

BYU Law Review

Volume 2014

Issue 6 *Law Review Symposium: The Global Commons*

Article 10


December 2014

Isolated Wetland Commons and the Constitution

Blake Hudson

Mike Hardig

Follow this and additional works at: <https://digitalcommons.law.byu.edu/lawreview>

 Part of the [Environmental Law Commons](#), [Natural Resources Law Commons](#), and the [Natural Resources Management and Policy Commons](#)

Recommended Citation

Blake Hudson and Mike Hardig, *Isolated Wetland Commons and the Constitution*, 2014 BYU L. Rev. 1443 (2015).
Available at: <https://digitalcommons.law.byu.edu/lawreview/vol2014/iss6/10>

This Article is brought to you for free and open access by the Brigham Young University Law Review at BYU Law Digital Commons. It has been accepted for inclusion in BYU Law Review by an authorized editor of BYU Law Digital Commons. For more information, please contact hunterlawlibrary@byu.edu.

Isolated Wetland Commons and the Constitution

Blake Hudson and Mike Hardig***

ABSTRACT

Isolated wetlands provide great ecological and economic value to the United States. While some states provide protection for isolated wetlands, a great many do not. These wetlands are also left outside the ambit of federal wetland regulatory protections under the Clean Water Act, with its murky jurisdictional reach. Notwithstanding jurisdictional questions under current federal statutes, the U.S. Supreme Court has gone so far as to call into question the constitutionality of federal isolated wetland regulation. This Article makes a normative argument that, in the absence of state or local programs providing holistic isolated wetland protection, federal action is needed. The Article further provides the legal foundation—despite doubts manifested by the nation’s highest court—for the constitutionality of federal isolated wetlands regulation. This legal foundation is based upon commons analysis, which ties developers of isolated wetlands engaged in interstate commerce to those wetlands within a single act of appropriation. Such acts of appropriation are economic transactions that in the aggregate substantially affect interstate commerce—thus meeting one of the tests established by the Supreme Court for determining the constitutionality of federal legislation.

* Professor, LSU Law Center and LSU School of the Coast and Environment, Baton Rouge, Louisiana. I would like to thank my coauthor, Mike Hardig, not only for working with me on this project, but for having a profound impact on my professional development while I attended the University of Montevallo. I also want to thank him for investing so heavily in fighting the good fight to protect resources like Ebenezer Swamp. I would further like to thank my colleague Brigham Daniels for co-organizing this symposium and the BYU Law Review editorial staff for working so hard to see this Article published. Finally, we are grateful to all of the symposium participants for their valuable feedback on this Article, though the assertions made in this Article are our own.

** Professor, Department of Biology, Chemistry, and Mathematics, University of Montevallo, Montevallo, Alabama.

INTRODUCTION	1445
I. ISOLATED WETLAND RESOURCES	1450
<i>A. Wetland Values and Losses</i>	1450
<i>B. Importance of Isolated Wetlands</i>	1451
II. THE COMMERCE CLAUSE AND ISOLATED WETLANDS	1458
<i>A. Wetlands and the Clean Water Act</i>	1458
<i>B. SWANCC and Rapanos: Administrative Limits on the Clean Water Act</i>	1459
<i>C. Constitutional Limits on Future Federal Isolated Wetland Legislation?: “Significant Constitutional and Federalism Questions”</i>	1461
III. A NEED FOR FEDERAL ISOLATED WETLAND LEGISLATION?: EBENEZER PRESERVE CASE STUDY	1462
<i>A. A Wetland of National Importance: Ecological Overview</i>	1462
1. <i>Regional geology and hydrology</i>	1462
2. <i>Ebenezer Preserve hydrology</i>	1464
3. <i>Ebenezer Preserve ecology</i>	1465
4. <i>Ebenezer Preserve utilization</i>	1467
<i>B. Interstate Threat to Ebenezer Swamp: Land Use Development</i>	1469
<i>C. University of Montevallo v. Middle Tennessee Land Development Co., LLC</i>	1473
<i>D. Implications of University of Montevallo v. Middle Tennessee Land Development Co. LLC</i>	1477
IV. COMMONS ANALYSIS SUPPORTS FEDERAL REGULATION OF ISOLATED WETLANDS UNDER THE COMMERCE CLAUSE	1477
<i>A. Defining Commons</i>	1477
<i>B. Privatized Commons Resources as New Commons: Isolated Wetlands as Privatized Commons Resources</i> ...	1479
CONCLUSION	1488

