

Can the Endangered Species Act Keep the Polar Bear
(*Ursus maritimus*) Out of Hot Water?

by

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ABSTRACT:

On December 27, 2006 the Fish and Wildlife Service (FWS) announced their support for listing the polar bear (*Ursus maritimus*) as a threatened species under the Endangered Species Act (ESA). The polar bear met two of the five listing criteria: (1) decline of the population throughout all or part of its range; and (2) lack of adequate regulatory mechanisms. The notice identified global climate change as the primary cause for population decline. FWS concluded that current laws are adequate to protect the polar bear from short-term direct impacts, but the listing under the ESA is needed to address impacts from climate change; a long-term, indirect threat. The polar bear is the first proposed listing with such diffuse and poorly defined harms. Given the nature of this threat, can the ESA protect the polar bear from global climate change? To answer this question I examined case studies of other species listed, past implementation of the ESA, and the establishment of proximate causation. I also reviewed how Section seven of the ESA might be implemented to address global climate change. The ESA is successful when 'takers' can be readily identified, and when the harms are easily managed. 'Takes' due to global warming are difficult to identify due to the number of emitters and differentiating between natural and anthropogenic sources. Additionally, it will be difficult to establish the proximate causation needed to assess harms. I conclude that it is unlikely that the listing alone will be able to save the polar bear.

INTRODUCTION:

“The problem is that the listing of endangered species, the study of which species are in trouble and effective action to prevent further extinctions cannot wait. The activities of humanity work on the natural environment without concern for fiscal years and economic game plans. Actions that may irreversibly doom a species cannot be undone.”

Senator George Mitchell.¹

On January 9, 2007 the United States Fish and Wildlife Service (FWS) announced the proposed listing of the polar bear (*Ursus maritimus*) as threatened under the Endangered Species Act (ESA).² FWS developed the listing proposal in response to a petition, submitted jointly by The Center for Biological Diversity (CBD), Natural Resource Defense Council (NRDC), and Greenpeace. The petition called attention to global warming impacts on the Arctic ecosystem and identified habitat loss due to global warming, contaminants, and oil and gas development as the major impetus for the listing. Under the ESA, a species is threatened when it is “likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.”³ A species is endangered when “it is in danger of extinction throughout all or a significant portion of its range.”⁴ ‘Foreseeable future’ is not defined. The World Conservation Union (IUCN) has listed the polar bear as vulnerable based on “estimated, inferred or suspected population size reductions of greater than 50% over the last 10 years or three generations, whichever is the longer to categorize the species.”⁵ The polar bear is currently protected by the Marine Mammal Protection Act, but the petitioners believe that the ESA is required to the polar bear from going extinct.

The plight of the polar bear, and its habitat loss, is not new to scientists or managers. As early as 1972 the U.S. Congress recognized that of marine mammals, polar bears “were the closest to endangerment.”⁶ The House Committee on Fisheries further stated the greatest “threat to marine mammals is the degradation of the environment upon which they depend.”⁷ And they

¹ Houck, O. A. (1993) The Endangered Species Act and Its Implementation by the U.S. Departments of Interior and Congress. 64 U. Colo. L. Rev. 278.

² 71 Fed. Reg. 27; 6745.

³ 16 U.S.C. § 1532 (20).

⁴ 16 U.S.C. § 1532 (6).

⁵ 72 Fed. Reg 5; 1070; http://www.iucnredlist.org/info/categories_criteria2001#critical visited 4/10/2007.

⁶ Baur, Donald C. (1996) Reconciling Polar Bear Protection Under United States Laws and the International Agreement for the Conservation of Polar Bears. Animal Law 2:9.

⁷ Id. 2.

were right; currently the single biggest threat facing the polar bear is habitat degradation due to global warming. Thirty-four years after Congress first issued the warning, very little has been done to protect polar bear habitat from proximate sources of destruction, such as oil and gas development, and nothing has been done to decrease the impacts from global climate change.

I hypothesize that due to the problems of implementation, and political and legal constraints, the ESA will not protect the polar bear. The ESA has protected other species, but the unique plight of the polar bear, which was never imagined by the original authors of the Act, cannot be managed using conventional legal and policy structures. There are shortcomings to the ESA that permeate all species protection, but will significantly hinder polar bear recovery. To examine my hypothesis I examined a both legal and political precedent as well as implementation of the ESA by FWS. Section I of my paper describes how decreasing sea ice due to global warming will directly impact the polar bear and magnify existing threats. Section II outlines current legislation protecting polar bears and polar bear habitat. This section also addresses why current laws are not suited to protect the polar bear, and why the ESA could potentially afford more protection. Section III examines the listing decision, recovery plans, and critical habitat designation under the ESA. Section IV analyzes how likely federal and private actions would be evaluated under the Act with regards to polar bear protection. Lastly, Section V addresses general political concerns and policy recommendations.

SECTION I. BIOLOGY AND THREATS

“Global warming is the single biggest threat [to polar bears]. While organochlorines and oil and gas drilling are also a problem, we would not have filed this petition had it not been for global warming.”

Kassie Siegal, Center for Biological Diversity⁸

Background:

There are estimated to be between 21,000 and 25,000 total polar bears in the Arctic.⁹ The polar bear is comprised of 19 discrete populations or stocks and two of these fall within U.S.

⁸ Seigal, K. personal communication. & ACIA, Ed. (2004). Impacts of a Warming Climate: Arctic Climate Impact Assessment. Cambridge, UK, Cambridge University Press.

⁹ Segal, K, Cummings, B. (2005) Petition to List the Polar Bear (*Ursus maritimus*) as Threatened Under the Endangered Species Act. Center for Biological Diversity.

jurisdiction (Figure 1).¹⁰ Subpopulations or distinct population segments are defined loosely in the ESA as “any distinct population segment of any species...which interbreeds when mature.”¹¹ FWS and NOAA have defined how distinct population segments are determined in practice. The designation is based on two conditions: 1) the population segment is “markedly separated from other populations of the same taxon as a consequence of physical, physiological, ecological, or behavioral factors.” Morphological or genetic evidence may be used to support these claims; and 2) the population is subject to political boundaries which might impact how the population is managed.¹² Sub-populations or individuals stocks are more likely to go locally extinct before the entire population.¹³ The populations managed by the U.S. are two of the more southern stocks and are likely to be some of the first to decline due to global warming. Uncertainty exists regarding the status of some populations: Of the 19 populations listed five are listed as declining, six are listed as data deficient, and two have unknown status.¹⁴

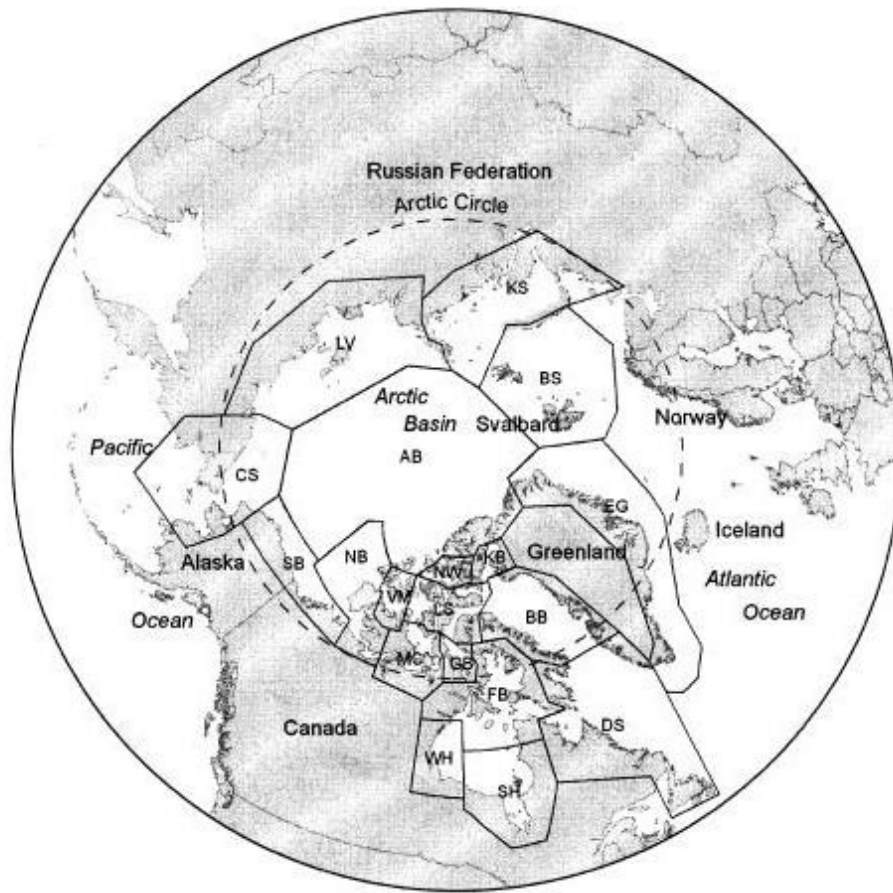
¹⁰ Id.

¹¹ 16 U.S.C. § 1532 (16).

¹² 61 Fed Reg 4722.

¹³ Scott, J. M et al (2006) “By the Numbers” In The Endangered Species Act at Thirty: Renewing the Conservation Promise. eds. Goble, D.D. et al. Island Press, Washington. p 17.

¹⁴ Aars, J. Lunn, N.J., Derocher, A.E. (2006) Polar Bears: Proceedings of the 14th Working Meeting of the IUCN/SSC Polar Bear Specialist Group, 20-24 June 2005 Seattle, WA, USA.



Legend: CS = Chukchi Sea; SB = Southern Beaufort Sea; NB = Northern Beaufort Sea; VM = Viscount Melville Sound; NW = Norwegian Bay; LS = Lancaster Sound; MC = M'Clintock Channel; GB = Gulf of Boothia; FB = Foxe Basin; WH = Western Hudson Bay; SH = Southern Hudson Bay; KB = Kane Basin; BB = Baffin Bay; DS = Davis Strait; EG = East Greenland; BS = Barents Sea; KS = Kara Sea; LV = Laptev Sea; AB = Arctic Basin

Figure 1: Polar Bear Distribution in the Arctic¹⁵

The two populations that fall within U.S. jurisdiction are the Southern Beaufort Sea and Chukchi Sea populations. It is important to note that neither of these populations falls exclusively within the geographic borders of the U.S.; the Southern Beaufort population extends eastward into Canada while the Chukchi Sea population extends east across the Bering Strait into Russia.

¹⁵ Figure from FWS – 72 Fed. Reg. 1069

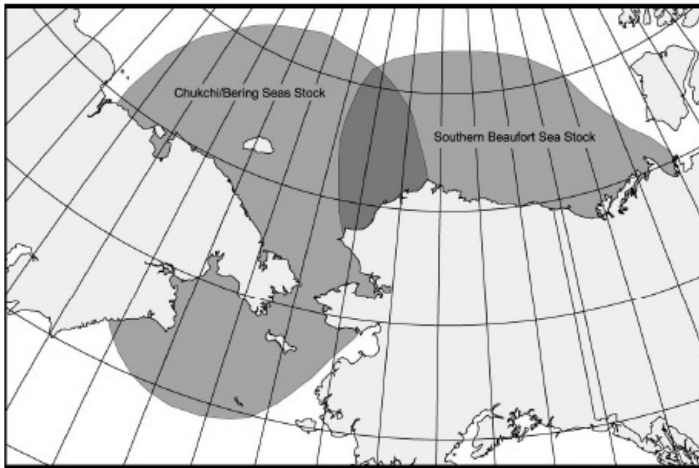


Figure 2: Approximate Distribution of the Chukchi/Bering Seas and Southern Beaufort Sea polar bear stocks. Shaded area represents geographical overlap between the two populations. ¹⁶

The Southern Beaufort Sea Population (SBSP) extends from Point Hope eastward to the Baillie Islands in Canada (Figure 2). The SBSP overlaps with the Chukchi Sea Population (CSP) between Point Barrow and Point Hope (shaded area in Figure 2). Genetic and tracking analyses are used to delineate between the two populations. Scientists believe the SBSP comprises between 1,973 and 2,272 bears. Based on the minimum population estimates the Potential for Biological Removal (PBR) for the stock is 59 bears, with no more than 30 females taken per year.¹⁷ The number can be extended up to 88 bears, providing that, again, no more than 30 of the takes are females. PBR encompasses any kind of human based mortality, including incidental takes due to oil and gas and the removal of ‘problem bears’; bears that pose a threat to the defense of life and property. Scientists and managers both agree that the SBSP is being hunted in a sustainable manner under current conditions.

