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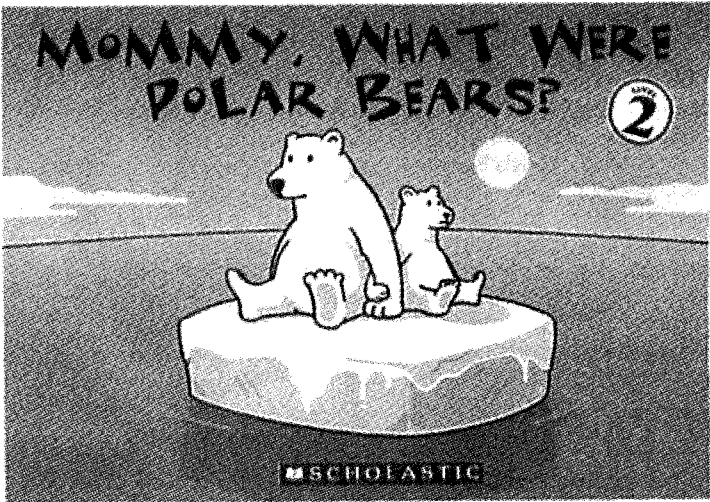
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The Endangered Species Act: A New Avenue for Climate Change Litigation?

Sarah Jane Morath*



Teddy Wayne & Mike Backs, *Top 10 Best Sellers of 2007*, Time Magazine 78 (Mar. 27, 2007).

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I. INTRODUCTION

Polar bears grace the cover of numerous wildlife calendars and magazines; they generate crowds at zoos and aquariums; they are popular stuffed animals; they even appear in soft drink commercials. Despite their fame, a time could come when polar bears no longer roam the Arctic. The cartoon above suggests that twenty years from now children will grow up in a world without this animal. While cartoons are intended to provoke laughter, the threat to the polar bear's existence is far from humorous, and the extinction of the polar bear could easily become a reality.

On January 9, 2007, the United States Fish and Wildlife Service ("FWS") published its proposed rule for listing the polar bear (*ursus maritimus*) as a threatened species under the Endangered Species Act ("ESA" or "Act").¹ The rule cites worldwide loss of sea ice, the polar bear's habitat, as the primary threat to this species.² Less than a month later, on February 7, the Intergovernmental Panel on Climate Change ("IPCC") published the first of four parts of its *Climate Change 2007* report, highlighting the causal link between human carbon dioxide emissions and climate change.³ In a press conference announcing the proposed listing of the polar bear, Secretary of the Interior Dirk Kempthorne expressed concern that polar bear "habitat may literally be melting," but continued to state that the "whole aspect of climate change is beyond the scope of the Endangered Species Act."⁴ However, when Dale Hale, the Director of the FWS, was asked whether the FWS saw global warming as the cause of melting sea ice, he responded "yes."⁵ Regardless of the FWS's stance on human contributions to global climate change, a warmer Earth threatens the polar bear's exis-

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1. 72 Fed. Reg. 1064 (Jan. 9, 2007).

2. U.S. Dept. of the Int., *Frequently Asked Questions: U.S. Fish and Wildlife Service Proposal to List Polar Bears as Threatened Species*, http://www.doi.gov/news/06_News_Releases/061227faq.html (Dec. 27, 2006) [hereinafter *Frequently Asked Questions*].

3. Intergovernmental Panel on Climate Change, *Climate Change 2007: The Physical Science Basis* 10 (Cambridge U. Press Feb. 2007) (available at <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf>) (stating, "[m]ost of the observed increase in globally averaged temperature since the mid-20th century is very likely due to the observed increase in anthropogenic [human] greenhouse concentrations.") [hereinafter *First Climate Change Report*]; *Frequently Asked Questions* at 2, n. 1 ("climate change" in the IPCC reports refers to "any change in climate over time, whether due to natural variability or as a result of human activity."). The author of this paper uses climate change, global warming, and global climate change interchangeably.

4. Press Conf. with Dirk Kempthorne, Sec. of Int., Dale Hall, Dir. of the U.S. Fish and Wildlife Serv., Mark Myers, Dir. of the U.S. Geology Survey, Tom Melius, Regl. Dir. for the Alaska Region of the U.S. Fish and Wildlife Serv. ([Boise, Idaho], Dec. 27, 2006) (transcripts available at <http://www.cicero.uio.no/webnews.asp?id=10761&lang=en>) [hereinafter *Press Conference*].

5. *Id.*

tence. Because global warming is causing the polar bear's decline, listing the species under the ESA remains a possible way to provide a cause of action against those emitting climate changing pollutants.

Since its enactment in 1973, the ESA has been labeled the "pit bull" of environmental statutes.⁶ Once a species is listed under the Act, it is afforded the broadest protection. The United States Supreme Court has found that the ESA provides for the protection and conservation of endangered species over competing human use of natural resources.⁷ A single listed species, even a three-inch fish, can permanently halt a billion dollar project.⁸ The teeth of the Act, together with recent scientific studies linking climate change to polar bear decline, and human activities to climate change, may provide a viable basis for a claim against actors, particularly carbon dioxide emitters, who modify polar bear habitat and harm the species.

This paper first addresses recent climate change litigation and proposes an ESA claim as an alternative. Part II discusses the history and purpose of the ESA and the proposed listing of the polar bear. Part III addresses Section 9 of the ESA, which makes it unlawful for any person to "take" an endangered species, and focuses on "harm," a type of taking. This Section also includes a description of citizen suits and injunctions under the ESA. Part IV analyzes whether modification of the polar bear's habitat as a result of climate change constitutes a taking. This Part also evaluates the evidentiary hurdles in proving that climate change activities harm polar bears, such that these activities should be enjoined under the ESA.

