

April 2005

## Harnessing Wind Is Not (by Nature) Environmentally Friendly

Victoria Sutton

Nicole Tomich

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### Recommended Citation

Victoria Sutton and Nicole Tomich, *Harnessing Wind Is Not (by Nature) Environmentally Friendly*, 22 Pace Envtl. L. Rev. 91 (2005)

DOI: <https://doi.org/10.58948/0738-6206.1137>

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# Harnessing Wind is Not (by Nature) Environmentally Friendly

VICTORIA SUTTON<sup>1</sup> and NICOLE TOMICH<sup>2</sup>

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1. Victoria Sutton, Visiting Lecturer (Fall 2004) Yale University, Professor of Law, Texas Tech University, Ph.D. in Environmental Sciences, University of Texas at Dallas and J.D., *magna cum laude*, American University.

2. Nicole Tomich, J.D., *cum laude*, Texas Tech University School of Law, Lubbock, Texas, 2004; B.S. Public Relations, *magna cum laude*, University of Texas, Austin, Texas, 2001.

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## 1.0 INTRODUCTION

America's heavy reliance on fossil fuels as a primary source for electrical power has been met with a call for the development and use of alternative and renewable sources of energy.<sup>3</sup> Wind power is one of those renewable energy resources<sup>4</sup> in which we have placed great hope for contributing to the replacement of non-renewable fossil fuels. Speculating on the promise of wind power, the wind energy sector is increasing faster than any other energy sector with installed capacity increasing at a compound growth rate of 26% between 1998 and 2002.<sup>5</sup> Projections from the Energy Information Administration forecast a continuing significant increase in wind powered electricity in the United States from 13 billion kilowatt hours in 2002 (0.3% of generation) to 47 billion in 2025 (0.8%).<sup>6</sup> World-wide cumulative capacity is expected to continue increasing by 25% through 2005.<sup>7</sup> Although wind is natu-

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3. Kim R. York & Richard L. Settle, *Potential Legal Facilitation or Impediment of Wind Energy Conversion System Siting*, 58 WASH. L. REV. 387 (1983).

4. The renewable energy resources are those like biomass, solar, geothermal and wind. The non-renewable energy resources are hydroelectric, nuclear, gas, oil, and coal.

5. George Sterziner, et al., *The Effect of Wind Development on Local Property Values, Analytical Report*, RENEWABLE ENERGY POLICY PROJECT (REEP), May 2003, at [http://www.repp.org/report/wind\\_online\\_final.pdf](http://www.repp.org/report/wind_online_final.pdf).

6. Annual Energy Outlook 2004 with Projections to 2025, 2004 DOE/EIA-0383 (Energy Information Administration January 2004), at <http://www.eia.doe.gov/oiat/aeo/electricity.html#elerene> (last visited Oct. 19, 2004).

7. Morgan Winn Tingley, *Effects of Offshore Wind Farms on Birds, "Cuisinarts of the Sky" or Just Tilting at Windmills?* 2 (2003) (unpublished thesis, Harvard Uni-

rally generated and therefore “free”, the cost of harnessing wind and getting it to market is still prohibitive, yet improving. The price for wind power has dropped about 90% in the past 20 years from \$0.80 per kilowatt hour in the early 1980s to current generation costing approximately \$0.04 per kilowatt hour.<sup>8</sup>

Interest in renewable energy has fluctuated inversely with the availability of fossil fuels over the years, giving rise to a regulatory framework and incentive system which is not appropriately linked to environmental impacts. The current administration has included wind power as an important component of establishing realistic goals toward reducing greenhouse gas emissions, and has offered economic incentives to promote the development of wind power.<sup>9</sup> Renewable technologies have the potential to produce power with absolutely no direct air pollution;<sup>10</sup> as such, the utilization of renewable energy sources has been touted as having fewer environmental impacts than traditional energy sources.<sup>11</sup> Because of the misconception that these renewable energy sources do not cause environmental degradation, the regulatory development in renewable energy has been economically driven, and lacks requirements to avoid negative environmental impacts.<sup>12</sup> For example, incentives such as the federal Wind and Biomass Renewable Electricity Production Credit (“REPC”)<sup>13</sup> and state renewable portfolio standards have been offered, yet there remains a glaring omission of the consideration of the possible negative environmen-

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versity) at <http://safewind.info/pdf/TingleyThesis2003.pdf> (last visited Mar. 6, 2004) (citing T. Ackermann & L. Soder, *An Overview of Wind Energy-status 2002*, Renewable and Sustainable Energy Reviews, 6, 67-128 (2002)) [hereinafter Tingley Thesis]. Excerpts from the Tingley Thesis were published in Mass. Audubon's Sanctuary Magazine, Autumn 2003.

8. Neil J. Numark & Michael O. Terry, *New Nuclear Construction: Still on Hold*, 141 NO. 22 PUB. UTIL. FORT. 32, 35 (2003) (citing A. Clamp, *Wind Flies High*, ELECTRIC PERSPECTIVES, July/August 2003, at 24).

9. Press Release, The White House Office of the Press Secretary, *Global Climate Change Policy Book* (Feb. 2002), at <http://www.whitehouse.gov/news/releases/2002/02/climatechange.html> [hereinafter Policy Book].

10. David M. Driesen, *Sustainable Development and Air Quality: The Need to Replace Basic Technologies with Cleaner Alternatives*, 10 BUFF. ENVTL. L.J. 25, 48 (2003).

11. THOMAS A. STARRS, SOLAR, WIND AND GEOTHERMAL ENERGY, IN ENVIRONMENTAL LAW FROM RESOURCES TO RECOVERY 482 (Celia Cambell-Mohyn, ed., 1993).

12. *Id.*

13. The Renewable Electricity Production Credit (REPC) is a per kilowatt hour tax credit for electricity generated by both public and private qualified energy producers and applies to electricity produced for ten years after a qualified facility comes on line. The credit was worth 1.8 cents per kilowatt hour in 2003 and is adjusted annually for inflation. STEVEN FERREY, THE LAW OF INDEPENDANT POWER § 3:53 (2004).

tal impacts of wind energy as part of these policy developments. Although renewable wind energy is attractively "green"<sup>14</sup> when included in climate change policy, every energy policy is inextricably linked to many other environmental choices.<sup>15</sup> Wind power, with its rapid growth, can no longer be ignored in the consideration of complete environmentally-friendly policy choices.

The negative environmental effects of wind power, which should be considered in policy choices, include an increase in bird mortality, degradation of ecosystems, and harm to endangered species and their habitats.<sup>16</sup> In the United States, it is estimated that about 70,000 birds die in collisions with windmills each year,<sup>17</sup> and most of these birds are raptors or other endangered species.

This article seeks to examine the existing regulatory framework and tools for addressing the environmental impacts of wind energy. The introductory discussion of the potential environmental impacts of wind energy generation and wind farm development reveals the need for regulation of these impacts. The potential for wind energy to provide a clean, economical, and renewable supply of electricity must be weighed against the potential for wind energy development to impact bird mortality, degrade ecosystems, and harm endangered species and endangered species habitats.<sup>18</sup> Next, this article examines the development and use of wind power in the existing regulatory context, and considers analogous case law and legal tools potentially applicable to the environmental impacts of the mass development of land-based and offshore wind power farms in the United States. Finally, this article summarizes the regulation of wind energy environmental impacts and the application of existing law to these environmental issues, and

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14. "Green" meaning a no-emission technology.

15. Gary C. Bryner, *The National Energy Policy: Assessing Energy Policy Choices*, 73 U. COLO. L. REV. 341, 341-42 (2002).

16. *Renewable Energy Wind Energy Resources Principles and Recommendations*, DEFENDERS OF WILDLIFE, at <http://www.defenders.org/habitat/renew/wind.html> (last visited Feb. 22, 2004).

17. This number was calculated using the Danish relationship of 30,000 birds per 4,000 turbines resulting in a total of 67,000 birds, annually. However, only 500 birds had been killed in California as a result of wind turbines, but this number includes only raptors. BJORN LOMBORG, *THE SKEPTICAL ENVIRONMENTALIST MEASURING THE REAL STATE OF THE WORLD* 135, n. 992 (The Press Syndicate of the University of Cambridge 2001).

18. *Renewable Energy Wind Energy Resources Principles and Recommendations*, *supra* note 16.

offers recommendations for legal guidance in the siting and engineering of wind farms.

