IOWA'S WETLANDS: HOW AGRICULTURE AND THE ENVIRONMENT CAN BENEFIT FROM PREDICTABLE AND MANAGEABLE CONSERVATION PRACTICES

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I. INTRODUCTION

This Note will analyze Iowa's wetlands, the benefits provided by wetlands, and how regulatory measures to protect wetlands often create confusion and conflict. Throughout the research performed for this Note, many facts became clear: the policies, laws, programs, and regulations, which ultimately work together to protect and restore wetlands, are numerous and often difficult to synthesize. To understand what wetlands are—and the necessary actions required to preserve them—it is vital to discover how society has historically approached the conservation of wetlands and how this relationship has evolved over time. This

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Note will approach the issue by revealing key entities in past and current regulations, with an ultimate focus on the vulnerability of current methods, and recommend improvements to regulations moving forward. Part II explores what wetlands are and how they are defined. Part III discusses the treatment of wetlands within the United States and Iowa. Part IV provides the benefits agriculture and the environment gain through the protection and restoration of wetlands. Part V defines the evolution of policies and regulations affecting wetlands throughout our history. Finally, Part VI considers conflicts and weaknesses of such regulations with recommendations on the future protection of wetlands.

II. WHAT ARE WETLANDS?

The protection of wetlands is fundamentally related to a society's understanding and approach to the environment. In order to understand the importance of wetlands and how the regulation of wetlands evolved with time, it is critical to define what wetlands are. The dictionary describes wetlands as "land or areas (such as marshes or swamps) that are covered often intermittently with shallow water or have soil saturated with moisture."[1] The U.S. Army Corps of Engineers (Army Corps) and the U.S. Environmental Protection Agency (EPA) define wetlands as "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."[2] Wetlands in the United States are classified by four main types: bogs, fens, marshes, and swamps.[3] "Each wetland differs due to variations in soils, landscape, climate, water regime and chemistry, vegetation, and human disturbance."[4] Bogs, generally found in the northern part of the United States, are freshwater wetlands whose only source of water is from rainwater.[5] Bogs are characterized by a growth of evergreen trees and shrubs with a peat deposit as a base.[6] While bogs maintain their source of water from rainwater, fens are

1. *Wetland*, MERRIAM-WEBSTER, https://perma.cc/M9LB-NPTT (archived July 8, 2018).

2. *Section 404 of the Clean Water Act: How Wetlands are Defined and Identified*, EPA, https://perma.cc/9LW6-V7LU (archived July 8, 2018) [hereinafter *Section 404 of the Clean Water Act*].

3. ENVTL. PROT. AGENCY, WETLANDS OVERVIEW (Dec. 2004), https://perma.cc/W5BN-MKDY [hereinafter WETLANDS OVERVIEW].

4. ENVTL. PROT. AGENCY, TYPES OF WETLANDS (Sept. 2001), https://perma.cc/R26C-X5LT [hereinafter TYPES OF WETLANDS].

5. *Id.*

6. *Id.*

groundwater fed wetlands home to grasses, reeds, sedges, and wildflowers.[7] Marshes tend to be periodically saturated or flooded and characterized by the growth of non-woody vegetation adapted to wet soil conditions.[8] Marshes have a number of subtypes including freshwater marshes, wet meadows, wet prairies, and prairie potholes.[9] Prairie potholes are a common formation found across central Iowa, Nebraska, North Dakota, and South Dakota.[10] The prairie pothole formation is the result of pockmarks and depressions left in the ground from glacial activity thousands of years ago.[11] This subtype of marsh forms when snowmelt, rain, and groundwater fill the depressions in the ground.[12] Swamps are the final type of wetlands and occur in fresh or saltwater.[13] Swamps are fed by surface water and generally contain trees and brush.[14]

III. BENEFITS OF WETLANDS

Even with the varying characteristics and numerous types, wetlands cover less than 9% of the earth's surface.[15] In the Des Moines Lobe, wetlands consist of less than 4% of the land.[16] Wetlands in the United States are ecologically diverse by providing habitat for over 1200 species of wetland plants and 10,000 invertebrate species.[17] "Often called 'nurseries of life,' wetlands provide habitat for thousands of species of aquatic and terrestrial plants and animals . . . [m]igrating birds [also] use wetlands to rest and feed during their cross-continental journeys and as nesting sites when they are at home."[18] The undisputed biological significance of wetlands is only one of the many benefits they provide. In addition

7. *Id*.

8. *Id*.

9. *Id*.

10. *See* CORNELIA F. MUTEL, THE EMERALD HORIZON: THE HISTORY OF NATURE IN IOWA 65 (2008); ENVTL. PROT. AGENCY, PRAIRIE POTHOLES**,** https://perma.cc/286B-NJEU (archived Oct. 31, 2018).

11. TYPES OF WETLANDS, *supra* note 4.

12. *Id*.

13. *Id*.

14. *Id*.

15. CHRISTIE VANDERVLIST DAIGNEAULT ET AL., THE IMPORTANCE OF WETLANDS IN ECOSYSTEM SERVICES: WITH SPECIAL ATTENTION ON FLOOD ATTENUATION, CARBON SEQUESTRATION, HYDROGEOLOGY, WATER QUALITY, BIODIVERSITY, AND SOCIAL AND LOCAL VALUES 2 (Apr. 16, 2012), https://perma.cc/W6TL-HYVS.

16. THE IOWA POLICY PROJECT, WETLAND RESTORATION IN IOWA: CHALLENGES AND OPPORTUNITIES 2 (May 2012), https://perma.cc/K6BZ-GMLV.

17. IOWA ASS'N OF NATURALISTS, IOWA WETLANDS 12 (2001), https://perma.cc/7TK5-NWQB.

18. WETLANDS OVERVIEW, *supra* note 3.

to habitat protection, wetlands provide for the reduction of peak flooding, improve water quality, and create recreational opportunities.[19] An analogy by the Iowa Association of Naturalist compares wetlands to sponges: wetlands are able to soak up any "excess water and slowly release it back into lakes, streams, and underground aquifers."[20] During times of excess rain or snowmelt, wetlands act as reservoirs and cut the peak water flow that often occurs.[21] This results in the reduction of destructive floods as well as limiting the amount of soil erosion.[22] "[B]y slowing the overland flow of water, wetlands reduce soil erosion along water courses. Some riverine wetlands and adjacent floodplains form natural floodways that slow water flows downstream. Wetlands filter and collect sediment from runoff water, helping reduce sedimentation in lakes and reservoirs."[23] While the benefits provided by wetlands are most tangible during periods of excess rainfall, wetlands also continue to contribute to the environment during periods of drought.[24] After severe storms pass and during periods of extended absent rainfall, wetlands begin to slowly release the water stored within and recharge ground water levels.[25]