II. PAST AND FUTURE CLIMATE CHANGE LITIGATION

A. *Climate Change*

Greenhouse gases are gases that trap heat in the atmosphere.⁹ While a tropical climate may sound inviting, the impacts of this temperature increase are far from idyllic. *Climate Change 2007* reports that as a result of increased global temperatures: (1) sea level will rise; (2) oceans will become increasingly acidic; (3) permafrost will thaw; (4) sea ice will shrink; (5) hot extremes, heat waves, and heavy precipitation events will continue to be more frequent; and (6) typhoons and hurricanes will become more intense.¹⁰ Although natural processes emit greenhouse gases, the modern increase of carbon dioxide concentrations in the atmosphere is primarily the

6. Paul Boudreaux, *Understanding "Take" in the Endangered Species Act*, 34 Ariz. St. L.J. 733, 747 (2002).

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

8. *Id.*

9. Env'tl. Protect. Agency, *Greenhouse Gas Emissions*, <http://www.epa.gov/climatechange/emissions/index.html> (accessed Apr. 20, 2007).

10. *First Climate Change Report*, *supra* n. 3, at 14-16.

result of human activity, especially in the form of fossil fuel consumption and land use changes.¹¹ Despite being the most important anthropogenic greenhouse gas in terms of contributing to climate change, carbon dioxide remains unregulated in the United States.¹²

B. Past Climate Change Claims

Concern over climate change and the lack of carbon dioxide regulations has led to increased litigation over carbon dioxide emissions. Human rights violations provided the basis for one type of climate change claim brought by indigenous people dependent on natural Arctic conditions for survival. The Inuit in Canada petitioned the Inter-American Commission on Human Rights to determine whether the emission of greenhouse gases violated their human rights.¹³ In their petition, the Inuit allege that the United States violated several rights contained in the American Declaration of the Rights and Duties of Man by refusing to sign any international treaty that cuts greenhouse gas emissions.¹⁴

Common law nuisance claims against private industries are a type of climate change claim available to United States citizens.¹⁵ Plaintiffs making these tort claims have argued that electrical generators, as emitters of carbon dioxide gas, interfere with public health and safety by emitting gases that contribute to climate change. In *Connecticut v. American Electric Power Co.*, eight states and New York City sued the five largest emitters of carbon dioxide in the United States under federal common law, or in the alternative, state law, to abate the public nuisance of global warming.¹⁶ The court dismissed their claims because it found that climate change raised a non-justiciable political question.¹⁷ Making a similar argument, the State of North Carolina later sued the Tennessee Valley Authority ("TVA"), asserting that emissions from TVA's coal fired power plants create a common

11. *Id.* at 2.

12. *Id.* The recent *Massachusetts v. Environmental Protection Agency* decision states that the Environmental Protection Agency ("EPA") has the authority to regulate carbon dioxide emissions, but at this time the gas is not regulated under the Clean Air Act ("CAA"). 127 S. Ct. 1438, 1462 (2007) (stating "[b]ecause green house gases fit well within the Clean Air Act's capacious definition of 'air pollutant,' we hold that EPA has authority to regulate the emissions of such gases."). Carbon dioxide is not regulated as a criteria pollutant under Sections 108 and 109 of the CAA or as a hazardous pollutant under Section 112 of the CAA. 42 U.S.C. §§ 7408, 7409, 7412 (2000). Section 103(g) of the CAA allows the EPA to address carbon dioxide through non-regulatory activities including monitoring and research. *Id.* at § 7403(g).

13. *Human Rights Body Reconsiders Inuit Climate Change Petition*, <http://www.cbc.ca/canada/north/story/2007/02/06/climate-hearing.html> (last updated Feb. 6, 2007).

14. *Id.*; See also Sara C. Aminzadeh, *A Moral Imperative: The Human Rights Implications of Climate Change*, 30 *Hasting Int'l & Comp. L. Rev.* 231, 240 (2007).

15. See *Conn. v. Am. Electric Power Co.*, 406 F. Supp. 2d 265 (S.D.N.Y. 2005); See *N.C. v. Tenn. Valley Auth.*, 439 F. Supp. 2d 486 (W.D.N.C. 2006).

16. *Am. Electric Power Co.*, 406 F. Supp. 2d at 267.

17. *Id.* at 274.

law public nuisance in North Carolina and other states in the region.¹⁸ While the *North Carolina v. Tennessee Valley Authority* court has yet to rule on the merits of the case, the defendant's motion to dismiss has been denied.¹⁹ So far, the plaintiffs have been unable to prevail under a common law nuisance claim.

Statutory claims against the federal government have met with more success. Recently, in *Massachusetts v. Environmental Protection Agency*, Massachusetts and eleven other states petitioned the Environmental Protection Agency ("EPA") to regulate carbon dioxide emissions from motor vehicles under Section 202 of the Clean Air Act ("CAA").²⁰ When the EPA declined to regulate the gas, the states brought suit and eventually appealed the case to the United States Supreme Court.²¹ In a decision likely to have a significant impact, the Supreme Court held that the EPA has the authority to regulate carbon dioxide from motor vehicles.²² The EPA may decide not to regulate carbon dioxide, but only if it finds that carbon dioxide emissions do not contribute to climate change.²³ Although the environmental community called the *Massachusetts* decision a victory, its impact on climate change litigation has yet to be seen.²⁴ Notably, the EPA has still not initiated a rulemaking process for regulating carbon dioxide under the CAA. The *Massachusetts* case suggests, however, that climate change litigation may have entered a new phase.

If courts are willing to reject the political question argument and require the EPA to act, then CAA litigation may become a more common method for addressing climate change. Alternatives to common law and CAA claims, however, are worth exploring.

C. The ESA: A New Climate Change Claim?

A different statutory claim would exist if the polar bear were protected under the ESA. Several aspects of the ESA make it an appealing litigation tool. The first strength is found in the language of the statute itself. Pursuant to Section 9 of the Act, actions that "take" an endangered species are

18. *N.C. v. Tenn. Valley Auth.*, 439 F. Supp. 2d at 488.

19. *Id.* at 497.

20. *Mass. v. Env'tl. Protec. Agency*, 415 F.3d 50 (1st Cir. 2005).

21. *Mass. v. Env'tl. Protec. Agency*, 127 S. Ct. at 1477-78.

