STATE OF MAINE
DEPARTMENT OF INLAND FISHERIES & WILDLIFE
FISHERIES DIVISION – REGION C
PO BOX 220
JONESBORO, MAINE 04648

Phone (207) 434 - 5925 FAX (207) 434 - 5923

John E. Baldacci
GOVERNOR

ROLAND D. MARTIN
COMMISSIONER

July 8, 2009

Emily Walsh, Project Manager
Stantec Consulting
30 Park Drive
Topsham, ME 04086

Dear Emily:

After reviewing the maps showing the potential wind facility in Eastbrook, Maine, there are no significant fishery resources in that area. I note that each of the two sites being considered have several streams and there is a good chance that some of them have brook trout, but wind facilities are usually located as high as possible so they would likely be higher than these streams. However, if the project is eventually built, we may desire to provide input on how the power lines cross these streams.

Sincerely,

Rick Jordan

Rick Jordan
Regional Fisheries Biologist

Cc: Steve Timpano

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Maine Field Office – Ecological Services
17 Godfrey Drive, Suite 2
Orono, ME 04473-3702
(207) 866-3344 Fax: (207) 866-3351

In Reply Refer To: 53411-2009-TA-334
FWS/Region5/ES/MEFO

November 17, 2009

Emily Walsh
Stantec Consulting
30 Park Drive
Topsham, ME 04086

Dear Ms. Walsh:

Thank you for your letter dated June 19, 2009, requesting information or recommendations from the U.S. Fish and Wildlife Service (Service) concerning a proposed wind project located at Eastbrook and T16 MD, Maine. We recommend that you consult the Service's interim guidance on wind energy development at http://www.fws.gov/habitatconservation/wind.pdf. We used the Service's interim guidance as a model for developing *Guidelines for Building and Operating Wind Energy Facilities in Maine Compatible with Federal Fish and Wildlife Regulations*, which are attached to this letter. We stepped down the national interim guidance to make the guidance more relevant for Maine wind energy developers. We provide these guidelines so you can make an informed decision regarding site selection, project design, and address the requirements of federal fish and wildlife legislation.

We provide the following information concerning species protected under the Endangered Species Act, Bald and Golden Eagle Protection Act, and Migratory Bird Treaty Act for the project area that you are considering:

Endangered Species Act (ESA)

Under Section 7 of the ESA federal agencies that permit or fund wind energy projects must determine if a project may affect federally listed species. If the federal agency determines that a project has "no effect" on a listed species or their critical habitat, they do not need to seek the concurrence of the Service. If the federal agency determines that a project is "not likely to adversely affect" a listed species, the agency must explain the basis for their determination and seek the written concurrence of the Service. Projects that have an "adverse effect" on a listed species require formal Section 7 consultation with the Service.

Unauthorized take of federally-listed species is prohibited under Section 9 of the ESA. If take of a listed species is anticipated, wind developers are encouraged to contact the Service to discuss

TAKE PRIDE® IN AMERICA

obtaining an incidental take permit under Section 10 of the ESA, which involves developing a Habitat Conservation Plan.

Atlantic salmon

The proposed wind project occurs within the range of the federally endangered Gulf of Maine Distinct Population Segment (GOM DPS) of Atlantic salmon (*Salmo salar*) in Maine (74 FR 29344; June 19, 2009). The Atlantic salmon GOM DPS encompasses all naturally spawned and conservation hatchery populations of anadromous Atlantic salmon whose freshwater range occurs in the watersheds from the Androscoggin River northward along the Maine coast to the Dennys River and wherever these fish occur in the estuarine and marine environment. Included in the GOM DPS are all associated conservation hatchery populations. The proposed project site is within the area designated as critical habitat for Atlantic salmon (74 FR 29300; June 19, 2009). Federal agencies permitting or funding your project should consult with the Service according to Section 7 of the ESA.

Construction associated with wind power projects may cause adverse effects to the federally-endangered Atlantic salmon if there are stream crossings or sedimentation caused from access roads or transmission lines in salmon habitat. We ask that you document any stream crossings and share this information with the Service and federal permitting or funding agencies (Army Corps of Engineers, or others) who are required to consult with the Service according to Section 7 of the ESA. We encourage project designs that will avoid and minimize adverse effects on salmon and their habitat.

Bald and golden eagles

Migratory bald eagle (*Halieetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) may occur at your project site. Bald eagle nests are known at Spectacle Pond, Scammon Pond, Molasses Pond, and Abrams Pond (see maps), but survey information is incomplete. In addition, there could be bald eagle nests on other waters within the project area. We do not know if bald eagle nest surveys have been conducted recently in this area. If not, we suggest you conduct surveys within four miles of your project. Further information on eagle nests and status may be obtained from Charlie Todd, MDIFW, 650 State St., Bangor, ME 04401.

Wind energy projects can affect bald and golden eagles by degrading or fragmenting habitat, taking birds by collision with rotating turbine blades, or by introducing new sources of disturbance (noise, construction activity, permanent changes to the landscape, barriers to movement, and increased human activity). Furthermore, both bald and golden eagles may be attracted to forest openings around wind turbines to feed, particularly if sources of carrion (large birds killed by collisions) are present. Emerging information suggests that in some situations, wind power may cause significant take and disturbance of eagles. For this reason, we recommend that you document eagle movements (resident and migratory birds) at your project location and locate eagle nests, communal roosts, and communal foraging areas within four miles of your proposed project location. See the attached guidelines for further information.

Although the bald eagle has recovered such that it no longer is protected under the ESA (August 9, 2007), it remains protected from take under the Bald and Golden Eagle Protection Act (BGEPA)(16 U.S.C. 668-668d) and the Migratory Bird Treaty Act (16 U.S.C. 703-712). "Take" under BGEPA means to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb. Disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle; 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior; or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior (72 FR 31332, 2007).