The effect on water quality and society's need for clean drinking water are by far the most critical components of wetlands. By serving as a transition zone between developed areas and waterways such as, streams, rivers, lakes, and groundwater, wetlands filter out chemical pollutants before they enter these larger bodies of water.[26] The pollutants filtered out include chemicals from pesticides and herbicides as well as the most common drinking water pollutant in Iowa—nitrogen.[27] As a result of wetlands' natural process,

> [n]utrients from fertilizer application, manure, leaking septic tanks, and municipal sewage that are dissolved in the water are often absorbed by plant roots and microorganisms in the soil. Other pollutants stick to soil particles. In many cases, this filtration process removes much of the water's nutrient and pollutant load by the time it leaves a wetland. Some types of wetlands are

19. U.S. DEP'T OF AGRIC., RESTORING IOWA WETLANDS A SNAPSHOT OF IOWA'S WETLAND TYPES, BENEFITS, RESTORATION PROCESSES AND PROGRAMS FOR LAND USERS (Jan. 2005), https://perma.cc/BE7Z-9DK9 [hereinafter RESTORING IOWA WETLANDS].

20. IOWA ASS'N OF NATURALISTS, *supra* note 17, at 16.

21. RESTORING IOWA WETLANDS, *supra* note 19.

22. IOWA ASS'N OF NATURALISTS, *supra* note 17, at 16.

23. RESTORING IOWA WETLANDS, *supra* note 19.

24. IOWA ASS'N OF NATURALISTS, *supra* note 17, at 16.

25. RESTORING IOWA WETLANDS, *supra* note 19.

26. IOWA ASS'N OF NATURALISTS, *supra* note 17, at 16.

27. *Id*.

> so good at this filtration function that environmental managers construct similar artificial wetlands to treat storm water and wastewater.[28]

As pointed out by Elliot Norse, "[l]iving systems [wetlands] cleanse water and make it fit, among other things, for human consumption."[29]

IV. HISTORY OF WETLANDS

The benefits of wetlands play a large role in the regulations tailored to protect those specific benefits, but history has not always treated wetlands in a favorable way. In the early 1600s, it is estimated the land that is now the United States was inundated in over 221 million acres of wetlands.[30] From the 1600s to the mid-1970s, over half of the wetland acres in the United States were destroyed.[31] The transformation of America's landscape was also experienced in Iowa. Iowa, along with many neighboring states in the Midwest, has lost its original wetlands at a rate of 87% to 91%.[32] Iowa was once home to over 4 million acres of wetlands—an amount that covered an estimated 11% of the state's surface area.[33] At the time of plentiful Iowa wetlands, the majority was located in an area known as the Des Moines Lobe.[34] The Des Moines Lobe is positioned in north central Iowa encompassing over twenty counties that contain a type of wetlands know as prairie potholes.[35] Prairie potholes are "small depressional wetlands . . . created by 'glaciers that pushed across the northern portion of Iowa as recently as 13,000 years ago.'"[36] Similar to the rest of the nation, the drainage and development of wetlands within Iowa was due to encouragement and incentive programs by the United States government.[37] One of these programs, the Swamp Land Act of 1849,

28. ENVTL. PROT. AGENCY, FUNCTIONS AND VALUES OF WETLANDS (Mar. 2002), https://perma.cc/EJN2-Q3HG.

29. WETLANDS OVERVIEW, *supra* note 3 (quoting ELLIOT A. NORSE, ANIMAL EXTINCTIONS (R.J. Hoage ed., 1985)).

30. Shannon O'Shea, Comment, *Lucas Leaves Room for Categorical Defenses for Regulations of Wetlands That Are Critical to Water Resources and Essential for Public Drinking*, 5 FLA. INT'L. U. L. REV. 243, 244 (2009).

31. RALPH W. TINER, WETLANDS OF THE UNITED STATES: CURRENT STATUS AND RECENT TRENDS vii (1984).

32. O'Shea, *supra* note 30, at 248.

33. THOMAS E. DAHL, U.S. DEP'T OF THE INTERIOR, WETLAND LOSSES IN THE UNITED STATES: 1780S TO 1980S, at 6 (1990).

34. THE IOWA POLICY PROJECT, *supra* note 16, at 1.

35. IOWA GEOLOGICAL SURVEY, DES MOINES LOBE (June 15, 2017), https://perma.cc/HA9J-2QQF.

36. James W. O'Brien, Comment, *Federal and State Regulation of Wetlands in Iowa*, 41 DRAKE L. REV. 139, 147 (1992).

37. TINER, *supra* note 31, at 33.

transferred approximately 1.2 million acres of public wetlands to settlers for development into new cropland.[38] In Iowa, the drainage of wetlands took place primarily within the Des Moines Lobe.[39] 12,000 years ago, the 1000 feet thick Wisconsin glacier flattened the area in north central Iowa to an extent that soil drainage did not often occur and most of the area was saturated.[40] To further expedite the development of Iowa's wetlands:

> [l]and owners who initially acquired some of this swampland tried to drain it using ditches but this proved impractical in many cases because there was often no place to outlet these ditches that did not result in the flooding of neighbors' land. In 1872, Iowa passed a law setting up public drainage enterprises, or drainage districts. These drainage districts, which had the right of eminent domain and to levy taxes, both provided the legal authority and funding mechanism to implement large-scale drainage systems draining entire catchments.[41]

The drainage districts of the Des Moines Lobe proved effective, as the total number of wetlands in the Des Moines Lobe was reduced by up to 99% (3.5 million acres to 30,000 acres).[42]

However, the depletion and conversion of wetlands in Iowa, and throughout the nation, was not without its benefits. The conversion of wetlands within the United States and Iowa resulted from the need for the land area the wetlands occupied. During the decade the Swamp Land Act was introduced, the population of the United States was 23 million, up over 35% from the prior decade.[43] The population of the United States would grow from 23 million to almost 250 million by 1990.[44] As the population of the country grew and America expanded, wetlands increasingly became a stumbling block for development and navigation.[45] Early

38. MARY ANN LEE & GRAHAM A. TOBIN, AN EVALUATION OF WETLANDS AND WETLAND POLICIES IN IOWA 22 (1982).

39. THE IOWA POLICY PROJECT, *supra* note 16, at 1-3.

40. Richard Doak, *The Story of Pioneer Iowa: From Wetland to Farmland*, DES MOINES REG. (Mar. 11, 2015), https://perma.cc/BZ3J-KAM9.

41. THE IOWA POLICY PROJECT, *supra* note 16, at 1.

42. Bradley A. Miller et al., *Spatial Distribution of Historical Wetland Classes on the Des Moines Lobe, Iowa*, 29 WETLANDS 1146, 1146 (2009).

