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Taking it to the Bank: Creating a New Constitutional Standard and Using Blue Carbon Banking to Compensate the Miccosukee Tribe for the Federal "Taking" of their Tribal Lands

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INTRODUCTION

The original members of what is now called the Miccosukee Tribe of Indians of Florida ("Miccosukee Tribe" or "Tribe") escaped persecution by hiding in one of the world's most inhospitable environments—the Florida Everglades.[1] This expansive wilderness—referenced by early Americans as "swampy, hammocky, low, excessively hot, sickly and repulsive in all its features"—provided a place of escape for the Tribe to survive three Indian Wars and numerous efforts to relocate them to the West.[2] For over 200 years, these "unconquered people" have survived and even thrived in the Florida Everglades, creating a culture that is intricately interconnected with this unique and endangered ecosystem.[3]

Early Americans viewed wetlands, especially the Everglades, as an impediment to development.[4] In response, the federal government developed policies and programs to encourage the draining of the Everglades.[5] Moreover, as the population in South Florida grew, the government—through the Army Corps of Engineers—implemented large-scale, expensive flood control projects that resulted in the "replumbing" of the Everglades.[6] Today, less than half of the original expanse of the Everglades remains, and the system receives less than one-third of its historic water flow.[7] The water that remains is polluted

1. *See discussion infra* Section I.A.

2. MICHAEL GRUNWALD, THE SWAMP 40 (2007) (quoting General Winfield Scott, who was assigned by President Andrew Jackson to drive the Indian population from the Florida Everglades during the Second Indian War).

3. The Seminole and Miccosukee Tribes refer to themselves as "unconquered people" because they are the descendants of just 300 Indians who managed to escape capture during the Indian Wars and subsequent attempts at removal. *Seminole History*, FLA. DEP'T OF STATE, http://dos.myflorida.com/florida-facts/florida-history/seminole-history/ (last visited Oct. 1, 2016).

4. *See* GRUNWALD, *supra* note 2, at 81 (stating that "[a]lmost everyone agreed that the Everglades was a vast and useless marsh").

5. Clay J. Landry, *Who Drained the Everglades? The Same Folks Who Are Restoring Them*, PERC REPORTS, Mar. 2002, at 3-5(To encourage settlement in South Florida, the state legislature formed the Internal Improvement Fund (IIF), which used public funds to entice private developers to drain wetlands).

6. GRUNWALD, *supra* note 2, at 218. The Central and Southern Florida Project for Flood Control and Other Purposes was created by the State of Florida in response to outcries over flooding in the blossoming south Florida cities. *Id.*

7. Landry, *supra* note 2, at 3.

by fertilizer and runoff, wildlife species are threatened, invasive species have encroached into the weakened habitats, fires and droughts are common, and algae blooms flourish.[8]

This already-stressed ecosystem now faces additional pressures from the rising sea levels associated with climate change. By the year 2100, the sea level in Florida is expected to rise twenty inches above its 1990 level.[9] The water management systems implemented by the Army Corps of Engineers for flood control, for agriculture, and for urban water supplies have dramatically altered the flow of freshwater through the Everglades, allowing saltwater to penetrate inland.[10] With already increased salinity levels, the Everglades' ability to filter saltwater is severely diminished. In sum, the development, water storage, and flood control policies of the federal government have contributed to the influx of saltwater into the tribal lands of the Miccosukee Tribe.

The typical remedy for a property owner whose property interests have been diminished from government regulations—as is the case with the federal government's regulation of the Miccosukee's tribal lands—would be compensation sought under the Fifth Amendment of the United States Constitution. The last clause of the Fifth Amendment—the Takings Clause—provides that "private property [shall not] be taken for public use, without just compensation."[11] The Supreme Court has explained that the purpose of the Takings Clause is to prevent the government from "forcing some people alone to bear public burdens which, in all fairness and justice, should be borne by the public as a whole."[12] Arguably, this is exactly what the Miccosukee Tribe is being forced to do—bear the burden of the environmental degradation of their tribal lands for no other purpose than for the benefit of the majority of society.[13] Unfortunately, Fifth Amendment protections have not been fully available to all American Indian tribes based on the unique land tenure rights of the native peoples.[14] It accordingly remains unclear whether the Tribe would be successful in a claim for compensation under the Takings Clause of the Fifth Amendment.

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8. Cyril Zaneski, *Epilogue* to MARJORY STONEMAN DOUGLAS, THE EVERGLADES: RIVER OF GRASS 428 (50th Anniversary ed. 1997).

9. *Climate Change, Wildlife, and Wildlands*, EVERGLADES DIGITAL LIBR. 1 (2008) http://everglades.fiu.edu/Everpres/FI07011001.pdf.

10. *Id.* at 2.

11. U.S. CONST. amend. V.

12. Armstrong v. United States, 364 U.S. 40, 49 (1960).

13. *See discussion infra* Section II.A (discussing regulatory takings claims).

14. *See discussion infra* Section II.C (discussing the unique property interests of American Indian tribes).

Under the Indian Trust Responsibility Doctrine, it is the duty of the federal government to protect Native Americans' tribal lands, resources, and way of life.[15] This doctrine has been applied in recent times to protect tribes from environmental threats posed by the actions of the majority of society.[16] Unfortunately, due to inconsistent judicial decisions regarding the doctrine,[17] specific standards and enforceable obligations are lacking, reducing this well-established framework to a mere moral standard, rather than an enforceable, legal framework.

This article proposes that the moral obligations imposed in the Federal Indian Trust Responsibility Doctrine should be used to create a new constitutional standard for property protections afforded to Native American Indian tribes. This standard would apply the fundamental, constitutional protections of property to all Native American Indian tribes, regardless of whether the title to their lands is held in fee simple, held in trust by the Federal Government, or merely held through aboriginal title.[18] Under such a standard—a standard which is governed by the federal obligation to protect tribal lands, resources, and way of life of Native Americans—the Miccosukee Tribe is much more likely to succeed in a takings claim for the federally caused degradation of their tribal lands.

Even with a new constitutional standard for American Indian Tribes, however, the Miccosukee Tribe still faces risks due to the rapidly rising seas associated with climate change. New, more innovative solutions are needed. One such solution could potentially come from the very thing the Miccosukee Tribe needs to protect—the Everglades. Recent research has emphasized the important role that coastal wetlands play in sequestering carbon dioxide (CO_2).[19] The carbon stored in coastal ecosystems (i.e., blue carbon) is estimated to exceed that stored in terrestrial forests. Thus, coastal wetlands have gained increased attention as an important tool in the efforts to mitigate the effects of climate change. As the largest coastal wetland in the United States, the Everglades has enormous carbon sequestration potential. This potential makes the preservation of the Everglades imperative.

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15. Mary Christina Wood, *Indian Land and the Promise of Native Sovereignty: The Trust Doctrine Revisited*, 1994 UTAH L. REV. 1471, 1496 (1994) [*hereinafter The Promise of Native Sovereignty*]; *see also infra* Section II.B.

16. Mary Christina Wood, *The Indian Trust Responsibility: Protecting Tribal Lands and Resources Through Claims of Injunctive Relief Against Federal Agencies*, 39 TULSA L. REV. 355, 360 (2003) [*hereinafter Protecting Tribal Lands Through Injunctive Relief*].

17. *See infra* text accompanying notes 160-181.

18. *See discussion infra* Section II.C (discussing aboriginal title).

19. *See discussion infra* Section III.C (discussing carbon sequestration potential of coastal ecosystems).

Part I of this article summarizes the connection between the Miccosukee Tribe and the Florida Everglades. It describes the original condition of the Everglades and the changes that have occurred due to the regulations of the federal government, as well as a history of the Miccosukee's property interests in the Everglades. Part II examines the federal government's legal obligations to protect the lands and resources of the Miccosukee Tribe, and discusses regulatory takings jurisprudence. Part III addresses how the legal frameworks described in Part II are inadequate in their current form to resolve the issues facing the Tribe. Part III proposes a new framework to (1) compensate the Tribe for the environmental degradation that has occurred to their lands for benefit of the majority of society, and (2) provide additional incentives to protect the Everglades from the rising seas associated with climate change. As the international community is increasingly involved with carbon markets, this article proposes that the carbon sequestration potential of the Everglades be used to provide compensation to the Miccosukee Tribe, while concurrently providing additional incentive for the restoration and preservation of the Everglades.

I. The Miccosukee Tribe and The Everglades

A. *The Unconquered People*

As sadly is the case for all American Indian Tribes, the Miccosukee Tribe's history is one of survival and adaptation. Pushed to the depths of what early Americans viewed as a wet and worthless land,[20] the Tribe survived wars, relocation efforts, and even genocide by hiding and adapting to the aquatic lands of the Everglades.[21] Now, the Tribe's cultural identity is intertwined with the Everglades ecosystem. As one scholar eloquently explains it: "This vast watery wilderness—harsh, remote, unforgiving—was home to the ancestors of today's Seminoles and Miccosukees and is at the core of how they think of themselves as a people."[22]

20. Grunwald, *supra* note 2, at 32 (quoting an early American congressman as describing the Everglades as "a land of swamps, of quagmires, of frogs, alligators and mosquitoes").

21. Paula Park, *A Brief History of the Miccosukees*, Miami New Times (Dec. 12, 1996), http://www.miaminewtimes.com/news/a-brief-history-of-the-miccosukees-6361176.

22. Brent Richards Weisman, Unconquered People: Florida's Seminole and Miccosukee Indians 67 (1999).

1. History of the Florida Indians

Ironically, the Miccosukee Indians were not original inhabitants of Florida.[23] Like many Floridians today, the Miccosukee Indians relocated to Florida from other areas. The original Tribe members split from the Creek Nation and migrated to the northern parts of Florida before it became part of the United States.[24] Even before Florida became a state, efforts were underway to remove the Indians from Florida.[25] The American ideas of white supremacy and Manifest Destiny led to considerable efforts to remove or exterminate the Indian population of Florida. After much resistance from the Indian population, however, it soon became clear that it would be easier to herd the Indians to the inhospitable and undevelopable region of the Everglades than remove them altogether.[26] In an effort to achieve peace, the Florida Indians agreed to relinquish all claims to their lands in North Florida and relocate to the fringes of the Everglades.[27] At this point, there were approximately 4,000 Indians in Florida, pushed to lands that were inaccessible, wet, and unable to support agriculture.[28] But in the eyes of Americans, this was 4,000 too many.

By 1830, President Andrew Jackson was engaged in a large scale removal effort to rid the East of what he considered to be "inferior beings."[29] As part of this removal effort, chiefs of the Florida Indians were gathered to sign a new treaty, which promised the Florida Indians land in Arkansas.[30] Many tribes and villages were not represented, however, and many chiefs refused to sign.[31] In the end, fifteen chiefs signed the Treaty of Payne's Landing, although many claimed that they signed merely to "appease the white man."[32] Nevertheless, the

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23. GRUNWALD, *supra* note 2, at 30.

24. WEISMAN, *supra* note 22, at 26.

25. GRUNWALD, *supra* note 2, at 31 (As early as 1818, General Andrew Jackson was engaged in a "scorched-earth march through north Florida designed to chastise a savage foe").