The U.S. Fish and Wildlife Service prepared National Bald Eagle Management Guidelines (http://www.fws.gov/migratorybirds/CurrentBirdIssues/NationalBaldEagleManagementGuidelines.pdf) to help landowners, land managers and others meet the intent of BGEPA and avoid disturbing bald eagles. Please note that our National Bald Eagle Guidelines do not provide guidance for large development projects like wind power projects. See our *Guidelines for Building and Operating Wind Energy Facilities in Maine Compatible with Federal Fish and Wildlife Regulations* for additional information.

Other protected species and rare natural communities:

We did not review this project for state-listed plants, natural communities and wildlife. We recommend that you contact the Maine Department of Inland Fisheries and Wildlife for additional information on state-threatened and endangered wildlife and wildlife species of special concern. The Maine Endangered Species Act may protect some of the species in your project area.

Steve Timapano
Maine Department of Inland Fisheries and Wildlife
284 State Street
State House Station 41
Augusta, ME 04333-0041
Phone: 207 287-5258

We recommend that you contact the Maine Natural Areas Program for additional information on state-threatened and endangered plant species, plant species of special concern, and rare natural communities.

Lisa St. Hilaire
Maine Natural Areas Program
Department of Conservation
93 State House Station
Augusta, ME 04333
Phone: 207 287-8046

Migratory Bird and Bat Concerns

Wind energy projects can adversely affect birds and bats and their habitats. Foremost, the potential exists for bird and bat collision within the rotor-swept area of each turbine. The potential for collision with resident or migratory species of birds and bats is affected by many factors but location of the wind turbines seems to be one of the most important.
The potential for harm makes careful evaluation of wind facilities essential. Each proposed development site is unique and requires individual evaluation. The Service's guidance on wind energy development should be consulted (http://www.fws.gov/habitatconservation/wind.pdf). Please see our *Guidelines for Building and Operating Wind Energy Facilities in Maine Compatible with Federal Fish and Wildlife Regulations* for additional guidance.

Wetlands

Your project may require bridging, filling, or degrading certain wetlands or other waters of the United States under jurisdiction of section 404 of the Clean Water Act, which may require permits be acquired from the U.S. Army Corps of Engineers. The Service may provide recommendations to the Army Corps to avoid and minimize effects to fish and wildlife in issuing Clean Water Act permits.

In summary, to ensure that appropriate areas are selected for wind power development and that these facilities are developed in the most environmentally sound manner we recommend that you follow *Guidelines for Building and Operating Wind Energy Facilities in Maine Compatible with Federal Fish and Wildlife Regulations* and the Service's *Interim Guidance on Avoiding and Minimizing Wildlife Impacts from Wind Turbines* http://www.fws.gov/habitatconservation/wind.pdf)

If you have any questions, please call Mark McCollough (Canada lynx and bald eagles) at (207) 866-3344 x115 or Wende Mahaney (wetlands and Atlantic salmon) at (207) 866-3344 x118.

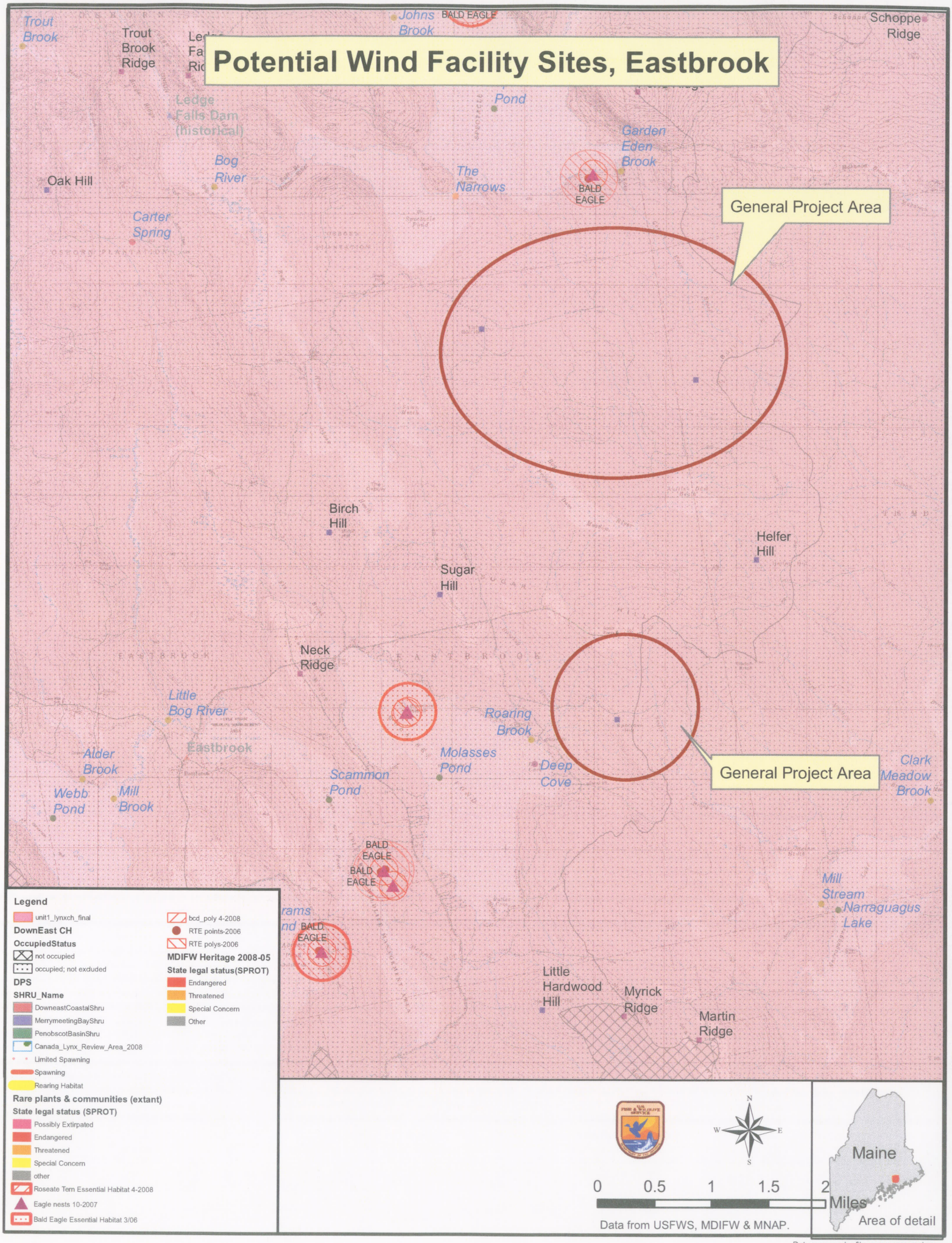
Sincerely,

Erin Williams

Erin Williams for
Lori H. Nordstrom, Project Leader
Maine Field Office

cc: Steve Timpano, MDIFW – Augusta, ME
Charlie Todd, MDIFW – Bangor, ME
Jay Clement, ACOE – Manchester, ME

