# Energy and Animals: A History of Conflict

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## I. INTRODUCTION

In recent years, environmental groups, federal and state agencies, and others who support the development of renewable energy have struggled with the adverse impacts of such development on animals and their habitat. Although renewable energy development has the benefit of

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creating energy without greenhouse gas ("GHG") emissions and other pollutants associated with traditional energy development, it does so through an intensive use of land, including federal public lands, thus competing with animals and their habitat. The current conflicts between birds, bats, and wind turbines throughout the country and between desert tortoises and utility-scale solar development in the southwest are only the start of what will undoubtedly be a continuous debate over how to balance renewable energy development with animal protection. This essay considers this issue against the backdrop of the long history of conflict between energy development and animals. Specifically, this essay focuses on judicial decisions where courts have had to balance competing statutory and regulatory mandates to both develop domestic energy supplies and to protect animal species and habitat. These cases illustrate that courts often are forced to strike a balance between energy development and animal protection in the absence of clear statutory or regulatory guidance. In other cases, however, where Congress has expressly set the balance or at least identified a process for the agency to set the balance, courts can engage in a more robust review of the agency decision-making process.

This essay then makes several observations. First, just as in cases involving traditional energy development, courts hearing disputes surrounding renewable energy development must balance the national interest in domestic energy development with protection of wildlife using existing statutory objectives that often promote one interest or the other, but do not always assist courts in balancing these competing interests. Second, unlike traditional energy development, renewable energy development has significant support among environmentalists. Thus, policymakers and renewable energy developers should be careful to take environmental concerns, specifically those surrounding animals and habitat, into account in order to retain that support to the extent possible and avoid the avalanche of lawsuits that has plagued traditional energy development. Third, in order to guide courts when disputes arise as well as retain support for renewable energy development in general, federal and state agencies should accelerate and build on current efforts to establish specific siting guidelines to map out where and how renewable energy development can take place without significant impact on animals and their habitat. In this way, regulators can best develop large-scale renewable energy with less fear of judicial intervention and at the same time reduce the number of lawsuits challenging the development in the first place. Last, it may be premature for Congress to create statutory mandates for agencies to follow in balancing renewable energy development and animal interests as it has done in some areas of traditional energy development. Instead, as industry and the government obtain more experience with large-scale renewable energy projects, the

U.S. Department of the Interior ("Interior Department") should continue its efforts to work with other federal agencies, states, environmental groups, and other stakeholders through memoranda of understanding, other voluntary agreements, and, ultimately, rulemaking to gather information, create site-selection guidelines for development, and otherwise attempt to balance these concerns. To the extent the Interior Department and other agencies fail in their mission to both encourage renewable energy development and protect animal species and their habitat, it may be that Congress should act to create more specific mandates re-balancing the scale in one direction or the other as it has done in the past. In the interim, however, there may be an important role for Congress in giving the federal agencies statutory direction and mandates regarding coordination among federal agencies and between federal agencies and states regarding how to resolve conflicts between renewable energy development and animals.

## II. CONFLICTS BETWEEN TRADITIONAL ENERGY DEVELOPMENT AND ANIMALS

For decades, Congress, federal agencies, and states have attempted to both encourage energy development on public and private lands and in federal and state waters while at the same time preserve animal species and habitat. This tension has played out in the development of traditional energy sources such as coal, oil, natural gas, and hydropower, as well as newer forms of renewable energy such as wind and solar power. The structure within which these disputes play out is often built on: (1) statutory mandates imposed on federal or state agencies to encourage, permit, license, and monitor specific types of energy development; (2) statutory mandates imposed on federal or state agencies to manage public lands for certain uses; (3) statutory mandates imposed on federal or state agencies to consider environmental impacts or to protect endangered species across a broad range of projects; and (4) state conditions or standards that federal law requires federal agencies to consider in approving certain projects.

For instance, the Federal Power Act and other statutes that direct the Federal Energy Regulatory Commission ("FERC") to license hydropower facilities according to particular standards is an example of the first type of statutory mandate. The Federal Land Policy and Management Act ("FLPMA"), which directs the Bureau of Land Management ("BLM") to manage public lands within its jurisdiction on a "multiple use" and "sustained yield" basis is an example of the second type of statutory

mandate. Under that directive, BLM must make difficult choices with regard to public lands within its jurisdiction when energy development conflicts with grazing interests, wildlife protection, or other environmental protection goals.[1] The National Environmental Policy Act ("NEPA") along with the Clean Water Act, Clean Air Act, and the Endangered Species Act are just a few examples of the third type of statutory mandate, which requires federal agencies to consider or limit the impact of certain actions and projects on animals and their habitat or, in the case of the Endangered Species Act, to prohibit certain actions that would put in jeopardy or "take" endangered species regardless of the benefits of the proposed project. Last, Section 401 certification, under the Clean Water Act and state consistency requirements, under the Coastal Zone Management Act, are just two examples of the fourth type of statutory mandate, which requires federal agencies to take state concerns, including wildlife protection concerns, into account in evaluating and approving energy projects that impact animals and their habitat.

This Part explores in more detail how courts have looked to these multiple statutory mandates to resolve disputes between animals and traditional energy development, specifically coal-based energy, oil and gas development, and hydropower. Each section within this Part begins with a discussion of the congressional policies favoring each side of the conflict, followed by a discussion of judicial decisions where judges were forced to balance competing policies. The purpose of this discussion is to learn from these disputes involving traditional energy development as Congress, agencies, states, and other stakeholders attempt to address this issue in the context of renewable energy.

1. According to BLM, which manages about 245 million surface acres, as well as 700 million sub-surface acres of mineral estate, the Agency has "a leading role in fulfilling the Administration's goals for a new energy economy based on a rapid and responsible move to large-scale production of solar, wind, geothermal, and biomass energy," as well as managing federal "onshore oil, gas and coal operations that make significant contributions to the domestic energy supply as the Nation transitions to a clean energy future." *New Energy for America*, BUREAU OF LAND MGMT., http://www.blm.gov/wo/st/en/prog/energy.html (last updated Jan. 9, 2012). In supporting the development of the nation's natural resources, BLM must also "ensure the needs of wildlife, fish and plants are taken into consideration" when authorizing "land use activities such as recreation, livestock grazing, energy development or forest management." *Fish, Wildlife, and Plant Conservation*, BUREAU OF LAND MGMT., http://www.blm.gov/wo/st/en/prog/more/fish__wildlife_and.html (last updated July 13, 2011).

### *A. Coal, Coal-Bed Methane, and Coal-Fired Power Plants*

Coal has always been a mainstay of the U.S. energy supply, currently providing nearly 50 percent of total net power generation in the United States and an even higher percentage of power from utility-owned power plants.[2] Conflicts with animals and animal habitat arise with both the mining of coal and the combustion of coal. With underground coal mining, concerns have focused on human health and safety for decades. With surface mining of coal, those human and health and safety concerns are not as prominent. However, surface mining has a significant adverse impact on the landscape, including on the animal species that live there. Since 1977, the federal Surface Mining Control and Reclamation Act has imposed regulations on surface mining to mitigate these adverse effects.[3] Specifically, the law requires that mining companies restore the original surface of the land or leave the land in a manner that limits erosion and other environmental harm.[4] It also places limits on mining prime farmland, creates financial assurance requirements, and establishes a comprehensive regulatory approval, monitoring, and closure process.[5] Despite these regulatory protections, coal mining has had a massive impact on public and private lands, particularly in the West, reducing the ability of these lands to act as sustaining habitat for numerous animal species.

Beyond the mining of coal, combustion of coal also has a significant adverse impact on animals and animal habitat. Even apart from the present-day concern over GHG emissions and climate change associated with coal combustion, the $SO_2$ and mercury emissions from such combustion have over the years resulted in significant fish kills and other more long-term adverse impacts on fish and other wildlife.[6] Although the Clean Air Act Amendments of 1990 focused specifically on these emissions with some success, the nation's current dependence on coal as a major energy source has made additional restrictions on such emissions politically difficult. Moreover, in recent years, coal bed methane ("CBM") development in the Interior West has been a significant source of new

2. BOSSELMAN ET AL., ENERGY, ECONOMICS AND THE ENVIRONMENT 214–15 (3rd ed. 2010).
3. 30 U.S.C. §§ 1201–1328 (2011).
4. *Id.* § 1265(b).
5. BOSSELMAN ET AL., *supra* note 2, at 189–90.
6. *Id.* at 211. *See also* Patricia Glick, *The Toll From Coal: Power Plants, Emissions, Wildlife, and Human Health*, 21 BULL. OF SCI., TECH. & SOC'Y 482 (2001).

energy development and a significant source of new problems for wildlife and wildlife habitat. Specifically, the tens of thousands of CBM wells and associated pipelines have adversely impacted millions of acres of land as well as water resources, harming fish and wildlife species, degrading rangeland, and poisoning livestock.[7]

Not surprisingly, the courts have often been called upon to resolve disputes between coal and coal-bed methane development and animals and their habitat. For instance, as early as 1975, in *Sierra Club v. Morton*,[8] soon after the enactment of NEPA, the U.S. Court of Appeals for the D.C. Circuit considered a challenge to the Interior Department's authorization of coal mining in the Northern Great Plains region of Montana, North Dakota, South Dakota, and Wyoming. The plaintiffs argued that the Interior Department violated NEPA by failing to prepare a comprehensive environmental impact statement for the region prior to authorizing development of coal resources in the area.[9] In finding that the Interior Department had failed to meet its obligations under NEPA, the court recognized that the region "is one of the world's richest basins of relatively untapped coal reserves" and that the coal in the area is "highly desirable because it is of low sulphur content, which makes it environmentally preferable, and because it is relatively close to the surface, which makes it readily accessible by strip mining."[10] Furthermore, the court acknowledged a growing "concern about greater national self-sufficiency in energy matters" as well as testimony that "at least for the short term, increased use of coal is said to be the best way to ward off any energy crisis."[11]

On the other hand, the court took into account that the massive development necessary to obtain the coal resources would affect the region's air quality; water quality; and wildlife population, distribution, and composition.[12] It also expressed concern that "a region best known for its abundant wildlife and fish, and for its beautiful scenery, a region isolated from urban America, sparsely populated and virtually unindustrialized, will be converted into a major industrial complex."[13] Ultimately, the court let stand an earlier temporary injunction against the

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7. *See, e.g.*, Robert J. Duffy, *Political Mobilization, Venue Change, and the Coal Bed Methane Conflict in Montana and Wyoming*, 45 NAT. RES. J. 409 (2005); Alexandra B. Klass, *The Frontier of Eminent Domain*, 79 U. COLO. L. REV. 101, 682–83 (2007) (discussing adverse environmental impacts associated with CBM development).

8. 514 F.2d 856 (D.C. Cir. 1975), *rev'd sub nom.* Kleppe v. Sierra Club, 427 U.S. 390 (1976).

9. *Sierra Club*, 514 F.2d at 861.

10. *Id.* at 861–62.

11. *Id.* at 862 & n.2.

12. *Id.* at 862.

