THE NATIONAL OCEAN POLICY: CAN IT REDUCE MARINE POLLUTION AND STREAMLINE OUR OCEAN BUREAUCRACY?

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Introduction 629

II. Reasons to Protect Our Ocean 632

III. State of the Oceans 635

IV. The National Ocean Policy ("NOP") 641

V. Evaluation of the Policy Implementation Today, Challenges to Implementation, and Recommendations for Future Implementation 651

VI. Final Considerations 655

Conclusion 656

INTRODUCTION

[I]t is an interesting biological fact that all of us have in our veins the exact same percentage of salt in our blood that exists in the ocean, and, therefore, we have salt in our blood, in our sweat, in our tears. We are tied to the ocean. And when we go back to the sea, whether it is to sail or to watch it, we are going back to whence we came.[1] —John F. Kennedy

President Kennedy's words may be poetic, but there is great truth to them. Consider that human existence and habitation would not be possible without the ocean because the oxygen we breathe derives from activities of photosynthetic organisms in the ocean.[2] Consider also that the ocean provides 99% of the habitat available for life—a statistic that makes sense

1. John F. Kennedy, President of the United States, Remarks of the President on the Occasion of the Dinner Given by his Excellency the Hon. Sir Howard Beale, K.B.E., Q.C., Ambassador of Australia to the United States (Sept. 14, 1962), available at http://www.jfklibrary.org/Asset-Viewer/Archives/JFKPOF-040-005.aspx.

2. NAT'L OCEANIC AND ATMOSPHERIC ADMIN., OCEAN LITERACY: THE ESSENTIAL PRINCIPLES AND FUNDAMENTAL CONCEPTS OF OCEAN SERVICES FOR LEARNERS OF ALL AGES (2013), available at http://oceanservice.noaa.gov/education/literacy/ocean_literacy.pdf.

considering the ocean covers more than 71% of the Earth's surface[3] and can plunge as deep as 6.85 miles.[4]

But humanity's ties to the ocean do not end there—we depend on the ocean in many other ways. Internationally, over 2.6 billion people rely on the ocean as their primary source of protein, making the ocean the world's largest source of protein.[5] Marine fisheries directly provide over $3 trillion in annual economic goods and services plus an estimated $20.9 trillion per year in non-market ecosystem services.[6] Finally, 90% of all internationally-traded goods are transported over the ocean via shipping.[7]

The United States is similarly dependent on ocean resources. According to the recent "State of the Coast" report issued by the National Oceanic and Atmospheric Administration ("NOAA"), coastal watershed counties contribute roughly $8.3 trillion to the United States' gross domestic product ("GDP"), which translates to about 58% of GDP in 2010.[8] In 2010, the coastal watershed counties of the United States supported a total of 66 million jobs[9] through which the employees received collectively about $3.4 trillion in wages. As Sarah Chasis, senior attorney and Director of the Natural Resources Defense Council ("NRDC") Ocean Initiative, observed: "[p]rotecting our oceans isn't only about saving fish or whales or dolphins. It's about keeping our economy strong for decades to come."[10] Our economic dependence on ocean resources, particularly in America's capitalistic society, is surely a reason why Americans as a whole can benefit from making ocean conservation a priority.

Unfortunately, however, the ocean is taking an environmental beating. Contributing to this harm is pollution, acidification, proliferation of exotic species, catastrophic oil spills, and overfishing, to name a few. In United States waters alone, approximately 20% of fisheries are over-fished.[11] The

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3. John C. Ogden, Maintaining Diversity in the Oceans: Issues for the New U.S. Administration, 43 ENV'T 28, 31 (2001), available at http://www.seaweb.org/resources/articles/writings/diversity.php.

4. Ocean Facts, NAT'L OCEANIC AND ATMOSPHERIC ADMIN., http://oceanservice.noaa.gov/facts/oceandepth.html (last updated Jan. 11, 2013).

5. Ocean and Coastal Area Governance, UNITED NATIONS DEV. PROGRAMME, http://www.undp.org/content/undp/en/home/ourwork/environmentandenergy/focus_areas/water_and_ocean_governance/ocean-coastal-governance/?page=2.

6. Id.

7. Id.

8. NAT'L OCEANIC AND ATMOSPHERIC ADMIN., ECONOMIC VALUE OF RESILIENT COASTAL COMMUNITIES 2 (2012).

9. Id.

10. Sarah Chasis, Reflections on Second Anniversary of National Ocean Policy, SWITCHBOARD (July 19, 2012), http://switchboard.nrdc.org/blogs/schasis/reflections_on_second_anniversary_of_national_ocean_policy.html.

11. Id.

United Nations Development Programme highlights some of the staggering statistics as follows:

> Around half of global fish stocks are fully exploited, and a quarter are depleted, over-exploited or recovering from depletion. An estimated 20% of global mangroves have been lost since 1980, 19% of coral reefs have disappeared, and 29% of seagrass habitat has vanished since 1879. Less than 0.5 percent of marine habitats are protected—compared with 11.5 per cent of global land area. The number of dead zones, caused by excess nutrient pollution to coastal zones, has been expanding at a geometric pace in recent years, with associated losses to ecosystems and the livelihoods that depend upon them. Invasive marine species, especially those carried in ship ballast water, cause an estimated $100 billion each year in economic damage to infrastructure, ecosystems and livelihoods.[12]

Furthermore, "marine systems have been relatively neglected because they are 'out of sight, out of mind' to most people, including scientists."[13] If not recognized and regulated appropriately, growing industrial use will surely lead to "ocean sprawl," further threatening the health of marine resources, jeopardizing food, jobs, and recreation.[14]

Until very recently, the United States Federal Government utilized a rather piecemeal and ineffective approach at preserving our ocean's health and valuable resources. In the past, "human uses and the environmental needs of the sea have been governed haphazardly—overseen by more than 140 laws and twenty agencies, each with different goals and often conflicting mandates."[15] No concrete or stable future plan accounting for humans' need for the ocean existed. Fortunately, the Obama Administration's National Ocean Policy ("NOP") provides an avenue for

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12. UNITED NATIONS DEV. PROGRAMME, supra note 5.

13. Robin Kundis Craig & Terry Hughes, Marine Protected Areas, Marine Spatial Planning, and the Resilience of Marine Ecosystems, in RESILIENCE AND THE LAW 1 (citing G.C. Ray and J.F. Grassel, Marine Biological Diversity: A Scientific Program to Help Conserve Marine Biological Diversity is Urgently Required, 41 BIOSCIENCE 453–57 (1991)).

14. Ocean Blueprint: Stopping Ocean Sprawl with Smart Coastal and Marine Spatial Planning, NATURAL RES. DEF. COUNCIL, http://www.nrdc.org/oceans/cmsp.asp (last visited Jan. 25, 2014).

15. NATURAL RES. DEF. COUNCIL, HEALTHY OCEANS NEED SMART PLANNING (2012), available at http://www.nrdc.org/oceans/oceanplanning.asp,

comprehensive and creative ocean planning and management to protect our ocean's resources and dependents.

This Note focuses on one major contributor to the global environmental problem—marine pollution—and evaluates how the United States' NOP targets, among other actions, collaborative agency efforts for potential ocean pollution reduction. Part II outlines some of the major reasons why people, Americans in particular, should care about the oceans. Part III describes the current state of the oceans, with an eye towards marine pollution's impacts. Part IV shifts to the NOP, describing its evolution through four stages and its relative (and perhaps controversial) authority as a presidential directive. Additionally, this section addresses NOP objectives that could address ocean pollution. The heart of this note is Part V, which evaluates the NOP's implementation progress, specifically on tackling the marine pollution problem, and addresses some potential challenges to implementation in general. Additionally weaved into this section are some recommendations for future implementation. Part VI discusses final considerations. Finally, the paper concludes by highlighting areas of improvement and proposing recommendations for future improvement.

II. REASONS TO PROTECT OUR OCEAN

Ocean and coastal waters issues reach into the lives of many people in the most basic ways. The ocean harbors the fish we eat and provides the water we swim in and sail upon. The ocean is rooted in many cultural beliefs and foundations; it is integral to a healthy economy; it provides food and medicine for human sustenance; it provides potential sources of energy for human consumption; and, it plays a large role in our national security. While coastal dwellers are reminded daily of the importance of the oceans, those living in the landlocked regions of the country have no visual sense of the ocean's presence. This section underscores a snapshot of our ties and interactions with the ocean, and discusses some reasons why humans should care about the conservation of our ocean, whether they live on the coast or not.