Potential Wind Facility Sites, Eastbrook



Date map made: file name: map maker

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Maine Field Office – Ecological Services
17 Godfrey Drive, Suite #2
Orono, ME 04473
Phone: (207) 866-3344 Fax: (207) 866-3351

Guidelines for Building and Operating Wind Energy Facilities in Maine Compatible with Federal Fish and Wildlife Regulations

Developed by the Maine Field Office, U. S. Fish and Wildlife Service
November, 2009

Background: Wind energy is renewable, produces no emissions, and can be an environmentally friendly technology. Development of wind energy is endorsed by the Secretary of the Interior. However, wind energy facilities can adversely affect fish and wildlife and their habitats. The Service's mission is conservation of fish and wildlife in the public trust. Our goals are to ensure renewable energy is fish, wildlife and habitat friendly and to make informed decisions and recommendations based on sound environmental assessment. Project review and permitting will be expedited when projects avoid, minimize, and mitigate adverse effects to federal trust resources.

Proper siting of turbines continues to be our most critical concern related to wind energy development - both to avoid and minimize wildlife mortality and habitat fragmentation. As more facilities are built, the cumulative effects of this rapidly growing industry may initiate or contribute to the decline of some wildlife populations. The potential harm to these populations from an additional source of mortality makes careful evaluation of the siting and effects of proposed facilities essential.

The Service is currently participating on a Federal Advisory Committee to develop national guidelines for site selection, evaluation, construction, and operation of wind energy facilities across the country. These new guidelines will be posted on the Service's national wind energy web page (http://www.fws.gov/habitatconservation/wind.html). Until new guidelines are prepared, wind energy developers and their consultants should consult the Service's *Interim Guidance on Avoiding and Minimizing Wildlife Impacts from Wind Turbines* (2003) are available at the same website.

Purpose: We provide these guidelines so you can make an informed decision regarding site selection, project design, and address the requirements of federal fish and wildlife legislation. These guidelines also provide information on Service wind energy guidance documents and wildlife species that we consider during the formal consultation process for construction projects. We hope this information assists you during your initial pre-site considerations and project design and encourage you to consult with us early in your wind energy development process. The project review and permitting process will proceed more quickly if projects avoid, minimize, and mitigate adverse effects to federal trust resources. We used the Service's interim guidance

TAKE PRIDE® IN AMERICA

as a model for developing the guidance that follows, but stepped them down to make the guidance more relevant for Maine wind energy developers.

Legal authorities: This guidance advises you of federal wildlife laws applying to wind power, including the Endangered Species Act as amended (16 U.S.C. 1531-1543), Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d, 54 Stat. 250), and Migratory Bird Treaty Act (16 U.S.C. 703-712).

Endangered Species Act (ESA): Under Section 7 of the ESA federal agencies that permit or fund wind energy projects must determine if a project may affect federally listed species. If the federal agency determines that a project has "no effect" on a listed species or their critical habitat, they do not need to seek the concurrence of the Service. If the federal agency determines that a project is "not likely to adversely affect" a listed species, the agency must explain the basis for their determination and seek the written concurrence of the Service. Projects that have an "adverse effect" on a listed species require formal Section 7 consultation with the Service.

Unauthorized take of federally-listed species is prohibited under Section 9 of the ESA. If take of a listed species is anticipated, wind developers are encouraged to contact the Service to discuss obtaining an incidental take permit under Section 10 of the ESA, which involves developing a Habitat Conservation Plan.

Several federally listed species could be affected by wind power projects in Maine. The federally-threatened Canada lynx occur throughout northern Maine. Critical habitat was designated in March 2009 in northwestern Maine. The endangered Atlantic salmon Gulf of Maine Distinct Population Segment encompasses all naturally spawned and conservation hatchery populations of anadromous Atlantic salmon whose freshwater range occurs in the watersheds from the Androscoggin River northward along the Maine coast to the Dennys River and wherever these fish occur in the estuarine and marine environment. Critical habitat was designated throughout much of this area in June 2009. The federally threatened piping plover and roseate tern nest along the coast of Maine. Other federally-listed species occur in Maine and could occur in your project area.

Bald and Golden Eagle Protection Act (BGEPA): Although the bald eagle has recovered such that it no longer is protected under the ESA (August 9, 2007), it remains protected from take under the Bald and Golden Eagle Protection Act (BGEPA)(16 U.S.C. 668-668d) and the Migratory Bird Treaty Act (16 U.S.C. 703-712). "Take" means to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb. The term "disturb" under the BGEPA means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle; 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior; or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior (72 FR 31332, June 5, 2007). It is the responsibility of landowners and project proponents to determine whether their project will take or disturb eagles. A permit is necessary to avoid potential liability for take.

The U.S. Fish and Wildlife Service prepared National Bald Eagle Management Guidelines (http://www.fws.gov/migratorybirds/CurrentBirdIssues/NationalBaldEagleManagementGuidelines.pdf) to help landowners, land managers and others meet the intent of BGEPA and avoid disturbing bald eagles. Please note that our National Bald Eagle Guidelines do not provide guidance for large development projects like wind power projects.