13. *Id.* at 880.

development to allow the agency to fully consider whether it should prepare a regional, comprehensive impact statement under NEPA rather than preparing smaller, project-by-project statements.[14] The court expressed the view that this large-scale energy development project provides "an excellent opportunity for [the Interior Department] to demonstrate how a responsible Federal agency can manage resource development with proper regard for environmental protection."[15] Thus, in this early NEPA case, the court expressly addressed the potential conflict between energy development, wildlife, and other environmental impacts and urged the Interior Department to avoid "piecemeal actions which restrict our future options" in favor of a more comprehensive review and balancing of relevant public interest goals.[16]

In a more recent case brought pursuant to NEPA and FLPMA, *Western Organization of Resource Councils v. BLM*,[17] the plaintiff environmental organizations sued BLM for its environmental review of coal-bed methane development in Wyoming, alleging that the agency failed to "prevent unnecessary and undue degradation to sage grouse and prairie dogs," and "irreversibly and irretrievably condemned the Powder River Basin to CBM development before complying with NEPA and the FLPMA."[18] In a 2008 decision, the U.S. District Court for the District of Wyoming rejected the plaintiffs' claims and found that the final environmental impact statement for CBM development in the region "fully complies with BLM's multiple use mission while considering and providing for responsible development of important oil and gas resources."[19] In finding that the environmental impacts identified by the preferred alternative were acceptable, the court cited to the U.S. national energy policy, which promotes "the production of reliable, affordable and environmentally clean energy," and the fact that one of the nation's "most pressing concerns is to reduce our reliance on foreign oil and gas while protecting the environment."[20] The court also relied on the agency's "multiple use mission," that the "BLM-administered lands contain world class energy and mineral resources, vital to the National interest," and

14. *Id.* at 883–84.
15. *Id.* at 863.
16. *Id.*
17. 591 F. Supp. 2d 1206 (D. Wyo. 2008).
18. *Id.* at 1214.
19. *Id.* at 1226.
20. *Id.* at 1226–27.

that "the vast energy and mineral resources under BLM's jurisdiction places the agency in a key role of ensuring that our country has an adequate supply of energy necessary for the safety and security of our families, our communities, and our Nation."[21] The court went on to cite the numerous federal statutes encouraging energy development on federal lands, including FLPMA, as additional reasons to uphold the agency decision.[22] The court did recognize that the decision of selecting among the various alternatives "reflects the difficulties in accommodating the vast array of competing interests and the huge diversity of public opinion regarding the use of these public lands, impacts to wildlife and their habitat, and administration of the federal mineral estate."[23]

Beyond NEPA and FLPMA, cases under the Clean Water Act also bring into focus the tension between energy development and animals. For instance, in *Riverkeeper v. EPA*,[24] the plaintiffs challenged EPA regulations under the Clean Water Act governing cooling water intake structures at new factories and power plants, including coal-fired power plants.[25] In reviewing the regulations, the court found that "[e]very day, power plants and factories around the nation withdraw more than 279 billion gallons of water to cool their industrial facilities" and that the pressure from the flow of large volumes of water into the systems traps ("impinges"), or draws ("entrains") fish, plankton, eggs, and larvae.[26] Specifically, "[a] single power plant might impinge a million adult fish in just a three-week period or entrain some 3 to 4 billion smaller fish and shellfish in a year, destabilizing wildlife population in the surrounding ecosystem."[27] The EPA regulations were an effort to reduce this impingement and entrainment of fish consistent with the statutory mandate to do so in the Clean Water Act, and provided multiple options for compliance based on best technology available or through certain restoration measures.[28]

In a 2004 opinion, the U.S. Court of Appeals for the Second Circuit upheld most of the regulations but found that the option of complying with the regulations through restoration measures was not consistent with the Clean Water Act.[29] The court found that the law required regulated parties to minimize adverse environmental impacts associated

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21. *Id.* at 1227.
22. *Id.* at 1232.
23. *Id.* at 1242.
24. 358 F.3d 174 (2d Cir. 2004).
25. *Id.* at 181.
26. *Id.*
27. *Id.*
28. *Id.* at 181–82.
29. *Id.* at 189–91.

with cooling water structures, and that restoration measures such as restocking fish that had been killed with those bred in a hatchery or habitat improvement merely "correct for the adverse environmental impacts of impingement and entrainment; they do not minimize those impacts in the first place."[30] The court also rejected the regulatory parties' arguments that some species were "nuisances" that were better off eradicated and that some species respond to losses by increasing reproduction.[31] Thus, because of the mandate in the Clean Water Act itself regarding efforts to minimize harm to fish and other aquatic wildlife, the court had a mandate through which it could require protection of such wildlife in the initial operation of the plants rather than simply by allowing restoration or other "clean-up efforts" after the damage had been done.

Finally, in January 2011, the Center for Biological Diversity sued the U.S. Department of the Interior's Office of Surface Mining ("OSM"), claiming that OSM failed to protect the San Juan River from additional coal development, putting drinking water, critical habitat, and species at risk, and violating the Endangered Species Act.[32] The area is home to two endangered fish species, the Colorado pikeminnow and the razorback sucker, and coal mining and combustion have allegedly resulted in mercury, selenium and other contaminants entering the river. The plaintiff contended that "regional coal development is driving species in the San Juan River ecosystem toward total collapse," and that the contamination is adversely affecting endangered species reproduction.

This discussion of selected cases involving conflicts between animals and coal-related energy development cannot do justice to the broad range of cases involving federal statutes that attempt to balance coal-related energy development with environmental protection. Nevertheless, there are some broad principles that can be derived from the cases. First, it is notable that in each of these cases, the courts spent a significant amount of time discussing the tension between energy development and the protection of animals or their habitat, and articulated the federal policies

30. *Id.* at 189.
31. *Id.* at 196.
32. *See* Complaint, Center for Biological Diversity v. Pizarchik, Case No. 1:11-cv-00243-RPM, (Jan. 30, 2011); Press Release, Center for Biological Diversity, *Lawsuit Filed Against Interior Department Over San Juan River Coal Pollution* (Jan. 31, 2011), *available at* http://www.biologicaldiversity.org/news/press_releases/2011/navajo-coal-mine-01-31-2011.html.

that promote each concern. Thus, courts are not dodging the issue or otherwise ignoring the interests at stake. Second, these cases show that statutory mandates such as the Clean Water Act or the Endangered Species Act can provide a partial counterweight in some circumstances to federal policies favoring coal-related energy development and can cabin agency discretion. In the *Riverkeeper* case, the court looked to the mandate of the Clean Water Act to override agency discretion favoring energy development over animals. By contrast, in the *Western Organization of Resource Councils* case, the court highlighted the multiple use and sustained yield mission of BLM in making decisions regarding the use of public lands, which tips the scale heavily in favor of agency discretion to preference energy development over animal protection. Thus, a statutory mandate that squarely puts the balancing of energy development and wildlife protection in the hands of one agency as opposed to multiple agencies can have a significant impact on the outcome of the case.

### *B. Oil and Gas*

Like coal, onshore oil and gas development has been a significant part of the U.S. energy economy for nearly a century. Apart from oil and gas leasing on federal public lands, state law has governed much of onshore oil and gas development since its inception, even though federal and state environmental protection laws, including the Clean Water Act, the Clean Air Act, NEPA, and the Endangered Species Act, now place numerous regulatory restrictions and reclamation requirements on such development. In recent decades, offshore oil and gas development has played a more significant role in federal energy policy as technology has allowed deeper and deeper drilling to proceed. The impacts of onshore and offshore oil and gas development on animals and animal habitat are significant, and they have played a major role in public policy and public opinion, particularly in the wake of significant oil spills. The Santa Barbara oil spill in 1969, which followed the first federal leases off the Pacific shore, led directly and indirectly to numerous new environmental protection statutes, including NEPA; the Marine Protection, Research, and Sanctuaries Act of 1972; the Coastal Zone Management Act of 1972; the Endangered Species Act of 1973; and later significant amendments to the Clean Water Act, Clean Air Act, and the Outer Continental Shelf Lands Act.[33] Since then, Congress has at various times withdrawn particularly sensitive offshore and onshore areas from

33. BOSSELMAN ET AL., *supra* note 2, at 286–88.

oil development, actions that have been politically controversial.[34] The Exxon Valdez oil spill in Alaska in 1989 and the BP Deepwater Horizon oil spill in the Gulf of Mexico in 2010 brought the tensions between domestic energy development and environmental protection, including wildlife and wildlife habitat, into the public spotlight. Even beyond these well-known spills, the day to day operation of oil and gas development has a significant adverse impact on animals and their habitat through air emissions from flaring, fugitive vapors, the motor vehicles needed to support onshore development, and significant water pollution associated with onshore and offshore development.[35]

Because of the difficulty of balancing wildlife protection with onshore and offshore oil and gas development, courts have often been called upon to resolve disputes in this area.[36] In these cases, courts are often forced to confront the conflict between energy development and animals, and preference one over the other, based on the statutory mandates set out above and the agency's record documenting the benefits and burdens of such development. In general, when the agency sufficiently documents its compliance with the relevant statutory mandates, the courts generally give significant deference to those decisions, even if they prefer energy development over animals or their habitat. By contrast, where plaintiffs are able to establish that the preference for energy was made without a sufficient consideration of impacts on wildlife or without following a statutory process requiring outside input, particularly from states, courts more often find the agencies did not appropriately set the balance.

For instance, in *Village of False Pass v. Watt*,[37] the plaintiff environmental groups challenged the Interior Department's grant of leases for oil and gas exploration in the St. George Basin in Alaska, which holds "some of the most important fish and wildlife resources in Alaska," acting as a "gateway for virtually every marine mammal, fish,

34. *Id.* at 308–11.
35. *Id.* at 319–20.
36. Courts also have been, and will continue to be, involved in the numerous lawsuits that arise out of massive oil spills such as the Santa Barbara spill, the Exxon Valdez spill, and the BP Deepwater Horizon spill, but these one-time disasters are beyond the scope of this essay, which focuses on the more routine conflicts between animals and energy development that arise when such development is conducted in its ordinary, as opposed to extraordinary, course.
37. 565 F. Supp. 1123 (D. Alaska 1983), *aff'd*, Village of False Pass v. Clark, 733 F.2d 605 (9th Cir. 1984).

and bird species moving between the North Pacific and the Bering Sea."[38] Although there were many claims in the lawsuit, the analysis of the claims under the Outer Continental Shelf Lands Act and NEPA are of most interest for present purposes. In the 1983 decision, the U.S. District Court for the District of Alaska upheld some of the claims and rejected others. According to the court, "[w]hen conflicts arise between exploration of the oil and gas reserves of the outer continental shelf and other uses of the marine environment, the federal government has assumed primary responsibility for minimizing the conflict."[39] Moreover, Section 19 of the Outer Continental Shelf Lands Act provides for some coordination between the federal government and state and local officials affected by the sale.[40] Here, the Governor of Alaska requested that certain stipulations be included in the sale to provide additional environmental protections with regard to potential spills, and the Secretary of the Interior included some, but not all, of these stipulations.[41] Due to negotiations between the Interior Department and the State of Alaska, Alaska was not a party to the lawsuit that was ultimately filed.[42] The plaintiff environmental groups argued, however, that the stipulations were insufficient to address reasonably likely spills, and that a major oil spill could "jeopardize the continued existence of endangered gray and white whales, cause serious harm to other marine mammals and seabirds, and produce long term adverse impacts on the commercial fisheries and shell fisheries."[43]

In rejecting the plaintiffs' claim, the court found that the concerns regarding oil spills had been "contested throughout the planning process" and "[t]he administrative record reflect[ed] numerous references to these questions."[44] Thus, the court found the Secretary's decision fully considered all the relevant factors.[45] Moreover, the court held that "[g]iven that Section 19 provides little or no guidance as to the proper balance to be struck by the Secretary between competing national and local interests, . . . the burden is on the plaintiffs to provide specific instances where the balance has been improperly struck."[46] By contrast, the plaintiffs did succeed on their NEPA claim because the environmental impact statement recognized a lack of knowledge and information on critical

38. *Id.* at 1129.
39. *Id.* at 1136.
40. *Id.* at 1137.
41. *Id.* at 1136–37.
42. *Id.* at 1137.
43. *Id.* at 1137–38.
44. *Id.* at 1138.
45. *Id.*
46. *Id.*

points relating to the impacts of oil and gas pollution and noise pollution on whales.[47] Thus, the Secretary was not in a position to make an informed choice and failed to fulfill his obligation under NEPA.[48]

Another case, *Conservation Law Foundation v. Watt*,[49] also illustrates how courts attempt to resolve conflicts between the federal government, states, and environmental groups over oil and gas development and wildlife. In that case, the plaintiffs alleged the Secretary of the Interior violated NEPA, the Endangered Species Act, the Coastal Zone Management Act, and the Outer Continental Shelf Lands Act when he sold leases for oil and gas exploration in the Georges Bank region of the Outer Continental Shelf off the coast of Massachusetts.[50] At the time of the lawsuit, the Georges Bank was a major spawning ground for at least 26 different species of fish and shellfish, including cod, haddock, herring, flounder, grey sole, silver hake, and scallops.[51] The area also provided a unique habitat for lobster, squid, tilefish, shrimp, and coral.[52] Unlike in *Village of False Pass*, where Alaska was satisfied with the federal conditions on development, in this case, the State of Massachusetts sued the Interior Secretary when the state's concerns regarding particular leases with significant potential adverse impact on fisheries were not addressed.[53] Specifically, the Governor of Massachusetts wrote that his overriding objective was "to protect, in a manner consistent with an aggressive energy policy, the rich and valuable resources of the Massachusetts coastal zone in general and its fishery in particular."[54] He then recommended the deletion of 103 of the proposed 540 tracts in the sale blocks and also recommended the sales be delayed to permit consideration of studies regarding the effect of oil and gas activity on Georges Bank.[55] The Secretary of the Interior rejected these recommendations and proceeded with the sale.[56]

In considering the administrative record in the case, the U.S. District Court for the District of Massachusetts found that the Interior

47. *Id.* at 1150–51.
48. *Id.* at 1153.
49. 560 F. Supp. 561 (D. Mass. 1983).
50. *Id.* at 564–65, 568.
51. *Id.* at 565.
52. *Id.*
53. *Id.* at 566–67.
54. *Id.* at 566.
55. *Id.*
56. *Id.* at 567.