INTRODUCTION

[T]he sort of isolation being considered is a political concept, not a scientifically demonstrated reality.¹

For the environmental lawyer, the term “isolated wetlands” may immediately call to mind the “abandoned gravel pit” in *Solid Waste Agency of Northern Cook County (SWANCC) v. U.S. Army Corps of Engineers*.² To be certain, the isolated wetland at the bottom of that pit became a migratory bird rest stop and served important ecological functions. But the pit has also become a rather misleading symbol of the importance of isolated wetlands to the nation, and the debate regarding how far the federal government’s Commerce Clause authority extends over land use regulation with supposedly tenuous connections to interstate commerce. The diverse types of isolated wetlands across the country are far from the stereotype of abandoned gravel pits and provide a wide variety of environmental and aesthetic values. These wetlands are of equal importance to the nation’s long-term environmental and economic well-being as wetlands with a “significant nexus” to traditional navigable waters—the key jurisdictional prerequisite for federal authority over wetland development arising out of the Clean Water Act (CWA).³

The most recent significant Supreme Court cases assessing federal jurisdiction over wetlands, *SWANCC* and *Rapanos v. United*

1. Allen E. Plocher et al., *Importance of Small Isolated Wetlands*, ILL. NAT. HIST. SURV. REP. 1, 1 (Mar. 2003) (citing RALPH W. TINER, IN SEARCH OF SWAMPLAND: A WETLAND SOURCEBOOK AND FIELD GUIDE (1998)). Others have framed the question as:

Why is there a bias against protecting small, isolated wetlands? The critical biological question is whether small wetlands are expendable, and the fundamental issue is the lack of biologically relevant data on the value of wetlands, especially so-called “isolated” wetlands of small size. . . . We argue that small wetlands are extremely valuable for maintaining biodiversity in a number of plant, invertebrate, and vertebrate taxa (e.g., amphibians) and that the disappearance of small wetlands will cause a dire reduction in the ecological connectance among remaining species populations.

Raymond D. Semlitsch & J. Russell Bodie, *Are Small, Isolated Wetlands Expendable?*, 12 CONSERVATION BIOLOGY 1129, 1130 (1998).

2. 531 U.S. 159, 167 (2001).

3. See *Rapanos v. United States*, 547 U.S. 715, 726 (2006).

States, turned on the difficult jurisdictional question of what exactly constitutes a “significant nexus.” The Court in those cases found Congress did not intend the CWA to extend federal jurisdiction to isolated wetlands without the requisite ties to navigable waters. Importantly, however, the Court not only provided its administrative law analysis of the scope of the CWA, it also opined that if Congress *had* intended to regulate isolated wetlands through the CWA (or presumably some other federal statute) it would raise “constitutional questions” about Congress’ authority to do so.⁴

In today’s political climate it may be hard to imagine legislation like the CWA being passed by Congress, much less a statute aimed at protecting isolated wetlands. The current political climate, however, does not diminish the importance of isolated wetlands to our nation, and there are strong arguments that wetland protections may be warranted at the federal level *if* states remain reticent to protect them. Many states appear to eschew such protection for many of the same reasons the Supreme Court called federal regulation of isolated wetlands into doubt. Isolated wetlands are more closely associated with land use regulation, a traditional purview of state and local governments, and states are passive in protecting natural capital through land use regulation for fear that doing so will push economic growth and development to other jurisdictions—the typical race-to-the-bottom, commons-herder mentality played out on the governmental scale.⁵ This is not to say there are no examples of state-level natural capital protection policies, such as Wisconsin’s wetland regulatory scheme (reaching isolated wetlands);⁶ Portland, Oregon’s growth boundary program;⁷ Maryland’s forest preservation ordinance;⁸ or Tallahassee, Florida’s tree protection

4. *SWANCC*, 531 U.S. at 173.

5. See BLAKE HUDSON, *CONSTITUTIONS AND THE COMMONS: THE IMPACT OF FEDERAL GOVERNANCE ON LOCAL, NATIONAL, AND GLOBAL RESOURCE MANAGEMENT* (2014).

6. Wetland Rules and Regulations, WISCONSIN WETLANDS ASS’N, <http://www.wisconsinwetlands.org/protectingwisconsinregs.htm> (last visited Sept. 20, 2014); see *Just v. Marinette Cnty.*, 201 N.W.2d 761 (Wis. 1972).

7. See Urban Growth Boundary, OREGON METRO, <http://www.oregonmetro.gov/urban-growth-boundary> (last visited Sept. 20, 2014).