## 2.0 THE IMPACT OF WIND FARMS ON THE ENVIRONMENT

Any artificial structure, such as a wind turbine, is likely to have a significant negative impact on the surrounding natural environment.<sup>19</sup> This reality increases in magnitude when the surrounding environment encompasses threatened or endangered species.<sup>20</sup> Studies in Europe have revealed that the public's perception of bird impacts can be a major factor in deciding whether a wind farm will gain acceptance and receive the proper permitting for a particular location.<sup>21</sup> Furthermore, the minimal amount of existing scientific research on the environmental impacts of wind-generated power is considered by some to be developer-driven, and therefore incomplete, biased, and flawed.<sup>22</sup> Whether "flawed" or not, there is existing literature on the negative impacts of wind power on the environment, and these impacts are discussed *infra*.

### 2.1 Impact of Wind Power on Birds

Evidence of negative impacts on birds from interaction with wind generation first arose in the late 1980s.<sup>23</sup> Since then, turbine blades have been proven to injure and kill birds—particularly birds of prey, known as raptors, some of which are threatened or endangered.<sup>24</sup> These birds, such as the Bald Eagle,<sup>25</sup> become victims of the wind turbines, primarily because of the height at which they fly. An early study of just one wind farm site in Altamont Pass, California, reported hundreds of raptors being killed yearly.<sup>26</sup> Studies from the site, which hosts 6,500 wind turbines on 190 kilometers of property reveal: (1) turbines within 500 feet of canyons, which are typically prey areas, are associated with

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19. Tingley Thesis, *supra* note 7, at 7.

20. *Id.*

21. *Id.* (citing Delft University Wind Energy Research Institute, *Final Report: Concerted Action on Offshore Energy in Europe*, (2001), at [http://owe.starforze.net/caowee/indexpages/downloads/CAOWEE\\_Complete.pdf](http://owe.starforze.net/caowee/indexpages/downloads/CAOWEE_Complete.pdf)).

22. *Id.* (citing J. Trewee, *Ecology and Environmental Impact Assessment*, 33 J. APPLIED ECOLOGY, 191-99 (1996)).

23. *Id.* at 6.

24. Elizabeth Thomas, *The Myth of a Single, "Green" Power Resource*, 10 NAT. RESOURCES & ENV'T 65, 67 (1996).

25. The Bald Eagle is currently listed as threatened, see Endangered Species Act 50 C.F.R. § 17.11 (2004).

26. Tingley Thesis, *supra* note 7, at 6.

higher mortality rates; (2) mortality at end turbines is higher, but is just as high within strings of turbines where there are gaps of 35 meters or more between turbines; and (3) the lower the turbine density, the higher the mortality rates.<sup>27</sup> The Altamont study was validated in the 1990s when migrating endangered Griffon Vultures were dying near Tarifa, Spain from collisions with wind turbine rotor blades.<sup>28</sup>

Bird collisions with wind generators can occur in a number of different ways: (1) a bird may strike the non-moving part of a turbine, such as the tower or motor box; (2) a bird may hit the spinning rotor blades; or (3) a bird may become caught in the strong pressure wave, or "wake" of a rotor blade.<sup>29</sup> Wake collisions can cause a bird to become disoriented, lose control, and collide with the turbine, or be thrown down onto the ground or into the ocean.<sup>30</sup> The speed of revolving rotor blades can also contribute to "motion smear," which is the degradation of the visibility of rapidly moving objects, causing birds not to see them and fly straight into them.<sup>31</sup>

One study estimates that approximately 10,000 to 40,000 birds are killed each year by wind turbines in the United States.<sup>32</sup> In comparison, approximately 60 million to 80 million yearly bird deaths result from vehicles, with an additional 40 million to 50 million deaths attributed to communication tower impacts.<sup>33</sup> While the second set of figures seem to dwarf the importance of 10,000 to 40,000 birds killed annually by wind turbines, comparison studies are often flawed because they tend to focus on "cumulative impact" data rather than focusing on losses suffered by a particular species.<sup>34</sup> Such studies compare the total mortalities from various sources, instead of the risk emanating from each sep-

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27. *Renewable Energy Wind Energy Resources Principles and Recommendations*, *supra* note 16.

28. Tingley Thesis, *supra* note 7, at 6 (citing R.H.W. Langston & J.D. Pullan, *Windfarms and Birds: An Analysis of the Effects of Windfarms on Birds, and Guidance on Environmental Assessment of Criteria and Site Selection Issues*, presented at the Convention on the Conservation of European Wildlife and Natural Habitats, Strasbourg, (Dec. 2002) at <http://mitglied.lycos.de/witfriedHeck/wf&birds.htm>).

29. *Id.* at 10-11.

30. *Id.* at 11.

31. *Id.* at 12.

32. *Id.* at 13.

33. *Id.* (using a study published by W.P. Erickson, et al., *Avian Collisions with Wind Turbines: A Summary of Existing Studies and Comparisons to Other Sources of Avian Collision Mortality in the United States*, National Wind Coordinating Committee Resource Document, (2001)).

34. Tingley Thesis, *supra* note 7, at 13.

arate source.<sup>35</sup> Using the figures above, and factoring in approximately 230 million registered motor vehicles in the United States in the year 2000, the result is a low average of 0.3 bird deaths per vehicle per year.<sup>36</sup> Furthermore vehicle deaths are much less likely to affect endangered or threatened raptors.

Collisions are not the only threat posed to birds by wind power development. Wind farms can also become a barrier to movement, causing a migrating species to fly around rather than through a particular production site.<sup>37</sup> A wind farm may also block daily home-range movements of a particular species, for instance, birds flying to and from preferred feeding and roosting sites.<sup>38</sup> A wind farm that intersects a major migration path can cause a species to reroute adding stress and forcing the species to exert extra energy.<sup>39</sup>

The lighting of turbines may also pose a large threat to birds. Aviation lights that blink or rotate, have long been associated with bird mortality.<sup>40</sup> Lighting dangers become amplified during bad weather such as fog, or heavy rain, increasing reflection and refraction, thus increasing mortality.<sup>41</sup> Installed wind energy generating capacity increased by an average of 32% annually from 1998-2002;<sup>42</sup> this ever-increasing growth rate combined with the various threats discussed *supra*, creates a unique and rapidly growing threat to bird populations and habitats.

## 2.2 Ecosystem and Wildlife Habitat Wind Power Impacts

Increased human activity in the vicinity of turbines for construction and maintenance will cause ecosystem disturbance. A prime example is new road construction in undisturbed areas, which has the potential to cause soil erosion, water pollution, and disruption of surrounding habitats.<sup>43</sup> Ecosystem impact occurs in two primary manners: (1) indirect habitat loss (i.e. making a

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35. *Id.*

36. *Id.* at 13-14.

37. *Id.* at 18.

38. *Id.*

39. *Id.*

40. Tingley Thesis, *supra* note 7, at 23.

41. *Id.*

42. Carolyn S. Kaplan et al., "Wind Energy Developments", Edison Electric Institute Fall Legal Conference, Oct. 9, 2003 at [www.nixonpeabody.com](http://www.nixonpeabody.com) (citing 2003 Global Wind Energy Market Report, American Wind Energy Association (AWEA)).

43. *Renewable Energy Wind Energy Resources Principles and Recommendations*, *supra* note 16.



habitat less desirable); and (2) direct habitat loss (e.g. building upon or physically altering a particular habitat).<sup>44</sup>

Indirect habitat loss will be of great significance to local species that rely on a specific area for sustenance.<sup>45</sup> Such species often have access to a particular "resource in only one area and unless they abandon historical breeding or wintering grounds, [it will] be unlikely to find a replacement for the resource."<sup>46</sup> Indirect losses may also effect migratory populations that use a specific area as a staging ground.<sup>47</sup> "Staging is the period before a large migration where birds gather in flocks and put on extra fat reserves."<sup>48</sup>

Direct loss of habitat from new construction is an ecological impact that some species could potentially adapt to. However, wind turbine-created direct habitat loss may pose some extreme dangers. For instance, a wind turbine creates a new perch, but the ability of birds to perch on turbines is naturally associated with a high risk of rotor collision.<sup>49</sup> Furthermore, offshore wind farms have the potential to cause direct habitat loss through underwater vibrations and electromagnetic impulses that may disturb fish populations.<sup>50</sup>

Offshore wind energy facilities encompass unique problems such as damage to the ocean floor.<sup>51</sup> Seafloor disturbance from wind tower installation hinges on the type of foundation constructed at a particular site (determined by water depth and benthic conditions), and has varying effects on the surrounding ocean habitat.<sup>52</sup> The placement of turbines in sandbanks could cause accretion, lowering the suitability of the benthic sand eels, a primary food source for many seabirds.<sup>53</sup> Total area, spatial arrangement, disturbance to shore and local marine conditions, such as the tide and currents, will also have varying environmental impacts.<sup>54</sup> The emerging regulatory framework for the review of proposed wind energy facilities must consider negative ecosystem and

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44. Tingley Thesis, *supra* note 7, at 16-19.

