

ILLINOIS COMMERCE COMMISSION

DOCKET No. 12-0598

REBUTTAL TESTIMONY

OF

**JULIA TIMS
ENVIRONMENTAL RESOURCES MANAGEMENT**

Submitted On Behalf

Of

AMEREN TRANSMISSION COMPANY OF ILLINOIS

APRIL 26, 2013

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8 **I. INTRODUCTION AND WITNESS QUALIFICATIONS**

9 **Q. Please state your name, business address and present position.**

10 **A.** My name is Julia Tims. I am Technical Director of Biodiversity and Ecosystem Services
11 with Environmental Resources Management (“ERM”), located at 200 Harry S. Truman Parkway,
12 Annapolis, MD 21401.

13 **Q. Please summarize your educational background and professional experience.**

14 **A.** These are described in Appendix A to my testimony.

15 **Q. What are your duties and responsibilities in your present position?**

16 **A.** My responsibilities include leading the ecology team in ERM’s Americas division and
17 conducting environmental impact assessments, including collecting terrestrial flora and fauna
18 baseline data (primarily vegetation, wildlife, rare species, and wetlands), identifying and
19 assessing the magnitude of impacts of projects on terrestrial biodiversity, conducting alternatives
20 analyses, and recommending measures to avoid, minimize, and mitigate impacts of projects of all
21 types on terrestrial biodiversity.

22 **II. PURPOSE AND SCOPE**

23 **Q. What is the purpose of your rebuttal testimony?**

24 **A.** The purpose of my testimony is to respond to environmental impact concerns,
25 particularly related to wetlands, soils, and habitat fragmentation, raised by certain intervenors in
26 this proceeding, including but not limited to The Nature Conservancy (“TNC”).

27 **Q. Are you sponsoring any exhibits in support of your testimony?**

28 **A.** No, I’m not.

29 **III. RESPONSE TO THE NATURE CONSERVANCY**

30 **Q. What is your understanding of the Stipulation entered into between Ameren**
31 **Transmission Company of Illinois and The Nature Conservancy for that portion of the**
32 **route between Meredosia to Ipava, Illinois?**

33 **A.** My understanding is that Ameren Transmission Company of Illinois (“ATXI”) and TNC
34 have agreed to a Stipulated Route, which represents a slight modification to the southern part of
35 ATXI’s Alternate Route, and whose effect is to avoid two areas of particular concern to The
36 Nature Conservancy, the Illinois Department of Transportation (“IDOT”) Wetland Mitigation
37 Bank and Spunky Bottoms Preserve.

38 **Q. What is the effect of this Stipulation on the Direct Testimony submitted by The**
39 **Nature Conservancy in this proceeding?**

40 **A.** The Direct Testimonies of K. Douglas Blodgett, Michael Ward, and Jeff Walk state that
41 they are primarily concerned with the environmental impacts of ATXI’s Primary Route because
42 of its impact on the Spunky Bottoms Preserve and are opposed to ATXI’s Alternate Route

43 because of its environmental impact to the IDOT Wetland Mitigation Bank. These concerns are
44 alleviated by the Stipulated Route.

45 **Q. What is the effect of the Stipulation on your testimony in this proceeding?**

46 **A.** While ATXI witness, Ms. Donell (Doni) Murphy's testimony supports the adoption of
47 the Stipulated Route, I am responding to TNC's claims with respect to ATXI's routes as a
48 contingency in the event that the Illinois Commerce Commission ("Commission") does not adopt
49 the Stipulated Route entered into between ATXI and TNC.

50 **Q. What is your overall evaluation of the testimony submitted by TNC regarding the**
51 **superiority of their Alternative Route proposals?**

52 **A.** TNC testimony contained opinions regarding the superiority of their Alternative Routes
53 based on environmental considerations; however, no substantive evidence was provided to
54 support those opinions. No detailed siting analysis was conducted for these alternative routes so
55 it is not possible to compare them with ATXI's Primary or Alternate Routes. Further, TNC
56 proposed routes only considered environmental factors in their route selection. Because they
57 have not properly considered any variable other than the environmental impacts to their property,
58 it is impossible to make a reasoned judgment as to the viability of their alternatives on other
59 grounds, which need to be equally considered in any siting analysis. Lastly, their testimony
60 focused on environmental impacts to their property, rather than considering the cumulative
61 environmental and social impacts along the entire alignments. As such, it is not possible to
62 accurately assess the superiority, or even viability, of their route proposals.