The Chukchi Sea Population extends west from Point Barrow to the Eastern Siberian Sea.¹⁸ According to the Polar Bear Specialist Group of the IUCN the status of the Chukchi Sea Population (CSP) is listed as data deficient. There are no estimates of PBR, nor the number of animals harvested in a year. The population is estimated to be around 2000 - 5000 animals, but with very low confidence.¹⁹ Overall the population is believed to be declining due to unsustainable harvest levels. Harvesting data are only available from Alaskan tribes. The overall trend in the U.S. has shown a 47% decrease in the number of bears harvested from the CSP over

¹⁶Figure and caption taken from: Angliss, R.P. and R.B. Outlaw. 2005. Alaska Marine Mammal Stock Assessments, 2005. U.S. Dep. Commer., NOAA Tech. Memo. NMFS – AFSC-161, 250 pg.

¹⁷ Id.

¹⁸ Id.

¹⁹ Id.

the past 20 years; it is not known if this is a true population decline.²⁰ There is no reliable information on how many bears are taken in Russia. Technically Russia claims to only be removing problem bears, but anecdotal evidence suggests hunters may be poaching several hundred bears per year, even though hunting was banned in 1956.²¹ This year the Russian government decided to allow a legal hunt to decrease illegal hunting: by giving hunters the opportunity to take bears legally perhaps they might not take bears illegally. The Russian Government first has to conduct a census and establish a hunting quota.²² Previous polar bear assessments have not set a PBR for this population due to lack of a reliable population estimate. Using the estimated minimum population size, a quick back of the envelope calculation of PBR provides a range of 31 – 63 bears per year; the average number the U.S. takes falls in that range, but does not account for Russian takes.²³ The Southern Beaufort Sea Population is currently managed sustainably by U.S. natives and FWS, and the U.S. is attempting to manage the Chuckhi Sea population in a sustainable manner. The listing proposal agreed that over harvesting does not appear to be a major threat to the polar bear, in contrast to many other marine species whose primary threat is over harvesting.²⁴

Global Warming:

The impacts of global warming are being felt worldwide but have a disproportionately large impact in the Arctic. Greenhouse gases emitted throughout the planet tend to concentrate over the Arctic in the winter, and the lack of sunlight prevents the greenhouse gases from breaking down.²⁵ Several reports, including the Intergovernmental Panel on Climate Change (IPCC) and the Arctic Climate Impact Assessment (ACIA), have shown that the increase in Arctic temperatures is almost twice the world average.²⁶ In parts of Alaska, temperatures have increased 3-4 degrees Celsius in the past 50 years, with projected increases of 3-5 more degrees

²⁰ Aars, J. *supra* note 14, 64.

²¹ Angliss, R.P., *supra* note 16.

²² Myers, S.L. (2007) "Russia Tries to Save Polar Bear with Legal Hunt" *New York Times*, April 16, 2007.

²³ PBR calculation was taken from NOAA stock assessment reports and the following formula: $(N_{MIN})(1/2 R_{MAX})(F_r) = PBR$.

²⁴ Kappel, C.V. (2005) "Losing Pieces of the Puzzle: Threats to Marine, Estuarine, and Diadromous species." *Frontiers in Ecology and Evolution* 3: 275-82.

²⁵ Revkin, A. C. (2006). Ice Retreats in Arctic for 2nd Year; Some Fear Most of it Will Vanish. *New York Times*. New York.

²⁶ Seigal, *supra* note 8, p iv.

in the next 100 years.²⁷ The 2007 finding of the IPCC states that “there is a greater than 90% chance that most of the observed increase in globally averaged temperatures is due to the observed increase in anthropogenic greenhouse gas concentrations.”²⁸

Increasing temperatures in the Arctic are causing a decrease in sea ice. Recent studies have shown that sea ice has decreased between 2% and 8% in the past 30 years and that, on average, sea ice is breaking up 2.5 weeks earlier.²⁹ These studies hypothesize that southern sea ice in areas such as Hudson Bay - prime polar bear habitat - may disappear completely by 2050.³⁰ Any decrease in sea ice, including the substantial decrease already seen, will disrupt behavioral patterns that are essential for survival of polar bears.³¹

In particular the decrease in sea ice will have a profound impact on the energetic costs and prey availability of polar bears. These are pagophilic (ice-loving) mammals and every life function of the polar bear is dependent on sea ice. They use the sea ice as a platform to hunt for seals, the main staple of their diet. As the sea ice decreases, so do foraging opportunities. Polar bears must hunt during winter while the ice is intact to store up fat and energy reserves which they depend on during summer.³² The early break up of sea ice decreases the available hunting time, which in turns leads to decreased body condition, ultimately impacting reproductive fitness. Ice decreases have resulted in lower reproduction rates, decreased body mass, and increased juvenile mortality in the Western Hudson Bay stock, the first distinct population segment to feel the brunt of global warming.³³ Ringed seals, the primary prey of polar bears, are also dependent on the sea ice and could see similar population declines, making it even harder for polar bears to hunt.³⁴

A decrease in sea ice will also disrupt denning. There is high variability in the types of terrain female polar bears may use for denning, but all types of denning sites are likely to be

²⁷ Id. p iv.

²⁸ IPCC (2007) Climate Change 2007: The Physical Science Basis: Summary for Policymakers

²⁹ Seigal, K. *supra* note 8, v.

³⁰ Derocher, A. E. L., Nicholas J.; Stirling, Ian. (2004). "Polar bears in a Warming Climate." Integrative and Comparative Biology 44(2): 163-176.

³¹ Id. 164.

³² Id. 165.

³³ Id. 165.

³⁴ Id. 168.

impacted by global warming. Females exhibit high fidelity to particular den sites.³⁵ As the gap widens between the summer edge of the sea ice and coastal denning areas, it will be harder for pregnant females to make it to the den sites in time. Bears will be forced to leave hunting grounds early to make it to the den, or den some place less suitable.³⁶ The longer journey will increase energetic costs, decreasing available fat storage needed by the females to sustain them through the summer. Some dens occur in permafrost, and as it decreases vegetation becomes drier, increasing risk of fire. Females use snow for warmth and den coverage; with the climate change, there may not be enough snow to build dens, causing collapsed dens, which would smother cubs. Lack of snow also leads to lack of available warmth, causing cubs to freeze.³⁷

As ice floes become scarcer, polar bears are forced to swim longer distances between ice floes, increasing their overall energetic costs. Recently, scientists have begun to recover polar bear carcasses that have drowned, something previously unseen.³⁸ Based on aerial surveys conducted by Minerals Management Service (MMS) polar bears are more likely to be found swimming or on land, than on ice.³⁹ Polar bears are capable of swimming 15 – 20 miles, but recently they have been spotted as far as 60 miles from shore.⁴⁰ Swimming is not as efficient as walking on ice, resulting in increased energetic impacts, and decreased reproductive fitness.

When faced with global warming other species may shift their ranges; polar bears have no place northward to shift. They have a long generation time and are highly adapted to exploit a specific ecological niche. It is doubtful that polar bears will be able to respond rapidly enough to the fast paced ecological changes now being observed in the Arctic.

Contaminants:

Increased contaminants in the Arctic also pose potential risks to polar bears when coupled with climate change. Contaminants enter the Arctic through several complex pathways; wind, current, and melting sea ice all deposit harmful substances. The extreme cold of the Arctic

³⁵ Polar bears do not return to the same den every year, rather they show high fidelity to specific types of terrain, or geographic regions. Amstrup, S. 2000 “Polar Bear” in The Natural History of the Arctic Oil Field; Development and the Biota. eds. Truett, J.C., S.R. Johnson. Academic Press, San Diego. p. 145.

³⁶ Derocher, supra note 30, 166.

³⁷ Id. 167.

³⁸ Monnett, C et al (2005) Potential Effects of Diminished Sea Ice on Open –Water Swimming, Mortality, and Distribution of Polar Bears during Fall in the Alaskan Beaufort Sea. Abstract Presented at the 16th Biennial Conference on the Biology of Marine Mammals; San Diego, CA.

³⁹ Id.

⁴⁰ Iredale, W. (2005) “Polar Bears Drown as Ice Shelf Melts.” Timesonline, UK.

slows the breakdown of contaminants.⁴¹ Contaminants are non-point source pollutants that come from sources all over the world. Polar bears are an apex predator in the Arctic, and their diet largely consists of seal fat where lipophilic toxins are stored in blubber. Persistent organic pollutants (POPs) – including DDT and chlordane - are absorbed into fat and become concentrated in top predators.

Studies suggest that high levels of PCB (a toxin) reduce reproductive success and cub survival.⁴² Additionally, high PCB contamination is believed to cause pseudo-hermaphroditism.⁴³ Scientists have documented impacts on the immune system – bears with high levels of PCBs produce fewer antibodies that help fight off disease.⁴⁴ While these impacts alone might impact polar bears, global warming is expected to exacerbate the problems. As polar bears are forced to fast longer, they will tap more and more into their stored fat supplies, and metabolize stored contaminants. In addition, increasing ice melt and shifting climate patterns will release any toxins previously frozen into the environment. Contaminants are a chronic impact but when coupled with climate change they represent a severe threat to polar bear survival.

Oil and Gas:

Oil and gas exploration and development (OGED) contributes to global warming and contamination, as well as increasing habitat fragmentation. Again, OGED might not have profound impacts on polar bears in the absence of global warming. But, given the probable decrease of suitable habitat available and habitat loss due to other causes, OGED will impact the polar bear (Figure 3 & 4).

Disturbance from OGED may have a disproportionate impact on females causing den abandonment and avoidance of key denning sites.⁴⁵ The Arctic National Wildlife Refuge has the highest concentration of terrestrial polar bear dens in Alaska; opening this region to large scale

⁴¹ AMAP 2002. AMAP Assessment 2002: Persistent Organic Pollutants in the Arctic. Arctic Monitoring and Assessment Programme. <http://www.amap.no/> p 5.

⁴² Id. 185.

⁴³ Id. 187.

⁴⁴ Id. 188.

⁴⁵ Perham, C.J. 2005 Proceedings of the Beaufort Sea Polar Bear Monitoring Workshop. OCS Study MMS 2005-034. Prepared by U.S. Fish and Wildlife Service –Marine Mammals Management, Anchorage, AK. Prepared for the U.S. Dept of the Interior, Minerals Management Service, Alaska OCS Region. Anchorage, AK. p 14.

OGED has long been suggested as a means of easing national dependence on foreign oil.⁴⁶ Seismic testing, often used for well exploration, leads to noise disturbance and possible den abandonment. Polar bears den in the Arctic National Wildlife Refuge and any oil and gas development there would likely disturb polar bear reproduction. Any disturbance in denning sites would impact the SBSP.⁴⁷ In addition to habitat fragmentation and denning disturbance, there is also a serious risk of oil spills.