A. We Are Historically and Culturally Tied to the Ocean

Many communities that inhabit the coasts and utilize the accompanying marine resources have significant cultural and historic ties to the ocean. Countries around the world depend on the ocean for food

security. Small Island Developing States, for example, rely on the coastal lands not only for primary settlement, but also for sustenance.[16] Americans depend on the ocean for their daily living needs, as evidenced by the fact that American consumers spend over $55 billion per year on fishery products.[17] Many countries also rely on the aesthetic value of the ocean and coastal regions because it draws tourists, accounting for much of the region's economic well-being.[18]

B. We Work the Ocean and Work on the Ocean

Our ocean and coastal waters drive the United States economy, providing marine transportation, recreation, and income to businesses tied to the ocean. The ocean also has the potential to produce economic benefits from future energy sources. Cumulatively, across all industry sectors, coastal and marine waters supported over 28 million American jobs as of 2008.[19] As Frances Beinecke, President of NRDC, analogized, "[the] oceans contribute more to our nation's economic output than the entire U.S. farm sector."[20]

C. We Play in the Ocean

Ocean-related tourism and recreation account for 72% of employment and 28% of the United States' GDP.[21] In 2009, the United States ocean tourism and recreation sector provided 1.8 million jobs.[22] However, while the economic benefits stemming from ocean-related recreation are very significant, they are not the only benefits. Time spent on or near the water—whether relaxing on the beach, sailing, surfing, or swimming—is beneficial for one's mental health and peace of mind. As a

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16. IOC/UNESCO ET AL., A BLUEPRINT FOR OCEAN AND COASTAL SUSTAINABILITY 9 (2011), available at http://www.undp.org/content/dam/undp/library/Environment%20and%20Energy/Water%20and%20Ocean%20Governance/interagency_blue_paper_ocean_rioPlus20.pdf.

17. Dan Klotz, Pew Says New U.S. National Ocean Policy Will Help Safeguard Economy, PEW CHARITABLE TRUSTS (July 19, 2012), http://www.pewenvironment.org/news-room/press-releases/pew-says-new-us-national-ocean-policy-will-help-safeguard-economy-8589935373.

18. IOC/UNESCO, supra note 16, at 10.

19. Klotz, supra note 17.

20. Frances Beinecke, Obama Administration Maps the Way toward Better Oceans Management, SWITCHBOARD (Jan. 12, 2012), http://switchboard.nrdc.org/blogs/fbeinecke/obama_administration_maps_the.html.

21. How Important is the Ocean to Our Economy: The Oceans Are the Trading Routes for the Planet, NAT'L OCEAN SERVICE, http://oceanservice.noaa.gov/facts/oceaneconomy.html (last visited Jan. 25, 2014).

22. Chasis, supra note 10.

celebrity once articulated, "[t]he ocean makes me feel really small and it makes me put my whole life into perspective . . . I feel born again when I get out of the ocean."[23]

D. We Produce Energy from Ocean Resources

The ocean currently provides a means for crude oil production and wind energy, and serve as a promising source of marine energy technologies. In 2009, offshore oil fields accounted for 32% of worldwide crude oil production.[24] Amazingly, there are 14,000 deep-water wells drilled around the world, and over 4,000 wells drilled in the Gulf of Mexico.[25] The onset of new technologies will allow for greater exploitation of oil and gas at greater depths of the ocean.

The future of offshore wind energy also promises energy production. As of October 2010, 3.16 gigawatts of offshore wind power capacity were operational; by 2020, this capacity should reach a total of 75 gigawatts worldwide.[26] Many regions are studying and implementing ways to harvest other forms of renewable energy from ocean tides, waves, and currents, as well as temperature and salinity gradients.[27] Further research on the financial and environmental costs, however, is needed in order to justify continued exploitation.

E. We Travel and Trade on the Ocean

In November 2008, NOAA reported that trans-ocean shipping contributed over $700 billion annually to the United States GDP and employed 13 million Americans.[28] In that same year, United States commercial ports filtered nearly $2 trillion worth of imports, a value likely to increase given that production of goods is projected to increase over 50% by 2020.[29]

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23. Beyonce Knowles Quotes, GOOD READS, https://www.goodreads.com/author/quotes/627033.Beyonc_Knowles (last visited Jan. 25, 2014).
24. IOC/UNESCO, supra note 16, at 10.
25. Id.
26. Id.
27. Id.
28. Klotz, supra note 17.
29. JOINT OCEAN COMM'N INITIATIVE, AMERICA'S OCEAN FUTURE: ENSURING HEALTHY OCEANS TO SUPPORT A VIBRANT ECONOMY 5 (2011), available at http://www.jointoceancommission.org/resource-center/1-Reports/2011-06-07_JOCI_Americas_Ocean_Future.pdf.

III. STATE OF THE OCEANS

The purpose of this Note is to reveal humanity's ties to the ocean, highlight the ocean's dire need for better conservation, and discuss areas of improvement in current national policy. This Note now turns to the health of the ocean, specifically in regards to marine pollution.

Sadly, the seas are swarming with all sorts of pollution, including garbage of both visible and microscopic varieties. NOAA has indicated that "marine debris has become one of the most pervasive pollution problems facing the world's oceans and waterways."[30] The following section discusses the extent of this "most pervasive pollution problem" by first introducing the vast expanse of the ocean and its role on planet Earth. Then, this section examines the nature of the pollution problem, including the types and quantities of pollution and its effect on all aspects of human and non-human life.

A. How Big is Our Ocean and What Role Does it Play on Earth?

Earth has one ocean, covering over seventy percent of the entire planet's surface.[31] The ocean is divided into ocean basins, namely the North and South Pacific, North and South Atlantic, the Indian, and the Arctic.[32] Most of the Earth's water—97%, to be exact—is in the ocean.[33] Having such a presence on our Earth, it should come as no surprise that the ocean shapes many of the physical features of the Earth. For example, new Earth crust is created beneath the ocean, and old, eroded earth is deposited back into the ocean.[34] Also, continental boundaries retreat and expand over time with changing sea levels.[35] The ocean substantially affects weather patterns and Earth's climate. Moreover, the ocean dominates Earth's energy, water, and carbon systems.[36] Thus, the conditions of the oceans are a large factor in controlling extreme weather events, precipitation, and carbon dioxide absorption.[37]

The ocean is a vast system with endless uses and functions. Aside from supporting humans, the ocean sustains a great diversity of ecosystems

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30. NAT'L OCEANIC AND ATMOSPHERIC ADMIN., MARINE DEBRIS FACTS, available at http://oceanservice.noaa.gov/education/yos/resource/101mdfacts.pdf.
31. OCEAN LITERACY, supra note 2.
32. Id.
33. Id.
34. Id. at 8.
35. Id.
36. Id. at 9.
37. Id. at 7, 9.

and other life.[38] Ninety-nine percent of the living space on earth is in the ocean, home to nearly 200,000 identified species.[39] All these known facts that speak to the ocean's pervasiveness, however, represent only a fraction of what is known about the ocean—the ocean is in fact the last and largest unexplored place on Earth, with more than 95% remaining unexplored.[40]

B. The Marine Pollution Problem

Traditionally, the ocean was thought to be "resilient enough to absorb and recover from multiple and interactive stresses—overfishing, pollution and now climate change—that humans impose on them."[41] Today, scientists and marine planners know better. In reality "[m]any marine ecosystems have lost their resilience to recurrent natural and man-made disturbances . . . ."[42] When ecosystems are no longer "resilient," or capable of absorbing and recovering from recurrent shocks, the results are a "regime-shift" and long-term degradation.[43] Unfortunately, according to a 2008 study, "no area of the world's oceans is completely unaffected by human impacts, and forty-one percent of the oceans are strongly affected by multiple human impacts."[44]

Among the human-induced drivers of change in marine ecosystems is marine pollution.[45] Though marine pollution can take many forms, the pollution is primarily "a land-based governance problem that cannot be addressed through direct regulation of the marine environment . . . ."[46] In the United States, for example, about 80% of marine pollution comes from land, including: discharge of pollutants from coastal industries; agricultural and urban runoff; and "atmospheric deposition of pollutants" from land-based, fossil-fuel-burning sources.[47] Pollution from these sources is compounded by "[d]eforestation, intensification of agriculture, urban sprawl, industrialization, population growth and migration to the coast."[48] Although international treaties have addressed offshore ocean dumping, the effects of past dumping events will remain for an unknown amount of