8. Washington County, Md., Forest Conservation Ordinance (Dec. 17, 2013), available at http://www.washco-md.net/county_attorney/pdf/forestcn.pdf.

ordinance.⁹ But these examples are few and far between, and urban sprawl proceeds apace across much of the nation. In addition, while a number of states purport to regulate isolated wetlands not protected at the federal level, only a handful of these programs have been successful to date.¹⁰ Most state and local governments rely solely on the CWA for protection of wetlands within their borders, which, of course, does not cover isolated wetlands.¹¹ States with some of the highest percentages of isolated wetland acreages afford them no protection whatsoever.¹² As a result of the *SWANCC* and *Rapanos* cases' jurisdictional limitation on wetlands covered under the CWA, and the constitutional doubts raised by those cases, scholars have called for greater state and local regulation to protect isolated wetlands.¹³ These proposed policies may include special protection ordinances and zoning regulations, which are considered "the most effective protection method."¹⁴

Nonetheless, many isolated wetlands are left in a precarious position of being protected by nothing more than common law claims that are exceedingly difficult to prevail upon, and which are of limited usefulness if property owners are not actively policing neighbors' attempts to drain isolated wetlands or capably playing an enforcement role through the court system. One wetland potentially falling within current conceptions of "isolated wetlands" is Ebenezer

9. Leon County, Fla., Land Development Code ch. 10, sec. 10-1.101, available at https://www.municode.com/library/fl/leon_county/codes/code_of_ordinances?nodeId=COLA_CH10LADECO_ARTIINGE_S10-1.101DE.

10. NAT'L WILDLIFE FED., N & NATURAL RES. DEF. COUNCIL, WETLANDS AT RISK: IMPERILED TREASURES 7 (2002), available at <http://www.nrdc.org/water/conservation/atrisk/wetlands.pdf> [hereinafter NWF & NRDC]; Karen Capiella & Lisa Fraley-McNeal, *The Importance of Protecting Vulnerable Streams and Wetlands at the Local Level*, WETLANDS & WATERSHEDS 1, 19–20 (Aug. 2007); John R. Dorney et al., *Isolated Wetlands in the Southeastern United States: A Comparison of State Regulatory Programs and Implications of Recent Research*, 34 NAT'L WETLANDS NEWSLETTER 21, 21–25 (2012); Scott G. Leibowitz & Tracie-Lynn Nadeau, *Isolated Wetlands: State-of-the-Science and Future Directions*, 23 WETLANDS 663, 680 (2003).

11. Capiella & Fraley-McNeal, *supra* note 10, at 12. Some local governments maintain policies aimed at isolated wetlands. *Id.* at 24–28.

12. Jon Kusler, *The SWANCC Decision and State Regulation of Wetlands*, ASS'N OF STATE WETLAND MANAGERS (2001), available at http://www.epa.gov/owow/wetlands/pdf/ASWM_Report.pdf.

13. Capiella & Fraley-McNeal, *supra* note 10, at 1, 22.

14. *Id.* at 22, 24–28.

Swamp, officially known as Ebenezer Wetlands Ecological Preserve (Ebenezer Preserve or the Preserve). The Preserve is located just outside the city of Montevallo, Alabama, and is owned by the University of Montevallo (University). This species-rich ecosystem is aquifer- and rain-fed, rather than being continuously fed by surface streams or other “navigable waters.” When a nearby quarry operator made plans to open a quarry just north of the Preserve, the University took action, with the assistance of one of the authors (Hardig), relying on a common law claim of anticipatory nuisance—an exceedingly difficult claim to prove. As demonstrated below, the University had to prove the quarry’s activities would, with near certainty, rise to a nuisance if not enjoined. While the University succeeded in this case, it did so primarily because the narrow set of facts were in its favor.

It remains to be seen whether the Corps of Engineers’ (Corps) recent proposed rule delineating more clearly which wetlands meet the Court’s “significant nexus test”¹⁵ would result in CWA jurisdiction over a wetland like Ebenezer Preserve, given that a non-navigable, perennial stream flows from the Preserve and eventually makes its way to traditional navigable waters. Yet at the time of the case in 2005, the University believed that it maintained no legitimate federal CWA section 404 permit claim. This doubt combined with the unique facts presented in the case is at least enough to support a conclusion that anticipatory nuisance doctrine and other archaic tools for environmental protection are not sufficient to reliably protect critical wetlands like Ebenezer Swamp. State or local government regulatory intervention may be preferable to federal intervention, as local and state governments maintain better information regarding the nature of isolated wetlands within their borders and the threats facing them, and may more efficiently administer programs to protect wetlands. Indeed, these are some of the well-recognized justifications for decentralized governance.¹⁶ But

15. Proposed Rule for Definition of “Waters of the United States” Under the Clean Water Act, 79 Fed. Reg. 22, 188 (proposed Apr. 21, 2014) (to be codified at 40 C.F.R. pt. 110), *available at* <http://www.gpo.gov/fdsys/pkg/FR-2014-04-21/pdf/2014-07142.pdf> [hereinafter Proposed Rule].