Oil spills pose large scale risks to polar bears through habitat contamination, release of contaminants into the food chain, and possible disruption of the food chain given a large spill.⁴⁸ In March 2006, a spill went undetected on the North Slope.⁴⁹ The spill released 267,000 gallons of crude oil covering an area of two acres. The fact that the spill went undetected for five days highlights the risk the Arctic ecosystem faces from a large oil spill. OGED alone does not represent a major threat, but in the face of global warming, oil and gas fields occupy needed polar bear habitat and increase the risk of human- bear interactions.

The polar bear is facing significant habitat loss in the next 50 years due to retreating sea ice. This habitat loss will amplify other impacts from chronic, sub-lethal threats such as contaminants and oil and gas exploration and development. Numerous domestic and international laws address polar bear protection against these threats. The question is: How effective is the protection?

⁴⁶ While the issue has been around a while it has received more press due to the rapidly increasing gas prices. The Republican Party announced the opening ANWR was part of their strategy to ease gas prices. Hules, C. Kirkpatrick, D. "Sharp Reaction to G.O.P. Plan on Gas Rebate." *New York Times*; May 1, 2006.

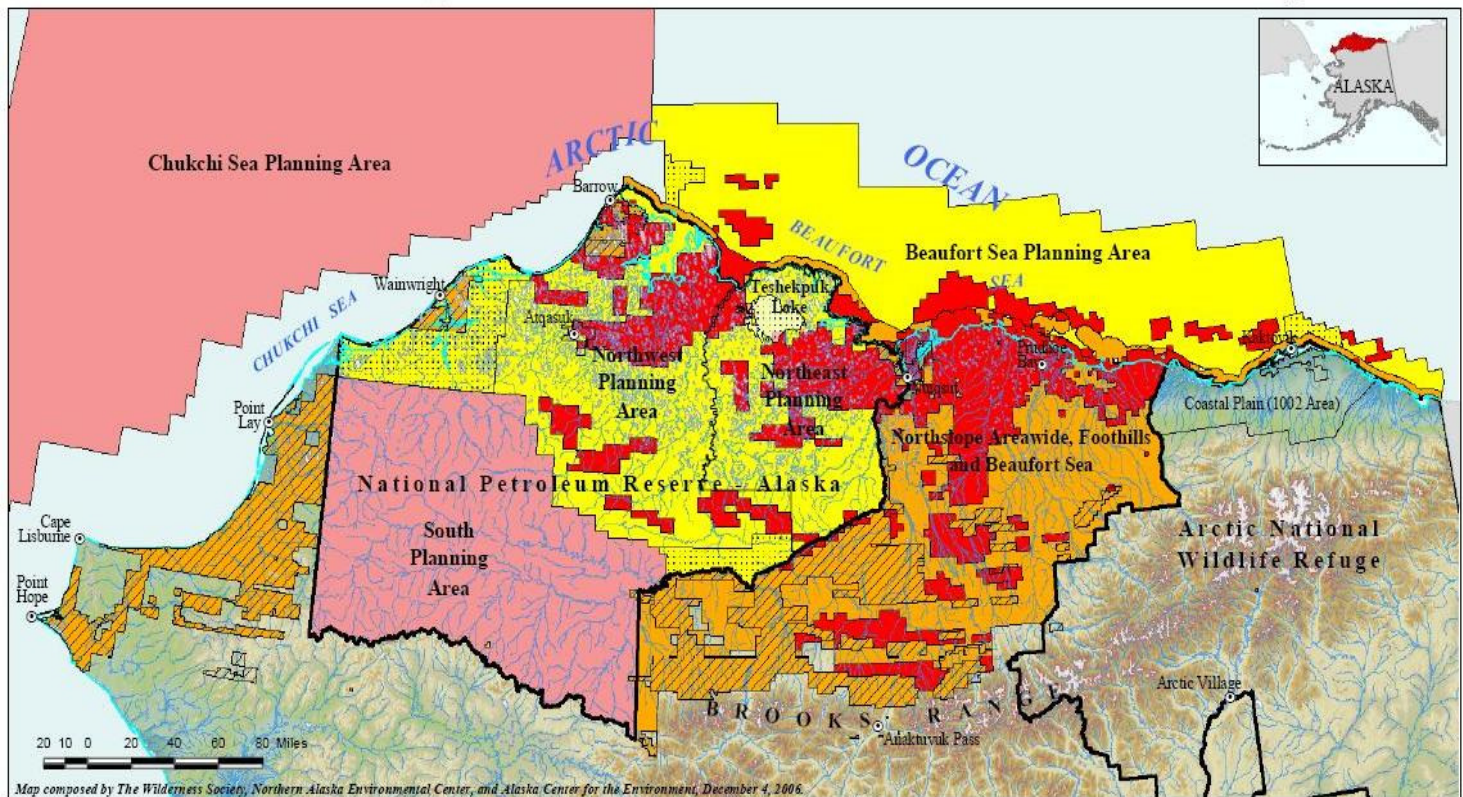
⁴⁷ Amstrup, S.C. 1993 Human Disturbances of Denning Polar Bears in Alaska. *Arctic* 46(3):246-250 in. Seigal K, 2005 p 99.

⁴⁸ Perham, C.J., *supra* note 45, p 14.

⁴⁹ Barringer, F. (2006). Large Oil Spill in Alaska Went Undetected for Days. *New York Times*. New York.

Figure 3⁵⁰:

Current and Proposed Oil & Gas Leases on Alaska's North Slope



- Sold Federal and State leases
- Active Federal Lease Area
- Proposed Federal Lease Plan Area
- Active State Lease Areas
- ASRC Surface and/or subsurface lands
- Barrow Native Lands

National Petroleum Reserve - Alaska (Federal BLM)

- * *Northeast Planning Area*
4.6 million acres - 100% opened to lease in 2006
 Lake deferred for an unspecified amount of time
Court canceled September 2006 lease sale
Supplemental EIS expected July 2007
Next lease sale in 2007
- * *Northwest Planning Area*
8.8 million acres - 100% opened to lease 2004
 Open to exploration but deferred from development until 2014
Next lease sale in 2007
- * *South Planning Area*
9.2 million acres
Preliminary alternatives expected May 2007

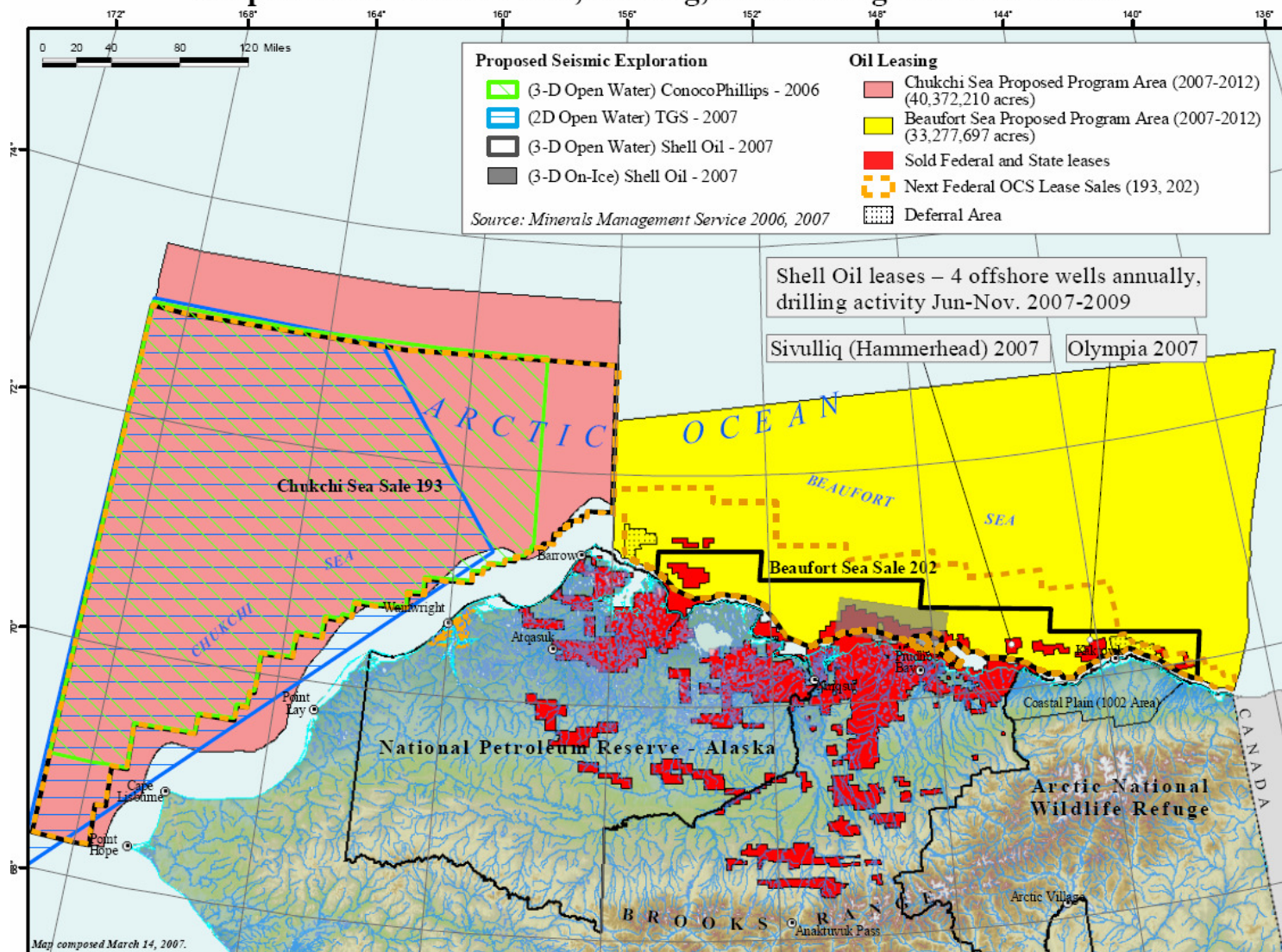
Arctic Ocean (Federal MMS)

- * *Beaufort Sea Planning Area*
9.4 million acres
Lease Sale 186- 97% offered to lease in 2003
Lease Sale 195- 97% offered to lease in 2005
Next Lease Sale (202) in March 2007
 Barrow and Kaktovik Whaling Deferrals
- * *Chukchi Sea Planning Area*
33.8 million acres
Next Lease Sale (193) in 2007
- State**
- * *Northslope Area-wide, Foothills and Beaufort Sea*
14.4 million acres in active lease plan areas
4.0 million acres in existing leases

⁵⁰ Figure from Earthjustice's public comments on the proposed listing decision.

Figure 4⁵¹:

Proposed Offshore Seismic, Leasing, and Drilling in Arctic Ocean



⁵¹ Figure from Earthjustice's public comments on proposed listing decision.

