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How the Public Trust Doctrine's Fiduciary Duty Requirement Requires States' Proactive Response to Promote Offshore Power Generation

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How the Public Trust Doctrine’s Fiduciary Duty Requirement Requires States’ Proactive Response to Promote Offshore Power Generation

Andrew S. Ballentine[†]

TABLE OF CONTENTS

I. Introduction	66
II. The Threat of Climate Change Impacts and Potential Effects on Florida	68
A. Erosion of the Florida Coastline	68
B. Rising Water, Retreating Population	71
III. Legal Foundations of the Public Trust Doctrine and Roadblocks to Judicial Review	72
A. The Public Trust Doctrine in United States Jurisprudence.....	72
1. The Scope of the Public Trust Doctrine	72
2. Legal Duties Implied to Trustees Under the Public Trust Doctrine	75
B. Judicial Review Under the Public Trust Doctrine: Standing and the Political Question Doctrine	77
C. Attempted Expansion of the Fiduciary Duty Arising Under the Public Trust Doctrine	80
1. Building a Foundation for Trustee Accountability	80
2. Atmospheric Trust Litigation	86
IV. Offshore Power Generation and the Regulatory Environment	88
A. Offshore Power Generation	89
1. Wave and Tidal Power Generation	89

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2. Wind Power Generation	92
B. Statutory Framework of Alternative Energy Solutions	94
1. Federal Regulatory Framework.....	95
2. Florida Regulatory Framework	97
V. Proposal to Address Climate Change Through Fiduciary Duty Accountability Through Offshore Renewable Energy	99
A. Public Trust Doctrine Fiduciary Duty Requires Action	99
B. Accountability of Existing Duty is Not an Expansion of the Public Trust Doctrine.....	102
VI. Conclusion	103

I. INTRODUCTION

As the earth continues to warm and the impacts of that warming trend loom larger, the question becomes whether and to what degree do governments have responsibility to respond to that threat. The potential range of threats and impacts from climate change vary greatly and governments' ability to respond, effectively and efficiently, exceeds that of the individual and therefore must fall on the greater collection of individuals.¹ In the United States, one way that the collection of individuals is represented, albeit with limitations, is by the government that operates for the collective public good.² This article does not debate the potential impacts of climate change nor the reliability of climate change science. Rather, it focuses on what responsibility state governments have under the public trust doctrine in United States jurisprudence and determines how effective the response of government should be when viewed in a public trust context.

The reason for a focus on the public trust doctrine within this article is twofold: (1) common ground and (2) inadequate legislative responses. Each state has one similarity in its common law, thus setting each state on par with one another for broad discussions of applicable law, and that similarity is the public trust doctrine ("PTD").³ The public trust doctrine

1. See generally *Summary for Policymakers*, IPCC 4–7 (last visited Feb. 2, 2015), http://www.ipcc.ch/pdf/assessment-report/ar5/wg2/ar5_wgII_spm_en.pdf [hereinafter *IPCC Report*]; Caroline Cress, *Its Time To Let Go: Why the Atmospheric Trust Won't Help the World Breathe Easier*, 92 N.C.L. REV. 236, 237–240 (2013).

2. Suzanne Dovi, *Political Representation*, STANFORD ENCYCLOPEDIA OF PHILOSOPHY (Oct. 17, 2011), <http://plato.stanford.edu/entries/political-representation/>.

3. See generally Joseph L. Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471 (1970), available at

provides a common pathway to evaluate governmental responses, reactive or proactive, to the looming climate change issues.⁴ However, this pathway can result in errant and tortured constructions of the public trust doctrine.⁵ This article will explore the relationship between the public trust doctrine, climate change, and governmental responses to the implementation of alternative energy solutions such as offshore wind or hydrokinetic power generation without straying into a “tortured construction” of the doctrine⁶ or by addressing related resources as some courts have done.⁷ This is an area of immediate importance given the rising risks of climate change and potential for grave impacts to be felt around the world,⁸ but most especially in the very areas on which the public trust doctrine is based—submerged lands and navigable waterways.

The statutory or regulatory responses to climate change impacts have been lacking thus far, which leads to alternative proposals for attempting to mitigate the potential impacts of climate change or adapt to those that have occurred.⁹ However, in the face of the far ranging impacts of climate change, the laissez-faire approach is inadequate and perhaps violative of the fiduciary duty imposed under the public trust doctrine.¹⁰ Moreover, one could argue that the lack of action will result in alienation, albeit not through the transfer of property as in a normal real estate

<http://scholarship.law.berkeley.edu/facpubs/1359/>; COASTAL STATES ORG., INC., PUTTING THE PUBLIC TRUST DOCTRINE TO WORK 3 (David C. Slade, R. Kerry Kehoe, Jane K. Stahl eds., 2d ed. 1997), available at <http://www.shoreline.noaa.gov/docs/8d5885.pdf>.

4. See generally Robin Kundis Craig, *Adapting to Climate Change: The Potential Role of State Common-Law Public Trust Doctrines*, 34 VT. L. REV. 781 (2010) [hereinafter *Adapting to Climate Change*].

5. Andrew Ballentine, Note, *Full of Hot Air: Why the Atmospheric Trust Litigation Theory is an Unworkable Attempt to Expand the Public Trust Doctrine Beyond its Common Law Foundations*, 12 DARTMOUTH L. J. 98 (2014) (discussing why the atmospheric trust litigation theory is an unworkable attempt to expand the public trust doctrine beyond its common law foundation). But see Jordan M. Ellis, *The Sky's The Limit: Applying The Public Trust Doctrine To The Atmosphere*, 86 TEMP. L. REV. 807 (2014) (arguing for an expansion of the public trust doctrine to include the atmosphere).

6. J.B. Ruhl & James Salzman, *Ecosystem Services and the Public Trust Doctrine: Working Change from Within*, 15 SOUTHEASTERN ENVTL. L.J. 223, 229 (2006) (citing Richard J. Lazarus, *Changing Conceptions of Property and Sovereignty in Natural Resources: Questioning the Public Trust Doctrine*, 71 IOWA L. REV. 631, 710–11 (1986)).

7. See generally *Geer v. State of Conn.*, 161 U.S. 519 (1896), *overruled by Hughes v. Oklahoma*, 441 U.S. 322 (1979).

8. See generally *IPCC Report*, *supra* note 1.

9. *Infra* Part III.C and Part V.

10. Michael P. Dixon, *Drawing Lines in the Disappearing Sand: A Re-evaluation of Shoreline Rights and Regimes A Quarter Century After Bell v. Town of Wells*, 16 OCEAN & COASTAL L.J. 481, 490 (2011) (“[E]ach state ha[s] a duty to protect lands in the public trust, and that this obligation to preserve access under the public trust doctrine is inalienable”); *Infra* Part III.

transaction, of public trust lands as they are eroded or simply submerged by rising sea levels.¹¹

This article argues that the state has a duty to act in a proactive, rather than reactive, manner in its approach to mitigating the impacts of climate change by seeking out opportunities to incentivize private industries within its jurisdiction to pursue energy production in a manner that contributes less to the growing climate change maelstrom. Thus, the approach that this article champions is not a per se expansion of the public trust doctrine, as has been attempted in related areas,¹² but rather is an application of fiduciary duty within the scope of the public trust doctrine to governmental responses to attempt to mitigate the impacts of climate change and global warming.¹³

Part II of this article addresses the potential impacts of climate change in Florida. Part III examines alternative power solutions and the statutory framework required to implement them. Part IV addresses the public trust doctrine and its development from English common law origins to the position it currently holds in United States jurisprudence and a discussion of the limits to which the doctrine can be expanded. Part V offers a proposal for holding states accountable under the public trust doctrine for their work, or in the alternative not working, to protect public trust assets by mitigating the potential impacts of climate change through proactive consideration of measures to encourage more carbon neutral solutions. This article concludes that the public trust doctrine can be a mechanism to require action on the behalf of state government under its fiduciary duty obligation to take proactive measures, such as the promotion of offshore power generation solutions, to combat the potential impacts of climate change.

II. THE THREAT OF CLIMATE CHANGE IMPACTS AND POTENTIAL EFFECTS ON FLORIDA

A. Erosion of the Florida Coastline

Florida is particularly sensitive to the threat of climate change impacts due to a variety of factors.¹⁴ The most threatening impact in Florida

11. See generally Sax, *supra* note 3.

12. *Infra* Part III.C.

13. *Infra* Part V.

14. See generally Karl Havens, *Rising seas bring heavy burden to Florida coastal economy. Can it adapt?*, THE CONVERSATION (Mar. 16, 2015, 5:39 AM), <http://theconversation.com/rising-seas-bring-heavy-burden-to-florida-coastal-economy-can-it-adapt-38766>; Robert J. Nicholls & Jason A. Lowe, *Benefits of mitigation of climate change for coastal areas*, 14 GLOBAL ENVTL. CHANGE 229, 233 (2004), available at <http://www.sciencedirect.com/science/article/pii/S0959378004000445> (Table 1 displays a variety of factors that could potentially affect coastal areas, such as Florida).

is rising sea levels, especially when combined with the erosion of coastal land that rising sea levels will cause when combined with normal tidal ebbs and flows.¹⁵ Climate change is defined as a change, typically classified as significant, in the measurement of climate, as observed by scientists, which lasts for an extended period of time and can encompass “major changes in temperature, precipitation, or wind patterns, among other effects . . .”¹⁶ Climate change is linked to the increase in global temperatures due to a rise in greenhouse gases (“GHGs”), also known as global warming,¹⁷ and as a result is causing climate patterns to change, among other impacts.¹⁸ These increases in GHGs cause increases in the amount of radiation trapped in the atmosphere rather than reflected from the earth’s surface, clouds, and oceans, which in turn cause the general warming of the atmosphere through the greenhouse effect.¹⁹ However, there are natural and anthropogenic causes of climate change²⁰ and the level of impacts between those two sources is the key issue in determining how best to mitigate,²¹ to the extent that it is possible, increases in the underlying causes of climate change and adapt to those impacts.²²

The loss of coastal areas due to rising sea levels and erosion is one of the major factors that result from climate change impacts in Florida and its impact in Florida is twofold.²³ First, the erosion of coastal areas presents a major impact to the economy of the state of Florida due to lost tourism revenues for both municipalities and private entities, such as hotels, restaurants, and similarly situated businesses that could feel the impact of rising sea levels. Second, a rise in sea level would likely result in significant erosion of coastal lands around the state and would pose a

15. Havens, *supra* note 14; see also *Researchers and lawmakers warn: Florida is ‘Ground Zero’ for sea level rise*, RAWSTORY (Apr. 22, 2014, 4:10 PM), <http://www.rawstory.com/rs/2014/04/researchers-and-lawmakers-warn-florida-is-ground-zero-for-sea-level-rise/>.

16. *Climate Change: Basic Information*, EPA, <http://www.epa.gov/climatechange/basics/> (last updated Mar. 18, 2014).

17. *Id.* (defining Global Warming as “the recent and ongoing rise in global average temperature near Earth’s surface”).

18. *Id.*; see generally *IPCC Report*, *supra* note 1.

19. Randall S. Abate & Dr. Sarah Ellen Krejci, *Climate Change Impacts on Ocean and Coastal Law: Scientific Realities and Legal Responses*, in CLIMATE CHANGE IMPACTS ON OCEAN AND COASTAL LAW: U.S. AND INTERNATIONAL PERSPECTIVES 4 (Randall S. Abate ed., 2015) (citing to 4 Elizabeth Kay Berner & Robert A. Berner, GLOBAL ENVIRONMENT: WATER, AIR, AND GEOCHEMICAL CYCLES 13 (1995) [hereinafter *Climate Change Impacts*]).

20. *Id.* at 2–5 (discussing the basic framework of Earth’s climate and anthropogenic contribution to climate change).

21. Kelley M. Jancaitis, *Florida on the Coast of Climate Change: Responding to Rising Seas*, 31 ENVIRONS ENVTL. L. & POL’Y J. 157, 169–86 (2008).

22. *Id.* at 186–94; see generally J.B. Ruhl, *Climate Change Adaptation and the Structural Transformation of Environmental Law*, 40 ENVTL. L. 363 (2010).

23. Nicholls & Lowe, *supra* note 14, at 234 (Table 2 presents effects of sea-level rise).

major challenge to the population in terms of displacement²⁴ and loss or reduction in public and private property.²⁵

As the Florida economy faces challenges due to potential impacts of climate change, it is important to understand how varied the economy in Florida is and its strategic placement relative to the United States.²⁶ One area of Florida's economy that could be negatively impacted is the agricultural sector. The agricultural sector in Florida is a major producer of oranges, both domestically and globally, and is also one of the leading states in the southeastern United States for farm income.²⁷ A significant change in climate conditions would negatively impacts the productivity of Florida's various agricultural industries and cause declines in the yield as much as fourteen percent with increases in temperature of six degree Fahrenheit and rainfall of ten percent.²⁸ As of 2013, the Office of Economic and Demographic Research estimated that agriculture, forestry, fishing, and hunting in the state accounted for approximately \$9 billion dollars in gross domestic product.²⁹ However, when viewing the impacts of the agricultural industry on the state the valuation goes up significantly and as of 2012 that impact was valued in excess of \$100 billion.³⁰ Therefore, should the worst case scenarios foreseen by the EPA's analysis on Florida come true, the potential exposure of harm to the State of Florida is in excess of \$14 billion in losses to the economy.³¹

The case of tourism is even more pronounced in terms of potential losses due to climate change impacts being and a rising sea level would cause significant loss of property and real estate damages.³² In Florida, real estate and property are closely linked and are major driving forces in the economy.³³ Rising sea levels not only pose risks to the human popu-

24. *Infra* Part II.B.

25. Jancaitis, *supra* note 21, at 161–62.

26. *Florida: An Economic Overview*, OFFICE OF ECONOMIC AND DEMOGRAPHIC RESEARCH (Jan. 6, 2015), http://edr.state.fl.us/Content/presentations/economic/FIEconomicOverview_1-6-15.pdf.

27. *Florida Quick Facts*, STATEOFFLORIDA.COM, <http://www.stateofflorida.com%2Fflorquicfa.c.html> (last visited Mar. 28, 2015).

28. EPA, *supra* note 16, at 4.

29. *Gross Domestic Product – 5 Year Analysis*, OFFICE OF ECONOMIC AND DEMOGRAPHIC RESEARCH, http://edr.state.fl.us/Content/special-research-projects/economic/2011_FL_state_GDP.pdf (last visited Mar. 28, 2015).