22. *Id.* (holding that: (1) State of Massachusetts had standing to petition for review; (2) CAA authorizes the EPA to regulate greenhouse gas emissions from new motor vehicles in the event that it forms a "judgment" that such emissions contribute to climate change; and (3) EPA can avoid taking regulatory action with respect to greenhouse gas emissions from new motor vehicles only if it determines that greenhouse gases do not contribute to climate change or if it provides some reasonable explanation as to why it cannot or will not exercise its discretion to determine whether they do).

23. Mark Sherman, *Supreme Court Calls Attention to Greenhouse Gas Emissions*, Missoulian A5 (Apr. 3, 2007).

24. Zachary Coile, *Ruling Pushes a New U.S. Approach to Global Warming*, S.F. Chron. A6 (Apr. 3, 2007) (available at <http://www.sfgate.com/cgi-bin/article.cgi?file=/chronicle/archive/2007/04/03/MNGHCPOJ51.DTL&type=politics>).

“prohibited.”²⁵ The term “take” is broadly defined in the statute to mean “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct.”²⁶ The language of the legislative history is equally strong. Congress intentionally defined “take” in “the broadest possible manner to include every conceivable way in which a person can ‘take’ any fish or wildlife.”²⁷

The interpretation of the Act by courts provides additional support to plaintiffs involved in ESA litigation. Procedurally, courts have found Congress intended the standard for issuing injunctions pursuant to the ESA to be different than the standard for injunctions under Federal Rule of Civil Procedure 65.²⁸ Because species are afforded the “highest of priorities,” courts cannot use equity scales to balance competing interest, such as one party’s economic interest.²⁹ Because the ESA definition of take does not explicitly include a mental statement element, some interpretations of the take prohibition eliminate the distinction between accidental and intentional takings, adopting a strict liability standard.³⁰ Section 9 also applies to future takings. Plaintiffs have successfully enjoined activities that have not yet occurred when the action will cause harm.³¹ Finally, a plaintiff does not have to allege that an entire population of a species will be eradicated or become extinct. Taking even a single member of a species is sufficient to invoke the authority of the Act.³²

Despite these favorable elements, whether a court grants an injunction under the ESA depends on the facts of each case and the particular evidence that the defendants’ actions amounted to a take. In the case of the polar bear, the evidence shows that this species has adapted to and is dependant on sea ice for its habitat.³³ Sea ice is being destroyed as the surface temperature of Earth’s atmosphere increases.³⁴ Consensus is growing that humans are causing the temperature increase.³⁵ The greatest challenge that a plaintiff faces is demonstrating that the defendant was the proximate cause of harm to the polar bear. Nonetheless, the ESA’s strength and the polar

25. 16 U.S.C. § 1538(a)(1)(B) (2000).

26. *Id.* at § 1532(19).

27. Sen. Rpt. 93-307 (July 6, 1973) (reprinted in 1973 U.S.C.C.A.N. 2989, 2995).

28. *Defenders of Wildlife v. Martin*, 454 F. Supp. 2d 1085, 1093 (E.D. Wash. 2006).

29. *Id.* (citing *Hill*, 437 U.S. at 174).

30. See Boudreaux, *supra* n. 6, at 744; see also 46 Fed. Reg. 29490, 29491 (June 2, 1981) (discussion on strict liability standard established in Section 9 of the Endangered Species Act (“ESA”).)

31. Boudreaux, *supra* n. 6, at 749.

32. *Loggerhead Turtle v. Co. Council of Volusia Co., Fla.*, 896 F.Supp. 1170, 1180, (M.D. Fla. 1995) (stating “the Act does not distinguish between a taking of the whole species or only one member of the species. Any taking and every taking – even of a single individual of the protected species – is prohibited by the Act. See 16 U.S.C. § 1538.”).

33. See 72 Fed. Reg. 1064 (Jan. 9, 2007).

34. *Id.*

35. See *First Climate Change Report*, *supra* n. 3.

bear's association with global warming³⁶ justify exploration of possible claims under the ESA.

III. LISTING THE POLAR BEAR UNDER THE ENDANGERED SPECIES ACT

A. Purpose of the Act

In 1973, the ESA was enacted to provide a national policy of preserving endangered species.³⁷ Congressional hearings at that time reveal that species were becoming extinct at a rate of about one per year, that the pace of extinction was increasing, and that this trend was a result of something other than natural selection.³⁸ "Destruction of natural habitat" and "hunting" were cited as the two major causes of extinction.³⁹ The legislative proceedings also reveal concern over this loss and a commitment to affording species the highest protection.⁴⁰ In the first United States Supreme Court case involving the ESA, the Court concluded that "the intent of Congress in enacting [the ESA] was to halt and reverse the trend toward species extinction, whatever the cost."⁴¹

The purpose of the Act is "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved" and "to provide a program for the conservation of such species."⁴² An "endangered species" is one which is likely to go extinct within all or a significant portion of its range, while a "threatened species" is likely to become endangered in the foreseeable future.⁴³ The Secretary of the Interior has the authority to afford the same level of protection to threatened species as endangered species are given.⁴⁴ For a species to be listed, the Secretary must determine whether one of the following five factors is causing a species to be endangered or threatened: "the present or threatened destruction, modification, or curtailment of its habitat or range; overutiliza-

36. Johns M. Broder and Andrew C. Revkin, *Warming Is Seen as Wiping Out Most Polar Bears*, *The New York Times* (Sept. 8, 2007) (available at <http://www.nytimes.com/2007/09/08/science/earth/08polar.html#>).

37. *Hill*, 437 U.S. at 176.

38. *Id.*

39. Sen. Rpt. 93-307 (July 6, 1973) (reprinted in 1973 U.S.C.A.N. 2989, 2990).

40. *Hill*, 437 U.S. at 177, citing George Cameron Coggins, *Conserving Wildlife Resources: An Overview of the Endangered Species Act of 1973*, 51 N.D. L. Rev. 315, 321 (1975) which states "The dominant theme pervading all Congressional discussion of the proposed [Endangered Species Act of 1973] was the overriding need to devote whatever effort and resources were necessary to avoid further diminution of national and wildlife resources."