16. Federalism is said to promote economic growth and reciprocity in the enforcement of the law, provide safeguards against the potential tyranny of centralized power, encourage local citizen participation in governance and experimentation with new forms of governance,

in the absence of holistic state or local protection across the nation, isolated wetlands need stronger protections. As the National Wildlife Federation (NWF) and National Resources Defense Council (NRDC) argue:

A patchwork of local and state protections cannot ensure the future survival of wetland-dependent migratory birds that fly thousands of miles, crossing entire continents. The damage caused by wetland destruction—increased water pollution and flooding and decreased groundwater recharge—is not restricted to one state. Local communities, states and the U.S. Congress must act quickly to ensure the future of the nation’s imperiled wetland treasures, or they will be lost forever. The inevitable result will be increased flooding, more water pollution and greater loss of wildlife habitat and biodiversity. We will all be the poorer for it.¹⁷

Forgetting for a moment the political improbability of Congress passing isolated wetland regulation, does the United States need federal isolated wetland regulation? We argue that, in the absence of sufficient state or local regulatory protections, it does. Beyond that, is there a case to be made for the constitutionality of federal isolated wetlands regulation—arguments that would adequately answer the constitutional questions raised by the Court in *SWANCC* and *Rapanos*? We contend there are such arguments, and this Article lays the legal foundation for federal isolated wetlands legislation. Part I discusses the value of isolated wetland resources more generally. Part II briefly details the constitutional questions raised regarding Congress’ reach over isolated wetlands. Part III utilizes Ebenezer Swamp as a case study for exploring the need for isolated wetland regulation at the federal level in the absence of appropriate state action. Part IV proceeds by detailing the constitutional analysis that would validate federal action under the Commerce Clause, primarily relying on prior research applying commons analysis to the “substantial effects” test utilized by the Court for assessing the constitutionality of federal statutes under the Commerce Clause.

and lead to administrative efficiency as decentralized governments can specifically tailor laws to fit local needs. Keith S. Rosenn, *Federalism in the Americas in Comparative Perspective*, 26 U. MIAMI INTER-AM. L. REV. 1, 6–7 (1994); see also Marcus B. Lane, *Decentralization or Privatization of Environmental Governance? Forest Conflict and Bioregional Assessment in Australia*, 19 J. RURAL STUD. 283, 284–85 (2003).

17. NAT’L WILDLIFE FED.,N & NATURAL RES. DEF. COUNCIL, *supra* note 10, at 19.

Part V briefly concludes.

I. ISOLATED WETLAND RESOURCES

A. *Wetland Values and Losses*

Wetlands provide a number of important ecosystem services.¹⁸ Wetlands reduce damages associated with flooding, protecting property owners, industries and other developments, and ecosystems downstream. A watershed containing at least 30% wetlands, for example, can reduce flooding by 60% to 80% relative to watersheds containing no wetlands.¹⁹ Wetlands also facilitate groundwater recharge and discharge, acting as sponges slowly absorbing and releasing water from and into the soil. Through the same processes, wetlands perform important erosion control services. Wetlands perform water quality control services, filtering out nutrients like nitrogen, phosphorus, and organic pollutants.²⁰ This can reduce the costs of developing human-built structures in the form of municipal water treatment systems. Wetlands further provide recreational opportunities²¹ and crucial habitats for a diverse number of economic and non-economic species.²² Finally, wetlands store vast quantities of carbon and can “contribute to amelioration of climate change impacts.”²³

Over the last century, development has claimed over half of all wetlands in North America.²⁴ Arkansas, California, Connecticut, Illinois, Indiana, Iowa, Kentucky, Maryland, Missouri, and Ohio have each lost 70% or more of their original wetland acreage.²⁵ Iowa

18. Capiella & Fraley-McNeal, *supra* note 10, at 9–11.

19. Raissa Marks, *Ecologically Isolated Wetlands*, WILDLIFE HABITAT COUNCIL 1, 2 (2006), *available at* <http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=18517.wba>.