45. *Id.* at 17.

46. *Id.*

47. *Id.*

48. *Id.* at 10.

49. *Id.* at 20.

50. Tingley Thesis, *supra* note 7, at 20.

51. *Id.* at 21.

52. *Id.* at 10.

53. *Id.* at 21.

54. *Id.* at 10.

wildlife habitat impacts, as well as create mitigation standards and techniques to be implemented throughout the industry.

### 3.0 THE CURRENT LAW OF WIND POWER

#### 3.1 Department of Energy/Department of Interior/United States Army Corps of Engineers as Partners in Regulation of Wind Power

On May 13, 2003, the U.S. Department of the Interior, Fish and Wildlife Service ("FWS") issued "Interim Guidance to Avoid and Minimize Wildlife Impacts from Wind Turbines" (hereinafter "Interim Guidance").<sup>55</sup> The Interim Guidance was prepared by the FWS's Wind Turbine Siting Working Group to assist the wind energy industry in avoiding and minimizing impacts to wildlife and wildlife habitat through: (1) proper evaluation of potential wind energy development sites; (2) proper location and design of turbines and associated structures within sites selected for development; and (3) pre and post-construction research and monitoring to identify and assess impacts to wildlife.<sup>56</sup> The potential to harm wildlife populations from an additional source of mortality and adverse habitat impacts makes "careful evaluation of proposed facilities essential."<sup>57</sup> The guidelines include site evaluation instructions, site development recommendations, turbine design and operation recommendations, and also discuss the use of the Potential Impact Index (PII) for the implementation of land based wind energy facilities.<sup>58</sup> While interim guidance does not have the force of law, it is often used to test the kind of regulation which will ultimately be drafted in the future.

The FWS's Interim Guidance specifically states that the guidelines "are not intended nor shall they be construed to limit or preclude the Service from exercising its authority under any law, statute, or regulation, and to take enforcement action against any individual, company, or agency, or to relieve any individual, company, or agency of its obligations to comply with any applicable Federal, State, or local laws, statutes, or regulations."<sup>59</sup> This indi-

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55. Memorandum to Regional Directors, Regions 1-7, Service Interim Guidance on Avoiding and Minimizing Wildlife Impacts from Wind Turbines, FWS 1 (May, 13, 2003), available at <http://www.fws.gov/r9dhcbfa/wind.pdf> [hereinafter FWS Interim Guidance].

56. *Id.*

57. *Id.*

58. *Id.* at 5.

59. *Id.* at 2.

cates a willingness on the part of the federal government to preserve any applicable federal, state, or local law or regulation for enforcement against wind farm operations and owners, to which this guidance is directed.

### 3.2 The First Wind Power Case: The Nantucket Case

The Nation's first proposed offshore wind energy facility, to be constructed off the shores of Massachusetts in Nantucket Sound, has been met with heated debate accompanied by some preliminary legal challenges under the National Environmental Policy Act (NEPA).<sup>60</sup> They are likely the beginning of what "may prove to be a protracted struggle."<sup>61</sup> Cape Wind Associates, a private company, wishes to construct 130 offshore wind turbines with each turbine towering to 417 feet in height and spanning 328 feet in width<sup>62</sup> — in the Atlantic Flyway, one of the largest migratory bird paths in the country.<sup>63</sup> The proposal poses new factual constructs for which the existing legal regime of statutes and common law does not specifically address.

Currently, no federal framework exists to evaluate offshore wind proposals. "Congress has not yet passed any law or authorized any agency to govern wind energy development on [Outer Continental Shelf] OCS lands since there have been no efforts, until recently, to use these lands for [renewable energy purposes]."<sup>64</sup> Noting the void in public policy, a group concerned about the protection of the Sound, the Alliance to Protect Nantucket Sound, Inc., writes: "Without proper guidance from Congress in the form of federal legislation — which would provide oversight by a competent agency to evaluate proposals and regulate those that are permitted — private, for-profit companies will shape OCS develop-

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60. 42 U.S.C. §§ 4321-4370 (2000).

61. Alliance to Protect Nantucket Sound, Inc., v. United States Dep't of the Army, 288 F. Supp. 2d 64, 66 (D. Mass. 2003).

62. *Frequently Asked Questions*, SAVE OUR SOUND, at <http://www.saveoursound.com/faq.html> (last visited Mar. 7, 2004).

63. *Developers Must Comply With the Migratory Bird Treat Act, the Marine Mammal Protection Act, the Endangered Species Act, as Well as all State, Regional and Local Environmental Laws and Regulations*, SAVE OUR SOUND, at <http://www.saveoursound.com/legal.html#mustcomply> (last visited Mar. 7, 2004) [hereinafter *Developers must comply*].

64. *No Federal Framework Exists to Evaluate Offshore Wind Proposals*, SAVE OUR SOUND, at <http://www.saveoursound.com/legal.html#Nofederal> (last visited Mar. 7, 2004).

ment policy without any requirement or concern for the public interest.”<sup>65</sup>

Unless legislation is passed, the U.S. Army Corps of Engineers (“the Corps”) is the lead regulatory agency overseeing the Nantucket Sound Project because no other agency has legal jurisdiction over renewable energy projects in federal waters.<sup>66</sup> Despite its leadership in the development of this project, the Corps has acknowledged it has “little experience permitting offshore wind farms” and that there “are no set standards for the environmental review of such a large facility in the ocean environment.”<sup>67</sup> Nevertheless, on August 19, 2002, the Corps issued a section 10 permit under the Rivers and Harbors Appropriation Act of 1899,<sup>68</sup> authorizing the installation of a data tower in Nantucket Sound as a preliminary step to issuing a permit for the construction and operation of the entire wind energy facility.<sup>69</sup>

The Rivers and Harbors Act requires the Corps approval for installation of a structure in navigable waters of the U.S.<sup>70</sup> Whether the Army Corps possesses the jurisdiction to issue such a permit was challenged in federal court by the Alliance to Protect Nantucket Sound. In an opinion issued September 18, 2003, the court upheld the Corps authority to issue a section 10 permit for construction of the data tower as valid under the Outer Continental Shelf Lands Act (OCSLA).<sup>71</sup> The court held that OCSLA gives the Corps section 10 jurisdiction “over all ‘artificial islands, installations, and other devices located on the seabed, to the seaward limit of the OCS,’ regardless of whether they are erected for the purpose of extracting resources.”<sup>72</sup> This was affirmed in early 2005.<sup>73</sup>

This is the first court opinion that begins to address the jurisdictional issues and regulatory process for offshore wind farm siting; however, in reality, the opinion only upholds the grant of a permit for construction of a temporary data tower, and is not di-

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65. *Id.*

66. *Frequently Asked Questions*, *supra* note 62.

67. *Id.* (quoting Memorandum from the Army Corps of Engineers (2001)) (internal quotes omitted).

68. 33 U.S.C. § 403 (2000).

69. *Alliance to Protect Nantucket Sound, Inc., v. United States Dep’t of the Army*, 288 F. Supp. 2d 64, 69 (D. Mass. 2003).

70. 33 U.S.C. § 403.

71. *Alliance to Protect Nantucket Sound*, 288 F.Supp.2d at 72-73.

72. *Id.* at 74 (quoting 33 C.F.R. §§ 320.2(b), 322.3(b), 322.5(f)).

73. *Alliance to Protect Nantucket Sound v. United States Dep’t of the Army Corps of Engineers*, 398 F. 3d 105 (1st Cir., 2005).

rectly on-point with regard to the implementation process for the siting of an entire wind energy plant. In fact, the First Circuit, in their opinion, noted that this was only for the placement of a temporary tower for the purpose of gathering scientific data upon which the government would make further assessments.<sup>74</sup> With respect to the implementation of a wind energy plant, arguably, the Army Corps of Engineers (1) lacks jurisdiction over non-mineral activities on the OCS, (2) has no authority to allow federal offshore lands and waters to be used for wind energy, (3) has no requirement for payments to be made for the use of federal offshore lands, (4) has no requirement for programmatic review or development of specific standards, and (5) lacks the relevant expertise.<sup>75</sup>

Many existing federal statutes, subject to NEPA, shed light on a proper process for the development of offshore wind energy facilities.<sup>76</sup> These statutes contain common elements that are lacking under the section 10 permitting process, such as (1) authorization of use of public lands and resources, (2) delegation of power to agencies with relevant expertise, (3) specific environmental protections and decision making standards, (4) mechanisms to grant property rights to resources, with the requirement of fair compensation for the right, and (5) specific roles for state and local involvement.<sup>77</sup>

The U.S. Bureau of Land Management recently announced it will conduct a two-year "programmatic" environmental impact statement in western states to assess common issues and concerns associated with land-based wind farm development.<sup>78</sup> The program is similar to what opponents of the Nantucket Sound propo-

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74. *Id.* at 114.

