

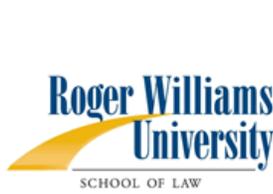


SHIFTING SEAS: The Law's Response to Changing Ocean Conditions

Background Document for Attendees

November 14 & 15, 2012
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Shifting Seas: The Law's Response to Changing Ocean Conditions

This Symposium will examine the laws and policies that are implicated as climate change impacts coastal and ocean environments. The land-sea boundary is shifting, ocean water is warmer and more acidic, fluctuating weather conditions and storms increasingly affect coastal communities, and the melting Arctic ice cap raises new international boundary and resource exploitation issues. These changes trigger many corresponding legal considerations for natural resource managers, planners, attorneys, insurers and law enforcement entities. To prepare for this Symposium, this background document will assist attendees in understanding the fundamentals of laws that may be utilized in adaptation to climate change.

This document will discuss the following federal laws and policies: The Clean Air Act (CAA), The Endangered Species Act (ESA), the National Marine Sanctuaries Act (NMSA), the Marine Mammal Protection Act (MMPA), the Public Trust Doctrine (PTD), and the Clean Water Act (CWA). Each section will explain the underlying purpose and principles of each law or policy and will explain how they have been impacted by climate change.

I. CLEAN AIR ACT

Background

The CAA was enacted “to protect and enhance the quality of the Nation’s air resources so as to promote the public health and welfare and the productive capacity of its population.”¹ Congress delegated the administration and enforcement of the CAA to the Environmental Protection Agency (EPA).² The CAA regulates the emissions of “air pollutants” which are defined as “any air pollution agent or combination of such agents, including any physical, chemical, biological, radioactive . . . substance or matter which is emitted into or otherwise enters the atmosphere.”³ The CAA controls the emission of these air pollutants by regulating ambient air standards and by creating limitations on both mobile and stationary sources.⁴ The EPA also publishes a list which includes the air pollutants whose emission “cause[s] or contribute[s] to air pollution which may reasonably be anticipated to endanger public health or

¹ 42 U.S.C § 7401(b)(1).

² 42 U.S.C § 7602(a).

³ 42 U.S.C § 7602(g).

⁴ 42 U.S.C § 7408(a)(1)(B).

welfare.”⁵ The definition of “welfare” includes the effects on climate.⁶

Additionally, each state is required to adopt a State Implementation Plan (SIP) for each air pollutant published by the EPA.⁷ Each SIP must regulate the air quality control established by the EPA for each region within their state.⁸ Each SIP must contain limitations on emissions, procedures to monitor air quality, enforcement measures, and prohibition of emissions which will interfere with the CAA’s established standards.⁹ An SIP must meet the “minimum criteria” established by the CAA to obtain the approval required by the EPA.¹⁰ An SIP must also contain a plan for Prevention of Significant Deterioration (PSD).¹¹ This plan requires the installation of the Best Available Control Technology (BACT) and an air quality analysis to assure that any decisions to increase air pollution will be made only after evaluating the consequences.¹²

Some experts believe that the CAA should give states more authority to regulate their own greenhouse gas emissions.¹³ Because every state is unique, some state regulators have argued that they need the ability to be able to regulate state-wide specific issues.¹⁴ For example, California already had stricter emissions standards due to problems with air pollution in Los Angeles, in particular, before the establishment of the CAA.¹⁵ In this case, because the state’s standards “tend to spur the development of better emission-control technologies that benefit the rest of the nation,” the CAA specifically allowed California an opportunity for waiver.¹⁶ Stipulations included that California’s standards must be “at least as protective of public health and welfare as applicable Federal standards,” and must be approved by the EPA in order for a waiver to be granted.¹⁷ The EPA does not have to approve the waiver if it determines the waiver

⁵ 42 U.S.C § 7408(a)(1).

⁶ 42 U.S.C § 7602(h).

⁷ 42 U.S.C § 7410.

⁸ 42 U.S.C § 7410(a)(1).

⁹ 42 U.S.C § 7410(a)(2).

¹⁰ 42 U.S.C § 7410(k)(1)(B).

¹¹ 42 U.S.C § 7410(a)(j).

¹² Prevention of Significant Deterioration (PSD) Basic Information. <http://www.epa.gov/NSR/psd.html> (last visited September 7, 2012).

¹³ Emily Siner, Environmental Officials Examine Clear Air Act from State Perspective (August 3, 2012), <http://www.infozine.com/news/stories/op/storiesView/sid/52708/>.

¹⁴ *Id.*

¹⁵ Clean Air Act and State Authority, Clean Cars Campaign, <http://www.cleancarscampaign.org/web-content/cleanairact/cleanairact.html#Anchor-Clean-49575> (last visited August 25, 2012).

¹⁶ *Scientific Basis for California's Tougher Emissions Standards Valid; Options Proposed for Improving Other States' Adoption of California Regulations*, National Academies.org,

<http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=11586> (last visited August 25, 2012).

