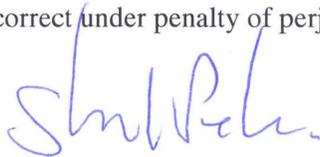


## Declaration of Steven Pelletier

1. My name is Steven K. Pelletier. I am a Certified Wildlife Biologist and Principal at Stantec Consulting in Topsham, Maine with over 25 years of professional natural resource experience, including the direct design and oversight of avian and bat migration and habitat studies in terrestrial and marine environments throughout the continental US. A copy of my CV is attached.
2. I am providing this declaration in support of comments to be filed by the Infrastructure Coalition with respect to the FCC's Programmatic Environmental Assessment regarding the Antenna Structure Registration system. This declaration is the result of my own research and I declare the following to be true and correct based on personal knowledge, information and belief.
3. In assessing general and specific standards for the marking and lighting of various types of obstructions to promote aviation safety, the FAA has provided a series of requirements and recommendations (USDOE Advisory Circular 70/746-0-1K; effective 2/1/07). Differences in requirements are however apparent between the differing types of obstructions. For example, general standards for radio and television towers and similar skeletal structures are subject to a diverse array of lighting and marking standards, each dependent on the overall height of the tower structure and the presence/absence of supporting guy wires. These include side and top lighting requirements with varying light intensity as well as flash sequence and synchronization standards, and involve L-810 Steady Burning Red Obstruction Lights, L-864 Flashing Red Beacons (with 20-40 flashes per minute "FPM"), L-856 High Intensity Flashing White Strobes (40 FPM), L-865 Medium Intensity Flashing White Strobes (40 FPM), and Dual L-864/L-865 Flashing Red Lights (20-40 FPM)/ Medium Intensity Flashing White Strobes (40 FPM) for daytime, twilight, and night use (pages 2-4 below).
4. In contrast, while the document reports that red lights are most effective and therefore the first consideration for lighting wind turbines, general standards for marking and lighting of wind turbine farms (Chapter 13-131) recommends nighttime wind turbine obstruction lighting consist of the FAA L-864 aviation red-colored flashing lights with 20-40 FPM. White strobe FAA L-865 (medium intensity; 40-FPM) may also be used in lieu of the preferred L-864 red flashing lights, but must be used alone without any red lights and positioned in the same manner as the red flashing lights. The position of the lighting on the turbine is also limited to the top of the nacelle on the tower, and does not include side mounted lights of any type (page 5). Thus, unlike many telecommunications towers, the FAA Advisory Circular does not permit wind turbines to utilize steady-burning side-mounted L-810s.
5. Given the differences in how the FAA requires the lighting to be between communications towers and turbine towers, the relevance of wind turbine avian mortality data to the FCC's PEA concerning communication tower registration is unclear.

I declare the foregoing to be true and correct under penalty of perjury.