75. Odin A. Smith, Esq., Perkins Coie LLP, "Alliance to Protect Nantucket Sound Deficiencies in the Review of the Cape Wind Project and a Proposal for Reform," Boston College Law School Symposium, Coastal Wind Power Energy Generation: Capacities and Conflicts, Sept. 25, 2003, Boston, Mass.

76. See Rivers and Harbors Act, 33 U.S.C. § 403; see also Outer Continental Shelf Lands Act, 43 U.S.C. § 1331 (2000); Ocean Thermal Energy Conversion Act, 32 U.S.C. § 9101 (2000); Deepwater Port Act, 33 U.S.C. § 1501 (2000); Geothermal Steam Act, 30 U.S.C. § 1001 (2000); Federal Power Act, 16 U.S.C. § 791a (2000); Federal Land Policy and Management Act, 43 U.S.C. § 1701 (2000); Surface Mining Control and Reclamation Act, 30 U.S.C. §§ 1201, 1202, 1211 (2000); National Forest Management Act 16 U.S.C. § 1600 (2000); Mineral Leasing Act, 30 U.S.C. § 181 (2000); Fishery Conservation and Management Act, 16 U.S.C. § 1801 (2000).

77. Smith, *supra* note 75.

78. FWS Interim Guidance, *supra* note 55.

sal would like to see implemented for offshore projects.<sup>79</sup> “The idea is to streamline the application and review process so that part of it could apply to every proposal by laying out basic environmental concerns and criteria.”<sup>80</sup> Given that the Nantucket Sound is located in the Atlantic Flyway, one of the largest migratory bird paths in the country,<sup>81</sup> it is unthinkable that impacts on wildlife should not be considered and well understood before avian populations, especially those that are already threatened or endangered, are jeopardized.

### 3.3 The Energy Policy Act of 2003: The Agency Authority Question

The Nantucket case raises the question: who has the authority to permit offshore wind energy projects? The proposed Energy Policy Act of 2003 and the Energy Policy Act of 2005 contained a provision that would have given the Interior Department oversight of the Nantucket Sound wind farm proposal.<sup>82</sup> The Energy Policy Act of 2005<sup>83</sup> was a revival of the Energy Policy Act of 2003 and was introduced in the 109th Congress, passing the House with a 249-183 vote, and received in the Senate April 25, 2005.

## 4.0 THE POTENTIAL APPLICABILITY OF FEDERAL ENVIRONMENTAL LAWS TO WIND POWER

The FWS within the Department of Interior, has authority to become involved in the review of potential wind energy developments under NEPA, the Migratory Bird Treaty Act (MBTA),<sup>84</sup> and the Bald and Golden Eagle Protection Act (BGEPA).<sup>85</sup> Additionally, the FWS is required by the Endangered Species Act (“ESA”)<sup>86</sup> “to assist other Federal agencies in ensuring that any action they authorize, implement, or fund will not jeopardize the continued existence of any federally endangered or threatened species.”<sup>87</sup>

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79. John Leaning, *U.S. to Study Land-Based Wind Farms*, CAPE COD TIMES, October 23, 2003.

80. *Id.*

81. *Developers must comply*, *supra* note 63.

82. H.R. 6, 109th Cong. (2003) § 2010 Alternate Energy-Related Uses on the Continental Shelf.

83. H.R. 6 (109th Cong. 1st Sess.)

84. 16 U.S.C. §§ 703-712 (2000).

85. 16 U.S.C. § 668 (2000); *Wind Energy*, U.S. FISH AND WILDLIFE SERV., at <http://www.fws.gov/r9dhcbfa/windenergy.htm> (last visited Mar. 4, 2004).

86. 16 U.S.C. §§ 1531-1543 (2000).

87. FWS Interim Guidance, *supra* note 55.

Applying these federal statutes to wind energy development, and examining the potential for liability arising under them from harm to birds and destruction of ecosystems and other endangered species, is an important endeavor; however, unlike planning, siting, and proper approval processes, these statutes address the issue only after the environmental harm is complete. The prevention of harm, rather than a cure after the fact, should be the preferred pedagogic approach to environmental protection from wind energy development.

#### **4.1 The Destruction of Birds**

##### **4.1.1 The Migratory Bird Treaty Act**

Under the MBTA, individuals are prohibited by law:

. . . at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export, any migratory bird, any part, nest, or egg of any such bird, or any product, whether or not manufactured, which consists, or is composed in whole or part, of any such bird or any part, nest, or egg thereof, included in the terms of the convention.<sup>88</sup>

Regulations to implement this statute are expressly authorized by the MBTA.<sup>89</sup>

The controversial portion of the statute at issue in many cases decided under the MBTA is the strict liability offense section.<sup>90</sup> The controversy is due in part to the definition of “take” under the statute. “‘Take’ means to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect.”<sup>91</sup> Violations of the MBTA are criminal offenses, and most violations are strict liability offenses.<sup>92</sup> Though none of the following cases specifically involve wind turbine-caused bird deaths, wind energy developers and operators

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88. *Id.*; see also Migratory Bird Conservation Act, 16 U.S.C. § 715(j) (2000) (defining “migratory birds” for the MBTA).

89. See 16 U.S.C. §§ 704, 712.

90. *Id.* at § 707.

91. 50 C.F.R. § 10.12 (2004).

92. 16 U.S.C. § 707.

should be on notice that the statutes have clear analogous implications to wind turbine-caused bird deaths.

#### 4.1.1.1 The *Moon Lake Case*<sup>93</sup>

A significant case, and possibly the most instructive with respect to wind industry liability, is *United States v. Moon Lake Electric Association, Inc.*<sup>94</sup> The defendant, Moon Lake Electric, was charged with six violations of the MBTA, and seven violations of the BGEPA, in connection with the deaths of Golden Eagles, Ferruginous Hawks, and a Great Horned Owl.<sup>95</sup> Moon Lake supplied electricity to an oil field which served as a home to several species of protected migratory birds.<sup>96</sup> Moon Lake was charged under the MBTA when it failed to install inexpensive protective devices on 2,450 power poles, causing migratory birds to die when they collided with the towers and the tower guy wires.<sup>97</sup>

Moon Lake argued that the MBTA only regulated intentionally harmful conduct.<sup>98</sup> The court rejected this contention, stating, "whether Moon [L]ake intended to cause the deaths of 17 protected birds is irrelevant to its prosecution under § 707(a)."<sup>99</sup> The court used precedent set out in earlier federal cases to uphold the MBTA as a strict liability statute, therefore rendering it unnecessary to prove that a defendant violated the MBTA with specific intent or guilty knowledge.<sup>100</sup>

Of potential detriment to wind energy facility owners and operators, is the inclusion of the following language in *Moon Lake* that could bring the deaths of birds caused by wind turbines under the Act:

By prohibiting the act of 'killing' in addition to the acts of hunting, capturing, shooting, and trapping, the MBTA's language and regulations suggest that Congress intended to prohibit conduct beyond that normally exhibited by hunters and poachers.

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93. *United States v. Moon Lake Elec. Ass'n, Inc.*, 45 F. Supp. 2d 1070 (D. Colo. 1999).

94. *See id.*

95. *Id.* at 1071.

96. *Id.*

97. *Id.*

98. *Id.*

99. *Moon Lake*, 45 F. Supp. 2d at 1074.

100. *Id.* at 1073-74 (citing *United States v. Corrow*, 119 F.3d 796 (10th Cir. 1997), *cert denied*, 522 U.S. 1133 (1998); *United States v. Manning*, 787 F.2d 431 (8th Cir. 1986)).