20. *Id.*

21. *Id.*

22. Capiella & Fraley-McNeal, *supra* note 10, at iii; Marks, *supra* note 19, at 2.

23. Loren M. Smith et al., *Are Isolated Wetlands Isolated?*, 33 NAT'L WETLANDS NEWSLETTER 26, 27 (2011) (citing Ned. H. Euliss Jr. et al., *North American Prairie Wetlands Are Important Non-Forested Land-Based Carbon Storage Sites*, 361 SCI. TOTAL ENV'T 179–88 (2006)).

24. David Moreno-Mateos et al., *Structural and Functional Loss in Restored Wetland Ecosystems*, 10 PLOS BIOLOGY 1, 1 (2012).

25. Marks, *supra* note 19, at 2.

has lost 95% of its wetlands, Minnesota 53%, South Dakota 35%, and North Dakota 60%.²⁶ These wetland losses have created dramatic habitat fragmentation, isolating many wetlands from surrounding waters, which negatively impacts the services they are able to provide—and especially the preservation of biodiversity habitats.

B. Importance of Isolated Wetlands

The term “isolated wetlands” has not been used consistently in the literature and does not have a uniform definition,²⁷ but wetlands considered isolated have been variously described hydrologically, ecologically, geographically,²⁸ and, of course, legally.²⁹ Ecologists have long defined isolated wetlands by hydrologic characteristics, based upon their lack of connection to other waters via surface waters.³⁰ But advances in hydrologic understandings render this understanding ill-informed since isolated wetlands may be connected to other bodies of water through groundwater systems.³¹ Wetlands also can be connected to other waters biotically when spillage during periodic flooding transfers biological organisms between isolated wetlands and other waters or when those organisms are dispersed through the air or over land.³² All of these connections effectively render the descriptor “isolated” a misnomer. Rather, these wetlands “are best understood as occurring within an isolation-connectivity continuum that has both hydrologic and biotic expressions.”³³

Despite the difficulty in forming a uniform understanding of isolated wetlands, they have been defined in the literature as “geographically isolated wetlands,”³⁴ “wetlands that are completely

26. NAT'L WILDLIFE FED.,N & NATURAL RES. DEF. COUNCIL, *supra* note 10, at 10.

27. Cappiella & Fraley-McNeal, *supra* note 10, at 6.

28. Leibowitz & Nadeau, *supra* note 10, at 664 (citing Ralph Tiner, *Geographically Isolated Wetlands of the United States*, 23 WETLANDS 494 (2003)).

29. Smith et al., *supra* note 23, at 26.

30. Leibowitz & Nadeau, *supra* note 10, at 664.

31. *Id.* (citing Dennis F. Whigham & Thomas E. Jordan, *Isolated Wetlands and Water Quality*, 23 WETLANDS 541 (2003)); *see also* Cappiella & Fraley-McNeal, *supra* note 10, at 2.

32. Leibowitz & Nadeau, *supra* note 10, at 668.

33. *Id.* at 669 (citing Scott G. Leibowitz, *Isolated Wetlands and Their Functions: An Ecological Perspective*, 23 WETLANDS 517 (2003)).

34. Dorney et al., *supra* note 10, at 21 (citing Ralph Tiner, *Estimated Extent of Geographically Isolated Wetlands in Selected Areas of the United States*, 23 WETLANDS 636–52 (2003)).

surrounded by upland,”³⁵ wetlands “not connected to each other or to other bodies of water by vegetated corridors or buffers, through which wildlife can easily disperse,”³⁶ and wetlands “generally not immediately adjacent or lack[ing] apparent surface water connection to navigable waters; they have well-defined wetland boundaries surrounded by terrestrial systems.”³⁷ The Corps has never formally defined isolated wetlands in the context of CWA jurisdiction, but has provided a definition of isolated wetlands in general permits issued under the program: “those non-tidal waters of the United States that are (1) Not part of a surface tributary system to interstate or navigable waters of the United States; and (2) Not adjacent to such tributary waterbodies.”³⁸ The Corps has also issued guidance describing isolated wetlands as those “lack[ing] links to interstate commerce sufficient to serve as a basis for jurisdiction.”³⁹ Similarly, some states have attempted to define isolated wetlands, such as the state of Florida describing them as “any wetland without a direct hydrologic connection by standing or flowing surface water at seasonal high water levels to a lake, stream, estuary, or marine waters.”⁴⁰

The exact extent of isolated wetlands nationwide is not known, but a number of estimates have been generated for specific states, as well as for the United States as a whole. The estimates typically have been calculated based upon the wetlands’ likelihood of being outside the ambit of currently understood CWA section 404 jurisdiction, as scientists were increasingly concerned post-SWANCC about the loss of federal jurisdiction over a number of wetlands considered isolated.⁴¹ As a few examples, up to 44% of

35. Leibowitz & Nadeau, *supra* note 10, at 664 (quoting Tiner, *supra* note 28).

36. Marks, *supra* note 19, at 2.

37. Smith et al., *supra* note 23, at 26 (citing Tiner, *supra* note 28).

38. 33 C.F.R. § 330.2(e) (2014).