43. U.S. CENSUS BUREAU, THE SEVENTH CENSUS OF THE UNITED STATES: 1850, at ix (1850), https://perma.cc/A3TL-WWG4.

44. U.S. CENSUS BUREAU, 1990 CENSUS OF POPULATION: GENERAL POPULATION CHARACTERISTICS, at 1 (1990), https://www2.census.gov/library/publications/decennial/1990/cp-1/cp-1-1.pdf.

45. THE IOWA POLICY PROJECT, *supra* note 16, at 1; *see also* O'Shea, *supra* note 30, at 248.

settlers, such as those in Iowa, found wetlands physically difficult to transverse as well as home to various flies and mosquitoes.[46] "Wetlands were feared by early settlers because they were associated with diseases, including malaria."[47]

The increase in population within the United States was followed by the need for an increase in the food supply. Especially in the Midwest, the conversion of wetlands was for agricultural practices.[48] The drainage of wetlands made farming possible in Iowa and neighboring states.[49] During the 1870s and 1880s wetland drainage in Iowa began and the "[a]rtificial drainage quickly turned wetlands into some of the country's most productive farm fields which allowed mechanized farming to take hold."[50] By 1890, this process allowed for the production of corn to triple on drained land within Iowa.[51] "The transformation of wetland to farmland added hugely to Iowa's agricultural wealth and was celebrated as progress. State law solemnly declared that drainage of water from agricultural land shall 'be presumed to be a public benefit and conducive to the public health, convenience and welfare.'"[52]

The progress of wetland drainage, and the right of settlers to do so, was not left to debate. In the early 1890s, the Iowa legislature adopted the first statutes defining a drainage district.[53] Shortly thereafter, the Constitution of the State of Iowa was amended to provide drainage districts the authority to carry out their purposes.[54] The amendment of 1908 applied to Iowa Constitution Section 18, Eminent Domain, and stated:

> [13] That there be added to Section eighteen (18) of Article one (I) of the Constitution of the State of Iowa, the following: Drainage ditches and levees. The General Assembly, however, may pass laws permitting the owners of lands to construct drains, ditches, and levees for agricultural, sanitary or mining purposes across the lands of others, and provide for the organization of drainage districts, vest the proper authorities with power to construct and

46. THE IOWA POLICY PROJECT, *supra* note 16, at 1.

47. *Id*. The number of deaths associated with malaria significantly decreased by the 1890s after the drainage of wetlands.

48. O'Shea, *supra* note 30, at 248.

49. GEORGE A. PAVELIS, FARM DRAINAGE IN THE UNITED STATES: HISTORY, STATUS, AND PROSPECTS 2 (1987).

50. THE IOWA POLICY PROJECT, *supra* note 16, at 1.

51. *Id*.

52. Doak, *supra* note 40.

53. James W. Hudson, *Observations of a Drainage Attorney*, *in* IOWA DRAINAGE LAW MANUAL 3, 3 (2005).

54. *Id*.

> maintain levees, drains and ditches and to keep in repair all drains, ditches, and levees heretofore constructed under the laws of the state, by special assessments upon the property benefited thereby. The General Assembly may provide by law for the condemnation of such real estate as shall be necessary for the construction and maintenance of such drains, ditches and levees, and prescribe the method of making such condemnation.[55]

The method of converting Iowa's wetlands into productive farm ground was such a powerful and influential factor within the Iowa legislature that the constitutional amendment regarding drainage ditches and levees allowed drainage districts to use eminent domain to accomplish this goal.[56] Out of this, the common law and statutory protection of an individual's right to drain surface water have provided sources of support.[57] This "statutorily created presumption that the drainage of surface waters is 'a public benefit and conducive to the public health, convenience, and welfare'" finds its strength of endorsement provided by Iowa's policy to reclaim wetlands for agricultural purposes.[58]

V. WETLAND PROTECTION

With the blessings of the Iowa legislature, wetlands were turned into productive farmland over the next 100 years. However, during the 1970s, the importance of wetlands was recognized. "In 1981, the first long-term study documenting the effectiveness of an Iowa wetland for removing nutrients was published[,] and more recent work has demonstrated the potential water quality benefits of targeted wetland restoration in agricultural watersheds."[59] In the decades following the 1970s, several federal acts provided for the protection of wetlands: the Swampbuster Provision of the 1985 Federal Food Security Act, Section 404 of the Clean Water Act, and the National Environmental Policy Act all provided efforts to preserve and restore wetlands in the United States. Wetlands in the United States (specifically Iowa) protected by these measures can be classified as three different types: (1) natural wetlands; (2) restored or created wetlands; and (3) cropped wetlands.[60] The preservation programs brought forth conservation practices, and the "[c]onversion back to wetlands increased from one acre for every three lost from 1954-1974 to one acre for every two lost from 1982-1992."[61]

55. IOWA CONST. amend. of 1908.
56. *See id.*
57. O'Brien, *supra* note 36, at 142.
58. *Id.*
59. THE IOWA POLICY PROJECT, *supra* note 16, at 4 (citations omitted).
60. *Id.* at 9.
61. RESTORING IOWA WETLANDS, *supra* note 19.

A. National Environmental Policy Act of 1969

In 1970, the protection of wetlands within the United States began with the enactment of the National Environmental Policy Act (NEPA).[62] Among the policy considerations of NEPA (42 U.S.C. § 4321), Congress states the purpose of the section to "encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere . . . ."[63] The existence of NEPA is to further the nation's understanding of the ecological systems and their interaction with the natural resources important to humans.[64] With the recognition that mankind's actions profoundly affect all components of the environment, NEPA declares the federal government will "attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences."[65] In relation to wetlands, it means those seeking to dredge or fill wetlands now have requirements to attain before permits can be issued.[66] When federal agencies take significant actions "affecting the quality of the human environment," such as granting permit applications, the agency must prepare an environmental impact statement (EIS).[67] This statement must contain: (1) adverse environmental impacts because of the implemented action; (2) alternatives to this action; (3) short-term use of the environment and the relationship between the maintenance and enhancement of long-term productivity; and (4) irreversible and irretrievable commitments of resources involved in the action.[68] The policy created by Congress requires the federal government and its agencies to use all means to create and maintain a productive harmony between man and the environment.[69] Along with the requirement of an EIS, the National Environmental Policy Act of 1969 created the Council on Environmental Quality (CEQ) to ensure compliance to NEPA across all federal agencies.[70] The CEQ's duties involve:

> (1) Ensuring that federal agencies meet their obligations under NEPA; (2) Overseeing federal agency implementation of the environmental impact

62. *What is the National Environmental Policy Act?*, EPA, https://perma.cc/32WB-LDJL (archived July 8, 2018).

63. 42 U.S.C. § 4321 (2018).

64. *See id.*

65. 42 U.S.C. § 4331(b)(3) (2018).