SECTION II: CURRENT LAWS- PROTECTIONS AND INADEQUACIES

“There are no known regulatory mechanisms currently in place at the national or international level effectively addressing threats to polar bear habitat.”
*U.S. Fish and Wildlife Service*⁵²

United States Laws:

Marine Mammal Protection Act (1972):

The Marine Mammal Protection Act establishes federal protection for all marine mammals, including polar bears. National Marine Fisheries Service (NMFS) manages cetaceans and pinnipeds, while the United States Fish and Wildlife Service (FWS) oversees walruses, dugongs, manatees, sea otters and polar bears. The MMPA states “these mammals should not be permitted to diminish below their optimum sustainable populations. Further measures should be taken immediately to replenish any species or population stock which has already diminished below that population.”⁵³ Populations are classified as ‘depleted’⁵⁴ if their abundance falls below Optimum Sustainable Population or when the species is listed on the ESA.⁵⁵ When the Center for Biological Diversity originally filed the listing petition in 2005, the Hudson Bay Population had declined by 14%, but this information was not yet available to managers and scientists.⁵⁶

The MMPA prohibits the taking of any listed species; take is defined as “to harass, hunt, capture, or kill or attempt to harass, hunt, capture or kill any marine mammal.”⁵⁷ The MMPA defines harassment in the legislation itself. Harassment is defined as “an act of pursuit, torment or annoyance which has the potential to injure a marine mammal, or marine mammal stocks in the wild or to disturb by causing disruption of behavioral patterns, including but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.”⁵⁸

The MMPA makes provisions that “efforts should be made to protect essential habitat.”⁵⁹ Additionally, the Act further stipulates “the primary objective should be to maintain the health

⁵² 72 Fed. Reg. 1091

⁵³ 16 U.S.C § 1361 (2).

⁵⁴ 16 U.S.C. § 1362 (1)

⁵⁵ 16 U.S.C. § 1362 (1)(B & C)

⁵⁶ Siegal, K. personal communication.

⁵⁷ 16 U.S.C. § 1361 3(13).

⁵⁸ 16. U.S.C. § 1361 (3)(18)(a).

⁵⁹ 16 U.S.C § 1361 (2) (1).

and stability of the marine ecosystem.”⁶⁰ Critical habitat that is essential to behavioral processes, such as mating grounds, and rookeries, are identified as areas that need protection. What is missing from the MMPA is a strict affirmative duty. The MMPA states the government “should” protect. The MMPA has “no clearly articulated affirmative duty or mandate imposed on the federal government to protect, conserve, or recover marine mammal species, stocks or habitats.”⁶¹ Attempts to preserve or protect habitat through the MMPA have been attempted only in conjunction with the habitat provisions set forth in the ESA, and this has only been done twice.⁶² The first instance was through the establishment of boating speed zones in Florida to protect the Florida manatee.⁶³ Both the ESA and the MMPA were listed as authorities for the protection. The MMPA was also used in tandem with the ESA and the National Park Service Organic Act to shield humpbacks in Glacier Bay National Park in Alaska from interference with cruise ships.⁶⁴ These two situations did not provide habitat protection *per se*, but instead provided additional ways to prevent takes due to vessel traffic.⁶⁵

Under the MMPA incidental take permits can be issued. These permits may be issued even in the face of evidence that predicts harmful consequences. For example, FWS issued a year round take permit for oil and gas development in the Beaufort Sea in spite of the fact that FWS concluded that any development during the winter was likely to have a negative impact on polar bears.⁶⁶ Since 1993, the FWS has issued 223 letters of authorization (LOA) for incidental take of polar bears in the Arctic.⁶⁷ FWS previously identified “Important Habitat Areas (IHAs), which FWS defines as having a “a high probability and reasonable likelihood of incidental take of polar bears.”⁶⁸ LOAs are issued for these areas and require monitoring, reporting, and avoidance of critical areas such as dens, but dens are hard to locate and may still be subject to the effects of the development. Thus, the MMPA offers some protection against oil and gas drilling, and incidental takes, but in the face of habitat loss, particularly that anticipated due to climate change, stronger protection is needed.

⁶⁰ 16 U.S.C. § 1361 (2)(1).

⁶¹ Baur, *supra* note 6, 56.

⁶² Baur, *supra* note 6, 57.

⁶³ 50 C.F.R. § 17.100-17.108 (1994).

⁶⁴ 36 C.F.R. § 13.65 (b).

⁶⁵ Baur, *supra* note 6, 57.

⁶⁶ *Id.* 51.

⁶⁷ Seigal, K, *supra* note 8, 136

⁶⁸ *Id.* 136.

Outer Continental Shelf Lands Act:

The Outer Continental Shelf Lands Act (OCSLA) manages oil and gas development off the shores of Alaska. The jurisdiction of OCSLA covers all submerged lands not granted to the states (the area between 3 and 200 nautical miles from shore).⁶⁹ The Minerals Management Service is the executor of the OCSLA and is charged with preventing “serious, irreparable or immediate harm or damage to living marine resources.”⁷⁰ In theory, this Act could be used to create habitat standards for the polar bear in areas where oil and gas development occurs. Before any leasing occurs, the leasing agency is required to evaluate environmental impacts that may result from large oil spills or small slow leaks.⁷¹ The OCSLA provides several mechanisms to protect polar bear habitat through mandatory oil spill plans and stipulations that lessees must have orientation programs that detail how to avoid harassing and harming polar bears.⁷² The OCSLA, much like the MMPA, and other laws, has the power and the wording to pro-actively protect the polar bear, but the protective sections of the Act are rarely, if ever, implemented.

International Law and Agreements:

International Agreement for Conservation:

The Polar Bear Agreement (PBA) is a multi-national agreement entered into by the U.S. and four other nations; Canada, U.S.S.R., Norway, and Denmark.⁷³ The primary goal of the Agreement is to limit the number of polar bears taken by hunting, but the agreement also addresses habitat conservation. The agreement mandates that each country shall take “appropriate action” to protect the ecosystem, and limit take due to hunting.⁷⁴ “Denning and feeding sites and migrations patterns,” are highlighted as areas of special concern.⁷⁵

Article III of the agreement allows for a managed harvest. Subsistence hunting by natives and sport hunting are allowed, but commercial uses and trade of any part of the polar bear are prohibited. In 1994 the MMPA altered some aspects of the agreement by allowing U.S. hunters to import polar bear trophies from Canada. Article III also allows takes when polar bears are interfering with the management of other resources. Originally, this provision was meant to

⁶⁹ 43 U.S.C. § 1331.

⁷⁰ 43 U.S.C. § 1334 (a)(1)(B).

⁷¹ Baur, *supra* note 6, 62.

⁷² *Id.* 63.

⁷³ Baur, *supra* note 6 provide a more in depth discussion regarding the polar bear agreement and IUCN’s intent.

⁷⁴ Baur, *supra* note 6, 28.

⁷⁵ <http://pbsg.npolar.no/ConvAgree/agreement.htm>.

address bears that were impacting seal hunts in Canada. However, this article expressly states that it does not allow takes attributed to oil and gas development; which the U.S. violates through repeated issuance of LOAs.⁷⁶ No administrative body exists to oversee the agreement or, more importantly, to serve as an enforcement body.

In cases where the agreement has conflicted with U.S. goals, the U.S. generally proceeds with the conflicting action. As noted above, the FWS has granted small take permits for oil and gas development that may negatively impact polar bears. FWS stated these takes would not contradict U.S. compliance with the Polar Bear Agreement, in spite of the provisions in Article III noted above. FWS concluded that the agreement is not “self-executing” and that “even if a conflict existed, such would not be an impediment to issuance of the final rule.”^{77,78} This exemplifies the problem with many international agreements; they are hard to enforce, and countries usually choose national interests over non-binding international obligations.

The Polar Bear Agreement fits into the common theme surrounding all current polar bear laws and regulations: there are no affirmative action clauses and thus no real measures that compel agency actions through litigation. On paper, the Polar Bear Agreement has the power and the language to protect the polar bear from over-exploitation. It has made remarkable strides to decrease unsustainable harvesting, but it lacks the ability to implement the steps necessary for habitat protection, the primary threat facing the polar bear.

Polar Bear Management Agreement for the Southern Beaufort Sea Population:

The Agreement, signed in 1988, is a user to user protocol between the Inuvialuit Game Council (IGC), which represents the Canadian natives of Yukon and Northwest Territories, and the North Slope Borough (NSB) which represent the five Alaskan villages that hunt polar bears from the SBSP (Figure 2).⁷⁹ The Beaufort Agreement implements the management framework created under the International Polar Bear Agreement. Under the Agreement, hunters are banned from hunting cubs, females with cubs and females with yearlings.⁸⁰ It is worth noting that the Council set initial quotas lower than PBR, which demonstrates their commitment to conservation

⁷⁶ Baur, supra note 6, 31.

⁷⁷ Baur, supra note 6, 50.

⁷⁸ Baur, supra note 6, also provides an interesting discussion regarding the U.S. involvement with the polar bear agreement and the degree to which non-self executing agreement are non binding vs. binding.

⁷⁹ Brower, C.D. et al. 2002. The Polar Bear Agreement for the Southern Beaufort Sea: An Evaluation of the First Ten Years of a Unique Conservation Agreement. Arctic 55(4): 362-372

⁸⁰ Id.

and sustainability. The agreement formally recognized that females should make up no more than one-third of the take. The FWS has no formal role in the administration of the agreement, but has contributed funding to monitoring efforts and have included incentives to encourage cooperation.⁸¹ The Agreement has shown some conservation success. In the 14 years since the Agreement was signed the number of cubs hunted has dropped, and the hunting quotas were only exceeded once. The Agreement has not been as successful at maintaining female take levels below one-third, of all bears hunted, but this number is still sustainable based on PBR calculations.⁸² This is not a legally binding agreement, but it has proven to be a successful conservation tool.

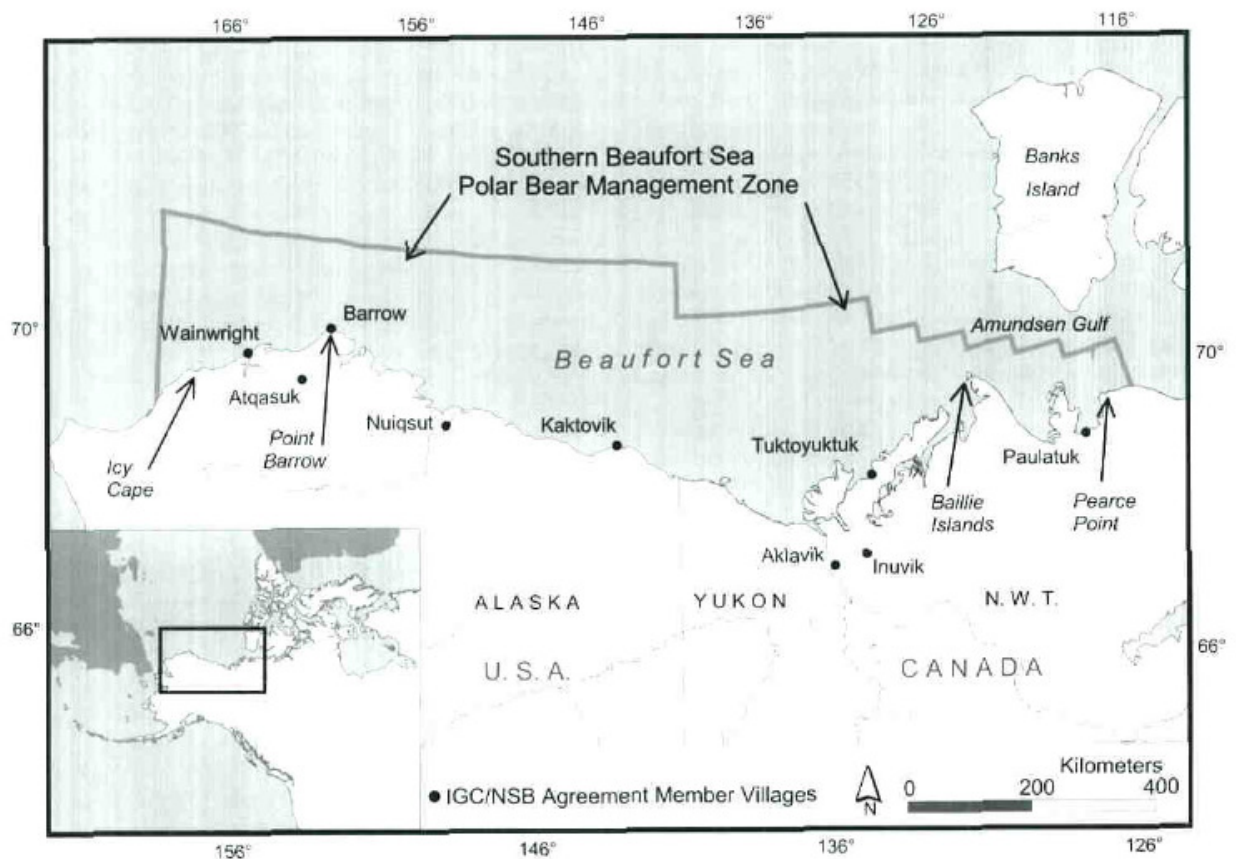


Figure 3: Southern Beaufort Sea Polar Bear Management Zone and associated native villages.⁸³

⁸¹ Id

⁸² Id.