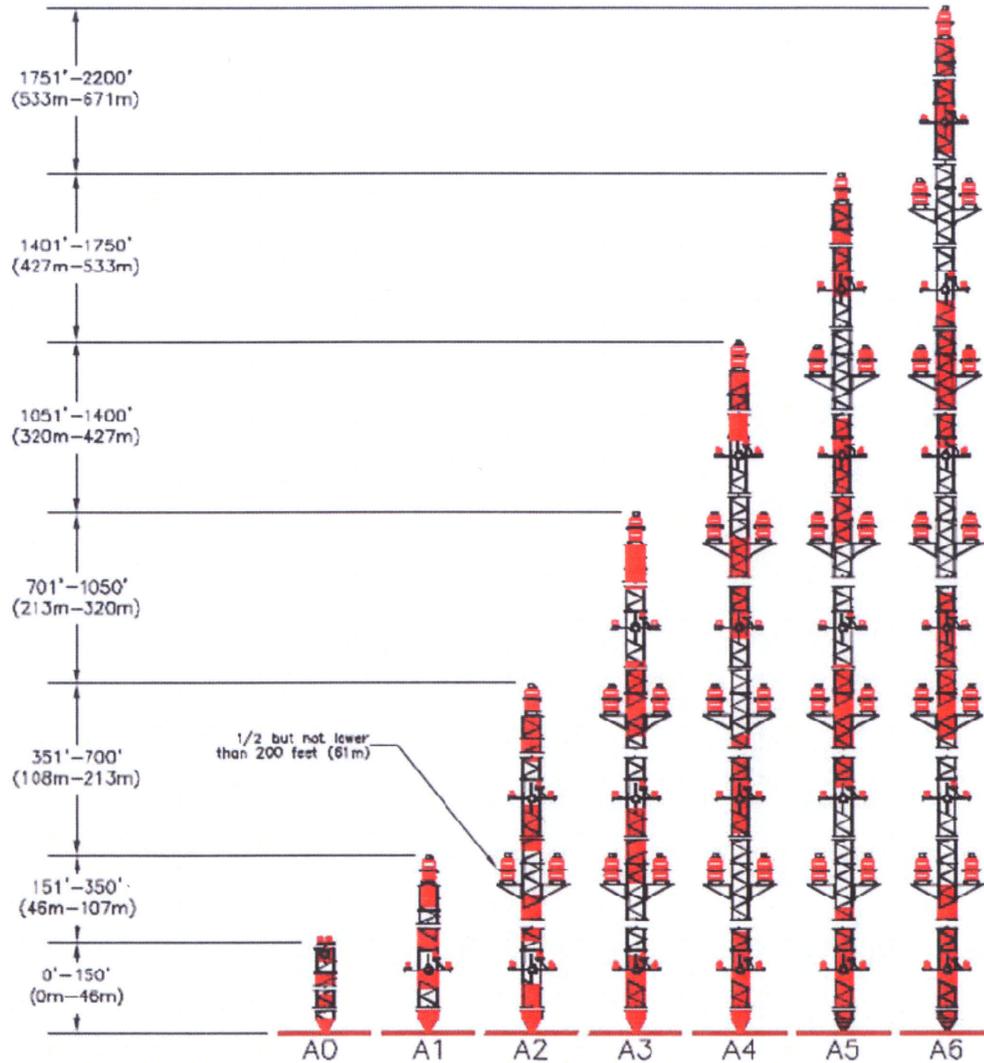
Steven K. Pelletier, CWB

Executed: \_\_\_\_\_

1/14/2010

# RED OBSTRUCTION LIGHTING STANDARDS (FAA Style A)

Day Protection = Aviation Orange/White Paint  
Night Protection = 2,000cd Red Beacon and sidelights