Indeed, the MBTA does not seem overly concerned with how captivity, injury, or death occurs.<sup>101</sup>

Additionally, the court emphasized the portion of section 703 which proscribes taking and killing "by any means or in any manner."<sup>102</sup>

The facts in *Moon Lake* seem to foreshadow similar incidents bound to occur at wind energy facilities—calling for the same conclusions of law to apply. However, this paper will include an analysis of a number of factually diverse cases which hinge on the strict liability controversy under the MBTA and provide additional support for the possibility of prosecutions of the wind energy industry under the MBTA. Federal Courts of Appeal have almost uniformly held the misdemeanor provision of the MBTA to be a strict liability criminal statute.<sup>103</sup>

#### 4.1.1.2 Bird Baiting

In *United States v. Reese*,<sup>104</sup> likely the earliest decision under the original MBTA, the court confirmed strict liability with respect to bird baiting.<sup>105</sup> In accordance with the prohibition against bird baiting, the court stated,

[t]here appears no sound basis here for an interpretation that the Congress intended to place upon the Government the extreme difficulty of proving guilty knowledge of bird baiting on the part of persons violating the express language of the applicable regulations promulgated pursuant to the statute; but it is more reasonable to presume that Congress intended to require that hunters shall investigate at their peril conditions surrounding the fields in which they seek their quarry.<sup>106</sup>

Decades later, in 1984, hunters were again cited under the MBTA for hunting migratory birds over a baited field.<sup>107</sup> The court called the violations "public welfare offenses wherein scienter is not an element"; it further stated that "these types of of-

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101. 45 F. Supp. 2d at 1074.

102. *Id.* (quoting 16 U.S.C. § 703).

103. See generally Larry Martin Corcoran, *Migratory Bird Treaty Act: Strict Criminal Liability for Non-Hunting, Human Caused Bird Deaths*, 77 DENV. U. L. REV. 318 (1999).

104. *United States v. Reese*, 27 F. Supp. 833 (W.D. Tenn. 1939).

105. *Id.* at 836.

106. *Id.*

107. *United States v. Catlett*, 747 F.2d 1102, 1103 (6th Cir. 1984).

fenses have long been sanctioned by the courts.”<sup>108</sup> Strict liability with respect to baiting was also upheld by the Fourth Circuit, “[v]iolating the regulation by shooting over a baited area requires no proof of a connection of the offender with the bait; a hunter is strictly liable for shooting on or over a baited area.”<sup>109</sup>

#### 4.1.1.3 Strict Liability

##### 4.1.1.3.1 No Requirement of Knowledge

The Eighth Circuit requires no proof that a defendant must violate the MBTA with specific intent or guilty knowledge.<sup>110</sup> A Third Circuit case, *United States v. Engler*, agrees, holding that scienter is not an element of criminal liability under the MBTA.<sup>111</sup> Furthermore, where a violator would not be surprised to learn of non-innocent prohibited conduct, the *Engler* court held that “due process is not violated by the imposition of strict liability as a part of ‘a regulatory measure in the interest of public safety’”.<sup>112</sup> In *United States v. Corrow*, the defendant was charged with illegally possessing and selling feathers of birds protected under the MBTA.<sup>113</sup> In *Corrow*, the Tenth Circuit confirmed the lack of any specific intent or guilty knowledge, when it joined the other circuits in treating violations of section 703 of the MBTA as strict liability crimes.<sup>114</sup>

##### 4.1.1.3.2 Exceptions

There are two noteworthy circuit court opinions which diverge from the uniform affirmation of strict criminal liability under the MBTA. In *United States v. Wulff*, the court rejected a portion of the original MBTA strict liability felony provision.<sup>115</sup> In *United States v. Delahoussaye*, the Fifth Circuit rejected strict liability for hunting over, or with the aid of bait.<sup>116</sup> In 1998, Congress amended the MBTA to require scienter in each of these

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108. *See id.* at 1104-05.

109. *United States v. Chandler*, 753 F.2d 360, 363 (4th Cir. 1985) (citing *United States v. Jarman*, 491 F.2d 764, 767-68 (4th Cir. 1974)).

110. *See United States v. Manning*, 787 F.2d 431, 435 (8th Cir. 1986) (citing *Rogers v. United States*, 367 F.2d 998, 1001 (8th Cir. 1966), *cert. denied*, 386 U.S. 943 (1967)).

111. *United State v. Engler*, 806 F.2d 425, 431 (3d Cir. 1986).

112. *See id.* at 435-36 (quoting *United States v. Freed*, 401 U.S. 601, 609 (1971) (citations omitted)).

113. *United States v. Corrow*, 119 F.3d 796, 799 (10th Cir. 1997).

114. *Id.* at 805 (citations omitted).

115. *United States v. Wulff*, 758 F.2d 1121, 1125 (6th Cir. 1985).

116. *United States v. Delahoussaye*, 573 F.2d 910, 912-13 (5th Cir. 1978).

instances, requiring now that "the person knows or reasonably should know that the area is a baited area."<sup>117</sup>

#### 4.1.1.3.3 Foreseeability of Migratory Bird Deaths

The argument that bird impacts with wind turbine towers and blades are unforeseeable, and therefore do not fall under strict liability application of the MBTA, is without merit. The underlying requirements of strict criminal liability are that the consequences of the acts for which a defendant is to be held criminally liable must (1) be foreseeable, (2) be avoidable, and (3) the defendant must have voluntarily assumed the risk of the consequences by volitional act or omission.<sup>118</sup> With the exception of *Moon Lake*, courts have been reluctant to prosecute migratory bird deaths resulting from impacts with automobiles, airplanes, and towers, for want of avoiding "absurd" and unintended results.<sup>119</sup> The judicial approach to fairness through prosecutorial reluctance with regard to object impact deaths is flawed. Proper wind farm siting and design considerations, coupled with the collection of accurate bird migration data, will alleviate the "unforeseeable" aspect of bird collisions with human constructed objects; therefore, clearly bringing all migratory bird deaths within the scope of strict liability under the MBTA.

#### 4.1.1.4 Still no Scierter Requirement in Pesticide Poisoning Cases

Perhaps the most frequently cited cases concerning the extent of MBTA strict liability are those that deal with bird ingestion of pesticides.<sup>120</sup> In *United States v. FMC Corp.*, the court upheld MBTA convictions at the trial court level for bird deaths resulting from FMC's discharge of wastewater from pesticide manufacturing into a pond that attracted migratory birds.<sup>121</sup> FMC argued that there must be intent to kill birds under the MBTA, and that it possessed no scienter or intent.<sup>122</sup> The court rejected FMC's argument, noting that FMC was engaged in the manufacturing of a dangerous pesticide, and therefore, the correct application of the

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117. 16 U.S.C. § 704(b) (2000) (baiting provision).

118. Corcoran, *supra* note 103, at 346.

119. See *United States v. FMC Corp.*, 572 F.2d 902, 905 (2d Cir. 1978); compare with *Moon Lake*, 45 F.Supp.2d at 1085.

120. Corcoran, *supra* note 103, at 332

121. *FMC Corp.*, 572 F.2d at 908.

122. *Id.* at 906.

MBTA would reasonably hold FMC strictly accountable for unforeseeable consequences of their acts.<sup>123</sup>

In *United States v. Corbin Farm Service*, a pesticide dealer, an employee-aerial spray operator, and the owner of the alfalfa field, in which a single application of pesticide was sprayed, were all charged under the MBTA for migratory bird deaths.<sup>124</sup> The court held that "the guilty act alone is sufficient to make out the crime. When dealing with pesticides, the public is put on notice that it should exercise care to prevent injury to the environment and to other persons . . . ." <sup>125</sup> The *Corbin* court went on to state, "[i]f defendants acted with reasonable care or if they were powerless to prevent the violation, then a very different question would be presented."<sup>126</sup> A similar case presented to a different federal district court ten years after *Corbin* resulted in an opposite holding. In *United States v. Rollins*, geese died from ingesting alfalfa from a field in which the defendant had sprayed a registered pesticide, an action he had taken many times previously without harming any birds.<sup>127</sup> The court found that Rollins had used "due care" in applying the pesticides and would not be held liable under the MBTA.<sup>128</sup> The result hinged on the court's view that the "outcome of the defendant's actions was not foreseeable, rather than whether the outcome of dead birds was a violation of the MBTA."<sup>129</sup>

However, where one act causes the death of more than one bird, only one criminal charge can be brought, without regard to the number of birds killed.<sup>130</sup> This holding was based upon a finding that Congress was not clear and unambiguous on this point, because they did not provide for multiple counts in prosecutions within the construction of the MBTA.<sup>131</sup> Fines limited to one offense, coupled with the potential for a large number of birds to be killed by one wind turbine—in theory—may provide little incentive to wind power operators to invest in strategies to prevent bird deaths, regardless of the number of birds killed.