⁸³ Figure taken from: Brower, C.D. et al. 2002. The Polar Bear Agreement for the Southern Beaufort Sea: An Evaluation of the First Ten Years of a Unique Conservation Agreement. *Arctic* 55(4): 362-372

World Conservation Union (IUCN) & Convention on International Trade in Endangered Species (CITES)

The polar bear is listed as “Vulnerable” on the IUCN’s Red List. An animal is listed as vulnerable “when the best available evidence indicates that it meets any of the criteria A to E for Vulnerable, and it is therefore considered to be facing a high risk of extinction in the wild.”⁸⁴ The criteria for vulnerable are: “a observed or prediction population decrease of > 50% over 3 generations or ten years whichever is greater,”⁸⁵ a decrease in geographic range, population size estimated at less than 10,000 individuals, populations that are small or restricted, or a species that has a 10% chance of becoming extinct in the next 100 years. The ICUN listed the bear due to predicted population reduction > 30%, and decline in habitat area and quality.⁸⁶ In the 1994 status review, the IUCN echoed the Center for Biological Diversity in listing the perceived threats to the polar bear. The top threats identified were habitat loss due to industry, hunting, global warming, and water pollution. The IUCN often works in tandem with CITES to recommend how different species should be managed, but it offers no protection, suggestions or requirements for the protection of the polar bear.

CITES is administered by the World Conservation Union (IUCN) and only deals with trade of threatened or endangered species between nations. It does not dictate or suggest how species should or could be conserved within a nation’s boundaries. The polar bear is listed on Appendix II of CITES, which applies to species that are “not necessarily threatened with extinction, but in which trade must be controlled in order to avoid utilization incompatible with their survival.”⁸⁷ To export a polar bear, or any part of a polar bear, there must be a certificate issued by the exporting country. For most Appendix II species, no permit is needed from the importing country. However, in the case of the polar bear, an import permit is needed in the U.S. because the polar bear is also protected by the MMPA. The 1994 amendments to the MMPA allow U.S. hunters to import polar bear hides provided they can show documentation that the polar bear is from a sustainably managed population.

These laws represent a variety of international and domestic regulations that in some way or another have the ability to protect polar bears and polar bear habitat. Within these laws the

⁸⁴ http://www.redlist.org/info/categories_criteria2001#definitions

⁸⁵ http://www.redlist.org/info/categories_criteria2001#definitions

⁸⁶ <http://www.iucnredlist.org/search/details.php/22823/all>

⁸⁷ <http://www.cites.org/eng/disc/how.shtml>.

acting agencies are afforded discretion with regards to actions they choose to take, thus the listing petition finds the laws inadequate to protect the polar from habitat loss. The ESA offers stronger protection through an affirmative action mandate: agencies are *required* to act.

SECTION III: THE ENDANGERED SPECIES ACT IMPLEMENTATION

*“Implementation of the act will likely be most effective when the species in question has a spatially restricted and easily demarcated range; when the listing only impacts a small and concentrated number of resource users; and when taking can clearly be defined and a “no takings” policy can be efficiently enforced.”*⁸⁸

Paul Armsworth

Background:

A critical examination of ESA implementation is crucial to understand how the ESA may fail to protect species like the polar bear which is primarily impacted by indirect threats and habitat loss. The ESA has been called one of the most important pieces of environmental legislation ever passed, and is widely regarded as one of the toughest laws on the books, yet some feel that it has changed from a firm mandate to a discretionary system.⁸⁹ Less than 10 species have been de-listed, while hundreds more have been petitioned for listing. Currently there are 1,922 animals and plants listed on the ESA and, of these, 567 are species that occur in other nations.⁹⁰ Of the species protected by the Act, 78.5% are listed as endangered and 21.5% are listed as threatened. Most species are listed as threatened before they are listed as endangered, which “suggests that we are failing to get ahead of the risk curve.”⁹¹ None of the recovered species were affected primarily by habitat loss.⁹²

Given the past success and failures of the ESA, can it protect the polar bear? I will examine three sections of the ESA: Section 4 which details the listing process, recovery plans and critical habitat designation, Section 7 which governs federal agency actions, and Section 9 which regulates individual and state actions. Lastly, I will examine the new legal developments and the ESA in an international arena.

⁸⁸ Armsworth, P. et al 2006 “Marine Species” In The Endangered Species Act at Thirty: Renewing the Conservation Promise. eds. Goble, D.D. et al. Island Press, Washington. p 44.

⁸⁹ Houck, supra note 1, p 35.

⁹⁰ http://ecos.fws.gov/tess_public/StartTESS.doc visited 4/10/2007 Scott et al, supra note 12, p 17.

⁹¹ Scott, supra note 12, 18.

⁹² Id. 29.

Justification for Listing:

The polar bear meets two of five listing criteria under the ESA: 1) “present or threatened destruction, modification, or curtailment of the species’ habitat or range”⁹³; and 2) “inadequacy of existing regulatory mechanisms.”⁹⁴ Over harvesting is a potential threat, but the listing proposal does not identify it as a major concern. A population decline has been documented in two of the 19 subpopulations: The Southern Beaufort Sea and the western Hudson Bay subpopulations have both shown a documented decrease.⁹⁵

Three critical aspects of the ESA afford significantly more protection to listed animals than the MMPA, and any other legislation, through the establishment of affirmative actions.⁹⁶ One aspect is the Section 7 agency review. Section 7 mandates that “any action authorized, funded, or carried out by [a federal] agency (agency action) is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species.”⁹⁷ This affords the affirmative action that is lacking in the MMPA. Second is the establishment of critical habitat. The MMPA does include recommendations for habitat protection but again, the ESA provides the affirmative action. Critical habitat under the ESA is defined as “the specific areas within the geographical area occupied by the species, at the time it is listed...on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection.”⁹⁸ Federal agencies are also required to consult on any agency action that is likely to “result in the destruction or adverse modification of critical habitat.”⁹⁹ Third is the development of a recovery plan. Recovery plans use the best available science and include “a description of such site-specific management actions” and “objective, measurable criteria.”¹⁰⁰ The Marine Mammal Protection Act does offer some strong protection measures, through more explicit definitions of take and harm, but the ESA provides mandates, which are easier to litigate.

⁹³ 16 U.S.C. § 1533 (a)(1)(A).

⁹⁴ 16 U.S.C. § 1533 (a)(1)(D).

⁹⁵ 72 Fed. Reg. 1073, 1076.

⁹⁶ Wetzler, Andrew. National Resource Defense Council, J.D. personal communication.

⁹⁷ 16 U.S.C § 1536(a)(2).

⁹⁸ 16 U.S.C § 1532(5)(a)(i).

⁹⁹ 16 U.S.C. § 1536(a)(2).

¹⁰⁰ 16 U.S.C. § 1533 (f)(1)(B).

Both the ESA and the MMPA lack any ability to protect species outside of U.S. territory, but both stipulate that some form of international cooperation should be pursued where possible. The ESA provides funding which can be used to assist foreign countries in their species' protection. This assistance could entail "the acquisition, by lease or otherwise, of lands, waters or interests."¹⁰¹ Under the MMPA, the Secretary of State can enter into agreements "with other nations for the protection and conservation of all marine mammals."¹⁰² The ESA is also the U.S. actor for CITES. At a minimum, the U.S. needs to take action in conjunction with the two other nations, Russia and Canada to protect U.S. stocks of polar bears.

Listing is a time-consuming process, only shortened by the threat or actual pursuit of litigation. If the listing of a species is litigated, time from initiation to listing proposal is reduced, on average, from 7.1 years to 2.4 years.¹⁰³ For species without litigation, the average time from the initial realization that a species is in peril until the time of final listing is 4.3 years.¹⁰⁴ Legal petitions have already been filed regarding FWS's inaction on the original petition to list the polar bear as threatened.¹⁰⁵ CBD filed the original listing petition on February 16, 2005. The regulations regarding listing require the Secretary of the Interior to respond to a listing petition within 90 days of receipt. The Center for Biological Diversity filed a complaint for declaratory judgment and injunctive relief against Gale Norton, the U.S. Secretary of the Interior, for failure to respond to the listing petition; the secretary had the petition for ten months at the time of filing. On February 9, 2006, the Secretary filed a notice of a 90-day petition to review the status of the polar bear – one year and one month - after receiving the initial petition.¹⁰⁶ On December 27th, 2006 FWS announced the proposal to list the polar bear, and published their findings in the Federal Register on January 9, 2007. A 90-day public comment period was opened from January 9 to April 9. FWS will release their final decision January 2008; three years after the original petition, one year less than the average listing time of 4.3 years.

¹⁰¹ 16 U.S.C. § 1533 (f)(1)(B).

¹⁰² 16 U.S.C § 1378 (a)(1).

¹⁰³ Scott, J. *supra* note 12, 63.

¹⁰⁴ Factoring in all animals listed since 1973 the average is 11 years. Post 1983, the average dropped to 4.3 years. *Id.* 63.

¹⁰⁵ The Center for Biological Diversity filed a complaint for declaratory judgment and injunctive relief in the Northern District of California Court on December 15, 2005. The FWS published the 90-day petition roughly two months later. <http://www.biologicaldiversity.org/swcbd/SPECIES/polarbear/Complaint12-15-05.pdf>.

¹⁰⁶ 71. Fed. Reg, 6745.

The Secretary can proceed in several ways from this point in the listing process: find the petition not warranted, find the petition warranted, find the petition warranted but precluded.¹⁰⁷ Originally, the ‘warranted but precluded’ category was intended to give priority to species that needed immediate management by directing resources towards critically endangered species. Lately ‘warrant but precluded’ has become “a black hole for unlisted endangered species.”¹⁰⁸ Some species have been on the ‘warranted but precluded’ list for more than 16 years.¹⁰⁹ She could also grant a sixth-month extension on the deadline if “there is substantial disagreement regarding the sufficiency or accuracy of the available data relevant to the determination.”¹¹⁰ If the polar bear is placed on the candidate list for the ESA, this listing is considered the same as ‘warranted but precluded’. If FWS chose either the ‘not warranted’, or ‘warranted but precluded’ category, environmental groups could challenge the agency’s decision as ‘arbitrary and capricious.’¹¹¹ Courts show large amounts of deference to agency decisions, and if the groups lost they would have no recourse for future actions. As of April 10, 2007, there are 278 species that are candidates for listing, and three more that are proposed for listing, including the polar bear.¹¹² Some species, such as the Page springsnail (*Pyrgulopsis morrisoni*), have been on the candidate list for 17 years.¹¹³ The polar bear is facing a ticking clock as the window of opportunity to make substantial reverses in global climate policy closes. Any hindrance en route to listing will have an impact on the potential recovery of this species. Even if the polar bear makes it through the listing process with little to no problems, it will still face the challenge of recovery plans and critical habitat designation.