26. MARJORY STONEMAN DOUGLAS, THE EVERGLADES: RIVER OF GRASS 198 (50th Anniversary ed. 1997) (hereinafter RIVER OF GRASS).

27. Miccosukee Tribe of Indians of Fla. v. United States, 716 F.3d 535, 546 (11th Cir. 2013).

28. GRUNWALD, *supra* note 2, at 34.

29. *Id.* at 35 ("[Jackson] saw Indians as inferior beings, and his concern for American security always outweighed his concern for their welfare").

30. RIVER OF GRASS, *supra* note 26, at 198 ("In May, 1832 . . . a group of chiefs were gathered together, by threats or promises . . . to sign a new treaty").

31. *Id.*

32. KATHRYN TRIMMER ABBEY, FLORIDA: LAND OF CHANGE 205 (1941).

government understood the treaty to be valid and attempts began shortly thereafter to remove the Florida Indians to the West.[33]

The Florida Indians' opposition to removal started a bloody battle now known as the Second Indian War;[34] the most expensive of the Indian Wars waged by the United States.[35] Many Indians were killed, and even more were shipped to Arkansas,[36] but "[t]he [Florida Indians] never did surrender."[37] In 1839, in order to end the ongoing hostilities, the Secretary of War issued a truce (known as the Macomb Truce) allowing the remaining Indians to retire to an area in the Everglades known as the "Macomb Area."[38] In 1842, President John Tyler agreed to let the last 300 Indians remain in the fringes of the Everglades.[39] Conflicts continued, however, until the year 1855, when a group of 163 Indians agreed to relocate to the West.[40] At this point, approximately 100 Indians remained in the Everglades.[41] From these 100 "unconquered people" descended the federally recognized tribes we know today as the Seminole and Miccosukee Tribes of Florida.

The Florida Indians continued to reside in the Macomb area, although without any titles or rights to the property.[42] In 1891, the State of Florida established a permanent reservation for the Florida Indians, designating 99,200 acres in Monroe County to be held in trust for the perpetual use of the Indians.[43] Not long after, however, the Indians were forced to move once again. In 1934, Congress created the Everglades National Park which incorporated the lands of the Indian reservation.[44] Thus, the state legislature withdrew the reservation in Monroe County[45] and created a new reservation on 104,800 acres in Broward County.[46]

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33. ABBEY, *supra* note 32.
34. *Id.* at 205-06.
35. WEISMAN, *supra* note 22.
36. *Id.* (It is estimated that 3,930 Indians were removed to the West during the Second Indian War).
37. GRUNWALD, *supra* note 2, at 53.
38. Miccosukee Tribe of Indians of Fla. v. United States, 716 F.3d 535, 546 (11th Cir. 2013).
39. *Id.*
40. GRUNWALD, *supra* note 2, at 53.
41. *Id*
42. *Miccosukee Tribe*, 716 F.3d at 546.
43. Fla. Stat. Ann. § 285.01 (2009).
44. *Miccosukee Tribe*, 716 F.3d at 546-47.
45. FLA. STAT. § 285.06 (2009).
46. FLA. STAT. § 285.03 (2009).

2. Modern Day Miccosukee Tribe

The Everglades Indians adapted to the unwelcoming terrain of the Everglades and survived and even thrived in the aquatic environment.[47] In 1957, the Everglades Indians were recognized by the federal government as the Seminole Indians of Florida.[48] Based on cultural differences within the group, however, a portion of the Florida Indians did not identify with the Seminole Tribe.[49] These Indians, who spoke the Mikasuki language, generally kept more traditional practices than the more mainstream Seminole Tribe.[50] In 1962, the federal government officially recognized the separate tribe of Miccosukee Indians.[51] The Miccosukee Tribe of today is comprised of over 600 members,[52] a much smaller tribe than the over 2,000-member Seminole Tribe.

Today, while the Miccosukee Tribe has assimilated into a more modern way of life, they have not abandoned their traditional customs or way of life.[53] In addition to operating a fully functioning township, including a police department, clinic, and educational systems for all ages, the tribal people also remain connected to their historical way of life by utilizing the Everglades in the same way as their ancestry.[54] The hunting, fishing, and substantive agriculture practiced by the Miccosukee on the exact lands that their forefathers used for refuge against persecution showcases their resilience and interdependence with the Florida Everglades.[55]

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47. Kelly Merritt, *Miccosukee Native American Indian Tribe Day Saturday*, NAPLES DAILY NEWS (Sep. 28, 2012), http://archive.naplesnews.com/entertainment/arts-and-culture/miccosukee-native-american-indian-tribe-day-saturday-ep-387255627-335225481.html/ (quoting a Miccosukee Tribe member as saying, "[w]e're opening a door unto the indigenous experience and how we are not only surviving but also thriving").

48. *Government*, SEMINOLE TRIBE OF FLA., https://www.semtribe.com/Government/Introduction.aspx (last visited Feb. 20, 2018).

49. GRUNWALD, *supra* note 2, at 257 ("The 300 or so Miccosukees felt a deep connection to the Everglades; they had split off from the Seminole Tribe.").

50. *Id.*

51. *History*, MICCOSUKEE TRIBE OF INDIANS OF FLA., http://www.miccosukee.com/tribe-c/history/ (last visited Nov. 22, 2014) [*hereinafter* MICCOSUKEE HISTORY]. .

52. *Id.*

53. *Miccosukee Tribe of Indians of Florida*, MICCOSUKEE TRIBE OF INDIANS OF FLA., http://www.miccosukee.com/tribe (last visited Nov. 22, 2014).

54. *Id.*

55. *Id.*

B. *The River of Grass*

Marjory Stoneman Douglas—a lifelong defender of the Everglades—best describes the natural wonder that is the everglades in her book, *Everglades: River of Grass*:

> [The Everglades] are, they have always been, one of the unique regions of the earth, remote, never wholly known. Nothing anywhere else is like them: their vast glittering openness, wider than the enormous visible round of the horizon, the racing free saltness and sweetness of their massive winds, under the dazzling blue heights of space. They are unique also in the simplicity, the diversity, the related harmony of the forms of life they enclose. The miracle of the light pours over the green and brown expanse of saw grass and of water, shining and slow-moving below, the grass and water that is the meaning and the central fact of the Everglades of Florida. It is a river of grass.[56]

In its natural condition, the Everglades consisted of nearly 11,000 square miles, covering almost all of South Florida.[57] Water flowed down the Kissimmee River and into Lake Okeechobee, which spilled over onto the flat, slightly sloped landscape of South Florida, creating a seemingly still sheet of shallow water that seeped slowly to Florida Bay.[58] The flat topography and slow-moving water created a unique, connected ecosystem consisting of millions of acres of sawgrass marshes, mangrove forests, wetlands, and hardwood hammocks, supporting over 1,100 species of trees and plants, 350 species of birds, and a variety of mammals and other species.[59]

The federal government has a long history of adopting policies and enacting regulations that have resulted in the drainage, plumbing, and environmental destruction of the Everglades.[60] Due to these policies and regulations and their effects, the degraded Everglades system is much more vulnerable to the quickly rising seas associated with climate change. This section of the article provides a history of the federal

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56. RIVER OF GRASS, *supra* note 26, at 5-6.

57. *History & Culture*, NAT'L PARK SERV., (Apr. 14, 2015), https://www.nps.gov/ever/learn/historyculture/index.htm.

58. *Id.*

59. GRUNWALD, *supra* note 2, at 12.

60. *See generally* John J. Fumero, *Everglades Ecosystem Restoration: A Watershed Approach by the Legislature*, 74 FLA. B.J. ENVTL. LAND USE 58, 58 (2000) ("As late as the 1800s, the Everglades consisted of a 60-mile-wide shallow river, seldom more than two feet deep, flowing from Lake Okeechobee to Florida Bay. That was before the U.S. Army Corps of Engineers erected 1,400 miles of dikes, dams, levees, and water control structures in the name of water supply and flood control. Now in the year 2000, more than 50 years after Marjorie Stoneman Douglas wrote about the demise of the Everglades, only 2.4 million acres of Everglades remain—about one third of the original Everglades eco-system.").

policies associated with the Everglades, and a discussion of how those policies have affected the current condition of the Everglades.

1. Federal Policies Affecting the Everglades

Since the beginning of American control over Florida, settlers thought of the Everglades as an impediment to development.[61] It was widely viewed that the area's organic soils, mild climate, and flat topography created the perfect conditions for productive farmland.[62] The only thing standing in the way of turning Florida into the most productive agricultural state in the country was the seasonal flooding of the Everglades. Thus, it became a nationwide priority to "reclaim" the Everglades.[63]

The first federal regulation that promoted the draining of the Everglades was the Swamp and Overflowed Lands Act of 1850, which was intended "to aid the States to reclaim the swamp and overflowed lands within their limits by means of drains and levees."[64] The Act provided Florida with the financial incentive to drain the Everglades.[65] In response, the State formed the Internal Improvement Fund[66] (IIF), a state agency that used public funds to encourage the private development of the Everglades and other wetlands in the state.[67]

With the passage of the Swamp and Overflowed Lands Act and the creation of the IIF, private developers set their sights on the massive project of draining the Everglades.[68] In 1881, the first major attempt to drain the Everglades began, led by a private developer named Hamilton Disston.[69] By the end of that first drainage effort,

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61. COMM. ON ENVTL. PRES. & CONSERVATION, STATEWIDE ENVIRONMENTAL RESOURCE PERMIT, S. 2012-121, at 1 (Fla. 2011), http://www.flsenate.gov/PublishedContent/Session/2012/InterimReports/2012-121ep.pdf (explaining that Floridians viewed wetlands as "worthless swamps that needed to be drained, filled and put to productive use").

62. DAVID MCCALLY, THE EVERGLADES: AN ENVIRONMENTAL HISTORY 85 (1999).

63. *Id.* at 86 (explaining that Floridians viewed "the conversion of worthless marshland into productive farmland as no less than a moral imperative").

64. DUNCAN UPSHAW FLETCHER, EVERGLADES OF FLORIDA: ACTS, REPORTS, AND OTHER PAPERS, STATE AND NATIONAL, RELATING TO THE EVERGLADES OF THE STATE OF FLORIDA AND THEIR RECLAMATION 7 (1911).

65. *See* J.O. WRIGHT, SWAMP AND OVERFLOWED LANDS IN THE UNITED STATES: OWNERSHIP AND RECLAMATION 11-12 (1907); *Enactment of the 1850 Swamp Land Act*, HIST. ENGINE, https://historyengine.richmond.edu/episodes/view/1711 (last visited Apr. 17, 2018).

66. FLA. STAT. ANN. § 253.01 (West, 2015).

67. Landry, *supra* note 5, at 3-4.

68. GRUNWALD, *supra* note 2 (quoting the *Weekly Floridian* at the time as saying "[a]ll know the value of the lands if reclaimed and the immense benefit that would accrue to the State. Now men of capital and energy have taken hold of the matter . . . .").