30. Jaime Sloane, *Florida's Agriculture Industry Continues to Grow*, WUFT NEWS (Oct. 23, 2013), <http://www.wuft.org/news/2013/10/23/floridas-agriculture-industry-continues-to-grow/>.

31. *Id.*; EPA, *supra* note 16, at 3.

32. Jancaitis, *supra* note 21, at 165–66.

33. OFFICE OF ECONOMIC AND DEMOGRAPHIC RESEARCH, *supra* note 26 (Real Estate and rental and leasing are approximately \$130 billion in GDP for State of Florida).

lation, but also pose a significant risk of loss of habitat for numerous species that live in the wetlands and lowlands of Florida's coastlines.³⁴

B. Rising Water, Retreating Population

The state of Florida is positioned, rather precariously, for the potential impacts of climate change especially as they may affect the coastal areas.³⁵ Florida has the most miles of coastline than that of any other state in the continental United States and second only to Alaska.³⁶ This is a significant point in any discussion regarding the true scope of danger faced as the sea levels rise, Florida, due to its relatively low lying topography, could be disproportionately impacted relative to the majority of states.³⁷ This threat is evinced by the erosion that can be caused by hurricanes and the staggering economic costs, both in repairs and tourism losses that accompany that erosion. The quintessential case for this scenario is demonstrated in *Stop the Beach Renourishment* and the battle of recovery in Walton County after significant damage was done to the coastal bluffs and dunes³⁸ in hurricane-related erosion.³⁹ The case was taken all the way to the Supreme Court of the United States, but was decided on grounds related to the avulsion of the sand due to the beach renourishment project—an subject only tangentially related to the scope of this article but nevertheless foretelling example of how property rights are affected by states' reactions and adaptations to eroding coastlines.⁴⁰

As the sea level rises, there are few options available to residents in low-lying areas other than retreat⁴¹ or adaptation.⁴² In evaluating the po-

34. EPA, *supra* note 16, at 3.

35. See generally Orrin Pikey, *Sea Level Rise and The World's Beaches*, COASTAL CARE (Jan. 11, 2015), <http://coastalcare.org/2011/01/sea-level-rise-and-the-worlds-beaches/> (discussing the potential ramifications of sea level rise on beaches).

36. Janice C. Beaver, *U.S. International Borders: Brief Facts*, CONSTITUTIONAL RESEARCH SERVICE 3–4 (Nov. 9, 2006), available at <http://www.fas.org/sgp/crs/misc/RS21729.pdf> (listing Florida with 1,350 miles of general coastline in Table 3).

37. *Id.*; *Elevation of Southern Florida: Image of the Day*, NASA (Sept. 9, 2004), <http://earthobservatory.nasa.gov/IOTD/view.php?id=4818> (noting the level of flooding that would occur with 5 and 10 meter rises in sea level throughout southern Florida).

38. *Walton County, Florida Hurricane and Storm Damage Reduction*, US ARMY CORPS OF ENGINEERS MOBILE DISTRICT EA-6 (Dec. 2012), available at http://www.sam.usace.army.mil/Portals/46/docs/planning_environmental/docs/Planning%20Reports/Walton%20County%20HSDR%20Final%20Report%20Volume%20II%20May%2024%202013.pdf (describing how the coastline featured prominent bluffs and dunes that ranged from eleven and a half feet to in excess of sixty feet in height and averaged twenty five and a half feet as of a 1988 survey).

39. Dixon, *supra* note 10, at 505–12 (discussing the factual background of *Stop the Beach Renourishment, Inc. v. Fla. Dep't of Env'tl. Prot.*, 560 U.S. 702 (2009)).

40. *Stop the Beach Renourishment, Inc. v. Fla. Dep't of Env'tl. Prot.*, 560 U.S. 702, 732–33 (2009); Dixon, *supra* note 10, at 511–12.

41. Jancaitis, *supra* note 21, at 191–93 (discussing retreat as a potential strategy for dealing with sea level rise).

tential impact on the population, a recent study estimated that almost 500,000 Florida residents live in areas where the property line is less than three feet about the high tide line, a figure that represents approximately twenty-one percent of the state.⁴³ By increasing the altitude to six feet above sea level, the impacted population increases to just over 2.6 million.⁴⁴ Ultimately, retreat may be the most economically efficient way to adapt to rising sea levels despite the anthropological upheaval that would result.⁴⁵ Incidentally, retreat may be an increasingly positive option as the reduction in pressures from human development of coastal areas might allow the coastal environments to react in a positive, more natural manner to the rising seas and permit individuals to continue enjoying the use of these coastal areas.⁴⁶

III. LEGAL FOUNDATIONS OF THE PUBLIC TRUST DOCTRINE AND ROADBLOCKS TO JUDICIAL REVIEW

A. *The Public Trust Doctrine in United States Jurisprudence*

1. The Scope of the Public Trust Doctrine

The public trust doctrine (“PTD”) is an ancient common law doctrine⁴⁷ that imposes various duties on the state, which acts as a trustee of the public lands under the trust.⁴⁸ The doctrine’s exact legal origins are somewhat murky, but the doctrine firmly took root under the English common law tradition and thus passed on to the newly formed United States of America after the Revolutionary War.⁴⁹ The Supreme Court originally formed the PTD around its traditional boundaries of the absolute right to “navigable waters, and the soils under them, passed to the states upon admission to the union, for the ‘common use’ of the ‘peo-

42. Dixon, *supra* note 10, at 524–30 (discussing potential adaptation strategies for rising sea levels).

43. Ben Strauss, et al., Florida and the Surging Sea: A vulnerability assessment with projections for sea level rise and coastal flood risk 24 (2014), available at <http://sealevel.climatecentral.org/uploads/ssrf/FL-Report.pdf> (Table 4 cites 489,925 in estimated affected population).

44. *Id.* (Table 4 cites 2,655,967 in estimated affected population).

45. Jancaitis, *supra* note 21, at 191.

46. Gordon McGranahan et al., *The Rising Tide: Assessing the Risk of Climate Change and Human Settlements in Low Elevation Coastal Zones*, 19 ENV'T & URBANIZATION 17, 20 (2007), available at <http://eau.sagepub.com/content/19/1/17.full.pdf+html>.

47. JUSTINIAN, THE INSTITUTES, 1.2.1, 2.1.1 (T. Sandars trans. 1st Am. Ed. 1876); see also Sidney F. Ansbacher, *Muddying the Public Trust Doctrine One Vote at a Time*, 29 J. LAND USE & ENVTL. L. 221, 222–24 (2014) [hereinafter *Muddying PTD*].

48. Idaho v. Coeur d'Alene Tribe of Idaho, 521 U.S. 261 (1997).

49. Martin v. Waddell's Lessee, 41 U.S. 367 (1842); Cathy J. Lewis, *The Timid Approach of the Federal Courts to the Public Trust Doctrine: Justified Reluctance or Dereliction of Duty?*, 19 PUB. LAND & RESOURCES L. REV. 51, 54 (1998).

ple.”⁵⁰ However, the doctrine’s English basis was that “the King is the owner of all navigable rivers, bays, and shores below the low water mark, and he owns them, not as trustee, but in full dominion and propriety.”⁵¹ This scope of the King’s ownership was limited in that there could not be restriction of use of the waterways for transportation, commerce, and as a source of fishing for the people.⁵² The United States has adhered to this legal principle of restricting the absolute right of the government, in lieu of the King,⁵³ by requiring that “certain crucial natural resources are the shared, common property of all citizens that cannot be subject to private ownership and must be preserved and protected by the government.”⁵⁴

This common law tradition is applicable both to the original states and those that joined the union afterwards.⁵⁵ The American twist on the PTD also presents a change in the responsibilities of the owner, which is subject to a fiduciary duty standard.⁵⁶ In addition to the standard duties of a fiduciary, the state is also restrained in its ability to alienate the public lands and that uses of such land should not interfere with the original purposes of the trust.⁵⁷

While the Supreme Court had set the boundaries of the PTD according to the common law tradition,⁵⁸ there have been various attempts to

50. Lewis, *supra* note 49 at 54; Cf. *Philips Petroleum Co. v. Mississippi*, 484 U.S. 469 (1988) (holding that the State gained title in fee simple to lands influenced by the tides even though they were not navigable in fact at the time of Mississippi’s admission to the union).

51. *Arnold v. Mundy*, 6 N.J.L. 1, 52 (1821).

52. *Id.*

53. *Martin*, 41 U.S. at 367 (“When the Revolution took place, the people of each State became themselves sovereign; and in that character held the absolute right to all their navigable waters, and the soils under them, for their own common use, subject only to the rights since surrendered by the constitution to the general government. A grant, therefore, made by their authority, must be tried and determined by different principles from those which apply to grants of the British crown, where the title is held by a single individual in trust for the whole nation.”).

54. Patrick C. McGinley, *Climate Change and the Public Trust Doctrine*, 65 PLANNING & ENVTL. L. No. 8, p. 7 (Aug. 2013) (citing Joseph L. Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471 (1970)).

55. *Pollard’s Lessee v. Hagan*, 44 U.S. 212 (1845) (discussing the nature of navigable waterways in relation to the State of Alabama’s admittance into the Union); *Brickell v. Trammell*, 82 So. 221, 226–27 (Fla. 1919) (discussing how the public trust doctrine is applicable to the State of Florida).

56. Edgar Washburn & Alejandra Núñez, *Is the Public Trust a Viable Mechanism to Regulate Climate Change?*, 27 NAT. RESOURCES & ENV’T 23, 25 (Fall 2012) (“The king held title to the soil beneath the sea and arms of the sea (navigable waters) in his sovereign capacity and could grant the beds of navigable waters into private ownership . . .”) [hereinafter *Is the Public Trust*].

57. *District of Columbia v. Air Fla., Inc.*, 750 F.2d 1077, 1082–83 (D.C. Cir. 1984); *Infra* Part IV.A.2.

58. See generally *Geer*, 161 U.S. at 519; *Martin*, 41 U.S. at 367.

expand the scope of the PTD beyond those initial boundaries.⁵⁹ Those attempts to expand the PTD have met with some success, as in the case of expanding the PTD to include traditional uses of water or submerged lands,⁶⁰ but most have failed when they sought to reach beyond the traditional scope of the doctrine.⁶¹ The courts have had difficulty with framing issues that arise under the PTD, especially where the claims brought by the plaintiffs amount to an attempt to expand the doctrine itself, such as in the *Alec L.* case as opposed to more straightforward application of the PTD itself.⁶² The scope of the PTD has often remained tied to its common law roots,⁶³ which is its source of the strength of the doctrine,⁶⁴ and that common law basis should not be confused as having been expanded in the instance where a legislature enacts constitutional environmental rights or statutory provisions.⁶⁵

59. See generally *Alec L. v. Jackson*, 863 F. Supp. 2d 11 (D.D.C. 2012), *reh'g denied sub nom.*, *Alec L. v. Perciasepe*, 2013 WL 2248001, at *1 (D.D.C. May 22, 2013), *aff'd sub nom.*, *Alec L. ex rel. Loorz v. McCarthy*, 561 F. App'x 7 (D.C. Cir. 2014), *cert. denied*, *Alec L. v. McCarthy*, 135 S. Ct. 774 (2014); *Kanuk v. State*, No. 3AN1107474, 2012 WL 8262438 (Alaska Super. Mar. 16, 2012), *aff'd*, *Kanuk v. State*, 335 P.3d 1088 (Alaska 2014); *Nat'l Audubon Soc'y v. Super. Ct.*, 658 P.2d 709 (Cal. 1983); *Marks v. Whitney*, 6 Cal.3d 251, 259–60 (Cal. 1971) (discussing the Public Trust as traditionally defined and how the trust has been expanded to include additional related rights); MARY CHRISTINA WOOD, *NATURE'S TRUST: ENVIRONMENTAL LAW FOR A NEW ECOLOGICAL AGE* (2013) (discussing the Nature's Trust adaptation of the Public Trust doctrine and how the Atmospheric Trust Litigation theory approaches climate change) [hereinafter *Nature's Trust*]; MARY CHRISTINA WOOD, *Atmospheric Trust Litigation*, in *ADJUDICATING CLIMATE CHANGE: STATE, NATIONAL, AND INTERNATIONAL APPROACHES* 99 (William C. G. Burns & Hari M. Osofsky eds., 2011) [hereinafter *Adjudicating Climate Change*]; Richard J. Lazarus, *Changing Conceptions of Property and Sovereignty in Natural Resources: Questioning the Public Trust Doctrine*, 71 IOWA L. REV. 631, 647–8 (1986) [hereinafter *Changing Conceptions*].

60. *Air Fla., Inc.*, 750 F.2d at 1082; *Marks*, 6 Cal.3d at 259–60 (discussing the Public Trust as traditionally defined and how the trust has been expanded to include additional related rights).

61. *Alec L. v. Jackson*, 863 F. Supp. 2d 11 (D.D.C. 2012), *reh'g denied sub nom.*, *Alec L. v. Perciasepe*, 2013 WL 2248001, at *1 (D.D.C. May 22, 2013), *aff'd sub nom.*, *Alec L. ex rel. Loorz v. McCarthy*, 561 F. App'x 7 (D.C. Cir. 2014), *cert. denied*, *Alec L. v. McCarthy*, 135 S. Ct. 774 (2014); *Kanuk v. State*, No. 3AN1107474, 2012 WL 8262438 (Alaska Super. Mar. 16, 2012), *aff'd*, *Kanuk v. State*, 335 P.3d 1088 (Alaska 2014).

62. *Complaint of Steuart Transp. Co.*, 495 F. Supp. 38, 40 (E.D. Va. 1980) (holding that “[u]nder the public trust doctrine, the State of Virginia and the United States have the right and the duty to protect and preserve the public's interest in natural wildlife resources”); *Alec L.*, 863 F. Supp. 2d at 11.

63. *Is the Public Trust*, *supra* note 56, at 26 (citing to *Marks* and *Nat'l Audubon Soc'y v. Super. Ct.*, 658 P.2d 709 (Cal. 1983), as examples of the limits of the judicial expansion of Public Trust Doctrine).

64. *Ruhl & Salzman*, *supra* note 6, at 229 (citing Richard J. Lazarus, *Changing Conceptions of Property and Sovereignty in Natural Resources: Questioning the Public Trust Doctrine*, 71 IOWA L. REV. 631, 710–11 (1986)); See generally George P. Smith & Michael W. Sweeney, *The Public Trust Doctrine and Natural Law: Emanations within a Penumbra*, 33 B.C. ENVTL. AFF. L. REV. 307 (2006).

65. *Is the Public Trust*, *supra* note 56, at 26.