Recovery Plans:

Global climate change has never been addressed under the ESA with regards to a recovery plan or critical habitat designation. Other indirect threats, such as contaminants, have been evaluated in recovery plans and critical habitat has been designated in the face of uncertainty. No direct parallel can be drawn, but a few similar case studies can shed light on the difficulty facing polar bear managers.

¹⁰⁷ 16 U.S.C. § 1533(b)(3)(b).

¹⁰⁸ Houck, *supra* note 1,

¹⁰⁹ Houck, *supra* note 1, p5.

¹¹⁰ 16 U.S.C. § 1533(b)(6)(B)(i).

¹¹¹ *Chevron U.S.A. v. Natural Resources Defense Council* 467 U.S. 837 (1984).

¹¹² http://ecos.fws.gov/tess_public/SpeciesReport.do?listingType=C.

¹¹³ <http://ecos.fws.gov/speciesProfile/SpeciesReport.do?spcode=G059> visited 4/12/07.

The specific tenets mandated in recovery plans cannot be addressed for the major threat facing the polar bear: habitat loss due to decreasing sea ice. Recovery plans are to be designated for each species for “the conservation and survival....unless [the secretary] finds that such a plan will not promote the conservation of the species.”¹¹⁴ For example, this provision exempts FWS from creating recovery plans for foreign species, over which the secretary has no control. For plans that are created it must contain: 1) a plan for “site specific management actions,” that would aid in the survival and conservation, 2) “objective measurable criteria”; and 3) estimates of the resources, including time and cost, that would be needed to fulfill the set forth goals.¹¹⁵ It is illuminating to examine how these criteria are applied to a species whose primary threat is also habitat loss: the Northern Spotted Owl (*Strix occidentalis caurina*).

The northern spotted owl was listed in 1990 due to habitat loss and habitat modification.¹¹⁶ In 1992 the FWS created a recovery plan to address habitat loss and modification. FWS outlined the recovery plan according to the three criteria. One of the “site specific management actions” proposed was to create suitable habitat where there was none.¹¹⁷ To create new habitat the Forest Service can improve tree stand to serve as suitable habitat for the spotted owl. Even the method of improvement is clearly stipulated in the recovery document: the Forest Service will thin some trees while leaving some debris to serve as snags and down wood. FWS does not have the option of creating new habitat for the polar bear. They cannot make ice in the vast quantities needed to replace lost habitat nor could they make modification to existing habitat to mimic function of sea ice. Once the specific actions are identified it is easier to determine the cost of recovery. For example: The Forest Service can calculate the cost of thinning a certain amount of acreage, or how many conservation easements would be needed. Without site specific management action, the recovery plan for the polar bear cannot estimate resources needed to protect the polar bear. No one really knows much it will cost to decrease carbon emissions. The recovery plan for the polar bear would need to take a new approach.

The recovery plan criteria are impossible to fulfill for the polar bear facing the off-site threat of global climate change. Other than managing oil and gas exploration and development, and increased monitoring, there are few on-site actions that managers can take to stop non-point

¹¹⁴ 16 U.S.C. § 1533 (f)(1).

¹¹⁵ 16 U.S.C. § 1533 (f)(1)(B)(ii).

¹¹⁶ 54 Fed. Reg. 26676.

¹¹⁷ Lujan, M. (1992) “Recovery Plan for the Northern Spotted Owl – Draft”.

source problems such as melting sea ice or increasing contaminants. Measurable criteria are equally difficult to devise. Scientists do not know where the critical threshold is for sea ice decrease or contaminant loads. How much do we need to decrease carbon emissions to stop global warming? With high uncertainty, it will be difficult to establish criteria.

Even for species with direct threats, recovery plans are difficult to implement. Currently 83% of species under FWS jurisdiction have recovery plans,¹¹⁸ but only 2% of FWS listed species have achieved at least 75% of the recovery goals.¹¹⁹ Although these plans are mandatory, the courts have been reluctant to force the FWS to create or enforce a recovery plan. The courts have openly stated, “the recovery plan itself has never been an action document.”¹²⁰ The courts generally feel that recovery plans are largely discretionary and so are unlikely to reverse FWS rulings.¹²¹ Recovery plans may lack funding, time frames, projected costs, or any measurable goals. The recovery plan for the Mexican grey wolf exemplifies most of these issues. Although the plan was created in 1982, it lacks all of the above criteria.¹²² It is hard to imagine what the recovery plan for the polar bear would entail. It would likely call for increased research and monitoring and, while these are important steps, they would not address the heart of the matter: habitat destruction.

While no recovery plan has been developed for a species facing such wide ranging habitat loss, the proposed recovery plan for the AT-1 population of killer whales (*Orcinus orca*) illustrates the difficulty in managing an indirect impact, in this case contaminants. The AT-1 population faces a variety of direct threats, including vessel traffic and declines in prey, but it is also heavily impacted by contaminants, including those affecting the polar bear.¹²³ The recovery plan identifies steps or measures that should be taken to ensure recovery and eventual delisting. Two of the steps it identifies are: “minimize input of contaminants into the environment” and “minimize levels of contaminants released by non point sources of pollution.”¹²⁴ How is this measurable? Does this action take any additional steps from current Clean Water Act standards?

¹¹⁸ Taylor, M.F.J., et al.(2005) The Effectiveness of the Endangered Species Act: A Quantitative Analysis. *BioScience* 55(4):360-367.

¹¹⁹ Id. 363.

¹²⁰ *Defenders of Wildlife v. Lujan* 792 F. Supp 834 (D.D.C. 1992).

¹²¹ *National Wildlife Federation v. National Park Service*, 669 F. Supp. 384; (D. Wyoming, 1987).

¹²² Houck, *supra* note 1, 31.

¹²³ National Marine Fisheries Service (2006) Proposed Recovery Plan for Southern Resident Killer Whales (*Orcinus orca*). National Marine Fisheries Service, Northwest Region, Seattle, Washington.

¹²⁴ Id. 128

Such recovery measures, while useful as goals, are not strategies that can be measured, and generally just identify shortcomings in other environmental laws. The plan also suggests more monitoring. The mitigation suggestions for contaminants reductions for the AT1 population of killer whales are not actions that will decrease the level of contaminants in the whales, or aid towards recovery. There is no single step that can be taken to reduce the entry of contaminants into the environment of the whales. This plan exemplifies the conservation challenges of non point source pollution.

Recovery plans often contain a variety of measurable goals and action plans, but typically there is a single focus on the primary threat. Global warming lies far outside the jurisdiction of FWS. FWS could, in theory, review agency actions that manage greenhouse gasses, but there is no agency currently in charge of managing emissions of greenhouse gasses. Later, I will address what would happen if the EPA chose to regulate any of the greenhouses gasses under the Clean Air Act.

Critical Habitat Designation (CHD)

Habitat protection will depend largely on the designation of critical habitat, one of the most contentious sections of the ESA. “The concept of protecting critical habitat had turned out to be the agony of the ESA,” so much so that in past reauthorization bills there have been frequent petitions to have it completely removed.^{125,126} To some it may seem that critical habitat designation is redundant in conjunction with the protection from harms listed in the take section, but it offers two additional protections: 1) it protects habitat not occupied by the species, but that is deemed essential for survival or recovery; and 2) the Section 7 provision prohibits agency actions from adversely modifying designated habitat. Critical habitat is only designated for 26% of listed species. This designation is a separate process from both listing and recovery plans.¹²⁷ Petitioners are calling for critical habitat to be listed concurrently, but the listing proposal does not identify any critical habitat at this time.¹²⁸ The listing proposal does seek comments on possible areas of critical habitat and these could be incorporated into the final decisions. Even if

¹²⁵ Houck, *supra* note 1, 9.

¹²⁶ HR. 3824, authored by Richard Pambo (R-CA). The bill passed the house 229-193, and was passed to the Senate subcommittee on environment and public works on September 19, 2005.

¹²⁷ Hagen, A. N., and Hodges. K.E. (2006) Resolving Critical Habitat Designation Failures: Reconciling Law, Policy and Biology. *Conservation Biology* 20(2):399-407.

¹²⁸ 72 Fed. Reg. 1064.

critical habitat is established, designation does not mandate how it should be managed. The second provision, if successful, will have the largest impact on polar bear recovery. Section 7 is typically how disputes between land managers, such as the Bureau of Land Management and the Forest Service, are settled, but in the example of polar bear protection it is not two land management agencies that are at odds, rather it is FWS versus almost all other federal agencies.¹²⁹

Even if critical habitat is established it provides no guarantee of protection for polar bears in a warming Arctic. FWS could list known denning sites and not sea ice. But, if sea ice was listed, there is no single action FWS could take for its protection. Sea ice is dynamic and can not be delineated like a closed fisheries area for sea turtles, or a speed zone for manatee protection.

The polar bear needs an efficient and effective listing process, something that rarely occurs under the current system. Even if we were to stop all emissions today, we have still committed ourselves to another one degree Fahrenheit change in global temperatures. To stop any future global warming, other than what we have committed ourselves to; we would need an 80% reduction in global emissions *today*.¹³⁰ Implementing polar bear protection would also require large amounts of funding, something FWS is lacking.¹³¹ The current tools of protection under the ESA, recovery plans and critical habitat designation, are not equipped to conserve a species in the face of such a global and diffuse threat.

Evaluation of Actions:

Proponents of the listing hope that it will force the federal government to address greenhouse gas emissions. This could happen through variety of means: Under Section 7, FWS could review agency actions dealing with greenhouse gas emission such as the EPA approval of State Clean Air Plans, or FWS could evaluate individual actions such as the development of a new coal fired power plant in North Carolina. I examined how these two specific actions, the Clean Air Act (CAA) and the citing of a North Carolina power plant, would be examined under the ESA with regards to polar bear protection and conservation.

¹²⁹ Suckling, K.F., Taylor, M. (2006) "Critical Habitat and Recovery" In The Endangered Species Act at Thirty: Renewing the Conservation Promise. eds. Goble, D.D. et al. Island Press, Washington. p 81.

¹³⁰ Seigal, K. personal communication.

¹³¹ Despite financial issues, the DOI has not asked for any increase in funding.

Section 7 – The Clean Air Act (CAA)

Section 7 (2)(a) is billed as the backbone of the ESA and it states that “each federal agency shall insure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species, or result in the destruction or adverse modification of critical habitat.”¹³² There are four questions in the evaluation process when determining agency actions under section 7: 1) is it a federal agency action; 2) what is the action area; 3) does the action cause jeopardy; and 4) does the action result in adverse modification?

The first step under Section 7 is determining if the action is a federal agency action. An agency's failure to act is not an action, and would not fall under section 7.¹³³ Only affirmative actions would cause a review. The EPA's refusal to promulgate regulations on greenhouse gas emissions as criteria pollutants cannot be reviewed by the ESA, but if the E.P.A. chose to create a national standard on carbon dioxide, that would be considered an action.