69. MCCALLY, *supra* note 62, at 89.

more than eighty miles of canals had been dredged within the upper Kissimmee Basin (the headwaters of the Everglades) and nearly 1.6 million acres of swamplands were "reclaimed,"[70] effectively changing the hydrology of the South Florida ecosystem.[71]

Efforts to reclaim the Everglades continued into the 20th century. Despite the government's best efforts, less than 900,000 acres had been successfully reclaimed by 1920.[72] Nonetheless, the government continued its efforts with a series of canals, ditches, dikes, and levees.[73] Poor engineering plans, however, led to widespread flooding, destruction, and human casualties after a series of devastating hurricanes hit the area.[74] The post-disaster climate of South Florida only increased the need for a more comprehensive engineering plan to control the flooding of the Everglades settlements.[75]

In response to the public outcry that occurred after the catastrophic effects of the hurricanes, the federal government—acting through the Army Corps of Engineers (ACOE)—initiated "the biggest engineering project the world had ever seen—the Central and Southern Florida Flood Control Project" (C&SF Project).[76] The C&SF Project consisted of 2,000 miles of levees and canals, spillways, floodgates, pumps and control structures,[77] that provided flood control, water level control, and water supply.[78] The effects of the C&SF Project on the South Florida landscape were profound. Once completed, the C&SF Project transformed the upper Kissimmee basin into profitable cattle lands, the upper Everglades region into an agricultural empire, the eastern Everglades into suburbs and development, and the central Everglades into giant reservoirs.[79] In short, the C&SF Project finally accomplished what the government had long been attempting—reclaiming the Everglades.

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70. GRUNWALD, *supra* note 2, at 96.

71. *Id.* at 117 (stating that "Disston's ditches transformed the headwaters of the Everglades in the upper Kissimmee basin").

72. Landry, *supra* note 5, at 4.

73. Clay Landry, *Who Drained the Everglades?*, PERC, https://www.perc.org/2002/03/01/who-drained-the-everglades/.

74. David G. Guest, *"This Time for Sure"- A Political and Legal History of Water Control Projects in Lake Okeechobee and the Everglades*, 13 ST. THOMAS L. REV. 645, 656 (2001).

75. MCCALLY, *supra* note 62, at 134-35.

76. Guest, *supra* note 74, at 658.

77. GRUNWALD, *supra* note 2, at 221.

78. H.R. STAFF ANALYSIS, COMPREHENSIVE EVERGLADES RESTORATION PLAN, H.M. 607, at 3 (Fla. 2014), http://flsenate.gov/Session/Bill/2014/0607/Analyses/h0607a.LFAC.PDF.

79. GRUNWALD, *supra* note 2, at 221.

2. Environmental Impacts and Current Condition of the Everglades

The environmental impacts of American efforts to drain the Everglades have been apparent since the first attempts at reclamation. Signs of environmental degradation were reported as early as 1905,[80] and evidence of environmental problems continued to surface[81] with each additional attempt to drain, reclaim, and control the Everglades.[82]

In the early 1900s, environmental problems associated with drainage resulted in the drying out of areas that had previously been inundated with water, leaving the soils of the Everglades susceptible to burning.[83] Muck-fires became widespread throughout the region, threatening the human settlements and degrading the very soils that drainage efforts were meant to reclaim.[84] The soils faced further degradation as a result of the escalated levels of oxygen, which increased the rate of decomposition of the previously compacted carbon materials, ultimately accounting for approximately 6.8 feet of soil loss by the year 1950.[85]

Additionally, in the early days of reclamation, South Florida's newly forged farming lands fell victim to a second set of consequences in the form of saltwater intrusion, directly impacting the freshwater wells of settlement communities.[86] The region's population explosion also added to the lowering of the freshwater table and assisted in the encroachment of saltwater; a problem that persists today.[87]

Environmental impacts only increased after implementation of the C&SF Project, resulting in nearly half of the Everglades being con-

80. McCALLY, *supra* note 62 62, at 103-04 (noting that Disston's chief engineer submitted a report to the State legislature in 1905 in which he noted that the canals connecting Lake Okeechobee to the Caloosahatchee River overburdened the river's ability to handle increased flow, and resulted in the flooding of areas that had previously been dry).

81. *See id.* at 147 (discussing environmental concerns raised by the Soil Science Society of Florida in 1939).

82. *See* Guest, *supra* note 744, at 645 (making the point, that, "[a]lthough each project was intended to make up for the shortcomings of the last, each was progressively more damaging to the environment, and thus necessitated another more expensive project").

83. McCALLY, *supra* note 62, at 141-42.

84. *Id.* at 143.

85. *Id.* at 144 (discussing an experiment site in 1950 that indicated that soil loss in drained areas amounted to 6.8 feet since 1912).

86. *Id.* at 146 (stating, "[b]y 1919, however, these artesian wells had not only stopped flowing but also had experienced saltwater intrusion, as the loss of fresh surface water allowed water from the Atlantic to flow up the creeks at high tide and penetrate the porous limestone strata along its banks").

87. *Id.* at 146.

verted into plantations and developments,[88] and the remaining areas being severely compromised due to the systematic reduction in water.[89] Reduced southward flow caused increased salinity in the southern estuaries, while large quantities of freshwater diverted to the east poisoned the estuaries on the Atlantic coast.[90] Such dramatic changes in the salinity levels caused widespread devastation to fisheries and marine breeding grounds, while also threatening the aforementioned water supplies of the ever-increasing South Florida population.[91] Further, the quality of the once pristine water was severely diminished because of agricultural runoff, and invasive species began encroaching into the weakened habitats.[92]

Sadly, environmental conditions in the Everglades are continuing to decline.[93] Less than 50% of the original extent of the Everglades remains today,[94] and much of what remains suffers from severe degradation and threats to survival as well as a major loss of diversified habitat.[95] The increase in urban and agricultural development not only affects the existing habitats but also greatly affects water quality.[96] Runoff from nearby agricultural operations and urban areas has led to an increase of nutrients into the previously low-nutrient system, lowering the quality of many of the water bodies in South Florida below the standard set forth by the state itself.[97] In this sense, development is seemingly stepping on its own toes. The continued influx of nutrients also leads to an overabundance of invasive vegetation, leaving less food for native wildlife.[98] In fact, it is now reported that there are 1.4 million acres of invasive melaleuca, Brazilian peppers,

88. South Florida River Water Management District & Army Corps of Engineers, Central and Southern Florida Project Comprehensive Review Study: Final Integrated Feasibility Report and Programmatic Environmental Impact Statement iii (1999), http://141.232.10.32/docs/comp_plan_apr99/summary.pdf [hereinafter *Feasibility Study*].

89. Michael Voss, *The Central and Southern Florida Project Comprehensive Review Study: Restoring the Everglades*, 27 Ecology L.Q. 751, 755 (2000).

90. *Id.* at 754-55.

91. *Id.* at 755.

92. *Id.* at 755.

93. Roel Slootweg et al., Biodiversity in Environmental Assessment: Enhancing Ecosystem Services for Human Well–Being 250 (2010).

94. *How is the Everglades Ecosystem Threatened?*, Everglades Found., http://www.evergladesfoundation.org/the-everglades/threats-to-the-ecosystem/ (last visited Jan. 17, 2018).

95. *Feasibility Study*, *supra* note 88, at iii, xi.

96. *Id.* at iii.

97. *Id.*

98. Matthew C. Godfrey & Theodore Catton, River of Interests: Water Management in South Florida and the Everglades 1948-2010, at 307 (2011).

and Australian pines across what was originally the Everglades.[99] Because these invasive species out-compete the native vegetation, there is less food for native wildlife. Sadly, more than 90% of wading birds and alligator populations have vanished from the area, and populations continue to decline.[100] Invasive wildlife populations flourish, with animals like the Nile monitor lizard and the Burmese Python contributing to the loss of native wildlife populations.[101] Fisheries, both recreational and commercial, continue to see a decline in fish species, generating both ecological and economic consequences.[102] The Florida Bay, where the Everglades drains into the Gulf of Mexico, is collapsing, with dying seagrass and coral reefs.[103] The ecological devastation of the Everglades is so severe that it is referenced as "an environmental collapse unprecedented in Florida history."[104]

The significance of past and present missteps in the reclamation, drainage, and development of the Florida Everglades has only recently become well understood, making Everglades preservation a current focus of activity in the executive, legislative, and judicial branches.[105] A new and vexing challenge has emerged, moreover, in the form of climate change, which will complicate the environmental protection initiatives in the Everglades. The sea level in South Florida is expected to rise twenty inches above its 1990 level by the year 2100, and that estimate is expected to increase.[106] As the sea levels rise, saltwater intrusion will continue to take advantage of a depleted Everglades by filling the gap left from dwindling freshwater aquifers.[107] The increase in salinity in the freshwater aquifers may cause the sys-

99. GRUNWALD, *supra* note 2, at 293.

100. *Id.* at 264.

101. *Id.* at 293.

102. U.S FISH & WILDLIFE SERVICE, SOUTH FLORIDA ECOSYSTEM: MULTI-SPECIES RECOVERY PLAN FOR SOUTH FLORIDA 17, http://www.fws.gov/verobeach/msrppdfs/sfecosystem.pdf (last visited Jan. 17, 2018).

103. GRUNWALD, *supra* note 2, at 294.

104. *Id.*

105. *See e.g.*, John J. Fumero, *Everglades Ecosystem Restoration: A Watershed Approach by the Legislature*, 74 FLA. B.J., 58 (2000) (summarizing different government initiatives to restore the Everglades, for example the Comprehensive Everglades Restoration Plan, authorized by Congress in 1992; the Governor's Commission for the Everglades, appointed by Governor Chiles in 1994; and the Everglades Restoration Investment Act, signed by Governor Bush in 2000); John J. Fumero, *The Everglades Ecosystem: From Engineering to Litigation to Consensus-Based Restoration*, 13 ST. THOMAS L. REV. 667, 676 (2001) (summarizing judicial decisions and litigation outcomes regarding Everglades restoration).

106. *Climate Change, Wildlife, and Wildlands, supra* note 9, at 2.

107. Bruce Dorminey, *As Sea Level Rises, Everglades Become More Vital to South Florida's Survival*, CLIMATE CENT., (Oct. 11, 2011), http://www.climatecentral.org/news/as-sea-level-rises-everglades-become-more-vital-to-south-floridas-survival.

tem to drain more slowly, allowing saltwater to move up rivers and into the freshwater marshes.[108] As saltwater moves inland, mangroves may spread into areas that were formerly freshwater habitats. Increased coastal flooding and erosion may cause more organic matter and nutrients to flow into the marshes, affecting the biodiversity of the ecosystem. As the freshwater habitat is reduced, South Florida's key species (e.g., Florida panther, Florida crocodile, Everglades snail kite) will face serious threats to survival.[109]

While these sea-level rise impacts are not entirely the result of the federal government's policies in the Everglades, the Everglades would be better equipped to adapt to the rising sea levels and increased salinity had the area been allowed to remain in its historical condition. Absent the government's drainage and reclamation efforts, the system would contain twice as much land mass for water storage, allowing the Everglades to handle the increased floods associated with the rising seas.[110] The freshwater aquifer would be full, limiting space for the intrusion of saltwater into the freshwater marshes. The mangrove forests, which provide a buffer between the sea and freshwater system, would be more robust and better able to adapt to the changes in sea level. In its current and depleted state, however, the Everglades is at an extreme risk from climate change.