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123. *See id.*

124. *United States v. Corbin Farm Serv.*, 444 F. Supp. 510, 515 (E.D. Cal.), *aff'd*, 578 F.2d 259 (9th Cir. 1978).

125. *Id.* at 536 (footnote omitted).

126. *Id.*

127. *United States v. Rollins*, 706 F. Supp. 742, 744-45 (D. Idaho 1989).

128. *Id.* at 744.

129. Corcoran, *supra* note 103, at 334.

130. *See Corbin Farm Serv.*, 444 F. Supp. at 531.

131. *Id.*

A penalty of \$15,000 per offense and/or six months in prison, or a probated sentence, for a violation of the MBTA applies to individuals as well as corporations.<sup>132</sup> The \$15,000 violation will extend to operating expenses per windmill (assuming one windmill is one offense) for a wind generating facility.

#### 4.1.2 Bald and Golden Eagle Protection Act

Violators of the MBTA are often cited for violations under the BGEPA as well. The BGEPA, in contrast to the MBTA, is not a strict liability statute. A violation of the BGEPA requires scienter:

Whoever, within the United States or any place subject to the jurisdiction thereof, without being permitted to do so as provided in this subchapter, shall knowingly, or with wanton disregard for the consequences of his act take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or in any manner, any bald eagle commonly known as the American eagle, or any golden eagle, alive or dead, or any part, nest, or egg thereof of the foregoing eagles, or whoever violates any permit or regulation issued pursuant to this subchapter, shall be find not more than \$5,000 or imprisoned not more than one year or both . . . .<sup>133</sup>

The BGEPA applies to those who harm a bald or golden eagle "knowingly, or with wanton disregard for the consequences" of their actions.<sup>134</sup> "The defendant 'must be conscious from his knowledge of surrounding circumstances and conditions that conduct will naturally and probably result in injury' to a protected bird."<sup>135</sup> Thus, the statute leaves the determination of "knowingly" for a jury to decide as a question of fact.

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132. 16 U.S.C. § 707 (2000).

Violations and penalties; forfeitures. (a) Except as otherwise provided in this section, any person, association, partnership, or corporation who shall violate any provisions of said conventions or of this subchapter, or who shall violate or fail to comply with any regulation made pursuant to this subchapter shall be deemed guilty of a misdemeanor and upon conviction thereof shall be fined not more than \$15,000 or be imprisoned not more than six months, or both.

*Id.*

133. *Id.* § 668(a).

134. *Id.*

135. *United States v. Moon Lake Elec. Ass'n, Inc.*, 45 F. Supp. 2d 1070 1074 (D. Colo. 1999).

However, much like the MBTA, the BGEPA also prohibits taking a protected species “at any time or in any manner.”<sup>136</sup> In fact, the statute has been described by the United States Supreme Court as “exhaustive,” and “consistently framed to encompass a full catalog of prohibited acts.”<sup>137</sup> Accordingly, the court in *Moon Lake* found that electrocutions of birds fall squarely within the prohibitions of the BGEPA.<sup>138</sup> This holding seems to indicate that any incident resulting in a “take” of a bald or golden eagle caused by a wind energy turbine could be prosecuted under the BGEPA.

## 4.2 Destruction of Species and Ecosystems

### 4.2.1 National Environmental Policy Act

NEPA was enacted to “encourage productive and enjoyable harmony between man and his environment” through efforts to “prevent or eliminate damage to the environment . . . .”<sup>139</sup> “[R]ecognizing the profound impact of man’s activity,” including “industrial expansion, resource exploitation, and new and expanding technological advances,” the statute creates a comprehensive framework to ensure that federal agencies consider the potential environmental consequences of proposed projects.<sup>140</sup> Any major federal action “significantly affecting the quality of the human environment” requires an environmental impact statement (“EIS”).<sup>141</sup> An EIS creates an obligation to conduct an evaluation of the potential consequences to the environment that may emanate from any given project, in light of NEPA’s goals to protect human health and welfare.<sup>142</sup>

Wind energy expansion is, in essence, development, which falls under the framework of NEPA. The Council on Environmental Quality (“CEQ”) is authorized to recommend environmental review procedures federal agencies should follow to comply with NEPA.<sup>143</sup> Further, the FWS Project Planning Program is “involved in the review of potential wind energy developments on

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136. See 16 U.S.C. § 668(a).

137. *Andrus v. Allard*, 444 U.S. 51, 56-59 (1979).

138. See *Moon Lake*, 45 F. Supp. 2d at 1086-88.

139. 42 U.S.C. § 4321 (2000).

140. See *id.* § 4331.

141. *Id.* § 4332(C).

142. See *id.*; *Metro. Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 767 (1983).

143. See 42 U.S.C. §§ 4342, 4344 (2000).

public lands" through NEPA.<sup>144</sup> The FWS has a "duty to comment on federally-licensed activities for which the agency has jurisdiction by law."<sup>145</sup> In the case of wind energy, the agency derives NEPA jurisdiction to comment under the MBTA and the BGEPA.<sup>146</sup>

An EIS must include alternatives to any proposed action.<sup>147</sup> Such alternatives can include design alternatives,<sup>148</sup> and in the case of wind energy, wind turbines of various designs may differ in associated bird mortality.<sup>149</sup> All existing windmills should be replaced, and the installation of any future windmills should include only the most efficient and bird friendly designs. Horizontal lattice towers, resembling radio towers, have high bird mortality rates because birds perch on the lattices; solid tubular towers are best.<sup>150</sup> "Turbine blades can also be designed in a way that makes them more visible to birds," such as covering the blades with wide black and white stripes.<sup>151</sup> Overall, bird friendly wind turbines have larger but slower turning blades, are the appropriate height for a particular location, and have all perching spots eliminated.<sup>152</sup> While NEPA requires only that the agency consider alternatives, given the environmental impacts, their decisions will be reviewed based on an arbitrary and capricious standard, making a reversal a very high hurdle. However, the Endangered Species Act has larger teeth.

#### 4.2.2 Endangered Species Act

The ESA, touted as the "most significant wildlife law ever enacted anywhere,"<sup>153</sup> is a comprehensive federal statute aimed at conserving, not only endangered and threatened species, but also

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144. *Wind Energy*, U.S. FISH AND WILDLIFE SERV., at <http://www.fws.gov/r9dhcbfa/windenergy.htm> (last visited Mar. 4, 2004).

145. *Id.*

146. *Id.*

147. 42 U.S.C. § 4332(C)(iii).

148. See *Limerick Ecology Action, Inc. v. U.S. Nuclear Regulatory Comm'n*, 869 F.2d 719, 723 (3d Cir. 1989).

149. *Renewable Energy Wind Energy Resources Principles and Recommendations*, *supra* note 16.

150. See *id.*

151. *Id.*

152. Corcoran, *supra* note 103, at 354 n.251 (citing Lisa Vonderbrueggen, *Agencies Say Windmill Farms Should Pay for Bird Habitat Protection*, CONTRA COSTA TIMES, Oct. 29, 1998).

153. Robert L. Glicksman & George Cameron Coggins, *Hardrock Minerals, Energy Minerals and Other Resources on the Public Lands: The Evolution of Federal Natural Resources Law*, 33 TULSA L.J. 765, 791 (1998).

the ecosystems upon which endangered and threatened species thrive.<sup>154</sup> The act vests the Secretary of the Interior with the power to promulgate regulations listing species that are “endangered” or “threatened.”<sup>155</sup> The ESA defines “endangered species” as “any species which is in danger of extinction throughout all or a significant portion of its range.”<sup>156</sup> “Threatened species” are species which are “likely to . . . become endangered species within the foreseeable future.”<sup>157</sup> There are currently seventy-seven different bird species listed as “endangered,” and sixteen listed as “threatened.”<sup>158</sup>

The ESA imposes upon each federal agency the duty to consult with the Secretary to insure that any agency action (authorized, funded, or carried out) “is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species . . . .”<sup>159</sup> Basically, “[e]very federal agency must insure that its actions do not jeopardize a listed species or . . . its habitat.”<sup>160</sup>

The ESA bars jeopardizing a listed species through its prohibition against “taking.”<sup>161</sup> The term “take,” as defined under the ESA, is very similar to the definition under the MBTA, yet the ESA adds the terms “harass” and “harm” to the definition.<sup>162</sup> As such, the phrase “take,” as applied under the ESA, has been substantially broadened by the courts.