The Service published a final rule explaining policies and procedures for applying for incidental take permits under the BGEPA (FR 74 46836-46879), which became effective on November 10, 2009. Draft *Implementation Guidance for Eagle Take Permits* will soon be distributed for public notice and comment and will provide further details on application requirements and procedures. The Service will soon release new national *Draft U. S. Fish and Wildlife Service Raptor Conservation Measures* for public notice and comment, which will specifically address lethal infrastructure projects such as wind power. The measures will also provide the interim guidance for golden eagle disturbance until species-specific guidance can be developed.

With extensive habitat and over 500 nesting pairs of bald eagles in Maine, nesting, migrating, wintering, summering, and transient bald eagles occur throughout the state. Maine was the last state to support nesting golden eagles in the eastern U. S. (up to 1999), and a small (100+ pairs), but growing population nests immediately north in Quebec and Labrador. Golden eagles nest in the Gaspe region of Quebec, have been seen in Maine in recent years during the breeding season, and may reoccupy Maine in the future.

Migratory Bird Treaty Act (16 U.S.C. 703-712; MBTA): The MBTA prohibits the taking of migratory birds, their eggs, parts, and nests. While the MBTA has no provision for allowing an unauthorized take, we recognize that some birds may be killed at structures such as wind turbines even if all reasonable measures to avoid take are implemented. We encourage wind power proponents to utilize the Service's wind energy guidelines, complete appropriate pre- and post-construction studies, and to site and operate wind projects to avoid and minimize take of migratory birds.

Bats: There are no federal regulations protecting bats, however, the Service encourages you to incorporate measures to avoid and minimize risk to bats. The federally endangered Indiana bat is not known to occur in Maine.

Some wind energy projects have been especially injurious to bats. Foremost, the potential exists for death to bats from collision or "barotraumas" (low pressure damage to lungs) within the rotor-swept area of wind turbines. The potential for mortality of bats is affected by many factors but location of the wind turbines seems to be one of the most important. The potential for harm makes careful evaluation of wind facilities essential.

Wetlands: Your project will likely require bridging, filling, or degrading certain wetlands or other waters of the United States under jurisdiction of section 404 of the Clean Water Act, which may require permits be acquired from the U.S. Army Corps of Engineers. The Corps of Engineers requires project proponents to avoid, minimize, and mitigate wetland impacts, and the Service strongly supports this sequential approach to permitting. The federal "nexus" of wetland

permitting by the Army Corps may require ESA consultation. The Service may provide recommendations to the Army Corps to avoid and minimize effects to fish and wildlife in issuing Clean Water Act permits.

Organization: The following guidelines provide Maine wind project developers with methods to assess potential effects, design, and operate a wildlife-friendly wind facility. We have organized these steps into three stages of wind facility development:

Stage 1: Site evaluation and selection
Stage 2: Project design and construction
Stage 3: Facility operation, monitoring, and adaptive management.

Each proposed wind power development site is unique and requires detailed, individual evaluation. We encourage wind energy proponents to develop site evaluation and pre- and post-construction surveys simultaneously with the Service, Maine Department of Inland Fisheries and Wildlife (MDIFW), and appropriate state and federal agencies. Site evaluations are important to select appropriate areas for wind development where adverse effects to wildlife and habitats can be avoided or minimized. Preconstruction surveys may allow for the project to be designed in such a way to further avoid or minimize impacts. As with all development projects, we encourage wind developers to consult early and consult often with our field office to minimize impacts to fish and wildlife. Doing so will facilitate permit review and result in compliance with federal legislation.

Stage 1: Site Evaluation and Selection

The first step in the assessing potential wind power sites is to conduct a regional evaluation of possible project locations to avoid adverse effects to fish and wildlife resources, wetlands, and sensitive ecosystems. Large project developers of all kinds typically conduct a regional evaluation of potential sites using information in the public domain and contacts with the Service, MDIFW, Maine Natural Areas Program, and other agencies. Wind developers are encouraged to use the site evaluation protocol in Appendix 1 of the *Service's Interim Guidance on Avoiding and Minimizing Wildlife Impacts from Wind Turbines*. Information should be evaluated on federal and state-listed species and their critical habitats; bald and golden eagles; migration corridors for birds, bats, and other wildlife; characterization of wildlife habitats present including wetlands; and proximity to state or national parks or wildlife refuges. If state and federal agencies lack data on these natural resources, project proponents are encouraged to seek help in designing studies to secure this information. The purpose of this reconnaissance is to identify and exclude sites with special designation and/or particularly high risks to fish and wildlife, identify sites that may be promising for wind power, and ultimately select a site that meets the wind developer's requirements while avoiding and minimizing impacts to fish and wildlife.

Stage 2: Project Design and Construction

After an appropriate wind development site is selected where impacts to fish and wildlife remain a concern, attention should be given to avoiding and minimizing impacts to fish and wildlife

through careful project design. If endangered species are present, consultation should begin with federal permitting agencies and the Service.

The following recommendations for wind energy development in Maine are intended to assist developers who are in the planning and design process. These recommendations will further avoid and minimize adverse effects to wildlife and their habitats and may evolve over time as new federal guidelines are developed and additional experience, monitoring and research, and adaptive management practices document how best to avoid and minimize impacts to wildlife. The Service will work with developers, the State, and other stakeholders to evaluate, revise, and update these recommendations. If necessary, additional recommendations may be made to address site-specific concerns.

Recommendations for addressing wildlife concerns in the development of wind energy projects in Maine.

1. When sites are being considered for potential wind power development (prior to placement of met towers) we encourage developers and their consultants to promptly contact our office to request information on federal trust species in the area. It is important that you identify your project as a potential wind energy project so that we can provide you with the best information and recommendations. The Service recommends development and agency review of pre-construction study plans that describe proposed assessments for endangered species, bald and golden eagle, migratory bird, wetland and other natural resources of concern.

2. To address the Endangered Species Act we will likely require surveys and/or habitat assessments for federally-listed species. These evaluations will be used by the federal agency authorizing, implementing, or funding the project to complete their evaluation of effects on listed species. If there is no federal connection to the project this information can be used to identify whether there is a risk of incidental take such that an incidental take permit may be necessary. Survey design may vary between sites in extent, methodology, and duration according to species and site. Survey designs should be developed with the Service to assure proper methods are being used and to determine where to focus additional investigations. Pre-construction surveys, whether in progress or completed, do not imply the Service's sanction for development of a site.