Due to the degraded condition of the Everglades—directly caused by the actions of the federal government—the tribal lands of the Miccosukee people are at risk of being inundated with saltwater. The sections that follow address whether the federal government is liable to the Tribe for the damages it has caused to tribal lands. Further, the following discussion will explore what obligations, both moral and legal, the federal government has to protect the Miccosukee's tribal lands and resources from the imminent threats of climate change.

II. Existing Legal Framework

The federal government—even while contributing to the widespread environmental degradation to the Everglades—has been operating under legal frameworks which require protection of the Miccosukee tribal lands. The Fifth Amendment of the United States Constitution provides that "private property [shall not] be taken for

108. *Climate Change, Wildlife, and Wildlands, supra* note 10, at 4.

109. *See* Grunwald, supra note 2, at 264, 304 (stating that "the region was on the verge of loving itself to death").

110. *See* Landry, *supra* note 5, at 3-4.

public use, without just compensation."[111] Thus, when the government's regulation of private property interferes with or diminishes a property owner's use and enjoyment of his property, compensation is required.[112] In addition, the federal government owes the Miccosukee Tribe a moral and legal duty to protect its tribal lands, through what is referred to as the Federal Indian Trust Responsibility Doctrine.[113] This section of the article describes both of these legal frameworks with a focus on their applicability to the problems facing the Miccosukee Tribe.

A. The Takings Clause of the United States Constitution

The language of the Fifth Amendment of the Constitution seems on its face to be relatively clear: "Private property [shall not] be taken for public use, without just compensation."[114] There is no doubt that the Takings Clause applies when the government takes physical control of one's property for governmental purposes.[115] The applicability of the clause becomes less clear, however, when the federal government regulates private property in such a way as to interfere with a landowner's property rights.[116] This concept of "regulatory takings" has produced extensive takings jurisprudence; however, a bright line rule on when a regulatory action constitutes a taking has still not been drawn.[117] Moreover, when applied to the unique land rights of Native American tribes, the application of the Takings Clause becomes additionally muddled.[118]

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111. U.S. CONST. amend. V.

112. *See* ROYAL C. GARDNER, LAWYERS, SWAMPS, AND MONEY: U.S. WETLAND LAW, POLICY, AND POLITICS 177-78 (2011).

113. *See generally* Reid Peyton Chambers, *Judicial Enforcement of the Federal Trust Responsibility to Indians*, 27 STAN. L. REV. 1213, 1213 (1975).

114. U.S. CONST. amend. V.

115. Michael A. Hiatt, *Come Hell or High Water: Reexamining the Takings Clause in a Climate Changed Future*, 18 DUKE ENVTL. L. & POL'Y F. 371, 380 (2008).

116. *See* David K. Brooks, *Regulatory Takings—Where Environmental Protection and Private Property Collide*, 17 A.B.A. J. NAT'L. RESOURCES & ENV'T 10, 10 ("[W]hen government circumscribes an owner's right to use property, without taking title or possession, the question of whether the Constitution requires compensation has proved vexing. This is the problem of 'regulatory takings.'").

117. *See* Penn Cent. Transp. Co. v. City of New York, 438 U.S. 104, 124 (1978) (where the Court explained that it was "unable to develop any set formula for determining when justice and fairness require that economic injuries caused by public action be compensated . . . .") (internal quotation marks omitted).

118. *See infra* Section II.C.

1. Regulatory Takings Jurisprudence

Regulatory takings jurisprudence dates back to as early as 1871, when the Supreme Court held that a defendant's construction of a dam, which permanently flooded the plaintiff's property, constituted a taking.[119] In *Pumpelly v. Green Bay Co.*, the Court explained that "where real estate is actually invaded by superinduced additions of water, earth, sand, or other material, or by having any artificial structure placed on it, so as to effectually destroy or impair its usefulness, it is a taking, within the meaning of the Constitution . . . ."[120]

Penn Central Transportation Co. v. City of New York is considered the leading case governing regulatory takings,[121] and the Supreme Court repeatedly points to its decision in *Penn Central* as the reference point for a regulatory takings analysis.[122] In *Penn Central*, the Court set forth three factors to be considered when deciding whether a government regulation "goes too far" and requires compensation: (1) the economic impact of the regulation on the property owner, (2) the extent to which the regulation interfered with distinct investment-backed expectations, and (3) the character of the government's action.[123]

Another landmark case dealing with regulatory takings was *Lucas v. South Carolina Coastal Council.*[124] In this case, under the South Carolina Beachfront Management Act, the plaintiff was prohibited from developing any part of his property.[125] The Supreme Court held that the Management Act effected a taking.[126] The lesson in *Lucas* was that a "regulation [that] denies all economically beneficial or productive use of land" is a regulatory taking requiring compensation.[127]

Under *Lucas*, a taking occurs when all economically beneficial use of private property is prohibited or eliminated.[128] If regulatory ac-

119. Pumpelly v. Green Bay Co., 80 U.S. 166, 181 (1871).

120. *Id.*

121. 438 U.S. 104.

122. Brooks, *supra* note 116, at 11; *see also* Lingle v. Chevron U.S.A., Inc., 544 U.S. 528, 539 (2005) ("The *Penn Central* factors—though each has given rise to vexing subsidiary questions—have served as the principal guidelines for resolving regulatory takings claims . . . .").

123. *Penn Central*, 438 U.S. at 124.

124. 505 U.S. 1003 (1992).

125. *Id.* at 1007.

126. *See id.*

127. *Id.* at 1015.

128. *See id.*

tion does not fall within this narrow category of *per se* takings, then the Court will apply the three-part, economic balancing test, or *Penn Central*, to determine if the regulation "goes too far."[129]

Regulatory actions can sometimes increase the devastating effects of natural disasters,[130] as is the case with the federal actions contributing to the effects of rising sea levels in the Everglades.[131] Because natural disasters are undoubtedly not the fault of the government, it is unclear whether the Takings Clause can be successfully invoked in these situations.

2. The Takings Clause and Hurricane Katrina

A good example of the uncertainty in the application of the Takings Clause to situations involving natural disasters is found in the takings claims that arose after the devastating effects of Hurricane Katrina.

The federal government did not, of course, cause Hurricane Katrina. It can be argued, however, that the actions of the federal government—particularly the ACOE —exacerbated the effects of the hurricane, leading to catastrophic flooding and property damage. The City of New Orleans lies below sea level and is mostly surrounded by water, making the area especially vulnerable to flooding.[132] Levees and drainage canals built by the ACOE to prevent flooding were not up to the task in the face of a Category 5 hurricane.[133] An outlet into the Gulf of Mexico (the "MR-GO") built by the ACOE to connect the Port of New Orleans with the Mississippi River led to increased development in areas that were once natural wetlands.[134] The widespread loss of wetlands contributed to the devastation caused by Katrina.[135] In 2004, the year before Katrina struck, the ACOE acknowledged that there were "serious ecological problems" in New Orleans; however, solutions were not forthcoming.[136] The results were tragic.[137]

Because the flooding was caused, in part, by the loss of wetlands and inadequacies of the flood management and control systems

129. *Penn Central*, 438 U.S. at 124.

130. *See* James Wilkins, *Is Sea Level Rise "Foreseeable"? Does it Matter?*, 26 Fla. Stat. U.J. Land Use & Envtl. L. 437, 490 (2011).

131.

132. St. Bernard Par. v. United States, 88 Fed. Cl. 528, 531 (2009).

133. *Id.* at 536.

134. *Id.* at 533.

135. *Id.* at 550.

136. *St. Bernard Par.*, 88 Fed. Cl. at 540.

137. *Id.*

built by the federal government, property owners in flooded areas sought compensation under the Takings Clause. The results in the ensuing litigation varied.

In *St. Bernard Parish v. United States*, both public and private property owners sued the United States alleging that the ACOE's construction, operation, and maintenance of the MR-GO caused severe flooding on their property after the hurricane, and intermittent recurring flooding thereafter, and that they were thereby owed just compensation.[138] The court held in this case that the property owners had sufficiently alleged a takings claim.[139]

Conversely, in another post-Katrina takings case, the court held that property owners' claim that the government's failure to adequately design, build, and maintain levees in New Orleans before and after Hurricane Katrina did not constitute a taking.[140] The court explained that the property damage was the result of a storm surge and was not the "direct, natural, or probable result of the government's construction or maintenance of the . . . flood protection system" maintained by the ACOE.[141] Thus, the court held, no compensation was required.[142]

In sum, it is unclear whether the Takings Clause can be an effective tool in compensating the Miccosukee Tribe from the imminent effects of climate change, as evidenced by the inconsistent outcomes in the takings cases from Hurricane Katrina.

B. The Federal Indian Trust Responsibility Doctrine

Native Americans are not limited to property protections provided in the Constitution, however. Due to the United States' complicated and tumultuous history with the American Indian populations, a unique judicial doctrine has been developed which recognizes that the federal government must operate under obligations to protect Native Americans, including obligations to protect the Native American right to occupy the lands on which they reside.

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138. *St. Bernard Par.*, 88 Fed. Cl. at 540.
139. *Id.* at 557.
140. Nicholson v. United States, 77 Fed. Cl. 605, 624 (2007).
141. *Id.* at 617.
142. *Id.* at 623-24.

1. Origins of the Doctrine

The Federal Indian Trust Responsibility Doctrine ("Indian Trust Doctrine") "is one of the primary cornerstones of federal Indian law,"[143] and dates back to as early as 1787, when Congress determined that "[t]he utmost good faith shall always be observed towards the Indians; their lands and property shall never be taken from them without their consent; and, in their property, rights, and liberty, they shall never be invaded or disturbed."[144] Cases involving the Indian Trust Doctrine establish the federal government's moral and legal obligations toward the native peoples of this country.

The origins of the Indian Trust Doctrine can be traced back to early American Indian policies which precipitated the large-scale cessions of Indian land to the federal government.[145] In most instances, the Indian populations simply abandoned their native lands to the federal government in exchange for promises that they could continue their way of life elsewhere free from intrusions from American society.[146] Nearly all of the native people remaining in the United States today suffer from the resulting loss of their native lands and resources.[147] This loss—imposed on the Native Americans as a result of policies of the federal government—gave rise to the Indian Trust Doctrine, which identifies the federal government's duty to protect tribal lands, resources, and the way of life of American Indians.[148]

2. Recent Jurisprudence

An essential component of the doctrine is the federal duty to protect American Indian's tribal lands. The connection between land and the federal duties established by the Indian Trust Doctrine is found in almost every judicial opinion that addresses the doctrine.

In two opinions, decided in 1831 and 1832, the U.S. Supreme Court, through John Marshall, addressed the land rights of the Chero-

143. Mary Christina Wood, *Fulfilling the Executive's Trust Responsibility Toward the Native Nations on Environmental Issues: A Partial Critique of the Clinton Administration's Promises and Performance*, 25 ENVTL. L. 733, 742 (1995) (internal quotation marks omitted) [*hereinafter Fulfilling the Executive's Trust Responsibility*].

144. Northwest Ordinance § 7, Act of Congress, July 13, 1787, U.S. REV. STAT. 13 (2d ed. 1878).

145. *The Promise of Native Sovereignty*, *supra* note 15, at 1495-96.