¹⁷ 42 U.S.C § 7543.

is arbitrary and capricious, if California does not need these high standards to meet the state's condition, or if these standards would be inconsistent with the CAA.¹⁸

In contrast, car companies have routinely fought California's ability to be able to create their own emission standards. They are concerned about the increased cost to manufacture cars with unique standards instead of using nation-wide control standards.¹⁹ Despite their arguments and after many rejections, the EPA granted California a waiver for the first time in 2009.²⁰ Other states can adopt California's stricter standards but cannot create their own standards.²¹ The waiver allows car companies that comply with President Obama's national policy to reduce greenhouse gas pollution to be deemed compliant with California's state requirements.²² California's ultimate goal was to have its high standards meet the legal requirements necessary to protect public health and welfare.²³

Clean Air Act in the Courts as it Relates to Climate Change

The Supreme Court addressed climate change for the first time in 2007 with its decision in *Massachusetts v. EPA*²⁴ In the majority opinion, the Court found that while Congress "might not have appreciated the possibility that burning fossil fuels could lead to global warming, they did understand that without regulatory flexibility, changing circumstances and scientific developments would soon render the [CAA] obsolete."²⁵ The Court stated that the only way the EPA could avoid regulating greenhouse gases was if it determined that "greenhouse gases do not contribute to climate change or if it provide[d] some reasonable explanation as to why it cannot or will not exercise its discretion to determine whether they do."²⁶ In response to the Supreme Court's decision, the EPA researched the matter, finding that the concentration of greenhouse gases are at unprecedented levels and that while average temperatures have been warming over

¹⁸ *Id.*

¹⁹ See Clean Air Act and State Authority, Clean Cars Campaign, <http://www.cleancarscampaign.org/web-content/cleanairact/cleanairact.html#Anchor-Clean-49575> (last visited August 25, 2012).

²⁰ EPA Grants California GHG Waiver, cleancarscampaign.org, <http://www.cleancarscampaign.org/web-content/newsroom/docs/EPAWaiverstatement.pdf> (last visited August 15, 2012).

²¹ See 42 U.S.C § 7543.

²² EPA Grants California GHG Waiver, cleancarscampaign.org, <http://www.cleancarscampaign.org/web-content/newsroom/docs/EPAWaiverstatement.pdf> (last visited August 15, 2012).

²³ *Id.*

²⁴ 549 U.S. 497, 528 (2007).

²⁵ *Id.* at 532.

²⁶ *Id.* at 533.

the past one hundred years, they have been particularly significant over the past 30 years.²⁷ Due to these findings, the EPA concluded that because greenhouse gas emissions “cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare,” they must be regulated by the CAA.²⁸ Thus, the EPA created a provision under Section § 111 of the CAA “to set limits on greenhouse gas emissions from new, modified, and existing fossil-fuel fired power plants.”²⁹ Further, after the EPA evaluated scientific evidence and public comments, it made an endangerment finding of six greenhouse gases, including CO₂, finding that these gases contribute to climate change.³⁰ EPA Administrator Lisa Jackson commented that “[t]hese long-overdue findings cement 2009’s place in history as the year when the United States Government began addressing the challenge of greenhouse-gas pollution.”³¹

An issue regarding stationary sources was addressed by a court in 2011. New stationary sources, a source emitting any air pollution that is constructed or modified after the publication of a regulation, are controlled through each SIP and are subject to more stringent regulations than already existing stationary sources.³² Furthermore, it is to be expected that existing sources will wear out, and will become subject to the more stringent regulations when the sources are replaced or modified.³³ However, such provisions are not without flaws, as in *U.S. v. EME Homer City Generation*. A district court in Pennsylvania dismissed a case involving a stationary source with generating units emitting some of the highest SO₂ levels in the nation at the time, deciding that they could not grant injunctive relief or require the owners of the source to be subject to the more stringent regulations.³⁴ Despite that the prior owners had modified this source, because they had failed to apply for a permit before the modification, they were not required by the state to install the BACT under the state’s Prevention of Significant Deterioration program and the court did not hold the new owner’s liable for this oversight.³⁵

The EPA’s interpretation of the CAA vehicle emissions standards was most recently challenged on June 26, 2012. The District of Columbia held, among other things, that the EPA’s

²⁷ See *Am. Elec. Power Co., Inc., v. Connecticut*, 131 S. Ct 2527, 2533 (2011).

²⁸ See 42 U.S.C § 7408(a)(1); *Am. Elec. Power Co., Inc.*, 131 S. Ct at 2533.

²⁹ *Am. Elec. Power Co., Inc.*, 131 S. Ct at 2533.

³⁰ EPA: Greenhouse Gases Threaten Public Health and the Environment, epa.gov, <http://yosemite.epa.gov/opa/admpress.nsf/0/08D11A451131BCA585257685005BF252> (last visited August 15, 2012).

³¹ *Id.*

³² See 42 U.S.C § 7411; *U.S. v. EME Homer City Generation*, 823 F.Supp.2d 247, 279 (W.D. Pa. 2011).

³³ See *EME Homer City Generation*, 823 F.Supp.2d at 279.

³⁴ *Id.* at 267-77, 288-91.

³⁵ *Id.* at 276-77.

interpretation of the CAA provision governing vehicle emissions as related to its endangerment finding was correct even though some states and industrial groups claimed that its findings were based on “improper constructions of the CAA.”³⁶ The states’ primary concern was that the EPA did not consider policy concerns and consequences when it determined an endangerment finding for vehicle emissions, and instead it relied only on a “science-based judgment devoid of [these] considerations.”³⁷ However, relying on *Massachusetts v. EPA.*, the court found that these types of considerations are not relevant in determining whether the emissions contribute to climate change, as “policy concerns were not part of the calculus for the determination of the endangerment finding,” that the CAA requires under the statute.³⁸

The Future of the Clean Air Act

Thus far, the CAA has benefited public health by increasing and improving lives, creating greater workforce productivity, and improving ecosystem protections.³⁹ Since it was passed, the CAA has reduced air pollution by more than sixty percent.⁴⁰ The Act has “include[d] new standards for cleaner, more efficient vehicles, common-sense regulations to curb pollution from power plants and industrial sources and efforts to deploy cleaner sources of energy across the country.”⁴¹ It has been debated whether Congress is trying to take away the EPA’s ability to protect public health by “gutting” the CAA with allowing exemptions for large polluters and corporations.⁴² Recent bills have threatened to “roll back” existing protections guaranteed by the CAA.⁴³ These bills are an effort to support claims that “EPA standards are harmful to the economy and employment.”⁴⁴ Additionally, an amendment to a transportation bill may allow the second largest source of industrial toxic air pollution in America to delay compliance with CAA

³⁶ *Coal. for Responsible Regulation, Inc. v. E.P.A.*, 684 F.3d 102, 113, 121 (D.C. Cir. 2012).