– L-864 Flashing Beacon



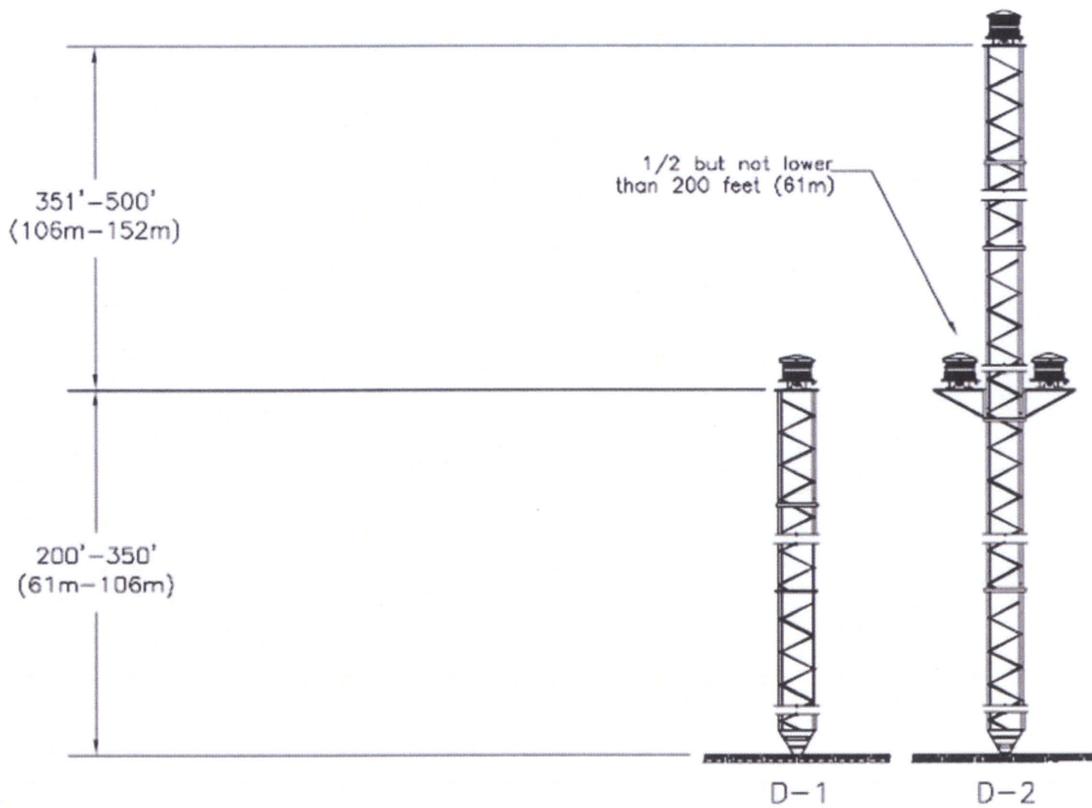
– L-810 Obstruction Light

# MEDIUM INTENSITY WHITE OBSTRUCTION LIGHTING STANDARDS (FAA Style D)

Day/Twilight Protection = 20,000cd White Strobe

Night Protection = 2,000cd White Strobe

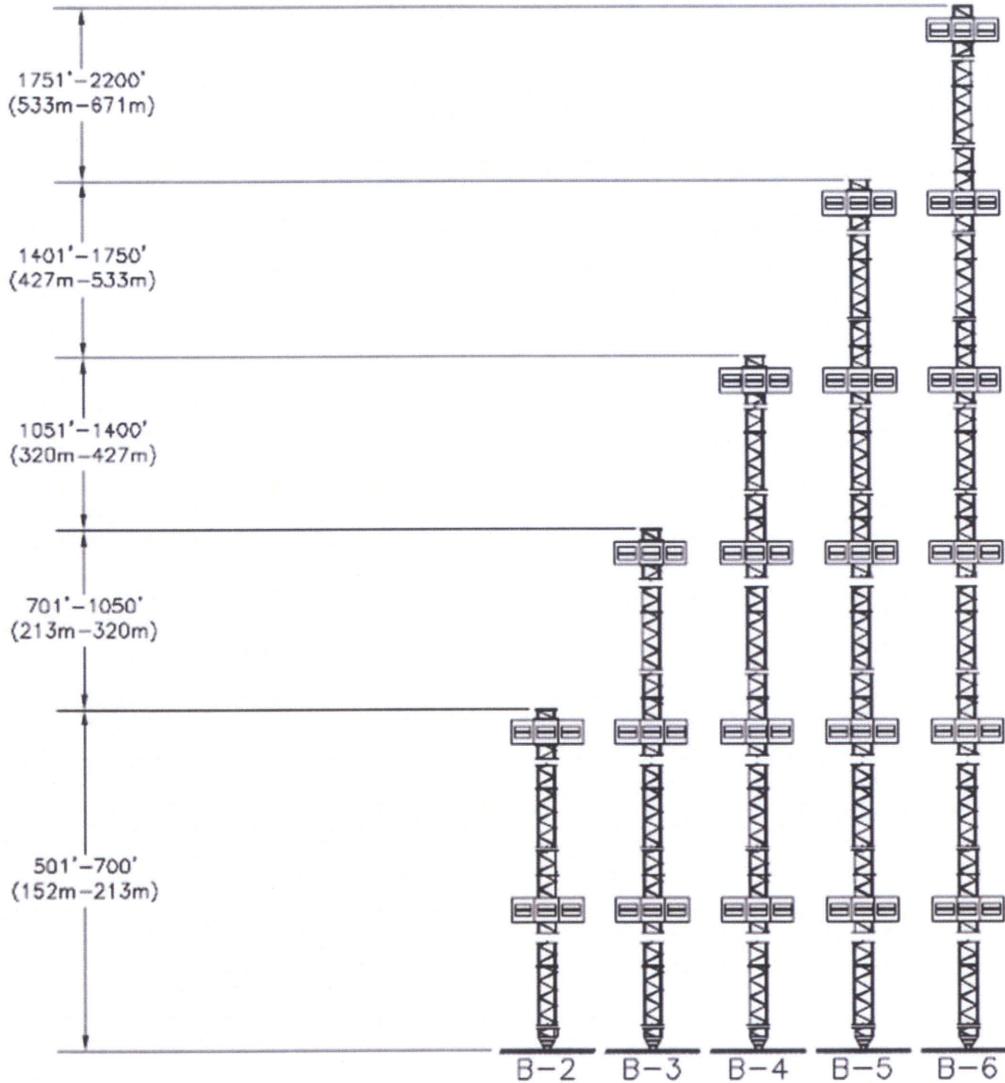
Painting of tower is typically not required.