Secondly, there was a slight modification from the ESA to the Code of Federal Regulations: FWS and NMFS added the word discretionary.¹³⁴ With this change only actions which are not part of a greater agency mandate would be reviewed by Section 7. The basis of this premise is the 9th Circuit Court of appeals statement that “where there is no agency discretion to act, the ESA does not apply.”¹³⁵ This is particularly relevant for the CAA. Under the CAA the federal government sets national pollution standards for listed criteria pollutants and it is up to the states to develop plans, called SIPP (State Implementation Planning Program) to meet these standards.¹³⁶ Once a state creates a SIPP that meets the standards, the EPA is *required* to approve the state's plan – this is a non discretionary action. The SIPPs are reviewed every five years. The state can choose any methods to meet the standards; the EPA cannot force the state to adopt a certain technology.¹³⁷ It is unlikely that the EPA would have discretion to require states to assess impacts from greenhouse gasses under the ESA, particularly as greenhouse gasses are not currently considered criteria pollutants. ‘Discretionary’ agencies actions, while misrepresenting

¹³² 16 U.S.C. 1536 (a)(2).

¹³³ *Western Watersheds Project vs. George Matejko*, 456 F.3d 924, (9th Cir. 2006).

¹³⁴ 50 C.F.R. 402.03.

¹³⁵ *Natural Resources Defense Council v. Houston*, 146 F.3d 118, 1125-26 (9th Cir. 1998); *Sierra Club v. Babbitt* 65 F.3d 1502; (9th Cir. 1995).

¹³⁶ 42 U.S.C. § 7410 (a)(1).

¹³⁷ *Virginia v. EPA* 108 F.3d 1397 (D.C. Cir 1997).

the original intent of Congress, are generally supported by the courts.¹³⁸ If the EPA chose to regulate carbon dioxide as a criteria pollutant, the National Ambient Air Quality Standard for carbon dioxide could be reviewed under Section 7. Developing a standard might be not be discretionary, but the level set by the standard would be considered a discretionary action and subject to review. FWS could evaluate the standard to determine a jeopardy or non jeopardy finding. It is unlikely that FWS would issue a jeopardy opinion because any decrease in carbon emissions would help the polar bear, but it does not mean the standard would be enough to protect the polar bear.

A recent court decision set a new legal precedent that might push back towards Congress's original intent of *all* agency actions, and not just discretionary actions.¹³⁹ Under the Clean Water Act the EPA can transfer authority to the state to administer National Pollution Discharge Elimination System Permits (NPDES). The EPA transferred this power to Arizona. Defenders of Wildlife challenged that this approval violated the ESA, because they alleged Arizona could fill in wetlands with no further consultations. Initially the EPA stated they did not have the discretion to factor in conditions not based on water quality. The court ruled that EPA did indeed have discretion and the action should be reviewed under Section 7 of the ESA. Because of this slight shift in legal precedent I will continue to evaluate the CAA under the ESA. It is unknown if the courts will view the approval of a SIPP as discretionary or not; it would largely depend on where the case is tried. This most recent decision suggests that such actions might be viewed as discretionary and thus would move to the second step under Section 7.

The second step in the process is determining the action area of the impacts. The action area is defined as "areas to be affected directly or indirectly by the Federal Action, and not merely the immediate area involved in the action."¹⁴⁰ Action can include "the granting of licenses, contracts, leases, easements, rights of way, or permits," and any actions "directly or indirectly causing modifications to land, water or air."¹⁴¹ Provisions were factored into the ESA to consider impacts outside the direct geographical area of the action, but how would one assess an action area that is essentially the globe? This standard would require the ESA to evaluate the impacts from an action in North Carolina thousands of miles away in the Arctic. The action area

¹³⁸ See Hasselman, J for an in depth legislative history of the ESA. Hasselman, J. (2006) "Holes in the Endangered Species Act Safety Net: The Role of Agency "Discretion" in Section 7 Consultation" Stanford. Env. Law.

¹³⁹ Defenders of Wildlife v. EPA 420 F.3d 946 (9th Cir. 2005).

¹⁴⁰ 50 C.F.R. 402.02.

¹⁴¹ 50 C.F.R. 402.02.

for the state plan would likely just be considered the state of North Carolina, and the surrounding air shed. Polar bears would not be considered in the Action Area; thus FWS would not evaluate the impacts to the polar bear.

The third step is assessing jeopardy, assuming federal agency action would be reviewed, and polar bears were identified as part of the action area. Jeopardy is “reducing the appreciable likelihood of both survival and recovery of listed species in the wild.”¹⁴² While there is a general consensus that global warming is occurring, the exact pathways are not understood, and it will be hard to prove that relatively small amounts of emissions from a single state would substantially add to the environmental baseline, which is the standard required when assessing jeopardy.¹⁴³ The biological opinion assesses the impact of the proposed actions on survival, not necessarily recovery. This concept of jeopardy stems largely from the courts interpretation and does not necessarily adhere to the original intent of the Act, which is recovery. Courts have shown large amounts of deference to agencies in their assessment of risk when determining a jeopardy/no jeopardy opinion.¹⁴⁴ Although NMFS has moved toward a more inclusive definition of survival to include recovery, FWS still adheres to the original definition set forth in *Fund for Animals vs. Rice*: the jeopardy decision does not have to factor in tenets set forth in the recovery plan, it just has to ensure survival.¹⁴⁵

FWS would have to determine whether or not the approval of North Carolina’s SIPP would substantially add to the environmental baseline, thus creating a jeopardy opinion. This addresses a critical problem with jeopardy and the polar bear: what is the critical threshold of emissions? What level of emissions constitutes a substantial increase? Would the environmental baseline factor in the status quo? Right now the current level of emission is causing a decrease in the extent and duration of sea ice. What level of emissions should be considered the baseline? 1980? Pre-industrial Revolution? If North Carolina is renewing their plan, without authorizing any additional emissions, the renewal would not substantially add to the current environmental baseline. Warming is caused by many thousands of global sources, and it is unlikely that North Carolina would add substantially to the baseline. Most importantly, FWS is ill equipped to answer such uncertainties. Even climate experts cannot state the exact level of emission

¹⁴² Suckling, *supra* note 129, p 78.

¹⁴³ Rohlf, D.J. 2001 “Jeopardy under the Endangered Species Act: Playing A Game Protected Species Can’t Win” *Washburn Law Journal*. 41:114.

¹⁴⁴ *Id.*

¹⁴⁵ *Fund for Animals v. Rice*, 85 F.3d 535 (11th Cir. 1996).

reductions needed to maintain adequate levels of sea ice prevent greater sea ice decrease, or the reductions needed to possibly reverse the current damage, if that is even possible.

Jeopardy decisions are supposed to factor in cumulative impacts: “those effects of future state or private activities, not involving federal activities, that are reasonably certain to occur within the action area of the federal action subject to consultation.”¹⁴⁶ This takes us back to the challenge of ‘action area’. Due to the global nature of the warming, all state and private actions involving greenhouse gas emissions could have impacts on the polar bear. With such and enormous volume of emissions FWS is unlikely to issue a jeopardy finding because that would set the precedent that any additional emissions would cause jeopardy; an unlikely scenario given FWS’s reluctance to issue jeopardy opinions in the face of certainty.

How likely is it that FWS would issue a jeopardy opinion for another species with a more precise understanding of impacts and actions? Numerous federal actions might trigger a jeopardy opinion, but FWS has rarely issued such an opinion. From 1988-1994 over 96,000 actions were evaluated through either informal or formal consultations. Of these .05% of the actions were considered to cause jeopardy.¹⁴⁷ Thus, even for species with well defined habitats and threats, jeopardy findings are rarely issued.

The last step under Section 7 is adverse modification. This follows a similar path of first determining an agency action, and then the action area. The statute states that a federal agency cannot conduct an action that would destroy or adversely modify designated critical habitat. The key phrase here is ‘designated’. Without the designation the standard does not apply, and it is unclear whether jeopardy alone would include habitat destruction to non-designated habitat. Legal precedent establishes beyond doubt “that the ESA’s prohibition on modification of critical habitat is interpreted by courts as strong and unyielding [while] the prohibition on jeopardy is viewed as discretionary and flexible.”¹⁴⁸ By not designating habitat, FWS avoids this scrutiny. The listing proposal stated that no critical habitat was being proposed at the time. Typically an environmental organization will file suit to force FWS or NMFS to designate habitat and courts generally compel designation. As of now, the adverse modification standard would not apply, costing the polar bear valuable protection since habitat loss is the primary threat.

¹⁴⁶ 50 C.F.R. 402.02.

¹⁴⁷ Rolff, *supra* note 143.

¹⁴⁸ Houck, *supra* note 1, 15.

Section 9 – North Carolina Power Plant

The next section of the ESA that would likely be involved is Section 9 which stipulates that it is “unlawful for any person subject to the jurisdiction of the United States to take any species within the U.S.”¹⁴⁹ Take includes harass, harm, pursue and hunt. The development of a private coal fired power plant in North Carolina could fall under Section 9. This is not a federal action, so Section 7 would not apply. It is unlikely that the utility company would seek a consultation on their own, so a third party would have to file a lawsuit forcing FWS to review the issue. For a plaintiff to bring a case, she must show three things: 1) injury in fact; 2) traceability to the defendant; and 3) that the harm they allege can be favorably redressed by the court.¹⁵⁰

Could the plaintiff show injury in fact? The courts further define injury in fact as “actual or imminent, not conjectural or hypothetical.”¹⁵¹ Based on the IPCC’s latest findings of climate change, injury in fact is likely to be granted. Global warming is occurring, but does it cause a taking through habitat destruction? Under Section 7, federal agencies are prohibited from adversely modifying habitat, but there are no explicit provisions for individuals in Section 9. Taking with regards to habitat destruction has been defined by the courts and not in the Act itself. The biggest point of contention concerns whether or not ‘take’ occurs without direct physical actions towards the species. Through two landmark cases *Palila v Hawaii Department of Land and Natural Resources*¹⁵² and *Babbitt v. Sweet Home Chapter of Communities for a Great Oregon*¹⁵³, the courts established that the definition of ‘take’ does included habitat modification. The court has been very explicit in these two cases. Additional decisions have supported the position that habitat modification does constitute harm, and thus is a take; however there is still great debate on “the mind boggling issue of causation.”¹⁵⁴ The emissions of the power plant would contribute to global warming and thus polar bear decline. But the chain of causation needs closer examination.

Would the plaintiff satisfy the second step: traceability to the defendant? Proximate causation, whether assessing take or adverse modification to critical habitat, is unlikely to be established for global warming based on the majority opinions concerning proximate

¹⁴⁹ 16 U.S.C. 1538 (a)(1)(B).

¹⁵⁰ *Lujan v. Defenders of Wildlife*, 504 U.S. 555; 112 S. Ct. 2130.

¹⁵¹ *Id.*

¹⁵² *Palila v. Hawaii Department of Land and Natural Resources*, 639 F.2d 495 (9th Cir. 1981).

¹⁵³ *Babbitt v. Sweet Home Chapter of Communities for a Great Oregon* 515 U.S. 687 (1995).