39. U.S. ARMY CORPS OF ENGINEERS, JURISDICTIONAL DETERMINATION FORM: INSTRUCTIONAL GUIDEBOOK 32 (2007), available at http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/cwa_guide/jd_guidebook_051207final.pdf; see also Dorney et al., *supra* note 10, at 21.

40. Robin Hart & James R. Newman, *The Importance of Isolated Wetlands to Fish and Wildlife in Florida*, in FLORIDA GAME & FRESHWATER FISH COMM’N 15 (Dec. 1995) (citation omitted).

41. Leibowitz & Nadeau, *supra* note 10, at 675–76.

Alabama's wetlands may fall into the isolated category,⁴² as may 31% of Indiana's, 24% of Wisconsin's, 60% of Illinois',⁴³ and 40% of Ohio's wetlands.⁴⁴ Estimates of the total isolated wetlands area in the United States range from 20%⁴⁵ to 30%.⁴⁶ This amount is important, because as scholars note, "20 to 30 percent of America's wetlands might eventually be deemed 'isolated' by the executive branch or by the courts because they will apply an unscientific standard: the absence of a direct surface connection to other bodies of water."⁴⁷

Isolated wetlands provide a broad range of functional services, partly due to the fact that they occur over such a wide range of geologic and climatic settings and are of such a size and scope that they maintain a wide range of unique characteristics.⁴⁸ Though isolated wetlands tend to be small, some are larger in size.⁴⁹ They include:

woodland vernal pools, natural and excavated ponds, former floodplain wetlands, seepage slope wetlands, . . . prairie potholes, playa lakes, Delmarva bays, vernal pools, alpine wet meadows, Carolina bays, limesink ponds, cypress ponds, Nebraska's Rainwater Basin and Sandhills wetlands, kettle-hole bogs, dune swale wetlands, desert springs and seeps, deflation plain wetlands, [pocosins, seepage swamps (aquifer fed),] and sinkhole wetlands.⁵⁰

While the South Atlantic and Gulf Coastal Plain have the greatest *diversity* of isolated wetland types, the highest *proportion* of isolated wetlands are found in the upper Great Lakes, north-central interior, and the Great Plains regions.⁵¹ Alabama actually maintains the

42. Capiella & Fraley-McNeal, *supra* note 10, at 8; *see also* Patrick Comer et al., *Biodiversity Values of Geographically Isolated Wetlands in the United States*, NATURESERVE (2005), [available at](http://www.natureserve.org/sites/default/files/projects/files/isolated_wetlands.pdf) http://www.natureserve.org/sites/default/files/projects/files/isolated_wetlands.pdf (estimating Alabama isolated wetlands represent 36% of the state's total wetlands).

43. Leibowitz & Nadeau, *supra* note 10, at 666.

44. NAT'L WILDLIFE FED.,N & NATURAL RES. DEF. COUNCIL, *supra* note 10, at 9.

45. Leibowitz & Nadeau, *supra* note 10, at 666.

46. Capiella & Fraley-McNeal, *supra* note 10, at 7.

47. NAT'L WILDLIFE FED.,N & NATURAL RES. DEF. COUNCIL, *supra* note 10, at 2.

48. Leibowitz & Nadeau, *supra* note 10, at 663.

49. *Id.* at 665.

50. *Id.*

51. *See* Comer et al., *supra* note 42; *see also* NAT'L WILDLIFE FED.,N & NATURAL RES.

greatest proportion of isolated wetlands of any state in the southeastern United States, with up to 44% of the state's total wetland area isolated, as noted earlier.⁵²

Isolated wetlands, though "isolated" by some amorphous standard, "do not operate in a vacuum, and they provide ecosystem services to the whole of society far beyond the boundaries of the individual wetland."⁵³ They facilitate groundwater recharge of important aquifers such as the Ogallala,⁵⁴ upon which much of the United States' agricultural and energy development depends.⁵⁵ Not only do isolated wetlands play this important water supply role, but they also detain local surface and precipitation runoff.⁵⁶ Isolated wetlands transfer nutrients to nearby lands and waters, moderate temperature of receiving waters to which they maintain connections, and physically retain, absorb, or chemically transform sediments or other nutrients.⁵⁷ Conversely, the loss or draining of isolated wetlands can lead to degradation of other waters downslope (including those considered navigable waters under the CWA).⁵⁸ Accordingly, isolated wetlands play a key role in regional water quality and availability.