146. *Id.*

147. *Fulfilling the Executive's Trust Responsibility*, *supra* note 143, at 742.

148. *The Promise of Native Sovereignty*, *supra* note 15, at 1496.

kee Indians in Georgia.[149] The Court determined, for the first time, that "Indians are acknowledged to have an unquestionable, and heretofore an unquestioned right to the lands they occupy . . ."[150] When tribes were relocated after ceding their native lands to the federal government, they did not acquire their new lands in the traditional "American Way" of property acquisition. In other words, they did not acquire fee simple title to the land to which they were moved.[151] Marshall's decisions were significant because they recognized that the Cherokee Indians had property rights and protections even without fee simple title.[152]

Another noteworthy opinion dealing with the Indian Trust Doctrine was issued in 1935. In *United States v. Creek Nation*, the Supreme Court held that the federal government was under a duty not to "give the tribal lands to others, or . . . appropriate them to its own purposes, without rendering . . . just compensation . . ."[153] While the exact duties and limitations under the doctrine are still debatable,[154] it is undeniable that the judiciary has recognized a fiduciary duty to protect the tribal lands of federally recognized American Indian tribes.

The duty of tribal land protection was first formulated to protect tribal lands from the intrusion of white settlers.[155] Today, however, federal protection is increasingly important to protect tribal lands from environmental threats originating from industries, development, and the policies of the federal government.[156] In response, the Indian Trust Doctrine has been used to challenge federal agency actions that impact the environmental conditions of tribal lands.[157] The muddled line of such cases leaves an unclear picture about the extent to which American Indians can rely upon the Indian Trust Doctrine for protection of tribal lands against environmental degradation.

In some instances, courts have ruled that the Indian Trust Doctrine provides broad protections of environmental quality for tribal

149. *See* Cherokee Nation v. Georgia, 30 U.S. 15, 17 (1831); Worcester v. Georgia, 31 U.S. 536, 560 (1832).

150. *See Cherokee Nation*, 30 U.S. at 17.

151. Yvonne Mattson, *Civil Regulatory Jurisdiction over Fee Simple Tribal Lands: Why Congress Is Not Acting Trustworthy*, 27 SEATTLE U. L. REV. 1063, 1082 (2004) (describing the varying forms of tribal property).

152. *See Cherokee Nation*, 30 U.S. at 15, 17 (1831); Chambers, *supra* note 113, at 1218-19 ("An overriding legal consequence of [Cherokee Nation] was to integrate Indian occupancy and ownership of land into the system of American land tenure.").

153. United States v. Creek Nation, 295 U.S. 105, 110 (1935).

154. *See* Chambers, *supra* note 113, at 1246-48.

155. *The Promise of Native Sovereignty*, *supra* note 15, at 1505.

156. *See Protecting Tribal Lands Through Injunctive Relief*, *supra* note 16, at 362.

157. *Id.*

lands and resources. For example, in *Pyramid Lake Paiute Tribe v. Morton,* the United States District Court for the District of Columbia held that the Secretary of the Interior could not obstruct water in the Truckee River because the fiduciary duties of the Indian Trust Doctrine obligated him to protect the Tribe's fishery interests in Pyramid Lake.[158] Also, in *Northern Cheyenne Tribe v. Hodel,* the Ninth Circuit Court of Appeals halted the leasing of federal lands for coal development outside of Cheyenne tribal lands because such activity would have an adverse environmental, economic, and social effect on the tribe.[159] This case is important because it recognized that the Indian Trust Doctrine extends to actions that the federal government takes off a reservation but which still uniquely impact tribal property.[160] Similarly, in *Klamath Tribes v. United States,* the Klamath Tribe was successful in halting timber sales by the U.S. Forest Service on forest lands that support deer herds protected by a tribal treaty.[161] In that case, the district court of Oregon ruled that "the federal government has a substantive duty to protect to the fullest extent possible, the Tribe's treaty rights, and the resources on which those rights depend."[162]

Federal agencies themselves have at times adopted standards to protect Indian interests and the courts have upheld such agency standards.[163] For example, in *Northwest Sea Farms v. U.S. Army Corps of Engineers,* a federal district court upheld the Army Corps of Engineers' denial of a permit for a fish farm because the permit would negatively impact the Lummi Nation's fishing resources.[164] The Army Corps of Engineers relied on the language of Section 10 of the Rivers and Harbors Act,[165] which allows the Corps to deny a permit if it conflicts with public interests.[166] The district court upheld this interpretation, holding that "it is the government's, and subsequently the [Army Corps of Engineers'], responsibility to ensure that Indian

158. Pyramid Lake Paiute Tribe of Indians v. Morton, 354 F. Supp. 252, 256 (D.D.C. 1972).

159. N. Cheyenne Tribe v. Hodel, 851 F.2d 1152, 1158 (9th Cir. 1988).

160. *Protecting Tribal Lands Through Injunctive Relief, supra* note 16, at 362.

161. Tribes v. United States, No. 96–381–HA, 1996 WL 924509, at *8 (D. Or. Oct. 2, 1996).

162. *Id.* at *8 (internal quotations marks omitted).

163. *Protecting Tribal Lands Through Injunctive Relief, supra* note 16, at 362.

164. Nw. Sea Farms, Inc. v. U.S. Army Corps of Eng'r, 931 F. Supp. 1515, 1522 (W.D. Wash. 1996).

165. 33 U.S.C. § 403 (2000).

166. *Nw. Sea Farms, Inc.*, 931 F. Supp. at 1519.

treaty rights are given full effect."[167] Also, in *Parravano v. Babbit,* the Ninth Circuit Court of Appeals upheld an emergency regulation attempting to reduce non-Indian fishing in order to protect the fishing rights of the tribe.[168] The court explained that "the Tribes' federally reserved fishing rights are accompanied by a corresponding duty on the part of the government to preserve those rights."[169]

Conversely, other decisions appear to limit the scope of the Indian Trust Doctrine by requiring a statute or other source of express law to support a trust claim for environmental protection.[170] The first judicial decision to limit the Indian Trust Doctrine in this way was *North Slope Borough v. Andrus.*[171] In this case, the Inupiat people of Alaska attempted to halt federal oil leasing in the Beaufort Sea because it threatened the bowhead whale population that the tribe hunted as part of its cultural heritage and identity.[172] The district court held that "[a] trust responsibility can only arise from a statute, treaty, or executive order . . . [and] that the United States bore no fiduciary responsibility to Native Americans under a statute which contained no specific provisions in the terms of the statute."[173]

Although the district court's opinion in *North Slope* has been labeled a "judicial misstep," other courts have since limited the Indian Trust Doctrine in a similar manner.[174] In 1998, the Morongo Band of Mission Indians brought suit against the Federal Aviation Administration for placing a flight path for the Los Angeles airport directly over the reservations the tribe considered sacred, and where they performed traditional cultural and spiritual ceremonies.[175] The Ninth Circuit, in applying the reasoning from *North Slope,* concluded that "unless there is a specific duty that has been placed on the government with respect to Indians, [the trust] responsibility is discharged by the agency's compliance with general regulations and statutes not specifically aimed at protecting Indian tribes."[176]

More pertinent here, the district court of the Southern District of Florida has applied this limiting application of the Indian Trust Doctrine in a suit brought by the Miccosukee Tribe. In *Miccosukee Tribe of*

167. *Nw. Sea Farms, Inc.*, 931 F. Supp. at 1520.
168. Parravano v. Babbit, 70 F.3d 539, 547 (9th Cir. 1995).
169. *Id.*
170. *Protecting Tribal Lands Through Injunctive Relief, supra* note 16, at 365.
171. N. Slope Borough v. Andrus , 642 F.2d 589 (D.C. Cir. 1980).
172. *Id.* at 611.
173. *Id.*
174. *Protecting Tribal Lands Through Injunctive Relief, supra* note 16, at 366.
175. Morongo Band of Mission Indians v. F.A.A., 161 F.3d 569, 572 (9th Cir. 1998).
176. *Id.* at 574.

Indians of Florida v. United States, the Miccosukee Tribe sued the United States Fish and Wildlife Service ("FWS") and others, claiming that the water management decisions of the ACOE damaged the habitat of the Everglades Snail Kite.[177] The Tribe argued, in part, that the Biological Opinion issued by the FWS permitted the destruction of Everglades Snail Kite habitat and that such activity breached the Indian Trust Doctrine.[178] The district court dismissed the tribe's claim, explaining that "despite the general trust obligation of the United States to Native Americans, the government assumes no specific duties to Indian tribes beyond those found in applicable statutes, regulations, treaties, or other agreements."[179]

C. Property Protection for American Indian Tribes

Indian tribes are unique landowners. Native Americans lived and used the land long before the existence of the Constitution and its protections of property. Despite their historical ties with the land, it has been a long standing policy of the federal government, as acknowledged by the Supreme Court, that fee title to the lands originally occupied by the Native American people became vested in the sovereignty of the United States after European settlement.[180] Nonetheless, the United States has recognized that American Indians have a right to the lands upon which they reside, sometimes referred to as "Indian title" or "aboriginal Indian title."[181] This right, however, has often been interpreted as a "right of occupancy" of tribal lands.[182] Today, even though it is widely accepted that that Indians have an unquestioned right to the lands upon which they live,[183] the notion that the Indians do not own fee simple title in their lands translates into a system in which Native Americans merely have the right to occupy the lands on

177. Miccosukee Tribe of Indians of Fla. v. United States, 430 F. Supp. 2d 1328, 1336 (S.D. Fla. 2006).

178. *Id.* at 1330.

179. Miccosukee Tribe of Indians v. United States, 980 F. Supp. 448, 461 (S.D. Fla. 1997).

180. *See e.g.*, Oneida Indian Nation of N. Y. State v. Oneida Cty., N. Y., 414 U.S. 661, 667 (1974) ("It very early became accepted doctrine in this Court that although fee title to the lands occupied by Indians when the colonists arrived became vested in the sovereign—first the discovering European nation and later the original States and the United States—a right of occupancy in the Indian tribes was nevertheless recognized.").

181. United States v. Newmont USA Ltd., 504 F. Supp. 2d 1050, 1062 (E.D. Wash. 2007).

182. *Id.*

183. *See Cherokee Nation,* 30 U.S. 1, 2 (1831); *see also supra* Section II.B for discussion of obligations established under the Federal Indian Trust Responsibility Doctrine.

which they reside, often making traditional American property protections unavailable.[184]

After the major Indian relocation efforts of the 1800's,[185] the American Indian tribes were located on approximately 300 reservations established by treaties between the tribes and the federal government.[186] These treaties were formed during times of great hostility towards the native people of this country, and offered what appeared to be a chance for peace and freedom from continued American intrusion.[187] Many of these Indian treaties, however, were considered to be the result of government coercion and resulted in the dispossession of huge populations of Native Americans and the transfer of millions of acres of Indian land to federal ownership.[188] Moreover, early American jurisprudence established that the federal government was empowered to repudiate its Indian treaties if they conflicted with federal interests.[189] As a result, many of the American obligations established under these Indian treaties were not met because it was determined that they conflicted with national interests.[190]

Today, as a result of the Indian land cession treaties, most of the Indian reservations are generally designated as one or more of the following types of land tenure: "(1) tribally owned land held in trust by the federal government; (2) allotted lands owned by individual Indians but held in trust by the federal government; and (3) parcels of property owned in fee simple, usually by non-Indians."[191] The result of these

184. Michael J. Kaplan, *Proof and Extinguishment of Aboriginal Title to Indian Lands*, 41 A.L.R. FED. 425, 2b (1979) ("But this aboriginal Indian interest simply constitutes permission from the whites to occupy the land, and means mere possession not specifically recognized as ownership by Congress.").