63 **Q. Do you disagree with the ecological importance of the Spunky Bottoms Preserve?**

64 **A.** No. I understand that as part of the larger Illinois River floodplain system, Spunky
65 Bottoms Preserve provides important ecological functions. I disagree with the magnitude of
66 ecological impacts that TNC has predicted the Spunky Bottoms Preserve will incur if ATXI's
67 Primary Route is approved.

68 **Q. Mr. Blodgett concludes on page 10 of his testimony that "construction of Ameren's**
69 **proposed Primary Route would have significant immediate negative ecological impacts and**
70 **likely would undermine the core of the Spunky Bottoms restoration effort." On page 12,**
71 **Dr. Walk makes similar assertions regarding ecological impacts should the proposed**
72 **transmission line cross the preserve. With specific regard to potential ecological impacts**
73 **associated with habitat fragmentation, erosion and/or wetlands, what is your response?**

74 **A.** It is my opinion that Mr. Blodgett and Dr. Walk's testimonies overstate the potential
75 ecological impacts of ATXI's Primary Route crossing the Spunky Bottoms Preserve. Mr.
76 Blodgett's testimony is based almost entirely on temporary effects that can be mitigated, or a
77 series of hypothetical impacts that would only occur if the right-of-way were not properly
78 managed during and after construction. While construction of ATXI's Primary Route would
79 cause a permanent loss of a small amount of forest in the southwestern corner of the preserve and
80 some forest-dependent species would likely relocate to the interior of the preserve, the impact to
81 those forest interior-dwelling species is overstated, given that the area affected by this route
82 abuts an open area to the west and these species likely occupy areas already more interior to the
83 preserve.

84 Other impacts discussed on page 10 of Mr. Blodgett’s testimony are hypothetical—he
85 hasn’t presented any study or analyses in support of his conclusions. In any event his concerns
86 can be avoided through proactive habitat management strategies. If the right-of-way is
87 maintained to support the re-establishment of native species, the risk that invasive species will
88 displace native species, disrupt wildlife’s life cycles, or cause wildlife to abandon the right-of-
89 way is remote. Mr. Blodgett’s assertion that the primary crossing would undermine the “core” of
90 the Spunky Bottoms restoration effort is unfounded and fundamentally inaccurate given that
91 ATXI’s Primary Route would cross the preserve near its western edge, and all Project related
92 activities within the preserve would be confined to the crossing for the life of the Project.

93 **Q. Is your response to Dr. Walk similar to those made to Mr. Blodgett?**

94 **A.** Yes. I respond similarly to the claims made by Dr. Walk on page 12 of his testimony.
95 While I agree there would be a small area of forest that would be altered “indefinitely” within the
96 right-of-way, the increased erosion and impacts on water quality cited by Dr. Walk would largely
97 be temporary and manageable. ATXI can apply appropriate best management practices during all
98 construction and maintenance activities which will minimize environmental impacts of the
99 transmission line to a significant degree. During construction, erosion and sedimentation (and any
100 resulting effects on water quality) can be managed through the application of standard, field-
101 proven erosion and sediment control measures. Following construction, the right-of-way can be
102 stabilized with a self-sustaining community of native herbaceous and shrubby vegetation that
103 will stabilize the soil and provide wildlife habitat.

104 Additionally, as it relates to wetlands, ATXI has consulted with the United States Army
105 Corps of Engineers (“USACE”) and the Illinois Department of Natural Resources (“IDNR”), the

106 federal and state agencies, respectively, with oversight responsibility for jurisdictional wetlands. It is
107 my understanding ATXI will continue to consult with the USACE and IDNR regarding impact
108 avoidance and minimization and obtain all required state and/or federal listed species permits or
109 approvals prior to construction.

