook, Maine:

Completed full design and local and State Permitting for a 30 acre business park. Design work included 1,500 LF of new road, stormwater facilities, and utilities. Completed site designs for over 120,000 SF of building space on two lots.

Skowhegan Middle School, Skowhegan, Maine:

Designed site layout of proposed Middle School, Athletic Fields and supporting infrastructure. Oversaw work of design team during preparation of all permit applications. Completed design of stormwater management systems and new utilities. Designed new softball, baseball and 400-meter track facility.

Freeport High School Performing Arts Center and Science Wing Addition, Freeport, Maine:

Developed site layout and civil design of new Performing Arts Center expansion. Coordinated with architectural team regarding permitting and construction.

Maine Criminal Justice Academy, Vassalboro, Maine:

Assisted State agencies with site selection and assessment process. Responsible for all site design and permitting activities for conversion of the former Oak Grove Coburn School to the new Maine Criminal Justice Academy. Completed State Department of Environmental Protection permitting and all onsite infrastructure design.

City of Portland, Engineering Services, Portland, Maine:

Provided general contract administration, design and construction phase services for a 5-year contract with the City. Completed multiple infrastructure improvement projects including sewer, storm drain, combined sewer separation and culvert replacements amounting to near \$10 million of construction. Responsible for overall project management, client coordination and management of subconsultants for work across multiple City departments.

First Roach Pond Subdivision Development- Plum Creek Land Company:

Assisted Plum Creek Land Company with their development of eighty nine (89) residential camp lots on First Roach Pond near the Moosehead Lake Region. Participated in initial Master Planning and Comprehensive Plan presentations to the Land Use Regulation Commission and provided technical support relating to Phosphorous studies, road design, and initial lot layout. Prepared multiple subdivision plans for each phase of the first Roach Pond development and made applications to LURC for each. Responsible for lot layout, existing and new road access and other technical design measures associated with each subdivision. Presented to LURC while attending multiple public hearings and meetings.

Permitting, Civil Design and Construction:

Miscellaneous engineering services for municipal, commercial, institutional and private projects:

- New Tank 16 for Global Companies Inc. Fore River Terminal, South Portland, ME
- Fall Brook Hydrologic and Hydraulic Study and Report, Portland, ME
- 51 Nonesuch River Plaza Office Building, Scarborough, ME
- Sawyer Road drainage and infrastructure improvement for Public Works Department, Scarborough, ME
- Raymark Site Redevelopment including offsite roadway improvement designs along Route 1, Stratford, CT
- Higgins Beach Drainage Study, Public Works Department, Scarborough, ME



Old Town Elementary School



Mercy Hospital



Bradley Street Drainage Improvement
Portland, Maine

EDUCATION AND EXPERIENCE:

- DeLuca-Hoffman Associates, Inc. Since 2008
- BS – University of New Hampshire
- Licensed Professional Engineer, Maine
- Member ASCE
- In Private Practice Since 2002



Mr. Blake is a Project Engineer with DeLuca-Hoffman Associates, Inc.'s Land Design and Engineering Services Group. He performs the preparation of preliminary and final design, as well as permit applications for a variety of civil/site engineering and environmental projects. Mr. Blake's expertise includes civil/site design, hydrologic and hydraulic analysis.

Projects Prior to Employment with DeLuca-Hoffman Associates, Inc.

Candlestick Cove Residential Subdivision, San Francisco, California:

Responsible for the site design for this 26 lot, 145 unit townhome style subdivision in San Francisco, CA. Responsible for the grading and infrastructure design which included over 3,000 linear feet of new roadway, sewer, storm drain, and water. Grading and drainage were particularly complicated at the site because of the nature of the existing hilly terrain and propensity for seismic activity. The design also included provisions for protective walls in the event seismic activity triggered rock slides from the adjacent hill.

Dougherty Road (South) Widening, San Ramon, California:

Managed the design of the widening of approximately 5,800 linear feet of Dougherty Road in San Ramon, CA. The project consisted of widening the existing four lane road to six lanes and included the installation of a 16 foot wide landscaped median. In addition to the widening, Mr. Blake was also responsible for the design of a bio-retention swale to provide water quality for the proposed widening. Challenges associated with the project included design provisions for the protection of a 30" recycled water main and a 12" gas main.