In a federal case centered around protecting the threatened piping plover, a small sand-colored shore bird found on coastal beaches from North Carolina to Newfoundland, the court held that a “take” is construed “in the broadest possible manner to include every conceivable way in which a person can ‘take’ or at-

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154. See 16 U.S.C. § 1531(b) (2000).

155. *Id.* § 1533(a)(1).

156. *Id.* § 1532(6).

157. *Id.* § 1532(20).

158. *Threatened and Endangered Species System (TESS)*, U.S. FISH AND WILDLIFE SERV. at [#B](http://ecos.fws.gov/tess_public/TESSWebpageVipListed?code=V&listings=0) (last visited Sept. 27, 2004).

159. 16 U.S.C. § 1536(a)(2).

160. Glicksman, *supra* note 153, at 791.

161. See 16 U.S.C. § 1538(a)(1)(B).

162. See *id.* § 1532(19) (defining the term “take” to mean “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct”).



tempt to 'take' any fish or wildlife."<sup>163</sup> The court used the ESA to issue an injunction preventing people from operating off-road vehicles ("ORVs") that were killing the threatened birds along the coast.<sup>164</sup> Additionally, the court found that the ORVs were likely to have "substantial adverse effects on the piping plovers' nesting and feeding habitat" (i.e. critical habitat).<sup>165</sup>

Further, the inclusion of the term "harm" within the definition of "take" under the ESA has noteworthy significance for extending a take to habitat modification or degradation. The Interior Department regulations contain this definition:

[h]arm in the definition of 'take' in the Act means an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.<sup>166</sup>

In other words, a party can be liable under the ESA for critical habitat degradation alone. The Secretary's interpretation of the term "harm" was challenged before the Supreme Court in 1995.<sup>167</sup> The majority of the Supreme Court held that the Secretary's interpretation of the word "harm" as promulgated in the Code of Federal Regulations is a permissible and reasonable construction of the ESA.<sup>168</sup>

Courts have enjoined timber harvests, water diversions, water developments, road construction, mining operations, and other projects under the strict mandates of the ESA.<sup>169</sup> *Tennessee Valley Authority v. Hill*, is the paramount project-halting ESA case.<sup>170</sup> In that case, the United States Supreme Court suspended the construction of a \$119 million dam to save the critical habitat of the endangered snail darter fish.<sup>171</sup> The Court acknowledged that the "language, history, and structure" of the ESA "indicates

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163. *United States v. Town of Plymouth*, 6 F. Supp. 2d 81, 83 (D. Mass. 1998) (citations omitted).

164. *Id.* at 82; see also 16 U.S.C. § 1540(e)(6) (enabling the Attorney General to "enjoin any person who is alleged to be in violation of any provision of this chapter or regulation").

165. See *id.* at 84.

166. 50 C.F.R. § 17.3 (2004).

167. See *Babbitt v. Sweet Home Chapter of Cmty. for a Great Or.*, 515 U.S. 687, 692 (1995).

168. See *id.* at 688.

169. See Glicksman, *supra* note 153, at 791-92.

170. See *Tenn. Valley Auth. v. Hill*, 437 U.S. 153 (1978).

171. *Id.* at 168.

beyond doubt that Congress intended endangered species to be afforded the highest of priorities.”<sup>172</sup> The *Tennessee Valley* Court further held that the “plain intent of Congress in enacting [the ESA] was to halt and reverse the trend toward species extinction, whatever the cost.”<sup>173</sup> In holding that Congress viewed the value of endangered species as “incalculable,” *Tennessee Valley* effectively prohibits courts from balancing the utility of an endangered species against any loss associated with enjoining a federal project that could jeopardize the existence of that species.<sup>174</sup>

“[A] reasonably certain threat of future harm is sufficient to support a permanent injunction under the ESA.”<sup>175</sup> The siting of a wind energy facility unaccompanied by proper biological studies could pose a “reasonably certain threat of future harm” to a listed species. Furthermore, it is extremely foreseeable that the construction of wind energy facilities will result in negative habitat modification, thus violating the prohibition against “harm” under the ESA. Likewise, the operation of wind energy facilities near the breeding, feeding, or sheltering grounds of listed species will foreseeably cause the deaths of listed species, thus being in violation of the “take” provision.

This discussion accentuates the “teeth” of the ESA, and sends a very loud message with regard to the development of wind energy facilities: although the operation of wind energy facilities will result in no toxic emissions, upon the discovery of an “adverse affect” to a protected species or its critical habitat, the construction of a facility could be subject to injunction under the ESA. Since the development of wind energy seems to put birds at a particularly high risk of harm, siting decisions associated with wind energy facilities should include preliminary bird surveys that encompass reviews of existing information on threatened and endangered species, candidate species, species of concern, migratory species, and neotropical migratory species.<sup>176</sup>

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172. *Id.* at 174.

173. *Id.* at 184.

174. *See id.* at 187-88.

175. *Marbled Murrelet v. Babbitt*, 83 F.3d 1060, 1068 (9th Cir. 1996) (citing *Forest Conservation Council v. Rosboro Lumber Co.*, 50 F.3d 781, 783 (9th Cir. 1995)).

176. *Renewable Energy Wind Energy Resources Principles and Recommendations*, *supra* note 16.

### 4.3 Property Law and Wind Power

Absent a clear right to unobstructed wind access as an incident of property ownership, property law principles already in place, and possibly applicable to wind energy, include "private nuisance law, acquisition of negative easements, restrictive covenants, or even fee ownership of a protective buffer of land" adjacent to the site of a wind energy conversion system.<sup>177</sup> The possibility of these state-regulated legal doctrines to encompass a right to wind as an energy source is yet to take place. In fact, there is no case law directly claiming an unfettered right to blowing air (i.e. wind) as an incident of property ownership; nevertheless, there has been some legal evolution with respect to solar access protection, and an abundance of cases concerning a right to "light, air, and view" that may serve as a guide for the development of wind access protection. It is important to remember, however, that these areas of the law are state-regulated, which means predicting a blanket rule would be impossible because there is sure to be variant treatment among states; furthermore, solar energy and wind energy may be "sufficiently different to warrant separate treatment" because solar-collectors need only a small amount of unblocked solar access, whereas wind energy can potentially require protection from all directions.<sup>178</sup>

To establish a private nuisance cause of action for the obstruction of light, air, or view by a structure on adjoining land, the plaintiff must show a right to unobstructed light, air, or view based on; "(1) an interest in unobstructed access to sunlight as an energy source, (2) an implied grant or reservation of an easement of light, air, or view, or (3) an interest in light, air, or view unobstructed by a maliciously erected structure."<sup>179</sup> This cursory explanation of existing solar nuisance law will be confined to basis (1) as that basis is most appurtenant to an unobstructed right to wind as an energy source.

Predictably, the more particular question concerning wind is: "[t]o what right [does] an owner or occupant of one lot [have to unobstructed air] coming laterally to his or her land from an adjoining landowner's property . . . which the neighbor is bound to

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177. See York & Settle, *supra* note 3, at 390.

178. See York & Settle, *supra* note 3, at 411 n.9.

179. Ann A. Maenpaa, *Cause of Action Against Adjoining Landowner for Private Nuisance Caused by Obstruction of Light, Air, or View*, Causes of Action First Series, 4 COA 645, §3 (2004) (citations omitted).

respect[?]"<sup>180</sup> In the absence of an express contractual or statutory obligation, the general rule is that a landowner has no recognized legal right to unobstructed light and air from adjoining property.<sup>181</sup> However, a few courts have recognized a private nuisance cause of action for unreasonable obstruction of access to sunlight where the plaintiff owns a solar-heated residence.<sup>182</sup>

One such case is *Prah v. Maretti*, an 1982 case from the Wisconsin Supreme Court.<sup>183</sup> More than twenty-plus years of post-*Prah* legal rhetoric now puts its holding in the minority; nevertheless, the legal doctrines, reasoning, and policy discussion in *Prah* are academically valuable predictors of nuisance law as applied to wind access. In *Prah*, the owner of a solar-heated residence sued to enjoin an adjacent landowner's proposed construction of a house that would interfere with plaintiff's access to unobstructed sunlight. The court held that the plaintiff was entitled to injunctive relief based on the private nuisance doctrine even though the defendant's proposed residence would conform to all existing deed restrictions and local ordinances.<sup>184</sup>

Arguably more noteworthy than the holding, was the court's adoption of the definition of private nuisance from the Restatement (Second) of Torts, which defines private nuisance as "a non-trespassory invasion with another's interest in the private use and enjoyment of land,"<sup>185</sup> and commentary that the term is defined broadly "to include any disturbance of the enjoyment of property."<sup>186</sup> Again, depending on the jurisdiction, this definition could be construed to include a right to wind access.