- L-885 Flashing White Strobe

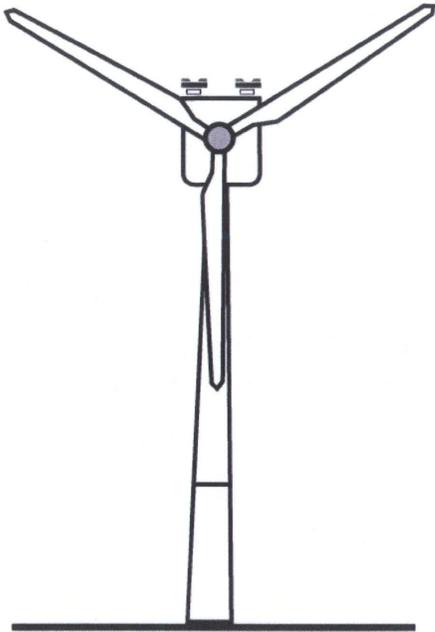
# HIGH INTENSITY OBSTRUCTION LIGHTING STANDARDS (FAA Style B)

Day Protection = 200,000cd White Strobe  
Twilight Protection = 20,000cd White Strobe  
Night Protection = 2,000cd White Strobe

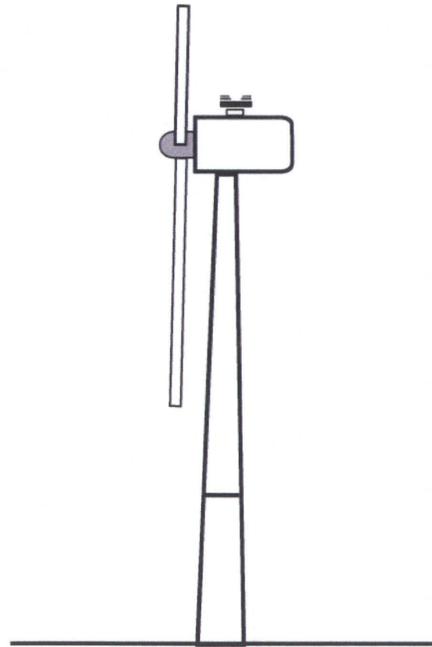


 - L-856 High Intensity Strobe  
(3 Flashheads required per level for 360° coverage)

TYPICAL LIGHTING OF A STAND ALONE WIND TURBINE



Front View



Side View



Mr. Pelletier is a Certified Wildlife Biologist, Professional Wetland Scientist, and Certified Professional and licensed Forester with over 25 years of professional experience. He specializes in a variety of landscape and site level natural community and habitat analyses, forest ecology/management, and project impact avoidance and mitigation. He offers particular expertise in rare species evaluations, avian/bat risk assessments, and wetland assessments for a variety of projects ranging from transportation to energy development.

Mr. Pelletier has provided expert witness testimonies and third-party reviews on a variety of ecological issues and concerns, and served on numerous State advisory committees and stakeholder groups involving diverse resource subjects such as mitigation banking, on/offshore wind energy, cumulative resource impacts, and vernal pools. He has also developed and taught wetland and timber harvest certification courses for municipal Code Enforcement Officers, and resource identification courses for Maine (DEP) staff and industry foresters.