While the states are trustees under the PTD and their ownership is subject to restrictions from the federal government, those restrictions do not create a duty for the federal government under the PTD.⁶⁶ In *Martin v. Waddell's Lessee*, the rationale that the Court employed was that “[w]hen the revolution took place, the people of each state became themselves sovereign; and in that character, held the absolute right to all their navigable waters, and the soil under them; for their own common use, subject only to the rights since surrendered by the constitution to the general government.”⁶⁷ The Supreme Court later discussed this limitation in *PPL Montana, LLC v. Montana*, wherein the Court stated that the power retained by the United States is for “the purposes of navigation in interstate and foreign commerce.”⁶⁸

2. Legal Duties Implied to Trustees Under the Public Trust Doctrine

The Supreme Court has touched on the public trust doctrine sporadically throughout history, as far back as the 1840s⁶⁹ and as recently as 2012,⁷⁰ but the seminal case is *Illinois Central Railroad Company*.⁷¹

In *Illinois Central*, the Supreme Court reviewed a series of legislative acts by the legislature of the State of Illinois to convey title to the lakebed, which is submerged lands, of Chicago’s harbor of Lake Michigan to the Illinois Central Railroad Company.⁷² At the time of the legisla-

66. *Is the Public Trust*, *supra* note 56, at 25 (citing *Kaiser Aetna v. United States*, 444 U.S. 164, 171–72 (1979)); *See generally* *Gibbons v. Ogden*, 22 U.S. 1 (1824); *Infra* Part IV.C.2.

67. *Martin*, 41 U.S. at 367; *See also* *Adapting to Climate Change*, *supra* note 4, at 798–9; *Is the Public Trust*, *supra* note 56, at 25 (explaining how the Equal Footing doctrine operates such that “each subsequently admitted state acquired the beds of navigable waters in its sovereign capacity at statehood” subject to a federal law limitation that “*the navigable waters* that passed to the states under the equal footing doctrine are those that are navigable-in-fact or are susceptible to being used, in their ordinary condition, as highways for commerce over which trade and travel are, or may be, conducted at the time of statehood.”[emphasis added]); *See generally* Robin Kundis Craig, *A Comparative Guide to the Western States' Public Trust Doctrines: Public Values, Private Rights, and the Evolution Toward an Ecological Public Trust*, 37 *ECOLOGY L.Q.* 53 (2010); Ballentine, *supra* note 5, at 98 (noting that the public trust doctrine does not apply, per se, to the federal government but to the states).

68. *PPL Montana, LLC v. Montana*, 132 S. Ct. 1215, 1228 (2012).

69. *Pollard's Lessee*, 44 U.S. at 212; *Martin*, 41 U.S. at 367.

70. *PPL Montana, LLC*, 132 S. Ct. at 1215.

71. *Ill. Cent. R.R. Co. v. Illinois*, 146 U.S. 387 (1892); Richard M. Frank, *The Public Trust Doctrine: Assessing Its Recent Past & Charting Its Future*, 45 *U.C. DAVIS L. REV.* 665, 680–85 (2012) (discussing application of PTD in the federal system and citing to *Illinois Central* that the decision was a “judicial explication of state, rather than federal, law principles”) [hereinafter *The Public Trust Doctrine*].

72. *See generally* *The Public Trust Doctrine*, *supra* note 71, at 680–85. *Contra* *Adapting to Climate Change*, *supra* note 4, at 801 (distinguishing private ownership of public trust doctrine lands is also subject to limitation based on the navigability of the waterway); *Is the Public Trust*, *supra*

tive action, there were a number of entities that were vying for control of this area of Chicago, based on disputed claims of controlling interest.⁷³ The land was occupied by various structures and tracks claimed by the Illinois Central Railroad Company.⁷⁴ The Supreme Court wrestled with the appropriateness of the legislative acts in light of several theories, but ultimately limited the ability of the legislature to convey title to those public lands based on the premise that the “public trust cannot be relinquished by the state, except as to parcels used in promoting the interest of the public and without the substantial impairment of the public interest in the remaining lands and waters.”⁷⁵

This limitation on the alienation of public trust lands has been adopted in “virtually every state jurisdiction as a matter of state common law.”⁷⁶ The Supreme Court’s reasoning was that the alienation of those public lands, which were of significance to the people of the State of Illinois due to the role of the harbor of Chicago, and the resulting alienation in the view of the Court “plac[ing] the same in the hands of a private corporation . . . is a proposition that cannot be defended.”⁷⁷ The Court held that position of the property was such that, being of a public nature as it was, that the land was held “by the whole of the people for purposes in which the whole people are interested.”⁷⁸ The Court further noted that the legislative action was akin to abdication and that the State, as trustees under the public trust could “no more abdicate its trust over property in which the whole people are interested, like navigable waters and soils under them . . . without impairment of the public interest . . . than it can abdicate its police powers in the administration of government and the preservation of the peace.”⁷⁹ The Court concluded that the State’s trusteeship of the public trust lands was a role, or alternatively an affirmative

note 56, at 25 (discussing the limitation for private owners will vary from no limitation, for owners of non-navigable waterways, to strict limitations on property rights extend only to the waterway).

73. *Ill. Cent. R.R. Co.*, 146 U.S. at 433 (discussing how the lands were attributed to the State of Illinois upon their admittance to the union and that as a matter of law “lands covered by tidewaters” are under the ownership of the State).

74. *Id.*; see generally *State v. Cent. Vt. Ry.*, 571 A.2d 1128 (Vt. 1989) (analogizing the Railway’s land as fee simple subject to condition subsequent, which was a restriction that the land be used for public purposes); *Boston Waterfront Dev. Corp. v. Commonwealth*, 393 N.E.2d 356 (Mass. 1979) (holding that the Lewis Wharf statutes gave grantees title to land below low water mark in fee simple, but subject to conditions subsequent that it be used for the public purpose for which it was granted).

75. See *Ill. Cent. R.R. Co.*, 146 U.S. at 453; see also *Is the Public Trust*, *supra* note 56, at 25.

76. *Is the Public Trust*, *supra* note 56, at 25 (discussing *Ill. Cent. R.R. Co.* as an example of legal action to curtail the actions of the Illinois legislature, as opposed to an agency, that had been complicit in its grant of land to the railroad company only to realize the error at a later date).

77. *Ill. Cent. R.R. Co.*, 146 U.S. at 454.

78. *Id.* at 456.

79. *Id.* at 452–53.

legal duty, that could not be abandoned without cause and that actions taken must be in the interest of the people of that state.⁸⁰

B. Judicial Review Under the Public Trust Doctrine: Standing and the Political Question Doctrine

Illinois Central set the standard against which future cases involving the PTD could be measured and contrasted.⁸¹ There are generally two different types of cases that are brought utilizing the public trust doctrine: the first involves the enforcement of a duty on the state due to the actions that state has taken and the second involves seeking to compel the state to act.⁸² The plaintiff bringing the case must meet the elements of standing, which are injury in fact, causation, and redressability.⁸³ The standing analysis, which was the major focus of *Lujan*, will be reviewed for each of the three factors and the burden of establishing each is on the party that brings the claim.⁸⁴ According to the *Lujan* court, the plaintiff must be able to demonstrate that “that they have suffered an injury in fact, i.e., a concrete and particularized, actual or imminent invasion of a legally protected interest.”⁸⁵ The plaintiff must also be able to demonstrate that there is a link, or causation, between that alleged harm and the defendant or in other words that the injury in fact is “fairly . . . trace[able] to the challenged action of the defendant, and not . . . th[e] result [of] the independent action of some third party not before the court.”⁸⁶ Finally, the redressability prong of the standing analysis is where the plaintiff must be able to demonstrate that there is some likelihood, not just a speculative possibility, “that the injury will be ‘redressed by a favorable decision.’”⁸⁷

Once the case has cleared the standing analysis, the court must also be presented with a matter that it can adjudicate without overstepping its

80. *Id.*

81. See generally Joseph D. Kearney & Thomas W. Merrill, *The Origins of the American Public Trust Doctrine: What Really Happened in Illinois Central*, 71 U. CHI. L. REV. 799, 800 (2004).

82. See generally *Ill. Cent. R.R. Co.*, 146 U.S. at 387 (enforcement of a duty upon the state); *National Audubon Soc’y v. Superior Court*, 658 P.2d 709 (Cal. 1983) (enablement of the state to act); *State v. Cent. Vt. Ry.*, 571 A.2d 1128 (Vt. 1993) (seeking to enforce a theory of public use for submerged lands under the PTD).

83. See *Lujan v. Defenders of Wildlife*, 504 U.S. 555 (1992).

84. *Id.*

85. *Id.*; see also *DaimlerChrysler Corp. v. Cuno*, 547 U.S. 332, 352 (2006).

86. *Lujan*, 504 U.S. at 560; see also *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs., Inc.*, 528 U.S. 167 (2000); *Washington Envt’l Council v. Bellon*, 732 F.3d 1131, 1143–44 (9th Cir. 2013) (citing *Allen v. Wright*, 468 U.S. 737, 753 n.19 (1984), which states that “[t]he ‘fairly traceable’ and ‘redressability’ components of the constitutional standing inquiry were initially articulated by this Court as ‘two facets of a single causation requirement.’”); *Salmon Spawning & Recovery Alliance v. Gutierrez*, 545 F.3d 1220, 1228 n. 5 (9th Cir. 2008).

87. *Lujan*, 504 U.S. at 560–61.

constitutional bounds by addressing a matter that is better handled by a different branch of government.⁸⁸ This is called the Political Question Doctrine and the analysis is sensitive, as “the mere fact that a case touches on the political process does not necessarily create a political question beyond courts' jurisdiction.”⁸⁹ To that end, there is a six factor test that the court will apply to determine whether the matter before the court presents an issue known as a political question.⁹⁰ If the claim fails to meet any of these factors, the case could be dismissed for lack of jurisdiction.⁹¹

The courts have reviewed numerous claims regarding the public trust doctrine, but this article will focus on several that highlight the ability for courts to review public trust doctrine issues without running afoul of the Political Question doctrine. In *National Audubon v. Superior Court* (“the Mono Lake case”), the California court reviewed the action of the Division of Water Resources of California when it granted the Los Angeles the ability to divert specific streams that fed Mono Lake.⁹² The result of the diversion of water from those streams caused the water level of Mono Lake to drop, which posed potential issues implicating the public trust doctrine.⁹³ The court had to balance competing issues of the public trust doctrine and prevailing water rights law under the “appropriative water rights system which since the days of the gold rush has dominated California water law.”⁹⁴ Given the traditional basis of the public trust doctrine and the resulting expansion within the California, the court reasoned that Mono Lake fit into the category of a navigable waterway or a fishery and qualified for protection under the public trust doctrine.⁹⁵

Upon determining that the issue could be reviewed under the tenets of the public trust doctrine,⁹⁶ the court viewed the trusteeship of the State as imposing a duty to manage the *res*, or the property of a trust, in a fidu-

88. *Baker v. Carr*, 369 U.S. 186 (1962) (establishing a six factored test for the political question doctrine); *Infra* Part IV.C.1.

89. *Barasich v. Columbia Gulf Transmission Co.*, 467 F. Supp.2d 676, 680 (2006) (citing to *In re Nazi Era Cases Against German Defendants Litig.*, 129 F.Supp. 2d 370, 374 (D.N.J. 2001) (citing *Nixon v. Herndon*, 273 U.S. 536, 540 (1927))).

90. *Id.* at 217; *see also Vieth v. Jubelirer*, 541 U.S. 267, 277–78 (2004) (quoting the six factored test from *Baker v. Carr*, 369 U.S. 186, 217 (1962)).

91. *See generally Baker v. Carr*, 369 U.S. at 217.

92. *Nat'l Audubon Soc'y v. Superior Court*, 658 P.2d at 709–12.

93. *Id.*

94. *Id.* at 712–13.

95. *Id.*

96. *Id.* at 719–20 (discussing two state decisions in which the actions of a party had impacted public trust land and reasoning that “the public trust doctrine, as recognized and developed in California decisions, protects navigable waters from harm caused by diversion of nonnavigable tributaries”).

ciary manner,⁹⁷ and to ensure that use of public trust lands is consistent with public purposes.⁹⁸ The clash between the two systems of management meant that one must give way to the other under our system of law.⁹⁹ The court held that the State has an “affirmative duty to take the public trust into account” when managing resources of navigable waters and any impacts on the same.¹⁰⁰ This resolution permitted the State to balance the competing uses for Mono Lake and its tributaries in a way, i.e. without making an initial policy determination on the allocation of water, that “such uses should not be destroyed because the state mistakenly thought itself powerless to protect them.”¹⁰¹

Just a few years after the *National Audubon* case, the Central Vermont Railway attempted to sell a range of property to a real estate developer until the City of Burlington and the state of Vermont invoked the public trust doctrine to challenge the sale.¹⁰² A 19th century legislative act gave certain owners along Lake Champlain development rights for their property.¹⁰³ The Central Vermont Railway’s land qualified under the act and over time the area had declined resulting in minimal occupancy that prompted consideration of redeveloping the land.¹⁰⁴ When redeveloping the land did not come to fruition, the Central Vermont Railway turned to a sale of the land.¹⁰⁵ In reviewing the sale, the court cited *Illinois Central*’s restrictions on the alienation of such lands.¹⁰⁶ In Vermont, the public trust doctrine is more than mere common law—the right to use public lands has been enshrined in the state’s constitution:

[t]he inhabitants of this State shall have liberty in seasonable times, to hunt and fowl on the lands they hold, and on other lands not inclosed, and in like manner to fish in all boatable and other waters (not private property) under proper regulations, to be made and provided by the General Assembly.¹⁰⁷

97. *Id.* at 440–41.

98. *Nat’l Audubon Soc’y*, 658 P.2d at 726–29.

99. *Id.* at 726–27 (reaching that competing systems of management “would occupy the field of allocation of stream waters to the exclusion of any competing system of legal thought”).

100. *Id.*

101. *Id.* at 732–33.

102. *Cent. Vt. Ry.*, 571 A.2d at 1129.

103. *Id.*

104. *Id.* at 1129–130.

105. *Id.* at 1130.

106. *Id.* (citing to *Ill. Cent. R.R. v. Illinois*, 146 U.S. 387, 452 (1892), and *Hazen v. Perkins*, 105 A. 249, 251 (Vt. 1918)).

107. *Id.* at 1130–131.

The Railway attempted to assert right of ownership under two separate legislative acts, but the court was not persuaded.¹⁰⁸ The Central Vermont Railway asserted a defense of laches, but the court sidestepped this in determining that “CVR does not hold title to the filled lands free of the public trust” and the state retains administrative control over the land such that “[a]ny substantial change . . . must therefore be consistent with a legislative grant or mandate . . .”¹⁰⁹ Thus, the court resolved the dispute without exercising judicial control over the decision making process controlled by the state as the *National Audubon* court had done.