66. O'Shea, *supra* note 30, at 254.

67. *Id.* at 255.

68. 42 U.S.C. § 4332(c) (2018).

69. *What is the National Environmental Policy Act?*, *supra* note 62.

70. O'Shea, *supra* note 30, at 255.

assessment process; (3) Issuing regulations and other guidance to federal agencies regarding NEPA compliance.[71]

In 1978, NEPA was implemented through the CEQ and thus made regulations binding on all federal agencies.[72] In all, the NEPA attempted to "achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities."[73]

B. Federal Water Pollution Control Act—1972 Amendment

In 1948, "the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters" was created by the Federal Water Pollution Control Act.[74] Due to a significant reorganization and expansion in 1972, the Federal Water Pollution Control Act is now colloquially known by the name of its amendments, the Clean Water Act (CWA).[75] Congress declares that the CWA's purpose is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters."[76]

Even though the CWA does not specifically define wetlands within the text of the Act, "the Act is the broadest source of federal authority for the regulation of wetlands."[77] Wetlands of the United States are protected by the CWA by defining wetlands within the definition of navigable waters.[78] The CWA then, in turn, defined navigable waters as waters of the United States.[79] Section 311 of the CWA, dealing with navigation and navigable water, makes "the discharge of any pollutant by any person" unlawful.[80] In defining navigable waters, the Supreme Court in *United States v. Riverside Bayview Homes, Inc.*, held Congress chose to act broadly when defining the waters covered by the Act.[81] When applying this definition to wetlands, the Court stated:

71. *What is the National Environmental Policy Act?*, *supra* note 62.

72. *Id.*

73. 42 U.S.C. § 4331(b)(5) (2018).

74. *Summary of the Clean Water Act*, EPA, https://perma.cc/S9Q9-9M6X (archived July 8, 2018).

75. *Id.*

76. 33 U.S.C. § 1251(a) (2018).

77. O'Brien, *supra* note 36, at 162.

78. O'Shea, *supra* note 30, at 256.

79. U.S. Army Corps of Eng'rs v. Hawkes Co., 136 S. Ct. 1807, 1811 (2016).

80. 33 U.S.C. § 1311(a) (2018).

81. United States v. Riverside Bayview Homes, Inc., 474 U.S. 121, 133 (1985); *cf* Rapanos v. United States, 547 U.S. 715, 715 (2006).

> [o]f course, it is one thing to recognize that Congress intended to allow regulation of waters that might not satisfy traditional tests of navigability; it is another to assert that Congress intended to abandon traditional notions of "waters" and include in that term "wetlands" as well. Nonetheless, the evident breadth of congressional concern for protection of water quality and aquatic ecosystems suggests that it is reasonable for the Corps to interpret the term "waters" to encompass wetlands adjacent to waters as more conventionally defined.[82]

The CWA extended protection to wetlands by making unlawful the discharge of pollutants into navigable water. The CWA defines pollutants as, among other things: dredged spoil, solid waste, sewage, garbage, sand, rock, cellar dirt and industrial, municipal, and agricultural waste.[83] By limiting the pollutants dischargeable into navigable water, Section 311 will prevent the filling in of wetlands; however, the Act provided an exception to the rule by way of permit.[84]

Section 404 of the CWA "establishes a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands."[85] Regulated within this section are actions which include soil fill for development, water resource projects, development for infrastructure, and mining projects.[86] Section 404 states the Army Corps may "issue permits, after notice and opportunity for public hearings for the discharge of dredged or fill material into the navigable waters at specified disposal sites."[87] Navigable waters, defined in Section 311 of the CWA as waters of the United States, applies to Section 404 and is "further defined by Corps regulations to include all 'interstate waters including interstate wetlands, . . . all other waters . . . which could affect interstate or foreign commerce' or any wetlands adjacent to other waters within the federal government's Section 404 jurisdiction."[88] Permits for dredging or filling are reviewed by the Army Corps and evaluated under a public interest review as well as other environmental guidelines established in Section 404.[89] Through these permits, Section 404 provides the federal government broad authority to regulate waters within its jurisdiction.[90] Section 404(f) allows for multiple exemptions from

82. *Riverside Bayview Homes, Inc.*, 474 U.S. at 133.
83. 33 U.S.C. § 1362(6) (2018).
84. O'Shea, *supra* note 30, at 256.
85. *Section 404 of the Clean Water Act*, *supra* note 2.
86. *Id.*
87. 33 U.S.C. § 1344(a) (2018).
88. O'Brien, *supra* note 36, at 162; *see also* 33 C.F.R. § 328.3(a) (1988).
89. *Section 404 of the Clean Water Act*, *supra* note 2.
90. O'Brien, *supra* note 36, at 162.

the required 404 permits.[91] A section 404 permit is not required if discharges of dredge or fill material is associated with "[e]stablished (ongoing) farming, ranching, or silviculture activities."[92] These actions must be part of an ongoing farming or forestry operation that does not create a "new use of the water" that would result in the reduction of flow or circulation.[93]

Recent Supreme Court cases have limited the jurisdiction of the CWA's Section 404 to regulate wetlands. The Army Corps, in 1975, adopted a broad definition of waters of the United States (which was upheld by *Riverside Bayview Homes*) that fell within the regulatory power of the CWA.[94] The new program and definition of waters of the United States was implemented in three stages.[95] The first stage was effective immediately after the 1974 regulation of navigable waters.[96] The second stage, effective in 1976, "extended Corps jurisdiction to nonnavigable tributaries, freshwater wetlands adjacent to primary navigable waters, and lakes."[97] The final stage, in 1977, "extended [the Army] Corps jurisdiction to all other waters covered under the statute."[98] This final stage extended the jurisdiction to isolated lakes, wetlands, prairie potholes, and other waters "'not part of a tributary system to interstate waters or to navigable waters of the United States, the degradation or destruction of which could affect interstate commerce.'"[99]

Solid Waste Agency of North Cook County (SWANCC) v. U.S. Army Corps of Engineers arose out of the Army Corps attempt to exercise jurisdiction over an abandoned sand and gravel pit; the pit was to be converted into a disposal site for nonhazardous solid waste.[100] These pits were home to migratory birds which the Army Corps argued fell within Congress's power to regulate activity which substantially affects interstate commerce.[101] The Court in *SWANCC* found serious constitutional issues arising out of the Army Corps's regulation of this body of

91. CLAUDIA COPELAND, WETLANDS: AN OVERVIEW OF ISSUES 19 (Nelson E. Santiago ed., 2015).

92. *Exemptions to Permit Requirements*, EPA, https://perma.cc/JK8F-LFG6 (archived July 8, 2018).