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38. Id. at 10.
39. UNITED NATIONS DEV. PROGRAMME, supra note 5.
40. OCEAN LITERACY, supra note 2, at 12.
41. Craig & Hughes, supra note 13, at 2.
42. Id.
43. Craig & Hughes, supra note 13, at 6.
44. Id. at 2.
45. Id. at 4.
46. Id.
47. ROBIN KUNDIS CRAIG, COMPARATIVE OCEAN GOVERNANCE: PLACE-BASED PROTECTIONS IN AN ERA OF CLIMATE CHANGE 30–31 (Edward Elgar, 2012).
48. Craig & Hughes, supra note 13, at 5.

time.[49] Other concerns that arise from land-based marine pollution are the increase of Harmful Algal Blooms, which can lead to "red tides;"[50] the release of neurotoxins and the contamination of shellfish; and eutrophication[51] and coastal "dead zones."[52] Again, these compounding environmental offenses work to weaken the ocean-ecosystem's resilience.

i. Sources of Marine Debris

Marine debris derives from two categories of sources: ocean-based and land-based.[53] Ocean-based sources include materials that are dumped, swept, or blown off vessels and stationary platforms located on the water.[54] The major ocean-based sources of marine debris include merchant shipping, fishing vessels, military fleets, research vessels, pleasure craft, offshore oil and gas platforms, and fish farming installations.[55] Debris can also be blown, swept, or washed out to sea from a source on land—as mentioned above, land-based sources comprise roughly 80 percent of the total marine debris.[56] Examples of major land-based sources include coastal or inland municipal landfills;[57] riverine transport of waste from landfills or other sources along rivers or waterways; discharge of untreated municipal sewage (including storm water); industrial facilities; and tourism-related trash disposal on beaches.[58]

ii. Visible Marine Debris

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49. Id.

50. What is a Red Tide? NAT'L OCEANIC AND ATMOSPHERIC ADMIN., http://oceanservice.noaa.gov/facts/redtide.html (last updated Jan. 23, 2014) ("Red tides"—so named because the bloom turns the water red—occur when colonies of algae grow at excessive rates, producing toxins that can kill fish, shellfish, mammals and birds, and may cause illness in humans).

51. Eutrophication, SCIENCEDAILY.COM (2013), http://www.sciencedaily.com/articles/e/eutrophication.htm.

52. Craig & Hughes, supra note 13, at 6; What is a Dead Zone? NAT'L OCEANIC AND ATMOSPHERIC ADMIN, http://oceanservice.noaa.gov/facts/deadzone.html (last updated Jan. 23, 2014) ("'Dead zone' is a more common term for hypoxia, which refers to a reduced level of oxygen in the water," and is so named because in such conditions, most marine life either dies or leaves the area).

53. Sources of Marine Litter, UNITED NATIONS ENV'T PROGRAMME, http://www.unep.org/regionalseas/marinelitter/about/sources/default.asp (last visited Jan. 28, 2014).

54. Marine Debris, NOAA, http://marinedebris.noaa.gov (last visited Feb. 17, 2013).

55. Sources of Marine Litter, supra note 53.

56. Claire Le Guern Lytle, When the Mermaids Cry: The Great Plastic Tide, COASTAL CARE (Nov. 11, 2009), http://coastalcare.org/2009/11/plastic-pollution/.

57. PLASTIC DEBRIS RIVERS TO SEA, PLASTICDEBRIS.ORG (2005), http://plasticdebris.org/PRDS_Brochure_DOWNLOAD.pdf.

58. Sources of Marine Litter, supra note 53.

The impacts of everyday trash in the water are fairly well known because this debris is visible. The garbage is unsightly, detracting from the beauty of the beach and water. Additionally, coastal and marine fauna commonly become ensnared in, or ingest, marine debris. While humans are typically able to avoid mistaking plastic for food, other species that inhabit the coasts and ocean are not. Animals frequently confuse plastic garbage for food.[59] For example, turtles mistake plastic bags for jellyfish, and albatrosses feed on pieces of red plastic because they resemble squid.[60] In a study of thirty-eight green turtles, 61% had ingested some form of marine debris including plastic bags, cloth, rope, or string.[61] Not only can marine animals choke on the plastic debris, but they can also suffer from poor nutrition or damage to their gut linings if they consume too much plastic.[62]

iii. Invisible Marine Debris: The Plastic Pollution Problem

Trash in our oceans takes many forms, and as touched upon above, most humans are familiar with the larger, more visible forms of garbage that clutter the beaches and waterways and interfere with the natural ecosystem. Unfortunately, trash in our oceans and lakes poses additional problems that are not visible to the naked eye. These are problems stemming largely from plastic production. Inevitably, then, most floating marine debris is plastic,[63] composing roughly 60 to 80% of the total marine debris.[64] Undoubtedly, plastics have many benefits for the environment—as an example, plastic reduces weight in consumer goods such as vehicles, which in turn improves fuel economy.[65] However, plastics are produced in enormous quantities worldwide[66] and are often discarded after a single

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59. Press Release, United Nations Env't Programme, Fertilizer and Plastic Pollution are Main Emerging Issues in 2011 UNEP Year Book (Feb. 17, 2011) available at http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=659&ArticleID=6897.

60. Id.

61. Marine Debris Impacts, EPA, http://water.epa.gov/type/oceb/marinedebris/md_impacts.cfm (last updated Mar. 6, 2012).

62. United Nations Env't Programme, supra note 59.

63. PLASTIC DEBRIS RIVERS TO SEA BROCHURE, supra note 57 (citing J.G.B. Derraik, The Pollution of the Marine Environment by Plastic Debris: A Review, 44 MARINE POLLUTION BULLETIN 843).

64. Id. (stating the proportion of plastic has reached over 90 to 95% in some areas).

65. Bettina Wassener, The Peril of Plastic, N.Y. TIMES (May 22, 2011), http://www.nytimes.com/2011/05/23/business/energy-environment/23green.html?_r=1&ref=global.

66. Press Release, Plastics Europe, Plastics Market in 2011: First Estimates Suggest Around 4% Increase in Global Production from 2010 (Apr. 11, 2012), available at http://pr.euractiv.com/pr/plastics-market-2011-first-estimates-suggest-around-4-increase-global-production-2010-92215.

use.[67] Most of this plastic trash ends up in landfills,[68] and though some plastic is recycled,[69] researchers estimate that approximately 4.7 million tons end up in the sea each year.[70]

Even worse is the fact that plastic is amazingly durable.[71] Plastic decomposition is both chemical and physical: large plastic objects, when exposed to ultraviolet radiation from the sun, break into smaller and smaller particles by forces such as wave action and wind.[72] The remnant plastic particles pose a two-fold problem. The first involves the release of toxic additives from the original composition of the plastic.[73] The second involves the release of "persistent, bio-accumulating and toxic substances ("PBTs") that have accumulated in plastic particles over time."[74]

Regarding the first concern, research lead by Katsuhiko Saido, a chemist working for the College of Pharmacy at Nihon University in Japan, indicates that some plastics break down in the ocean, leaching potentially toxic chemicals such as bisphenol A ("BPA") and styrene compounds.[75] At high concentrations, these chemicals can interfere with human endocrine systems involved in regulating hormone balance.[76] Prior to this research, scientists thought plastics broke down at much higher temperatures and over hundreds of years.[77] Now, the research indicates that plastic breaks down at cooler temperatures and within a year of the trash hitting the water.[78]

The study involved collecting water samples from various waters around the world, including the United States, Europe, India, and Japan.[79] The researchers found that all samples contained derivatives of polystyrene ("PS"), a common plastic used in Stryofoam, plastic cutlery, DVD cases, and many other everyday plastic things.[80] Upon performing a laboratory simulation of polystyrene decomposition in under ocean conditions, the

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67. Wassener, supra note 65.
68. Id.
69. Id.
70. Id.
71. UNITED NATIONS ENV'T PROGRAMME, Plastic Debris in the Ocean, 2011 UNEP YEAR BOOK 20, 26 (2011), http://www.unep.org/yearbook/2011/pdfs/plastic_debris_in_the_ocean.pdf.
72. Id.
73. Id.
74. Id.
75. Styrene monomer is a suspected carcinogen and BPA is known to disrupt the functioning of hormones in animals and can severely affect reproductive systems. Carolyn Barry, Plastic Breaks Down in Ocean, After All—And Fast, NAT'L GEOGRAPHIC NEWS, Aug. 20, 2009, http://news.nationalgeographic.com/news/2009/08/090820-plastic-decomposes-oceans-seas.html.
76. UNITED NATIONS ENV'T PROGRAMME, supra note 71, at 28.
77. Id. at 26.
78. Barry, supra note 75.
79. Id.
80. Id.