110 **Q. Both Mr. Blodgett and Dr. Walk cite habitat fragmentation as a concern with**
111 **respect to the construction and maintenance of the transmission line across the Spunky**
112 **Bottoms Preserve, IDOT wetland mitigation site and certain upland and bluff areas. They**
113 **conclude that the transmission line will result in destruction of native plants, introduction**
114 **of invasive plant species, disruption of normal animal activities, and erosion. Do you agree**
115 **with their assessment?**

116 **A.** Construction of the transmission line will require minor losses of native vegetation
117 (mostly trees) within the right-of-way. Small losses of trees are virtually unavoidable along this
118 portion of the Project regardless of the specific route chosen due to the abundance of forested
119 land in the area (as depicted in the Nature Conservancy's Exhibit 11); however, ATXI's Primary
120 Route minimizes these losses within the preserve since it crosses a narrower portion of the
121 preserve compared to other potential crossings of the preserve. Maintenance activities would not
122 add to fragmentation as Mr. Blodgett and Dr. Walk assert because maintenance activities would
123 be confined to areas already cleared during construction.

124 I do not agree that introduction of invasive plant species, significant disruption of
125 wildlife, and substantial erosion are unavoidable impacts of the Project. It is possible to prevent
126 invasive species from becoming established through proactive vegetative management. Some
127 minor wildlife disturbances and runoff may occur during construction and to a lesser extent

128 during maintenance, but these impacts would be episodic rather than permanent and could be
129 minimized through an adaptive wildlife management strategy that schedules
130 construction/maintenance activities during periods of low sensitivity to disturbance.

131 **Q. Do you agree with Mr. Blodgett's assertion on page 15 that the land subject to the**
132 **conservation easement (the upland and bluff section) is more vulnerable to construction**
133 **and maintenance damage than other land?**

134 **A.** Although it is true that higher slopes tend to increase susceptibility to erosion, the
135 challenges posed by these susceptibilities are manageable through appropriate site engineering
136 methods and represent more of a design issue than an environmental impact. Furthermore, other
137 factors (grain size and shape, cohesiveness, soil composition, moisture content, etc.) also
138 influence sensitivity to disturbance and susceptibility to erosion, so elevation and slope by
139 themselves do not determine vulnerability. I would further add that the topography throughout
140 the Meredosia-Ipava area consists of rolling terrain divided by shallow to deep ravines,
141 subjecting any potential route in this area to similar concerns.

142 **Q. Both Mr. Blodgett (pages 15 and 18) and Dr. Walk (page15) express concern about**
143 **erosion during construction and maintenance of the transmission line to the land subject to**
144 **a conservation easement held by TNC and the bluff habitat in Schuyler County. How can**
145 **erosion be limited in this area?**

146 **A.** As described above, the right-of-way can be engineered to avoid erosion in most areas
147 during the design phase, in conjunction with the application of appropriate erosion control
148 strategies. Appropriate erosion control strategies will include best management practices in
149 addition to any agency required measures, to the extent applicable.

150 **Q. On pages 18 and 19, Mr. Blodgett concludes by citing studies assigning a dollar**
151 **value to the benefits of floodplain wetlands and freshwater wetlands. Are these studies**
152 **applicable to this proceeding?**

153 **A.** The ecosystem service benefits and values of wetlands are well recognized. However,
154 there is no documentation in TNC testimony to support a finding that the impacts of their
155 proposed route alternatives relative to ecosystem services would be any different than that of
156 ATXI's Primary or Alternate Routes. A complete wetland delineation and subsequent impact
157 assessment based on exact pole locations, access paths and wetland/waterbody crossing locations
158 would need to be conducted before any conclusions could be drawn

159 **Q. On page 3, Dr. Walk states "The Nature Conservancy has identified two alternate**
160 **routes that would have much less significant effects on sensitive habitats than those**
161 **proposed by Ameren." Do you agree with this conclusion?**

162 **A.** Please review the testimony of Dr. James Dwyer regarding avian impacts associated with
163 the various routes. Additionally, it is impossible to compare the effects of TNC and ATXI
164 proposals on sensitive habitat because TNC has not provided critical information to support their
165 proposal. Most importantly, they have not described the distribution and relative sensitivity of
166 the natural habitats that their alternatives would cross, or compared the impacts on sensitive
167 habitat that may occur relative to their alternative routes vs. those associated with ATXI's
168 proposed routes. Furthermore, TNC's alternatives were based mostly on habitat protection within
169 property they own to the near exclusion of all other considerations, including potential habitat
170 related impacts that may occur irrespective of route or the increase in other types of impact along
171 their route proposals. Please see the rebuttal testimony of Ms. Murphy as to further discussion

172 related to impacts that may occur along TNC's route alternatives, in comparison to ATXI's
173 proposed routes. Finally, I note that pursuant to the terms of the Stipulation, TNC has withdrawn
174 its two alternative routes.