Department's NEPA analysis was flawed because it overstated the anticipated energy benefits of the sales, thus undermining any analysis balancing the benefits and harms associated with the sales.[57] With regard to the Endangered Species Act claim, the court found the Secretary failed to use the best available scientific information to analyze whether endangered species would be placed in jeopardy and that the discussion of the risk was incomplete and conclusory.[58]

Most important for present purposes, the court found that the Interior Department violated the Coastal Zone Management Act because the sale was not consistent "to the maximum extent practicable," with Massachusetts's federally-approved Coastal Zone Management Program.[59] The court stated that the Act was passed by Congress to promote "comprehensive and coordinated planning" for coastal development and expressly recognized the competing demands on coastal waters from "extraction of mineral resources and fossil fuels," "harvesting of fish, shellfish, and other living marine resources," and "new and expanding demands for food [and] energy."[60] Massachusetts's plan under the Act required that exploration of offshore oil and gas resources "minimize adverse impacts on the marine environment, especially with respect to fisheries, water quality, and wildlife."[61] When the state made its initial determination that the leases in question would be inconsistent with the state plan because of the potential risks of deep water drilling on the marine environment, the Interior Department disagreed and indicated it would go forward with the sales.[62] The court found that, although the procedural requirements of the Act were met, the substantive requirements of the Act were not satisfied.[63] The court recognized that the Act did not give states "veto power" over federal actions in the coastal zone, but that Congress did "cede some authority in matters of coastal development to the affected states in order to achieve cooperation and coordinated development of scarce natural resources."[64] In this case, there was simply insufficient evidence in the record for the Secretary to find that the proposed sales were consistent with the state coastal zone management program, in violation of the Act.[65]

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57. *Id.* at 569–70.
58. *Id.* at 572–73.
59. *Id.* at 576–78.
60. *Id.* at 574.
61. *Id.*
62. *Id.* at 576.
63. *Id.* at 578.
64. *Id.* at 576.
65. *Id.* at 578.

Finally, with regard to the claim under the Outer Continental Shelf Lands Act, the court held that the law provides a significant role for states in outer continental shelf leasing decisions, and that the Secretary shall accept the state's recommendations if they provide "a reasonable balance between the national interest and the well-being of the citizens of the affected state."[66] Under the Act, oil and gas must be "developed in a manner which takes into consideration the Nation's long-range energy needs and also assures adequate protection of the renewable resources of the [outer continental shelf]."[67] The court found that, although the Secretary attempted to justify his conclusions as a balancing process "between the competing considerations of energy exploration, fishery maintenance and environmental protection," it was apparent that such a balance did not take place.[68] Instead, "the presence or absence of 'oil and gas-bearing geologic structures' on each of the tracts nominated for deletion [by the state] served to effectively and absolutely determine whether that tract would be included in the proposed sale."[69]

These cases illustrate how a statute that mandates a balancing of interests between energy development and animals and between federal and state interests can be a powerful check on federal desires to promote energy at the expense of wildlife and habitat, particularly when an affected state is willing to act as a champion for those latter interests. In the absence of the state acting as an advocate for animal and habitat interests, however, it can be difficult for environmental groups to limit energy development if the federal agency is careful to document and consider all the relevant interests.

For instance, in 2010, in *Theodore Roosevelt Conservation Partnership v. Salazar*,[70] the U.S. District Court for the District of Columbia considered BLM's approval of new oil and gas wells in the Pinedale Anticline Project Area ("PAPA") on federal land in Wyoming.[71] PAPA is the "third-largest natural gas field in the nation, . . . capable of producing 25 trillion cubic feet of natural gas—enough to heat 10 million homes for 30 years."[72] BLM approved an operator proposal for 4,399 new wells

66. *Id.* at 578–79.
67. *Id.* at 579.
68. *Id.*
69. *Id.*
70. 744 F. Supp. 2d 151 (D.D.C. 2010).
71. *Id.* at 154.
72. *Id.*

along with the elimination of seasonal restrictions that had been imposed on earlier well operations in order to protect wildlife in the area.[73] In place of the seasonal restrictions, BLM approved less onerous mitigation measures.[74]

The plaintiff conservation group sued BLM alleging violations of FLPMA and NEPA. With regard to FLPMA, the plaintiff cited to U.S. Fish and Wildlife Service ("FWS") comments indicating that the proposed mitigation measures would not benefit wildlife or protect against environmental decline.[75] In rejecting the FLPMA claim, the court recognized that the law directs the Secretary of the Interior to "take any action necessary to prevent unnecessary or undue degradation of the [public] lands," but found BLM's determination that such unnecessary or undue degradation would not occur was reasonable.[76] Notably, the court found that, even though the plaintiff "would prefer stronger protection of wildlife, especially the sage grouse, the BLM's responsibility under the FLPMA is to ensure that public lands are managed 'under principles of multiple use and sustained yield,'" which is an "enormously complicated task of striking a balance among the many competing uses to which land can be put, 'including but not limited to, recreation, range, timber, minerals, watershed, wildlife, and fish.'"[77] Thus, BLM was not required to adopt the best practices to protect wildlife, "but instead to balance the protection of wildlife with the nation's immediate and long-term need for energy resources and the lessees' right to extract natural gas."[78] With regard to the NEPA claim, the court held that BLM considered the impacts on hunting and sage grouse, and considered and responded to the comments of FWS on this issue.[79] The court found that simply because FWS has expertise in wildlife management, BLM was "not required to defer to FWS's comments."[80] Instead, BLM's analysis as to why its alternative protections were adequate satisfied NEPA's "hard look requirement."[81]

Unlike the cases with claims under the Coastal Zone Management Act, where the state can act as a check on federal energy development pursuits, under FLPMA, the Interior Department has more significant discretion to weigh energy development over wildlife or other land uses.

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73. *Id.* at 155.
74. *Id.*
75. *Id.* at 157.
76. *Id.* at 156–58.
77. *Id.* at 157.
78. *Id.* at 157–58.
79. *Id.* at 162.
80. *Id.* at 163
81. *Id.*

Of course, the Interior Department must still comply with the multiple use and sustained yield principles of FLPMA, but it need not defer to the views of states, other federal agencies, or other environmental or wildlife interests so long as it documents a reasoned decision with regard to the use of federal lands. Likewise, under NEPA, so long as the agency considers all the evidence and comments and takes a "hard look" at the issue, it has significant discretion to go forward with oil and gas development at the expense of wildlife.

In sum, the oil and gas cases show that Congress has attempted to create a balance between energy development and animals both on federal lands and offshore. In offshore areas, however, Congress has built in more significant authority for affected states, which allows some offset to federal discretion in setting the balance. This distinction may be important for future disputes regarding renewable energy because of the significant focus on public lands and waters for siting such development.[82] Under existing law, on federal lands, the Interior Department will have significant discretion in balancing energy development and wildlife protection. In federal waters, however, as shown by the *Conservation Law Foundation* case, the states may have some check on federal authority if they choose to exercise it.

### *C. Hydropower*

Hydropower is both a traditional energy source and a renewable energy source. As a traditional energy source, it is discussed in this Part with coal, oil, and natural gas because it is one of the oldest sources of energy. Indeed, from the days of early water mills to the high-tech hydropower operations of today, using water as energy has been critical to the country's national energy policy. Hydropower is a renewable energy source because it relies on the continuous water cycle, which creates kinetic energy when water flows from a higher elevation to a lower elevation. In 2009, hydropower accounted for 7% of total U.S. electricity generation and 35% of generation from renewable energy sources.[83]

82. *See, e.g.*, Energy Policy Act of 2005, Pub. L. 109-58, 119 Stat. 594, 660 (codified in scattered sections of 16 U.S.C.A. & 42 U.S.C.A.) (directing the Department of Energy and the Department of Interior to work together to place at least 10,000 MW of non-hydroelectric renewable energy on public lands).

83. *See Hydropower Explained*, U.S. ENERGY INFO. ADMIN., http://www.eia.doe.gov/energyexplained/index.cfm?page=hydropower_home (last updated July 5, 2011).

Beginning in the 1920s, Congress enacted a series of statutes governing hydropower development including the Federal Water Power Act of 1920 and the Federal Power Act of 1935.[84] Through these statutes, Congress created the Federal Regulatory Energy Commissions ("FERC") and regulatory structures that encouraged the development and licensing of small and large hydropower facilities throughout the country. It further created the Tennessee Valley Authority ("TVA"), and began construction of a series of massive dams, including the Hoover Dam and the Grand Coulee Dam, to further develop hydropower resources.[85] Moreover, the Public Utility Regulatory Policies Act of 1978 ("PURPA") encouraged significant new development of hydropower by providing financial incentives for non-utility hydropower development.[86] This resulted in FERC licensing hundreds of new, smaller facilities.

Hydropower projects, of course, have had a significant adverse effect on the environment, including fish species and their habitat.[87] Fish cannot survive downstream migration over a dam or through a turbine, nor can fish migrate upstream.[88] The ability of a waterway to support fisheries also changes substantially when a dam replaces fast-moving water in a river with a warmer, still-water reservoir behind a dam and reduces the flow of water downstream.[89] Moreover, unlike other areas of environmental law where state and local requirements can augment federal environmental protection requirements, the U.S. Supreme Court has held that the Federal Power Act's broad grant of authority to FERC preempts more stringent state and local environmental laws.[90]

Today, however, other federal laws require FERC and hydropower developers to protect fish, other wildlife, and their habitat to some extent. These laws include NEPA, the Endangered Species Act, the Clean Water Act, the Wild and Scenic Rivers Act, and additional provisions specific to the hydropower licensing process. The famous case of *TVA v. Hill* is a notable example where the Endangered Species Act prevented development of a hydropower project because of the impact on the endangered snail darter fish,[91] at least until Congress superseded that decision and allowed the project to be built.[92] With regard to the licensing

84. BOSSELMAN ET AL., *supra* note 2, at 124.
85. *Id.* at 124–25.
86. *Id.* at 143; 16 U.S.C. §§ 2601, 2701–08 (2011).
87. BOSSELMAN ET AL., *supra* note 2, at 136–37.
88. *Id.* at 137.
89. *Id.*
90. *Id.* at 142–43; First Iowa Hydro-Elec. Coop. v. Florida Power Comm'n, 328 U.S. 152, 164 (1946).
91. Tenn. Valley Auth. v. Hill, 437 U.S. 153 (1978).
92. *See, e.g.*, J.B. RUHL, JOHN COPELAND NAGLE, JAMES SALZMAN & ALEXANDRA B. KLASS, THE PRACTICE AND POLICY OF ENVIRONMENTAL LAW 95–96 (2d ed. 2010).

provisions referred to above, the Electric Consumers Protection Act of 1986 ("ECPA"), which amended the Federal Power Act, requires FERC to give consideration not only to power and development purposes in the relicensing process, but also to energy conservation, fish and wildlife, and other environmental values.[93]

Federal agencies now often require hydropower facilities to install "fish ladders" or other fish passage devices to enable fish migration to preserve these species. These requirements, however, are extremely controversial, both because environmental advocates argue they are often ineffective, and hydropower developers and operators argue they are unnecessarily costly. Recently, hydropower operations have challenged the fish passage requirements as constituting a taking of private property without just compensation under the Fifth Amendment because of the financial impact on the facility, thus putting additional pressures on federal and state efforts to protect wildlife from hydropower impacts.[94] Moreover, the Energy Policy Act of 2005 reduced leverage for environmental interests in the FERC licensing process by allowing project owners a trial-type procedure to challenge licensing conditions and authorizing FERC to select alternative licensing conditions to those conditions proposed by resource agencies, if the alternatives are "adequate" but less costly.[95]

There has been significant litigation, in some cases spanning decades, regarding the conflict between hydropower development and aquatic species. Often the litigation turns on the operation and removal of dams, including disputes within the Columbia, Snake, and Klamath River basins in the Pacific Northwest.[96] Beyond these long-running disputes, the cases discussed below provide merely some examples of how these conflicts have played out under existing law. Notably, the cases tend to show that, when FERC or another federal agency approving a hydropower project gives sufficient consideration to wildlife concerns, even if such consideration

93. *See* Electric Consumers Protection Act of 1986, Pub. L. 99-495, § 3 (2011) (amending 16 U.S.C. §§ 797, 803 (2011)); 16 U.S.C. § 797(e) (2007).

94. *See, e.g.*, Casitas Mun. Water Dist. v. U.S., 76 Fed. Cl. 100 (Fed. Cl. 2007), *aff'd in part, rev'd in part*, 543 F.3d 1276 (Fed. Cir. 2008) (involving fish ladder construction requirements on the operation of the Ventura River Project in southern California under the Endangered Species Act, and whether those requirements constitute a taking under the 5th Amendment).