researchers found that it degraded at eighty-six degrees Fahrenheit, leaving behind PS oligomer and BPA—the same compounds detected in the ocean samples.[81] None of these chemicals appear naturally in the ocean.[82] Rather, these compounds materialize in ocean waters as the plastics decompose, a process enhanced by tidal disturbance and exposure to the sunlight's heat.[83] Later studies by the same research group indicate that hard plastics[84] and hard epoxy resins[85] also decompose in ocean environments.[86] Like the softer plastics, such as Styrofoam and plastic bags, hard plastics and epoxy resins release BPA when they break down.[87] These chemicals contaminate our oceans, threatening not only marine life, such as turtles and corals, but possibly also humans.[88]

Regarding the second concern, plastic that degrades into small particles has the potential to absorb PBTs[89] that are already present in seawater and sediments.[90] Many of these pollutants "cause chronic effects, such as endocrine disruption affecting reproduction, increases in the frequency of genetic mutations (mutagenicity), and a tendency to cause cancer (carcinogenicity)."[91] There is some concern that these pollutants could end up in the food chain. However, the science is not yet certain on the exact impacts of plastics on humans and ecosystems, therefore, much more research is needed.[92]

IV. THE NATIONAL OCEAN POLICY ("NOP")

A. Evolution and Structure

81. Id.
82. Id.
83. Emily Sohn, Plastic in the Oceans Leaches Chemicals, DISCOVERY NEWS (Aug. 20, 2009), http://lists.ufl.edu/cgi-bin/wa?A2=CTURTLE;ow1qKQ;20090821022436-0400.
84. Press Release, Am. Chem. Soc'y, Hard Plastics Decompose in Oceans, Releasing Endocrine Disruptor BPA (Mar. 23, 2010), available at http://www.acs.org/content/acs/en/pressroom/newsreleases/2010/march/hard-plastics-decompose-in-oceans-releasing-erine-disruptor-bpa.html (describing hard plastics, which are composed of polycarbonates and are used to make shatter-proof eyeglass lenses, screwdriver handles, and other durable products).
85. See id. (describing epoxy resins, which are found in epoxy paint that is used to seal the hulls of ships and prevent rust and the accumulation of barnacles and other deposits).
86. Id.
87. Id.
88. Sohn, supra note 83.
89. UNITED NATIONS ENV'T PROGRAMME, supra note 71.
90. Id.
91. Id. at 26–28.
92. Id. at 28.

The Obama Administration's call for a national ocean policy was a long time coming. For decades, policymakers have planned and devised various strategies for ocean management and protection, and over time "various ocean law leaders, commissions, and scholars have called for the creation of a NOP."[93] After Congress enacted the Marine Resources and Engineering Development Act in 1966, ocean governance evolved.[94] Congress enacted legislation involving ocean resources and development,[95] and federal and state ocean-policy committees published reports and recommendations for a national ocean policy.[96]

Building upon previous ocean governance efforts, President Barack Obama established the Interagency Ocean Policy Task Force[97] on June 12, 2009 and charged it with developing recommendations to "better meet our Nation's stewardship responsibilities for the ocean, our coasts, and the Great Lakes."[98] President Obama's initiative paved the way for the present NOP—a policy that evolved through four stages. The first stage was the issuance of the Final Recommendations of the Interagency Ocean Policy Task Force ("Final Recommendations") on June 19, 2010.[99] In the Final Recommendations, the President detailed nine national priority objectives: (1) ecosystem-based management; (2) coastal and marine spatial planning; (3) inform decisions and improve understanding; (4) coordinate and support; (5) resiliency and adaptation to climate change and ocean acidification; (6) regional ecosystems protection and restoration; (7) water quality and sustainable practices on land; (8) changing conditions in the

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93. Angela T. Howe, The U.S. National Ocean Policy: One Small Step for National Waters, But Will It Be the Giant Leap Needed for Our Blue Planet?, 17 OCEAN & COASTAL L.J. 65, 73 (2011).

94. See id. (chronicling the development of ocean governance in the United States since the enactment of the Marine Resources and Engineering Development Act).

95. E.g., the Coastal Zone Management Act of 1972, 16 U.S.C. §§ 1451–65 (1972); Oceans Act of 2000, 33 U.S.C. §§ 857–19 (2000); and Water Resources Development Act of 2007, 33 U.S.C. §§ 2201–2348 (2007).

96. For a detailed history of United States ocean policy, see Howe, supra note 93, part IV "The Road to a National Ocean Policy."

97. The Task Force, led by the Chair of the Council on Environmental Quality ("CEQ"), enrolled senior-level officials from executive departments, agencies, and offices across the Federal Government. National Ocean Policy Implementation Plan, WHITEHOUSE.GOV, http://www.whitehouse.gov/administration/eop/ceq/initiatives/oceans (last visited Jan. 26, 2014).

98. THE WHITEHOUSE COUNCIL ON ENVTL. QUALITY, FINAL RECOMMENDATIONS OF THE INTERAGENCY OCEAN POLICY TASK FORCE JULY 19, 2010 1, available at http://www.whitehouse.gov/files/documents/OPTF_FinalRecs.pdf (July 19, 2010).

99. See id. ("In response to President Obama's June 12, 2009 memorandum, and after careful consideration of thousands of valuable comments from political leaders, public and private organizations, and citizens, the Task Force is pleased to submit these final recommendations for a comprehensive national ocean policy, an improved governance structure, a targeted implementation strategy, and a framework for effective coastal and marine spatial planning").

Arctic; and (9) ocean, coastal, and Great Lakes observations, mapping, and infrastructure.[100]

In the second phase, adopting the Final Recommendations of the Task Force, President Obama issued Executive Order 13,547.[101] The Order "establishes for the first time a comprehensive, integrated National Policy for the stewardship of the ocean, our coasts, and the Great Lakes."[102] Specifically, the Policy aims to develop a more comprehensive management of the ocean with greater coordination across all levels of government in order to reduce duplication of federal agency policies and activities. Additionally, the Policy seeks to engage all stakeholders who use, care about, and depend upon ocean resources.[103] In the Order, President Obama declares that the United States shall promote the policy by:

> (i) ensuring a comprehensive and collaborative framework for the stewardship of the ocean, our coasts, and the Great Lakes that facilitates cohesive actions across the Federal Government, as well as participation of State, tribal, and local authorities, regional governance structures, nongovernmental organizations, the public, and the private sector; (ii) cooperating and exercising leadership at the international level; (iii) pursuing the United States' accession to the Law of the Sea Convention; and (iv) supporting ocean stewardship in a fiscally responsible manner.[104]

In order to guide federal agencies in implementing the policy, the Order created the National Ocean Council ("NOC"),[105] which is a committee comprised of officers from a variety of agency and federal departments.[106] The NOC is also comprised of many sub-committees

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100. THE WHITEHOUSE COUNCIL ON ENVTL. QUALITY, supra note 98, at 6.

101. Exec. Order No.13,547, 75 Fed. Reg. 43,023 (July 19, 2010) (revoking Exec. Order No. 13,366, 69 Fed. Reg. 76,591 (Dec. 17, 2004)).

102. Id. at § 1.

103. National Ocean Policy Implementation Plan, supra note 97.

104. Exec. Order No. 13,547, supra 101, at § 2.

105. About the National Ocean Council, WHITEHOUSE.GOV, http://www.whitehouse.gov/administration/eop/oceans/about (last visited Jan. 26, 2014).