175 **Q. On Page 20, Dr. Walk states that ATXI's route selection methodology was flawed**
176 **because it failed to consider direct and indirect impacts to forest, wetlands, natural areas,**
177 **and threatened/endangered species. Do you agree with that assessment?**

178 **A.** ATXI Exhibits 4.0 and 4.3, which included the direct testimony of Ms. Murphy and the
179 attached Siting Study Summary, both discussed types of impacts that may occur relative to
180 ATXI's proposed routes. Wooded areas, wetlands, threatened and endangered species and
181 natural areas were all considered within ATXI's route siting analysis. As identified by Ms.
182 Murphy, ATXI's route siting analysis aimed to balance the trade-offs associated with impacts to
183 various types of land use and environmental features. Public participants who attended ATXI's
184 public meetings helped to distinguish what environmental criteria were of highest sensitivity,
185 when such distinction was necessary in comparing multiple route options. The ultimate extent of
186 direct and indirect impacts relative to any environmental consideration will be entirely dependent
187 on route, pole locations, means of construction and any other locations of ground disturbance.
188 Further, many types of impact, namely including those identified by TNC, have the potential to
189 occur regardless of route in the Meredosia-Ipava area.

190 **Q. On page 21 and page 25, Dr. Walk states that ATXI did not do an adequate job of**
191 **trying to avoid forested areas or consider the impacts on wetlands in the Meredosia to**
192 **Ipava area, and that TNC's proposed route alternatives would avoid these impacts. Do you**
193 **agree with this statement?**

194 **A.** ATXI Exhibit 4.5 provides a summary of the values of occurrence of various
195 environmental sensitivities along ATXI's proposed routes. However, the proposed routes were
196 the result of a comprehensive route siting analysis, not the impetus of any localized comparison.
197 As identified by Ms. Murphy, ATXI's comprehensive route siting analysis incorporated public
198 input, which identified heightened sensitivity to other environmental features than those specific
199 to TNC's property. ATXI Exhibit 4.0 provides discussion as to how the potential for impacts to
200 both wooded areas and wetlands were considered, and reduced, through ATXI's route selection
201 process. Ms. Murphy further addresses potential impacts related to ATXI's proposed routes,
202 relative to TNC's proposed route alternatives, in her rebuttal testimony.

203 **Q. Dr. Walk's testimony compares the environmental impacts to Known State Listed**
204 **Species Occurrence, Illinois Natural Area Inventory Sites (page 22), and impacts upon**
205 **wetlands (page 25) of ATXI's routes from Meredosia to Ipava to these environmental**
206 **impacts on the rest of the transmission line. Is this an appropriate comparison?**

207 **A.** No. It is inappropriate to compare environmental impacts of one section of the route to
208 impacts of other sections of the route because these impacts are largely a function of localized
209 environmental sensitivities (such as habitat types, species distributions, etc.) that are not
210 homogeneously distributed along the route. The appropriate comparison would have been
211 between ATXI's Proposed Routes between Meredosia and Ipava and any other route alternatives

212 in the immediate vicinity of the Meredosia-Ipava area. Furthermore, as stated, ATXI's route
213 siting analysis considered additional environmental factors other than those identified by TNC,
214 while also incorporating public input.

215 **Q. Has TNC conducted any siting analysis on its identified route alternatives that**
216 **evaluate route impacts on forested areas or wetlands? If not, how can the Commission**
217 **properly evaluate the impacts of their proposed alternatives?**

218 **A.** TNC has not provided any evidence that they have conducted a siting analysis of their
219 proposed route alternatives. In the absence of that information, it is impossible to evaluate the
220 relative benefits or impacts of their proposed route alternatives compared to ATXI's Primary or
221 Alternate Routes.