185. For information about federal efforts to relocate Native Americans in the 1800's, *see* Grunwald, *supra* note 2, at 35, and the corresponding text.

186. Sherry Hutt, *If Geronimo Was Jewish: Equal Protection and the Cultural Property Rights of Native Americans*, 24 N. ILL. U.L. REV. 527, 534 (2004).

187. *Id.*

188. Raymond Cross, *Sovereign Bargains, Indian Takings, and the Preservation of Indian Country in the Twenty-First Century Lift Your Weapons. Here Is the One That Resists Intentions*, 40 ARIZ. L. REV. 425, 427-28 (1998) ("Spurious land cession agreements and coerced Indian land transfers in the mid-to-late nineteenth century were devastating for the Indian peoples: they today retain only some fifty-seven million acres of their lands that once stretched from the Atlantic Seaboard to the Pacific Coast.").

189. The Lone Wolf doctrine permits the federal government to abrogate federal Indian treaties or agreements if those agreements conflict with an overriding national interest or are no longer deemed in the best interest of the affected Indian people. Cross, *supra* note 188, at 434 n. 13; *see also* Nell Jessup Newton, *The Judicial Role in Fifth Amendment Taking of Indian Land: An Analysis of the Sioux Nation Rule*, 61 OR. L. REV. 245, 254-55 (1982).

190. Lone Wolf v. Hitchcock, 187 U.S. 553, 565 (1903) (holding that "tribal lands are subject to Congress' power to control and manage the tribe's affairs").

191. *The Promise of Native Sovereignty*, *supra* note 15, at 1477.

unique land tenure rights is that traditional property protections are often lacking for Native American tribes.

Early American jurisprudence perpetuated the unfair notion that neither common law property rights nor Constitutional property protections applied to Indian land holdings. In 1823, the Supreme Court determined that American Indian tribes had no power to transfer title to lands because they had no legally enforceable rights to the land.[192] Although much progress has been made in acknowledging Native Americans' rights to property, an adherence to the historical notion that Native Americans do not enjoy traditional property protections exists today.[193] The lack of traditional, constitutional property protections for American Indian tribes is exemplified in the case, *Tee-Hit-Ton Indians v. United States*.[194]

In *Tee-Hit-Ton,* a clan of the Tlingit Tribe brought a claim under the Fifth Amendment Takings Clause against the United States for timber logging the government had conducted on land on which the Tribe resided.[195] Before *Tee-Hit-Ton*, the Supreme Court had consistently held that Congress had broad authority to abrogate claims of land rights of Native American Tribes.[196] The issue in this case was not whether Congress had the right to remove timber from the Tribe's lands, but rather whether the Tribe had a constitutional right to compensation.[197] After analyzing the history of American Indian land rights, the Supreme Court determined that no previous case had held that a taking of Indian land required compensation.[198] The Court thereby held that "Indian occupancy, not specifically recognized as ownership by action authorized by Congress, may be extinguished by the Government without compensation."[199] The Court reasoned:

> In the light of the history of Indian relations in this Nation, no other course would meet the problem of the growth of the United States except to make congressional contributions for Indian lands

192. Johnson v. M'Intosh, 21 U.S. 543, 573-75 (1823).

193. Robert T. Coulter, *Native Land, Regardless of the Title Under Which it is Held, is Entitled to Full Constitutional Protection,* NATIVE LAND LAW § 3:3 (2014).

194. Tee-Hit-Ton Indians v. United States, 348 U.S. 272 (1955).

195. *Id.* at 273.

196. *See, e.g.*, United States v. Santa Fe Pac. R.R. Co., 314 U.S. 339, 347 (1941) ("[T]he exclusive right of the United States to extinguish Indian title has never been doubted. And whether it be done by treaty, by the sword, by purchase, by the exercise of complete dominion adverse to the right of occupancy, or otherwise, its justness is not open to inquiry in the courts.") (internal quotation marks omitted).

197. *See* Earl M. Maltz, *Brown and Tee-Hit-Ton*, 29 AM. INDIAN L. REV. 75, 82 (2004).

198. *Tee-Hit-Ton*, 348 U.S. at 281 ("No case in this Court has ever held that taking of Indian title or use by Congress required compensation.").

199. *Id.* at 288-89.

> rather than to subject the Government to an obligation to pay value when taken with interest to the date of payment. Our conclusion does not uphold harshness as against tenderness toward the Indians, but it leaves with Congress, where it belongs, the policy of Indian gratuities for the termination of Indian occupancy of Government-owned land rather than making compensation for its value a rigid constitutional principle.[200]

Under this judicially created rule, "only Native lands held by *recognized title* are constitutionally protected from governmental taking."[201]

This controversial holding has limited the property rights of American Indian tribes by narrowing the constitutional protections afforded to Native American Tribes with unique land rights. The idea that Indian title is "not a property right but amounts to a right of occupancy which the sovereign grants and protects against intrusion by third parties . . .,"[202] continues to influence American jurisprudence today.[203] For example, in 2007, a federal district court relied on the holding in *Tee-Hit-Ton* to support its decision that the United States holds title to the Spokane Indian Reservation due to its "conquest" of the Tribe.[204] Also, in the case *State v. Elliot,* the Supreme Court of Vermont cited *Tee-Hit-Ton* when it decided that the title of the Western Abenaki Tribe had been extinguished by "the increasing weight of history."[205] Thus, it is clear that the limiting effect of the *Tee-Hit-Ton* holding persists today.

III. Proposed Legal Solutions Aimed at Protecting the Tribal Lands of the Miccosukee Tribe

Sadly, in practice, neither the Takings Clause nor the Federal Indian Trust Responsibility Doctrine provides enforceable legal standards that are likely to either prevent the harmful effects of climate change or to compensate the Miccosukee Tribe for the degradation of their tribal lands. Even though it is clear that the regulations imposed

200. *Tee-Hit-Ton*, 348 U.S. at 290-91.

201. Indian Land Tenure Found., *Native Land Law: Can Native American People Find Justice in the U.S. Legal System?*, Indian Land Tenure Found., at 4, https://www.iltf.org/sites/default/files/native_land_law_2010.pdf (last visited Jan. 22, 2018); *see generally Tee-Hit-Ton*, 348 U.S. 272.

202. *See Tee-Hit-Ton*, 348 U.S. at 279.

203. *See, e.g.*, Karuk Tribe of Cal. v. Ammon, 209 F.3d 1366 (Fed. Cir. 2000) (relying on *Tee-Hit-Ton* to deny a takings claim brought by the Yurok and Karuk Tribes because the Tribes' interest in their reservation was not recognized as ownership by Congress).

204. United States v. Newmont USA Ltd., 504 F. Supp. 2d 1050, 1062 (E.D. Wash. 2007).

205. State v. Elliott, 616 A.2d 210, 218 (Vt. 1992).

by the federal government have significantly interfered with the Miccosukee Tribe's tribal lands, there are legal hurdles that limit the availability of takings claims to the Miccosukee Tribe. This section explores the inadequacies of the existing legal frameworks at protecting the Tribe from rapidly rising seas, and proposes new frameworks aimed at protecting the lands of the Miccosukee Tribe.

A. Inadequacies of Existing Legal Frameworks

1. Takings Clause Applicability

The federal government's flood management and flood control policies that have so severely affected the health of the Everglades were designed to protect and to serve the ever-increasing non-Tribe population of South Florida. As explained by the Supreme Court, the purpose of the Takings Clause is to prevent the government from "forcing some people alone to bear public burdens which, in all fairness and justice, should be borne by the public as a whole."[206] Arguably, this is exactly what the Miccosukee Tribe is being forced to do—bear the burden of the environmental degradation of their tribal lands for no other purpose than for the benefit of the majority of society. The Tribe has suffered a regulatory loss to their land—i.e., a "taking"—that has allowed the public to benefit, and, under the Takings Clause, that "taking" *should* be compensated.

In one of the earlier takings cases, one that involved government-caused flooding to private property, the Supreme Court explained that "where real estate is actually invaded by superinduced additions of water, earth, sand, or other material, or by having any artificial structure placed on it, so as to effectually destroy or impair its usefulness, it is a taking, within the meaning of the Constitution . . . ."[207] If this language is given its clear and obvious meaning, then any government-caused invasion of land by "water, earth, sand, or *other material*" that would "destroy or impair its usefulness," is considered a taking.[208]

The intrusion of saltwater into the Everglades has been occurring since the early days of government reclamation activities. The draining and development of the freshwater marshes minimizes the freshwater in the Florida aquifer, allowing room for the intrusion of

206. Armstrong v. United States, 364 U.S. 40, 49 (1960).
207. Pumpelly v. Green Bay Co., 80 U.S. 166, 181 (1871).
208. *Id.* (emphasis added).

saltwater.[209] As the ecosystem has become increasingly salty, its ability to filter additional saltwater is reduced, allowing for even higher concentrations of salinity. The saltwater—imposed into the freshwater Everglades through the management practices of the federal government—is a "superinduced addition[ ] of . . . other material."[210] The effect of that saltwater intrusion severely degrades the environmental health of the ecosystem by diminishing water quality, minimizing habitat for wildlife, and altering the hydrology of the ecosystem with which the Tribe's way of life is so intricately intertwined. Undoubtedly, the intrusion of saltwater into the Everglades "impair[s] its usefulness" to the Tribe by impairing the Tribe's ability to hunt, live and survive on the land. Because, through its policies and regulations, the government has caused a "superinduced addition[ ] of . . . other material" into the Everglades, thereby "impair[ing] its usefulness" to the Tribe, the Takings Clause *should* allow for compensation.[211]

That compensation under the Takings Clause *should* be allowed, does not mean that it will be allowed. In fact, given the Tribe's unique land tenure rights, a successful claim under existing takings precedent appears unlikely. As the holding in *Tee-Hit-Ton* indicates, constitutional protection for Indian Tribes is largely limited to those Tribes having an affirmative grant of permanent "title" from Congress.[212] The effect of *Tee-Hit-Ton* and its progeny thus undermines the ability of Native American Tribes, including the Miccosukee Tribe, to seek compensation for, and protection of, their tribal lands under the Fifth Amendment.

2. Federal Indian Trust Responsibility Doctrine Applicability

Just as the Takings Clause is an uncertain means for protecting Indian lands from government-caused environmental encroachments or "takings," so too is the Indian Trust Doctrine. On the one hand, the doctrine has been used to provide broad environmental protections to tribes, even providing a mechanism to halt federal actions that threaten tribal lands and resources.[213] The courts in the *Pyramid Lake, Northern Cheyenne, Northwest Sea Farms, Klamath,* and *Parravano* cases all applied the doctrine to impose trust responsibilities on

209. *See supra* Part I.B. for discussion of federal reclamation activities and the associated effects on the salinity levels of the Everglades.