95. BOSSELMAN ET AL., *supra* note 2, at 156–57; Energy Policy Act of 2005, Pub. L. 109-58, § 241 (2011).

96. BOSSELMAN ET AL., *supra* note 2, at 157–58.

does not result in changes to a proposed project, the courts tend to defer to the agency. When the agency fails to consider wildlife concerns at all or only minimally, however, the courts are far less deferential. The same is true when Section 401 of the Clean Water Act, the EPCA Amendments to the Federal Power Act, or the Endangered Species Act is triggered. In those cases, Congress has reduced agency discretion in favor of statutory mandates or heightened state approval procedures in a way that can have a significant impact on whether courts will approve an agency decision that prefers energy development over animals.

To illustrate, in *Platte River Whooping Crane Critical Habitat v. FERC*,[97] the plaintiff requested that FERC determine the need for conditions on operation to protect a whooping crane habitat on the Platte River in connection with relicensing two hydropower plants on the river.[98] After years of delay by the license holders and FERC in conducting the studies, FERC determined that it had no authority to condition the licenses on studying the need for environmentally protective conditions and that there was insufficient information to determine appropriate mitigation conditions.[99] In a 1989 decision, the U.S. Court of Appeals for the D.C. Circuit found that FERC abused its discretion in refusing to undertake any inquiry into the need for environmentally protective conditions in the licenses.[100]

Specifically, the court found that FERC had the authority under the existing licenses and applicable statutes to obtain information and, if appropriate, condition the licenses on environmentally protective conditions.[101] Moreover, the court cited to the 1986 ECPA Amendments to the Federal Power Act for the proposition that Congress, in those amendments, "made explicit the obligation to give environmental considerations equal weight to that accorded to power and irrigation concerns," so that there can be an appropriate resolution of "these potentially competing values so that fish and wildlife and the projects' developmental purposes will be compatible, in the context of the public interest."[102] Because findings in the earlier licensing proceedings had determined that the projects at issue had contributed to cumulative flow depletion and an adverse impact on whooping crane and other animal habitat, FERC had an obligation to "explore the need for protective conditions in the annual licenses."[103] The court concluded that it was

97. 876 F.2d 109 (D.C. Cir. 1989).
98. *Id.* at 111–12.
99. *Id.*
100. *Id.* at 110–11.
101. *Id.* at 113–14.
102. *Id.* at 114 n.6, 117–18.
103. *Id.* at 116.

"reinforced" in its conclusion that FERC had abused its discretion because of language in the conference report for ECPA, which stated that "as a Nation we have come a considerable distance in recognizing the importance of our heritage," and that the legislation extends that "distance" even more.[104] The report specifically identified "fish and wildlife protection, mitigation and enhancement . . . and energy conservation as non-developmental values that must be adequately considered by FERC" when it decides to issue a hydropower license and under what conditions.[105]

Likewise, in *American Rivers v. FERC*,[106] the State of Vermont and environmental groups challenged the FERC licensing of six hydropower projects located on rivers in Vermont.[107] At issue was the authority of states to place conditions on FERC licenses under Section 401 of the Clean Water Act[108] and the appropriate process for review of the state's certification decisions.[109] In that case, Vermont had placed 18 conditions on the licenses, many of which were for environmental protection purposes, including requirements related to fish ladders.[110] FERC argued it had the authority to find that the state had exceeded its authority under Section 401, and if it made that finding, could refuse to include those state conditions in the FERC project licenses.[111] According to FERC, because the conditions were not related to "water quality," as specified in Section 401 of the Clean Water Act, the state did not have authority to weigh in on those issues and FERC did not have to include the conditions.[112] The plaintiffs argued that FERC was bound by Section

104. *Id.* at 117.

105. *Id. See also* Wash. State Dep't of Fisheries v. FERC, 801 F.2d 1516 (9th Cir. 1986) (holding FERC violated the Federal Power Act and the Fish and Wildlife Act by failing to prepare a comprehensive plan for development of the river system and by failing to coordinate a study and review of proposed projects prior to issuing preliminary permits for hydropower plants in the Snohomish River Basin in Washington); Nat'l Wildlife Fed'n v. FERC, 801 F.2d 1505 (9th Cir. 1986) ("We do not hold the Fish and Wildlife Act requires the Commission to develop a comprehensive plan, coordinate proceedings, or develop uniform study guidelines before issuing permits; we do hold the Commission must consider and respond to petitioners' contentions on the basis of the record.").

106. 129 F.3d 99 (2d Cir. 1997).

107. *Id.* at 101–02.

108. *See* 33 U.S.C. § 1341(a)(1) (requires that any federal license or permit to conduct an activity that may result in a discharge to waters of the United States must first receive a water quality certification from the state in which the activity will occur.).

109. *American Rivers, Inc.*, 129 F.3d at 101–02.

110. *Id.* at 102–03.

111. *Id.*

112. *Id.* at 102–03, 106–07.

401 to incorporate all state-imposed certification commissions, and it was up to the licensee to challenge those conditions in court.[113]

In a 1997 opinion, the U.S. Court of Appeals for the Second Circuit agreed with the plaintiffs and found that, despite the Federal Power Act's congressional intent to establish a broad federal role in development of hydropower, and despite the preemptive reach of the Federal Power Act, the Clean Water Act expressly requires FERC to incorporate state-imposed water-quality conditions into licenses.[114] The court also cited to the ECPA Amendments to the Federal Power Act, which directed FERC to "give equal consideration to . . . the protection, mitigation of damage to, and enhancement of, fish and wildlife . . . and the preservation of other aspects of environmental quality."[115] Thus, based on EPCA and the Clean Water Act, FERC had the option of refusing to issue a license if the conditions made the license impractical, and the licensee had the option of challenging the conditions in court to the extent the licensee believed they were beyond the state's Section 401 Clean Water Act authority.[116] Notably, in reaching its decision, the Second Circuit held that FERC's interpretation of Section 401 or any other provision of the Clean Water Act received no judicial deference, because it is the EPA, not FERC, which is statutorily authorized to administer the Clean Water Act.[117]

By contrast, in *National Wildlife Federation v. FERC*,[118] the U.S. Court of Appeals for the D.C. Circuit held in 1990 that FERC acted within its discretion in issuing licenses to a hydropower project on Lee Creek near the Arkansas-Oklahoma border despite the adverse impact on fish and fish habitat.[119] In that case, the Oklahoma Department of Wildlife Conservation argued that flooding associated with the project would result in the stagnation of water, leading to the reduction of diversity in the fish population and would result in a reduced population of gar, buffalo, and carp, as well as the population of the longnosed darter, a fish already on the state's endangered species list.[120] Although FERC placed certain conditions on the license in order to minimize impact on the fish, it ultimately determined that it was "prepared to accept the loss of these fish at this site in exchange for the overall benefits to be produced by this project."[121]

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113. *Id.* at 102–03.
114. *Id.* at 111–12.
115. *Id.* at 112.
116. *Id.* at 111–12.
117. *Id.* at 107.
118. 912 F.2d 1471 (D.C. Cir. 1990).
119. *Id.* at 1473.
120. *Id.* at 1480.
121. *Id.*

In its decision upholding this determination, the court found that while the ECPA Amendments to the Federal Power Act were designed to require FERC to consult with state and federal wildlife agencies and give serious attention to fish and wildlife issues, they did not give states or state agencies veto power over FERC decisions.[122] More importantly, while ECPA required FERC to give equal consideration to environmental values and the need for development, "it is not necessarily required to give these sets of competing values equal weight in every situation."[123] Thus, if FERC determined the benefits of development of the dam justified the environmental costs, FERC could go forward with the project with whatever mitigation it deemed appropriate.[124] Indeed, the court found that FERC adequately reviewed the recommendations and had required installation of fish screens on project intakes as well as studies to minimize impacts to the fish population.[125] Ultimately, the court found that, although ECPA "requires that the needs of wildlife be taken into consideration when FERC evaluates license applications, these considerations need not always prevail."[126]

These cases tend to show that, when FERC evaluates the considerations required under the relevant statutes, such as the Federal Power Act and applicable federal environmental laws, courts will give significant deference to FERC's license determination and conditions, even when the decision is to preference hydropower over wildlife. By contrast, in the cases where the agency failed to consider wildlife impacts at all, or argued it had no choice but to grant the license, courts were much more willing to find an abuse of discretion. While this pattern can be found in many areas of environmental law and administrative law, it is particularly important here, where the specific laws governing hydropower licensing require a balancing of power interests and wildlife interests, and where the general federal environmental laws such as NEPA, the Endangered Species Act, and the Clean Water Act provide another set of requirements for the agency. This precedent suggests that, in creating new federal laws that both promote renewable energy and attempt to protect wildlife, it will be important to impose requirements on the agency beyond simply "considering" wildlife impacts in the analysis. Indeed, as shown above,

122. *Id.* at 1481–82.
123. *Id.* at 1481.
124. *Id.*
125. *Id.* at 1481.
126. *Id.*

courts are not always consistent on whether giving "consideration" to wildlife interest also requires giving equal "weight to those interests."[127]

## III. CONFLICTS BETWEEN RENEWABLE ENERGY DEVELOPMENT AND ANIMALS

This Part discusses the growth of renewable energy generally, with a focus on wind and solar energy. While geothermal energy is also a potential growth area, knowledge regarding its impact on wildlife and wildlife habitat is more limited, and disputes of that nature have not yet arisen on a large scale.[128] Also, as noted above, while hydropower is also a source of renewable energy, it is also a traditional and long-standing source of energy, which means the federal policy and regulatory structure governing disputes between hydropower and animals have been in place for a long time. Wind and solar energy, by contrast, has grown significantly in recent years, but the policy and regulatory structure surrounding its development is still in the early stages.

In general, the Energy Policy Act of 1992, along with subsequent legislation, encouraged the growth of renewable energy by providing a production tax credit in order to incentivize investment in wind farms and other renewable energy projects.[129] More recently, in the Energy Policy Act of 2005, Congress directed the Interior Department and the U.S. Department of Energy ("DOE") to place at least 10,000 megawatts ("MW") of non-hydroelectric renewable energy on public lands by 2015.[130] Since then, additional federal grants, policies, and incentives have resulted in solar and wind energy companies seeking and receiving significant numbers of permits for renewable energy projects on BLM

127. *Compare Platte River*, 876 F.2d at 114 n.6, 117–18 (equal consideration requires equal weight) *with Nat'l Wildlife Fed'n*, 912 F.2d at 1482 (equal consideration does not require equal weight).

128. *See, e.g.*, Hadassah M. Reimer & Sandra A. Snodgrass, *Tortoises, Bats, and Birds, Oh My: Protected-Species Implications for Renewable Energy Projects*, 46 IDAHO L. REV. 545, 579 (2009).

129. *See, e.g.*, U.S. Dep't of Energy, *20% Wind Energy by 2030*, NAT'L RENEWABLE ENERGY LAB. 6 (2008), *available at* http://www.nrel.gov/docs/fy08osti/41869.pdf [hereinafter *20% Wind Energy by 2030*] (discussing enactment of production tax credit ("PTC") for wind energy in 1992 and subsequent expirations and extensions of the PTC); *Federal Incentives/Policies for Renewables and Efficiency: Renewable Electricity Production Tax Credit (PTC)*, DATABASE OF STATE INCENTIVES FOR RENEWABLES & EFFICIENCY, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=US13F (last updated June 3, 2011) (discussing history and provisions of PTC, which grants a per-kilowatt-hour tax credit for electricity generated by qualified energy resources and sold by the taxpayer to an unrelated person during the taxable year).

130. Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594, 660 (2005) (codified as amended in scattered sections of 16 U.S.C.A. and 42 U.S.C.A.); Glennon & Reeves, *infra* note 142, at 111.

and other public lands.[131] Moreover, the American Recovery and Reinvestment Act of 2009 ("ARRA") allocated over $16 billion to the DOE to invest in renewable and other clean energy technologies.[132] At the state level, over twenty states and the District of Columbia have enacted "renewable portfolio standards" ("RPSs"), which require utilities in the state to generate a certain percentage of power from renewable energy sources.[133] For example, California requires 33 percent by 2030, and New York requires 24 percent by 2013.[134] The remainder of this part discusses wind and solar technologies, and the conflicts that have arisen between such development and animal species and their habitat.[135]

### *A. Wind Energy*

The U.S. ranks second behind China in installed, land-based wind energy capacity, but, as of June 2010, wind represented only about 2% of the country's electric energy supply. The wind harnessed to make power from a turbine is formed by a combination of factors, including the uneven heating of the earth's atmosphere, the shape of the earth's surface, and the earth's rotation, which combine to form varying wind patterns across the earth.[136] This wind pushes the blades of a turbine, which in turn spins a shaft connected to a generator.[137] The generator sends energy down the shaft and into the energy system.[138] Wind turbines can be used on a small scale to power individual homes or businesses, but much of the focus for wind turbine use today is on creating larger, utility-scale wind installations, commonly referred to as "wind farms."