222 **Q. On pages 26-27, Dr. Walk concludes that both of TNC route alternatives would**
223 **reduce upland habitat fragmentation in Schuyler County and avoid the IDOT wetland**
224 **mitigation site.. Has Dr. Walk substantiated his conclusion?**

225 **A.** No, he has not. Habitat fragmentation has the potential to occur irrespective of route, and
226 TNC has not provided sufficient evidence identifying how their proposed route alternatives
227 would reduce this impact. They have not described the distribution and relative sensitivity of the
228 natural habitats that their alternatives would cross, or compared the amount of sensitive habitat
229 that their alternative routes would impact outside the IDOT wetland mitigation site to the
230 sensitive habitat that would be impacted by ATXI's proposed routes.

231 **Q. Do you believe that ATXI's proposed routes are superior to TNC's proposed route**
232 **alternatives, specifically as it relates to wetlands, erosion and habitat fragmentation?**

233 **A.** ATXI's Primary and Alternate Routes effectively balance competing concerns with
234 respect to environmental and natural resources concerns. ATXI's Alternate Route, which
235 includes the Stipulated Route, not only effectively balances these concerns, but avoids the IDOT
236 wetland mitigation site. The analysis supporting ATXI's Alternate Route is robust and far
237 superior to the rationale provided to-date to support TNC's proposed route alternatives.

238 **IV. RESPONSE TO MS. DONNA ALLEN**

239 **Q. On page 3, Ms. Allen expresses concern about the impact of ATXI's Alternate Route**
240 **from Kansas to the Indiana State Line on old growth woodland that is highly erodible, with**
241 **deep creeks throughout. Explain whether ATXI's Alternate Route would impact this area.**

242 **A.** ATXI's Alternate Route extends along the section line and northern boundary of Ms.
243 Allen's property for approximately 2,000 feet. This route would require tree removal within the
244 right-of-way. However, tree removal would not be unique to Ms. Allen's property, nor would
245 the creeks she identifies. I understand ATXI will, as feasible and appropriate, implement best
246 management practices and any other appropriate mitigation measures aimed at mitigating
247 impacts regardless of the ultimate location of the approved route.

248 **Q. On page 7, Ms. Allen is concerned that ATXI's Alternate Route will result in the**
249 **destruction of rare woodland vegetation. How would any impact to this vegetation be**
250 **minimized?**

251 **A.** While tall growing vegetation would have to be removed within the right-of-way, low
252 growing vegetation would remain. I understand ATXI would implement appropriate measures to

253 mitigate the potential for impacts to any protected plants should any protected plants in fact
254 occur in this area. Mitigation measures could include, as examples, confirming protected plants
255 are present, controlling construction traffic in the vicinity of these plants, limiting ground
256 disturbance to the extent feasible and restoring the right-of-way to its pre-construction condition,
257 to the extent feasible but absent any tall growing vegetation. However, it's not clear to me how
258 Ms. Allen alleges that red trillium is located on her property and yet her cited source does not
259 identify that red trillium occurs in Clark County. As previously identified, if the Alternate Route
260 were approved, ATXI would need to confirm the presence of protected plant species along this
261 route to further address any potential for impact and appropriate mitigation.

262 **Q. Both Ms. Allen (page 4) and Dr. Walk (page 24), on behalf of TNC, have claimed a**
263 **potential impact to the federally protected Indiana bat on different portions of the**
264 **transmission route. What is the potential for the Indiana Bat to be impacted by either of**
265 **ATXI's Primary or Alternate Routes?**

266 **A.** I would agree that there is a potential for impact to the Indiana bat; however, this is true
267 relative to the entire Project. The habitat range of this species encompasses the entire Project
268 area. The extent of impact to the Indiana bat will be entirely dependent on the confirmed
269 presence of the species, namely areas of recorded maternity colonies, relative to the final
270 approved route and areas of tree removal necessary to construct and operate the Transmission
271 Line along this route.

272 **Q. What measures will ATXI employ to further assess the potential for impact and any**
273 **appropriate mitigation measures?**

274 A. Specific to the Meredosia-Ipava area, it is my understanding that based on past
275 discussions with the U.S. Fish and Wildlife Service (“USFWS”), the USFWS has not identified
276 any known maternity colonies or sensitive habitat beyond general suitable habitat.
277 Notwithstanding any lack of previously identified sensitive habitat and with further regard to
278 recent guidelines released by the USFWS, ATXI will continue to consult with the USFWS to
279 identify known maternity colonies and any other known sensitive habitats associated with the
280 Indiana bat, conduct any required field studies and implement any appropriate mitigation
281 measures, as required, to reduce or avoid the potential for impact to this species.