3. To address the Bald and Golden Eagle Protection Act we recommend surveys begin at least two years in advance of anticipated project construction to identify important eagle feeding, roosting, nesting or wintering areas eagle areas within four miles of your project area. Four miles is an average distance that Maine bald eagles may be expected to travel within their nesting territory or from roosting, foraging, or wintering areas.

   If important eagle areas are identified by MDIFW or the Service or discovered via surveys, we recommend two years of pre-construction studies be completed to obtain baseline information on eagle nest productivity, document use of feeding, roosting, nesting or wintering areas, documenting movements in relation to proposed turbine locations (including an analysis of spatial use in relation to rotor swept zone), numbers

moving through the project area, movements in relation to meteorological conditions, and phenology of movements. For proposed wind projects located within four miles of eagle nests, we recommend that eagle movement studies be conducted for two years for at least 20 days each nesting season when adult eagles and their fledged young are most active (June through early October). Migrating eagle information should be collected as part of raptor migration surveys (see recommendation #4).

The purpose of surveys is to document the use and location of important eagle areas in relation to the proposed infrastructure, document eagle use of the project area, and ensure proper siting and placement of infrastructure to avoid take of eagles. For example, wind turbines sited between several bald eagle territories and a river that serves as the eagle's primary feeding area will have a higher risk of mortalities than it would if sited outside of the flight path of the eagles.

Eagle migration and movement data should be used to develop a quantitative risk assessment to determine likelihood of take of bald and golden eagles. If the risk assessment suggests that incidental take of eagles is likely, developers should employ measures to avoid take of eagles. Developers are advised to seek a BGEPA incidental take permit from the Service if take or disturbance cannot be avoided. Under a BGEPA permit, developers will likely be requested to conduct long-term post-construction studies of behavioral response to wind turbines, and monitoring of mortality, injury, and productivity so that the effects of the wind project on eagles can be monitored and understood. Additionally, an adaptive management plan likely will be required to regularly review and analyze eagle data, meet with the Service to discuss results, and develop appropriate measures to further reduce take of eagles. Mitigation for take may be necessary.

If the risk assessment suggests that take of eagles is not likely, but important eagle feeding, roosting, nesting or wintering areas are nearby or migratory eagles frequent the area, then long-term monitoring would be advised to periodically reassess risk to eagles under BGEPA.

4. To address Migratory Bird Treaty Act and bat concerns, we concur with recommendations for migratory bird and bat surveys found in MDIFW and Maine Department of Environmental Protection (MDEP) *Methodologies for Evaluating Bird and Bat Interactions with Wind Turbines in Maine*, Attachment H (http://www.maine.gov/doc/mfs/windpower/pubs/report/wind_power_task_force_rpt_final_021408.pdf).

   Bird and bat survey information will be used by the Service to evaluate and comment on overall site suitability, siting of turbines and other infrastructure, habitat fragmentation, and risk to birds and bats. In addition survey data may be used to inform permit review with other agencies, permit conditions, design and duration of post-construction studies, and adaptive management programs.

5. We encourage wind developers and their consultants to review and incorporate the Service's *Interim Guidance on Avoiding and Minimizing Wildlife Impacts from Wind Turbines* (2003)(http://www.fws.gov/habitatconservation/wind.pdf) This document

provides the Service's guidance on locating and operating wind turbines and associated structures. Employing these guidelines will help avoid and minimize impacts to wildlife and facilitate permit review.

6. In addition to the recommendations above, we suggest:
   - Minimize area disturbed by site development, construction, and operation. Minimize number and length of access roads. Maintain minimum road width after construction. Avoid long road cuts that block wildlife movements.
   - Time site-clearing and developing activities to avoid the bird nesting period.
   - Avoid degrading high-value habitats (e.g. vernal pools, emergent wetland, streams, eel grass beds and estuaries)
   - Minimize construction and management activities that may attract birds and bats (e.g. remove sources of carrion that could attract raptors and revegetate turbine pads to forest to deter foraging raptors).
   - To reduce bird collisions, place collector transmission lines underground unless prohibitively expensive or where greater impacts to biological resources would result. Transmission infrastructure should comply with the *Suggested Practices for Avian Protection on Power Lines* (2006)(http://www.aplic.org/). Overhead lines may be acceptable if located away from high use bird areas (gaps between ridges, crossings between roosting and feeding areas) and if deterrent devices are deployed (especially over water and wetland crossings).
   - Use tubular towers (not lattice) and avoid guy wires to reduce perching opportunities and risk of collision.
   - To avoid disorienting or attracting migratory birds, turbines should not be placed near other light sources (e.g. lighthouses). FAA-required visibility lighting should employ only strobe lighting. Solid red or pulsating red incandescent lights should not be used, as they appear to attract night-migrating birds.
   - Use native plants to revegetate turbine pads and road edges. Reserve soils and chipped wood on site to use as mulch to promote revegetation.

Stage 3: Facility Operation, Monitoring and Adaptive Management

The Service's *Interim Guidance on Avoiding and Minimizing Wildlife Impacts from Wind Turbines* (2003) include operational guidelines that are important to follow for avoiding and minimizing risk to wildlife. Other operational measures to reduce the likelihood of bird and bat mortality and adverse effects to habitat are possible, and will be developed based on post-construction monitoring at the facility. The degree of post-construction monitoring will be determined by a combination of factors including the size and location of the facility and the species and habitats at risk at the site.

1. A post-construction plan should be developed to describe the design and duration of post-construction studies and surveys. The plan should also document how the developer will avoid, minimize, and mitigate effects on birds, bats, and habitat fragmentation. The post construction plan should incorporate methods used in the pre-construction study design to

provide robust data on environmental impacts that are comparable between the pre- and post-construction condition. Wind energy proponents should develop the post-construction study plan simultaneously with the Service and MDIFW. By doing so, federal and state regulatory agencies and the developer have a reasonable expectation of the operational measures to be employed if significant bird and bat mortality occurs. Examples of additional measures may include habitat manipulation and management on and around the project site, radar monitoring coinciding with migration, and discontinuing turbine operation during high risk conditions.