Isolated wetlands support high levels of biodiversity, and "are among the country's most significant resources in terms of biological diversity."⁵⁹ They often support rare, threatened, and endangered species, "partly because they represent an infrequent habitat type within a relatively homogeneous landscape."⁶⁰ One-third of species threatened or endangered in the United States depend on wetlands generally, and many of those are found solely

DEF. COUNCIL, *supra* note 10, at 4.

52. Capiella & Fraley-McNeal, *supra* note 10, at 8. Others estimate that isolated wetlands in the Southeast generally make up no more than 5% of total wetland acreage, though it is difficult to determine with certainty given different conceptions of what is "isolated." Dorney et al., *supra* note 10, at 23; *see also* Comer et al., *supra* note 42.

53. Smith et al., *supra* note 23, at 27.

54. Leibowitz & Nadeau, *supra* note 10, at 669.

55. *Id.*; Smith et al., *supra* note 23, at 26.

56. Leibowitz & Nadeau, *supra* note 10, at 670.

57. *Id.*; Capiella & Fraley-McNeal, *supra* note 10, at 10.

58. Leibowitz & Nadeau, *supra* note 10, at 670.

59. Capiella & Fraley-McNeal, *supra* note 10, at 11.

60. Leibowitz & Nadeau, *supra* note 10, at 671.

in isolated wetland habitats.⁶¹ A 2005 study of all fifty states found isolated wetlands supported 274 at-risk plant and animal species, many of which were endemic to isolated wetland habitats.⁶² One study determined that twenty species of amphibians in South Carolina “would become extinct if all . . . isolated wetlands were lost.”⁶³

Because some isolated wetlands experience wet-dry cycles, they also can have high temporal diversity⁶⁴ as the habitat shifts back and forth over time during respective cycles and provides a degree of dynamism to the habitat not seen in contiguous wetlands.⁶⁵ In particular, the southeastern United States maintains a wide range of isolated wetlands noted for their biological uniqueness and for supporting species not found in “navigable” wetlands, as that term is understood jurisdictionally.⁶⁶ Even so, habitat loss for important species relying on isolated wetlands has been particularly severe in the southeastern United States.⁶⁷ Studies performed in areas rich in biodiversity, like Florida, have concluded that due to isolated wetlands’ support of a wide range of diverse species, isolated wetlands “should receive the same degree of protection as contiguous wetlands,”⁶⁸ and that “[t]he legal emphasis on protection of contiguous wetlands can be traced to limited understanding of the biological importance of isolated wetlands.”⁶⁹

Isolated wetlands are threatened by agriculture, forestry and mining activities, and general land development for commercial, residential, and other purposes.⁷⁰ Over the last few decades, for example, a disturbing correlation has emerged between the rate of population growth and the rate of land development. As seen in Figure 1, even as population grows, land is developed at *more than*

61. Marks, *supra* note 19, at 4.

62. Capiella & Fraley-McNeal, *supra* note 10, at 11.

63. *Id.* (citing SOUTHERN ENVIRONMENTAL LAW CENTER, AT RISK: SOUTH CAROLINA’S “ISOLATED” WETLANDS 2003–2004 (2004)).

64. Leibowitz & Nadeau, *supra* note 10, at 671.

65. Hart & Newman, *supra* note 40, at 105.

66. *Id.* at 3.

67. Semlitsch & Bodie, *supra* note 1, at 1132.

68. Hart & Newman, *supra* note 40, at ii.

69. *Id.* at 2.

70. Capiella & Fraley-McNeal, *supra* note 10, at 11.

twice the rate of population growth.⁷¹ This has dire implications for the future of the nation's wetlands as populations continue to rise. Indeed, between 1998 and 2004, nearly 61% of wetland losses were due to urban and rural land development.⁷²

71. DANA BEACH, COASTAL SPRAWL: THE EFFECTS OF URBAN DESIGN ON AQUATIC ECOSYSTEMS IN THE UNITED STATES, PEW OCEANS COMM'N 4-5 (2002), *available at* http://www.pewtrusts.org/~media/legacy/uploadedfiles/wwwpewtrustsorg/reports/protecting_ocean_life/envpewoceanssprawlpdf.pdf.