106. Id. (The agencies include: Department of State, Defense, the Interior, Agriculture, Health and Human Services, Commerce, Labor, Transportation, Energy, and Homeland Security; the Attorney General; the Administrators of the EPA and NASA; the Chairs of the CEQ, the Federal Energy Regulatory Commission ("FERC"), and the Joint Chiefs of Staff; the Directors of the Office of Management and Budget ("OMB"), National Intelligence, the Office of Science and Technology Policy ("OSTP"), and the National Science Foundation ("NSF"); the Assistants to the President for National Security Affairs, Homeland Security and Counterterrorism, Domestic Policy, Economic Policy, and

charged with coordinating and providing high-level attention to ocean policy.[107]

Once the NOC was in place, the NOP launched into the third phase—information gathering. The Committee sought input from national, regional, and local stakeholders and the general public on devising an implementation plan.[108] As such, the NOC held numerous regional listening sessions throughout the country and sought public comment until July 2011.[109] During the development of a draft implementation plan, the NOC released outlines for nine Strategic Action Plans (paralleling the nine policy objectives outlined in the Executive Order) in order to focus and guide public and stakeholder input.[110] On January 12, 2012, the NOC released the draft National Ocean Policy Implementation Plan.[111] The draft Plan focuses on the nine priority objectives addressed in the NOP, detailing a number of actions and their intended outcomes, outlining key milestones, identifying lead agencies or other responsible entities, and listing timeframes for accomplishing such actions and goals.[112] The draft Plan had four major themes: "(1) adopt ecosystem-based management [(EBM)]; (2) obtain, use, and share the best science and data; (3) promote efficiency and collaboration; and (4) strengthen regional efforts."[113]

The draft Plan was open for public comment until March 28, 2012;[114] and on April 16, 2013, the NOC released the Final Plan.[115] The Final Plan is

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Energy and Climate Change; an employee of the U.S. designated by the Vice President; and the Under Secretary of Commerce for Oceans and Atmosphere (NOAA Administrator)).

107. Id. (The sub-committees include: the Steering Committee, which is the main group to ensure integration and coordination on priority areas within the NOC; the Ocean Resource Management Interagency Policy Committee; the Ocean Science and Technology Interagency Policy Committee; and the Governance Coordinating Committee, which focuses on coordinating inter-jurisdictional ocean policy issues.).

108. National Ocean Policy Draft Implementation Plan, supra note 97.

109. Share Your Ideas with the National Ocean Council at a Listening Session Near You, WHITEHOUSE.GOV, http://www.whitehouse.gov/blog/2011/05/26/share-your-ideas-national-ocean-council-listening-session-near-you.

110. NAT'L OCEAN COUNCIL, DRAFT NATIONAL OCEAN POLICY IMPLEMENTATION PLAN 95 (2010), available at http://www.whitehouse.gov/sites/default/files/microsites/ceq/national_ocean_policy_draft_implementation_plan_01-12-12.pdf.

111. Press Release, Dep't of Interior, Salazar Applauds Release of Draft National Ocean Policy Implementation Plan (Jan. 12, 2012), available at http://www.doi.gov/news/pressreleases/Salazar-Applauds-Release-of-Draft-National-Ocean-Policy-Implementation-Plan.cfm.

112. NAT'L OCEAN COUNCIL, supra note 110, at 2.

113. Id.

114. The Ocean Project, Vision for Our National Ocean Policy Part II, OCEAN PROJECT (Feb. 8, 2012 at 1:27 PM), http://theoceanproject.org/2012/02/vision-for-our-national-ocean-policy-part-ii/.

a relatively short document organized into five sections—(1) The Ocean Economy, (2) Safety and Security, (3) Coastal and Ocean Resilience, (4) Local Choices, and (5) Science and Information.[116] The first three sections describe how the NOP will positively impact America's ocean economy, security, and ocean and coastal resilience. The fourth section describes the need for more localized efforts at addressing ocean and coastal priorities, given that priorities vary across all regions within the United States.[117] The last section addresses the need for partners and stakeholders to make a scientific, technological, and educational commitment to addressing ocean and coastal priorities.[118] In the Plan, the NOC recognizes that completion of the actions is dependent "upon the availability of funds and resources."[119] The Plan is meant to be flexible:

> [The] Plan is intended to be a living document. It is designed to be adaptive to new information or changing conditions, and will be updated periodically as progress is made, lessons are learned, new activities are planned, and as the Nation continually strives to improve the stewardship of the ocean, coasts, and Great Lakes for the benefit of current and future generations.[120]

Now, with the Implementation Plan complete, the United States is in the final stage[121]—actual implementation of the NOP.

B. Defining NOP Authority

On its face, particularly to the ocean conservationist, the NOP seems like a neutral, common-sense policy. However, the policy has sparked some criticism. Opponents argue, for example, that the NOP is an executive "power grab"—one "that circumvents existing state and local decision-

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115. Obama Administration Releases Plan to Promote Ocean Economy and Resilience, COUNCIL ON ENVTL. QUALITY (Apr. 16, 2013), http://www.whitehouse.gov/administration/eop/ceq/Press_Releases/April_16_2013.

116. NAT'L OCEAN COUNCIL, NATIONAL OCEAN POLICY IMPLEMENTATION PLAN 4 (2013), available at http://www.whitehouse.gov//sites/default/files/national_ocean_policy_implementation_plan.pdf.

117. Id. at 19.

118. Id. at 24.

119. Id. at 4.

120. Id.

121. The word "final" to describe this fourth step is somewhat of a misnomer because the Implementation Plan is an adaptive and flexible document that is to be revisited every year to assess its progress.

making bodies . . . without the consent of Congress, without the consent of the governors, and, most important of all, without the consent of the governed."[122] Along these lines is the fear that the Executive Order presents a separation of powers issue, thus violating the Constitution, by "creat[ing] via the [NOP], a new set of requirements with which existing statutes are to be consistent, and then plac[ing] these new standards beyond judicial review. This effectively constitutes the enactment of new legislation that violates the separation of powers set forth in the U.S. Constitution."[123] However, these fears may be premature.

Determining the authoritative reach or the constitutionality of the NOP should begin by differentiating an executive order from a plan or policy. First, "[a]n executive order is a directive issued by the President, which has the force of law and requires no action by the legislature or judiciary."[124] However, the Constitution limits the reach of a presidential executive order. In the 1952 Steel Seizure case, the United States Supreme Court completely overturned an executive order in part because, as it held, "[t]he President's power, if any, to issue the order must stem either from an act of Congress or from the Constitution itself."[125] The Court emphasized that the Constitution vests Congress with lawmaking authority, not the President, and that "[t]he Constitution limits [the President's] functions in the lawmaking process to the recommending of laws he thinks wise and the vetoing of laws he thinks bad."[126] While this Court's decision remains primary authority for presidential directives,[127] the courts have seen fit to

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122. Bonner R. Cohen, *Obama's Ocean Policy Initiative: Washington's Latest Power Grab*, DAILY CALLER (Sept. 9, 2010, 12:08 PM), http://dailycaller.com/2010/09/09/obamas-ocean-policy-initiative-washingtons-latest-power-grab/2/ ("The president's instruction to 'take such action as necessary' will inevitably lead to a tidal wave of new regulations under the Clean Water Act, Clean Air Act, or some other federal statute, all of which will have the force of law behind them. What the administration in effect is putting in place is an alternative power structure that circumvents existing state and local decision-making bodies and replaces them with made-in-Washington zoning. All of this is taking place without the consent of Congress, without the consent of the governors, and, most important of all, without the consent of the governed."); see also Audrey Hudson, Zoning the Ocean, HUMAN EVENTS (Apr. 17, 2012 6:43 AM) www.humanevents.com/2012/04/17/zoning-the-ocean-2/ (quoting Rep. Bill Flores, "[the NOP] to me could be the sleeping power grab that Americans will wake up one day and wonder what the heck hit them").

123. Empty Hooks: The National Ocean Policy is the Latest Threat to Access for Recreational and Commercial Fishermen: Hearing Before the Subcommittee on Fisheries, Wildlife, Oceans, and Insular Affairs Regarding National Ocean Policy, 112th Cong. 25 (2012) (testimony of George J. Mannina, Jr.).

124. Howe, supra note 93, at 80 (citing John Contrubis, Cong. Research Serv., 95-722 A, Executive Orders and Proclamations 1 (1999), available at http://www.llsdc.org/assets/sourcebook/crs-exec-orders-procs.pdf).