³⁷ *Id.* at 117. .

³⁸ *Id.*

³⁹ Heather Zichal, *Attacks to the Clean Air Act & the False Choice between a Healthy Environment and Healthy Economy*, (September 15, 2011), <http://www.whitehouse.gov/blog/2011/09/15/attacks-clean-air-act-false-choice-between-healthy-environment-and-healthy-economy>.

⁴⁰ *Id.*

⁴¹ *Id.*

⁴² *Congress Guts the Clean Air Act*, sierraclub.org, <http://www.sierraclub.org/coal/ma/pr/pr2011-02-19.aspx> (last visited August 25, 2012).

⁴³ Zichal, *supra* note 39.

⁴⁴ *Id.*

new standards for possibly fifteen years or more.⁴⁵ This amendment would “gut” the core authority of the CAA by overturning and weakening the EPA’s authority to regulate the CAA.⁴⁶ Those opposing these bills believe that “Congress has undermined some of our nation’s most fundamental health and environmental laws to benefit big polluters and allow corporations to continue polluting without limits.”⁴⁷ Furthermore, they believe that “Congress should stop interfering and let the EPA do its job of safeguarding our water, air and health.”⁴⁸

Employment rates have also threatened to impact the CAA by preventing new regulations from being issued until rates increase.⁴⁹ This may prevent or delay the EPA from updating their standards for smog and soot pollution “guaranteeing a cascade of health hazards and unsafe air quality for Americans.”⁵⁰ While the courts continue to side with the EPA, confirming that political implications should not be considered when making determinations for pollution, these political considerations are being considered by Congress.⁵¹ In any case, avoiding “the extraordinary dangers of climate change eventually will require new legislation to supplement the [CAA] and . . . other existing clean energy laws.”⁵²

II. ENDANGERED SPECIES ACT

Background

The ESA was enacted to conserve the ecosystems that endangered and threatened species depend on, to provide a program for their conservation, and to maintain the purposes of associated international treaties.⁵³ An endangered species is “any species which is in danger of

⁴⁵ John Walke, *Why Senator Collins’ Boiler Amendment Guts the Clean Air Act and Does Not Just Delay it*, Curbing Pollution, Health and the Environment, U.S. Law and Policy (March 6, 2012), http://switchboard.nrdc.org/blogs/jwalke/why_senator_collins_boiler_ame.html.

⁴⁶ *Id.*

⁴⁷ Congress Guts the Clean Air Act, *supra* note 42.

⁴⁸ *Id.*

⁴⁹ John Walke, *Reckless House Legislation Would Impose Moratorium on Clean Air & Health Protections* (July 19, 2012), http://switchboard.nrdc.org/blogs/jwalke/the_house_of_representatives_i.html.

⁵⁰ *Id.*

⁵¹ See *Coal. for Responsible Regulation, Inc.*, 684 F.3d at 113.; David Doniger, *Climate Smack-Down: Court Upholds EPA’s Carbon Pollution Standards in Triumph of Science and Law*, Curbing Pollution, Solving Global Warming, U.S. Law and Policy (June 28, 2012), http://switchboard.nrdc.org/blogs/ddoniger/climate_smack-down_court_uphol.html.

⁵² *Id.*

⁵³ See 16 U.S.C § 1531(a); 16 U.S.C § 1531(b).

extinction throughout all or a significant portion of its range.”⁵⁴ A threatened species is “any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.”⁵⁵ The ESA defines “conserve” as using “all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary.”⁵⁶ The ESA provides a list of methods and procedures that can be used to achieve these goals for each species listed as endangered or threatened.⁵⁷

Both the Secretary of Commerce and the Secretary of the Interior administer the terms of the ESA.⁵⁸ When they receive a petition to review a species, they determine whether that species should be listed as endangered or threatened by evaluating the current impacts on that species. Such impacts include: threat to habitat, overutilization, amount of disease or predation, inadequacy of current regulations, and “other natural or manmade factors affecting its continued existence.”⁵⁹ These factors are determined “solely on the basis of the best scientific and commercial data available” when a species “requires protection from unrestricted commerce” or has been “identified as in danger of extinction, or likely to become so within the foreseeable future.”⁶⁰ After this evaluation, the Secretaries determine whether the species’ habitat should be classified as a critical habitat by evaluating “the best scientific data available,” by considering the economic and by determining other relevant impacts on the particular area.⁶¹

A species’ critical habitat is the specific area occupied by a species which has features that are “essential to the conservation of the species and which may require special management consideration or protections.”⁶² The Secretaries may exclude an area from this classification only if they determine that the benefits of this exclusion would outweigh the benefits of labeling an area as classified.⁶³ However, despite this, if the Secretaries determine “that the failure to

⁵⁴ 16 U.S.C § 1532(6).

⁵⁵ 16 U.S.C § 1532(20).

⁵⁶ 16 U.S.C § 1532(3).

⁵⁷ “Such methods include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulatory taking.” 16 U.S.C § 1532(3).

⁵⁸ 16 U.S.C § 1532(15).

⁵⁹ See 16 U.S.C § 1533(a); 16 U.S.C § 1533(b).

⁶⁰ 16 U.S.C § 1533(b).

⁶¹ *Id.*

⁶² 16 U.S.C § 1532(5).