Projects with Deluca-Hoffman Associates, Inc.

Reconstruction of Old Alfred Road, Arundel, Maine:

Responsible for providing bid documents for the reconstruction and realignment of Old Alfred Road in Arundel, ME. The design included approximately 750 linear feet of full depth roadway reconstruction and 400 linear feet of pavement reclamation. The design included provisions for realigning a portion of the existing roadway to provide adequate site distance. Other facets of the project included regrading of existing driveways and installation of culverts and ditches for stormwater conveyance.

Gorham Elementary School, Gorham, Maine:

Design and permitting for the construction of a 60,000 square foot Elementary School and associated site improvements in Gorham, ME. The project included stormwater analysis involving hydrologic modeling (TR-20 HydroCAD Software), and design of a wet detention basin and underdrained soil filters to detain stormwater and provide water quality treatment associated with the development. The overall project includes the disturbance of approximately 24 acres, of which approximately 25,000 square feet of wetland will be filled to construct the building, the 150-space parking areas, 4 new athletic fields and access drives. Other facets of the project included the design of a 1400 linear foot public entrance drive and wetland creation areas.

PROFESSIONAL EXPERIENCE & ACCOMPLISHMENTS

- Designed 115kV and 34.5kV transmission line generator exit leads for wind farm projects in Maine.
- Performed required upgrade analysis on substation structural components for several 345kV and 115kV substations across Maine.
- Supported Professional Engineers in a wide variety of geotechnical projects including deep and shallow foundations, roadways, retaining walls, detention ponds and infiltration studies.
- Construction Observations include pile driving, foundation subgrade, and artificial turf subgrade.
- Completed geotechnical reports for commercial buildings, cell towers, substations, and embankments.
- Coordinated, directed and performed subsurface investigations via borings and test pits.
- Field inspection of concrete, soil, rebar and asphalt at various construction sites throughout Maine.
- Laboratory testing of concrete, aggregates and soils.

EDUCATION

M.S., Civil Engineering, University of Maine, Orono, Maine, May 2008

B.S., Civil Engineering, University of Maine, Orono, Maine, May 2006

RELATED TRAINING

- OSHA 40 hr Training in Health and Safety for Hazardous Waste Operations
- Design of Transmission Line, Structures, and Foundations
- Design of Overhead Transmission Lines using PLS-CADD
- Substation Design and Construction

EMPLOYMENT HISTORY

RLC ENGINEERING, LLC – Augusta, ME

2009 – Present *Civil Engineer*

R.W. GILLESPIE & ASSOCIATES, INC. – Saco, ME

2008 – 2009 *Geotechnical Engineer*

SUMMIT ENVIRONMENTAL CONSULTANTS – Lewiston, ME

Summers 2005 – 2006 *Geotechnical Engineer*

Summers 2003 – 2004 *Geotechnician*

DEPARTMENT OF CIVIL ENGINEERING – Orono, ME
2003 – 2007 *Lab/Graduate Assistant*

PROFESSIONAL AFFILIATIONS / REGISTRATIONS

- Certified as an Engineer-Intern (#5616)
- Chi Epsilon (Civil Engineering Honor Society), Member
- American Society of Civil Engineers, Associate Member
- American Concrete Institute, Member
- Certified ACI Concrete Field Testing Technician – Grade 1

QUALIFICATIONS

- Thirty-five years of experience in the electric utility and power supply industry with five years devoted to customer service activities in the area of Energy Management/Demand Side Management (DSM); eight years devoted to rate and regulatory activities; and 22 years devoted to electrical engineering and engineering consulting.
- Experienced as an effective leader of technical staff.
- Experienced at Project Management.
- Proficient at project economic analysis.
- Excellent oral and written communication skills.
- Proficient with PSLF, SKM and PSS/E power system models.
- Solid understanding of power and control systems, substation and transmission line design and construction, demand side management (DSM), generator interconnection systems, renewable energy resources and electric service rates and issues.
- Licensed Professional Engineer in the States of Maine, New Hampshire and Vermont.