The public trust is an age-old doctrine, with deep roots relating to the navigable waterways and submerged lands. Occasionally, there are violations by public trust doctrine trustees that need to be addressed and should be done so within the confines of the traditional public trust doctrine, such as the standard used in *Illinois Central*.¹¹⁰ Many theories and strategies that have been developed to hold public trust doctrine trustees accountable either by a novel application of the doctrine or by expansion of the doctrine.

C. Attempted Expansion of the Fiduciary Duty Arising Under the Public Trust Doctrine

1. Building a Foundation for Trustee Accountability

Climate change litigation is a relatively new phenomenon in United States jurisprudence, but there are older cases that provide insight into the reasoning of these recent cases. There are several notable cases that provide the basic foundation of what has been attempted, what has suc-

108. *Cent. Vt. Ry.*, 571 A.2d at 1132–134 (“We need not resolve this fundamental question of legislative power, however, because we hold that the legislature did not intend to grant the lands at issue free from the public trust. . . . Nor do we find that an intention to abandon the public trust is necessarily implicit in either of the acts before us. The 1827 Act can be read as a simple grant of wharfing rights and privileges, while the 1874 Act actually employs the language of trust law. Neither of these enactments is inconsistent with a continuing adherence to public trust responsibilities on the part of the legislature.”); see generally *Boston Waterfront Development Corp. v. Com.*, 393 N.E.2d 356 (Mass. 1979).

109. *Cent. Vt. Ry.*, 571 A.2d at 1137; see generally Barton H. Thompson, Jr., *The Public Trust Doctrine: A Conservative Reconstruction & Defense*, 15 *SOUTHEASTERN ENVTL. L.J.* 47, 58 (2006) [hereinafter *Conservative Reconstruction*].

110. *Ill. Cent. R.R.*, 146 U.S. at 460 (“We hold, therefore, that any attempted cession of the ownership and control of the State in and over the submerged lands in Lake Michigan, by the act of April 16, 1869, was inoperative to affect, modify or in any respect to control the sovereignty and dominion of the State over the lands, or its ownership thereof, and that any such attempted operation of the act was annulled by the repealing act of April 15, 1873, which to that extent was valid and effective. There can be no irrevocable contract in a conveyance of property by a grantor in disregard of a public trust, under which he was bound to hold and manage it.”).

ceeded, and where the courts have drawn the line in those cases in which the plaintiffs have not been successful.

Nearly 100 years after *Georgia v. Tennessee Copper Co.*¹¹¹, a similar issue resurfaced when Massachusetts brought suit against the Environmental Protection Agency (EPA) to seek review of an order denying rulemaking in September 2003.¹¹² At issue were alleged injuries suffered and potentially to be suffered due to climate change because the EPA had denied a petition to begin regulating the emissions of carbon dioxide, as a pollutant, from new automobiles.¹¹³ The EPA contested the alleged harm suffered, but the Court did not agree with EPA's analysis likening the standing qualification to "whether petitioners have such a personal stake in the outcome of the controversy as to assure that concrete adverseness which sharpens the presentation of issues upon which the court so largely depends for illumination."¹¹⁴ The Court then turned to the *Lujan* factors for standing and also reasoned that the litigant was vested with a procedural right as a result of 42 U.S.C. §7607(b)(1).¹¹⁵ Furthermore, the Court recalled the language of *Tennessee Copper* in the further analysis of standing, but in some respects contrary to the standing analysis in *Tennessee Copper* where actual harms were found, albeit tenuous,¹¹⁶ the Court grants standing to Massachusetts under a "special solici-

111. *Georgia v. Tennessee Copper Co.*, 206 U.S. 230 (1907) (reviewing the impacts and remedies available to the State of Georgia for cross-border impacts from the operations of the Tennessee Copper Company's based on the ability of a state to control, or in the alternative pursue remedies, the natural resources within their boundaries). Currently, this case has been cited over 40 times by the Supreme Court of the United States alone and perhaps, most importantly, in *Massachusetts v. EPA*, 549 U.S. 497 (2007).

112. *Massachusetts v. EPA*, 415 F.3d 50 (D.C. Cir. 2005), *rev'd*, 549 U.S. 497, 511, 514 (2007).

113. *Massachusetts*, 549 U.S. at 515–16; *see also Bellon*, 732 F.3d at 1131 (discussing the Ninth Circuit's narrowing of the standing test announced in *Massachusetts v. EPA*); Randall S. Abate, *Massachusetts v. EPA and the Future of Environmental Standing in Climate Change Litigation and Beyond*, 33 WM. & MARY ENVTL. L. & POL'Y REV. 121 (2008) (discussing how *Massachusetts v. EPA* has impacted standing in environmental jurisprudence).

114. *Massachusetts*, 549 U.S. at 517, 521–23 (citing to *Baker v. Carr*, 369 U.S. 186, 204 (1962)) (internal quotations omitted).

115. *Id.* at 517–18 (reasoning that "[w]hen a litigant is vested with a procedural right, that litigant has standing if there is some possibility that the requested relief will prompt the injury-causing party to reconsider the decision that allegedly harmed the litigant."). *But see Oklahoma ex rel. Pruitt v. Sebelius*, No. CIV-11-30-RAW, 2013 U.S. Dist. LEXIS 113232, at *11 (citing that "the Tenth Circuit also reiterated that special solicitude does not eliminate the obligation to establish a concrete injury" in *Wyoming v. U.S. Dep't of Interior*, 674 F.3d 1220, 1238 (10th Cir. 2012)).

116. *Massachusetts*, 549 U.S. at 519–20 (Roberts, C.J., dissenting) ("In contrast to the present case, there was no question in *Tennessee Copper* about Article III injury. There was certainly no suggestion that the State could show standing where the private parties could not; there was no dispute, after all, that the private landowners had "an action at law."); *Tennessee Copper Co.*, 206 U.S. at 237–39; *see generally* David S. Green, *Massachusetts v. EPA Without Massachusetts: Private Party Standing in Climate Change Litigation*, 36 ENVIRONS ENVTL. L. & POL'Y J. 35, 62–63 (2012)

tude” standard as “Massachusetts [has a] well-founded desire to preserve its sovereign territory today.”¹¹⁷ Ultimately, the Court reasoned that the EPA’s lack of a “reasoned explanation for its refusal to decide whether greenhouse gases cause or contribute to climate change” was arbitrary and capricious, which violated the law.¹¹⁸ Thus holding, the Court ordered that the EPA must base its decisions, regardless of whether to take action or not, in the statute and reversed the court of appeals judgment.¹¹⁹

Another key case in environmental litigation is the recent *American Electric Power Company* case, which involved multiple states, the city of New York and three land trusts suing five power companies for the generation of carbon dioxide in the operation of their power plant facilities.¹²⁰ This case is important because of the interplay of nuisance laws and regulations, such as the Clean Air Act,¹²¹ in the determination of the potential claim, not to mention the effect of congressional act on private claims.¹²² The relief the plaintiffs sought was a decree establishing a system of caps on carbon dioxide emissions for each of the defendant and a method for that cap to be reduced on an annual basis.¹²³ In the Court’s analysis of the issue, it was broken into three separate analyses which are: (1) the availability of a federal common law right, (2) whether congressional action on a question previously at issue under federal common law removes a need for it to be addressed, and (3) when there is federal regulation on point, whether the resulting government entity’s inaction in regulating the particular cause of action does not result in displacement.¹²⁴

In the first portion of the analysis, the Court reasoned that there was a federal right to pursue a claim based on common law, but that the claim must be one of a national concern.¹²⁵ The notion of the federal common law is “academic question” due to the effect of the “Clean Air

(discussing how standing analysis has become more problematic in the wake of this application/non-application of standing in granting “special solicitude” to Massachusetts).

117. *Massachusetts*, 549 U.S. at 519–20 (“Congress has moreover recognized a concomitant procedural right to challenge the rejection of its rulemaking petition as arbitrary and capricious. § 7607(b)(1). Given that procedural right and Massachusetts’ stake in protecting its quasi-sovereign interests, the Commonwealth is entitled to special solicitude in our standing analysis.”).

118. *Id.* at 534–35.

119. *Id.*

120. *Am. Elec. Power Co. v. Connecticut*, 131 S. Ct. 2527 (2011); James W. Shelton, *The Misuse of Public Nuisance Law to Address Climate Change*, 78 DEF. COUNS. J. 195, 205–09 (2011).

121. 42 U.S.C. § 7401 et seq. (1990).

122. *Am. Elec. Power Co.*, 131 S. Ct. at 2532 (“The Clean Air Act and the Environmental Protection Agency action the Act authorizes, we hold, displace the claims the plaintiffs seek to pursue.”).

123. *Id.*

124. *Id.* at 2530.

125. *Id.*

Act and the EPA actions the Act authorizes.”¹²⁶ The plaintiffs faced an uphill battle due to the presence of the Clean Air Act, as noted by the Court when it stated that “legislative displacement of federal common law does not require the ‘same sort of evidence of a clear and manifest [congressional] purpose.’”¹²⁷ To determine if Congress intended to displace common law when enacting the Clean Air Act, the test is “whether congressional legislation excludes the declaration of federal common law is simply whether the statute ‘speak[s] directly to [the] question’ at issue.”¹²⁸ The Court held that Congress did intend for the Clean Air Act to displace “any federal common law right to seek abatement of carbon-dioxide emissions from fossil-fuel fired power plants.”¹²⁹ Once the Court held that displacement was authorized, the next step was to review the Clean Air Act for delegation to the EPA for enforcement, which as authorized only provides for private enforcement in absence of EPA enforcement, but as the EPA had engaged in rulemaking that left no room for private actions.¹³⁰ The EPA was free to engage in any of its authorized methods of enforcement and that congressional delegation was all that was needed to create displacement of the ability for a party to seek relief through litigation.¹³¹ The Court held that the Clean Air Act, which displaced the federal common law cause of action, preempted the plaintiff’s claim, and as a result the state law action could not be sustained.¹³²

These three cases create the standard by which future climate change litigation will be weighed and, if lacking, will be dismissed. The next two cases will demonstrate how a claim can run afoul of that standard and accordingly be dismissed.

126. *Id.* at 2537 (*Massachusetts v. EPA*) made plain that emissions of carbon dioxide qualify as air pollution subject to regulation under the [Clean Air] Act).

127. *Id.*; see also Shelson, *supra* note 120, at 202–05 (discussing preemption of state law by Congress).

128. *Am. Elec. Power Co.*, 131 S. Ct. at 2537.

129. *Id.* (“We hold that the Clean Air Act and the EPA actions it authorizes displace any federal common law right to seek abatement of carbon-dioxide emissions from fossil-fuel fired power plants. *Massachusetts v. EPA* made plain that emissions of carbon dioxide qualify as air pollution subject to regulation under the Act. And we think it equally plain that the Act ‘speaks directly’ to emissions of carbon dioxide from the defendants’ plants.”).

130. *Id.* at 2538 (“The Act itself thus provides a means to seek limits on emissions of carbon dioxide from domestic power plants—the same relief the plaintiffs seek by invoking federal common law. We see no room for a parallel track.”).

131. Mark Belleville & Katherine Kennedy, *Cool Lawsuits – Is Climate Change Litigation Dead After Kivalina v. Exxonmobil?*, 7 APPALACHIAN NAT. RESOURCES L.J. 51, 55 (2013) [hereinafter *Cool Lawsuits*].

132. *Am. Elec. Power Co.*, 131 S. Ct. at 2540 (citing *International Paper Co. v. Ouellette*, 479 U.S. 481, 488 (1987)); See also *Bell v. Cheswick Generating Station*, 903 F.Supp.2d 314 (3d Cir. 2013).

The first two cases, *Comer v. Murphy Oil USA, Inc.* I and II, involved a claim that alleged that the defendants contributed, by virtue of their release of “by-products that led to the development and increase of global warming, which produced the conditions that formed Hurricane Katrina, which damaged their property.”¹³³ The district court heard arguments on three main issues – standing, political question, and displacement of common law claim.¹³⁴ However, the court primarily analyzed the causation portion of the standing analysis and reasoned that the plaintiffs asserted causation given the overarching issue of EPA’s order on greenhouse gases “[did] not in and of itself support the contention that the plaintiffs’ property damage is fairly traceable to the defendants’ emissions.”¹³⁵ This lack of traceability to the defendant’s actions resulted in the inability of the plaintiffs to link the injuries allegedly suffered to the actions of the defendants and as such were not sufficient to survive the standing analysis.¹³⁶ Furthermore, in the standing analysis the burden lies with the plaintiff to sufficient plead facts that demonstrate a traceable link to the defendants and the harms alleged were more tenuously connected than those of *Massachusetts v. EPA* or *American Electric Power Co.*¹³⁷

Additionally, a violation of political question negatively affected the plaintiff’s claims, as the plaintiff’s prayer for relief was ultimately “asking [the] Court to regulate emissions or to make policy determinations concerning climate change.”¹³⁸ This was problematic because the political question doctrine, as previously discussed, does not permit the court to make policy decisions otherwise attributable to another branch of government and the court reasoned that the plaintiff’s complaint would mean the court must “determine that the defendants’ levels of emissions are ‘unreasonable’ in order to rule on the claims.”¹³⁹ On the issue of displacement, the Court ruled that the Clean Air Act displaced the plaintiff’s claims based on the holding of *Am. Elec. Power Co.*

133. *Comer v. Murphy Oil USA, Inc.*, 839 F. Supp. 2d 849 (2012); see also *Comer v. Murphy Oil USA, Inc.*, 718 F.3d 460 (2013); Shelson, *supra* note 121, at 209–12.

134. *Comer*, 839 F. Supp. 2d at 849.

135. *Comer*, 839 F. Supp. 2d at 858–61 (citing *Center for Biological Diversity v. U.S. Dept. of Interior*, 563 F.3d 466, 478 (2009)); See also *Massachusetts*, 549 U.S. at 517; See generally *Bellon*, 732 F.3d at 1131; *Merrick v. Diageo Americas Supply, Inc.*, 5 F. Supp. 3d 865 (W.D. Ky. 2014) (holding that plaintiff’s claim based on the defendant’s emissions constituted valid claims and that the Clean Air Act did not displace these common law claims).

136. *Comer*, 839 F. Supp. 2d at 861.

137. *Id.* at 861–62 (citing the Court’s decision in the prior *Comer* case disallowing “discovery that will likely cost millions of dollars, when the tenuous nature of the causation alleged is readily apparent at the pleadings stage of litigation”).