A 2010 study by DOE's National Renewable Energy Laboratory ("NREL") found that overland wind energy resources in the contiguous

131. Glennon & Reeves, *infra* note 142, at 111–12 (discussing additional federal and state incentives and policies to promote wind and solar energy).
132. *See* American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 140–41 (2009).
133. *States with Renewable Portfolio Standards*, U.S. DEP'T OF ENERGY, http://apps1.eere.energy.gov/states/maps/renewable_portfolio_states.cfm (last updated June 16, 2009) (listing states and percentages); Kline, *infra* note 186, at 391.
134. *See States with Renewable Portfolio Standards*, *supra* note 133.
135. Some of the statistics and case law discussion in this part come from a more extensive article by the author on renewable energy. *See* Alexandra B. Klass, *Renewable Energy and the Public Trust Doctrine*, U.C. DAVIS L. REV. (forthcoming 2012).
136. *How Wind Turbines Work*, U.S. DEP'T OF ENERGY, http://www1.eere.energy.gov/wind/wind _how.html (last updated Nov. 18, 2011).
137. *Id.*
138. *Id.*

48 states could generate 37 billion MW-hours of electrical power per year, equal to roughly 10 times the current electrical power usage in the continental United States.[139] Another NREL study focused on offshore wind resources and estimated that resource at more than 4,000 gigawatts ("GW"), or roughly four times the generating capacity currently carried on the U.S. electric grid.[140] As of September 2010, the top five states for installed wind power capacity were Texas (10,135 MW), Iowa (3,675 MW), California (2,518 MW), Minnesota (2,432 MW), and Washington (2,356 MW).[141]

Efforts to use wind power to meet state renewable energy goals and reduce dependence on fossil fuels is complicated by the fact that wind power is extremely land intensive. As a result, such development can have significant adverse impacts on plant and animal species habitat, resulting in avian deaths, and interfering with open space and wilderness values. For instance, some studies report that a wind farm producing 1,000 MW of power requires at least 46,000 acres of land, compared to 640–1,280 acres of land for a coal or nuclear plant to produce the same amount of power.[142] As a result, the habitat disturbance impacts of wind power development are significant, resulting from the footprint of the turbines, support facilities, access roads and utility connections, construction activity, and vehicle traffic over a much larger area. Regulators are particularly concerned that habitat disturbance will adversely impact the endangered Desert Tortoise in the Mojave Desert, as well as the Greater

139. *See* Nat'l Renewable Energy Lab., *Estimates of Windy Land Area and Wind Energy Potential, by State, for Areas >= 30% Capacity Factor at 80m*, WIND POWERING AM. (Apr. 13, 2011), *available at* http://www.windpoweringamerica.gov/pdfs/wind_maps/wind_potential_80m_30percent.pdf. An earlier Department of Energy study estimated that the U.S. has more than 8,000 GW of available land-based wind resources. *20% Wind Energy by 2030*, *supra* note 129, at 8.

140. U.S. Dep't of Energy, *Assessment of Offshore Wind Energy Resources for the United States*, NAT'L RENEWABLE ENERGY LAB. 4 (June 2010), *available at* http://www.nrel.gov/docs/fy10osti/45889.pdf.

141. *Industry Statistics*, AM. WIND ENERGY ASS'N, http://awea.org/learnabout/ industry_stats/index.cfm (last updated Aug. 4, 2011).

142. Mike Hightower, *Renewable Energy Development in the Southwest: Sustainability Challenges and Directions* (Oct. 22, 2009), *available at* http://www. swhydro.arizona.edu/renewable/presentations/thursday/hightower.pdf; Robert Glennon & Andrew M. Reeves, *Solar Energy's Cloudy Future*, 1 ARIZ. J. OF ENVTL. L. & POL'Y 91, 103 (2010) (discussing intensive land use nature of solar and wind power). Other estimates for the acreage required per megawatt of wind power are much higher. These comparisons, however, are far from perfect because the acreage amounts for traditional energy development do not include the massive amounts of land necessary to extract coal, or store nuclear waste and the environmental externalities associated with the full life cycle of coal or nuclear power generation.

Sage Grouse in the Interior West and Plains States, which is a candidate species for listing under the Endangered Species Act.[143]

Furthermore, once the wind turbine is operational, the rotating blades pose a significant risk to avian species, such as eagles, birds, and bats. During the summer of 2010, BLM suspended issuing wind permits on public land in California and other western states after wildlife officials cited conflicts with federal laws protecting eagles, which may be adversely impacted by the proposed projects.[144] In Hawaii, the tension between wind energy and preservation of endangered species is even more heightened. Hawaii is the state in the nation most dependent on fossil fuels, and to address that, the state has enacted a RPS that requires 20 percent of their electricity to come from renewable sources by the end of 2020, and a non-binding RPS of 40 percent by 2030.[145] At the same time, the state has the country's most diverse wildlife population, and is also "the bird extinction capitol of the world."[146] Of the 113 unique bird species that once lived in the state, 73 have gone extinct, and 33 of the remaining species are endangered.[147] Thus, there is significant concern over an existing 20-turbine wind farm on Maui, along with a proposed expansion of that facility and the construction of other facilities, because of their impact on several endangered species, including the Hawaiian Goose, Hawaiian Hoary Bat, and endangered waterfowl.[148]

As a result of growing concern regarding the impact of wind turbines on both ground-based and avian species, FWS in February 2011 released two draft documents containing guidelines designed to provide agency employees, developers, other federal agencies, and state organizations with information on site selection, and other decision-

143. *See Greater Sage-Grouse*, U.S. FISH & WILDLIFE SERV., http://www.fws.gov/mountain-prairie/species/birds/sagegrouse/ (last updated May 25, 2011); Reimer & Snodgrass, *supra* note 128, at 561 (stating that despite the fact the Greater Sage-Grouse is not currently on the endangered species list, it "poses one of the greatest concerns for wind energy developers in the western United States because of its prevalence in areas with the greatest potential for wind energy development."); Jim Robbins, *Safeguarding Sage Grouse and Their Elaborate Courtship Dance*, N.Y. TIMES (Feb. 7, 2011), http://www.nytimes.com/2011/02/08/science/08bird.html?_r=1.

144. Noaki Schwartz & Jason Dearen, *Wind Farms on Public Land Stymied by Eagle Concerns, Radar Interference*, MINNEAPOLIS STAR TRIB., Dec. 13, 2010.

145. Laura Peterson, *Species-rich Hawaii Poses Unique Challenges for Wind Power Industry*, LAND LETTER, Feb. 24, 2011.

146. *Id.*

147. *Id.*

148. *Id.*

making for wind energy facilities to avoid and minimize impacts on fish, wildlife, plants, and habitat.[149] The first document, *The Draft Voluntary, Land-Based Wind Energy Guidelines*, was developed for industry to avoid and minimize impacts to federally protected migratory birds, bats, and other impacted wildlife, resulting from site selection, construction, operation, and maintenance of land-based wind energy facilities.[150] The second document, *The Draft Eagle Conservation Plan Guidance*, was developed to provide interpretive guidance to wind developers, FWS biologists, and others in applying regulatory permit standards under the Bald and Golden Eagle Protection Act and other federal laws.[151]

In California, which contains significant BLM lands suitable for wind development, there have been collaborative efforts between BLM and the state to move forward aggressively with wind energy development while also coordinating efforts to protect land, avian species, and habitat. For instance, BLM, the California Department of Fish and Game, the California Energy Commission, and FWS have created a Renewable Energy Action Team ("REAT") to develop a Desert Renewable Energy Conservation Plan for California.[152] A notice of intent was published in November 2009, and a draft map identifying areas primarily for conservation and areas more suitable for development was published in March 2009.[153] The Interior Department and the State of California also entered a Memorandum of Understanding in 2009, regarding renewable energy development, including wind energy development on BLM lands in California that includes collaboration among numerous federal and state agencies governing land, species, and energy.[154]

Moreover, with regard to offshore wind development, the Outer-Continental Shelf Lands Act and Coastal Zone Management Act requires the federal government to take state concerns regarding environmental protection, including animals, into account as shown in Part II. One major offshore wind project, the Cape Wind project off the coast of Massachusetts, has received numerous federal and state approvals to go forward, despite considerable opposition by local groups concerned about aesthetic and other harms associated with the project.[155] Although

149. *See Wind Energy Development Information*, U.S. FISH & WILDLIFE SERV., http://www.fws.gov/windenergy/index.html (last updated Sept. 20, 2011).

150. *Id.*

151. *Id.*

152. *See Energy Resources: California*, BUREAU OF LAND MGMT., http://www.blm.gov/ca/st/en/prog/energy.html (last updated Dec. 23, 2011).

153. *Id.*

154. *Id.*

155. *See, e.g.*, Ten Taxpayers Citizen Grp. v. Cape Wind Assocs., 373 F.3d 183 (1st Cir. 2004) (finding that in federal authority over approvals for the Cape Wind project, Congress had "retained for the federal government the exclusive power to authorize or

Massachusetts gave the required state approvals for the Cape Wind project, it has continued to work with the federal government, including the Federal Bureau of Ocean Energy Management, Regulation and Enforcement ("BOEMRE") within the Interior Department regarding offshore wind resources generally. In May 2011, as a result of state concerns associated with marine habitat, fishing, and shipping, BOEMRE reduced by more than half the area under consideration for wind energy leasing on the Outer Continental Shelf off the coast of Massachusetts.[156] Such action illustrates the impact of laws like the Outer-Continental Shelf Lands Act and the Coastal Zone Management Act on federal action and the increased authority they give to states concerned about localized adverse impacts of energy development, including impacts on marine animals.

Turning to the courts, concerns over the impact of wind turbines on birds and bats have led to litigation by environmental groups.[157] For instance, in *Center for Biological Diversity v. FPL Group*,[158] the plaintiff environmental group sued the owners and operators of wind turbines in the Altamont Pass Wind Resource Area in Alameda County and Contra Costa County, California, one of the largest and oldest wind farms in the United States. Between 1981 and 2005, Alameda County issued 46 use

prohibit specific uses of the seabed beyond three miles from shore"); Alliance to Protect Nantucket Sound, Inc. v. U.S. Dep't of the Army, 288 F. Supp. 2d 64 (D. Mass. 2003) (confirming authority of U.S. Army Corps of Engineers to put the tower in place for Cape Wind project); Town of Barnstable v. Cape Wind Assocs., 2010 WL 2436837 (Mass. Super. Ct. 2010) (finding that the Secretary did not act in an arbitrary and capricious manner in issuing a final environmental impact report certificate because "[t]he Secretary's failure to analyze the potential impacts of the Wind Farm was rationally based on a legally correct determination that MEPA jurisdiction over the Project does not extend into federal waters"); *Secretary Salazar Announces Approval of Cape Wind Energy Project on Outer Continental Shelf off Massachusetts*, U.S. DEP'T OF THE INTERIOR (Apr. 28, 2010), http://www.doi.gov/news/doinews/Secretary-Salazar-Announces-Approval-of-Cape-Wind-Energy-Project-on-Outer-Continental-Shelf-off-Massachusetts.cfm; Press Release, U.S. Dep't of the Interior, Secretary Salazar Approves Seventh Large-Scale Solar Energy Project on U.S. Public Lands (Nov. 4, 2010), *available at* http://www.doi.gov/news/pressreleases/Secretary-Salazar-Approves-Seventh-Large-Scale-Solar-Energy-Project- on-US-Public-Lands.cfm.

156. *See* Martha Kessler, *U.S. Agency Cuts by Half Potential Areas for Wind Energy Off Massachusetts Coast*, 42 ENVT. REP. 982 (May 6, 2011).

157. Although the Cape Wind project off the coast of Massachusetts has resulted in numerous lawsuits, the claims have focused more on the potential adverse aesthetic impacts of the project rather than direct impacts on animals, and thus the Cape Wind lawsuits will not be discussed in detail here. *See* Alliance to Protect Nantucket Sound, Inc. v. Energy Facilities Siting Board, 932 N.E.2d 787 (Mass. Sup. Ct. 2010).