125. Youngstown Sheet & Tube Co. v. Sawyer, 343 U.S. 579, 585 (1952).

126. Id. at 587.

127. Tara L. Branum, President or King? The Use and Abuse of Executive Orders in Modern Day America, 28 J. Legis. 1, 61, 63 (2002).

strike down only fourteen orders, in whole or in part, out of eighty-six executive order challenges.[128] Notably, federal courts have "upheld presidential directives that were unauthorized when issued but were subsequently validated by Congress via statute."[129]

The Obama Administration issued Executive Order 13,547, intending for Congress to "show support for effective implementation of the NOP, including the establishment of an ocean investment fund"—the hope being that Congress would codify the Order in subsequent legislation.[130] At present, Congress is wrestling with some bills relating to the NOP; however, not all proposals support the policy. For example, the House has adopted an amendment to the Water Resources and Development Act ("WRDA")[131] that would bar the Obama Administration from implementing marine spatial planning under the WRDA, specifically "preventing the Army Corps of Engineers and other entities that receive money from the bill from implementing such planning as part of the National Ocean Policy."[132] Then again, also before Congress is a bill that seeks to establish a National Endowment for the Oceans, which would fund programs and activities to "restore, protect, maintain, or understand living marine resources and their habitats and ocean, coastal, and Great Lakes resources. . . ."[133] For this bill to pass, House and Senate members must agree to prioritize ocean conservation and research, and allocate funds to the initiative. Although the NOP is appearing on the Congressional docket, it is hard to find hope for successful ocean reform in the current congressional atmosphere.

In the face of Congressional gridlock, executive orders may be necessary, particularly to advancing pro-environmental policies. As legal scholar Sandra Zellmer argues, "[t]he bitterly partisan nature of

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128. Id. at 59.

129. E.g., WILLIAM J. OLSON & ALAN WOLL, EXECUTIVE ORDERS AND NATIONAL EMERGENCIES: HOW PRESIDENTS HAVE COME TO "RUN THE COUNTRY" BY USURPING LEGISLATIVE POWER 10 (1999) (describing how "the Supreme Court upheld President Franklin Roosevelt's transfer of certain authority from the U.S. Shipping Board to the Secretary of Commerce, pursuant to EO 6166, where Congress had recognized the transfer of authority in subsequent acts").

130. Howe, supra note 93, at 80 (citing Joint Ocean Comm'n Initiative, America's Ocean Future: Ensuring Healthy Oceans to Support a Vibrant Economy 2–4 (2011)).

131. See H.R. 3080: Water Resources Development Act of 2013,, 113th Cong. (2013) available at https://www.govtrack.us/congress/bills/113/hr3080 (stating the House passed the bill on October 23, 2013, and the Senate passed the bill on October 31, 2013, with changes for the House).

132. Adam Schank, House Sets UP Confrontation Over Marine Spatial Planning Under WRRDA, CQ Roll Call, 2013 WL 75761376 (Oct. 24, 2013).

133. National Endowment for the Oceans, S. 646, 113th Cong. § 5 (2013); See also Alexandra Adams, Threats to Ocean Health Now Being Considered in Water Resources Development Act Conference, SWITCHBOARD: NATURAL RESOURCES DEFENSE COUNCIL STAFF BLOG (Nov. 20, 2013), http://switchboard.nrdc.org/blogs/aadams/threats_to_ocean_health_now_be.html.

environmental issues in Congress today suggests that comprehensive, thoughtful reforms tailored to the problems faced by modern society are unlikely."[134] Further, Zellmer points out that even "if today's Congress were to take up the call to reform existing statutes, it may be more likely to dismantle provisions disliked by powerful, regulated entities than to pass comprehensive, forward-thinking legislation designed to solve contemporary environmental problems."[135] Thus, with an essentially incompetent Congress, Zellmer proposes that non-legislative action, such as issuing an executive order, may "offer an opportunity to work around the congressional logjam and move the environmental ball forward."[136]

Whether or not Executive Order 13,547 runs afoul of the separation of powers doctrine is a matter of time. Nevertheless, there is a distinction in the language of the Policy that opponents may be overlooking. The Executive Order calls for a national policy.[137] A policy, keep in mind, is no more than guidance to agencies and decision-makers.[138] The language of the Implementation Plan for the Policy dismisses any hint of binding authority; it reads:

> The Policy does not create new regulations, supersede current regulations, or modify any agency's established mission, jurisdiction, or authority. Rather, it helps coordinate the implementation of existing regulations and authorities by all Federal agencies in the interest of more efficient decision-making. The Policy does not redirect congressionally-appropriated funds, or direct agencies to divert funds from existing programs. Instead, it improves interagency collaboration and prioritization to help focus limited resources and use taxpayer dollars more efficiently.[139]

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134. Sandra Zellmer, *Treading Water While Congress Ignores the Nation's* Environment, 88 NOTRE DAME L. REV. 2323, 2325 (2013).

135. Id.

136. Id. at 2327.

137. Exec. Order No. 13,547, supra note 101, at § 1 (reading "[the] order establishes a national policy to ensure the protection, maintenance, and restoration of the health of the ocean, coastal, and Great Lakes ecosystems and resources, enhance the sustainability of ocean and coastal economies, preserve our maritime heritage, support sustainable uses and access, provide for adaptive management to enhance our understanding of and capacity to respond to climate change and ocean acidification, and coordinate with our national security and foreign policy interests").

138. MERRIAM-WEBSTER DICTIONARY, www.merriam-webster.com/dictionary/policy?show=0&t=1387481193 (last visited Jan. 22, 2014) (stating that policy is meant merely "to guide and determine present and future decisions").

139. NAT'L OCEAN COUNCIL, supra note 116, at 2.

The Final Implementation Plan for the NOP is by no means a binding body of laws; again, it is merely guidance for federal and state agencies, stakeholders, and communities to begin prioritizing ocean and coastal issues. The Plan recommends the types of actions agencies will take to address such priorities, and provides the tools required for taking such action. Ultimately, the NOP is a perfectly appropriate use of presidential authority to bring desirable national priorities to the fore.

C. NOP Objectives Showing Promise for Marine Pollution

As mentioned above in Part III, pollution is principally a land-based problem that requires improved management of land-use practices; protective control of air emissions, water discharges, plastic and other waste disposal; and better management of polluted runoff.[140] Thus, the following section is concerned with whether the NOP addresses the pollution problem, and if so, how it outlines the necessary management practices, such as land-based governance.

It should be noted that the current regime for managing land-based pollution in the United States is rather fragmented. As an example, land-based non-point source pollution is primarily governed by states, whereas ocean ecosystems are generally subject to the federal or commonwealth government's authority.[141] What is needed instead is coordination across land and sea, and across each level of government. The NOP makes a first pass at addressing this disconnect.

The first objective of the NOP that is relevant in regulating marine pollution directly is to inform policy decisions and improve understanding of the general public. This objective aims to better inform and educate policy makers about the ocean, our coasts, and the Great Lakes in order to increase their ability to respond to change and challenges.[142] This objective also aims to inform the general public about these issues so that they may be more active in the policy process and may make more informed decisions about their lifestyle habits.[143]

The next relevant objective is to "[s]trengthen and integrate federal and non-federal ocean observing systems, sensors, data collection platforms, data management, and mapping capabilities into a national system and integrate that system into international observation efforts."[144]

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140. Craig & Hughes, supra note 13, at 6.
141. Id. at 9.
142. NAT'L OCEAN COUNCIL, supra note 110, at 18.
143. Id.
144. Id. at 26.

Creating a more integrated system for researching and sharing research will prevent overlapping projects and will ultimately preserve valuable resources on local, regional, and federal levels. The third objective has a similar purpose: to better coordinate and support federal, state, tribal, local, and regional management of the ocean, our coasts, and the Great Lakes.[145] This objective serves to improve coordination and integration across the federal government and, as appropriate, engage with the international community.[146]

The fourth objective is to establish and implement regional ecosystem protection and restoration.[147] The desired integrated strategy will be science-based and will align conservation and restoration goals at the federal, state, tribal, local, and regional levels.[148] Similarly, the fifth relevant objective is to establish sustainable practices on land—that is, establish practices on land throughout the country, not just the coastal states—designed to improve the quality of the nation's waters.[149] The water cycle is uninterrupted from the coasts to the inlands: rainfall that is absorbed by the soil enters the groundwater, percolates into lakes and rivers, and eventually flows to the ocean. By promoting and implementing sustainable practices on land, the water quality in our ocean, along our coasts, and in our lakes will improve.[150]

Finally, one of the more promising areas for United States ocean policy improvement is in the development of Coastal and Marine Spatial Planning ("CMSP") in the regions. At base, CMSP is "a process developed from the bottom up to improve collaboration and coordination among all coastal and ocean interests, and to better inform and guide decision-making that affects their economic, environmental, security, and social and cultural interests."[151] Some misconceive that CMSP will initiate more bureaucracy into an already congested political system.[152] Some associate CMSP with "ocean zoning," which implies that there will be a top-down federal process involved in dividing up ocean and coastal management regions.[153]

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145. Id. at 35.
146. Id.
147. Id. at 43.
148. NAT'L OCEAN COUNCIL, supra note 110, at 43.
149. Id. at 63.
150. Id.
151. National Ocean Policy, COASTAL AND MARINE SPATIAL PLANNING, NAT'L OCEANIC & ATMOSPHERIC ADMIN., www.msp.noaa.gov (last visited Jan. 22, 2014).
152. JOINT OCEAN COMM'N, AMERICA'S OCEAN FUTURE: ENSURING HEALTHY OCEANS TO SUPPORT A VIBRANT ECONOMY 11–12 (July 2011), available at http://www.jointoceancommission.org/resource-center/1-Reports/2011-06-07_JOCI_Americas_Ocean_Future.pdf.
153. Id. at 12.