PROFESSIONAL EXPERIENCE & ACCOMPLISHMENTS

TECHNICAL

- Designed collector system and transmission interconnection for numerous proposed wind farms in Canada, Maine, Massachusetts, New Hampshire, New York, Texas and Vermont.
- Designed and managed the electrical balance of plant construction for the Norway (9 MW) and West Cape (99 MW) wind projects on Prince Edward Island.
- Performed preliminary substation design on Vermont Electric Cooperative's Jay #17 and Lowell Substations and Green Mountain Power's KCW interconnection substation.
- Experienced with GEWE 1.5, 1.6 and 2.75; Vestas V80 and V90; Gamesa G87 and G90 wind turbine interconnections.
- Experienced with induction generators and DFIG technology.
- Designed multiple 2.5 MVA medium voltage service additions for Procter & Gamble's Tambrands Facility in Auburn, Maine.
- Performed distribution system impact studies on the 15 MW Berkshire Wind Project and 1.5 MW Silver Lake Photovoltaic Projects.
- Designed, managed construction and commissioned Fish Head 34.5 – 12.47 kV Substation
- Designed, managed construction and commissioned electrical collector system and interconnection for the 4.5 MW Freedom Wind and Fox Island Wind Projects.
- Testified before the Vermont Public Service Commission relative to the electric utility system impacts of interconnecting the Sheffield Wind and the Deerfield Wind Projects.
- Conducted economic due diligence reviews for Central Maine Power Company on several alternate energy projects.
- Designed and commissioned 1.7 MW Emergency Power System with automatic transfer for waste water treatment facilities at International Paper's Bucksport mill.

- Conducted an independent review of Bangor Hydro Electric Company's service quality for the State of Maine on behalf of the Public Advocate's Office.
- Performed short circuit, protection coordination and arc flash hazard analysis of plant-wide electrical systems at the Kibby Wind Farm, the Stetson Wind Farm, The Jackson Laboratory, Procter & Gamble's Tambrands Auburn facility and Groveton Paper Board's Groveton facility
- Performed comprehensive EMF surveys and calculations for proposed power plants in Dighton, Massachusetts; Chelsea, Massachusetts; Johnston, Rhode Island; and Tiverton, Rhode Island; Middletown Connecticut; Yarmouth, Massachusetts; Meriden, Connecticut; Norwalk, Connecticut and testified before both the Connecticut and Massachusetts Facility Siting Council on the issue.
- Performed comprehensive EMF analyses for proposed high voltage transmission projects in Rochester, Southampton and Smithtown, New York and submitted testimony before the New York State Public Service Commission on the issue.
- Performed EMF surveys on over 50 residential households, municipal buildings, commercial and industrial facilities.
- Served as owner's representative for the Commissioning of Jamaica Private Power Company's (JPPC) 60 Mw diesel power plant in Kingston, Jamaica.
- Performed detailed surge protection analysis for transmission facilities at International Paper Company, AES Londonderry, Public Service of New Hampshire and Meriden.
- Conducted embedded and marginal cost of service studies and sundry rate design analyses for retail and wholesale rate cases. Developed rate tariffs, rules and regulations and applications for Maine PUC and FERC submissions.
- Testified before the Maine PUC on matters relating to retail cost of service, pole rental rates, and cost effectiveness of DSM programs.
- Conducted seminars on rate and energy management topics.

MANAGEMENT

- Served as Manager of Power System Analysis for TRC Engineers, LLC
- Served as oversight witness for interconnection relay and trip testing for Central Maine Power Company.
- Served as Project Manager of Central Maine Power Company's Generation Management System (GMS), Androscoggin Energy LLC (AELLC), Rumford Power Associates (RPA), and Bucksport Energy, LLC (BELLC) Merchant Plant Projects.
- Managed the Central Maine Power Company's power contracts and joint owner's agreements associated with Maine Yankee, Connecticut Yankee, Vermont Yankee, Yankee Rowe and Millstone Unit 3.
- Served as Director of System Engineering for Central Maine Power responsible for relay and control panel designs for line terminal and transformer panels, procurement specifications for large power transformers, uninterruptable power supplies, battery systems and other electrical components.

- Directed the organization and development of the Electric Council of New England (ECNE) National Conference "Demand-Side Management: Partnerships in Planning" held in Boston, Massachusetts in November of 1989.
- Worked with clients to resolve technical questions related to rates, energy management programs and power quality.