2. Post-construction mortality studies for birds and bats should be conducted for 2 to 3 years (both spring and fall migration seasons) within 5 years of initiating operation of a wind project. These studies should follow the MDIFW-DEP *Methodologies for Evaluating Bird and Bat Interactions with Wind Turbines in Maine*. Developers should consult with the Service and MDIFW when varying from recommended methodologies. Adaptive management, as described in the post-construction plan, should be employed to revise methodologies as new information is obtained.

3. Take of endangered species and bald and golden eagles should be reported to the Service within 24 hours of discovery. Migratory bird and bat mortality events of >25 individuals over a 24-hour period should be reported to the Service within 24 hours of discovery. Otherwise, bird and bat mortalities should be summarized in reports provided to the Maine Field Office at least annually.

In summary, the guidelines provided above and the Service's *Interim Guidance on Avoiding and Minimizing Wildlife Impacts from Wind Turbines* (2003) are intended to guide wind power developers in Maine while protecting federal trust fish, wildlife and their habitats.

If you have any questions, please call or email:

Lori Nordstrom, Project Leader at (207) 866-3344 x111, lori_nordstrom@fws.gov

Mark McCollough, endangered species biologist (Canada lynx, Furbish's lousewort, roseate terns, piping plovers, and bald eagles) at (207) 866-3344 x115 mark_mccollough@fws.gov

Wende Mahaney, wetland and endangered species biologist (Atlantic salmon) at 866-3344 x118, wende_mahaney@fws.gov

John E. Baldacci
Governor

Roland D. Martin
Commissioner

DEPARTMENT OF INLAND FISHERIES AND WILDLIFE, 2009

June 23, 2009

James Hall
Wildlife Division - Region C
PO Box 220
Jonesboro, Maine 04648
Phone: (207) – 434-5927
Fax: (207) – 434-5923

Emily Walsh
Stantec
30 Park Dr.
Topsham, Me. 04086

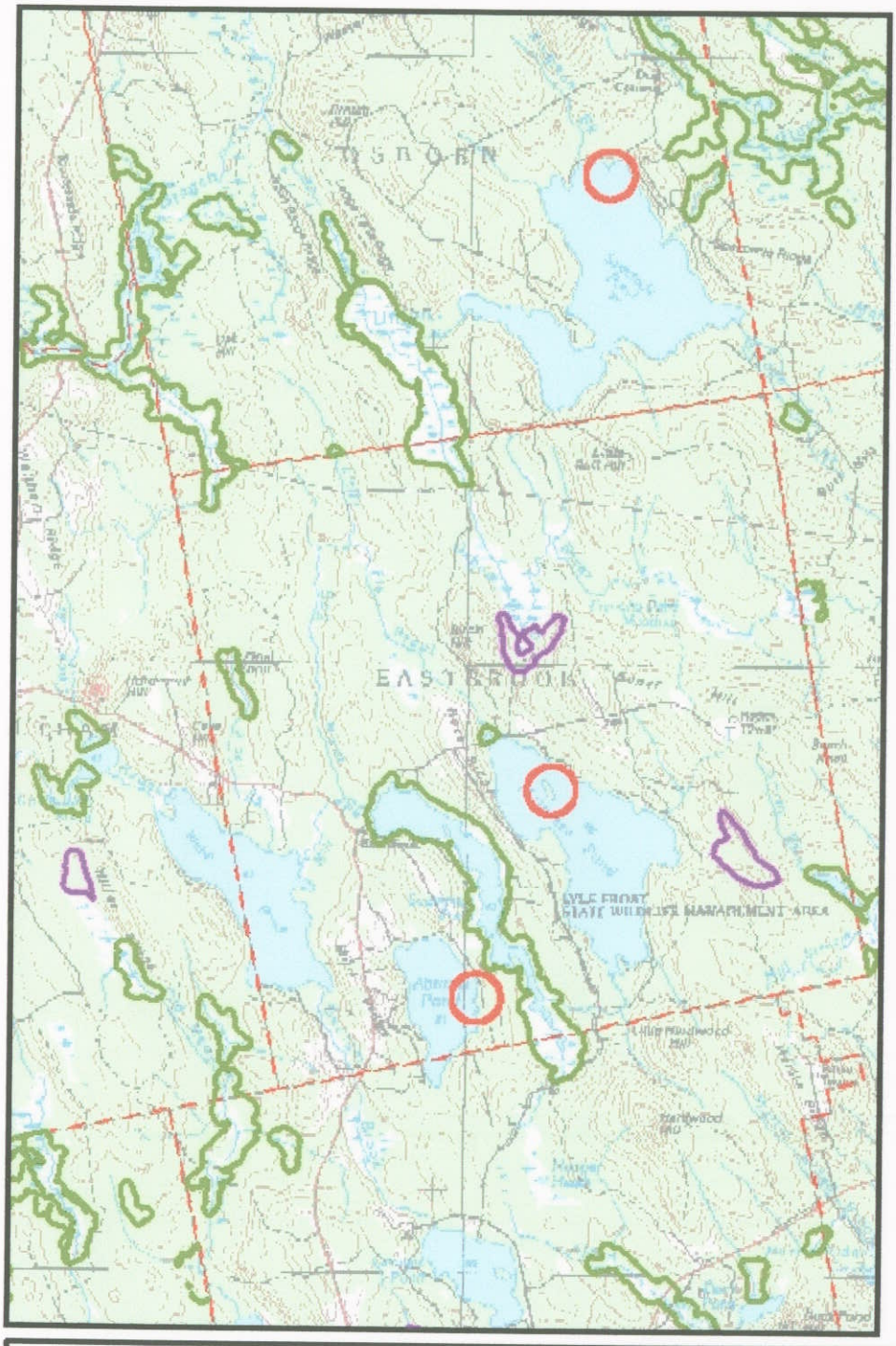
I have reviewed the Proposed Wind Power Projects in Eastbrook, Osborn and T22MD. Enclosed please find a Wildlife Resource Map of the Project Areas. There doesn't appear to be any Significant or Essential Wildlife Habitats involved.