⁶³ 16 U.S.C § 1533(b).

designate an area as a critical habitat will result in the extinction of the species concerned” they must identify the habitat as critical regardless of other economic and policy considerations.⁶⁴

The Secretaries also create a recovery plan for each species listed under the ESA to determine a management program for habitats in order to achieve the “goal for the conservation and survival of the species”, establish criteria that would result in the species being removed from the list once met, and an estimation of the time and the cost required to meet the plan’s goal.⁶⁵ Once a species is listed as threatened or endangered, the plan for each species is reviewed at least once every five years to determine whether a species status under the ESA should be modified or whether the species has recovered enough to be removed from the list.⁶⁶

The ESA also requires that other federal agencies work with the ESA. Under the ESA, federal agencies are required to ensure that their actions are “not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of the habitat of such species.”⁶⁷ The ESA prohibits importing or exporting any species listed, “taking” a species listed, and possessing or sale of such species.⁶⁸ However, a Secretary may issue a permit that allows an exception for one of these activities if the activity is for “scientific purposes or to enhance the propagation or survival of the affected species” and the activity includes a conservation plan for the species.⁶⁹ There are also exceptions for undue hardship if a person entered into a contract before the ESA listed the species and an exception for Alaskan Natives.⁷⁰

Endangered Species Act in the Courts as it Relates to Climate Change

In *Defenders of Wildlife v. Babbitt*, the District Court of Columbia held that an agency needed to not only consider the affect its activities directly had on an area, but was also required to assess the implications its activities would have on the protected pronghorn surrounding the area as well, as these pronghorn were “indirectly affected” by their activities in the area.⁷¹ Thus,

⁶⁴ *See id.*

⁶⁵ 16 U.S.C § 1533(f).

⁶⁶ 16 U.S.C § 1533(c).

⁶⁷ 16 U.S.C § 1536(a).

⁶⁸ *Id.*

⁶⁹ 16 U.S.C § 1539(a).

⁷⁰ The exception for Alaskan Natives applies when the taking is primarily for subsistence purposes, and when it is not accomplished in a “wasteful manner.” Products of species may be sold when they are made into “authentic native articles of handicrafts and clothing.” *See* 16 U.S.C § 1539(b); 16 U.S.C § 1539(e).

⁷¹ *Defenders of Wildlife v. Babbitt*, 130 F.Supp.2d 121, 128-30 (D.C. Cir. 2001).

while an agency is entitled to deference in selecting an area to conduct its activities, it must consider relevant factors and potential effects on surrounding species and their environment.⁷² Similarly, in *Native Ecosystems Council v. Dombeck*, when an agency failed to analyze the effects of a timber sale and livestock on the protected grizzly bears surrounding the area, the agency's biological assessment was found to be inadequate.⁷³ Both these cases highlight that while the ESA protects specific species under the Act, these species are not only affected by their immediate surroundings.

This increasingly large area that can affect protected species will be important for future actions based on climate change. In *Natural Resources Defense Council v. Kempthorne*, a District Court in California announced that the U.S. Fish and Wildlife Service "acted arbitrarily and capriciously by failing to address the issue of climate change."⁷⁴ The court found that the studies presented regarding the affects that climate change would have on Delta smelt provided enough evidence to warrant an analysis from the ESA.⁷⁵ Additionally, this decision effectively allowed the ESA to regulate a large California water source in order to protect the smelt.⁷⁶ This decision could have implications beyond the endangered species itself and affect the entire California community by cutting off up to one third of the drinking water normally captured from this water source.⁷⁷ This, in turn, could affect surrounding states and their use of water.⁷⁸

The Problem of Causation

Issues arise with liability when it comes to endangered species and climate change. While hunting a protected animal is a clear violation of the ESA, whether an owner of a building releasing carbon dioxide can be liable under the ESA for this contribution currently affecting a species protected under the ESA due to global warming is less clear.⁷⁹ In order for an organization to be liable under the ESA, the organization's contribution to global warming must jeopardize an entire species, and it is not liable if its actions would affect only one or two of the

⁷² *Native Ecosystems Council v. Dombeck*, 304 F.3d 886, 902 (9th Cir. 2002).

⁷³ *Id.*

⁷⁴ *Natural Res. Def. Council v. Kempthorne*, 506 F.Supp.2d 322, 369 (E.D. Cal. 2007).

⁷⁵ *Id.* at 367, 369.

⁷⁶ Jeff Kray, *Small Fish Causes Big Splash in California as State Ponders water Rationing to Protect Endangered Species*, Martin Law (September 26, 2007), <http://www.martenlaw.com/newsletter/20070926-water-rationing>.

⁷⁷ *Id.*

⁷⁸ *Id.*

⁷⁹ Matthew Gerhart, *Climate Change and the ESA: The Difficulty of Proving Causation*, *Ecological Law Quarterly* Vol. 36:167, 2009 at 169.

particular species.⁸⁰ Climate change is difficult to assess in the context of the ESA “due to the global nature of sources contributing to the problem and the difficulty of addressing these causes and impacts for individual species and small scale ecosystems.”⁸¹

The ESA gives the Secretaries the discretion to limit a recovery plan that may require mechanisms that are not currently available to promote recovery of a species due to a globalized issue such as climate change.⁸² Additionally, Section 9 of the ESA may raise a question of whether climate change actually causes “harm,” which is required under the definition of a “taking.”⁸³ As in *Massachusetts v. EPA*, where the Court first noted a connection between climate change and carbon dioxide, this may show that, “in the context of takings caused by climate change, causation may take many forms, so agency discretion will have an especially important role in implementing the regulatory scheme.”⁸⁴