EMPLOYMENT HISTORY

RLC ENGINEERING, LLC – Augusta, ME

2008 – present *Principal Electrical Engineer and Manager of Engineering Services*

TRC/E-PRO ENGINEERING & ENVIRONMENTAL CONSULTING, LLC – Augusta, ME

2006 – 2007 *Manager, Power Systems Studies*

1999 – 2006 *Principal Electrical Engineer*

E-PRO AND CENTRAL MAINE POWER COMPANY – Augusta, ME

1997 – 1999 *Principal Electrical Engineer*

1995 – 1996 *Director of Business Development*

CENTRAL MAINE POWER COMPANY – Augusta, ME

1994 – 1995 *Technical Coordinator, Nuclear and Interim Manager of Electrical Support Services*

1991 – 1993 *Director of System Engineering*

1986 – 1990 *Director of Energy Management Planning*

1984 – 1985 *Director of Costing and Pricing Analysis*

1975 – 1983 *Staff Engineer in the Operating and Rate Departments*

EDUCATION

B. S., Electrical Engineering, University of New Hampshire, 1974

M. S., Management, Thomas College, 1980

PROFESSIONAL AFFILIATIONS / REGISTRATIONS

- Licensed Professional Engineer, Maine, #3811, since 1978
- Licensed Professional Engineer, New Hampshire, #10409, since 2001
- Licensed Professional Engineer, Vermont, #69338, since 2010
- Licensed Professional Engineer, Province of Prince Edward Island, #1140, since 2007

QUALIFICATIONS

- Current position as Principal Civil Engineer responsible for Project Management and civil design of substation and transmission line projects.
- Thirty seven (37) years experience in the planning, management and construction of large and medium size industrial facilities and electric power projects.
- Extensive experience managing, trouble shooting and resolving commercial issues and disputes involving large construction projects from Maine to Virginia.
- Registered Professional Engineer in the State of Maine.

PROFESSIONAL EXPERIENCE & ACCOMPLISHMENTS

TECHNICAL AND MANAGEMENT

- Two and one half (2 1/2) years as Contracts Manager, Procurement Manager, Real Estate Manager and Manager of Construction & Procurement Planning for a billion dollar transmission expansion project from inception through permitting interfacing with all phases of the project team including the engineering, environmental, legal, real estate and planning functions.
- Nineteen (19) years experience with a large nationally prominent construction firm specializing in power, marine and heavy construction projects. Positions held included Senior Project Engineer, Project Manager, and Corporate Contracts Manager. Projects managed include microchip plant expansion (\$60 mm), paper mill machine rebuild (\$60mm), large catalog company design/build of new distribution center (\$20mm not including equipment), shipyard facility design/build demolition/construction (\$20mm), numerous hydropower generation plant construction (12MW, 25 MW) and 115kV transmission line construction.
- Ten (10) years experience as Construction Manager and Director of Construction Engineering for a large Maine utility. Responsibilities included engineering oversight of the construction of all generation, substation, transmission and commercial facilities.
- Extensive experience managing claim avoidance and disputes activities, including mediation, arbitration, Dispute Review Board and legal proceedings.
- Extensive experience constructing large civil site work, bridge/highway and other power plant facilities.

EMPLOYMENT HISTORY

RLC ENGINEERING, LLC – Augusta, ME

2009 – present *Principal Civil Engineer*

CIANBRO CORPORATION – Pittsfield, ME

2007 – 2009 *Contracts/Construction Manager MPRP Program*

1998 – 2006 *Corporate Contracts Manager*

1993 – 1997 *Project Manager*

WARREN CONSTRUCTION – Augusta, ME

1990 – 1992 *Construction Manager*

CENTRAL MAINE POWER COMPANY – Augusta, ME

1987 – 1990 *Director of Construction Engineering*

1980 – 1986 *Construction Manager*

STATLER TISSUE COMPANY – Augusta, ME

1976 – 1979 *Civil Engineer*

CIANBRO CORPORATION – Portland, ME

1973 – 1975 *Field Engineer*

EDUCATION

B. S., Civil Engineering, University of Maine, 1972

PROFESSIONAL AFFILIATIONS / REGISTRATIONS

- Registered Professional Engineer, Maine, #3551, since 1976



Albert Frick Associates

Soil Scientists & Site Evaluators
95A County Road Gorham, ME 04038
(207) 839-5563 FAX (207) 839-5564

Albert Frick, SS, SE
James Logan, SS, SE
Matthew Logan, SE
Brady Frick, SE
Bryan Jordan, SE
William O'Connor, SE
Noel Dunn, Office Manager