210. *Pumpelly*, 80 U.S. at 181.

211. *See id.*

212. *See supra* Part II.C. for discussion of the *Tee-Hit-Ton* holding.

213. *See supra* Part II.B.2, notes 159-169 and accompanying text.

federal agencies to protect tribes from environmental threats.[214] On the other hand, the *North Slope*[215] decision—and the similar decisions that followed[216]—threaten to weaken modern applications of the doctrine. By concluding that a governmental agency fulfils its tribal obligations under the doctrine if the agency's actions conform to applicable statutory law, the court in *North Slope* essentially conflated Indian trust standards and statutory standards, thereby undermining the very purpose of the Indian Trust doctrine.[217]

In is undeniable that the Indian Trust Doctrine was developed to provide a vulnerable community with additional protections not already provided by statutory law.[218] At the very core of the doctrine is the understanding that the history and needs of the Indian people are unique and that the federal government owes additional duties to them to ensure the survival of their lands, their resources, and their way of life. By merging Indian trust standards into statutory standards, the *North Slope* court rendered the Indian Trust Doctrine all but meaningless. Rather than recognizing the *unique* obligations imposed by the government by the doctrine, the *North Slope* court determined that the needs of the Indian people can be met under the same statutory standards that serve the majority populations.[219] This determination is contrary to the very purpose of the doctrine.[220]

Unfortunately, the effect of these conflicting lines of decisions is that the federal government's trust obligations towards Indian tribes, including the Miccosukee Tribe, remain moral rather than legally binding.[221] Nonetheless, the Indian Trust Doctrine remains an important legal framework for the continued protection of tribal lands, resources, and identity. There is consistent agreement that, under the

214. *See* Pyramid Lake Paiute Tribe of Indians v. Morton, 354 F. Supp. 252, 256 (D.D.C. 1972); N. Cheyenne Tribe v. Hodel, 851 F.2d 1152, 1158 (9th Cir. 1988); Tribes v. United States, 96-381-HA, 1996 WL 924509 (D. Or. Oct. 2, 1996).; and Parravano v. Babbitt, 70 F.3d 539, 547 (9th Cir. 1995), respectively.

215. N. Slope Borough v. Anrus, 642 F.2d 589 (D.C. Cir. 1980); *see supra* Section II.B.2., note 171 and accompanying text.

216. *See supra* Part II.B.2., notes 174-66 and accompanying text.

217. *Protecting Tribal Lands Through Injunctive Relief*, *supra* note 16, at 363.

218. *See supra* Part II.B.1., notes 145-38 and accompanying text.

219. *See N. Slope Borough*, 642 F.2d 529.

220. *See* Curtis G. Berkey, *Rethinking the Role of the Federal Trust Responsibility in Protecting Indian Land and Resources*, 83 DENV. U. L. REV. 1069, 1081 (2006) (making the point that the Indian Trust Doctrine is based on "the fundamental principle that federal law should honor and protect the unique relationships of Indian tribes to their land and natural environment. That surely was the premise of the trust doctrine originally and it should be the basis of future efforts to give it genuine legal meaning today").

221. Yvonne Mattson, *Civil Regulatory Jurisdiction over Fee Simple Tribal Lands: Why Congress Is Not Acting Trustworthy*, 27 SEATTLE U. L. REV. 1063, 1074 (2004).

doctrine, an Indian tribe's occupancy on tribal lands provides that tribe with a property interest in the land—a property interest that the federal government, at the very least, has a moral obligation to protect from intrusion.

B. New Standard for Constitutional Protections

Neither the Takings Clause nor the Indian Trust Doctrine, alone, has consistently provided protection to American Indians whose land has been "taken" by the federal government. The courts' application of both frameworks has been inconsistent. On the one hand, it is well recognized that the federal government has an obligation—whether moral or legal—to protect American Indians and the lands on which they reside.[222] On the other hand, constitutional property protections have not been fully extended to American Indian Tribes; protections for Indian tribes have been limited based on the Indians' lack of traditional "title" to their lands.

The Takings Clause, in particular, has typically been used to protect the interests of traditional property owners, owners who have "title" to their lands. The *Penn Central* standards employed in a takings analysis focus on factors important to traditional private property owners—factors such as the economic impact of the regulatory action and the "investment-backed expectations" left unrealized by the federal regulation.[223] While these economic factors will often indicate when the government's action constitutes a "taking" of traditional private property, they are not broad enough to protect the unique land interests of Indian Tribes. Because a tribe's interest in land often includes a spiritual and cultural component, a strict economic evaluation will fail to protect, or even acknowledge, the unique land interests possessed by the tribe, even when the tribe has "title" to the land. To provide true protection for Indians, Takings Clause jurisprudence needs to take into account the uniqueness of the Indians' land interests.[224]

The Indian Trust Doctrine has likewise been limited in the protections it affords to Indian tribes. To be sure, the doctrine recognizes that the government has a moral obligation to protect Indians and their lands, and it has been invoked to enjoin transfers of Indian

222. *See supra* Part II.B.

223. Penn Cent. Transp. Co. v. City of New York, 438 U.S. 104, 127 (1978).

224. *See supra* Part II.C.

land,[225] forbid trespass on Indian lands,[226] protect tribal rights of occupancy,[227] and defend tribal forest lands[228] and resources.[229] The doctrine does not, however, create "legal" rights and has not been invoked to provide Indian Tribes with comprehensive constitutional protections; protections they both need and deserve.[230]

To rectify the discrepancies and limitations of the existing frameworks, a new constitutional standard is needed to gain true land protection for American Indian Tribes. The Fifth Amendment to the United States Constitution provides that, "private property [shall not] be taken for public use, without just compensation."[231] The amendment does not define "private property," and does not provide that only titled private property owners are protected from governmental takings.[232] The takings jurisprudence, however, has been molded to "fit" just such a population of titled private property owners. For American Indians, that mold often does not fit. For Indians, courts need to view the Takings Clause through a different lens, recognizing that American Indians are deserving of Fifth Amendment protection based not only on their unique history and land rights, but also on the government's well-recognized moral obligation to protect Indian lands, resources, and their way of life.[233] Without a true "title" to the land, Indian Tribes often have possessory interests dating back to the time of congressionally backed and oft-broken treaties, and those interests should be recognized within the context of the Fifth Amendment. While the *Penn Central* economic impact/investment-backed expectations standard works for titled landowners, a different standard should take its place for Indians whose interest in the land may be more spiritual and cultural than economic. The Indians' land interests are not less worthy of Fifth Amendment protection simply because they are

225. *See* Lane v. Pueblo of Santa Rosa, 249 U.S. 110, 113-14 (1919) (enjoining Secretary of Interior from disposing of tribal lands under public land laws).

226. *See* Edwardsen v. Morton, 369 F. Supp. 1359, 1371 (D.D.C. 1973).

227. *See* Oneida Cty., N.Y. v. Oneida Indian Nation of N. Y., 470 U.S. 226, 229 (1985).

228. *See* White Mountain Apache Tribe of Ariz. v. United States, 11 Cl. Ct. 614, 672 (1987).

229. *See* N. Arapahoe Tribe v. Hodel, 808 F.2d 741, 750 (10th Cir. 1987).

230. *See generally* Robert N. Clinton, *The Rights of Indigenous Peoples as Collective Group Rights*, 32 ARIZ. L. REV. 739, 740-43, 747 (1990) (discussing the discrepancies between tribal rights and the American notion of individual freedom).

231. U.S. CONST. amend. V.

232. *See* U.S. CONST. amend. V.

233. *See The Promise of Native Sovereignty*, *supra* note 15, at 1508–09 (summarizing the government's fiduciary duties towards Indian Tribes).

more esoteric.[234] The Indian Trust Doctrine recognizes the obligations that the federal government owes to the Indians, but the doctrine does not have the persuasive force of the United States Constitution. If the courts construing and applying the Takings Clause would do so through the prism of the Indian Trust Doctrine, then perhaps Indian Tribes could count on the constitutional protection that they deserve.

C. Using Blue Carbon Banking for Taking Compensation

While a new constitutional standard for American Indian Tribes would provide more opportunities for protection—and, indeed, would make compensation to the Miccosukee Tribe for the many years of government-caused degradation of their tribal lands more likely—it will still do little to protect the tribe from the increasing threat of rising sea levels. Further, the unprecedented nature of the effects of climate change requires a reexamination of whether the government should be held accountable for every "taking" of private property resulting from sea level rise.[235] Because it is estimated that thousands of square miles of land, and even several major cities, are at risk of being submerged with sea water within this century, compensation for every affected landowner is impracticable.[236] A solution for the issues facing the Miccosukee Tribe should not be lost, however, merely because of the severity of the problem. One potential solution may be found in the very resource that the Miccosukee Tribe needs to protect—the Everglades.

Coastal ecosystems have gained increased attention in the international community lately for their carbon sequestration and carbon storage potential.[237] Coastal habitats—including marshes, mangroves, and sea grasses—sequester carbon from the atmosphere and store it in the living biomass and soils.[238] Recent studies have

234. *See* COULTER, *supra* note 193 (recognizing that "under modern takings law, [Indian property] interests [should] quality as compensable").

235. Michael A. Hiatt, *Come Hell or High Water: Reexamining the Takings Clause in A Climate Changed Future*, 18 DUKE ENVTL. L. & POL'Y F. 371, 371 (2008).

236. *Id.* at 371 ("[I]f this act is considered a taking it may impose a significant financial burden on the states to provide adequate compensation, and perhaps even be impracticable given the substantial amounts of land and large number of private property owners threatened by large-scale sea level rise.").

237. Linwood Pendleton et al., *Considering "Coastal Carbon" in Existing U.S. Federal Statutes and Policies*, NICHOLAS INST. FOR ENVTL. POL'Y SOLUTIONS, July 2012, at 3, https://nicholasinstitute.duke.edu/sites/default/files/publications/considering-coastal-carbon-in-existing-u.s.-federal-statues-and-policies-paper.pdf.

238. *Id.*

quantified the magnitude of the "Blue Carbon"[239] stored in these ecosystems, estimating that coastal habitats are responsible for capturing and storing up to nearly seventy percent of the carbon permanently "stored in the marine realm."[240] Thus, coastal wetlands are now being recognized as essential tools in the efforts to reduce threats to climate from the release of greenhouse gases ("GHGs").[241] Nonetheless, coastal wetlands are being destroyed faster than any other ecosystem in the world, with large portions expected to be lost within a few decades.[242] Based on the newly appreciated importance of coastal wetlands, the international community is engaged in a debate on how to best preserve and restore these ecosystems and how to capitalize on their carbon sequestration potential.[243] This section of the article explores whether the carbon sequestered in the Everglades—the largest coastal wetland in North America—can be used to help protect and preserve the tribal lands of the Miccosukee Tribe.

The reservation lands of the Miccosukee Tribe consist of over 270,000 acres within the Everglades ecosystem.[244] Much of this is still functioning wetland habitat, while a portion has been converted into developable uplands.[245] This article proposes that the tribal reservation lands of the Miccosukee Tribe should be permitted as a wetland mitigation bank, which incorporates economic value for the carbon sequestered in the soils and living biomasses. The Tribe's carbon credits could then be sold in the market to developers who need them, as a way of compensating the Tribe for the federally-caused degradation of their tribal lands and concurrently satisfying the obligation established under the Indian Trust Doctrine to protect the Tribe's lands.