One of the largest controversies involving the ESA is whether the polar bear can be protected under the Act. In 2008, the Secretary of the Interior announced that it would list the polar bear as a threatened species under the ESA based on scientific data showing that the loss of sea ice in the Arctic threatens, and will likely to continue to threaten their habitat.⁸⁵ However, when the Secretary made this announcement, he further stated that he was “taking administrative and regulatory action to make certain the ESA isn’t abused to make global warming policies.”⁸⁶ As a listing cannot limit climate change alone, he announced that there would be further guidance “limiting the unintended harm to the society and economy of the United States.”⁸⁷ Both the Secretary of the Interior and the Bush Administration have stated that “the ESA was never intended to regulate global climate change.”⁸⁸ The ESA was not meant to set climate policy. Its purpose is merely to reduce the avoidable losses of fish and wildlife, such as the polar bear.⁸⁹ Thus, the Secretary also announced the development of a new rule stating that if “an activity is permissible under the stricter standards imposed by the Marine Mammal Protection

⁸⁰ *Id.* at 172.

⁸¹ Lawrence R. Liebesman, Elizabeth Lake, Peter Landreth, *The Endangered Species Act and Climate Change – Current Issues*. American Law Institute November 5 - 6, 2009 at 234.

⁸² *See id.* at 237.

⁸³ *Id.*

⁸⁴ *Id.* at 238.

⁸⁵ *Secretary Kempthorne Announces Decision to Protect Polar Bears under Endangered Species Act, U.S. Department of the Interior*, May 14, 2008, http://www.doi.gov/archive/news/08_News_Releases/080514a.html.

⁸⁶ *Id.*

⁸⁷ *Id.*

⁸⁸ *Id.*

⁸⁹ *See id.*

Act, it is also permissible under the [ESA] with respect to the polar bear.”⁹⁰ This rule creates a compromise, ensuring the protection of the polar bear, while also allowing the United States to continue its research and develop in the Arctic.⁹¹ It allows oil drilling and mining to continue in some of the regions where the threats to the polar bear are the most severe.⁹² John Kerry, a democratic senator from Massachusetts, has announced that this “may ultimately kill polar bears.”⁹³ Rule supporters argue that the ESA is not equipped to balance these concerns, and instead, the ESA is better equipped to protect species that are affected by local and tangible threats, not global climate change.⁹⁴

This rule to limit the protections for the polar bear under the ESA has not gone unchallenged.⁹⁵ A court upheld the rule in October 2011, finding that the underlying purpose of the rule was not arbitrary and capricious as the Administration “reasonably determined that the prohibitions and exceptions set forth in [this rule] for the polar bear are ‘necessary and advisable to provide for the conservation of the species.’”⁹⁶ Additionally, the judge determined that “whether the ESA is an effective or appropriate tool to address climate change” was not a question for the court.⁹⁷ He also acknowledged that “climate change poses unprecedented challenges of science and policy on a global scale, and this court must be most deferential when operating at the frontiers of science.”⁹⁸ Thus, while the ESA will be an important tool to mitigate damages from climate change, its scope is limited to the species under its control. However, it will endeavor to provide assistance for some species learning to adapt to their changing environment due to climate change.

⁹⁰ *Secretary Kempthorne, supra* note 85.

⁹¹ *Id.*

⁹² NEWS: Polar Bears, the Endangered Species Act, and Climate Change, Climate Change Water Blog, (May 28, 2008, 9:44), <http://climatechangewater.org/files/6c1996e850e66e60c97caca676d40840-23.php>.

⁹³ *Id.*

⁹⁴ *Id.*

⁹⁵ *In re Polar Bear Endangered Species Act Listing and § 4(D) Rule Litigation*, 818 F.Supp.2d 214, 239 (D.D.C 2011).

⁹⁶ *Id.* at 234.

⁹⁷ *Id.*

⁹⁸ *Id.* at 219.

III. NATIONAL MARINE SANCUARIES ACT

Background

The NMSA was enacted in 1972 because “certain areas of the marine environment possess conservation, recreational, ecological, historical, scientific, educational, cultural, archeological, or esthetic qualities which give them special national, and in some cases international, significance.”⁹⁹ One of its purposes is “to maintain [and protect] the natural and biological communities in the national marine sanctuaries . . . and, where appropriate, restore and enhance natural habitats, populations, and ecological processes.”¹⁰⁰ A “sanctuary resource” is “any living or nonliving resource of a national marine sanctuary that contributes to the conservation, recreational, ecologically, historical, educational, cultural, archeological, scientific, or aesthetic value of the sanctuary.”¹⁰¹ The Secretary of Commerce may designate any area of the marine environment as a sanctuary under the NMSA by determining that an area is of “special national significance.”¹⁰² The factors for this determination include: uses of an area that depend on the maintenance of the area’s resources, activities that may adversely affect the environment, and the public benefits of this resource, including the protection of the sanctuary and potential for tourism.¹⁰³

Any federal agency whose actions are “likely to destroy, cause the loss of, or injure any sanctuary resource,” may need to consult with the Secretary before beginning such activities and the Secretary may “recommend reasonable and prudent alternatives.”¹⁰⁴ The Secretary may not add a sanctuary that will have a negative impact on other sanctuaries already protected by the NMSA.¹⁰⁵ Under the NMSA, violation of a provision of the Act may result in criminal penalties, civil penalties, and/or an injunction from activity, and the violators will be liable directly to the United States.¹⁰⁶ A person who is liable to the United States owes “the amount of response costs and damages resulting from destruction, loss, or injury; and interest on that amount

⁹⁹ 16 U.S.C § 1431(a)(2).

¹⁰⁰ 16 U.S.C § 1431(b)(3).

¹⁰¹ 16 U.S.C § 1432(8).