158. Ctr. for Biological Diversity, Inc. v. FPL Grp., 83 Cal. Rptr. 3d 588 (Cal. Ct. App. 2008).

permits for operation of more than 5,000 wind turbine generation facilities over a 40,000 acre area.[159] Because of the age of many of the wind turbines, plaintiffs alleged that the turbines were obsolete and, more important for purposes of the litigation, much more dangerous to eagles, hawks, falcons, owls, and other raptors and non-raptors than modern turbines.[160] In its complaint, the plaintiffs alleged that since the 1980s, the generators had killed tens of thousands of birds, including between 17,000 and 26,000 raptors (including more than a thousand Golden Eagles and thousands of hawks).[161]

Although the initial complaint in 2005 alleged numerous causes of action, by the time the case reached the California Court of Appeals, the only issue remaining was whether the defendants' alleged destruction of wildlife violated the state public trust doctrine.[162] On that issue, the court of appeals held that the public trust doctrine in California applies to wildlife in general and is not limited to tidelands or navigable waters, as the defendants attempted to argue.[163] The court of appeals also held that members of the public can enforce the public trust doctrine.[164] The court not only found that "[t]he concept of a public trust over natural resources unquestionably supports exercise of the police power by public agencies," but that "the public trust doctrine also places a *duty* upon the government to protect those resources."[165] However, because the obligation to uphold the doctrine is on the government, not on private parties who had been permitted to act, the plaintiffs' lawsuit against the defendant wind farm operators in this case could not go forward.[166] Instead, the plaintiffs should have brought their public trust doctrine claim against the county authorities that permitted the wind turbines, and the time for bringing such an action had long since passed.[167]

The court reasoned that the plaintiffs should not be allowed to "bypass" the expertise that had been brought to bear on the subject of wind power by the state and county agencies involved in the permitting and

159. *See id.* at 591–92. As of 1995, the Altamont Pass wind farm together with wind farms in Tehachapi (southeast of Bakersfield) and San Gorgonio (near Palm Springs, east of Los Angeles) produced 95% of wind energy in California and 30% of the entire world's wind-generated electricity. *See Overview of Wind Energy in California*, CAL. ENERGY COMM'N, http://www.energy.ca.gov/wind/overview.html (last modified Aug. 15, 2011).

160. *See Ctr. for Biological Diversity, Inc.*, 83 Cal. Rptr. 3d at 592.

161. *Id.*

162. *See id.*

163. *See id.* at 595–97.

164. *See id.* at 600.

165. *Id.* at 601.

166. *Id.* at 602.

167. *See id.* at 606.

environmental review proceedings.[168] It is at this point in the opinion that the court focused on the importance of renewable energy development. The court stated that there "unquestionably is a strong public interest in utilizing wind power as a source of energy" and cited both federal and state law designed to "foster the development of wind power" and "to recognize the importance of wind power as a clean, renewable source of energy."[169] The court detailed the efforts of the county board and other agencies to "strike a balance between the generation of clean renewable energy with wind turbines and the protection of raptors and other birds adversely affected by the turbines."[170] Thus, according to the court, state and local governments have an obligation under the public trust doctrine to take the concerns surrounding wildlife and natural resources into account, but it was not for the courts "to perform an ongoing regulatory role as technology evolves and conditions change" beyond "exercising oversight over the administrative process and ensuring that proper standards are applied."[171] Thus, the court recognized the important policies in conflict in the case—wildlife protection and renewable energy development—and deferred to the state and county authorities to strike the right balance between the two.

In a 2009 case involving wind energy and wildlife, *Animal Welfare Institute v. Beech Ridge Energy LLC*,[172] the U.S. District Court for the District of Maryland considered a claim by the plaintiff environmental group to enjoin construction and operation of a wind energy project in West Virginia consisting of 122 turbines along 23 miles of Appalachian mountain ridgeline on the grounds that the project would result in an unlawful "take" of endangered Indiana bats under the Endangered Species Act.[173] In finding the defendant had violated the Act and partially granting the plaintiff's request for an injunction, the court began its opinion by stating that this was a case "about bats, wind turbines, and two federal policies, one favoring protection of endangered species and the other encouraging development of renewable energy resources."[174] In a lengthy analysis, the court detailed the purpose and provisions of the

168. *Id.* at 603.
169. *Id.* at 604.
170. *Id.*
171. *Id.* at 605.
172. 675 F. Supp. 2d 540 (D. Md. 2009).
173. *Id.* at 542, 548.
174. *Id.* at 542.

Endangered Species Act and the many ways in which the defendant had ignored evidence of the likely impact on the bats and failed to comply with the Act. The court noted that the project would cost over $300 million to build and would produce 186 MW of electricity, enough to power 50,000 West Virginia households, and would operate for a minimum of twenty years.[175]

Despite these benefits of the project, the court found that the Endangered Species Act's citizen suit provision allowed the plaintiffs to seek relief based on wholly-future violations of the statute, even where no past violation had occurred, based on the statutory language as well as Congress's express intent, in enacting the law, "to protect and conserve threatened and endangered species, whatever the cost."[176] After detailing all the testimony presented and enjoining all operation of wind turbines presently under construction, except during the winter period when bats would not be at risk, the court returned to the policy conflict between promoting renewable energy and protecting the bats.[177] The court found that Congress, in enacting the Endangered Species Act, "has unequivocally stated that endangered species must be afforded the highest priority."[178] At the same time, the court recognized that "Congress has strongly encouraged the development of clean, renewable energy, including wind energy."[179] The court then stated that the "two vital federal policies at issue in this case are not necessarily in conflict."[180] Instead, according to the court, "the tragedy of this case" was that the defendants disregarded advice from FWS and also failed to take advantage of options in the Endangered Species Act itself "to allow their project to proceed in harmony with the goal of avoidance of harm to endangered species."[181] The court concluded by stating that "[t]he development of wind energy can and should be encouraged, but wind turbines must be good neighbors."[182]

These cases are only two examples of the tensions that have arisen, and that will continue to arise, between wind energy and animals. Notably, courts are very aware of the tensions that exist between the Endangered Species Act, or the public trust doctrine, on the one hand, and federal and state policies promoting renewable energy, including wind energy, on the other. Thus, the Endangered Species Act can be a considerable

175. *Id.* at 548–49.
176. *Id.* at 561 (citing Tenn. Valley Auth. v. Hill, 437 U.S. 153, 184 (1978)).
177. *See id.* at 581.
178. *Id.*
179. *Id.*
180. *Id.*
181. *Id.*
182. *Id.* at 583.

check on wind energy development, just as it is for traditional energy development. Whether the Endangered Species Act provides too much or too little of a check, however, is unclear. Certainly, one can argue that we should protect a much wider range of animals and their habitat than that covered under the Endangered Species Act, and that other, related open-space, aesthetic, and wildlife concerns should receive protection under the law. On the other hand, the Endangered Species Act may be too heavy a weapon in some circumstances where there are unavoidable conflicts between significant wind energy development and animals. At this point, Congress has not seen fit to attempt to set a balance between species preservation and wind energy or even to direct the agencies regarding the factors to consider in setting that balance. Whether Congress should do this and, if so, the manner in which it might proceed is discussed later in Part IV.

### *B. Solar*

Although the amount of solar energy generated in the United States is currently less than one percent of U.S. electric power,[183] many state and local governments are attempting to facilitate the increased development of solar energy. Thus far, both the federal government and state governments have created incentive programs, grants, and loans to promote its use.[184] Solar energy is harnessed commercially primarily through the use of two main technologies: concentrating solar power ("CSP") and photovoltaic ("PV").[185] As of 2011, the total CSP and PV electric power capacity installed in the United States was approximately 3,650 MW.[186] CSP converts solar power into thermal energy by using

183. *See Renewable Energy Consumption and Electricity Preliminary Statistics 2009*, U.S. ENERGY INFO. ADMIN. (Aug. 2010), *available at* http://www.eia.gov/cneaf/alternate/page/renew_energy_consump/pretrends09.pdf (indicating that solar energy made up a 1 percent market share for total consumer energy in 2009).

184. *See* Alexandra B. Klaas, *Property Rights on the New Frontier: Climate Change, Natural Resource Development, and Renewable Energy*, 38 ECOLOGY L.Q. 63, 66 (2011).

185. *See Solar Technology and Products*, SOLAR ENERGY INDUS. ASS'N, http://www.seia.org/cs/solar_technology_and_products (last visited Jan. 11, 2011).

186. *See Facts on America's Solar Industry*, SOLAR ENERGY INDUS. ASS'N (Jan. 23, 2102), *available at* http://www.seia.org/galleries/pdf/factsheet_solar_industry_facts.pdf; *see also* Craig M. Kline, *Solar*, *in* THE LAW OF CLEAN ENERGY 391, 392 (Michael B. Gerrard ed., 2011).

mirrors or lenses to concentrate radiation onto a receiver.[187] Because the most cost-efficient CSP plants are often large, they are typically associated with energy suppliers to utilities or with utilities themselves.[188] By contrast, a PV system, the most common method of using solar power, converts sunlight into energy when solar radiation hits a semiconductor, releasing electrons.[189] PV systems, which allow for solar energy production on a smaller level, generally consist of ground mounted or roof mounted panels, which contain several individual solar cells or a single thin layer.[190]

In October 2010, Interior Secretary Ken Salazar approved the first large-scale solar energy project on public lands.[191] As of December 2010, nine such projects had been approved on BLM lands in California and Nevada through the Interior Department's "fast-track initiative."[192] These decisions authorize BLM to grant rights-of-way to use public lands for solar energy for decades, so long as permit conditions are met.[193] Also in December 2010, Interior Secretary Salazar and Energy Secretary Steven Chu announced the results of a comprehensive environmental analysis to identify proposed "solar energy zones" on public lands in six western states most suitable for "environmentally-sound, utility-scale

187. *Concentrating Solar Power: Utility-Scale Solutions For Pollution-Free Electricity*, SOLAR ENERGY INDUS. ASS'N (Sept. 29, 2009), *available at* http://www.seia.org/galleries/pdf/factsheet_csp.pdf.

188. *See Solar Technology and Products*, SOLAR ENERGY INDUS. ASS'N, http://www.seia.org/cs/solar_technology_and_products (last visited Jan. 11, 2011).

189. *Photovoltaic Solar Technology: Creating Electricity from Sunlight*, SOLAR ENERGY INDUS. ASS'N (Feb. 4, 2010), *available at* http://www.seia.org/galleries/pdf/SEIA_PV_Factsheet.pdf.

190. *See* U.S. Dep't of Energy, *Small Solar Electric System Arrays*, ENERGY SAVERS, http://www.energysavers.gov/your_home/electricity/index.cfm/mytopic=10800 (last updated Feb. 9, 2011).

191. *See* Press Release, U.S. Dep't of the Interior, Salazar Green-Lights First-Ever Solar Energy Projects on Public Lands (Oct. 5, 2010), *available at* http://www. doi.gov/news/pressreleases/Salazar-Green-Lights-First-Ever-Solar-Energy-Projects-on-Public-Lands.cfm.

192. *See* Press Release, U.S. Dep't of the Interior, Salazar, Chu Announce Next Step in Nation's March Toward Renewable Energy (Dec. 16, 2010), *available at* http://www.doi.gov/news/pressreleases/Salazar-Chu-Announce-Next-Step-in-Nations-March-toward-Renewable-Energy-Future.cfm [hereinafter December 2010 Press Release]; *DOI Approves Ninth Commercial Solar Project on Public Lands*, U.S. DEP'T OF ENERGY (Jan. 12, 2011), http://apps1.eere.energy.gov/news/news_detail.cfm/news_ id=16641 (reporting on Secretary Salazar's approval of construction of a 110 MW solar power plant on BLM lands in Nevada, the Crescent Dunes project, that will be capable of powering 75,000 homes and will begin construction in mid-2011).