41. *Hill*, 437 U.S. at 184.

42. 16 U.S.C. § 1531(b).

43. *Id.* at § 1532(6) ("endangered species" means any species which is in danger of extinction throughout all or a significant portion of its range other than a species of the Class Insecta determined by the Secretary to constitute a pest whose protection under the provisions of this chapter would present an overwhelming and overriding risk to man); *Id.* at § 1532(20) ("threatened species" means any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range).

44. *Id.* at § 1538(a)(1)(B); 50 C.F.R. § 17.31 (2006).

tion for commercial, recreational, scientific, or educational purposes; disease or predation; the inadequacy of existing regulatory mechanisms; or other natural or manmade factors affecting its continued existence.”⁴⁵

B. Polar Bear Habitat

All five listing factors are addressed in the proposed rule for listing the polar bear.⁴⁶ While some factors may have effects on individual bears, the rule states that the greatest threat to the polar bear population is the present or threatened destruction, modification, or curtailment of the polar bears’ habitat or range.⁴⁷ In particular, the FWS found “that polar bear populations throughout their distribution in the circumpolar Arctic, are threatened by ongoing and projected changes in their sea ice habitat.”⁴⁸

Polar bears, which are found only in the Northern Hemisphere, have evolutionarily adapted to life on sea ice, and depend on sea ice for survival.⁴⁹ As carnivores that feed primarily on seals, polar bears use sea ice as a platform to hunt for their prey.⁵⁰ In addition to using sea ice to hunt, polar bears rely on sea ice to make seasonal migrations between the sea ice and denning areas on land, and for seeking mates and breeding.⁵¹ When ice conditions become unsuitable for hunting, polar bears must retreat to land. While on land, they do not have access to a regular food supply and are forced to live off stored fat reserves.⁵²

The Arctic Climate Impact Assessment of 2004 reports that Arctic regions have felt and will continue to feel the effects of climate change with the greatest intensity.⁵³ In the past few decades, temperatures in the Arctic have increased at twice the rate of other locations.⁵⁴ This increase in temperature is dramatically altering Arctic conditions. For example, the sea ice season in Canada’s Hudson Bay has been shortened by 2 ½ weeks, reducing the polar bears’ hunting season.⁵⁵ In many areas, sea ice is breaking up earlier and freezing later each year.⁵⁶ Estimates calculated using satellite

45. 16 U.S.C. § 1533(a)(1)(A-E).

46. See 72 Fed. Reg. 1064.

47. *Id.*

48. *Id.* at 1081.

49. U.S. Fish and Wildlife Serv., *Fact Sheet: The Polar Bear*, <http://www.fws.gov/home/feature/2006/polarbear.pdf> (Dec. 2006).

50. *Id.*; *Frequently Asked Questions*, *supra* n. 2.

51. Ctr. for Biological Diversity, *Petition to List the Polar Bear as a Threatened Species; Before the Secretary of Interior* iv (Feb. 16, 2005) (available at <http://www.biologicaldiversity.org/swcbd/SPECIES/polarbear/ExecutiveSummary.pdf>) [hereinafter *Petition*].

52. *Id.*

53. See Arctic Climate Impact Assessment, *Impacts of a Warming Arctic, Executive Summary* (Cambridge U. Press 2004) (available at <http://amap.no/acia/>).

54. *Id.*

55. *Petition*, *supra* n. 52, at v.

56. See Eugene H. Buck, *Polar Bears: Listing Under the Endangered Species Act* (CRS Feb. 23, 2007).

imagery indicate that the Arctic ice cap has shrunk by 20% since 1979.⁵⁷ If temperature increases continue, the Arctic ice cap will be eliminated by 2040.⁵⁸

Less sea ice and shorter ice season limit both the time polar bears have to hunt and the area where hunting can occur. "The reduced hunting season has translated into thinner bears, lower female reproductive rates, and lower juvenile survival."⁵⁹ Of the nineteen polar bear populations, the western Hudson Bay population decline of 22% has been the most drastic. While the Alaska population has not experienced significant decline yet, the potential for a similar decline exists.⁶⁰ An estimated 20,000-25,000 polar bears remain worldwide.⁶¹

C. Polar Bear Listing

Concern over the status of the polar bear population led the Center for Biological Diversity to petition the FWS on February 17, 2005, to list the polar bear as threatened throughout its region.⁶² Greenpeace, Inc. and the Natural Resources Defense Council joined as petitioners on July 5, 2005.⁶³ Based on the scientific evidence presented in the petition, the FWS initiated a formal status review. After a review of the scientific information, the FWS concluded that listing the polar bear as a threatened species under the ESA was warranted and formally proposed such a listing on January 9, 2007.⁶⁴ The public comment period for the proposed listing ended April 10, 2007.⁶⁵ When deciding whether to list the polar bear under the ESA, the Secretary of the Interior must consider only the best available scientific and commercial information, and not the potential economic effects of the listing.⁶⁶ The final listing process for the polar bear was expected to be complete by December 27, 2007, but as of March 2008, the FWS has yet to make a final decision.⁶⁷ For purposes of this paper, the author assumes that

57. *Frequently Asked Questions*, *supra* n. 3.

58. Buck, *supra* n. 56.

59. *Petition*, *supra* n. 51, at iv.

60. *Frequently Asked Questions*, *supra* n. 2.

61. *Id.*

62. *Petition*, *supra* n. 51, at ii.

63. Buck, *supra* n. 56, at 4.

64. *Id.*

65. Env'tl. Protec. Agency, *Federal Register Environmental Documents, Endangered and Threatened Wildlife and Plants; Petition to List the Polar Bear as Threatened*, <http://www.epa.gov/fedrgstr/EPA-SPECIES/2006/February/Day-09/e1226.htm> (accessed Apr. 20, 2007).