¹⁰² 16 U.S.C § 1433(2).

¹⁰³ 16 U.S.C § 1433(b).

¹⁰⁴ 16 U.S.C § 1434(d).

¹⁰⁵ 16 U.S.C § 1434(f).

¹⁰⁶ 16 U.S.C § 1437.

calculated.”¹⁰⁷

The National Marine Sanctuaries Act as it Relates to Climate Change

Climate change is affecting ecosystems through ocean acidification and coral bleaching.¹⁰⁸ The NMSA is different than other acts because it protects an entire ecosystem, instead of specific species like the Endangered Species Act.¹⁰⁹ The National Oceanic and Atmospheric Administration (NOAA) manages sanctuaries that become part of the national marine sanctuaries program. A challenge of addressing climate change under the NMSA is proving that a person’s or organization’s action actually caused the destruction of a sanctuary.¹¹⁰ The federal government may be able to argue that they have a personal stake in the matter because sanctuaries are a federally protected area under the act.¹¹¹ However, widespread causes spread through ocean currents and weather patterns, make it difficult to determine who is responsible, for example, when carbon dioxide emissions from likely more than one organization led to the injury or harm.¹¹²

Some suggest that the most useful remedy under the NMSA is to mandate an injunction against suspected individuals or corporations.¹¹³ While a complete injunction would likely put many jobs at risk, a partial injunction could force emissions to be curbed by a percentage.¹¹⁴ NOAA recognizes that climate change is a potential threat to sanctuaries and plans to develop a climate change site scenario and action plan to protect the sanctuaries in the future.¹¹⁵

IV. THE MARINE MAMMAL PROTECTION ACT

Background

The MMPA was enacted in response to the threat of extinction and depletion of marine mammals due to human activities and the need to conserve these marine mammals, marine

¹⁰⁷ 16 U.S.C § 1443(1).

¹⁰⁸ Jane Cynthia Graham, *The National Marine Sanctuaries Act: A Sanctuary for Climate Change Litigation?*, Marine Resource Committee Newsletter Vol. 13:2 (July 2010) at 13.

¹⁰⁹ See 16 U.S.C § 1431(b)(3).

¹¹⁰ Graham, *supra* note 108 at 14.

¹¹¹ *Id.*

¹¹² *Id.*

¹¹³ *Id.* at 17.

¹¹⁴ *Id.*

¹¹⁵ Flower Garden Banks National Marine Sanctuary Regulations, 77 Fed. Reg. 25060 (April 27, 2012) at cmt. 25.

mammal products, and their habitats.¹¹⁶ Congress determined that “such species and population stocks should not be permitted to diminish beyond the point at which they cease to be a significant functioning element in the ecosystem of which they are a part. And, consistent with this major objective, they should not be permitted to diminish below their optimum sustainable population.”¹¹⁷ This “optimum sustainable population” refers to “the number of animals which will result in the maximum productivity of the population or the species, keeping in mind the carrying capacity of the habitat and the health of the ecosystem of which they form a constituent element.”¹¹⁸ This population is established by scientifically determining a species maximum net productivity level (lower limit) and their environmental carrying capacity (upper limit), and optimum sustainability falls in between these limits.¹¹⁹ Thus, the MMPA not only provides protection for each marine mammal species, but also for population stock of a species that have the same “common spatial arraignment.”¹²⁰ These mammals are “resources of great international significance, esthetic, and recreational as well as economic” value that should be protected and encouraged to develop to “the greatest extent feasible.”¹²¹

The MMPA imposes “a moratorium on the taking and importation of marine mammals and marine mammal products,” with some exceptions such as educational purposes and incidental fishing.¹²² To regulate these exceptions, NOAA uses the “best scientific evidence available” and may prescribe certain regulation to ensure that these exceptions will not disadvantage certain species and so population stocks with remain consistent.¹²³ Any person who violates the MMPA is subject to civil penalties and possible imprisonment.¹²⁴

The MMPA establishes a program for international cooperation by encouraging NOAA to initiate negotiations with other nations for similar protections of marine mammals covered under the Act.¹²⁵ The MMPA encourages state cooperation by allowing management authorities

¹¹⁶16 U.S.C. § 1361.

¹¹⁷ *Id.*

¹¹⁸16 U.S.C. § 1362(9)

¹¹⁹ Timothy J. Ragen, Henry P. Huntington, Grete K. Hovelsrud, *Conservation of Arctic Marine Mammals Faced with Climate Change*, 18 Ecological Applications S166 (2008) at S167.

¹²⁰16 U.S.C. § 1362(11).

¹²¹16 U.S.C. § 1361.

¹²²16 U.S.C. § 1371.

¹²³ 16 U.S.C. § 1373.

¹²⁴ 16 U.S.C. § 1375.

¹²⁵ 16 U.S.C. § 1378.

for a species to be transferred to the state once NOAA finds that the state will implement its program according to the regulations set by the MMPA.¹²⁶

Additionally, the MMPA created the Marine Mammal Commission. The Commission's responsibilities include: reviewing existing laws and conventions addressing marine mammal issues, monitoring population stocks of the marine mammals, and making recommendations to NOAA as needed "for the protection and conservation of marine mammals."¹²⁷ A marine mammal is considered depleted under the MMPA when either a species or a population stock is below its established maximum productivity level, or when a species is listed as endangered or threatened under the ESA.¹²⁸ When a species or population stock is identified as depleted they are given more protection throughout the MMPA.¹²⁹