93. *Id.*

94. Solid Waste Agency of N. Cook Cty. v. U.S. Army Corps of Eng'rs, 531 U.S. 159, 184 (2001).

95. *Id.*

96. *Id.*

97. *Id.*

98. *Id.*

99. *Id.* (citations omitted).

100. *Id.* at 162.

101. *Id.* (relying on Missouri v. Holland, 252 U.S. 416, 435 (1920)).

water.[102] "Permitting respondents to claim federal jurisdiction over ponds and mudflats falling within the 'Migratory Bird Rule' would result in a significant impingement of the States' traditional and primary power over land and water use."[103] Through this finding, the Court declined to take the next step that would hold isolated ponds within Section 404's jurisdiction.[104] In doing so, the Court explained under the *Riverside Bayview Homes* decision, it was the "significant nexus between the wetlands and 'navigable waters' that informed our reading of the CWA."[105] In order for the Court to rule in favor of the Army Corps's jurisdiction, "we would have to hold that the jurisdiction of the Corps extends to ponds that are *not* adjacent to open water. But we conclude that the text of the statute will not allow this."[106] This decision removed isolated wetlands (not connected to navigable waters) from the protection of Section 404 of the CWA (this includes prairie potholes that account for most of Iowa's wetlands).[107]

In *Rapanos v. United States*, the Supreme Court plurality continued to define the jurisdictional limits of the CWA. Concerning four wetlands lying near manmade channels, which eventually emptied into navigable waters, the United States brought a civil enforcement action against Rapanos for backfilling three of these wetlands without a permit.[108] The district court found Rapanos in violation of the CWA because the wetlands were adjacent to waters of the United States.[109] The Supreme Court vacated the decisions of the district court and court of appeals and remanded for further proceedings.[110] In doing so, the Court held waters of the United States to "include only relatively permanent, standing or flowing bodies of water."[111] This definition does not include "transitory puddles or ephemeral flows of water."[112] Addressing the Army Corps's adopted definition of waters of the United States the Court stated:

> [t]he restriction of "the waters of the United States" to exclude channels containing merely intermittent or ephemeral flow also accords with the commonsense understanding of the term. In applying the definition to

102. *Id*. at 174.
103. *Id*.
104. *Id*. at 171.
105. *Id*. at 167.
106. *Id*. at 168.
107. *Id*.
108. Rapanos v. United States, 547 U.S. 715, 715 (2006).
109. *Id*.
110. *Id*. at 757.
111. *Id*. at 732.
112. *Id*. at 733.

> "ephemeral streams," "wet meadows," storm sewers and culverts, "directional sheet flow during storm events," drain tiles, man-made drainage ditches, and dry arroyos in the middle of the desert, the Corps has stretched the term "waters of the United States" beyond parody.[113]

While setting the limits for waters of the United States, the Court found parallel reasoning from *SWANCC* where, "'navigable waters' even though defined as 'the waters of the United States'—carries *some* of its original substance."[114] The Army Corps claimed its jurisdiction over the Michigan wetlands because of their adjacency to bodies that are waters of the United States.[115] Reviewing the decision in *SWANCC*, the Court explained that *Riverside Bayview's* independent basis for including wetlands as waters of the United States was rejected, and the only condition that allowed the Army Corps to rely on ecological conditions was in the ambiguity found in determining where water ends and the adjacent wetland begins.[116] Thus, the only adjacent wetlands are those that have a continuous surface connection to waters of the United States with no clear distinction between water and wetland.[117] Because of the plurality opinion issued in *Rapanos*, lower courts have struggled to produce a definitive test for determining the reach of waters of the United States.[118] Specifically, courts began to adopt Justice Kennedy's significant nexus test[119]—where the wetlands must have a significant nexus to waters that are navigable.[120]

The reach of the CWA and significant nexus test again found trouble in the Supreme Court. In *U.S. Army Corps of Engineers v. Hawkes Co.*, the respondents, three companies who engage in peat mining, challenged the reviewability of a waters of the United States jurisdictional determination (JD).[121] In *Hawkes*, respondents owned a 530-acre tract of land containing wetlands with sufficient quality peat suitable to be used in golf greens; in order to harvest the peat, respondents applied for a Section 404 permit from the Army Corps.[122] Section 404 permits are necessary to avoid substantial criminal and civil penalties (not to exceed $37,500 per day) if a landowner is found to have waters of the United States

113. *Id.* at 734.
114. *Id.*
115. *Id.* at 742.
116. *Id.* at 741-42.
117. *Id.* at 742.
118. COPELAND, *supra* note 91, at 17.
119. *Id.*
120. *Rapanos*, 547 U.S. at 759.
121. U.S. Army Corps of Eng'rs v. Hawkes Co., 136 S. Ct. 1807, 1811-14 (2016).
122. *Id.* at 1812-13.

and discharges pollutants into them.[123] The Army Corps indicated the permitting process would take years to complete and eventually cost the respondents over $100,000.[124] Two years later, as part of the permitting process, the Army Corps released a JD specifying the respondents property did indeed contain waters of the United State because of a significant nexus with the Red River of the North located over 120 miles away.[125] JDs are offered in two stages with the approved JD constituting a final agency action that can be administratively appealed.[126] The respondents administratively appealed the approved JD to the Army Corps Division Commander who remanded and then reaffirmed the initial finding of waters of the United States on the respondent's land.[127] Respondents sought judicial review, eventually receiving certiorari from the Supreme Court.[128] The Court held the JD in this case was an agency decision with no adequate alternatives for challenging the decision in court.[129] While the ruling from the Court does not affect whether certain lands contain waters of the United States, it does allow landowners to "have the substantive issues heard in court *before* facing ruinous delays, permitting costs, fines, and incarceration."[130, 131]

C. Swampbuster Provision of the 1985 Federal Food Security Act

One of the most important regulatory tools for the protection of wetlands is the Swampbuster provision of the 1985 Federal Food Security Act (FSA).[132] Swampbuster is the name for the Erodible Land and Wetland Conservation Program of the 1985 Farm Bill.[133] Created as a disincentive program, rather than a regulation, the Swampbuster provision indirectly protects wetlands by disqualifying individuals on agricultural lands from federal farm programs.[134] Swampbuster protects wetlands by finding any person who produces an

123. *Id*. at 1815.

124. *Id*. at 1813.

125. *Id*.

126. *Id*. at 1812.

127. *Id*. at 1812-14. The approved JD is an Army Corps finding, relating to waters of the United States, that binds the Army Corps and EPA for five years.

128. *Id*. at 1813.

129. *Id*.

130. James S. Burling, *Final Agency Actions and Judicial Review:* United States Army Corps of Engineers v. Hawkes Co., 17 FEDERALIST SOC'Y REV. 28, 28 (2016).

131. To stay up to date on current changes to waters of the United States definition, see PRACTICAL LAW REAL ESTATE, *Trump Executive Order Targets Waters of the US Rule*, Westlaw (2017).