However, the President's Executive Order specifically dismisses that concern by stating that CMSP creates no new authority, nor adds any additional layer of review; rather CMSP is a "decision and support tool and planning process that will provide a platform for gathering the best information available and ensuring greater transparency." [154] Existing federal, state, tribal, and local authorities will work together with stakeholder groups, the scientific community, and the general public to develop each regional framework.[155]

The resulting guidance, again, is regional in scope and provides a transparent, science-based roadmap to guide coastal communities to plan for the future of their waters in a direct, objective, and inclusive way.[156] Specifically, the framework establishes a new approach to how we use and protect the ocean, the coasts, and the Great Lakes; how we decrease user conflicts, improve planning and regulatory efficiencies and decrease costs and delays, and preserve critical ecosystem services; how we move away from sector-by-sector and statute-by-statute decision-making; how we bring federal, state, and tribal partners together in an unprecedented manner to jointly plan for the future of the ocean, our coasts, and the Great Lakes; how we place science-based information at the heart of decision-making; and how we emphasize stakeholder and public participation.[157]

Overall, the goal of CMSP is to optimize how we use our oceans and make management more effective and efficient.[158] By identifying the areas in the sea that are appropriate for industrial use and areas where ocean habitat and wildlife need protection, we can better allocate our resources, and have more transparency on the issues threatening our oceans.

Some states have already implemented a successful CMSP. A standout example is Rhode Island's Ocean Special Area Management Plan, or Ocean SAMP, which serves as a federally recognized coastal management and regulatory tool and uses the best available science in order to approach the development and protection of Rhode Island's ocean-based resources.

V. EVALUATION OF THE POLICY IMPLEMENTATION TODAY, CHALLENGES TO IMPLEMENTATION, AND RECOMMENDATIONS FOR FUTURE IMPLEMENTATION

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154. Id.

155. National Framework, COASTAL AND MARINE SPATIAL PLANNING, NAT'L OCEANIC & ATMOSPHERIC ADMIN., www.cmsp.noaa.gov/framework/index.html (last visited Jan. 23, 2014).

156. Id.

157. Id.

158. National Ocean Policy, supra note 151.

Prior to the release of the Final Implementation Plan, many local and regional leaders, stakeholders, industries and state and federal agencies initiated action in line with the NOP. The Joint Ocean Commission ("JOC")[159] released two "Report Cards," one published in 2011 and one in 2012, assessing the United States' progress since the inception of the NOP.[160] In the most recent Report Card, the JOC grades the progress made on earlier recommendations and on certain areas of implementation, which are divided into five categories: (1) National leadership and support; (2) regional, state, and local leadership and implementation; (3) research, science, and education; (4) funding; and (5) Law of the Sea Convention.[161] This Note only discusses the information in the first four categories because those are relevant for determining the NOP's progress in the marine pollution context. Each is discussed in turn below.

A. National Support and Leadership

Garnering robust national support and leadership is critical for the improvement of marine pollution given the interconnectivity between landlocked regions, coastal regions, and the ocean. Unfortunately, the JOC gave this category a "C," noting that although the NOP laid "good groundwork," it lacked "communication, stakeholder engagement, and tangible results."[162] Although the NOC successfully released strategic action plans and the draft Implementation Plan, and organized the National Coastal and Marine Spatial Planning Workshop in June 2011, the Council's work is far from complete.[163]

Comments submitted during various stages of NOP implementation reflect the disconnect between stakeholders, notably industry stakeholders, and the NOC. For example, some raised concerns about the effect of adopting a "precautionary approach" as suggested in one of the NOP's

159. Joint Ocean Commission Initiative, MERIDIAN INST., www.merid.org/en/Content/Projects/Joint_Ocean_Commission_Initiative.aspx?view=news (last visited Jan. 23, 2014) (describing the Joint Ocean Commission "is a bipartisan collaboration of senior leaders representing a diversity of viewpoints and interests in our oceans and includes former members of the U.S. Commission on Ocean Policy and Pew Oceans Commission. A primary goal of the Joint Ocean Commission Initiative is to accelerate the pace of change that results in meaningful ocean policy reform").

160. U.S. OCEAN POLICY REPORT CARD 2012, JOINT OCEAN COMM'N 1 (2012), available at http://www.jointoceancommission.org/resource-center/2-Report-Cards/2012-06-06_2012_JOCI_report_card.pdf [hereinafter U.S. REPORT CARD 2012].

161. Id. at 5.

162. Id. at 5.

163. Id. at 7.

"guiding stewardship principles." The language of the relevant principle read:

> Decisions affecting the ocean, our coasts, and the Great Lakes should be informed by and consistent with the best available science. Decision-making will also be guided by a precautionary approach as reflected in the Rio Declaration of 1992, which states in pertinent part, "[w]here there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."[164]

Many feared that this "precautionary approach" might mandate action or prohibit activities, conceivably to the detriment of certain industries. However, the NOP Task Force clarified the misconception by stating in part, "precaution is a tool or approach . . . it is clear that the precautionary approach does not mandate action or prohibit activities."[165] In order to garner support from all stakeholders, particularly in the current political environment, it is essential that the NOC regularly involve all stakeholders during the actual implementation and future development of the NOP's objectives and actions.

Similarly, the Report suggests that the NOC must "work more closely with regions, states, and local communities to identify priority needs and issues that could benefit from the [NOP]."[166] In addition, the NOC must provide more opportunities for stakeholders to get directly involved with Council members.[167] The JOC also recommended that the NOC conduct a comprehensive interagency effort to review ocean-related policies. Such an effort would reduce duplication and inefficiencies, and may help to resolve conflicts in the current management system.

These recommendations are particularly pertinent in the context of marine pollution because an ocean pollution problem is a national problem. Even landlocked regions contribute pollution to the ocean, rivers, streams, and coastal waterways. For example, crop and soil fertilizers deposited in agricultural regions travel through runoff or groundwater into rivers, streams, ponds, and lakes, and ultimately, if not directly, into the ocean. If the NOC can effectively communicate this "land-to-sea" connection across

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164. THE WHITEHOUSE COUNCIL ON ENVTL. QUALITY, supra note 98, at 16.
165. NAT'L OCEAN COUNCIL, supra note 110, at 97.
166. U.S. REPORT CARD 2012, supra note 160, at 7.
167. Id. at 8.

all states and the Federal Government, then perhaps local and regional bodies will adjust their existing codes and ordinances to reflect the uniform goal of protecting coastal and ocean ecosystems. In particular, these policies should focus on reducing the water quality impacts of land uses and development—a priority that both interior and coastal regions can afford to improve upon.

B. Regional, State, and Local Leadership and Implementation

One of the NOP's more notable accomplishments thus far is its effect on the regional, state, and local leadership and implementation efforts. The JOC gave this category an "A-," noting "regional ocean partnerships continue to make progress but need more support from states and federal agencies."[168] States and regions across the nation are showing greater understanding and management of ocean resources through a variety of collaborative tools and strategies. Many regions have created regional planning bodies, which are encouraged to implement the NOP in creative and sensible ways. The NOC is supposed to provide flexibility for these regions, allowing each to focus on their own priorities and needs. For instance, some regional planning bodies collect data, develop stakeholders' involvement initiatives, and develop regional marine protected areas.[169]

C. Research, Science, and Education

Arguably one of the most important areas of the NOP is in the promotion and support for research and education on marine issues. The JOC gave this category a "C" because although some progress had been made, there had been "funding and program cuts, as well as delayed implementation of critical tools, weakened ocean science, research, and education."[170] One of the greatest improvements in this area was the installation of the data portal, ocean.data.gov, which "serves as a clearinghouse for access to non-confidential federal ocean data and planning tools."[171] There have also been "strong regional efforts to coordinate on regional ocean and coastal research, observing, mapping, and restoration priorities."[172]

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168. Id. at 5.
169. Id. at 11–12.
170. Id. at 5.
171. U.S. REPORT CARD 2012, supra note 160, at 14.
172. Id.