193. *See* Press Release, U.S. Dep't of the Interior, Salazar Approves Fifth-Ever Solar Project on Public Lands (Oct. 20, 2010), *available at* http://www.doi.gov/news/pressreleases/Salazar-Approves-Fifth-Solar-Project-on-Public-Lands.cfm [hereinafter October 2010 Press Release].

solar energy production."[194] Under the environmental study's preferred alternative, BLM has established the new solar energy program to standardize, streamline, and speed up the authorization process and establish mandatory design features for solar energy projects on BLM lands.[195] Moreover, the solar energy zones, which were identified in a Draft Solar Programmatic Environmental Impact Statement, were areas that were identified as the most appropriate for solar development and that contained the fewest environmental and resource conflicts.[196]

Development of solar energy is critical to the efforts of many western states, such as California, to meet their RPS requirements.[197] In 2010, California Governor Arnold Schwarzenegger signed a Memorandum of Understanding with Interior Secretary Ken Salazar to speed up permitting of renewable energy projects in the state. State and federal agencies in California, Nevada, Arizona, Utah, Texas, New Mexico and Colorado are extremely supportive of the significant number of applications for utility-scale solar production, totaling 6,800 MW of potential production capacity.[198] According to BLM, it established the "fast-track" process for solar energy, as well as other forms of renewable energy on public lands, in order to diversify the country's energy portfolio "in an environmentally responsible manner."[199]

Despite the promise of solar energy, environmentalists and others who are often the strongest proponents of renewable energy have raised significant concerns regarding large-scale development of solar power on public lands because of the land-intensive nature of solar energy and the inevitable conflict between solar plants and critical habitat for desert species, as well as open space values and desert vistas. Research from 2009 indicates a CSP solar plant requires approximately 6,000 acres to produce 1,000 MW of power, compared to 640–1,280 acres for a coal fired

194. December 2010 Press Release, *supra* note 192.
195. *Id.*
196. *See* Ari Natter, *Interior, Energy Departments Identify "Solar Energy Zones" in Six Western States*, 41 ENV'T REP. 2850 (Dec. 31, 2010).
197. *See supra* notes 191–96.
198. *See Secretary Salazar, Gov. Schwarzenegger Sign Initiative to Expedite Renewable Energy Development*, BUREAU OF LAND MGMT. (Oct. 12, 2009), http://www.blm.gov/wo/st/en/info/newsroom/2009/october/NR_10_12A_2000.html; *Concentrating Solar Power Funding Opportunity Announcement*, U.S. DEP'T OF ENERGY (May 25, 2007), http://apps1.eere.energy.gov/news/progress_alerts.cfm/pa_id=75.
199. *BLM Concentrating on Renewable Energy Projects That Could Meet Stimulus Funding Deadline*, BUREAU OF LAND MGMT. (Dec. 29, 2009), http://www.blm.gov/wo/st/en/info/newsroom/2009/december/0.html.

power plant or nuclear plant to produce the same amount of power.[200] Other sources of information, primarily from solar permit applications, suggest that it can require as much as 10,000 acres of land to produce 1,000 MW of power from a CSP plant.[201] Moreover, many CSP plants require a significant amount of water to operate, placing additional pressures on desert areas in the southwest that already struggle to meet water needs for consumption, industry, and species protection.[202]

For instance, the Mojave Desert in southwestern California is an ideal location for large-scale solar because of the amount of solar radiation available. However, it also serves as a critical habitat for endangered desert tortoises and is home to big-horn sheep and rare plants.[203] This has resulted in disputes among environmental groups as they debate how to reconcile the public interest in increasing renewable solar energy with the longstanding effort to preserve desert landscapes.[204] Beyond the desert tortoise, which has received the most attention, state and federal officials and environmental groups have expressed concern about the impact of certain large-scale solar projects in California on habitat for the flat-tailed horned lizard, which is not a listed species but has been proposed for listing in the past and subject to litigation.[205] Moreover, the significant water consumption of these solar plants will place a substantial strain on aquatic species and other animals in the desert.

Because solar developers and the Interior Department significantly altered some of the proposed projects to respond to concerns by

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200. Hightower, *supra* note 142; Glennon & Reeves, *supra* note 142, at 103 (discussing intensive land use nature of CSP plants); John Copeland Nagle, *See The Mojave!*, 89 OR. L. REV. 1357, 1381 (2011) (discussing competing perspectives regarding the Mojave Desert).

201. *See* Reimer & Snodgrass, *supra* note 128, at 572 (citing draft environmental impact statement prepared for Ivanpah Solar Electric Generating System in California for proposition that project will require 4,073 acres; 6.4 square miles to produce 400 MW, or approximately 10.2 acres per MW).

202. *See* Glennon & Reeves, *supra* note 142, at 96–103 (discussing water-intensive nature of certain types of CSP plants and controversies over such water use for projects on BLM and private lands); Todd Woody, *Solar Developer Abandons Water Plans*, N.Y. TIMES, Nov. 16, 2009 (discussing how water has emerged as a contentious issue for dozens of large-scale solar power plants in the southwest desert and the decreased efficiency of current dry-cooling technology as opposed to wet cooling).

203. *See, e.g.*, Todd Woody, *It's Green Against Green in Mojave Desert Solar Battle*, YALE ENV'T 360 (Feb. 1, 2010), http://e360.yale.edu/content/feature.msp?id= 2236; Ina Jaffe, *A Renewable Energy Debate Heats up in the Mojave*, NAT'L PUB. RADIO (Apr. 23, 2010), http://www.npr.org/templates/story/story.php?storyId=126173547; Felicity Barringer, *A Soft Spot for Public Lands*, N.Y. TIMES, Oct. 6, 2010; Felicity Barringer, *Environmentalists in a Clash of Goals*, N.Y. TIMES, Mar. 24, 2009.

204. *See* Glennon & Reeves, *supra* note 142, at 116–20 (discussing disputes between environmental groups and renewable energy companies, and between national environmental organizations and their local chapters, over solar projects proposed on BLM lands in the southwest, including in the Mojave Desert). *See also* Nagle, *supra* note 200.

205. *See* Reimer & Snodgrass, *supra* note 128, at 574–75.

environmental groups such as the Natural Resources Defense Council, Defenders of Wildlife, and the Wilderness Society, the large-scale solar projects the Interior Department approved in late 2010 received at least lukewarm support from these groups. Some of the projects significantly reduced their footprint (the Tessera Solar project reduced its footprint from 8,230 acres to 4,604 acres and the BrightSource Energy Ivanpah CSP project reduced its footprint by 12 percent) and included greater commitments to mitigate impacts on desert tortoises and other species and reduce water use.[206] Nevertheless, many local environmental groups remain opposed to these projects and are concerned that the push for renewable energy, while a worthy goal, will overshadow the critical need to preserve desert landscapes for wildlife habitat.[207] Indeed, in December 2010, the Sierra Club sued the State of California for its approval of the Calico solar project in the Mojave Desert because of its location in the middle of a desert tortoise habitat.[208] This followed a lawsuit in November 2010 by the Santa Clara County Audubon Society and other environmental groups against San Benito County; allegedly the county conducted inadequate environmental review under state law for a proposal to build a million pole-mounted solar panels on a few thousand acres in Panoche Valley, California, which is core habitat for the endangered blunt-nosed leopard lizard, San Joaquin kit fox, and giant kangaroo rat.[209] Other environmental groups are opposed to the "fast track" process, arguing that it results in rushed approvals and "shoddy" environmental analyses.[210]

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206. *See, e.g.*, Barringer, *Solar Power Plants to Rise on U.S. Lands*, N.Y. TIMES, Oct. 5, 2010 (discussing changes made to solar plants in the desert as a result of environmental objections); October 2010 Press Release, *supra* note 193 (same); Glennon & Reeves, *supra* note 142, at 116–18 (discussing Ivanpah project).

207. *See* Glennon & Reeves, *supra* note 142, at 116–20.

208. *See* Debra Kahn, *Despite Permitting Shortcuts, California Projects Still Hit Hurdles*, CLIMATEWIRE, Jan. 3, 2011. Although the California Supreme Court dismissed the Sierra Club's legal challenges to the project, other lawsuits against the project are currently pending. *See* Greg Wannier, *Green Versus Green: Litigation for and Against Solar Power in California*, COLUMBIA LAW SCHOOL CLIMATE LAW BLOG (May 18, 2011), http://blogs.law.columbia.edu/climatechange/2011/05/18/green-vs-green-litigation-for-and-against-solar-power-in-california/.

209. *See* Petition for Writ of Mandate, Save Panoche Valley et al. v. San Benito Cnty., (2010) (No. 00-10-020); Erin Barrite, *Chapter Joins Suit Against Panoche Valley Solar Plant*, article in newsletter for *Entry Loma Prieta Chapter*, SIERRA CLUB (July/August 2011), http://lomaprieta.sierraclub.org/loma-prietan/story/action/chapter-joins-suit-against-panoche-valley-solar-plant/2895.

210. *See* Kahn, *supra* note 208.

## IV. SOME THOUGHTS FOR FUTURE RENEWABLE ENERGY DEVELOPMENT

Part III shows that government agencies, industry, and environmental groups are struggling with the desire to promote renewable energy development while at the same time protecting animals and their habitat. Each stakeholder has a different mission, statutory mandate, or objective. The Energy Department is focused on developing renewable energy in addition to traditional energy. The Interior Department is subject to a presidential directive to site renewable energy projects on public lands, and BLM and FWS within that department have their own supporting missions. BLM has played the leading role in using and managing public lands for renewable energy development, while at the same time complying with its "multiple use" and "sustained yield" mandate which includes habitat protection. FWS's mission is "to work with others to conserve, protect and enhance fish, wildlife and plants and their habitats for the continuing benefit of the American people."[211] Renewable energy developers have an incentive to achieve the highest energy production at the lowest cost, which includes working with environmental groups and regulatory agencies to minimize land use conflicts and permitting delays.

For their part, environmental groups are often split on the issue. Although they generally are all in favor of renewable energy development and species protection, when the two goals come into conflict, the groups are not all of one mind.[212] National groups and their local chapters have split over renewable energy projects in the desert.[213] This stands in contrast to the history of opposition toward many large-scale traditional

211. *About the U.S. Fish and Wildlife Service*, U.S. FISH & WILDLIFE SERV., http://www.fws.gov/help/about_us.html (last updated Apr. 20, 2010).

212. *See* Michael Levine, *Clean Energy Splits Environmentalists*, INTERISLAND WIND (May 20, 2010), *available at* http://www.interislandwind.com/App_Images/Clean%20Energy%20Splits%20Environmentalists.pdf (discussing splits between environmental groups on wind and solar projects in Hawaii); John Dillon, *Local Groups Step up Fight Against Wind Project*, VT. PUB. RADIO (Nov. 17, 2010), http://www.vpr.net/news_detail/89310/local-groups-step-up-fight-against-wind-projects/ (discussing local environmental group opposition to wind projects, reporting that "Vermont's environmental community is divided on wind development," and that despite the local protests, "[t]hree of the state's mainstream environmental organizations released a statement last month saying utility-scale wind needs to be a part of the state's energy mix."); Asher Price, *Environmental Community Split over Wind Farm*, AUSTIN AM.-STATESMAN, May 9, 2006 (discussing tension between siting of new wind farm in the Gulf of Mexico and migratory bird paths in the area and with regard to the split among environmental groups over the issue, stating that "if nothing else, the schism shows that the environmental community is far from monolithic, with some of the oldest environmental groups in the nation taking different sides.").

213. *See* Glennon & Reeves, *supra* note 142, at 116–21 (discussing disputes between environmental groups and renewable energy companies, and between national environmental organizations and their local chapters over solar projects proposed on BLM lands in the southwest, including in the Mojave Desert).

energy development projects, which commanded more uniformity of position among the nonprofit community, even if some groups were more active than others in certain disputes based on each group's mission and leadership. For instance, on its website page devoted to energy issues, the Natural Resources Defense Council has a strong statement about the benefits of renewable energy next to a photo of wind turbines against a blue sky and declares "[i]nvesting in clean energy is the surest way to create millions of new jobs and whole new industries that will provide an immediate boost to the U.S. economy. The result will be a big step forward in the fight against global warming and oil dependency."[214] While the wildlife page on the website contains references to threats to wildlife from traditional energy development, it does not mention any conflicts between wildlife and renewable energy.[215] As noted above, however, local chapters of the Sierra Club have filed lawsuits against certain solar projects and, understandably, groups like the Center for Biological Diversity, which have missions strongly focused on species protection and habitat, have also been prominent in this area.[216]

In the end, though, renewable energy developers, environmental groups, and state and federal governmental agencies are united in a position that renewable energy should be promoted to reduce GHG emissions and other forms of pollution associated with our longstanding dependence on traditional sources of energy. All of these groups also agree that siting renewable energy development in a manner that does not interfere unduly with species protection is beneficial as it meets environmental goals, reduces permitting costs and delays, and avoids lawsuits.

Despite the fact that the various stakeholders can agree on many issues, several key questions remain. How should Congress, agencies, and the courts reconcile these interests when they inevitably come into conflict? Simply because some in the environmental community may be

214. *See Energy*, NATURAL RES. DEF. COUNCIL, http://www.nrdc.org/energy/default.asp (last visited Oct. 30, 2011).

215. *See Wildlife*, NATURAL RES. DEF. COUNCIL, http://www.nrdc.org/wildlife/default.asp (last visited Oct. 30, 2011).

216. *See Our Mission*, CTR. FOR BIOLOGICAL DIVERSITY, http://www.biologicaldiversity.org/about/index.html (last visited Oct. 30, 2011); *see also* Scott Streater, *Renewable Energy: Interior Wind Farm Guidance Alienates Industry, Bird Advocates*, LAND LETTER, Feb. 17, 2011 (reporting that the American Bird Conservancy Vice President had likened the Obama administration's renewable energy policy of aggressively developing renewable energy on public lands to "the dam-building boom of the early 20th century, which wreaked havoc on aquatic ecosystems across the country.").

more willing to "go easy" on renewable energy development when it conflicts with animals and their habitat, can agencies embrace such a position under existing law? Should Congress give renewable energy more leeway with regard to adverse impacts on endangered species, scenic vistas, and other environmental values subject to federal protection because of the national need to develop renewable energy sources? Congress and agencies have made exceptions to environmental laws like NEPA in matters of national security; however, environmentalists severely criticize such decisions. Is this a situation where the ends (renewable energy development) justify the means (excusing non-compliance with existing environmental laws)?