66. Buck, *supra* n. 56, at 4.

67. World Conserv. Force Bull., *Polar Bear and Trophy Imports Both in Jeopardy*, http://www.huntingreport.com/conservation_force.cfm?id=108 (accessed Apr. 20, 2007); Immediately prior to publication, the Department of the Interior announced its decision to list the polar bear under the ESA on May 14, 2008. Dept. of the Interior, *Secretary Kempthorne Announces Decision to Protect Polar Bears under Endangered Species Act*, www.doi.gov/news/08_news_releases/080514a.html (May 14, 2008).

the polar bear will be listed as threatened and will be afforded the same protection as an endangered species.

Once listed, the FWS will implement a recovery plan to promote the conservation of the polar bear.⁶⁸ During the planning process, which can involve international, federal, state, local and tribal officials, and private entities, the FWS identifies and implements a conservation plan for the listed species.⁶⁹ As part of the recovery process, the listed species is afforded additional protection under Sections 7 and 9 of the ESA. Pursuant to Section 7, federal agencies are required to consult with the FWS prior to initiating any action that might affect listed species.⁷⁰ Section 9 prohibits certain actions by both government officials and private individuals.⁷¹

IV. PROHIBITED TAKINGS UNDER SECTION 9 OF THE ESA

A. *When Habitat Modification Constitutes Harm and Therefore a Take*

The ESA includes a laundry list of acts which constitute a "take," including harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect.⁷² The term "harm," in particular, has been subject to extensive legislative scrutiny. Originally, the definition of harm included "significant environmental modification or degradation which has such effects."⁷³ Concern over the inclusion of this phrase resulted in a proposed revision of the rule in 1981.⁷⁴ Some members of Congress feared that this definition could be read to include "significant environmental modification or degradation without further proof of actual injury or death."⁷⁵ They feared that regardless of whether "actual killing or injuring of a listed species" occurred, a "showing of habitat modification alone" could result in a violation.⁷⁶ The proposed redefinition would have limited harm to only acts or omissions "which injure or kill wildlife"⁷⁷ to prevent courts from holding that "habitat modification alone may constitute 'harm.'"⁷⁸

Harm was redefined, but the limited definition proposed was abandoned because the regulations provided that a combined habitat modification and

68. 16 U.S.C. § 1534.

69. 16 U.S.C. §§ 1535-1536.

70. *Id.* at § 1537.

71. *Id.* at § 1538.

72. 16 U.S.C. § 1532(19).

73. 46 Fed. Reg. at 29490 (the original definition of "harm" as the Act was enacted in 1973 included "an act or omission which actually injures or kills wildlife, including acts which annoy it to such an extent as to significantly disrupt essential behavioral patterns, which included, but are not limited to, breeding, feeding or sheltering; significant environmental modification or degradation which has such effects is included within the meaning of 'harm'").

74. *See id.*

75. *Id.* at 29490.

76. *Id.*

77. *Id.*

78. *Id.* at 29492.

impact on the species *could* be considered a taking.⁷⁹ At present, “harm” means “an act which actually kills or injures wildlife ...includ[ing] significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.”⁸⁰

The definition of harm was also subject to a facial challenge in the 1995 case, *Babbitt v. Sweet Home Chapter of Communities for a Great Oregon*. The plaintiffs in *Babbitt* claimed that Congress did not intend the word take to include habitat modification.⁸¹ The Supreme Court’s analysis focused on the text, structure, and legislative history of the Act.⁸² In the end, the Court deferred to the FWS Secretary’s interpretation of harm and found the “Secretary reasonably construed the intent of Congress when he defined ‘harm’ to include ‘significant habitat modification that actually kills or injures wildlife.’”⁸³

In sustaining this interpretation of “harm,” the Court affirmed that in some instances otherwise lawfully conducted land use activities that indirectly inflict injury on a member of a listed species could constitute a take under Section 9.⁸⁴ Habitat modification that indirectly causes a take, however, will not always result in a violation of the ESA. The term “harm” requires that the habitat modification results in “actual injury or death,” as opposed to hypothetical or speculative death or injury.⁸⁵

B. Injunctions under the ESA

The take prohibition of Section 9 applies to both federal and private actions. A governmental agency can violate Section 9 when certain regulatory acts “take” protected wildlife.⁸⁶ Additionally, private actors can be held liable for taking a protected species. Both government and private individuals can apply for incidental take permits, which, when approved, authorize the incidental taking of a species pursuant to otherwise lawful activity.⁸⁷

Absent an incidental take permit, three types of enforcement actions can be used to enjoin or punish the unlawful taking of protected species or other violations of the ESA. First, the government may prosecute certain “know-

79. *Sierra Club v. Lyng*, 694 F. Supp 1260, 1270-1271 (E.D. Tex. 1988) (emphasis added).

80. 50 C.F.R. § 17.3.

81. *Babbitt v. Sweet Home Chapter of Communities for a Great Or.*, 515 U.S. 687, 687 (1995).

82. *Id.*

83. *Id.* at 708.

84. Alan M. Glen & Craig M. Douglas, *Taking Species: Difficult Questions of Proximity and Degree*, 16 Nat. Res. & Env. 65, 66-67 (Fall 2001); *Sweet Home Chapter*, 515 U.S. at 702 (finding the Secretary’s interpretation of “harm” to include “indirectly injuring endangered animals through habitat modification” permissible.).

85. *Id.* at 697.

86. *Loggerhead Turtle v. Co. Council of Volusia Co., Fla.*, 148 F.3d 1231, 1251 (11th Cir. 1998).

87. 16 U.S.C. § 1539(a)(2)(B).

ing" violations of the ESA as a criminal offense.⁸⁸ Second, it may impose civil penalties.⁸⁹ Finally, the government or a private individual may seek injunctive relief to prevent or stop a take. A private plaintiff can sue under the citizen suit provision.⁹⁰ This paper focuses on the use of citizen suits to enjoin activities that harm polar bears.