132. *See* THE IOWA POLICY PROJECT, *supra* note 16, at 4.

133. O'Brien, *supra* note 36, at 150.

134. COPELAND, *supra* note 91, at 21.

agricultural commodity on converted wetlands in violation of the provision.[135] The conversion of wetlands to cropland is discouraged by holding violators of the provision ineligible for any payment from the Federal Crop Insurance Corporation or from a plan under the Federal Crop Insurance Act.[136] In order to be in compliance with the Swampbuster provision of the FSA, the United States Department of Agriculture (USDA)'s National Resource Conservation Service (NRCS) will make a certified determination if a producer's land contains wetlands subject to the provision.[137] A producer must submit form AD-1026 if he or she believes a conducted activity may be subjected to the wetland conservation provisions.[138] The NRCS "maintains a list of the plants and combinations of soils and plants found in wetlands and uses these technical tools, along with the hydrology of the area, to conduct determinations."[139] If an individual produces an agricultural commodity on wetlands converted to cropland between December 28, 1985, and November 28, 1990, they are in violation of the Swampbuster unless an exemption applies.[140] If an individual produces an agricultural commodity on wetlands converted after November 28, 1990, they are in violation of the Swampbuster unless the loss of the wetlands is mitigated.[141] The Swampbuster is also concerned with cropped wetlands, meaning an area within an agriculture field that rarely contains wetlands vegetation but is wet enough to produce crop loss.[142] Within cropped wetlands are two distinct classes of wetlands: prior converted cropland and farmed wetlands.[143] For compliance reasons, Swampbuster makes a distinction between prior converted cropland and farmed wetlands.[144] Prior converted cropland is defined as wetlands that "had been sufficiently drained prior to December 23, 1985 . . . and are not treated as wetlands under the Swampbuster provisions of the 1985 Farm Bill."[145] Land that is currently farmed but would resort back to wetland vegetation growth if cropping ceased, may be classified as farmed wetlands under the Swampbuster provision.[146] This land was not properly drained prior to December

135. 16 U.S.C. § 3821 (2018).

136. *Id*.

137. *Wetland Conservation Provisions (Swampbuster)*, USDA, https://perma.cc/6TZY-JA95 (archived July 8, 2018).

138. U.S. DEP'T AGRIC., CERTIFIED WETLAND DETERMINATIONS, https://perma.cc/M5JF-CVVP (archived July 8, 2018) [hereinafter CERTIFIED WETLAND DETERMINATIONS].

139. *Wetland Conservation Provisions (Swampbuster)*, *supra* note 137.

140. *Id*.

141. *Id*.

142. THE IOWA POLICY PROJECT, *supra* note 16, at 5.

143. *Id*. at 3.

144. 7 C.F.R. § 12.32(a) (2019).

145. THE IOWA POLICY PROJECT, *supra* note 16, at 13.

146. O'Brien, *supra* note 36, at 152.

23, 1985 and is afforded the protection of the Swampbuster provision.[147] As distinguished from a prior converted wetland, a farmed wetland may only be farmed as it was prior to December 23, 1985 and any current drainage systems cannot be expanded.[148]

Conversion of a wetland on agricultural lands may include the actions of leveling, filling, draining, dredging, or otherwise altering wetlands.[149] The Swampbuster creates financial disincentives that "are so strong that many farmers will have little choice but to comply."[150] Nearly 38% of all farmers in the United States received direct payments from federal subsidy programs in 2007.[151] Violations of the provision will lead to not only the loss of Federal Crop Insurance but also ineligibility for price support under the Agricultural Market Transition Act; loans under the Consolidated Farm and Rural Development Act; and payments from contracts made with the Environmental Quality Incentives Program.[152] The 2014 Farm Bill amendments additionally included federal crop insurance premium subsidies as a benefit that is ineligible if an individual is found in violation of the Swampbuster provisions.[153]

Exemptions from the ineligibility are provided if met. Swampbuster is not violated if the wetlands were converted before December 23, 1985.[154] Wetlands that result from irrigation or a water delivery system will not violate Swampbuster if an agricultural commodity is produced on them.[155] Thirdly, a wetland that is farmed using normal practices, and as a result of a natural condition, such as drought, the natural wetland is destroyed, is not in violation of the Swampbuster provision.[156] Fourth, wetlands that are artificially created to retain water are not subject to Swampbuster ineligibility.[157] Amended in 1996, greater flexibility in Swampbuster violation is provided. If an agricultural commodity is produced on a converted wetland, a person may be exempt from ineligibility provisions if the wetland value lost in the conversion is mitigated through the creation, restoration, or expansion

147. THE IOWA POLICY PROJECT, *supra* note 16, at 13.
148. O'Brien, *supra* note 36, at 152.
149. COPELAND, *supra* note 91, at 21.
150. O'Brien, *supra* note 36, at 150.
151. COPELAND, *supra* note 91, at 3.
152. 16 U.S.C. § 3821(b)(3) (2018).
153. COPELAND, *supra* note 91, at 22.
154. 16 U.S.C. § 3822(b) (2018).
155. *Id*.
156. *Id*.
157. *Id*.

of other wetlands.[158] Another 2014 Farm Bill amendment eased the severity of Swampbuster violation by providing additional time for violators to come back into the required compliance; this allows additional time to remedy or mitigate the violation before losing federal subsidies.[159]

D. Voluntary Programs—Agriculture Conservation Easement Program

Until 2014, the Wetland Reserve Program (WRP) provided landowners with payments and financial assistance to restore and protect wetlands. The WRP "was a voluntary program that offered landowners the opportunity to protect, restore, and enhance wetlands on their property."[160] This was accomplished through the purchase of wetlands reserve easements.[161] As a function and partnership with NRCS, NRCS provided financial and technical support to landowners furthering wetland restoration through the WRP.[162] In 2014, Farm Bill replaced the WRP and the Wetland Reserve Enhancement Program with the Agriculture Conservation Easement Program (ACEP).[163] ACEP continues to function similar to WRP and contains wetland protection and restoration through the Wetland Reserve Easements program.[164] The NRCS may enroll eligible land in this program through a variety of ways, including permanent easements, thirty-year easements, and term easements.[165] Depending on the type of easement provided, landowners may be compensated for the value of the land easement and the costs to restore wetlands.[166] For example, in the thirty-year easement, the NRCS will pay up to 75% of the easement value and up to 75% of the cost of wetlands restoration.[167] Although the 2014 Farm Bill amendments cut conservation title funding by 4 billion over the next ten years, for the first time, the bill makes wetland easement funding permanent.[168] The problem that persisted under the WRP was the shortchanging in assistance dollars from the Office of Management and Budget.[169] The new ACEP

158. *Id*.