138. *Id.* at 864.

139. *Id.*

due to a similar claim that also required the Courts to make a determination as to the defendant's emissions.¹⁴⁰

In *Kivalina v. ExxonMobil Corp.*, the plaintiffs similarly claimed harm due to defendant's emissions that caused an increase in temperatures due to global warming, thus causing a reduction in Arctic sea ice protecting the shoreline of the Village of Kivalina.¹⁴¹ The plaintiff's prayer for relief requested monetary damages to assist in the relocation of the village, which had an estimate cost of as much as \$400 million.¹⁴² At issue, similar to *Comer*, was the requirement that the court evaluate, i.e., making a policy determination, the defendants' emissions to reach the underlying claims, which again raises the issue of the political question doctrine.¹⁴³ Despite potential political question issues, which the court side stepped in its reasoning,¹⁴⁴ the court based its review of the case on standing.¹⁴⁵

In the court's standing analysis, the Court concluded that the plaintiffs had not sufficiently pled an injury that met the requirements under standing, a point that the plaintiffs conceded in their complaint when stating that "they are unable to trace their alleged injuries to any particular defendant,"¹⁴⁶ and as such failed to meet the burden for standing.¹⁴⁷ On appeal before the Ninth Circuit, the plaintiffs sought to have the district court's decision reversed, but the Ninth Circuit determined that the lower court had acted properly in their dismissal of the case and further added that the Clean Air Act in fact displaced the plaintiff's claims.¹⁴⁸

The foregoing cases establish a patchwork framework of statutory provisions, federal preemption, political question doctrine conflicts that

140. *Comer*, 839 F. Supp. 2d at 865; *See also* California v. Gen. Motors Corp., No. C06-05755 MJJ, 2007 WL 2726871, at *1 (N.D. Cal. Sept. 17, 2007) (discussing the claim by the State of California against a group of automobile manufacturers. The plaintiffs sought damages rather than an injunction, which was a notable departure from previous climate change litigation. In the end, the Court held that "it cannot adjudicate Plaintiff's federal common law global warming nuisance tort claim without making an initial policy determination of a kind clearly for nonjudicial discretion."); Shelson, *supra* note 120, at 212-13 (discussing California v. General Motors Corp., 2007 WL 2726871 at *1).

141. Native Village of Kivalina v. ExxonMobil Corp., 663 F. Supp. 2d 863 (2009), *aff'd*, 696 F.3d 849 (2012), *cert. denied*, 133 S. Ct. 2390 (2013); Shelson, *supra* note 120, at 213-15.

142. *Native Village of Kivalina*, 663 F. Supp. 2d at 870.

143. *Id.* at 870-71.

144. *Id.* at 872-76.

145. *Id.* at 878.

146. *Id.*; *See also* *Lujan*, 504 U.S. at 559-60.

147. *Native Village of Kivalina*, 663 F. Supp. 2d at 883.

148. *Id.* at 858 (basing their ruling on Supreme Court precedent, which states that "the type of remedy asserted is not relevant to the applicability of the doctrine of displacement."); *Cheswick Generating Station*, 903 F. Supp. 2d at 318.

are inherent in an attempt to establish trustee accountability within the scope of environmental law as well as the public trust doctrine.

2. Atmospheric Trust Litigation

The Atmospheric Trust Litigation (“ATL”) theory is based on an application of the public trust doctrine that seeks to “hold governments . . . accountable for reducing carbon emissions” vis-à-vis the addition of the atmosphere, or the air, as an asset under the public trust doctrine.¹⁴⁹ The theory proposes that the government, upon courts recognizing the atmosphere as an asset of the public trust, be held to a fiduciary duty for their actions, or inactions, relating to the atmosphere.¹⁵⁰ The theory is applicable on either the national or global level because in ATL, the atmosphere is “characterized . . . as one of the assets in the trust, shared as property among all nations of the world as co-tenants.”¹⁵¹ Ultimately, the theory proposes that the public trust doctrine, as found in English common law countries, or a foreign derivation be utilized to “enforce planetary carbon reduction requirements, formulated to hold each government accountable for its share of the necessary reduction.”¹⁵²

The ATL theory has gained traction and is seen as a preferred method for seeking change in the current environment related to climate change for several reasons.¹⁵³ First, the theory is rooted in legal tradition that will hold governments accountable while also protecting the environment.¹⁵⁴ Second, trustee accountability provides the potential for a positive legal outcome should there be a breach of the fiduciary duty due to the nature of the public trust doctrine’s provision for trustee.¹⁵⁵ Finally, the theory adds to existing human rights and therefore also relies on the potential for enforcement to protect those rights.¹⁵⁶

149. See generally *Adjudicating Climate Change*, *supra* note 59, at 99–100; Hope M. Babcock, *The Public Trust Doctrine: What A Tall Tale They Tell*, 61 S.C. L. REV. 393 (2009) (discussing the reasoning behind using the PTD as a stopgap measure before positive law can be enacted); Peter Manus, *To a Candidate in Search of an Environmental Theme: Promote the Public Trust*, 19 STAN. ENVTL. L.J. 315 (2000).

150. *Adjudicating Climate Change*, *supra* note 59, at 100; See also *Nature’s Trust*, *supra* note 59, at 156–61, 221–22 (discussing a test for defining the trust corpus under the theory’s adaptation of the public trust doctrine and how ATL approaches climate change).

151. See generally *Adjudicating Climate Change*, *supra* note 59, at 99–100.

152. *Id.* at 100.

153. *Id.* at 100–03; see also *Nature’s Trust*, *supra* note 59, at 14.

154. *Adjudicating Climate Change*, *supra* note 59, at 101.

155. *Cool Lawsuits*, *supra* note 131, at 82 (discussing an amicus brief for the *Alec L.* case); *Nature’s Trust*, *supra* note 59, at 128 (explaining how the public trust fiduciary duty is discharged when the government’s conduct is “directed to no other end but the peace, safety, and public good of the people”).

156. *Adjudicating Climate Change*, *supra* note 59, at 100.

As ATL seeks to promote government accountability through litigation, there have been a series of cases that have sought these changes on both a state and federal level.¹⁵⁷ The ATL cases have resulted in a mixed bag of successes and failures, but the claims generally fall into a trend where the cases that are successful are based on pre-existing legislative action to provide for the atmosphere or air as a part of the public trust.¹⁵⁸ Judicial endorsement of the ATL theory in these cases is not a judicial expansion of the public trust doctrine; rather, it is more an upholding of legislative intent. The courts typically have rejected the ATL theory in the cases where there is an absence of prior legislative action to address air or the atmosphere as a public trust asset.¹⁵⁹

As the states evaluate their choices in the current environment of climate change threats, they must remember that the public trust doctrine imposes a duty on the state as trustee of the public lands to protect and use those lands in a way that benefits the citizens of that state.¹⁶⁰ The notion of the public trust doctrine, as argued by Professor Robin Kundis Craig, is that “management of water resources . . . generally anticipates continued human use of those resources.”¹⁶¹ This concept is at the heart of the ongoing conflict between governmental management of public lands versus the threats posed by climate change and as such can be a key to revitalizing the management process by aligning the interests of the general public, governmental regulators, and a state’s legislature so that those resources will be available for continued human use, e.g., the general public.¹⁶² Furthermore, the public trust requires that public property be used for public purposes.¹⁶³ The preservation of public trust lands from harm due to climate change impacts, both for their continued use

157. See generally *Sanders-Reed v. Martinez*, 350 P.3d 1221 (N.M. App. 2015); *Chernaik v. Kitzhaber*, 328 P.3d 799 (Or. Ct. App. 2014); *Bonser-Lain v. Tex. Comm’n on Env’tl. Quality*, No. D-1-GN-11-002194, 2012 WL 3164561 *1 (Tex. Dist. Aug. 2, 2012), *vac’d by*, Tex. Comm’n on Env’tl. Quality v. *Bonser-Lain*, 438 S.W.3d 887 (Tex. Ct. App. 2014); *Filippone ex rel. Philippone v. Iowa Dept. of Natural Resources*, 829 N.W. 2d 589, 590 (2013). *Contra Barhaugh v. State*, 264 P.3d 518 (Mont. 2011); *Butler ex rel. Peshlakai v. Brewer*, No. 1 CA-CV 12-0347, 2013 WL 1091209, at *1, *3 (Ariz. Ct. App. Mar. 14, 2013); *Svitak v. State*, No. 69710-2-I, 2013 WL 6632124, at *1 (Wash. Ct. App. Dec. 16, 2013); *Aronow v. State*, No. A12-0585, 2012 WL 4476642, at *1 (Minn. Ct. App. Oct. 1, 2012).

158. E.g., *Sanders-Reed*, 350 P.3d at 1226–27; *Bonser-Lain*, 438 S.W.3d at 894.

159. See generally *Alec L.*, 863 F. Supp. 2d at 11; *Filippone*, 829 N.W.2d at 589.

160. *Supra* Part III.A.

161. Robin Kundis Craig, “Stationarity is Dead”—*Long Live Transformation: Five Principles for Climate Change Adaptation Law*, 34 HARV. ENVTL. L. REV. 9, 34 (2010).

162. *Id.* at 34, 43–53 (arguing for changes in legislative and regulatory behavior to create a statutory and regulatory environment that “will nevertheless improve resilience and adaptive capacity”).

163. *Nat’l Audubon Soc’y*, 658 P.2d at 724.

under traditional public trust doctrine uses¹⁶⁴ and as a resource for expansive public trust doctrine uses,¹⁶⁵ is a challenge that the government is responsible to undertake in its role as the trustee unless there be some proper action to alienate those lands from the public trust.¹⁶⁶

Going forward, the states must determine what strategies they want to pursue in order to discharge their obligations under the public trust doctrine to protect the trust *res* from harm through climate change mitigation or adaptation. These strategies will likely vary widely, but will likely include incentives, improvements in regulatory framework, and grants for research in areas related to the protection of public trust assets or mitigation of climate change.

IV. OFFSHORE POWER GENERATION AND THE REGULATORY ENVIRONMENT

Florida is well positioned for the expansion of energy production to include offshore methods given the very lengthy coastline.¹⁶⁷ The issue is not whether it is feasible, but rather what options are available and will best suit the production environment on Florida's coasts. The next two sections will discuss offshore power generation alternatives before transitioning to a discussion of the overarching regulatory environment for these alternative methods of power generation.

164. *Marks v. Whitney*, 491 P.2d 374, 380 (Cal. 1971) (“Public trust easements are traditionally defined in terms of navigation, commerce and fisheries. They have been held to include the right to fish, hunt, bathe, swim, to use for boating and general recreation purposes the navigable waters of the state, and to use the bottom of the navigable waters for anchoring, standing, or other purposes.”).

165. *Id.* (“The public uses to which tidelands are subject are sufficiently flexible to encompass changing public needs. In administering the trust the state is not burdened with an outmoded classification favoring one mode of utilization over another. There is a growing public recognition that one of the most important public uses of the tidelands—a use encompassed within the tidelands trust—is the preservation of those lands in their natural state, so that they may serve as ecological units for scientific study, as open space, and as environments which provide food and habitat for birds and marine life, and which favorably affect the scenery and climate of the area.”).

166. *Id.* (“[T]he state in its proper administration of the trust may find it necessary or advisable to cut off certain tidelands from water access and render them useless for trust purposes. In such a case the state through the Legislature may find and determine that such lands are no longer useful for trust purposes and free them from the trust. When tidelands have been so freed from the trust—and if they are not subject to the constitutional prohibition forbidding alienation—they may be irrevocably conveyed into absolute private ownership.”); see also *Adapting to Climate Change*, *supra* note 4, at 814–29 (reviewing state specific applications of the public trust doctrine, which emphasizes that the one size fits all approach is in some way inapplicable).

167. *Beaver*, *supra* note 36 (stating that the Florida coastline is approximately 1,350 miles).

A. Offshore Power Generation

For offshore power generation, there are several different types—tidal or wave, wind, and the traditional oil, gas, and methane hydrates.¹⁶⁸ Given the global warming consequences of the latter of those options, this article will focus on the first two as they are among the least carbon-intensive options available.¹⁶⁹ These two types of offshore power generation have a maximum lifetime carbon dioxide equivalent, according to the IPCC Working Group III, of approximately 28 and 35, respectively, which puts them at the low end of the scale with hydropower being at the top with equivalent value of 2200.¹⁷⁰ Given the clear advantages of wind, wave or tidal power generation in terms of its carbon emissions, a comparison of the various technologies is warranted. This article provides a brief overview of the technology for the purposes of discussing its implementation strategies and encouragement of development as an action that should be considered by public trust trustees.

1. Wave and Tidal Power Generation

Wave and tidal power generation is a potentially unlimited source of energy as the ocean is constantly in flux and waves are continuously being pushed to shore by oceanic winds. These technologies are being adopted throughout the world.¹⁷¹ However, the potential of wave or tidal energy is limited by the local topography in the area that is targeted for deployment.¹⁷² The amount of wave energy that the U.S. receives on its shores, although almost entirely untapped, is estimated to be equivalent to the country's total hydroelectric energy production.¹⁷³

Wave or tidal power generation works by harnessing wave energy through capture of the kinetic energy in the motion of the ocean's waves applied to a generator, as designed by the particular technology applica-

168. See generally Megan E. Higgins & Jason Busch, *Offshore Wind and Wave Energy and Ocean Governance*, in CLIMATE CHANGE IMPACTS ON OCEAN AND COASTAL LAW: U.S. AND INTERNATIONAL PERSPECTIVES 153–91 (Randall S. Abate ed., 2015).

169. Thomas Bruckner et al., 2014: *Annex III: Technology-specific cost and performance parameters*, in CLIMATE CHANGE 2014: MITIGATION OF CLIMATE CHANGE 1335 (Steffen Schlömer et al eds., 2014), available at http://report.mitigation2014.org/report/ipcc_wg3_ar5_annex-iii.pdf.

170. *Id.* (reporting measurements in gCO₂eq / kWh); see also Benjamin K. Sovacool, *Valuing the greenhouse gas emissions from nuclear power: A critical survey*, 36 ENERGY POL'Y 2940, 2950 (2008), available at http://www.nirs.org/climate/background/sovacool_nuclear_ghg.pdf (relying on a survey of different analyses but providing a scale that places offshore wind lifecycle emissions at the low end of the continuum).

171. *Wave & Tidal Energy Technology*, RENEWABLE NORTHWEST (Apr. 7, 2007), <http://www.rnp.org/node/wave-tidal-energy-technology>.