¹⁵⁴ Sullins, T. (2001) *ESA: Endangered Species Act* (Best Practice Series) Chicago, Section of Environment Energy Resources p 47.

causation.¹⁵⁵ Harm must be assessed using “ordinary requirements of proximate causation and foreseeability.”¹⁵⁶ Both the opinion and the dissent of *Sweet Home* shed light on the court’s opinion of causation. Justice Scalia, who wrote the dissent, gave the example of a farmer who caused erosion and the runoff caused a river to become anoxic resulting in fish kills.¹⁵⁷ Under the definition of harm this would not be considered a take. It is not hard to translate this example into global warming; a power plant emits carbon emissions which become trapped in the atmosphere, which then traps sunlight, increasing temperatures and melting ice, decreasing habitat for the polar bear, decreasing foraging opportunities and causing polar bear mortality. The courts have already begun to address emissions and causation. In the oral arguments in *Massachusetts et al. vs. Environmental Protection Agency*, the EPA cited the National Research Council (NRC) when discussing global warming and causation. NRC stated that “a causal linkage’ between greenhouse gas emissions and global warming ‘cannot be unequivocally established.”¹⁵⁸

There are two tests used to establish causation and it largely depends on the court where the case is tried on which test is used. FWS uses the common “but for” test when establishing causation. The “but for” test states that “the injury would not have occurred *but for* the defendant’s conduct.”¹⁵⁹ Due to the cumulative nature of global warming it will be difficult to attribute all the effects to just one cause. Many different sources emit carbon; including cars, factories, power plants, and natural sources. Together all of these emissions account for some portion of global warming. If the power plant were to be reviewed it would be hard to prove that the power plant and the power plant alone is causing harm to polar bears. The second test is “substantial factor” test. Would the conduct be a substantial factor in causing injury? The U.S. is responsible for only 25% of global emissions, and power plants represent only a fraction of those emissions, so the substantial factor test would not hold up in court. Section 9 offers strong protection against direct takings, but it does not offer similar protection against indirect and distant takings, the primary threat facing the polar bear. Even past administrators of the Act recognize the difficulties in establishing proximate causation. Don Barry, former Assistant

¹⁵⁵ *Lujan v. Defenders of Wildlife* 504 U.S. 555; 112 S. Ct. 2130 & *Friends of the Earth v. Laidlaw Env'tl. Servc.*, 528 U.S. 167, 167 (2000).

¹⁵⁶ 515 U.S. 687, 115 S. Ct. 2414.

¹⁵⁷ *Id.* 2420. J. Scalia, dissenting.

¹⁵⁸ *Massachusetts et al. vs. Environmental Protection Agency* 367 U.S. App. D.C. 282; 415 F.3d 50.

¹⁵⁹ Liebesman, L.R. 1995 *Takings of Wildlife under the Endangered Species Act after Babbitt v. Sweet Home Chapter of Communities for a Great Oregon*. 5 U. Balt. J. Env'tl. L. 137.

Secretary of the Interior, stated “It will be a stretch to establish the causation between something such as car emissions and polar bear habitat.”¹⁶⁰

The third aspect is redress; would the prohibition of a power plant lead to polar bear recovery? No. As previously stated there are many thousands of sources causing global climate change, and stopping construction of a single power plant is not going to save the polar bear. If the suit was against all coal-fired power plants then the case for redress might be stronger, but not for one power plant.

In addition, plaintiffs are not likely to meet the burden for standing, and thus would be unable to bring their case to court. FWS would be left to assess the actions. FWS also has the option of issuing an incidental take permit, so the plant is allowed to ‘take’ some species provided it does not “appreciably reduce the likelihood of the survival and recovery of species in the wild.”¹⁶¹ We are now back to the concept of survival and recovery under Section 7 of the Act. How much sea ice does one ton of carbon dioxide decrease? How much sea ice decrease leads to one polar bear taking? There is too much uncertainty in the science to identify possibly incidental takings from the power plant, and in the face of large uncertainty FWS is likely to leave the matter alone.¹⁶²

Therefore, Section 9 is unlikely to offer much protection from individuals’ actions. Plaintiffs would not have standing to challenge the decision in court, and it would be up to FWS to assess takings. Due to large amounts of uncertainty FWS would not find that the power plant would ‘take’ polar bears.

New Developments: Massachusetts et al. v. EPA

On April 2, 2007 the U.S. Supreme Court handed down a decision that could have large bearing on the concept of standing in environmental cases under Section 9 and sets both legal and political precedence. They granted Massachusetts and nine other states standing to challenge the EPA’s decision not to regulate carbon dioxide under the CAA. The states were suing to force automakers to cut emission by 30% starting with 2009 models. This is the first case to set the

¹⁶⁰ Barry, Don. Personal Communication.

¹⁶¹ 16 U.S.C. § 1539 (a)(2)(B)(iv)

¹⁶² National Research Council (1995) Science and the Endangered Species Act National Academy Press, Washington D.C. p 160

precedent that the harms from global warming are “actual and imminent.”¹⁶³ The case also appears to relax other aspects of the standing provision that would substantially help litigation for polar bear protection. In the case the EPA alleges that the states could not prove traceability to the defendant alone because other nations, such as India and China, are rapidly industrializing and contributing greenhouse gasses. Justice Stephens recognized in the majority opinion that just because it would be a first step in many “does not by itself support the notion that federal courts lack jurisdiction to determine whether that step conforms to law.”¹⁶⁴ To apply this to Section 9: the power plant could be reviewed for just its impacts to the polar bear, with the knowledge that stopping the power plant would not recover the polar bear, but it would be a first step. The opinion also establishes that “a reduction in domestic emissions would slow the pace of global emissions increases, no matter what happens elsewhere.”¹⁶⁵ This removes the argument that since warming is a global problem, and we can do nothing with regards to foreign emissions, we should do nothing here.

In addition to legal precedence the case also added support to the political push to force the EPA to list carbon dioxide as a pollutant. The EPA made the argument that emission standards were the responsibility of the Department of Transportation; therefore they did not need to regulate. The court rejected this reasoning and decided that the EPA does have the power to regulate carbon emissions under the CAA, and the “EPA must ground its reasons for action or inaction in the statute.”¹⁶⁶ This decision creates political capital for environmental groups to continue their push for regulations.

The ESA and International Actions:

Assuming that the ESA worked perfectly, the polar bear was listed, an effective recovery plan was implemented and critical habitat was established, it would still not be enough to save the species because the ESA cannot mandate international actions. The U.S. Senate noted in 1972 that “Unilateral action by the United States...could be fruitless unless other nations are involved in the taking of marine mammals work with the United States to preserve and protect

¹⁶³ Massachusetts et al v EPA; 549 U.S. ____ (2007)

¹⁶⁴ Justice Stevens, Opinion of the Court 549 U.S. ____ (2007)

¹⁶⁵ Justice Stevens, Opinion of the Court 549 ____ (2007)

¹⁶⁶ Id.

these creatures.”¹⁶⁷ The Act does provide permission to enter into acts with other nations to help protect species, but cannot enforce these international actions.¹⁶⁸

If the U.S. took drastic steps to cut carbon emissions and develop the technology to make cuts possible, other nations would likely follow suit. Global warming, like so many of the environmental problems we will face in the coming century, is just that, a global problem. The Kyoto protocol, one of the first ratified treaties to try and reduce global carbon emissions, only mandates that Annex 1 countries reduce their 1990 carbon emissions by 5%.¹⁶⁹ The U.S. has yet to ratify this treaty. Some view the U.S. as having the ability to set the precedent, and able to make a sizeable impact on decreasing emissions; currently the U.S. emits 24% of the world’s carbon emissions.¹⁷⁰ However, China and India are rapidly industrializing and may soon surpass the U.S. in carbon emissions. The ESA is powerless against other nations, and conservation of the polar bear requires global actions.

IV. POLICY RECOMMENDATIONS

“If the ESA were to take on fuel standards or try to seriously cut back on U.S. emissions, it would send shockwaves across the political arena. It would be a case of win the battle but lose the war. The ESA would be subject to intense scrutiny and the remedy you are seeking would not rectify the wrongs you think you suffer. The U.S. should take steps to curb global warming but it should not be on the back of the ESA” - Don Barry¹⁷¹

If the ESA cannot protect the polar bear from its primary threat, global warming, then what can it do? And what else can be done? Managers will need to be both creative and flexible when devising how to protect the polar bear. The ESA can protect the polar bear from oil and gas exploration and drilling. The ESA could also minimize incidental takes. It will allow managers to take certain steps that will buy more time, while policymakers determine how to tackle the global problem of climate change. These recommendations are designed to reduce small scale mortality from problem bears and oil and gas drilling.

¹⁶⁷ Baur, supra note 6, 12

¹⁶⁸ 16 U.S.C. § 1537.

¹⁶⁹ Seigal, K, supra note 8, 57.

¹⁷⁰ Id 57.

¹⁷¹ Don Barry, personal communication.

Designation of Critical Habitat:

Sea ice is needed for all life processes, but polar bears are increasingly using land sites and these can be protected within the ESA. FWS should designate critical habitat: including known denning areas, polynas, and ice leads. Polynas are open water areas in the ice and serve as foraging habitat.¹⁷² These locations vary from year to year they are somewhat predictable based on weather conditions.¹⁷³ It is difficult to designate a location that could possibly move from year to year, but FWS could stipulate general locations and conditions. FWS has already identified Important Habitat Areas (IHAs) for the polar bear and these should be reviewed and designated as critical habitat.

Oil and Gas Drilling & Shipping:

Agency review will most likely not work for global warming, but proximate causation can be established for oil and gas exploration and development in polar bear habitat. FWS has shown certain unwillingness to slow the exploration under the MMPA but the ESA offers stronger protection. As previously detailed OGED can have a substantial impact on polar bear denning and behavior and represents a high number of incidental takes. If oil and gas expands in the Arctic and the industry continues the practice of deterring polar bears from these sites, it will further reduce suitable polar bear habitat. FWS made several recommendations increasing polar protection from OGED. These recommendations were not implemented in 1995 because implementation would require increased regulations and the polar bear was protected under the MMPA. FWS should omit IHAs from all future lease sales and prohibited any additional development in these areas.¹⁷⁴ This would protect denning and feeding areas from encroaching oil and gas. FWS should develop strategies to deal with a likely increase in shipping traffic. Shipping lanes should be mapped away from barrier islands and the shore. OGED is not the biggest threat but it is one that can be easily mitigated given current regulatory and legal structures.

¹⁷² FWS (1995) Habitat Conservation Strategy for Polar Bears In Alaska

¹⁷³ Id. P 65

¹⁷⁴ Id. J -3

Education:

Polar bears will continue to approach towns looking for an easy meal. The frequency of such unwanted interactions will likely increase as bear habitat shrinks in size and quality. Problem bears face removal and represent a needless take. FWS should continue their education program of native communities to prevent polar bears from wandering into towns looking for an easy meal. FWS should work with native communities to create guidelines on how to store trash and bowhead whale carcasses so as not to attract more bears.

CONCLUSION:

*We conclude that the future persistence of polar bears is tenuous.”
Derocher.*

There is no single action the U.S. government or the Endangered Species Act can take to protect the polar bear. Can the Endangered Species Act save the polar bear? No. The U.S. has shown an extreme reluctance to make any attempt to decrease fossil fuel use, and the listing petition makes no mention of the link between fossil fuels, greenhouse gas emissions and polar bear habitat, nevertheless, the tide might be changing. A slew of current events indicate a possible shift in U.S. attitudes towards climate change that could lead to polar bear protection. Several major companies called on Congress to work to curb greenhouse gas emissions. The State of Vermont is suing automakers to force a decrease in emissions; the movie Inconvenient Truth introduced millions of people to the plight of the polar bear via a short two-minute scene depicting a polar bear drowning; the IPCC issued their latest report supporting findings of global warming. Polar bears have made the cover of Time, National Geographic, New York Times, and the Washington Post. The polar bear resonates with many people as a warm and cuddly example of charismatic megafauna, and it could be the focusing event for global climate change.

The ESA was never meant to have the far reaching global impacts needed to save the polar bear from global warming. In most aspects, we have already failed the polar bear; it has become the proverbial canary in the coal mine of global warming. Regardless of what political fallout or changes will occur as a result of the potential listing and subsequent protection measures, the polar bear will likely still fall victim to global warming.