282 **V. CONCLUSION**

283 **Q. Does this conclude your rebuttal testimony?**

284 A. Yes, it does.

Julia Tims



Ms. Tims is a professional ornithologist with more than 18 years of experience in terrestrial ecology, natural resource management, and environmental impact assessment. Ms. Tims has conducted environmental impact assessment and natural resources studies throughout the United States, South America, Africa, and Europe involving biodiversity assessment and management, wildlife and vegetation management, endangered species survey and management, and stakeholder engagement related to biodiversity and the interactions between biological and social issues.

Ms. Tims has particular expertise in projects that combine technical ecological issues with project design, land management, and conservation planning for sensitive species and habitats.

Registrations & Professional Affiliations

- American Ornithologist's Union
- Society of Wetland Scientists
- The Wildlife Society
- Waterbird Society

Fields of Competence

- Environmental impact assessment
- National Environmental Policy Act (NEPA) and state-equivalent NEPA compliance
- Wetland delineation and permitting
- Project permitting and documentation
- Project planning and design to address ecological issues
- Ecological baseline studies
- Stakeholder engagement
- Habitat restoration and enhancement
- Endangered Species Act Section 7 Consultation
- Taxonomy of vegetation, birds, mammals, reptiles, and amphibians
- Cumulative impact assessment

Education

- M.S., Natural Resources Management/Ecology, Cornell University, 1999, With Distinction
- B.S., Entomology and Applied Ecology/Wildlife Conservation, University of Delaware, 1990
- Wetland Delineation Training, University of Washington and U.S. Army Corps of Engineers, 2000
- Habitat Evaluation Procedures (HEP), U.S. Fish and Wildlife Service
- Ecosystem Services Review (ESR), World Resources Institute, 2009



Key Projects

Susquehanna to Roseland 500 kV Project.

Currently assisting in managing the development of a Right of Way Vegetation Management Plan, Avian Management Protection Plan, Critical Habitat/Endangered Species Mitigation Plan, Wetlands and Transition Areas Mitigation Plan and Stream and Riparian Habitat Restoration Plan for a 500 kV electric transmission line.

Environmental Impact Statement, Clackamas Hydroelectric Project Relicensing, Portland, OR.

Project manager for the Environmental Impact Statement (EIS) and technical leader for terrestrial ecological issues for relicensing the Clackamas River hydroelectric project. Ms. Tims provided technical expertise within working groups and facilitated coordination among natural resource trustees on ecological issues. Managed the NEPA process for the project, including preparation of the Draft and Final EIS as third-party contractor to the Federal Energy Regulatory Commission. Facilitated interactions with PGE and the Federal Energy Regulatory Commission (FERC) regarding relicensing issues.

Golden Pass LNG Environmental Impact Assessment, Sabine Pass, TX, 2006.

Technical lead for ecological issues associated with a LNG import terminal located along the Port Arthur Ship Channel in Jefferson County, TX. Assessed the ecological impacts of the proposed project on tidal and freshwater wetlands, coastal plain habitats, migratory birds, endangered species, and habitat connectivity. Prepared FERC Resource Reports detailing existing conditions at the site and the potential effects of the project on these resources. Significant issues included large-scale impacts to freshwater and tidal wetlands and the removal and disturbance of critical migratory bird stopover habitat.

Camelia Bay LNG Environmental Impact Assessment, Mobile, AL 2006.

Technical lead for ecological issues on a feasibility assessment for development of a liquefied natural gas (LNG) import terminal at a former Navy facility located on Mobile Bay, AL. Conducted wetland and terrestrial

habitat investigations and identified environmental constraints to development at the site.

Environmental Impact Statement for the New York Power Authority (NYPA), FDR Power Project. Massena, NY.

Addressed ecological issues and preparing biological portions of the EIS related to the proposed relicensing of the FDR hydroelectric power project. The EIS was prepared to meet federal NEPA and New York State Environmental Quality Review Act (SEQRA) standards and requirements. Provided technical expertise within working groups and facilitated coordination among natural resource trustees on ecological issues. Facilitated interactions with NYPA and the FERC regarding relicensing issues and worked with state and federal agencies including New York State Department of Environmental Conservation (NYSDEC), U.S. Army Corps of Engineers (USACE), and the New York State Historic Preservation Office (NY SHPO).