#### PROFESSIONAL EXPERIENCE

- Stantec Consulting. 2007-present. Senior Principal.
- Woodlot Alternatives, Inc. 1987-2007. Vice President and Founder.
- Maine DEP. 1984-1989. Environmental Enforcement Specialist II.
- Maine Dept. of Inland Fisheries and Wildlife. 1980-1985. Seasonal Biological Assistant.
- US Forest Service, Platina, CA. 1982-1983. Wildlife Biologist.
- US Forest Service, Cordova, AK. 1981. Wildlife Biologist Assistant.
- US Navy, USS America (CV-66). 1974-1976. Photographers Mate.

#### EDUCATION

BS, Wildlife Management & Forestry, University of Maine, Orono, Maine, 1980

AS, Forest Management Technology, with Distinction, University of Maine, Orono, Maine, 1978

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

#### REGISTRATIONS

Certified Wildlife Biologist, The Wildlife Society

Professional Wetland Scientist, Society of Wetland Scientists Certification Program

Certified Forester, Society of American Foresters

Licensed Professional Forester, State of Maine, Board of Licensure of Foresters

Certified in Habitat Evaluation Procedures, U.S. Fish & Wildlife Service, National Conservation Training Center

#### PROFESSIONAL ASSOCIATIONS

Member, Co-founder, Past President, Maine Association of Wetland Scientists

Ocean Energy Task Force, Environmental and Human Impacts Subcommittee, Maine State Planning Office

Maine Vernal Pools Work Group, Maine State Planning Office

Science Advisory Committee, Friends of Merrymeeting Bay

West Branch Stewardship Advisory Group, Forest Society of Maine

Member (Maine and New England Chapters), The Wildlife Society

Member and Former Board Member, Brunswick-Topsham Land Trust

# Steven K. Pelletier PWS, CWB, LPF

Principal, Environmental Management

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Board Member, State of Maine, Board of Licensure of Foresters

(Past) Maine Oil Spill Advisory Committee, appointed by Governor of Maine, State of Maine

Member, Society of Wetland Scientists

Member, Society of American Foresters

Member, Forest Guild

## PROJECT EXPERIENCE

### Natural Resource Services

#### Wind Farm Development Surveys and Risk Assessments (Principal Scientist)

Oversaw pre-construction wind energy development surveys and risk assessments at multiple sites throughout coastal Atlantic and northeastern US. Assessments include preliminary site screening, landscape analyses, fatal flaw analyses, neo-tropical migrant surveys using NEXRAD and marine radar, acoustic bat, breeding bird, bat mist netting, and raptor surveys, and ecological community characterizations. In addition, Mr. Pelletier has aided in development of a weight-of-evidence approach to risk assessments specifically for wind farms. This risk assessment approach was presented to the annual (2007) conference of The Wildlife Society in Tucson, Arizona.

#### Gulf of Maine Avian/Bat Pilot Migration Project, Gulf of Maine (Principal Biologist)

Designed and directed offshore fall (2009) avian and bat migration survey along ~140 mile transect along Maine coast from Petit Manan to Halfway Rock Islands, and extending up to 20(+) miles offshore to Mt Desert Rock. Survey included dual coastline/island x-band radar surveys and concurrent acoustic bat surveys at 12 dispersed locations including 10 offshore island sites. Project was supported by Stantec Consulting and included federal, state, and NGO partners. Survey results to be released and currently pending.

#### Expert Witness Testimony (Principal Scientist)

Provided critical State (ME, NH, VT, MA, WV) Expert Witness testimony on natural resource issues involving rare natural communities, landscape- and project-scale habitat fragmentation, avian, bat, and terrestrial rare species impact assessments, avian and bat migration, and timber trespass. In addition, Mr. Pelletier has provided external third-party reviews of proposed project impacts on behalf of state review and regulatory agencies.

#### Plum Creek Moosehead Lake Region Concept Plan, Maine (Project Manager)

Managed and oversaw extensive, multi-year broad spectrum and comprehensive natural resource evaluation and field analysis of lands in the Moosehead Lake region of Maine. Landscape-level surveys were conducted across approximately 11,000 acres of land proposed for development, and 392,000 acres of permanently conserved lands as proposed by the Plum Creek Concept Plan. Surveys included rare, significant, or otherwise unusual or unique natural resources that could potentially be present within each proposed development area and involved rare, threatened, or endangered (RTE) wildlife habitat; RTE plant species; Significant Wildlife Habitat, including potential Deer Wintering Areas and Inland Wading Bird and Waterfowl habitat; aquatic habitats, including vernal pools, streams, and shorelines; and Maine Land Use Regulation Commission communities. Extensive reports and maps summarizing survey results were prepared, followed by extensive expert witness testimony. Findings were key to the successful permitting of the Plan and developing the nationally recognized Moosehead Region Conservation Easement.