James Logan

EDUCATION: **Bachelor of Science**, May 1985
University of Maine, Orono, Maine
Program: Natural Resources – Land Use Planning

Rutgers – The State University of New Jersey, 1979-1983
Program: Environmental Science – Water Resources

WORK EXPERIENCE:

July 1987 - Present **Consulting Soil Scientist and Site Evaluator. Albert Frick Associates, Inc. Gorham, Maine.**
Professional associate in small consulting firm that produces high-intensity soil maps, subsurface wastewater disposal system designs, environmental studies, and subdivision planning with regard to soil utilization.

March 1986 - June 1987 **Research Technician II. University of Maine at Orono. Department of Plant & Soil Sciences.**
Responsible for soil site-disturbance study assessing the effects of paper industry cultural practices on the chemical components of soils and groundwater quality.

May 1985 - March 1986 **Biologic Aide. Soil Conservation Service. U.S. Dept. of Agriculture**
Compilation and construction of soil maps for Cooperative Soil Survey (Knox-Lincoln, Hancock, and Oxford counties), using aerial photos and field observation.

September 1984 - May 1985 **Research Assistant. Soil & Water Resources Center. University of Maine at Orono.**
Acid deposition studies with regard to soil properties, including in-depth chemical laboratory analysis.

July 1981 - December 1981 **Compliance Investigator. New Jersey Department of Environmental Protection.**
Had enforcement responsibility for state and federal discharge permits for treatment facilities, also including flood control, stream encroachment and sludge application.

**January 1981 -
July 1981**

Staff Scientist. ECOL Science Environmental Consulting Group
Preparation and presentation of Environmental Impact Statements, Comprehensive Plans, and other environmental documents for private and public-sector organizations.

1980 – 1981.

Environmental Compliance Investigator, New Jersey Department of Environmental Protection.
Inspected municipal wastewater treatment facilities for compliance with state and federal regulatory programs.

PUBLICATIONS: **An Investigation into the Effects of Site Disturbance on the Mobilization of Accumulated Trace Metals from Forest Floors and the Implications for Groundwater Quality.** Land & Water Resources Center, University of Maine (October, 1987).

PROFESSIONAL AFFILIATIONS AND ORGANIZATIONS:

Maine Certified Soil Scientist #213
Maine Licensed Site Evaluator #237
Maine Association of Professional Soil Scientists, past Vice-President
Maine Associates of Site Evaluators (Secretary, 1991-1992), present
MASE Technical Review Committee, Chairman
Soil Conservation Society of America, Pine Tree Chapter member.
Co-chair of Subcommittee on Design, Soils and Site Conditions for
Task Force on Review of Maine Subsurface Wastewater
Disposal Rules (2006-present)

TERRENCE J. DEWAN, ASLA
Principal

Terry DeWan has over 35 years of professional experience in landscape architecture, visual resource assessment, site planning, design guidelines, community development. His experience includes work with communities, state agencies, private developers, utility companies, and the forest products industry in New England. He has written numerous studies on community planning, visual impacts, recreation planning, water access, and highway corridor redevelopment.

Maine Licensed Landscape Architect #6

EDUCATION

State University of New York, School of Environmental Sciences and Forestry, cum laude

VISTA Training, University of Colorado

Visual Assessment Procedures, University of Southern Maine

PROFESSIONAL EMPLOYMENT

1988-Present	TJD&A, Yarmouth, ME Principal
1977-1988	Mitchell-DeWan Associates Portland, ME Partner
1976-1977	Center for Natural Areas South Gardiner, Maine Landscape Architect
1973-1976	Moriece and Gary of Maine Portland, ME Landscape Architect
1971-1973	The Architects Workshop Philadelphia, PA VISTA/Landscape Architect
1969-1970	Rocky Mountain Development Council, Helena, Montana VISTA Volunteer
1968-1969	Peter G. Rolland and Associates, Rye, NY

PROFESSIONAL AFFILIATIONS

Maine State Board for Licensure of Architects, Landscape Architects, and Interior Designers, 1986-present, Secretary
 Public Art Committee, Maine Arts Commission
 American Society of Landscape Architects
 Boston Society of Landscape Architects
 LAAB: Landscape Architectural Accreditation Board, CLARB representative

SELECTED PROJECT EXPERIENCE

VISUAL IMPACT ASSESSMENT

Spruce Mountain Wind Project, Patriot Renewables, Woodstock, ME.