159. COPELAND, *supra* note 91, at 22.

160. *Wetlands Reserve Program*, USDA, https://perma.cc/77G5-G5BX (archived July 8, 2018).

161. *2014 Farm Bill—Agricultural Conservation Easement Program—NRCS*, USDA, https://perma.cc/4KZQ-C8YK (archived July 8, 2018).

162. *Wetlands Reserve Program*, *supra* note 160.

163. COPELAND, *supra* note 91, at 22.

164. *Id*.

165. *Wetlands Reserve Program*, *supra* note 160.

166. COPELAND, *supra* note 91, at 23.

167. *Wetlands Reserve Program*, *supra* note 160.

168. *2014 Farm Bill Drill Down: Conservation—Easements, CRP, and Energy*, NAT'L SUSTAINABLE AGRIC. COAL.: NSAC'S BLOG (Feb. 10, 2014), https://perma.cc/6UNF-USN3.

169. *Id*.

solves this funding, and the backlog created by the lack of funding, by providing permanent funding.[170] For fiscal year 2016, the Iowa NRCS reported the ACEP spent 12.5 million dollars on twenty-two easements covering nearly 2900 acres the in state.[171]

VI. CONCERNS FOR WETLANDS PROTECTION

With the benefits wetlands provide to the environment uniformly agreed upon,[172] the analysis must shift to the results of current wetlands regulations and incentive programs. The determination must be made as to whether the policies in place are effective at protecting wetlands and what possible changes could be implemented to increase the effectiveness of our goal: wetland protection and restoration. Issues that repeatedly present difficulties in wetland regulations include (A) are wetlands actually protected from degradation, and if so, are restored and created wetlands equivalent to naturally occurring wetlands; (B) does the confusion from defining and classifying wetlands diminish the predictability and thus effectiveness of protecting wetlands; (C) with the current policies in place, are conflicts in property rights and constitutional guarantees created; and (D) what local or regional protections exist to ensure wetland existence?

A. Wetlands Protection and Quality

The policy shift during the 1970s played a critical role in acknowledging the importance of wetlands, along with the need to protect those remaining.[173] As important as these measures are in mitigating the destruction of wetlands in the United States and throughout Iowa, serious concerns still exist as to the safety and disappearance of wetlands.[174] Across the United States, academics, outdoorsmen, and reporters remark on wetlands loss currently taking place.[175] In the United States, the total wetland acres have declined from 220 million acres in the 1600s to 110 million acres in 2009.[176] Even with the policies and regulations in place, a study by the National Oceanic and Atmospheric Administration found in the coastal regions

170. *Id*.

171. KURT SIMON, USDA, AT-A-GLANCE: IOWA 1 (Oct. 2016), https://perma.cc/U4N6-RK4N.

172. RESTORING IOWA WETLANDS, *supra* note 19; *see also* COPELAND, *supra* note 91, at 6.

173. THE IOWA POLICY PROJECT, *supra* note 16, at 1-2.

174. COPELAND, *supra* note 91, at 2.

175. *Id*.; Hal Herring, *U.S. Wetlands Are Disappearing Faster Than Ever, and We Just Watch*, FIELD & STREAM: THE CONSERVATIONIST (Dec. 5, 2013), https://perma.cc/RC66-7G7H.; *see also* Darryl Fears, *Study Says U.S. Can't Keep Up With Loss of Wetlands*, WASH. POST (Dec. 8, 2013), https://perma.cc/58PA-7MUM.

176. COPELAND, *supra* note 91, at 2.

of the eastern United States, from 2004 to 2009, the loss of wetlands increased by 25% compared the previous study in 1998 to 2004.[177] The loss in this area is attributed to expansion in urban development and an increased presence of farming.[178] Even with a "no net loss" policy endorsed by administrations for two decades,[179] studies of prairie pothole wetlands in Iowa indicate 20% of the restored wetlands (restored in 1988 and resampled in 2007) selected for the study became failures—never producing wetland hydrology or vegetation.[180] The National Wetlands Inventory estimates nearly 14,000 acres of wetlands are still lost per year.[181]

For the wetlands that are successfully restored or created, "many scientists question if restored or created wetlands provide equivalent replacement for natural wetlands that contribute multiple environmental services and values."[182] The problem with restored wetlands in Iowa, as discussed by the Iowa Policy Project, is a number of the restored wetlands drain small areas and do not intercept enough contaminant loads to affect water quality.[183] Further, the U.S. Fish and Wildlife Service indicated a scientific consensus as to the equivalence of replacement wetlands, compared to naturally occurring ones, is not clear.[184] Restored wetlands in Iowa often suffer from underdeveloped and poor vegetation and habitat quality.[185] This is a result of the isolation of the restored wetlands and number of invasive species within the habitat; without active vegetation management the restored wetlands will never resemble natural wetlands.[186]

B. Confusion from Definitions

Another issue is the confusion in defining what wetlands are in general, and the various definitions the specific wetlands have under different programs (such as CWA compared to the agricultural disincentive program of the FSA Swampbuster). As stated in the USDA's Certified Wetland Determination Fact Sheet, "[b]ecause of differences that now exist between the Food Security Act [Swampbuster] and the Clean Water Act on the jurisdictional status of some

177. Fears, *supra* note 175.
178. *Id*.
179. COPELAND, *supra* note 91, at 2.
180. THE IOWA POLICY PROJECT, *supra* note 16, at 5-9.
181. COPELAND, *supra* note 91, at 7.
182. *Id*. at 2.
183. THE IOWA POLICY PROJECT, *supra* note 16, at 7.
184. COPELAND, *supra* note 91, at 9.
185. THE IOWA POLICY PROJECT, *supra* note 16, at 8.
186. *Id*. at 5-9.

wetlands, it is frequently impossible for one agency to make a wetland determination that is valid for the administration of both laws."[187] How wetlands are defined has a large impact on agriculture and the regulation of wetlands within Iowa.[188] The difference in treatment under Swampbuster and CWA is evident for cropped wetlands.[189] For example, a producer on cropped wetlands that does not participate in USDA programs is not subject to the Swampbuster provisions.[190] But the uncertainty of the significant nexus test and waters of the United States definitions under CWA could be redefined to include such lands.[191] In the past, Congress has responded to the constricting definitions of CWA by introducing legislation to reverse the decisions in *SWANCC* and *Rapanos*.[192] With shifting definitions on the federal level, Army Corps district offices differ in how each branch interprets definitions of wetlands, leading to a complex system burdened with arbitrary restrictions.[193]

C. Conflicts in Property Rights

When regulations involve dictating what can and cannot be done with private property, a conflict in personal rights and interests will always exist. Regardless of the societal value wetlands might provide, some will oppose regulation of private lands strictly as a philosophical stance.[194] The conflicts generally are between two camps: those backing environmental interests that strive for enhanced wetlands protection through all levels of government and regulatory agencies, and landowners and farmers who demonstrate that overaggressive and zealous regulations are too inflexible and constricting on private property to achieve little if any wetland value.[195] One concern with the effectiveness of regulating wetlands involves attacks on such regulations, like the CWA, with claims of unconstitutional taking.[196] The Fifth Amendment of the United States Constitution states in part: "nor shall private property be taken for public use, without just compensation."[197] When the CWA requires permits for individuals to develop private land, denial of such

187. CERTIFIED WETLAND DETERMINATIONS, *supra* note 138.

188. THE IOWA POLICY PROJECT, *supra* note 16, at 10.

189. *Id*.