The Marine Mammal Protection Act as it Relates to Climate Change

Marine mammals in the Arctic will be affected by physical manifestations of their environment including changes in temperature, sea ice, precipitation, fresh water flow, and changes in oceanic and atmospheric circulation. The MMPA "provides a national example of an effort to set tolerable limits for ecosystem disturbance."¹³⁰ Depleted marine mammals are "unable to fulfill their natural ecological role within the marine ecosystems, and [are] in need of special management protection."¹³¹ However, while the MMPA is supposed to assess the progress of these changes and the effects on marine mammals by obtaining data on species, determining ecosystem parameters, and turning societal aspiration into action, the maximum net productivity level and environmental carrying capacity have not been assessed for many marine mammals in the Arctic.¹³² In fact, due to the lack of funding and other complications, estimates of this data are available only for four of the ten stocks of the Arctic marine mammals in U.S. waters.¹³³ Additionally, this data needs to be assessed when a population is in its "relatively natural state."¹³⁴ Because the environment has already been altered due to climate change the "estimates of the environmental carrying capacity based on current conditions would be based

¹²⁶ 16 U.S.C. § 1379.

¹²⁷ See 16 U.S.C. § 1401; 16 U.S.C. § 1402.

¹²⁸ 16 U.S.C. § 1362(1).

¹²⁹ 16 U.S.C. § 1362(1).

¹³⁰ Ragen, *supra* note 119.

¹³¹ *Id.*

¹³² *Id.* at S168.

¹³³ *Id.*

¹³⁴ See *id.*

low relative to the natural conditions they were intended to reflect.”¹³⁵ Further, even if this data was collected now, it would provide little meaning if not acted upon.¹³⁶

In order for such action to occur, the United States would have to make changes to help prevent climate change, and establishing these changes is not within the scope of the MMPA.¹³⁷ The best course of action would be to establish specific and objective indicators to establish thresholds for populations or habitat loss and use this information to assess trends and measures.¹³⁸ Basic identifiers can be determined cheaply such as the extent of sea ice, population trends in well studied areas, and health and reproductive trends in frequently captured species. Collecting this data is essential to determine risks and respond to the changing environments.¹³⁹

V. THE PUBLIC TRUST DOCTRINE

Background

The main principle of the public trust doctrine is that every sovereign government holds important natural resources in a trust for the public to ensure their vitality for both present and future generations.¹⁴⁰ This foundation is based upon English common law protecting public navigation and fishing rights over their tidal lands.¹⁴¹ In the United States during the revolution, these trusts were vested within the respective borders of each state, and the right to use this land was limited to the extent that they would not cause harm to public waters and land.¹⁴² Thus, the doctrine ensures that these resources are protected from “irrevocable harm to critical resources by private interests” and instead are held to benefit the people.¹⁴³ This doctrine has been used to protect resources such as water, wetlands, and wildlife habitats.¹⁴⁴ Given these principles, “it is not a great leap to recognize the atmosphere as one of the crucial assets of the public trust.”¹⁴⁵

¹³⁵ Ragen, *supra* note 119 at S168.

¹³⁶ *Id.*

¹³⁷ *See id.*

¹³⁸ *See id.* at S169.

¹³⁹ *See id.* at S169-S172

¹⁴⁰ *See* Mary Wood, Susan O’Toole, *How to Sue for Climate Change: The Public Trust Doctrine*, 10 Environmental & Natural Resource Section 1 (Oregon State Bar 2009).

¹⁴¹ *Alec L. v. Jackson*, No. 1:11–CV–02235, 2012 WL 1951969, at *1 (D.C. Col. May 31, 2012).

¹⁴² *Id.* at *2.

¹⁴³ Wood, *supra* note 140.

¹⁴⁴ *Id.*

¹⁴⁵ *Id.*

The Public Trust Doctrine as it Relates to Climate Change

The public trust doctrine is the most fundamental legal mechanism that has the ability to ensure that the government safeguards its public resources that are essential to maintaining public welfare.¹⁴⁶ The public trust doctrine allows citizen beneficiaries of a trust to sue a trustee for failing to protect a trust, and allows one trustee to sue another for failure to maintain their common property.¹⁴⁷ However, in order to have a viable claim under the public trust doctrine, “atmosphere” needs be recognized as a legitimate trust that should be protected under this doctrine.¹⁴⁸

Many state courts, including those in Colorado, Oregon, Arizona, Washington, Arkansas, and Minnesota are having trouble finding a basis for this “atmospheric trust.”¹⁴⁹ In *Alec L. v. Jackson*, a federal court held that the public trust doctrine was a state law issue, and therefore the court did not have jurisdiction to hear the case.¹⁵⁰ In this case, the court was asked to recognize the atmosphere as a public trust, and find that “the United States government, as a trustee, has a fiduciary duty to refrain from taking actions that waste or damage this asset.”¹⁵¹ However, if the court required federal agencies to take on this activity, this decision could be displaced by Congress, as similar ones have previously been, making this case “about the fundamental nature of our government and our constitutional system, just as much – if not more – than it is about emissions, the atmosphere or the climate.”¹⁵² However, on August 2, 2012, the District Court of Texas acknowledged that as the public trust doctrine does not exclusively apply to water, it “includes all natural resources of the State including the air and atmosphere.”¹⁵³ While this reasoning, in part, may have considered based on the language incorporated into the Texas Constitution that declares all natural resources as a public trust, this decision may be a step

¹⁴⁶ *Id.*

¹⁴⁷ See Mary Wood, Susan O’Toole, *Enforcing the Atmospheric Fiduciary Obligation*, 10 Environmental & Natural Resource Section 3 (Oregon State Bar 2009).

¹⁴⁸ *Texas Trial Court Recognizes Potential Application of “Public Trust” Doctrine to Redress Climate Change*, July 7, 2012, <http://www.gardere.com/Binaries/Press%20and%20Publications/20120717TexasTrialCourtRecognizesENVIRONMENTALALERTWEBVERSION.html>

¹⁴⁹ *Id.*

¹⁵⁰ *Alec L.*, No. 1:11–CV–02235, 2012 WL 1951969, at *1.