Prepared Visual Impact Assessment for proposed 11 turbine wind project.

Saddleback Mountain Wind Project, Patriot Renewables, Carthage, ME. Visual Impact Assessment for 19 turbine wind project.

Maine Power Reliability Program. Visual Impact Assessment (VIA) for 352 miles of new 115 kV and 345 kV transmission line corridor system upgrades in 82 Maine towns, for Central Maine Power.

Stetson I & II Wind Project, Evergreen Wind V, LLC, Washington County, ME. Prepared Visual Impact Assessment including 3D Modeling and photosimulations for a 28 turbine wind project and 17 turbine expansion.

Pinnacle Wind Project and Liberty Gap Wind Project, West Virginia. Visual reports in support of state permitting applications for US Wind Force.

Cape Wind Energy Project, Nantucket Sound, MA. Peer review of Draft Environmental Impact Statement prepared by MMS.

Maine Governor's Task Force on Wind Power Development. Consultant to Task Force on scenic issues.

Maine DEP / Visual Assessment Rules. Consultant to DEP in the formulation of Chapter 315 Regulations: Assessing and Mitigating Impacts to Existing Scenic and Aesthetic Uses. Served on DEP Task Force for the development of the rules.

Hudson Landing, Kingston, NY
 A review of the VIA and Development Guidelines for a 1,750-unit community on the Hudson River. Hudson River Heritage.

St. Lawrence Cement, Hudson, NY
 Evaluation of visual impacts of proposed cement plan in a historic Hudson Valley community for Scenic Hudson, The Olana Partnership, and Hudson Valley Preservation.

Black Nubble Wind Farm, Redington Township, ME. VIA for 18 wind turbine project near Sugarloaf and Saddleback Mountains for Maine Mountain Power.

Scenic Inventory, Mainland Sites of Penobscot Bay. ME State Planning Office Critical Areas Program.

Scenic Inventory, Islesboro, North Haven, Vinalhaven, Maine. ME State Planning Office Critical Areas Program.

Downeast LNG, Robbinston, ME. VIA for LNG terminal. Downeast LNG, Inc.

Maine DEP: West Old Town Landfill. Peer review of VIA for an expanded landfill.

MaineDOT: Bath-Woolwich Bridge. Assessment of potential visual impacts to the historic U.S. Custom House in Bath.

Bath Iron Works, Land Level Transfer Facility, Bath, Maine. VIA and mitigation plan for BIW's \$250M modernization plan.

Bangor Hydro-Electric. 345 kV Transmission line from Orrington, ME to New Brunswick.

New England Wind Energy Station, Boundary Mountains of Western Maine. Kenetech Windpower, Livermore, California.

Stiles Road Quarry, Torrington, CT. VIA of a proposed quarry expansion in an historic community in southern Connecticut.

Recreation Plan, Visual Assessment, and Relocation Study for Golden Road, 'Big A' Hydroelectric Facility, Great Northern Paper, Millinocket, Maine.

Recreation, Land Use, and Visual components for Relicensing of Ripogenus Dam and Penobscot Mills, Great Northern Paper, Millinocket.
AES-Harriman Cove Co-generation Project, Bucksport, Maine. Visual assessment of a coal-fired power plant on Penobscot River.

Route 27 Scenic Byway Corridor Management Plan. MDOT. Long-term plan for 45 miles of Route 27 between Kingfield and Canada.

Preliminary Facilities and Interpretive Media Plan, Kancamagus Scenic Byway. White Mountain National Forest. Demonstration forest, hiking trails, interpretive exhibits, overlooks, outdoor amphitheater.

SELECTED PUBLICATIONS

DeWan, Terrence J. **Scenic Assessment Handbook.** Maine State Planning Office. 2008.

DeWan, Terrence J. **A Vision for the Moosehead Lake Region.** Natural Resources Council of Maine. 2006.

DeWan, Terrence J., and Brian Kent. **The Great American Neighborhood, A Guide to Livable Design.** Maine State Planning Office. 2004.

DeWan, Terrence, J. **Scenic Inventory, Islesboro, North Haven, Vinalhaven, Maine.** ME State Planning Office Critical Areas Program. 1992.