Sincerely,

James Hall

James Hall, Wildlife Biologist

Search for Wildlife Observations & Habitat



- Bald Eagle Nest Site
- Piping Plover / Least Tern Nesting, Feeding, & Brood-rearing Area
- Roseate Tern Nesting Area
- Deer Winter Area
- Inland Waterfowl / Wading Bird Habitat
- Tidal Waterfowl / Wading Bird Habitat
- Seabird Nesting Island
- Shorebird Area
- Significant Vernal Pool
- Endangered, Threatened, & Special Concern Species Habitat
- Township Boundary
- County

0 0.9 1.8 2.7 3.6 Miles

1 = 108,540

UTM Projection, Zone 19N, NAD83

N

P.O. Box 220
Jonesboro, ME 04648
Voice: (207) 434-5927
Fax: (207) 434-5923
June 23, 2009

Haider, Jessica

From: D'Auria, Danielle [Danielle.Dauria@maine.gov]
Sent: Friday, September 11, 2009 10:25 AM
To: Nein, Daniel
Cc: MacDonald, Lisa; Todd, Charlie; Schaeffer, Thomas
Subject: RE: Blue Sky East Work Plan

Hi Dan,
I apologize for such a long delay in getting back to you...I do not know of any great blue heron colonies in the vicinity of the Blue Sky East project in Eastbrook and T16 MD. The closest colony that I know of is to the west of Great Pond in T8 SD (or Fletcher's Landing Twp) . We have not done extensive searches for nesting great blue herons in the area of the proposed project, but are interested in knowing about any locations that are found. Great blue herons will use a variety of settings, including live trees in uplands (they don't have to be very close to water), as well as flowages with large standing dead trees. While they may forage in their nesting flowage, they often commute far distances (close to 5 miles in some cases) to prime foraging habitat. A survey for colonies would be somewhat easy to do for this area (by air). Perhaps I'll see you at the upcoming site visit and we can talk more about it then.
Please let me know if you have any questions.
Thank you,
Danielle

~~~~~~
Danielle E. D'Auria
Wildlife Biologist, Bird Group
Maine Dept. Inland Fisheries & Wildlife
650 State St., Bangor, ME 04401
Phone: (207) 941-4478; Fax: (207) 941-4450
Email: danielle.dauria@maine.gov
~~~~~~

From: Nein, Daniel [mailto:daniel.nein@stantec.com]
Sent: Tuesday, August 18, 2009 10:08 AM
To: D'Auria, Danielle
Cc: MacDonald, Lisa
Subject: Blue Sky East Work Plan

Hello Danielle,

Charlie Todd recently copied you with his review comments relative to the Bird and Bat Work Plan for a wind energy project in Eastbrook and T16MD, proposed by Blue Sky East LLC, an affiliate of First Wind. I wanted to follow-up with you to determine if your office has data on known heron rookeries in the vicinity of the project site. I attached a project location map for your reference.

Please let me know if you have questions.
Thank you.
Dan
<<00500-00-locationUSGS.pdf>>

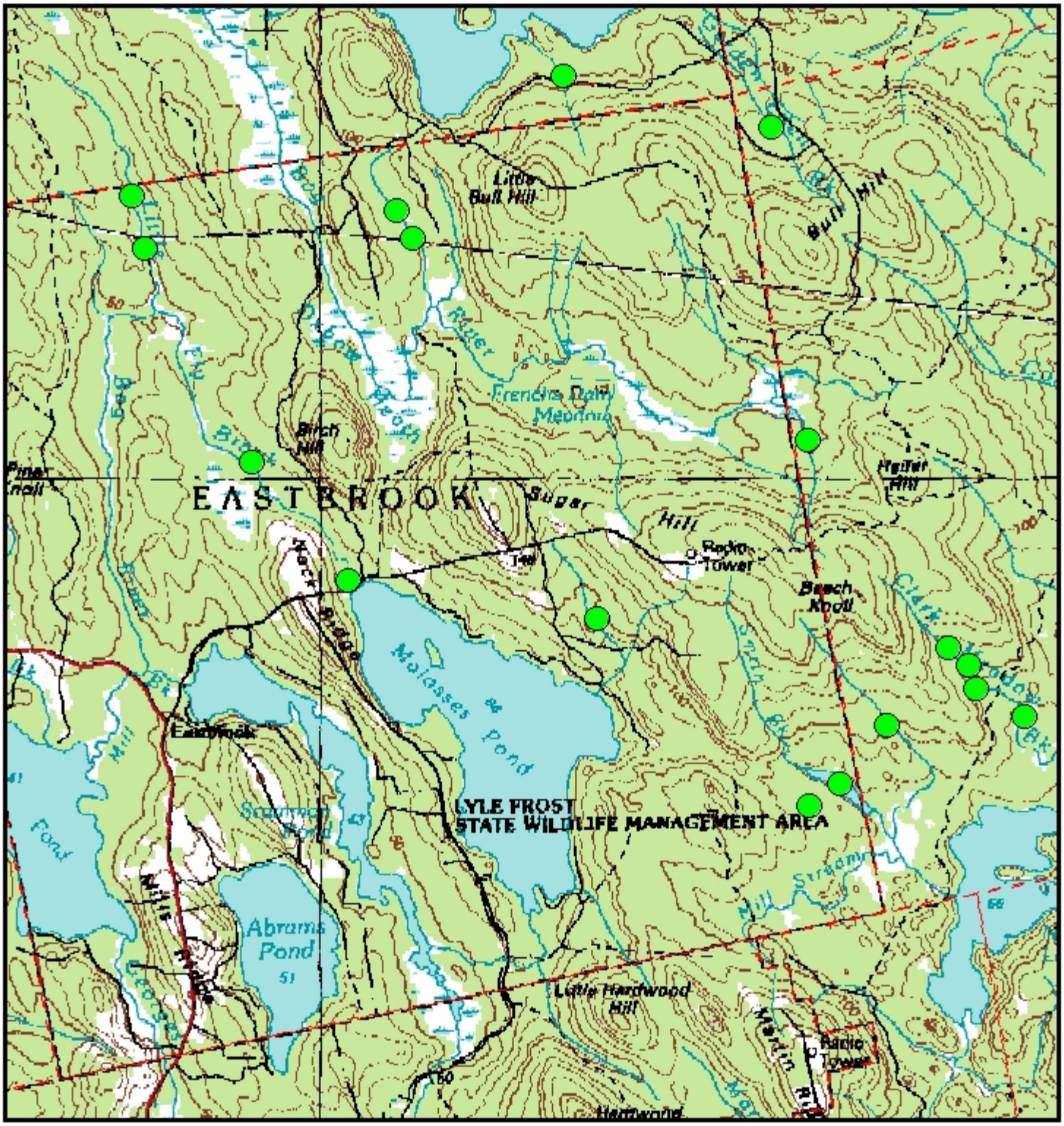
Daniel G. Nein, CWB
Wildlife Biologist / Project Manager
Stantec
30 Park Drive
Topsham ME 04086
Ph: (207) 729-1199