If a defendant argues that climate change is not currently harming polar bears, courts may infer an implicit Congressional intent "to authorize private plaintiffs to enjoin a 'potential violator . . . before harm to the species even occurs.'"⁹¹ The legislative history of this Section indicates that Congress anticipated that citizen suits would include "injunctive relief for violations or potential violations."^{92,93}

The traditional test for preliminary injunctions is not the test used for injunctions under the ESA.⁹⁴ In ESA cases, courts do not have the discretion to balance parties' competing interests.⁹⁵ The Supreme Court has held that "Congress has spoken in the plainest of words, making it abundantly clear that the balance has been struck in favor of affording endangered species the highest of priorities, thereby adopting a policy which it described as 'institutionalized caution.'"⁹⁶ When determining whether to issue an injunction under the ESA, "the Court does not have the 'traditional equitable discretion' to balance the parties' interests, any threatened harm is *per se* irreparable harm, and the public interest always favors the imposition of an injunction under the Act."⁹⁷

Although the scale is tipped heavily in favor of protected species, courts are not obligated to grant an injunction for every violation of the ESA. A plaintiff must show that a violation of the ESA is at least likely in the future.⁹⁸ The Ninth Circuit requires a definitive threat of future harm to protect species, not mere speculation.⁹⁹ Recent studies of Arctic sea ice have

88. *Id.* at § 1540(b).

89. *Id.* at § 1540(a).

90. *Id.* at § 1540(e)(6), (g).

91. *Forest Conserv. Council v. Rosboro Lumber Co.*, 50 F.3d 781, 786 (9th Cir. 1995) (emphasis in original).

92. *Id.* (citing H.R. Rpt. 93-412 (July 27, 1973)).

93. In the case of the polar bear, a court would first determine a Defendant's liability under Section 9, that is whether injunctive relief is appropriate, and then would determine the scope of the injunctive relief. See *Defenders of Wildlife v. Martin*, 2007 U.S. Dist. LEXIS 13061, 16. If issued against a large power generator, injunctive relief could include a reduction in overall carbon dioxide emissions through abatement, the installation of more energy efficient technology, or the integration of alternative forms of energy production.

94. *Natl. Wildlife Fedn. v. Burlington N. R.R., Inc.*, 23 F.3d 1508, 1510 (9th Cir. 1994).

95. See *id.* at 1511.

96. *Hill*, 437 U.S. at 194.

97. *Loggerhead Turtle*, 92 F. Supp. 2d at 1301-1302 (citing *Hill*, 437 U.S. at 174, 184); see also *Marbled Murrelet v. P. Lumber Co.*, 880 F. Supp. 1343 (N.D. Cal. 1995), *aff'd*, 83 F.3d 1060 (9th Cir. 1996).

98. *Burlington N. R.R., Inc.*, 23 F.3d at 1511.

99. See *id.* at 1512.

calculated that half of the ice will be gone by 2050.¹⁰⁰ Studies like the Arctic Climate Impact Assessment, which predicts a loss of half of the polar bear's habitat in the next fifty years, will bolster a plaintiff's claim and dispel any concern that the threat of harm is not certain.

V. MODIFICATION OF POLAR BEAR HABITAT BY CLIMATE CHANGE: A TAKING?

Assuming that a plaintiff has established standing and jurisdictional requirements, a citizen suit must allege that the polar bear's habitat is being modified such that individual animals are actually killed or injured, or will be in the future.¹⁰¹ Citizen suits claiming only that a species' habitat is being modified are precluded; therefore, an allegation that carbon dioxide emissions are modifying polar bear habitat is insufficient.¹⁰² A plaintiff must demonstrate that the habitat modification had or will have an adverse impact on the species.¹⁰³ Alan M. Glen and Craig M. Douglas suggest that after *Sweet Home Chapter* a plaintiff's showing of harm must include "substantial evidence that:

- (1) the party in question significantly modified the habitat of a listed species;
- (2) the modification significantly impaired essential behavioral patterns, which
- (3) actually resulted in death or injury to one or more identifiable members of a listed species, or is substantially likely to cause death or injury in the near future."¹⁰⁴

A. Significant Modification to the Habitat of a Listed Species

Establishing that a certain defendant caused significant modification of the species habitat may be the most challenging part of an ESA claim. The *Sweet Home Chapter* court noted that the degree and proximity to which the habitat modification harms a species must be addressed on a case-by-case basis.¹⁰⁵ *Palila v. Hawaii Dep't of Land and Natural Res.* is often cited in support of the argument that habitat destruction that causes actual injury to

100. *As the Earth Warms: The Thinning of the Arctic Ice Cap*, <http://www.ecology.com/ecology-today/earth-warms/index.html> (Nov. 30, 2001).

101. 35A Am. Jur. 2d *Fish, Game, and Wildlife Conservation* § 66 (2007).

102. *Id.*

103. *Palila v. Haw. Dept. of Land and Nat. Resources*, 649 F. Supp. 1070, 1077 (D. Haw. 1986).

104. Glen & Douglas, *supra* n. 91, at 68; *See Sweet Home Chapter*, 515 U.S. at 713 (O'Connor, J. concurring) ("the 'harm' regulation applies where significant habitat modification, by impairing essential behaviors, proximately (foreseeably) causes actual death or injury to identifiable animals that are protected under the Endangered Species Act.").