These are difficult questions that do not have easy answers, although I provide some initial thoughts here for further consideration. First, current law does not allow giving renewable energy a "free pass" when particular wind, solar, or other renewable energy projects interfere with protected habitat or adversely impact endangered or other protected animal species. Although humans and animals as a group may benefit in the long run from reduced GHG emissions, the Endangered Species Act and other laws protecting animals and their habitat limit agency discretion to preference renewable energy and any exceptions must comply with existing law.[217] Starting from that position, the question then becomes what tools Congress, the President, and federal agencies may have available to attempt to promote renewable energy while reducing conflicts with animal species. To answer that question, it is helpful to look to what tools and mandates are available, as well as how they have fared in disputes over traditional energy development as detailed in Part II.

Congress, the President, and federal agencies have existing statutory and regulatory tools and mandates available, some of which require that agencies "consider" environmental impacts, including animal impacts, before going forward with a project while others place more limits on agency discretion. NEPA is an example of a statute that requires federal agencies to merely "consider" environmental impacts, including the impacts on species. Thus, if the procedural requirements are met, the agency can make the policy choice to preference energy over wildlife, or vice versa. The Federal Power Act requires FERC to give "weight" or "consideration" to wildlife concerns, as well as energy concerns, in licensing decisions, although, as shown above, courts disagree as to how

217. For instance, in order for any action, including a renewable energy project to "take" endangered species, the project proposer must obtain an "incidental take permit" under Section 10 of the Endangered Species Act which often results in the project proposer entering into a "habitat conservation plan" to minimize and mitigate the impacts of the taking. *See* 9 U.S.C. §§ 1538, 1539.

much "weight" or "consideration" is actually required.[218] The Endangered Species Act and the Coastal Zone Management Act go even further by allowing another agency (i.e., FWS) or a state, in some cases, to virtually stop an energy project if they determine in their discretion that impacts to species or state interests are significant. While the courts are often required to intervene if the permitting agency disregards the consulting agency or state, the statutes themselves transfer enough authority to the non-permitting agency or state to at least create a stronger argument for species protection over energy development. Thus, in situations where a renewable energy project triggers one or more of these laws (and many projects will trigger more than one), there is a mechanism for agencies to resolve the conflicts, some of which give agencies more discretion than others. In light of the various approaches in various statutes, it is not surprising that plaintiffs have focused most heavily on the Endangered Species Act when challenging renewable energy or traditional energy projects because these cases tend to exemplify instances where the permitting agency has the least authority to ignore species concerns in favor of energy concerns.

Upon consideration of the existing laws, the question then becomes whether Congress should enact new legislation covering certain renewable energy projects to give such projects more favorable treatment, regardless of competing environmental concerns, including animal and wildlife concerns. So far, of course, Congress has not created any new legislative mandates with regard to setting a balance between renewable energy development and wildlife. Congress has directed the Interior Department in the Energy Policy Act of 2005 to place a certain amount of renewable energy development on public lands but has so far been silent on how the agency should go about this mission and the level of adverse effects on wildlife that will be tolerated. Existing laws protecting species and the environment apply of course, so NEPA, the Endangered Species Act, and the Coastal Zone Management Act, for instance, can act as a check on the Interior Department in balancing energy needs and wildlife if endangered species or coastal zones are involved. Should Congress go further and attempt to set a balance as it did in the ECPA Amendments to the Federal Power Act? It's not clear at this point whether such action

218. *See supra* notes 97–127 and accompanying text (showing courts differing in their determination of how much weight FERC must give to wildlife under the ECPA Amendments to the Federal Power Act).

is necessary or desirable. Currently, the Interior Department is working with environmental groups, states, and industry to obtain more detailed information on the impacts of renewable energy on wildlife, experimenting with ways to avoid impacts, and has been willing, at least for now, to impose a moratorium on new wind permits in parts of California to address the problem. Moreover, the enactment of the ECPA Amendments to the Federal Power Act and the Coastal Zone Management Act were responses to decades of action by FERC and the Interior Department to pursue energy development while ignoring wildlife and other environmental concerns. Thus, we have a situation where the Endangered Species Act and, where applicable, the Coastal Zone Management Act and Outer Continental Shelf Lands Act can act as a powerful counterbalance, for better or for worse, to agency and private efforts to site large renewable energy projects on public and private lands; but where these laws do not apply, there is much less to limit agency discretion.

Today, it appears that the Interior Department is making an effort to take animal interests seriously in this process, working with states and environmental groups to limit impacts on species and otherwise work in a collaborative fashion. On the other hand, the agency may not always be so friendly to wildlife impacts if there is a change in administration or if the country's energy needs become more pressing. Many environmental groups are not happy with the level of wildlife protection the Interior Department is providing, although they may be less happy with whatever balance is ultimately struck by Congress. Ultimately, it seems that it may be too early for a clear congressional statement on such a balance, even if such a clear statement were politically feasible. Large-scale wind and solar projects are still few and far between on a national level, and more experimentation may be necessary to see if animal interests can be sufficiently protected in the process. If the agencies fail in that mission after further experimentation, looking to Congress may be at least a partial solution. Likewise, if current efforts to consider species and habitat pose too great a burden on siting needed for renewable energy projects, Congress can step in and give less weight to animal and habitat concerns if it wishes to encourage more renewable energy development.

So, whether it is the optimal approach or simply the reality of today, the fact is that the Interior Department has discretion in this area, cabined only by stand-alone environmental legislation such as NEPA or the Endangered Species Act or site-specific legislation such as the Coastal Zone Management Act. How should federal agency and state partners exercise that discretion? Part III discussed the Memorandum of Understanding between the Interior Department and the State of California on renewable energy, as well as the FWS guidelines on

wind energy. Are these appropriate mechanisms to address the conflict? Can such mechanisms, which create working relationships between agencies with overlapping authority on an issue, be a better approach than placing all authority within one agency and providing more specific direction?

In a forthcoming article in Harvard Law Review, Professors Jody Freeman and Jim Rossi address this issue of agency coordination and "shared regulatory space."[219] In that article, they explore the benefits and drawbacks of Congress splitting authority for regulation or requiring consultation among multiple federal agencies or among federal agencies and states, such as FWS consultation under the Endangered Species Act, state certification or approval under Section 401 of the Clean Water Act and the Coastal Zone Management Act, and in other areas of law, such as worker safety and financial regulation. They cite the benefits of such shared regulatory space, including: more information and increased expertise from competition between agencies, reduction of Congress's monitoring costs by creating inter-agency "fire alarms," and production of optimal compromises among lawmakers with different preferences. To promote these benefits, Congress splits authority between agencies with a mission some lawmakers prefer, such as energy development, and agencies with a mission other lawmakers prefer, such as wildlife protection.

In order to maximize the benefits of shared regulatory space, however, agencies must engage in significant coordination in order to minimize the drawbacks of shared regulatory space which include greater bureaucracy; increased confusion over which authority or regulations apply on the part of agencies, regulated parties, and the public; redundancy; and inconsistency of regulation. In the Freeman and Rossi article, the authors look to joint rulemaking, memoranda of understanding, and presidentially-directed coordination, such as when the Obama Administration directed multiple federal agencies to develop a strategy on carbon capture and sequestration and directed EPA and the U.S. Department of Transportation to set 2010 fuel efficiency standards. According to the authors, these methods of agency coordination, particularly joint rulemaking and memoranda of understanding (using the Interior Department's Memorandum of Understanding with California and other agencies regarding renewable energy as an example), allow the

219. *See* Jody Freeman & Jim Rossi, *Agency Coordination in Shared Regulatory Space*, 125 HARV. L. REV. (forthcoming 2012).

country to capture the benefits of shared regulatory space while minimizing the drawbacks.

Under this analysis, the Interior Department appears to be moving in the right direction by reaching out to states and other agencies to address wildlife impacts associated with renewable energy development as shown in Part III. Still, this approach is far from perfect. Ultimately, these memoranda of understanding are not binding, and if the Interior Department wishes to preference renewable energy development at the expense of animals or vice versa, it can probably do so under its statutory mission to pursue multiple use and sustained yield with regard to federal lands. The equation changes, of course, if endangered species or coastal areas are at issue, giving greater authority to FWS views or the states. However, in many cases involving large-scale renewable energy, coastal areas and endangered species are not implicated; but there still may be a significant impact on non-listed species or inland areas of concern to states, thus leaving the discretion to the Interior Department generally and BLM specifically.

Although it may be too early for Congress to make a policy choice balancing renewable energy development and protection of animals, it may not be too early for Congress to make a clear legislative statement that the Interior Department must consult with other federal agencies and states on a range of impacts to animals and other environmental and aesthetic impacts in siting renewable energy projects. In recent years, the Interior Department has undertaken such consultation with regard to endangered species under existing law, but Congress could go further and require such consultation for a broader range of species and impacts. In legislation, Congress could provide direction regarding how inter-agency consultation should take place, encourage memoranda of understanding between federal agencies or between federal agencies and states, and require the Interior Department to report to Congress on a regular basis with regard to the level of cooperation and the results of these efforts.

In the present statutory and regulatory environment, all stakeholders would be advised to participate in the inter-agency coordination activities that are taking place to date, as that may be where they can have the greatest influence on how to balance the competing interests. Stakeholders wishing to protect wildlife can resort to the courts when endangered species or coastal zones are involved, or when NEPA processes are flawed, and can learn from litigation surrounding traditional energy development and wildlife. In the absence of greater congressional direction on setting the balance, though, creating better agency decision-making and helping the agency chart a balanced course is probably the first order of business.

With regard to the current conflict over renewable energy development and wildlife, siting is, of course, the key, and that is where the agencies have placed a significant amount of emphasis in their guidance, agreements, and memoranda. Professor John Leshy has suggested several ways to reconcile competing uses on public lands in the area of renewable energy generally, and these ideas can be applied specifically to the conflict between renewable energy development and animals. He recommends: (1) requiring renewable energy projects to pay the government for use of federal lands based on the value of the energy produced and using that money for conservation programs on other public lands; (2) identifying those lands that would be preserved from energy development while actively encouraging the use of other, more appropriate lands, for such development; and (3) auctioning off some lands with time-limited permits and others in fee simple conditional with a reverter back into public ownership once the use ends and the land is reclaimed.[220]

Ultimately, federal agencies and Congress appear to have learned from the disputes of the past regarding energy development and animals. The statutory landscape is far more complicated than it was when many of the earlier disputes detailed in Part II were decided, and agencies today have better tools to document their decisions. That does not mean the agency always makes the right decision or sets the right balance. Indeed, some argue in court and in the press that the Interior Department and other agencies are failing to take animal and habitat interests into account in the current push for renewable energy development. Likewise, others argue that even the existing statutory protections for animals and state interests will prevent the nation from ever transitioning to a renewable energy-based economy because the permitting hurdles are too high, too lengthy, and too costly. Even some environmentalists will argue that species protection is irrelevant if climate change renders the planet uninhabitable for those species. Nevertheless, at least until climate-related disaster strikes the United States in a major way, or our energy needs become more dire, agencies, environmentalists, states, and other stakeholders will attempt to strike a balance and the historical disputes associated with traditional energy development along with new approaches toward inter-agency and agency-state cooperation can at least serve as a partial guide to resolving these disputes.

220. *See* John D. Leshy, *Federal Lands in the Twenty-First Century*, 50 NAT. RES. L.J. 111, 121 (2010).

## V. CONCLUSION

This essay considers the long-running conflict between energy development and animals in order to explore the current conflicts between renewable energy development, particularly wind and solar development, and animals. While environmental groups have in the past been fairly uniform in their skepticism or outright opposition to many aspects of traditional energy development such as coal, oil and gas, or hydropower, renewable energy elicits a much more mixed response. This is because of the potential for renewable energy to supplement or replace traditional energy development and avoid many of the adverse effects associated with such development. A review of disputes surrounding traditional energy development shows that, where a single agency has extensive discretion in balancing energy development and animals, energy development more easily prevails. In situations where Congress has transferred some of that agency authority to other agencies or states, however, courts are far more willing to second-guess the agency's decision to preference energy development. This essay concludes with a discussion of possible tools for considering the various interests in the context of renewable energy development and suggests that it may be too early to advocate for a strong congressional statement on the issue favoring one side or the other, and that further agency study, cooperative agreements, memoranda of understanding, and rulemaking should be used to refine site selection and other aspects of renewable energy development. In the meantime, Congress could require by statute that such inter-agency consultation as well as federal-state consultation take place, encourage memoranda of understanding and other agreements between federal agencies and between federal agencies and states, and require the Interior Department to report to Congress on its progress. In this way, BLM and other agencies with authority over renewable energy development can attempt to set a balance relying on a range of stakeholders and consistent with existing laws such as the Endangered Species Act. This would allow the agencies, environmental groups, and the public to work collaboratively while collecting data that may ultimately lead to a more precise determination by the Interior Department or Congress on whether a new balance between renewable energy development and protection of animals must be set or whether existing law provides a sufficient balance on its own.