Fx: (207) 729-2715
daniel.nein@stantec.com
stantec.com

The content of this email is the confidential property of Stantec and should not be copied, modified, retransmitted, or used for any purpose except with Stantec's written authorization. If you are not the intended recipient, please delete all copies and notify us immediately.

Please consider the environment before printing this email.

Potential Great Blue Heron Nesting Colony Locations



UTM Projection, Zone 19N, NAD83

Towns 1:24K

Potential habitat

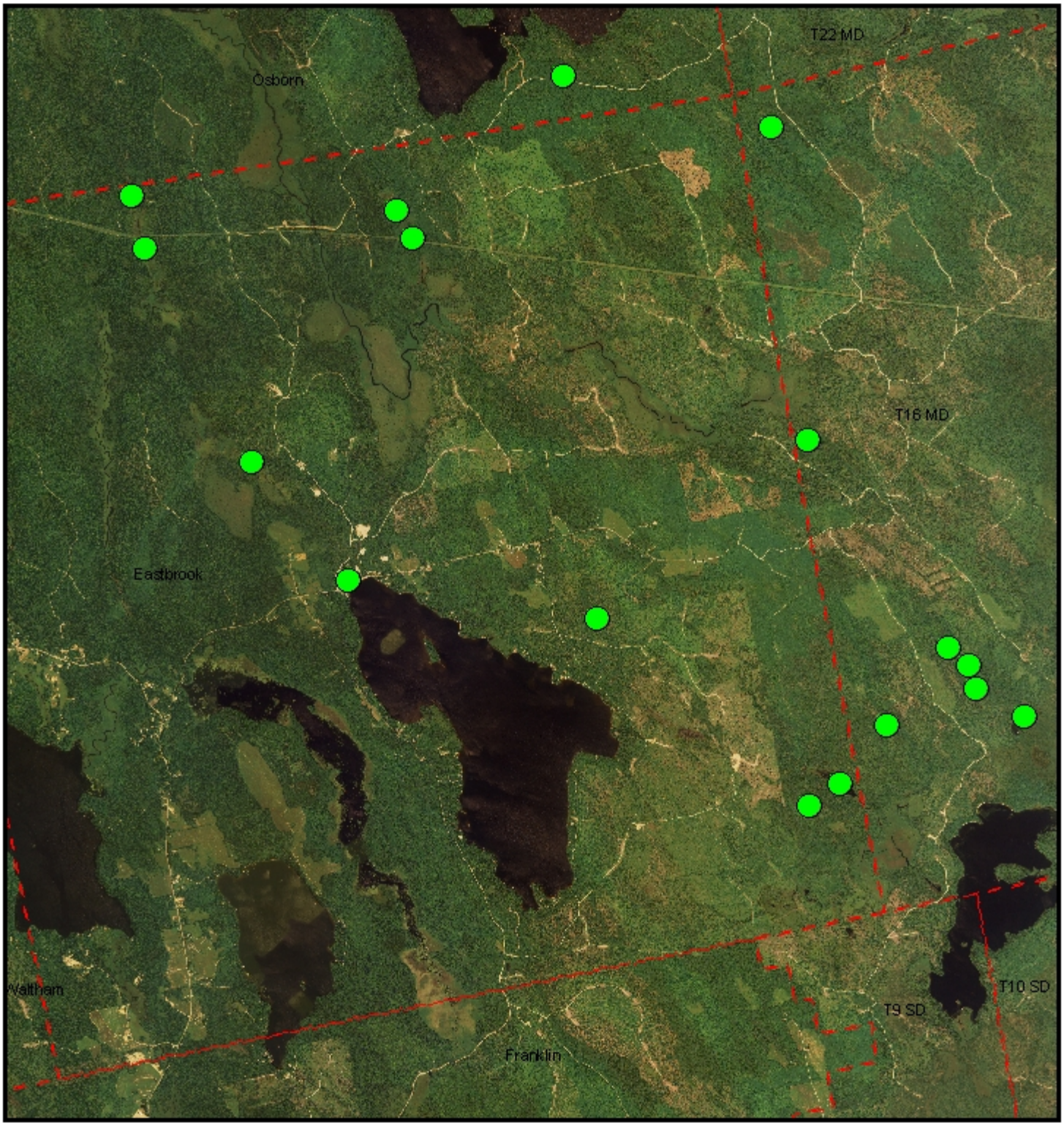
N

1 = 64,432

0 0.5 1 1.5 2 Miles

650 State Street
Bangor, ME 04401
Voice: (207) 941-4466
Fax: (207) 941-4450
August 19, 2009

Potential Great Blue Heron Nesting Colony Locations



UTM Projection, Zone 19N, NAD83
Aerial Photo: NAIP 2006 (3.3 ft)

Towns 1:24K

Potential habitat

N

1 = 64,432

0 0.5 1 1.5 2 Miles

650 State Street
Bangor, ME 04401
Voice: (207) 941-4466
Fax: (207) 941-4450
August 19, 2009