105. *Id.* ("The task of determining whether proximate causation exists in the limitless fact patterns sure to arise is best left to lower courts.").

a species constitutes harm and therefore a taking under the ESA.¹⁰⁶ The Palila, an endangered bird, was wholly dependent on its forest habitat for breeding, feeding and sheltering.¹⁰⁷ Sheep grazing in the Palila's habitat decreased the bird's food supply and nesting sites, preventing recovery from endangered status.¹⁰⁸ The court found that the sheep were harming the bird by modifying its habitat, and ordered that the sheep be removed from the Palila's habitat.¹⁰⁹

Morrill v. Lujan held that proof of a taking requires the plaintiff to establish a causal link between the habitat modification of a proposed project and the potential harm alleged.¹¹⁰ Conclusive evidence of a "cause and effect relationship" must be presented.¹¹¹ In *Morrill*, the plaintiff sought a preliminary injunction of beach front construction, claiming the development threatened the habitat of the Perdido Key Beach mouse.¹¹² Relying heavily on *Palila*, the plaintiff argued that the building project could degrade or modify beach mouse habitat.¹¹³ Unlike *Palila*, where habitat modification was certainly occurring, the habitat modification in *Morrill* had not yet occurred. The plaintiff in *Morrill* did not present substantial evidence that the proposed development would threaten the species. Because the plaintiff failed to prove the "critical link" between the project and predicted habitat destruction, the injury to the species was held too speculative and the plaintiff's motion for preliminary injunction was denied.¹¹⁴

Revelations about the connection between a warming climate and melting sea ice, however, may alleviate the evidentiary hurdles the plaintiffs in *Morrill* faced and allow for successful litigation involving the polar bear. Recent and forthcoming IPCC reports help establish the critical link between human carbon dioxide emissions and the modification of the polar bear's habitat. The first *Climate Change 2007* report focuses on human and natural causes of climate change, observed climate change, and projected future climate change.¹¹⁵ The report concludes that it is "very likely" that human activity is causing global warming.¹¹⁶ This degree of certainty gives greenhouse gas emitters less ability to argue that they did not know about the risks of emitting gases. The old argument that the scientific community is in conflict as to the causal connection between human activities and the harms caused by carbon dioxide is now untenable, and "business as usual

106. *Palila*, 649 F. Supp. at 1082-83.

107. *Id.* at 1072.

108. *Id.* at 1074.

109. *Id.* at 1082.

110. *Morrill v. Lujan*, 802 F. Supp. 424, 432 (S.D. Ala. 1992).

111. *See id.* at 431.

112. *Id.* at 426.

113. *Id.* at 432.

114. *Id.*

115. *See First Climate Change Report*, *supra* n. 3.

116. *Id.*

could be viewed as neglig[en]ce.”¹¹⁷ The increased certainty regarding the connection between human activities and global warming helps to satisfy any proximate cause requirement of “harm.”

The second *Climate Change 2007* report addresses the current scientific understanding of the impact of climate change on different ecosystems, the capacity of these systems to adapt, and their vulnerability.¹¹⁸ For the Polar Regions, the report projects a “reduction in thickness and extent of glaciers and ice sheets . . . with detrimental effects on many organisms including . . . mammals.”¹¹⁹ The proposed polar bear listing regulation cites modification of habitat, through melting sea ice, as the potential threat and purpose of listing the polar bear as an endangered species.¹²⁰ Both the *Climate Change 2007* reports and the proposed rule listing the polar bear connect climate change to habitat modification of the polar bear’s habitat. While only the *Climate Change 2007* reports link climate change to human activities, these reports help establish a causal connection between carbon dioxide emissions and climate change, which would prove beneficial in litigation.

B. Modification That Impairs Essential Behavioral Pattern

A plaintiff making an ESA claim must be able to show how melting sea ice impacts polar bear behavioral patterns including breeding, feeding and sheltering.¹²¹ The court in *Rosboro* concluded that “habitat modifications that significantly impair a protected species’ behavioral patterns are explicitly proscribed by the Secretary’s redefinition of harm.”¹²² A plaintiff “would need to show significant impairment of the species’ breeding or feeding habits and prove the habitat degradation prevents, or possibly, retards recovery of the species.”¹²³ In contrast, the court in *Burlington Northern* declined to issue an injunction for a takings claim as a result of habitat modification when evidence showed that the habitat affected was localized and did not significantly impact the feeding habits of the grizzly bear. In addition, the defendant provided evidence that long-term cumulative effects on the bear population from the previous mortalities would be unlikely.¹²⁴

117. Eoin O’Carroll, *As Earth Warms, Lawsuits Mount*, Christian Sci. Monitor 12 (Feb. 22, 2007) (available at <http://www.csmonitor.com/2007/0222/p12s01-wogi.html>) (“[v]ery likely” translates into 90 percent, an increase from 66 percent, which was the degree of certainty announced by the IPCC in its 2001 report).

118. See Intergovernmental Panel on Climate Change, *Climate Change 2007: Climate Change Impacts, Adaptation and Vulnerability* (Apr. 2007) (available at <http://ipcc-wg1.ucar.edu/wg1/wg1-report.html>).

119. *Id.* at 13.

120. *Frequently Asked Questions*, *supra* n. 2.

121. *Sweet Home Chapter*, 515 U.S. at 710 (O’Connor, J., concurring) (“Breeding, feeding, and sheltering are what animals do. If significant habitat modification, by interfering with these essential behaviors, actually kills or injures an animal protected by the Act, it “causes harm” within the meaning of the regulation.”).

122. *Rosboro*, 50 F.3d at 788.

123. *Burlington N. R.R., Inc.*, 23 F.3d at 1513.

124. *Id.*

To avoid the problems addressed in *Burlington Northern*, a plaintiff seeking to protect polar bears must show that the impact of carbon dioxide emissions is global rather than local, and that the loss of sea ice will have a long-term impact on the feeding, breeding, and sheltering of the polar bear population.

Interference with feeding, breeding, and sheltering can cause a species population to decline. If a plaintiff can show that habitat modification is interfering with these behavioral patterns and causing the species population to decline, an injunction may be issued.¹²⁵ In *Sierra Club v. Lyng*, the Forest Service's even-aged forest management practices were impairing the essential behavioral patterns of the red-cockaded-woodpecker by interfering with breeding practices, making it more difficult for birds to find food, and destroyed nesting spots.¹²⁶ The court found that the management practices had modified the bird's habitat, harmed the species, and caused and accelerated its decline.¹²⁷ An injunction in the plaintiff's favor was granted.¹²⁸

Similar to the red-cockaded-woodpecker, the polar bear's behavioral patterns will change as its habitat is modified. As outlined in the proposed rule, polar bear behavioral patterns are tied to sea ice. The polar bear's primary habitat is sea ice, which it depends upon for hunting, seeking mates and breeding, traveling to land, and maternal denning.¹²⁹ The rule also describes how polar bears will continue to be affected by changes to their sea ice habitat.¹³⁰ The likely impacts in the near future include a decrease in body weight and decrease in cub survival, while long-term impacts include reduced access to den areas, downward growth rates and population size, and decrease adult survival.¹³¹ The results of the studies included in the proposed rule should meet the burden of showing how the habitat modification impacts the essential behavioral patterns of the polar bear.