#### Greenbush Natural Resource Characterization, Permitting, and Environmental Monitoring, Hingham, Cohasset, and Scituate, Massachusetts (Project Manager)

Directed identification and assessment of wetland and vernal pool resources and state-listed rare wildlife and plant species relative to reconstruction of an abandoned 18-mile railroad right-of-way. Developed key mitigation (rail line crossing) design elements enabling MESA compliance for a rare species "take" and approval of required Conservation Management Permit. Conducted pilot assessment of a prototype crossing structure designed for use by spotted turtles and other urban wildlife, and oversaw monitoring of rare species pre-, during, and post-construction of the rail line including water quality monitoring of 52 on-site and control vernal pools, surface water sampling for hydrocarbon analysis, amphibian egg mass, invertebrate and vegetative community surveys, and spotted turtle radio telemetry. Provided expert witness testimony and participated in state DEP and MNHESP agency consultations on behalf of MBTA.

## Steven K. Pelletier PWS, CWB, LPF

Principal, Environmental Management

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### **Buzzards Bay Oil Spill Impact Assessments, Boston, Massachusetts (Project Manager)**

*Emergency Oil Spill Response, assisted in oversight of spill response efforts on behalf of NOAA Natural Resource Damage Assessment (NRDA) team, coordinated wetland habitat and avian impact evaluations within the affected coastal zone immediately following spill, conducted intensive surveys of waterfowl and wading bird populations in oil spill area, and assisted NOAA and USFWS in preliminary planning of habitat restoration efforts. Serves as member of NOAA's NRDA team, contracted to perform scientific and ecological studies for NOAA on a nationwide basis.*

### **Carriage Road Rehabilitation - Acadia National Park, Bar Harbor, Maine (Project Manager)**

*Developed long-term vista restoration strategies for a variety of scenic forest vista types along the historic, 51-mile Carriage Road system in Acadia National Park. Work included relocation of several hundred interior and exterior viewsheds as originally envisioned and developed by JD Rockefeller and generation of a series of low-cost, silvicultural management strategies for and maintaining trees and woody vegetation associated with this public resource over the long term.*

### **Casco Bay Watershed Wetland Characterization, Cumberland County, Maine (Project Manager)**

*Provided technical oversight for development of GIS-based Pilot assessment methodology within 985-square-mile Casco Bay Watershed in support of function-based system to identify priority wetlands throughout Maine. Activities included air photo and NWI interpretation, conducting field evaluations, generating GIS data sets and maps, and coordination with Federal and State Pilot Project Steering Committee members. Final process advanced methods for identifying wetland compensation opportunities in the region and throughout the State.*

### **Maine Forest Sustainability, Maine (Certified/Licensed Professional Forester)**

*Conducted technical evaluation of State forest sustainability issues on behalf of the Maine Forest Service. Purpose of the evaluation was in support of a comprehensive analysis of state-wide forest components, conditions and susceptibility to threats. Evaluation incorporated direct interviews of professional representatives from academic institutions, the forest industry, federal and state agencies, non-government environmental organizations, resource consultants, and private researchers from across Maine.*

### **Acadia National Park Rehabilitation NEPA Documentation, Bar Harbor, Maine (Project Manager)**

*Directed natural resource and cultural resource assessments for reconstruction and infrastructure work on 10 major projects at Acadia National Park, including rehabilitation of 24 historic bridges, beach areas, visitor facilities, campgrounds, and power line infrastructure. Coordinated wetland and ecological surveys, production of NEPA Environmental Assessments and Categorical Exclusion documents, and coordination of local and state permitting for the projects.*