Ormond Beach Threatened and Endangered Species Studies, Oxnard, CA.

Project manager and lead ecologist on natural resources inventory and threatened and endangered species study at a 350-acre coastal site in central CA. Conducted extensive habitat characterization, mapping, and surveys for 17 state and federally listed plant and animal species. Mapped vegetation communities and sensitive habitats using GPS. Developed GIS database for project including vegetation communities, locations of sensitive plants and animals, potential habitat for Threatened and Endangered Species (TES), and developable areas. Prepared report including impact assessment of a potential redevelopment project and summary of NEPA and CEQA compliance issues and development constraints at the site.

Massena Electric Department Grasse River Hydropower Feasibility and Licensing Study. Massena NY.

Directed studies in support of the environmental assessment required by the Federal Energy Regulatory Commission under the Federal Power Act for a proposed multipurpose hydropower project on the Grasse River in NY. The studies also supported

requirements pursuant to New York SEQRA. Conducted botanical, terrestrial, and riparian resources and water quality assessments in preparation of an environmental report for the project. Provided permitting support, including NYSDEC and USACE consultation related to potential impacts on endangered species, wildlife, and wetlands.

Environmental Assessment and Wetland Permitting, Global Common, Long Island, NY.

Conducted an environmental assessment of a proposed 50-MW oil-fired CT power project in Greenport, NY. Conducted wetland delineation, habitat assessment, and threatened and endangered species evaluation. Prepared SEQRA documentation for the project and assisted the client in developing site plans to avoid or minimize wetland impacts. Coordinated with the NYSDEC and USACE to obtain confirmation of wetland boundaries and wetland permits necessary for the project under an expedited time frame.

Maritimes and Northeast Natural Gas Pipeline Third Party EA, ME.

Technical lead for biological issues related a pipeline expansion (looping) project, including construction of five new compressor stations in Maine and Massachusetts. Natural resource issues included wetlands, wildlife, vegetation, and threatened and endangered species. Conducted project scoping and interagency consultation as part of FERC's pre-filing process. Conducted Section 7 Endangered Species Act consultations for bald eagle, Atlantic salmon, and shortnose sturgeon. Resolved agency issues, which eliminated the need for mal consultation and a Biological Assessment.

Northeast Gateway LNG Deepwater Port Third Party EIS, MA.

Technical lead for ecological and endangered species issues related to the proposed Northeast Gateway Deepwater Port and associated 16.4-mile marine pipeline. Working as a third party contractor to the US Coast Guard, ERM was responsible for developing the EIS scope and preparing the joint Port and Pipeline draft as well as the final Environmental Impact Statement. Participated in the threatened and endangered species

consultation in compliance with Section 7 of the Endangered Species Act. Significant threatened and endangered species issues included effects of the project and pipeline on sea turtles, lobster, North Atlantic right whale, humpback whale, and fin whale.

Crown Landing LNG Environmental Studies and Permitting, Logan Township, NJ.

Technical lead for terrestrial ecological issues associated with a proposed LNG import terminal located on the Delaware River in New Jersey. Conducted terrestrial investigations at the site including wetland delineation, vegetation community characterization, wildlife habitat assessment, and threatened and endangered species investigations. Prepared FERC resource reports and worked closely with client to address ecological issues associated with the project. Provided guidance for avoidance and mitigation measures to offset potential impacts of the project. Primary ecological issues with the project included impacts to wetlands and bald eagles. Addressed ecological issues with the regulatory agencies and prepared state and federal permit applications for the project.

Site Screening Studies for Wind Power Facilities, US.

Prepared due diligence assessments for siting over 50 potential wind power facilities throughout the United States. Identified regulatory constraints and potential issues of concern for each site including wetlands, rare, threatened, or endangered species, migratory bird routes, avian and bat concentration areas, Federal Aviation Administration compliance, and general wildlife concerns. Assessments included projects in New York, Pennsylvania, Virginia, North Dakota, South Dakota, Iowa, Minnesota, Michigan, Kansas, Nebraska, Texas, Illinois, Wyoming, Colorado, Montana, and Idaho. Developed standardized assessment system to assist developers in identifying no-go projects and ranking the potential projects according to level of regulatory constraints and environmental and social issues.