C. Harm That Actually Results in Death or Injury

The ESA does not require a plaintiff to wait until the habitat modification has injured or killed a polar bear. Numerous cases stand for the proposition that "imminent threat of future harm is sufficient for the issuance of an injunction under the ESA."¹³² For example, in *Burlington Northern*, the Ninth Circuit required that a plaintiff show that that injury was "sufficiently

125. See *Sierra Club*, 694 F. Supp. 1260.

126. *Id.* at 1271-1272.

127. *Id.* at 1271.

128. *Id.* at 1278.

129. 72 Fed. Reg. at 1067.

130. *Id.*

131. *Id.* at 1064 tbl. 1.

132. *Marbled Murrelet v. Babbitt*, 83 F.3d 1060, 1064 (9th Cir. 1996) (citing *Rosboro*, 50 F.3d at 783); *Burlington N. R.R., Inc.*, 23 F.3d at 1511; *Palila v. Haw. Dept. of Land and Nat. Resources*, 852 F.2d 1106, 1108 (9th Cir. 1988).

likely” to occur in the future.¹³³ The Ninth Circuit has also held that imminent harm to a species is harm that is “reasonably certain” to occur.¹³⁴

The First Circuit, on the other hand, has taken a more restrictive view of the definition of harm. For injunctive relief, a plaintiff must show that an alleged activity has “actually harmed the species.”¹³⁵ In *American Bald Eagle v. Bhatti*, plaintiffs argued that bald eagles would be harmed by lead in slugs used by hunters to shoot deer. Eagles that feed on unrecovered deer carcasses would be exposed to lead that was in the deer.¹³⁶ While the First Circuit agreed that the evidence presented showed that eagles can be harmed by ingesting lead, the plaintiffs presented no evidence that any eagles in the area had actually ingested lead slug or ate deer carcasses containing a lead slug.¹³⁷

Upon examination, the First Circuit’s interpretation of harm appears to be more aligned with the Ninth Circuit’s view. The First Circuit’s concern involved the conjectural nature of the alleged harm, rather than the fact that harm had not yet occurred. The court’s definition of harm required that an “alleged activity [has] actually harmed the species, or if continued will actually, as opposed to potentially, cause harm to the species.”¹³⁸ By including the words “if continued” in its harm requirement, however, the court did not exclude future harms from its definition of actual harm. As long as the proposed threat is more than speculative, claims for future harms are not precluded.

The *Rosboro* court had a similar analysis of the word “actually” and found the insertion of the word “actually” to the definition of harm specified the “degree of certainty that injury would befall a protected species, as opposed to the timing of the injury.”¹³⁹ As long as a plaintiff can show that the threat of death or injury to the polar bear is more than potential or hypothetical, the “actual” element of harm will be satisfied. Statements about the polar bears’ dependence on sea ice included in the proposed rule and the predictions of future sea ice loss in the Arctic Climate Impact Assessment and IPCC reports should quiet any arguments over the speculative nature of the polar bear’s harm.

VI. CONCLUSION

Modification of polar bear habitat is innately linked to climate change and the decline in the polar bear population is tangible proof of the impacts of climate change. Although the proposal to list the polar bear as a threat-

133. *Burlington N. R.R., Inc.*, 23 F.3d at 1511.

134. *Rosboro*, 50 F.3d at 787.

135. *Am. Bald Eagle v. Bhatti*, 9 F.3d 163, 165 (1st Cir. 1993).

136. *Id.* at 164.

137. *Id.* at 166.

138. *Id.*

139. *Rosboro*, 50 F.3d at 787.

ened species does not include a scientific analysis of the causes of climate change, and administrators repeatedly claim that such an analysis is “beyond the scope of the ESA review process,”¹⁴⁰ the polar bear’s unique situation invites an investigation of potential ESA claims. As the Earth warms, the habitat on which polar bears rely is being destroyed from afar. Whether carbon dioxide emissions qualify as a sufficient cause of habitat modification to sustain an ESA taking claim will depend on a plaintiff’s ability to prove that a particular defendant is causing the modification. If a causal link can be established between carbon dioxide emission and harm to the polar bear, the claim should succeed. Courts evaluate each injunction on a case-by-case basis, and expect expert opinions to be supported by studies or other scientific evidence.¹⁴¹ Many of the evidentiary hurdles preventing an ESA claim to protect the polar bear have been eliminated with the publication of the IPCC reports and the behavioral studies cited in the proposed rule. The strength of the Act and its commitment to species conservation further supports the argument that the ESA may be a new avenue for climate change litigation. Even if ESA claims involving polar bears prove unsuccessful, the proposed polar bear listing is more than mere fodder for cartoonists. Polar bears have become global warming’s poster child.¹⁴²

140. *Frequently Asked Questions*, *supra* n. 2; *Press Conference*, *supra* n. 4.

141. See *Hawksbill Sea Turtle v. Fed. Emerg. Mgt. Agency*, 11 F. Supp. 2d 529 (D.V.I. 1998); *Morrill*, 802 F. Supp. at 424.

142. Miguel Bustillo, *Endangered Status Sought for Polar Bears*, L.A. Times A.16 (Feb. 17, 2005) (available at <http://www.biologicaldiversity.org/swcbd/SPECIES/polarbear/latimes2-17-05.html>) (quoting Senator Joe Lieberman, “The potential listing of the polar bear as an endangered species because of the effects of global warming should set off alarm bells around the world.”).