### **New Hampshire ATV Policy Development and Trail Planning, New Hampshire (Project Manager)**

*Oversaw research and development of statewide ATV Trail Plan to address dramatic growth in ATV use throughout NH. Plan inventoried existing trails open to the public, including trail length and condition, organizations responsible for maintenance, funding levels, and estimated use. Using registration and demographic data, the amount of trail expansion required to accommodate the public need for the next 5 years was assessed. Identified sites for strategic acquisition and trail development by the state, reviewed the environmental sensitivity of these sites, and assessed level of funding necessary for purchases of land, easements, and rights-of-way. Also evaluated state's statutory process for development of ATV trails on public lands, including a review of environmental filter protocols.*

### **Schoodic Point Assessment, Winter Harbor, Maine (Certified/Licensed Professional Forester)**

*Conducted a timber-based, ecological assessment of a 1600-acre parcel on Schoodic peninsula on behalf of Friends of Acadia, Acadia National Park, and Maine Coast Heritage Trust, in response to local and regional concerns over proposed timber harvesting on the parcel. A Conservation Plan was developed in cooperation with the landowner/developer, based on sustainable forest management principles, minimizing adverse impacts on adjacent Park Service lands and Park visitor experiences.*

### **Plum Creek Deer Wintering Surveys, Maine (Project Manager)**

*Managed and oversaw a typical growing season and (typical) winter field surveys to evaluate deer wintering habitat on 60,000(+) acres of Plum Creek land in areas with historic deer use. Surveys conducted in concert with Maine Department of Inland Fisheries and Wildlife and Plum Creek biologists.*

**Steven K. Pelletier** PWS, CWB, LPF

Principal, Environmental Management

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**Mere Point Boat Launch Evaluations, Permitting, and Testimony, Brunswick, Maine (Project Manager)**

*Directed wetland habitat assessments and wildlife impact evaluations within terrestrial, riparian, and coastal zones, developed mitigation options and plans, and assisted in state and federal permitting for a controversial public boat launching facility in Casco Bay. Provided expert witness testimony for BEP hearings and public process.*

**Regional Blanding's Turtle Rapid Habitat Assessment, Southern and Central New Hampshire (Project Manager)**

*Oversaw landscape analysis, habitat assessment, and survey of Blanding's turtle habitat modeling results in southern and central NH. Developed regional study plan in coordination with NHFWD to assess modeling results of 15 multi-town sites (>1500 acres). Summary finding included summary results of suitable habitat conditions, new observations of Blanding's turtles, and conservation planning/management recommendations to NHFWD.*

**Integrated Forest (Timber) and Wildlife Management Plans, Maine (Certified/Licensed Professional Forester, Certified Wildlife Biologist)**

*Developed integrated Forest and Wildlife Management Plans providing commercial and private clients with comprehensive appraisals of current and projected resource values, timber volumes and conditions, in support of a multiple-resource forest management strategy.*

**Municipal and Private Foundation Forest Management Plans (Certified/Licensed Professional Forester, Certified Wildlife Biologist)**

*Developed comprehensive forest management plans for towns as well as private land trusts and natural resource organizations interested in public, multiple-resource use. Plans frequently provide extensive natural community, stand-specific flora and fauna documentation and timber and wildlife values, as well as prevailing regulatory information.*

**Significant Wildlife Habitat Mapping, Central and Southern Maine (Project Manager)**

*Identified and mapped deer wintering areas, wetlands, and other Significant Wildlife Habitat on behalf of Maine Department of Inland Fisheries and Wildlife throughout 40 towns in southern and central Maine.*

Steven K. Pelletier PWS, CWB, LPF

Principal, Environmental Management

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## PUBLICATIONS

Pelletier, S.K., T.S. Peterson, and G. Kendrick. Gulf of Maine Offshore Bird and Bat Migration Pilot Study. *Speaker Presentation at NWCC Wind Wildlife Research Meeting VIII, Lakewood, Colorado, 2010.*

Pelletier, S.K., A.J. Gravel, and T.S. Peterson. Results of Regional Avian and Bat Migration Pilot Study in the Gulf of Maine. *Speaker Presentation at the AWEA North American Offshore Wind Conference, Atlantic City, New Jersey, 2010.*