DeWan, Terrence, J., and Don Naetzer. **Scenic Inventory, Mainland Sites of Penobscot Bay.** ME SPO. 1990.

SELECTED PRESENTATIONS

Scenic Inventory Training. Maine State Planning Office. 2009.

Halifax Regional Municipality Planning Presentation. 2008.

Photoshop as a Design Tool. American Society of Landscape Architects Annual Meeting. Portland, OR. 1998.

Chattahoochee Riverway Plan. American Society of Landscape Architects Meeting. Atlanta. 1997.

Los Angeles River Plan. American Society of Landscape Architects Annual Meeting. Los Angeles. 1996.

Cleveland Computer Design Charrette. American Society of Landscape Architects Annual Meeting. Cleveland. 1995.

Scenic Assessments Methods along the Maine Coast. 20th Annual Natural Areas Conference, Orono, Maine. 1993. Moderator.

Visual Assessment Standards and Technology Conference: Case Studies in Visual Assessment Techniques. SUNY, Syracuse, New York 1992.

Scenic Inventories, Maine Coast Scenic Workshop, Maine State Planning Office, Bar Harbor 1990.

AWARDS AND DISTINCTIONS

Council of Landscape Architects Registration Boards. Presidents Awards

Boston Society of Landscape Architects Excellence Award for outstanding professional practitioner
Merit Award for Planning: 'From the River to the Bay' A Parks, Recreation, and Open Space Plan for Brunswick, Maine
Merit Award for Landscape Analysis and Planning – Park Planning: Coastal Maine Botanical Gardens, with EDAW

North American / United Kingdom Stewardship Exchange, Exmoor National Park, North Devon, England

American Planning Association, NNE Chapter: Outstanding project of the year award:
Kancamagus Scenic Byway Facilities and Interpretive Plan (with White Mountain National Forest).
Knightville-Mill Creek Vision Plan, South Portland
A Guide to Livable Design

American Society of Landscape Architects Merit Award for Communications: Los Angeles River Project and Chattahoochee River Greenway, Atlanta



R Scott Bodwell PE

Principal

Bodwell EnviroAcoustics LLC

Summary

R. Scott Bodwell, P.E. is the founder and principal of Bodwell EnviroAcoustics LLC, an engineering consulting firm that services the energy and industrial sector and specializes in Environmental Acoustics.

Professional Experience

Mr. Bodwell has over 25 years of experience in environmental assessments, project engineering and design, and regulatory permitting for major utility, energy production, and transmission projects in the northeast United States.

As a consulting engineer in Maine since 1987, Mr. Bodwell has conducted acoustic studies on over 300 industrial development projects and is recognized as a leading authority on Environmental Acoustics in Maine. Mr. Bodwell was the lead acoustical engineer on the first two utility-scale wind energy facilities in Maine at Stetson Mountain in Washington County and Mars Hill Wind Farm in Aroostook County. He also conducted the acoustic study for the wind turbine installation at University of Maine at Presque Isle.

Mr. Bodwell has worked closely with the Maine Department of Environmental Protection and Maine Land Use Regulation Commission and independent acoustical consultants to develop and refine procedures and methods for assessment and measurement of sound from wind turbines. Specialized measurement techniques were developed based on several hundred hours of sound testing for operating wind turbines in Maine and are considered to be some of the most advanced and thorough testing procedures in the United States.

Mr. Bodwell has provided expert testimony at state hearings and municipal reviews in successful support of major industrial and energy projects in Maine including Stetson Wind Project, Rollins Wind Project, Maritimes & Northeast Pipeline, Bath Iron Works, Maine Medical Center, Stratton Power Project, St. Joseph's College of Maine, and Waste Management of Maine. He also developed and conducted an Environmental Acoustics seminar for project managers and technical staff at the Maine Department of Environmental Protection.

Mr. Bodwell has conducted peer reviews of environmental assessments by others for the Maine DEP, the Saco River Corridor Commission and several municipalities in Maine, and assisted municipalities with the development of noise control ordinances.

Education and Credentials

Mr. Bodwell is an Engineering Sciences graduate of Dartmouth College and has completed numerous graduate and continuing education courses in engineering and acoustics.

Mr. Bodwell has been a licensed professional engineer in Maine since 1994.