172. *Id.*

173. *Id.*

tion.¹⁷⁴ There are several different types of wave energy technologies, which capture the kinetic energy through “floats, buoys, or pitching devices.”¹⁷⁵ More specifically, the current technology uses descriptions such as “point absorber, oscillating water column, subsurface pressure differential, attenuator, and rotating mass” to describe how the motion of the waves is harnessed and the technological approach utilized.¹⁷⁶ Each technology has its own benefits and detriments.

Attenuator style applications of offshore power generation¹⁷⁷ may be preferred over several others because their impact will likely be less harmful to the environment as compared to the oscillating water column or overtopping/terminator device¹⁷⁸ and because their installation near-shore may prevent the normal sediment movements in the ocean over a much larger area.¹⁷⁹ The power generated by the installation, regardless of the technology chosen, is transferred onshore through a connection to a nearby power grid.¹⁸⁰ It is estimated that full-scale commercial applications of wave energy production technologies is three to five years, but there are multiple companies actively working to create solutions that are economically feasible and research is being conducted in university set-

174. Higgins & Busch, *supra* note 168, at 167; *see generally* Andrew Thornquest, *The New Wave of Florida Energy: The Regulatory Path to Harnessing Marine Hydrokinetic Power*, 34 PUB. LAND & RESOURCES L. REV. 191, 193–99 (2013); *Ocean Wave Energy*, BUREAU OF OCEAN ENERGY MANAGEMENT, <http://www.boem.gov/Renewable-Energy-Program/Renewable-Energy-Guide/Ocean-Wave-Energy.aspx> (last visited Apr. 19, 2015).

175. *See Wave & Tidal Energy Technology*, *supra* note 171.

176. Higgins & Busch, *supra* note 168, at 167; *see also Wave Devices*, EUROPEAN MARINE ENERGY CENTRE, <http://www.emec.org.uk/marine-energy/wave-devices/> (last visited Apr. 19, 2015) (provides a description of each of the different technologies and an animation show the application in work); *Wave Energy Systems*, OFFICE OF INDIAN ENERGY AND ECONOMIC DEVELOPMENT, <http://teec.indianaffairs.gov/er/hydrokinetic/restech/desc/wave/index.htm> (last visited Apr. 19, 2015) [hereinafter *Indian Waves*].

177. *Wave Devices*, *supra* note 176 (discussing how the attenuator operates by utilizing a system of floating device that is generally placed perpendicular to the wave motion and moves in sync with the waves, essentially “rid[ing] the waves,” in order to generate power); *Indian Waves*, *supra* note 61; Thornquest, *supra* note 174, at 194 (discussing how attenuators have been placed as far out as ten kilometers); *Id.* at 196 (“Point absorber wave energy converters have a much smaller surface area than terminators and attenuators and collect their energy from a single point in wave swells.”); EUROPEAN MARINE ENERGY CENTRE, *supra* note 61.

178. *Wave Devices*, *supra* note 176; *Indian Waves*, *supra* note 176; Thornquest, *supra* note 174, at 196–97 (“Overtopping devices act like miniature dams by using the force of the waves to push water into an elevated reservoir, then releasing the collected reservoir waters back to the surface of the sea.”).

179. *Wave Devices*, *supra* note 176; *see generally* THE CARBON TRUST, *Oscillating Water Column Wave Energy Converter Evaluation Report 67* (2005), *available at* <https://www.carbontrust.com/media/173555/owc-report.pdf>; Thornquest, *supra* note 174, at 197–200 (discussing the environmental impacts of various wave energy technologies on humans, marine plants, and marine animals).

180. *Indian Waves*, *supra* note 176.

tings.¹⁸¹ The advantage of wave energy is its continuous nature, but the limitation is that it is highly variable based on location of the installation.¹⁸²

Tidal power generation uses a similar approach, but seeks to capture the kinetic energy of the waves through the tidal forces moving in and out.¹⁸³ However, tidal power technologies, such as the barrage installation in La Rance, France, can present certain environmental issues due to the nature of their installations and they also rely on significant changes in the level of high and low tides to be effective.¹⁸⁴ The environmental impact of tidal energy deployments is still being fully evaluated, but the potential for impacts are certainly present.¹⁸⁵

However, there are other applications of tidal energy production that present less of an environmental impact as they are akin to submerged wind turbines.¹⁸⁶ There are two basic types of tidal turbines, horizontal axis and vertical axis, which are named in reference to the direction in which the fins of the turbine are oriented.¹⁸⁷ The potential value of these small site solutions is that they can be implemented without the same impact to the surrounding area and at depths that will preclude them from posing a hazard to navigation.¹⁸⁸ These technologies can also be deployed from a floating platform, which would permit them to be movable in the event the need arises.¹⁸⁹ Similar to their wave energy counterparts, the deployments would be connected to the energy grid via underwater electrical cable.¹⁹⁰ While these technologies are still under

181. Higgins & Busch, *supra* note 168, at 167; see also Swood, *Wave Energy Technology Becoming a Reality at Florida Institute of Technology* (June 18, 2012), <http://blogs.fit.edu/blog/campus/marine-environmental/wave-energy-technology-becoming-a-reality-at-florida-institute-of-technology/>.

182. U.S. DEPT. OF THE INT. MINERALS MGMT. SERV., *Technology White Paper on Wave Energy Potential on the Outer Continental Shelf 2* (2006), available at http://www.camelottech.com/CMFiles/Docs/OCS_EIS_WhitePaper_Wave.pdf.

183. *Wave & Tidal Energy Technology*, *supra* note 171 (“[T]he common model for tidal power facilities involved erecting a tidal dam, or barrage, with a sluice across a narrow bay or estuary. As the tide flows in or out, creating uneven water levels on either side of the barrage, the sluice is opened and water flows through low-head hydro turbines to generate electricity.”); *Tidal Energy Systems*, OFFICE OF INDIAN ENERGY AND ECONOMIC DEVELOPMENT, <http://teeic.indianaffairs.gov/er/hydrokinetic/restech/desc/tidal/index.htm> (last visited Apr. 19, 2015) [hereinafter *Indian Tides*].

184. *Indian Tides*, *supra* note 183.

185. Rachael E. Salcido, *Rough Seas Ahead: Confronting Challenges to Jump-Start Wave Energy*, 39 ENVTL. L. 1073, 1077, 1085–86 (2009).

186. *Id.*

187. *Id.*

188. *Tidal Devices*, EUROPEAN MARINE ENERGY CENTRE, <http://www.emec.org.uk/marine-energy/tidal-devices/> (last visited Apr. 19, 2015) (provides a description of each of the different technologies and an animation show the application in work).

189. *Id.*

190. *Indian Tides*, *supra* note 183.

development it may arrive in full-scale commercial deployments earlier due to the similarities to wind turbines.¹⁹¹ In Europe, there are multiple deployments around the United Kingdom; permitting has begun for a project near Juneau, Alaska; and, a recent pilot commercial license was issued for a deployment in the East River in New York by Verdant Power.¹⁹² The Roosevelt Island Tidal Energy Project in New York is a good case study of how a busy metropolitan area with active waterways can accommodate a submerged tidal energy project. As the pilot project in the United States, it will help define the future for tidal energy projects.¹⁹³

2. Wind Power Generation

As with wave and tidal energy production, European development of wind power alternative energy solutions is significantly ahead of the United States as there are multiple full-scale projects in place in addition to the framework established to promote wind energy development.¹⁹⁴ The Vindeby Wind Farm, the pilot project for wind farms, is a testament to the stability and effectiveness of wind power given its survival plus efficient power generation in excess of similar onshore wind farms.¹⁹⁵ The United States is catching up in its development of wind energy with

191. Megan Higgins, *Is Marine Renewable Energy a Viable Industry in the United States?: Lessons Learned from the 7th Marine Law Symposium*, 14 ROGER WILLIAMS U. L. REV. 562 (2009); FLORIDA ENERGY SYSTEMS CONSORTIUM, *Florida Energy Systems Consortium Annual Report* 150–54 (2014), available at http://www.floridaenergy.ufl.edu/wp-content/uploads/Nov_2014-FESC-Annual-Report.pdf; *Renewable Energy Technical Assessment Guide - TAG-RE: 2006*, ELECTRIC POWER RESEARCH INSTITUTE 8-1 (2007), available at http://my.epri.com/portal/server.pt?Abstract_id=00000000001012722 (discussing a brief overview of the implementation and status of tidal energy projects, as of 2006).

192. *Wave & Tidal Projects*, EUROPEAN MARINE ENERGY CENTRE, <http://www.emec.org.uk/marine-energy/wave-and-tidal-projects/> (last visited Apr. 19, 2015) (displaying a variety of sites for both Wave Energy and Tidal Energy projects); *Ocean (Wave and Tidal)*, RENEWABLE ENERGY ALASKA PROJECT, <http://alaskarenewableenergy.org/why-renewable-energy-is-important/alaska-resources/ocean-wave-and-tidal/> (last visited Apr. 19, 2015); *RITE Project*, VERDANT POWER (2014), <http://www.verdantpower.com/rite-project.html> (last visited Apr. 19, 2015).

193. *RITE Project*, *supra* note 192.

194. Higgins & Busch, *supra* note 168, at 161; *Global Offshore: Current Status and Future Prospects*, GLOBAL WIND ENERGY COUNCIL (2014), <http://www.gwec.net/global-offshore-current-status-future-prospects/> (discussing European leadership in the development of wind turbines).

195. *Vindeby Offshore Wind Farm*, LORC, <http://www.lorc.dk/offshore-wind-farms-map/vindeby> (last visited Apr. 19, 2015); *Vindeby Offshore Wind Farm*, MT HØJGAARD, <http://mth.com/Projects/Offshore/Vindeby.aspx> (“The 11 wind turbines produce 20% more electricity than can be produced by similar wind turbines on land”); GLOBAL WIND ENERGY COUNCIL, *supra* note 194 (“Twenty-one years have passed since the [world’s] first offshore wind farm, Vindeby (5MW), was built in Denmark.”).

an increase of 4,854 megawatts of new capacity in 2014, an increase that represents in excess of four times the 2013 installed capacity.¹⁹⁶

While onshore wind farms are nearly ancient history,¹⁹⁷ offshore wind turbines are a relatively new application of that ancient concept.¹⁹⁸ The implementation of offshore wind turbines can vary as it depends on a number of factors. For example, the width of the continental shelf is a major concern for Japanese offshore wind power generation and the narrowness of that continental shelf makes floating platforms ideal, as bottom-mounted platforms are not feasible.¹⁹⁹ The potential for offshore wind generation is aided by the fact that the winds present offshore “tend to blow harder and more uniformly than on land,” therefore there is a higher potential for energy generation than onshore.²⁰⁰ Wind turbines harness the kinetic power of these winds and, through the spinning of the blades attached to the turbine, electrical power is generated.²⁰¹ This process is essentially the inverse of the normal household fan that is ubiquitous.²⁰² In order to effectively capture the winds, turbines are mounted at heights of nearly 300 feet and routinely have blades of significant lengths.²⁰³ Given the disparities in costs, the development of a land-based

196. *Global Wind Report Annual Market Update 2014*, GLOBAL WIND ENERGY COUNCIL 76 (2014), available at http://www.gwec.net/wp-content/uploads/2015/03/GWEC_Global_Wind_2014_Report_LR.pdf.

197. *History of Windmills @ Outwood Mill*, OUTWOOD WINDMILL, <http://www.outwoodmill.com/history/history-windmills/> (last visited Apr. 19, 2015) (discussing the history of windmills and “The earliest known example of what we would regard as a windmill is that created by Heron of Alexandria, a Greek engineer in the 1st Century AD.”); *Offshore Wind Energy*, BUREAU OF OCEAN ENERGY MANAGEMENT, <http://www.boem.gov/Renewable-Energy-Program/Renewable-Energy-Guide/Offshore-Wind-Energy.aspx> (last visited Apr. 19, 2015) [hereinafter *BOEM Offshore*].

198. *Global Offshore*, GLOBAL WIND ENERGY COUNCIL, <http://www.gwec.net/global-figures/global-offshore/> (last visited Apr. 19, 2015).

199. *Global Wind Report Annual Market Update 2014*, *supra* note 196.

200. *BOEM Offshore*, *supra* note 197 (“Offshore winds tend to blow harder and more uniformly than on land. The potential energy produced from wind is directly proportional to the cube of the wind speed. As a result, increased wind speeds of only a few miles per hour can produce a significantly larger amount of electricity. For instance, a turbine at a site with an average wind speed of 16 mph would produce 50% more electricity than at a site with the same turbine and average wind speeds of 14 mph. This is one reason that developers are interested in pursuing offshore wind energy resources.”); Robert W. Eberhardt, Note, *Federalism and the Siting of Offshore Wind Energy Facilities*, 14 N.Y.U. ENVTL. L.J. 374, 399–404 (2006).

201. Higgins, *supra* note 191, at 567–70.

202. Adam M. Dinnell & Adam J. Russ, *The Legal Hurdles to Developing Wind Power as an Alternative Energy Source in the United States: Creative and Comparative Solutions*, 27 NW. J. INT’L L. & BUS. 535, 539–40 (2007); *BOEM Offshore*, *supra* note 85 (discussing Offshore Wind Energy Technology, including a diagram that displays the various components of a wind turbine).

203. Dinnell & Russ, *supra* note 202, at 540 (For example, the Zond Z-750, a turbine widely used on wind projects in the United States between 1998 and 1999, includes a tower 208 feet (63 meters) high, with blades 79 feet (24 meters) in length, spanning a rotor diameter of 164 feet (50 meters).”).

site is not nearly as daunting as it is offshore site. Both construction and maintenance costs associated with the marine environment are considerably higher than compared to land-based environments.²⁰⁴

This basic understanding of how the turbines function and their deployment, environmental, aesthetic, and maritime use concerns must be considered when choosing how to implement wind turbines and where to place them.²⁰⁵ There are issues relating to migratory birds and the regulations developed around the taking of those birds that also stands as a potential challenge in the effective siting of a wind turbine that is also capable of efficiently harnessing the kinetic energy of sufficient wind.²⁰⁶

The alternative solutions for generating power from the near limitless resources of the ocean and wind are there. The applications are being improved from their ancient origins and the choice of how to deploy them, what locations work, and the type of technology to employ largely comes down to a location specific determination that can be agreed upon by the various stakeholders.²⁰⁷ An agreement between stakeholders is necessary to find a path forward for renewable energy. As demonstrated in the Cape Wind project, which led to legal confrontation, regulatory hurdles were seemingly overcome while public concern hurdles were not.²⁰⁸

B. Statutory Framework of Alternative Energy Solutions

The regulatory environment for the provision of offshore power generation is a complex, cooperative federalism approach where coastal states have certain rights and the remaining authority is centered in the federal government.²⁰⁹ This section will discuss federal regulation, as the majority of the regulation on the subject takes place at the federal level, followed by a discussion of the regulatory framework in Florida.