However, more is needed in terms of funding and support for further education. Investments in research, science, and education on ocean and coastal issues are crucial, particularly in the context of marine pollution, because it will "produce a more informed citizenry; create better stewards of ocean, coastal, and Great Lakes resources; and increase awareness of business opportunities related to these resources." [173] With a greater knowledge base, people can participate in activities that address the issues facing our oceans and coasts. Furthermore, an educational system that incorporates ocean and coastal science is crucial to ensuring that the next generation of ocean scientists and engineers are sufficiently trained "to continue to lead an innovation-based global economy." [174] Country-wide education would also bring more awareness to the pervasive interconnectivity of land and marine pollution, and hopefully illuminate the need for efforts across the nation, rather than just on the coasts.

D. Funding

Unfortunately, the area that received the lowest grade out of the four here listed—and one that is probably most needed for the implementation of the NOP—is funding. The JOC gave this category a "D-" because ocean programs are "chronically underfunded." [175] In order to implement the NOP to the fullest extent possible under existing authorities and as directed by the 2010 Executive Order, the government must allocate resources to the NOC. The President's Fiscal Year 2011 Budget Request contains additional funding to advance priority activities identified in the Final Recommendations of the Interagency Ocean Policy Task Force. [176] However, some legislators are skeptical about the Obama Administration's plan to begin implementing the NOP. [177] Mostly hailing from the Republican party, the opposition fears that the money to support the Policy will be siphoned from other important programs, and argue that the White House fails to garner Congressional authorization. [178] Also, Republicans are concerned that the Implementation Plan is a plan for the government to

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173. NAT'L OCEAN COUNCIL, supra note 110, at 24.

174. U.S. REPORT CARD 2012, supra note 160, at 17.

175. Id. at 5.

176. THE PRESIDENT'S OFFICE OF MGMT. AND BUDGET, BUDGET OF THE U.S. GOVERNMENT FISCAL YEAR 2011 52 (2011), available at http://www.whitehouse.gov/sites/default/files/omb/budget/fy2011/assets/budget.pdf.

177. Lauren Gardner, Oceans Plan Meets Wave of GOP Resistance, CQ WEEKLY (June 2, 2012, 2:16 PM), http://public.cq.com/docs/weeklyreport/weeklyreport-000004098268.html.

178. Id.

"zone" the ocean, establishing areas for specific uses while precluding other activities (such as oil drilling).[179]

The JOC suggests a very respectable solution to the lack of funding: establish an "ocean investment trust fund to provide the financial support for national, regional, state, and local programs working to understand and manage our ocean and coastal resources."[180] The JOC also recommends that an integrated ocean and coastal budget be established to make it easier to track support for and analyze the progress of programs situated across the federal government that are closely related, and in some cases overlapping and duplicative.[181] As mentioned above, a bill for a National Endowment for the Oceans is presently before Congress, but the likelihood of that passing is unknown at this point.

VI. FINAL CONSIDERATIONS

The National Ocean Policy is still in its infancy—indeed, the Final Implementation Plan was released in April of 2013. The assessments conducted and the recommendations proposed thus far depend upon coordination between all facets of government and across all regions of the United States. In the context of marine pollution, the idea of coordination and collaboration is particularly important given the transboundary and inter-connective nature of pollution. However, if after a few more years in motion, the NOP's attempts to unitize and coordinate all the agencies and regional bodies fails or is moving too slowly, the NOC may consider creating a break-off group whose priority is to coordinate solely marine pollution. Due to the broad and expansive nature of the NOP, and because its goals are so enormous and far-reaching, a single body that works to coordinate marine pollution among the several states could be effective. This body would have experts in the land-use and marine environment science and the ability to identify the greatest contributors to marine pollution. This body could then identify the agencies, stakeholders, and industries that are linked to the pollution, i.e. either contribute to the pollution or are involved in some facet of regulating the pollution. The marine pollution body could have a stake in the Joint Initiative's proposed integrated ocean and coastal budget, in order to allocate money for research in the sources and impacts of marine pollution. Such a solution would help to coordinate regional and local policies on a more targeted scale, making

179. Id.
180. U.S. REPORT CARD 2012, supra note 160, at 19.
181. Id. at 20.

the goals more manageable and more specific than the broad and perhaps over-encompassing NOP.

CONCLUSION

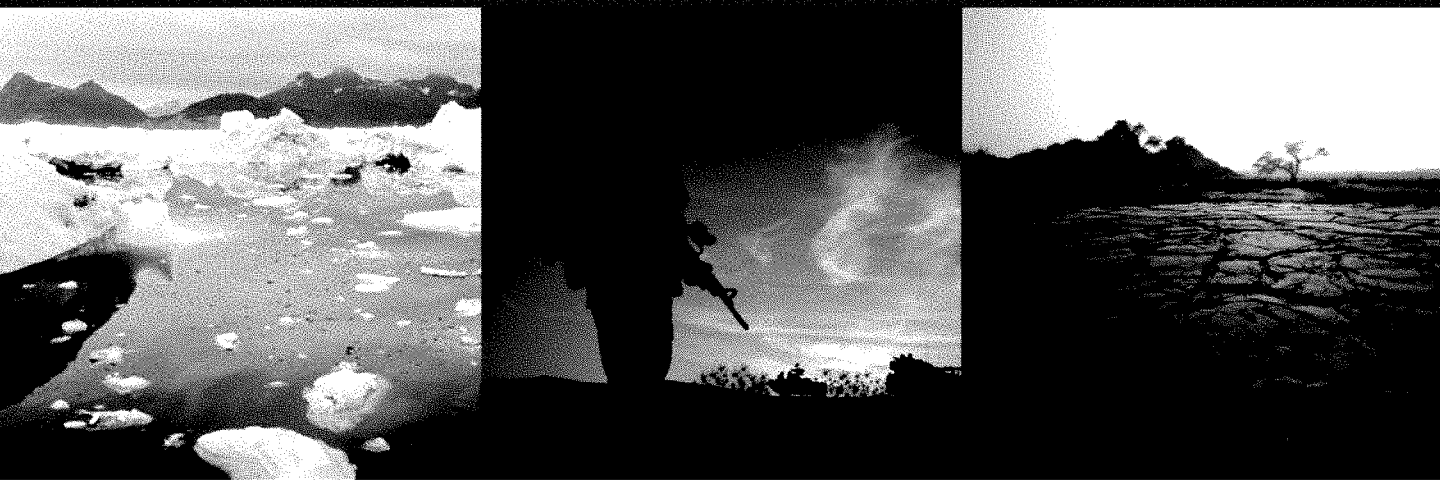
In order to achieve the ambitious goals and objectives of the NOP, much more support is needed from our people and our representatives. With a plan already in place, Americans must rally their representatives for funding to support interagency coordination, research, and education on ocean and coastal issues. Having one collective body to organize and report on the ocean and coasts will ensure greater transparency and greater efficiency in allocating responsibilities for ocean protection and conservation.

While it may seem hyperbolic to argue that everyone, even those living in a landlocked state or region, should care about the oceans, the International Programme on the State of the Ocean succinctly articulates one reason that truly ties all humans to the ocean: "It is no exaggeration to say that the Ocean is as critical to human survival as the air we breathe—not least because it provides roughly half of the world's oxygen…it supplies the oxygen in every second breath we take."[182] This statement highlights the basic feedback principle so fundamental to understanding the importance of the ocean. Human life depends on the vitality of the ocean—we are tied to the ocean—and thus the American people would be wise to advocate for a robust and sustainable NOP.

182. The Earth System, INTERNATIONAL PROGRAMME ON THE STATE OF THE OCEAN, http://www.stateoftheocean.org/flash/system.html; see also Michael Perry, Oceans Choking on CO_2, Face Deadly Changes: Study, REUTERS (June 18, 2010, 2:36 AM), http://www.reuters.com/article/2010/06/18/ozatp-climate-oceans-idAFJOE65H03Q20100618?pageNumber=1&virtualBrandChannel=0&sp=true (citing Australian marine scientist Professor Ove Hoegh-Guldberg stating that "oceans were the Earth's 'heart and lungs', producing half of the world's oxygen and absorbing 30 percent of man-made carbon dioxide").

Rising Temps and Emerging Threats:

The Intersection of Climate Change and National Security in the 21st Century



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