190. *Id*.; *see also* 16 U.S.C. § 3821 (2018).

191. THE IOWA POLICY PROJECT, *supra* note 16, at 10.

192. COPELAND, *supra* note 91, at 18. Legislation to reverse the *SWANCC* and *Rapanos* decisions was introduced in several occasions since the 107th Congress.

193. *See id*. at 14, 15.

194. *See id*. at 21.

195. *See id*. at 4.

196. O'Shea, *supra* note 30, at 265.

197. U. S. CONST. amend. V.

permits can lead to a claim of regulatory taking.[198] While these regulatory taking claims may threaten the existence of certain wetlands, it is likely CWA regulations will defeat these claims by showing the landowner acquired the property after the enactment of the CWA, the regulations themselves are reasonable, and the protection of such wetlands is critical to water resources.[199]

Along a similar line of judicial challenges, the *Hawkes* decision did not immediately impact how waters of the United States is defined, but it did allow an avenue for landowners to challenge the jurisdictional determination made by the Army Corps and the CWA.[200] Justice Kennedy commented on the constitutional issues of the CWAs reach by stating "'[t]he Act . . . continues to raise troubling questions regarding the Government's power to cast doubt on the full use and enjoyment of private property throughout the Nation.'"[201] While the Act's reach is "notoriously unclear,"[202] the decision in *Hawkes* may indicate "the patience of at least some of the Justices is wearing thin."[203]

D. Local and Regional Protection

Concerns for the continued protection of wetlands arise when the offered federal protection is subject to change or restricted definitions. Most noticeable in this concern is "Iowa has largely relied upon the federal government for wetland protection."[204] Iowa does define what wetlands are protected within the state but relies on Section 401 of the CWA to prohibit drainage.[205] The Iowa Department of Natural Resources oversees Section 401 permitting process and uses this certification to protect wetlands.[206] Iowa has passed wetland protection measures, such as The Iowa Wetlands Act and Protected Wetlands Act of 1990, but has never

198. O'Shea, *supra* note 30, at 265.

199. *Id*. at 291.

200. J. Tom Boer et al., *Supreme Court Decision in* Hawkes*: A Shot Across The Bow*, 31 NAT. RESOURCES & ENV'T, 58, 58 (2016).

201. *Id*. at 59 (quoting U.S. Army Corps of Eng'rs v. Hawkes Co., 136 S. Ct. 1809, 1817 (2016)).

202. U.S. Army Corps of Eng'rs v. Hawkes Co., 136 S. Ct. 1807, 1816 (2016).

203. Burling, *supra* note 130, at 30.

204. THE IOWA POLICY PROJECT, *supra* note 16, at 10.

205. IOWA CODE § 455B.171(39) (2012); IOWA CODE § 456B.1(5) (2012); ENVTL. LAW INST., STATE WETLAND PROTECTION: STATUS, TRENDS, & MODEL APPROACHES 3 (2008), https://perma.cc/3ZHK-B9HQ. The state of Iowa defines wetlands as "an area of two or more acres in a natural condition that is mostly underwater or waterlogged during the spring growing season and is characterized by vegetation of hydric soils." IOWA CODE § 456B.1(5) (2012).

206. *Id*.

fully implemented the Acts.[207] While Iowa does not have an "anti-degradation policy specific to wetlands" the Iowa Department of Natural Resources receives a number of grants from the EPA to establish wetlands monitoring and use federal funding for restoration programs (Identification of Potential Wetland Complex Restoration in the Prairie-Pothole Region of Iowa and the Upper Mississippi River & Great Lakes Region Joint Venture).[208]

VII. CONCLUSION

The treatment of wetlands as an important function of water quality is an assuring step toward conservation compared to the drainage policies of the 1800s. While the regulations and policies in place promote the protection and restoration of wetlands, serious broad scale issues exist across the nation and within Iowa. As a rudimentary step in protecting wetlands, the classification and definition of what constitutes wetlands and whether those wetlands fall under regulations, such as waters of the United States, must be simplified across restoration programs. For effective management of wetlands, it is important to create programs that are predictable, manageable, and ultimately coordinated across several platforms.[209]

As was pointed out in the *Hawkes* court, the manageability and predictability of basic wetland classifications within federal regulation is yet to be had. A possible solution to wetland classification is to create multiple tiers of wetland types by value, in order to establish where the highest value wetlands are located (applying stricter regulations) compared to the least valuable wetlands (allowing alterations). [210]

In addition to the issue of wetland classification, problems arise regarding what jurisdiction is best suited to handle wetland protection. With limited funding, it is important to maintain a realistic idea of capital available to support these policies. Efforts by environmentalists ensure wetland protection by strengthening agency regulation on all levels of government,[211] while most farmers and landowners hold current wetlands protection efforts on private land as too aggressive and inflexible.[212] The competing views of wetland regulation resonate on a philosophical level[213] and represent the difficult decision to adopt the "carrot or the stick."

207. THE IOWA POLICY PROJECT, *supra* note 16, at 10.
208. *See* ENVTL. LAW INST., *supra* note 205, at 6.
209. *See* COPELAND, *supra* note 91, at 18.
210. *See id.* at 20.
211. *Wetlands*, SIERRA CLUB, https://perma.cc/Z5FR-45V3 (archived July 8, 2018).
212. COPELAND, *supra* note 91, at 4.
213. *Id.* at 21.

Iowa's wetlands will benefit by the state adopting its own wetlands conservation practices. Implementing and funding regional programs is the best solution to manage the volatility and shifting jurisdiction of federal programs. Creating regional programs will ensure wetlands in Iowa reach their full potential to remedy water quality issues. As our land ethics evolve and adapt to new challenges presented to each generation, it is important Iowa implements predictable and manageable conservation practices. Iowa must protect wetlands that have felt the "forces represented by the cow, plow, fire, and axe" and not create conservation that is only "paved with good intentions which prove to be futile, or even dangerous, because they are devoid of critical understanding either of the land, or of economic land-use."[214]

214. ALDO LEOPOLD, A SAND COUNTY ALMANAC: AND SKETCHES HERE AND THERE 205, 225 (1949).