Pelletier, S.K., G.J. Giumarro, and T.S. Peterson. Gulf of Maine Offshore Bird and Bat Pilot Study. *Speaker presentation at EnergyOcean International Conference, Ft. Lauderdale, Florida, 2010.*

What's Out There: Atlantic Offshore Bat and Bird Pilot Study 2009 Results. *Presented at AWEA Windpower Conference and Exhibition, Dallas, Texas, 2010.*

Pelletier, S.K.; G.C. Kendrick; T.S. Peterson; and A.J. Gravel. Atlantic Offshore Bird & Bat Pilot Study: 2009 Results. *Poster Presentation at AWEA Offshore Energy Conference, Atlantic City, New Jersey, 2010.*

Pelletier, S.K., G.J. Giumarro, and G.C. Kendrick. Gulf of Maine Offshore Bat and Bird Pilot Study. *Poster Presentation at the AWEA Offshore Wind Project Workshop, Boston, Massachusetts, 2009.*

Pelletier, S.K. Forest biomass – the good, the bad, the ugly. *Speaker Presentation at New England Society of American Foresters Conference; Portland, Maine, 2009.*

Giumarro, G., S. Pelletier, K. Watrous, T. Peterson, and J. Johnson. Seasonal Distribution of Tree Bats in the Northeast Using Passive Acoustic Sampling. *Poster Presentation at AWEA Windpower Conference and Exhibition, Chicago, Illinois, 2009.*

Pelletier, S.K., A.J. Gravel, and T.S. Peterson. Nocturnal avian flight heights relative to risk of collision with wind turbines. *Presented at NWCC Wind Wildlife Research Meeting VII, Milwaukee, Wisconsin, 2008.*

Pelletier, S.K., C.W. Meinke, T.S. Peterson, and A.J. Gravel. Radar and acoustic bat surveys in pre- and post-construction bird and bat mortality monitoring. *Poster Presentation at 2008 AWEA Conference in Los Angeles, California, 2008.*

Radar and Acoustic Bat Surveys in Pre- and Post-Construction Bird and Bat Mortality Monitoring. *Presented at AWEA Windpower Annual Meeting; Houston, Texas, 2008.*

Windpower and Wildlife: Survey Techniques, Impacts, and Future Research. *Speaker Presentation at Hoffman Bird Club Annual Meeting; Pittsfield, Massachusetts, 2007.*

MBTA Greenbush Rail Line - Wildlife Crossing Demonstration Project. *Presented at International Conference on Ecology and Transportation (ICOET); San Diego, California, 2005.*

Giumarro, G.J. and S.K. Pelletier. Rare Turtle Tracking and Mitigation Associated with Infrastructure Development. *Presented at North American and Natural Resources Conference, Washington, DC, 2005.*

Railroad Crossing Structures for Spotted Turtles. *International Society of Wetland Scientists 25th Anniversary Conference, Charting the Future: A Quarter Century of Lessons Learned; Seattle, Washington; with others, 2004.*

Windpower and Wildlife – Risks and Benefits. *Speaker Presentation at The Wildlife Society New England Fall Meeting, 2004.*

A Survey of Potential Vernal Pool Habitats in the Town of Falmouth, Maine. *Association of State Wetland Managers (ASWM) National Symposium, Wetlands 2003: Landscape Scale Wetland Assessment & Management; Nashua, New Hampshire; with others, 2003.*

Wildlife and critical habitat concerns associated with windpower facilities. *New England Wind Power Siting Workshop; Boston, Massachusetts, 2001.*

Steven K. Pelletier PWS, CWB, LPF

Principal, Environmental Management

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A GIS-based Wetland Characterization of the Casco Bay Watershed – A Pilot Study. *Society of Wetland Scientists (SWS) Quebec 2000: Millennium Wetland Event, 2000.*

Biodiversity in the Forests of Maine: Guidelines for Land Management. *UMCE Bulletin #7147, University of Maine Cooperative Extension; with others, 1999.*

An analysis of forest sustainability issues in Maine. *Maine Forest Service and Maine Natural Areas Program, 1996.*

Distribution and abundance of breeding birds and small mammals in the high salt marsh and adjacent upland critical edge in southern Maine. *Maine Biological and Medical Science Symposium; Bowdoin College; Brunswick, Maine; with others, 1986.*