204. *Id.* at 544.

205. *Id.*; Higgins, *supra* note 191, at 569.

206. Dinnell & Russ, *supra* note 202, at 555–65 (discussing the impacts of the Migratory Bird Treaty Act, the Endangered Species Act, the National Wildlife Refuge Systems Administration Act, National Environmental Policy Act, among others, in relation to the development of wind power); *infra* Part III.B.

207. Dinnell & Russ, *supra* note 202, at 587–90 (discussing what changes are needed to simplify the development of wind power and the interrelation between regulation, investment potential, and the demand for power).

208. Higgins & Busch, *supra* note 168, at 164–65; Dinnell & Russ, *supra* note 202, at 545–55.

209. Higgins & Busch, *supra* note 168, at 170.

1. Federal Regulatory Framework

In the 1950s, Congress enacted the Submerged Lands Act²¹⁰ in response to acts by several states during the 1940s to claim jurisdiction over resources off their respective coasts.²¹¹ This Act created a regulatory scheme whereby the coastal states were granted jurisdiction over certain activities related to a strip of the continental shelf that extended for three nautical miles from their shore.²¹² However, certain states were granted additional authority in recognition of their former sovereign status prior to joining the union.²¹³ These states are permitted to exercise control up to nine nautical miles offshore.²¹⁴ Beyond the three or nine nautical mile point, jurisdiction over the outer continental shelf²¹⁵ (OCS) rests exclusively in the federal government and is primarily regulated by the Bureau of Ocean Energy Management (BOEM).²¹⁶

BOEM replaced the Minerals Management Service and the Bureau of Safety and Environmental Enforcement in October 2011.²¹⁷ BOEM shares the regulatory burden for the management of the OCS with the Federal Energy Regulatory Commission (FERC) based on an understanding of the respective roles established between the two agencies.²¹⁸ This additional regulation by FERC over offshore power generation, specifically hydrokinetic energy, is a relatively new change that was an expansion from inland hydropower regulation.²¹⁹ FERC's authority in this area originates in the Federal Power Act.²²⁰ However, the regulatory authority of FERC does have some limitations when it comes to “[p]rojects that involve experimental technology, which will run for a short period of time for educational, or data collection purposes, and from which the

210. 43 U.S.C. §§ 1301–1315 (2012).

211. *Id.*; Eberhardt, *supra* note 200, at 381–82; Michael J. McHale, *An Introduction To Offshore Energy Exploration—A Florida Perspective*, 39 J. MAR. L. & COM. 571, 574–79 (2008); see also *United States v. California*, 332 U.S. 19 (1947).

212. Higgins & Busch, *supra* note 168, at 168.

213. *Id.* (“Louisiana, Texas, and the Gulf Coast of Florida are an exception, with state jurisdiction extending as far out as nine [nautical miles] offshore.”).

214. *Id.*

215. 43 U.S.C. § 1331(a) defines the OCS as “all submerged lands lying seaward and outside of the area of lands beneath navigable waters as defined in section 1301 of this title, and of which the subsoil and seabed appertain to the United States and are subject to its jurisdiction and control.”

216. Higgins & Busch, *supra* note 168, at 170.

217. *The Bureau of Ocean Energy Management, Regulation & Enforcement HomePage*, BUREAU OF OCEAN ENERGY MANAGEMENT, <http://www.boemre.gov/> (last visited Apr. 19, 2015).

218. *Id.*; BOEM/FERC Guidelines on Regulation of Marine and Hydrokinetic Energy Projects on the OCS (Version 2, July 19, 2012), <http://www.boem.gov/BOEM-FERC-staff-guidelines/>; Salcido, *supra* note 185, at 1079.

219. Thornquest, *supra* note 174, at 202–03 (noting that “marine hydrokinetic energy projects off the coasts of U.S. territories will be nearly exclusively regulated by FERC, as the Submerged Lands Act limits BOEM’s regulation to waters off states shores only.”).

220. Higgins, *supra* note 191, at 571–72.

power generated will not interfere with an interstate electric grid.”²²¹ BOEM, but not FERC, also will play a role in regulating experimental projects and applicants that wish to pursue one, to the extent that such projects extend into the OCS.²²² Additionally, the National Environmental Policy Act²²³ (NEPA) plays a role for offshore siting by requiring an environmental review, also known as an environmental impact statement (EIS), for any “major federal actions significantly affecting the quality of the human environment” and the level of detail on the review is very high.²²⁴

Another regulatory component of the siting permit process is the Endangered Species Act (ESA)²²⁵, which like NEPA will place a significant burden on the developer of the project.²²⁶ The ESA is significant because of the role it plays in federal regulation as it not only regulates directly, but it also regulates indirectly by requiring that “all federal departments and agencies utilize their authorities to conserve endangered and threatened species, as well as their ecosystems.”²²⁷ The potential issue under the ESA is that it prohibits a take,²²⁸ which is defined to include “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.”²²⁹ Given the potential for a wind turbine, wave energy, or tidal energy platform to take, the ESA looms quite large when considering the regulatory impacts to the development of a project.²³⁰ However, the incidental take provision en-

221. Thornquest, *supra* note 174, at 202–03.

222. Jeffrey Thaler, *Fiddling as the World Floods and Burns: How Climate Change urgently Requires a Paradigm Shift in the Permitting of Renewable Energy Projects*, 42 ENVTL. L. 1101, 1132–133 (2012); Thornquest, *supra* note 174, at 204–05; *see also* Energy Policy Act of 2005, Pub. L. 109-58, 119 Stat. 604 (codified primarily in scattered sections of 16 U.S.C. and 42 U.S.C.).

223. Under NEPA, an EIS must provide information, in detail and potentially at an extraordinary cost, on the following areas: (i) the environmental impact of the proposed action, (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented, (iii) alternatives to the proposed action, (iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and (v) any irreversible and irretrievable commitments of resources involved in the proposed action should it be implemented. Thaler, *supra* note 222, at 1134–135.

224. Thaler, *supra* note 222, at 1133–134 (2012); Dinnell & Russ, *supra* note 202, at 562.

225. Endangered Species Act of 1973, 16 U.S.C. §§1531–1544 (2006 & Supp. IV 2011).

226. Thaler, *supra* note 222, at 1135–136.

227. Dinnell & Russ, *supra* note 202, at 559–61 (“The ESA seeks to ensure that all federal departments and agencies utilize their authorities to conserve endangered and threatened species, as well as their ecosystems. . . . [T]he ESA commands all other federal agencies to comply with its provisions, even where such protection conflicts with the agency's primary responsibility.”).

228. 16 U.S.C. § 1538(a)(1)(B); *see also* 16 U.S.C. § 1532(19) (defining take as meaning “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct”).

229. Dinnell & Russ, *supra* note 202, at 559–61.

230. *Id.* (“Therefore, any activity related to the construction or maintenance of wind turbines could expose an individual or entity to liability where it results in the harming, wounding, or killing

acted in a 1982 amendment to the ESA does provide some flexibility for a developer, if an application for incidental take is granted.²³¹

Moreover, the Migratory Bird Treaty Act (MBTA)²³² also impacts the development of a wind turbine project due to the potential interference with migratory birds.²³³ The MBTA is administered by the Fish and Wildlife Service, which is an agency of the Department of the Interior, and invokes strict liability that makes certain conduct unlawful when related to a migratory bird.²³⁴ The MBTA has a potentially broad impact as the Act defines a migratory bird as a “species native to the United States or its territories” and there is no incidental take provision as found in the ESA.²³⁵ If a migratory bird is taken, the statutory penalties can be significant and care should be taken when determining an effective site to evaluate potential migratory patterns in that area.²³⁶

The total framework of the process to successfully secure a permit for the installation of a project, statutes, and the various agencies involved is a lengthy and detailed framework, thus beyond the scope of this article.²³⁷

2. Florida Regulatory Framework

Florida has a much simpler regulatory environment²³⁸ Florida law provides very few distinctions in renewable energy compared with those

of a protected species. While liability would be expressly limited to instances involving certain species expressly designated under the ESA, any wind turbines located within the habitat of such species would be affected. Thus, the ESA would limit the number of locations suitable for wind turbine projects.”).

231. *Id.*; see also Thaler, *supra* note 222, at 1135–137 (discussing the ESA and its impacts).

232. 16 U.S.C. § 703(a) (2004).

233. Dinnell & Russ, *supra* note 202, at 556–57.

234. *Id.* (“the MBTA makes it [unlawful to] pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export, any migratory bird [protected under the four treaties].”).

235. *Id.*; Thaler, *supra* note 222, at 1138–139.

236. Thaler, *supra* note 222, at 1138–39.

237. See generally *Regulatory Framework and Guidelines*, BUREAU OF OCEAN ENERGY MANAGEMENT, <http://www.boem.gov/Regulatory-Development-Policy-and-Guidelines/> (last visited Apr. 19, 2015); Oregon Wave Energy Trust, *Wave Energy Development in Oregon, Licensing & Permitting Requirements* (2009), http://oregonwave.org/oceanic/wp-content/uploads/2013/05/OWET_Licensing_-Permitting_July2009.pdf; Higgins & Busch, *supra* note 53, at 170–77 (discussing regulatory environment and roadblocks to development of oceanic renewable energy projects); see also Magnuson-Stevens Fishery Conservation and Management Act of 1976, 16 U.S.C. §§ 1801–1891 (2006) (As the MBTA is rather specific to wind turbines, the wave and tidal energy projects have to contest with the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), which is the “primary law for managing marine fisheries in federal waters.”).

238. Thornquest, *supra* note 174, at 209–12 (discussing the regulatory environment of Florida).

of traditional power generation.²³⁹ The state has statutes relating to promoting renewable energy in the interest of the state²⁴⁰ and there are administrative codes relating to oil and gas.²⁴¹ Therefore, management of renewable energy production would fall under a myriad of federal regulations and the Coastal and Aquatic Management Areas division of the Florida Department of Environmental Protection (“FDEP”).²⁴² The Aquatic Preserves Act of 1975²⁴³ provides restrictions on areas that may be available for development of tidal or wave energy projects as it provides for various preserves throughout the state.²⁴⁴ The Florida Fish and Wildlife Commission, which manages concurrently with FDEP, oversees the Florida Endangered Species Act²⁴⁵ and has the power to effectively ban development of marine kinetic energy production in areas where an endangered species is located.²⁴⁶

Florida has the authority to define its coastal zone management plan (CZMP) under the Coastal Zone Management Act (CZMA), which is taken into consideration when federal agencies evaluate any permitted activities that are located off the state’s coast and such federal activities must comply with the state’s CZMP.²⁴⁷ This is significant because the state has the power to contest federally permitted activities that run afoul of the state’s CZMP. Florida’s CZMP permits FDEP to “make final consistency decisions on federal actions within state waters to ensure that all activities having reasonably foreseeable coastal effects are consistent with the enforceable policies of the federally-approved FCMP.”²⁴⁸

The limited state regulation in Florida gives rise to the potential for significant issues if a project should be sought within the nine nautical mile zone where regulation falls to the State of Florida²⁴⁹. However,

239. Uma Outka, *Siting Renewable Energy: Land Use and Regulatory Context*, 37 *ECOLOGY L.Q.* 1041 (2010).

240. FLA. STAT. § 377.711 (2011); FLA. STAT. § 366.91(1) (2009); Solar Energy Standards Act of 1976, FLA. STAT. § 377.705 (2008); Florida Energy and Climate Protection Act, FLA. STAT. §§ 377.801–377.804 (2014).

241. FLA. ADMIN. CODE ANN. r. 62C-25-62C-30.

242. Thornquest, *supra* note 174, at 210.

243. FLA. STAT. §§ 258.35–258.46 (2014).

244. Thornquest, *supra* note 174, at 210.

245. Endangered and Threatened Species Act, FLA. STAT. § 379.2291 (2011).

246. Thornquest, *supra* note 174, at 210.

247. *Id.* at 211–12; Thaler, *supra* note 222, at 1139–141; Eberhardt, *supra* note 200, at 386–95 (discussing CZMA, CZMP and consistency reviews for federally permitted activities).

248. Thornquest, *supra* note 174, at 211–12 (noting that “[o]ne of the federal actions expressly mentioned in [Florida’s CZMP] to be a reviewable activity is outer continental shelf activity, including leasing decisions by BOEM, and any actions under the Federal Power Act. In the context of a proposed wave power project, Florida will review federal actions on a proposed BOEM lease for consistency while evaluating the wave energy project’s state environmental resource permit.”).

249. Outka, *supra* note 239, at 1069.

there is relatively low potential for wind energy for Florida and, as such, it creates less urgency for Florida to create a regulatory environment that is conducive to the promotion of offshore renewable energy.²⁵⁰

V. PROPOSAL TO ADDRESS CLIMATE CHANGE THROUGH FIDUCIARY DUTY ACCOUNTABILITY THROUGH OFFSHORE RENEWABLE ENERGY

This proposal focuses on two main points. First, the public trust doctrine requires that trustees of public trust lands take action, under a fiduciary duty standard, to protect the corpus of the trust when faced with potential harm such as climate change impacts. Second, a failure by a trustee to meet that standard, and accordingly be brought into court to enforce compliance with its fiduciary duty, does not constitute an expansion of the trust when the basis for the breach is executed within the traditional confines of public trust doctrine.

A. Public Trust Doctrine Fiduciary Duty Requires Action

In order to fulfill the fiduciary duty imposed that the public trust imposes on the government, the notion that the management of those public resources for the benefit of the public should require, at a minimum that the states manage proactively rather than merely reactively.²⁵¹ The pathway to proactive management is partially cut through the courts by embracing a view of the public trust doctrine that enables, rather than restricts, and encourages states to manage their public resources in a balanced fashion.²⁵² However, the courts have a history of treating the public trust doctrine as evolutionary, which causes uncertainty for the states in managing their public resources.²⁵³ It also suggests that courts need to exercise restraint from interpreting the scope of the public trust doctrine in a manner that enables it to reach beyond its tidal lands and navigable waterway foundations.²⁵⁴

250. Thornquest, *supra* note 174, at 212.

251. Salcido, *supra* note 185, at 1094–95 (stating that “[T]he government has a fiduciary responsibility to its citizens to manage the oceans for public benefit. U.S. laws addressing ocean resources, both living and nonliving, emphasize the responsibility to manage those resources for the public benefit.”); *Conservative Reconstruction*, *supra* note 109, at 66.