Carbon banking programs are nothing new to the international community. In fact, "eight new carbon markets emerged" in the year

239. The carbon sequestered in coastal wetlands is often referred to as Blue Carbon due to its proximity to the ocean.

240. C. Nellmann et al., *Blue Carbon: The Role of Health Oceans in Binding Carbon*, GRID-ARENDAL, 1, 5 (2009), https://gridarendal-website-live.s3.amazonaws.com/production/documents/:s_document/83/original/BlueCarbon_screen.pdf?1483646492.

241. BRIAN C. MURRAY & TIBOR VEGH, INCORPORATING BLUE CARBON AS A MITIGATION ACTION UNDER THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE: TECHNICAL ISSUES TO ADDRESS 1 (2012), https://nicholasinstitute.duke.edu/sites/default/files/publications/blue-carbon-unfccc-paper.pdf.

242. Nellmann, *supra* note 240, at 5-7 (estimating loss of coastal ecosystems to be four times the loss of rainforests).

243. *Id.* at 8 (proposing options for protecting, managing and restoring ocean carbon sinks).

244. *See Reservation Areas*, MICCOSUKEE TRIBE OF FLA. INDIANS, http://www.miccosukee.com/tribe-c/reservation-areas/ (last visited Oct. 8, 2016).

245. *Id.*

2013 and China has added "six new regional cap-and-trade regimes" since the year 2011.[246] Moreover, the United States' hesitation to participate in efforts to find solutions to climate change may be coming to an end, as evidenced by the recent agreement between the Obama administration and China to reduce CO_2 emissions by the year 2030.[247] A number of states are starting to consider carbon trading schemes independently to assist in meeting the latest carbon limits suggested by President Obama.[248] For example, California has joined Quebec in creating the "largest carbon market in North America this year."[249] The point being, carbon markets are becoming increasingly common and there is increasing pressure at both the state level and the national level for the United States to participate in these emerging markets.

Further, there are existing federal and state policies that could be used to support an economic program for Blue Carbon protection in the United States. The federal government and the state of Florida have both recognized the importance of wetland preservation. In 1972, Congress passed the Clean Water Act (CWA) in response to the growing problem of water pollution.[250] Section 404 of the CWA established a program for regulating the discharge of dredge and fill materials into "waters of the United States," which includes certain wetlands considered to have national importance (i.e., interstate wetlands, wetlands which could affect interstate or foreign commerce, and wetlands adjacent to other water of the United States).[251] The basic rationale of Section 404 is that no discharge of dredged or fill material should be permitted if degradation to the nation's waters would occur.[252]

The state of Florida implemented its own regulation of wetlands in 1984 with the Warren S. Henderson Wetlands Protection Act, which contained what was referred to as the Wetlands Resource Permit pro-

246. Steve Zwick, *World Bank Says Carbon Pricing Programs Proliferating In Wake of Failed UN Talks*, ECOSYSTEM MARKETPLACE (May 28, 2014), http://www.ecosystemmarketplace.com/pages/dynamic/article.page.php?page_id=10367.

247. Johnathan R. Nash, *If Not a Historic Agreement, Then a Historic Step—Obama, China and Climate Change*, THE HILL (Nov. 17, 2014 6:00 AM), http://thehill.com/blogs/pundits-blog/energy-environment/224335-if-not-a-historic-agreement-then-a-historic-step-obama.

248. Barney Jopson & Ed Crooks, *US States Consider Carbon Trading Schemes*, FIN. TIMES (June 9, 2014), https://www.ft.com/content/e4356328-ee7c-11e3-95f9-00144feabdc0.

249. Lynn Doan, *States Won't Leave Carbon for California, Quebec*, BLOOMBERG (Sept. 26, 2014 12:35 PM), http://www.bloomberg.com/news/2014-09-25/rggi-chair-says-states-won-t-join-california-quebec.html.

250. *See generally* Clean Water Act of 1977, Pub. L. No. 95-217, 91 Stat. 1566 (codified as amended at 33 U.S.C. §§ 1251-1376 (1982)).

251. *Id.*

252. *Id.*

gram.[253] This program regulated the dredging, filling, and construction activities over "waters of the state," which consisted of contiguous or connected wetland systems.[254] Today, Florida regulates all wetlands (connected and isolated) under the Environmental Resource Permit ("ERP") program.[255] The Florida ERP program operates *in addition* to the federal program under the Clean Water Act. The goal for both the federal and state permit programs is to achieve no net-loss in wetland habitat and functions. To achieve the no net-loss requirement of the wetland regulations, wetland mitigation programs have been implemented both at the federal and state level. The most commonly used (and most preferred) method of mitigation is mitigation banking.[256] As a result, a profitable market has emerged in the banking of wetland ecosystem services.[257] Within the last decade, approximately thirty to fifty mitigation banks have been approved annually, with over 600 federal mitigation banks currently marketing wetland credits.[258] It is now estimated that mitigation banking in the United States generates over $1.5 billion per year.[259]

The current wetland mitigation programs function by evaluating ecosystem assessment, and then translating that assessment value into an economic value.[260] Hydrology, vegetation, location, landscape environment, and wildlife value are all evaluated as part of this assessment.[261] The programs do not, however, incorporate a value for carbon sequestration or storage potential, even though sequestration potential is an important characteristic of wetland function.[262] As a result, inland, forested wetlands are assessed as having a higher economic value than their coastal counterparts.[263] Consequently, wetland mitigation programs (especially in Florida) have encouraged the relocation of wet-

253. Warren S. Henderson Wetlands Protection Act of 1984, FLA. STAT. § 403.913 (1985).

254. *Id.*

255. FLA. STAT. ANN. § 373.4131 (West, 2016).

256. Lynn Scarlett & James Boyd, *Ecosystem Services: Quantification, Policy Applications, and Current Federal Capabilities*, RESOURCES FOR THE FUTURE 1, 55 (2011), http://www.rff.org/files/sharepoint/WorkImages/Download/RFF-DP-11-13.pdf.

257. *Id.* at 52.

258. *Id.*

259. *Mitigation & Conservation Banking in the United States: An Emerging Biodiversity-based Asset Class*, NEW FORESTS, https://www.newforests.com.au/wp-content/uploads/2014/08/201202-MarketOutlookUSMitBanking.pdf (last visited Feb. 20, 2017.

260. Scarlett & Boyd, *supra* note 256, at 9.

261. Pendleton et al., *supra* note 237, at 7-8.

262. *Id.* at 7.

263. *See id.* at 3.

lands to inland areas and allowed for the development of coastal areas, contributing to the destruction of coastal ecosystems.[264]

In principle, wetland mitigation programs provide an excellent opportunity to put a value on Blue Carbon in coastal wetlands.[265] By simply providing for carbon sequestration potential in the evaluation criteria for wetland value, the economic value of coastal wetlands would increase.[266] For example, in Florida, wetland value is measured using the Uniform Mitigation Assessment Method ("UMAM").[267] The UMAM works by establishing a standardized procedure for evaluating wetland function, and considers factors such as community condition, hydrologic connection, uniqueness, location, wildlife utilization, time lag, and mitigation risk.[268] By simply adding criteria for the evaluation of carbon sequestration potential to the UMAM scoring procedures, the economic value of coastal wetlands—which are now acknowledged to sequester more carbon than terrestrial areas—would increase.

Evaluating the carbon sequestration potential of wetland habitats would not only bring increased value to coastal wetland areas, but it would also increase the economic value of degraded wetlands. Currently, wetlands with polluted water, altered hydrology, or invasive species are assigned a lower economic value.[269] In application, this enables the destruction of low functioning wetlands even if their carbon sequestration potential is high. By adding carbon storage potential to wetland assessment evaluations, the value of even low-functioning wetlands would increase, thereby providing additional incentive to preserve, restore, or enhance wetlands considered to have high carbon sequestration potential.

The seemingly simple change of adding carbon storage potential to wetland evaluation criteria could possibly increase the economic value of the tribal lands of the Miccosukee Tribe. As the largest coastal wetland in North America, the carbon storage potential of the Everglades is immense. By placing an economic value on this carbon stored

264. Scarlett & Boyd, *supra* note 256, at 55 ("[I]n Florida, wetland mitigation banking may have stripped wetlands from coastal, densely populated areas and relocated them to rural inland areas.").

265. *See* Pendleton et al., *supra* note 237, at 7 ("[T]he 2008 compensatory mitigation rule provides an opportunity to consider carbon in coastal wetland habitats when determining required compensatory mitigation . . .")

266. *See id.* at 7 (explaining that consideration of carbon sequestration in wetland mitigation evaluations would increase the value of mitigation credits).

267. FLA. ADMIN. CODE ANN. r. 62-345.100 (2005).

268. *Id.*; *see also* Memorandum from Jeff Littlejohn, Deputy Sec'y for Regulatory Programs, Fla. Dep't of Envtl. Prot. (June 15, 2011) https://floridadep.gov/sites/default/files/7.%20Uniform%20Mitigation%20Assessment%20Method_0.pdf.

269. FLA. ADMIN. CODE ANN. r. 62-345 (2016).

in the Everglades, there is even greater incentive not only to preserve what remains of the Everglades, but also to restore the portions of the Everglades that have been degraded due to the policies of the federal government. With greater economic incentive to preserve the Everglades, the Miccosukee Tribe stands a better chance to preserve their tribal lands from the imminent effects of climate change.

Conclusion

The tribal lands of the Miccosukee Tribe—the Everglades—are in peril. The very lands where the Tribe was pushed to by the federal government during the Indian Wars of the 1800's are the same lands that the federal government has drained, converted, and managed into what is now considered the most endangered ecosystem in the country. Now, with sea levels in South Florida rising at unprecedented rates, the cultural survival of the Tribe is at stake.

While the United States Constitution provides that private property will not be taken for public use without just compensation, this constitutional property protection has been withheld from American Indian Tribes due to their unique land tenure rights. Such a limiting interpretation of the Takings Clause is in direct conflict with the federal obligations established under the Federal Indian Trust Responsibility Doctrine, which provides that the federal government is obligated to protect the tribal lands of American Indian Tribes. This article proposes that a new constitutional standard is needed to extend these constitutional protections to American Indian Tribes. By invoking the obligations acknowledged under the Indian Trust Doctrine, the fundamental protections provided by the Constitution can be extended to American Indian Tribes.

More is still needed, however, to protect the Miccosukee Tribe from the threats of rising sea levels. One potential solution may be found in the resource the Tribe needs to protect—the Florida Everglades. This paper proposes that—to both compensate the Tribe for the federal "taking" of their lands and to provide incentive for further protection and restoration of the Everglades—the reservation lands of the Tribe be permitted to function as a wetland mitigation bank under the existing federal and state wetland mitigation programs. By adding evaluation criteria for carbon sequestration potential to the existing ecosystem assessment procedures, the large amount of Blue Carbon stored in the Everglades—the largest coastal wetland in North

America—could provide compensation to the Miccosukee Tribe, while concurrently providing additional incentive for the protection and restoration of the greater Everglades ecosystem.