¹⁵¹ *Id.* at *2.

¹⁵² *Id.* at *5.

¹⁵³ *Bonser-Lain v. Texas Commission on Environmental Quality*, No. D-1-GN-11-002194, 2012 WL 3164561, at *1 (Tex. Dist. August 2, 2012).

towards assigning liability for climate change under the public trust doctrine.¹⁵⁴

VI. THE CLEAN WATER ACT

Background

Congress states that the purpose of the CWA is to “restore and maintain the chemical, physical, and biological integrity of the Nation's waters.”¹⁵⁵ To achieve this purpose the CWA states that “it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited,” that states must implement and develop area-wide waste treatment management, and major research and demonstration efforts must be made to develop the technology necessary to prevent discharge pollutions from entering into navigable waters, the contiguous zone, and the oceans.¹⁵⁶ The EPA is responsible for carrying out the majority of the provisions within the CWA.¹⁵⁷ The most basic role of the CWA is to address pollution, defined as “the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water.”¹⁵⁸ The term “pollutant” under the CWA means “dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.”¹⁵⁹ The CWA regulates the discharge of pollutants, meaning “(A) any addition of any pollutant to navigable waters from any point source; and (B) any addition of any pollutant to the waters of the contiguous zone or the ocean from any point source other than a vessel or other floating craft.”¹⁶⁰ The CWA regulates this discharge of pollutants from any “point source,” defined as “any discernible, confined and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or

¹⁵⁴While this Court addressed that atmosphere could be considered as part of a trust under the doctrine, this Court held that it was reasonably for Texas to not proceed with this rulemaking at this time based on other state and federal litigation. *Id.*

¹⁵⁵ 33 U.S.C. § 1251(a).

¹⁵⁶ 33 U.S.C § 1251(a)(3)-(6).

¹⁵⁷ 33 U.S.C § 1251(d).

¹⁵⁸ 33 U.S.C § 1362(19).

¹⁵⁹ 33 U.S.C § 1362(6).

¹⁶⁰ 33 U.S.C § 1362(12).

other floating craft, from which pollutants are or may be discharged.”¹⁶¹ Additionally, the EPA must “establish national programs for the prevention, reduction, and elimination of pollution.”¹⁶²

Under the CWA, the EPA must publish water quality criteria based on the “latest scientific knowledge,” describing the “kind and extent of all identifiable effects on health and welfare.”¹⁶³ The EPA uses this information, working with state and federal agencies, to develop factors necessary to restore and maintain the waters, and protect the animals and activities within the waters.¹⁶⁴ Additionally, states establish a priority ranking for their waters, “taking into account the severity of the pollution and the uses to be made of such waters,” so that these waters may have additional protections.¹⁶⁵

The Clean Water Act as it Relates to Climate Change

On January 16, 2009 the EPA agreed to address the Center for Biological Diversity’s petition to revise water quality criteria in light of current knowledge regarding ocean acidification.¹⁶⁶ Oceans have become 30 percent more acidic in the last 250 years, and the pH is expected to decrease another 0.3 to 0.4 by the end of this century.¹⁶⁷ Because of climate change, it is expected that the demand for water will increase as there will be less precipitation and less water in present water sources.¹⁶⁸ The build-up of greenhouse gas can promote chemical interactions between the air and water that can change the quality of that water.¹⁶⁹ The structure of the CWA allows it to adapt to the changes caused by climate change and “acknowledge these new ecological realities and respond to them, not waste time, money, and effort attempting to re-achieve conditions that are no longer possible.”¹⁷⁰ The CWA can address climate change issues by compiling information about how climate change is specifically affecting the nation’s waters.¹⁷¹ This would give the EPA information to create planning efforts to deal with the

¹⁶¹ 33 U.S.C § 1362(14).

¹⁶² 33 U.S.C § 1254(a)(1).

¹⁶³ 33 U.S.C § 1314.

¹⁶⁴ *Id.*

¹⁶⁵ 33 U.S.C. § 1312(d).

¹⁶⁶ Robin Kundis Craig, *The Clean Water Act on the Cutting Edge: Climate Change and Water – Quality Regulation*, Natural Resources & Environment, Vol. 24, No. 2, p. 14, Fall 2009.

¹⁶⁷ *Id.*

¹⁶⁸ *Id.*

¹⁶⁹ *Id.*

¹⁷⁰ *Id.* at 18.

¹⁷¹ Robin Kundis Craig, *Climate Change Comes to the Clean Water Act: Now What?*, 1 Wash. & Lee J. Energy, Climate and Env’t (2012), <http://scholarlycommons.law.wlu.edu/jece/vol1/iss1/4>, 24-25.

impacts of climate change.¹⁷² Climate change qualifies as “pollution” under the CWA because it will affect the chemical, physical, biological, and radiological integrity of water.”¹⁷³ Therefore, the EPA has the authority to “gather and generate scientific data regarding climate change’s actual and potential effects” on water quality, species, and aquatic ecosystems.¹⁷⁴ Thus, the CWA “functions most naturally to help governments identify and plan for climate change impacts and to help regulators respond to those impacts.”¹⁷⁵ However, while the CWA is probably best adapted to mitigate climate change and greenhouse gas emissions, it does not have the required mechanisms to reduce these emissions or reduce the impacts that climate change has had on water quality.¹⁷⁶

¹⁷² *Id.* at 25.

¹⁷³ *Id.* at 26.

¹⁷⁴ *Id.* at 27.

¹⁷⁵ *Id.* at 44.

¹⁷⁶ *Id.* at 48.