252. *Conservative Reconstruction*, *supra* note 109, at 68.

253. *Compare Conservative Reconstruction*, *supra* note 109, at 48 (discussing how “suggestions in some judicial opinions, moreover, the public trust doctrine permits courts to override the views of obstreperous legislatures and to reconfigure property rights without worrying about the takings constraints imposed by the federal and state constitutions - two hurdles that often stand in the way of environmental and public-access goals”) with *Adapting to Climate Change*, *supra* note 4, at 846–50 (discussing the evolution of the public trust doctrine in various states) and Salcido, *supra* note 185, at 1092–096 (arguing for consideration of the oceans as a public trust asset).

254. *Conservative Reconstruction*, *supra* note 109, at 48.

States are meant to manage their public trust assets in a way that preserves them for future generations. As such, utilization of those assets in a way that can benefit the current generation as well as a funding mechanism for research for future generations seems to be the ultimate fulfillment of that requirement.²⁵⁵ There are several different ways that the state can choose to adopt proactive management strategies that would encourage the development of carbon neutral or alternative energy; for instance, wind turbine deployment, simplifying permitting procedures within the scope of their management under existing statutory confines, passing legislation that will have a similar effect as a regulatory change, and creating incentives for private entities that operate within their borders, such as funding grants for research into improving the existing technologies or offering subsidies providers of such alternative energy solutions.²⁵⁶

Governmental entities need information to act in a manner most compliant with the fiduciary duty, which means the government also needs to create a regulatory framework in which necessary information can be acquired or researched.²⁵⁷ This information gap highlights why the creation of a grant for research on different subjects related to energy production and climate change can be viewed as a component of the fiduciary duty of trustees because without reliable information the decisions being made will be subject to shortfalls.²⁵⁸ The path of least resistance within the management of public trust resources is the option that the governments are most likely to pursue. Research is a key way to maintain those public lands for public purposes as required under the public trust doctrine as lands that are lost due to climate change and arguably lost through lack of maintenance.²⁵⁹ On the other hand, there are

255. Salcido, *supra* note 185, at 1092 (arguing on the appropriateness of state governments generating revenue from leases and royalties from the use of public trust resources by private entities).

256. Craig, *supra* note 161, at 48–51 (arguing that governments need to reevaluate the impacts of the incentives their laws create within the scope of environmental and natural resources law); Salcido, *supra* note 185, at 1104–08 (discussing the manner in which ocean law can be modified to encourage the development of wave power projects); Ruhl & Salzman, *supra* note 6, at 233–34 (discussing how “ecological economics has shown us . . . that when the value of natural capital and ecosystem services are taken into account, promoting economic benefits is consistent with protection of natural systems”).

257. Craig, *supra* note 161, at 53–63 (discussing the need for coordination between entities to facilitate reliable information being placed into the hands of decision makers); Jeffrey W. Henquinet & Tracy Dobson, *The Public Trust Doctrine and Sustainable Ecosystems: A Great Lakes Fisheries Case Study*, 14 N.Y.U. ENVTL. L.J. 322, 344–47 (2006) (discussing ways that governance of natural resources faces information dilemmas and how process improvements can rectify that problem).

258. Craig, *supra* note 161, at 53–63.

259. Sax, *supra* note 3, at 477 (discussing the three characterizations of the public trust doctrine’s protections for the public).

times when the decision makers may need to make decisions that have unfortunate outcomes and strict interpretations of the public trust doctrine may result in even worse judicial outcomes in terms of promoting governmental proactive management of public trust resources.²⁶⁰

For example, the Florida Legislature has passed legislation that created a requirement for the Department of Agriculture and Consumer Services to “promote the development and use of renewable energy resources” through a three-pronged strategy.²⁶¹ This legislation coupled the State’s Comprehensive Plan²⁶² with a section that identifies Florida’s strategy for dealing with energy resources, as a subpart of the state’s natural resources, and combating climate change.²⁶³ This type of forward-thinking action by a state legislature, albeit relatively minimal compared to other state legislatures, is an example of proactive management of public trust resources and encouragement of alternative energy solutions. These efforts would be consistent with the duty this article argues are incumbent upon states as trustees under the public trust doctrine if legislation is followed through to completion.²⁶⁴ However, Florida can go further than the actions that they have taken thus far. The reinstatement of the renewable portfolio standards (“RPS”) is a good first step, but more can be done.²⁶⁵ The encouragement of alternative energy solutions, such as offshore power generation solutions, has been identified by the IPCC as a method of combating climate change while also meeting the demand of a populace for energy.²⁶⁶ These technologies provide a pathway for legislatures to balance their duties under the PTD as well.²⁶⁷

Mere legislative action or executive prompting is only one half of the puzzle and the other half is the follow through by the responsible

260. *Adapting to Climate Change*, *supra* note 4, at 851–52 (arguing that adaptive management by government would allow the decision makers the opportunity to improve management strategies through a “learn by doing” evolution).

261. FLA. STAT. § 377.703(h)(1–3) (2014); Thornquest, *supra* note 174 (“(1) Establish goals and strategies for increasing the use of solar energy in this state; (2) Aid and promote the commercialization of solar energy technology; (3) Identify barriers to greater use of solar energy systems in this state, and developing specific recommendations for overcoming identified barriers, with findings and recommendations to be submitted annually in the report to the Governor and Legislature”).

262. FLA. STAT. § 187.101–201 (2014).

263. FLA. STAT. § 377.601(1) (2015).

264. *Adapting to Climate Change*, *supra* note 4, at 851–52. *Contra* Eberhardt, *supra* note 200, at 376–77 (discussing the response to the development of the Cape Wind project by various entities, including opposition from the Commonwealth of Massachusetts).

265. Outka, *supra* note 239, at 1043–44; *Renewable Energy Activities*, FLORIDA PUBLIC SERVICE COMMISSION, <http://www.psc.state.fl.us/utilities/electricgas/RenewableEnergy/> (last visited Apr. 19, 2015) (Renewable Portfolio Standard and Rule were discussed, but never finalized).

266. Renewable Energy Sources and Climate Change Mitigation: Summary for Policymakers and Technical Summary, IPCC (2012), https://www.ipcc.ch/pdf/special-reports/srren/SRREN_FD_SPM_final.pdf.

267. *Id.* at 7 (summarizing the reports findings on renewable energy and climate change).

state agencies, which in the case of the legislation has largely been left incomplete in the areas of significance.²⁶⁸ Failure to follow through to completion can leave a trustee exposed to liability for the breach of their fiduciary duty when a trust asset stands imperiled.²⁶⁹ However, is this truly meeting the burden under the public trust doctrine in mere words, but not in actions? The former would seem to be the case rather than the latter given the lack of progress,²⁷⁰ despite legislative authority and duty under the law. Thus, it falls to the courts to interpret the application of the fiduciary duty under the public trust doctrine against the state's actions to determine how deficient the state is in its actions.

B. Accountability of Existing Duty is Not an Expansion of the Public Trust Doctrine

When there has been a potential violation of the fiduciary duty under the public trust doctrine, the public has the option of pursuing civil action against the state to enforce the obligations of the public trust doctrine under the common law.²⁷¹ However, the enforcement of obligations arising under the public trust doctrine does not necessarily coincide with an expansion of the fiduciary duties of the trustee or the scope of public trust doctrine lands.²⁷² In fact, enforcement of fiduciary duty under the public trust doctrine is fairly characterized as an enforcement of the traditional scope of the public resources under the doctrine.²⁷³ Expansion of the public trust doctrine is often accomplished through enforcing, or attempted enforcement, of some right under the public trust doctrine to the

268. Outka, *supra* note 239, at 1043–044.

269. *Nature's Trust*, *supra* note 59, at 138–39, 197–99 (reviewing the duties of the trustee and the delegation of a trustee's power to an agent for completion of a task does not absolve the trustee of their responsibilities).

270. Outka, *supra* note 239, at 1043–044; *Renewable Energy Activities*, *supra* note 266; *Florida | State and Local Climate and Energy Program*, EPA, <http://www.epa.gov/statelocalclimate/state/tracking/individual/fl.html> (noting that the Renewable Portfolio Standard's status is "In Progress").

271. *Muddying PTD*, *supra* note 47, at 226–27 (quoting Joseph Sax's proposal that the public trust doctrine could be used as an avenue for citizen suits).

272. *See generally Nat'l Audubon Soc'y*, 658 P.2d at 732–33. *Contra Marks*, 491 P.2d at 380 (reasoning that "[i]n administering the trust the state is not burdened with an outmoded classification favoring one mode of utilization over another").

273. *Kearney & Merrill*, *supra* note 81, at 930–31; *Ruhl & Salzman*, *supra* note 6, at 224–29. *Contra* *Filippone ex rel. Philippone v. Iowa Dept. of Natural Resources*, 829 N.W.2d 589 (Iowa Ct. App.2013) (citing to *State v. Sorensen*, 436 N.W.2d 358, 363 (Iowa 1989), which states that "We do not necessarily subscribe to broad applications of the doctrine, noted by one authority to include rural parklands, historic battlefields, or archaeological remains. In fact, we are cautioned against an overextension of the doctrine."); *Kanuk*, 2012 WL 8262438 at *4.

use or against the alienation of a resource that falls outside of the traditional scope of the public trust doctrine assets.²⁷⁴

This concept is important in the framework of arguing for an expanded understanding of what the fiduciary duty entails to avoid unnecessary confusion with an argument for an expanded scope,²⁷⁵ which requires very specific circumstances or novel argument in order to succeed,²⁷⁶ from that of an expanded fiduciary duty under the trust.²⁷⁷ The goal is not to change why the governmental decision making process operates as it does, but rather to ensure that along the way that environmental concerns, such as climate change impacts, are a consideration in the ultimate decision that is being made.²⁷⁸ If the government does not give consideration to the environmental concerns that are behind the decision or perhaps driving it, then government runs the risk of intentionally, at worst, or inadvertently, at best, violating the fiduciary duty standard under the public trust doctrine.²⁷⁹ Offshore power generation provides governments with a method to eat the proverbial cake of providing power generation to their constituents while enjoying the benefits of a public trust doctrine compliant manner of doing so. As the technologies improve and become more prevalent, albeit perhaps with the encouragement of government funded research or incentives for production, the return on investment will only increase.

VI. CONCLUSION

As we progress into this next phase of the planetary change, the questions that will be faced will largely revolve around what can be done

274. *In re Water Use Permit Applications*, 9 P.3d 409, 447 (Haw. 2000) (declaring that the public trust doctrine applies to groundwater); *Changing Conceptions*, *supra* note 6, 644–45 n.77 (listing cases state by state that have invoked the public trust doctrine in some capacity).

275. *In re Water Use Permit Applications*, 9 P.3d 409, 457 (Haw. 2000).

276. Salcido, *supra* note 185, at 1095–96 (discussing an expansion of the public trust doctrine to include the oceans). *But cf.* Alec L. v. Jackson, 863 F. Supp. 2d 11 (D.D.C. 2012), *reh'g denied sub nom*, Alec L. v. Perciasepe, 2013 WL 2248001, at *1 (D.D.C. May 22, 2013), *aff'd sub nom*, Alec L. *ex rel.* Loorz v. McCarthy, 561 F. App'x 7 (D.C. Cir. 2014), *cert. denied*, Alec L. v. McCarthy, 135 S. Ct. 774 (2014) (rejecting an argument based on public trust doctrine applying to the federal government).

277. *Conservative Reconstruction*, *supra* note 109, at 52, 56–8, 68–70; *see generally In re Water Use Permit Applications*, 9 P.3d 409, 455 (Haw. 2000); *Adjudicating Climate Change*, *supra* note 59, at 105 (citing Restatement (Second) of Trusts §176 that states “The trustee is under a duty to the beneficiary to *use reasonable care and skill* to preserve the trust property.” [emphasis added]).

278. William D. Araiza, *Democracy, Distrust, and the Public Trust: Process-Based Constitutional Theory, the Public Trust Doctrine, and the Search for a Substantive Environmental Value*, 45 UCLA L. REV. 385 (1997).

279. *Id.*; *Conservative Reconstruction*, *supra* note 109, at 52, 56–8, 68–70; *Adjudicating Climate Change*, *supra* note 59, at 105 (citing Restatement (Second) of Trusts §176 that states “The trustee is under a duty to the beneficiary to *use reasonable care and skill* to preserve the trust property.” [emphasis added]).

to adapt to these changes, but more importantly what should be done. The State of Florida has fallen down on upholding some of those duties when it comes to the half-finished measures on renewable energy, such as the RPS,²⁸⁰ but the Legislature has enacted various incentives for individuals and businesses to engage in renewable energy platforms.²⁸¹ While these measures are perhaps not sufficient in the view of some,²⁸² it can hardly be said that the State of Florida is completely avoiding their duties as trustee under the public trust doctrine in exercising some level of reasonable care.²⁸³ For a trustee under the public trust doctrine, there is a significant risk of breaching their fiduciary duties if they are asking what should be done too late.²⁸⁴ When these missed opportunities arise, regardless of the reason for why they were missed, the question, perhaps somewhat ironically, will once again fall to what can be done to alleviate the damage incurred by that missed opportunity. Irrespective of what options may be put forth to remedy the harm, the standard against which they should all be measured is the traditional standard of the public trust doctrine and judicially enforced compliance to that standard, i.e., trustee accountability, should never be seen as an expansion of the public trust doctrine standard such as that sought under the ATL theory.²⁸⁵

280. Outka, *supra* note 239, at 1043–044; *Renewable Energy Activities*, *supra* note 291.

281. FLA. STAT. § 377.711 (2011); FLA. STAT. § 366.91(1) (2009); Solar Energy Standards Act of 1976, FLA. STAT. § 377.705 (2008); Florida Energy and Climate Protection Act, FLA. STAT. §§ 377.801–377.804 (2014).

282. Outka, *supra* note 239, at 1043–044.

283. *Adjudicating Climate Change*, *supra* note 59, at 105 (citing Restatement (Second) of Trusts §176 that states “The trustee is under a duty to the beneficiary to *use reasonable care and skill* to preserve the trust property.” [emphasis added]).

284. *Nature’s Trust*, *supra* note 59, at 138–39, 197–99; *Adjudicating Climate Change*, *supra* note 59, at 105 (citing Restatement (Second) of Trusts §176 that states “The trustee is under a duty to the beneficiary to *use reasonable care and skill* to preserve the trust property.” [emphasis added]).

285. *Supra* Part III.A-B. *Contra* Part III.C.