The court went on to give three policy reasons for its reluctance to hold for the defendant, and three policy reasons supporting its finding for the plaintiff. The court rejected: (1) the "jealously" guarded right of landowners to use their property as they wished, as long as they do not cause physical damage to a neighbor; (2) that sunlight is "valued only for aesthetic enjoyment or as illumination; [and s]ince artificial light could be used for illumination, loss of sunlight was at most a personal annoyance which was given little, if any, weight by society"; and (3) that soci-

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180. *Id.*

181. *Id.*

182. *Id.*

183. *Prah v. Maretti*, 321 N.W.2d 182 (Wis. 1982).

184. *Id.* at 191-92.

185. *See id.* at 187.

186. *Id.*

ety has “a significant interest in not restricting or impeding land development.”<sup>187</sup> Rejecting these policies as “social priorities that are now obsolete,” the court adopted the following policy reasons to support its finding for the plaintiff: (1) “society has increasingly regulated the use of land by the landowner for the general welfare”; (2) access to sunlight has taken on a new significance—here, the plaintiff seeks to protect access, not for aesthetic reasons, but as a source of energy; and (3) “the policy of favoring unhindered private development in an expanding economy is no longer in harmony with the realities of our society.”<sup>188</sup> It is important to note that these arguments were framed in an “ancient” versus “current” (remember this is a 1982 case) policy context – a context which very well may have flip-flopped and/or changed completely in the past twenty plus years (not to mention simple jurisdictional precedence differences). However, the protection of access to wind for energy finds support in the court’s express statement that “access to sunlight as an energy source is of significance both to the landowner who invests in solar collectors and to a society which has an interest in developing alternative sources of energy.”<sup>189</sup>

Again, courts have differed in their treatment of recognizing a right to light, air, and view as an incident of property ownership;<sup>190</sup> yet, despite these differences in treatment, there is the possibility that courts will begin to recognize a right to unblocked wind as the wind power industry continues to grow. Some state and local governments have implemented zoning ordinances which may be used to address the proper siting of wind farms.<sup>191</sup> For example, Oregon has enacted legislation which will not allow real property conveyance instruments to include any provisions prohibiting the use of solar energy systems on the property.<sup>192</sup> Local land-use law is likely the most efficient method for allocating wind access rights on private lands.<sup>193</sup> Noise, visual impacts, and electromagnetic interference are conditions to be avoided during

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187. *See id.* at 189.

188. *Id.* at 189-90.

189. *Prah*, 321 N.W.2d at 189.

190. *See generally* *Los Angeles County Metro. Transp. Auth. v. Cont'l Dev. Corp.*, 941 P.2d 809 (Cal. 1997); *see also* *Reid v. Jefferson County*, 672 So. 2d 1285 (Ala. 1995); *Pierce v. Northeast Lake Washington Sewer and Water Dist.*, 870 P.2d 305 (Wash. 1994); *O'Neill v. Brown*, 609 N.E.2d 835 (Ill. App. Ct. 1993); *Wolford v. Thomas*, 235 Cal. Rptr. 422 (Cal. Ct. App. 1987).

191. STARRS, *supra* note 11 at 526.

192. *See* OR. REV. STAT. § 105.880(1) (2003).

193. STARRS, *supra* note 11, at 509.

the siting of wind farms.<sup>194</sup> Arguably, zoning ordinances encompassing a right to wind access should encompass setback requirements to prevent intrusion on adjacent landowners wind resource, limits on building and vegetation height, and street and building alignment requirements that minimize wind impairment.<sup>195</sup>

## 5.0 APPLICATION TO WIND ENERGY

### 5.1 Wind Energy Credits

The Administration has proposed an 18% reduction over the next ten years in greenhouse gas emissions, with a strategy to increase this rate to 30%.<sup>196</sup>

Several policy approaches are used to achieve these reductions. For example, businesses can register with the Greenhouse Gas Reduction and Sequestration Registry, and they are provided with transferable credits which would be protected from any future policy changes from subsequent administrations. Further, tax credits for utilization of “clean” technologies, including a 10% credit for the use of co-generation systems, are also provided in the President’s policy. Tax credits to individuals for residential solar energy systems, wind-generated electricity, and energy produced from landfill-generated methane gas contribute to the economically balanced approach. Because the President has planned these reductions in the context of the economic means to do so, the Administration hopes to reach the goals of the Kyoto Protocol without massive costs to the economy.<sup>197</sup>

### 5.2 Applicability of MBTA Common Law Precedent to Wind Energy Development

One may think the common law evolution of strict liability under the MBTA, and its application to factually dissimilar cases based on baiting, bird-part sales, and pesticide misuse, has no application to the possible liability of wind energy facilities under the MBTA. An argument to the contrary analyzes each of these

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194. *Renewable Energy Wind Energy Resources Principles and Recommendations*, *supra* note 16.

195. *Starrs*, *supra* note 11, at 509-10.

196. *Policy Book*, *supra* note 9.

197. Victoria Sutton, *Environmental Law Symposium: The First Years of the Bush Administration: The George W. Bush Administration and the Environment*, 25 W. NEW ENG. L. REV. 221, 240 (2003)(footnotes omitted).

factually dissimilar cases to extract the underlying obligation found in each; that is, industry has the responsibility to execute all reasonable means of care with regard to protecting all species of migratory birds. "Strict liability statutes are not meant to punish the vicious will but to put pressure upon the thoughtless and inefficient to do their whole duty in the interest of public health or safety or morals."<sup>198</sup> With respect to America's newly developing market for wind energy, all reasonable means of care have not been taken with respect to the absolute, most environmentally friendly, approach to wind project siting. When this goal is eventually met, through regulatory promulgation and industry compliance, then the need to prosecute wind facility owners and operators for strict liability violations of the MBTA will, most likely, be unnecessary.

## 6.0 RECOMMENDATIONS

### 6.1 Bird guidelines

Organism collisions with wind turbines, particularly bird collisions, warrant site-specific design or siting considerations.<sup>199</sup> "Given the bird kill potential of wind turbines, [wind energy facilities] should not be sited in the breeding or wintering territories or along the migratory concentrations of threatened or endangered bird or bat species."<sup>200</sup> Overall site evaluation should include habitat quality, bird abundance, bird use, prey base, migratory movements, and night use.<sup>201</sup>

### 6.2 Ecosystem concerns

Wind farms are most appropriately located in areas where there are existing compatible land uses, such as agricultural lands, pastureland, and defunct strip mines.<sup>202</sup> Destruction of native habitat for turbine construction is inappropriate in undisturbed wildlife areas.<sup>203</sup>

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198. Corcoran, *supra* note 103, at 331 (citing Laurie L. Levenson, *Good Faith Defenses: Reshaping Strict Liability Crimes*, 78 CORNELL L. REV. 401, 402 (1993) (quoting ROSCOE POUND, *THE SPIRIT OF THE COMMON LAW* 52 (1921))).

199. York & Settle, *supra* note 3, at 403 (citation omitted).

200. *Id.*

201. *Renewable Energy Wind Energy Resources Principles and Recommendations*, *supra* note 16.

202. *Id.*

203. *Id.*

With the expansion of renewable energy sources, particularly wind, the main goal of total ecological preservation, which naturally complements the idea of renewable energy, should be at the core of every development project. The consideration of environmental policy directed at protecting the environment should not be viewed as unrealistic and over-burdensome policy obstacles to wind energy production. Rather, such regulations should be embraced as incidental to the future of sustainable energy development. With a core goal of total ecological preservation, U.S. policy makers need to be prepared to cope with and respond to any unexpected effects, such as high prices, associated with environmentally friendly design, development, and distribution of wind energy.<sup>204</sup>

## 7.0 CONCLUSION

"No resource type is truly green."<sup>205</sup> "Every type of electric power resource has potentially significant impacts on various elements of the environment."<sup>206</sup> Balancing the public's need for power while also balancing the needed protections of the environment is a formidable, but not insurmountable, challenge.<sup>207</sup> The move toward high levels of wind energy development arguably has, but undoubtedly will have, enough environmental impacts and socioeconomic influence to consider legal redress. Regulators and policy makers should consider not merely whether a particular set of impacts is tolerable at a particular wind energy site, but also which sets of impacts, in which vicinities, best promote the protection and conservation of the natural environment.

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204. See Bryner, *supra* note 15, at 342.

205. Thomas, *supra* note 24, at 80.

206. *Id.*

207. *Id.*