72. T. E. DAHL, STATUS AND TRENDS OF WETLANDS IN THE CONTERMINOUS UNITED STATES 1998 TO 2004, U.S. FISH & WILDLIFE SERV. 16 (2006), *available at* <http://www.fws.gov/wetlands/Documents/Status-and-Trends-of-Wetlands-in-the-Conterminous-United-States-1998-to-2004.pdf>.

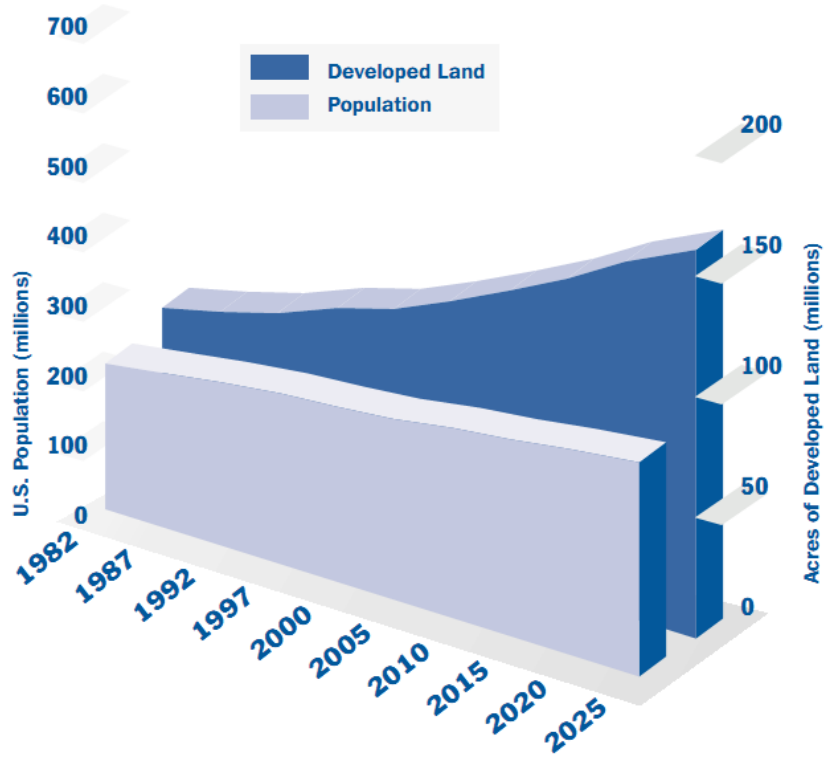


Figure 1 Ratio of Acres of Land Developed to Population Growth

A number of factors make isolated wetlands particularly

vulnerable to development. Isolated wetlands are relatively easy to fill (or to justify planning for “relocation”⁷³) compared to larger contiguous wetlands. In addition, they are “often unnamed, rarely appear on maps, and are not always wet,” which means “they are not always recognized as streams or wetlands and are consequently not afforded adequate protection during development.”⁷⁴ The aggregated effects of isolated wetland loss are significant. As one scholar notes, “[o]ne must also consider cumulative loss: a single 1/4 acre wetland may not seem to be a significant loss, but a thousand is quite a different story” since the aggregate loss increases flooding and decreases water quality, groundwater recharge, and wildlife habitat through fragmentation.⁷⁵

II. THE COMMERCE CLAUSE AND ISOLATED WETLANDS

A. Wetlands and the Clean Water Act

Most federal environmental laws are passed pursuant to the authority of Congress “[t]o regulate Commerce . . . among the several States.”⁷⁶ The CWA is one such law. It regulates “navigable waters,” defined as “waters of the United States, including the territorial seas.”⁷⁷ The Environmental Protection Agency (EPA) and the Corps, who administer the statute, have subsequently defined “waters of the United States” to include a wide variety of wetlands, including wetlands adjacent to traditional navigable waters and wetlands along tributaries flowing to traditional navigable waters. The Corps recently issued a proposed rule clarifying its jurisdiction.⁷⁸

73. Furthermore, ecologists have long understood relocation and mitigation of wetlands to be problematic, due to the difficulties in achieving functionality of original wetlands among other problems. See Joy B. Zedler, *Ecological Issues in Wetland Mitigation: An Introduction to the Forum*, 6 *ECOLOGICAL APPLICATIONS* 33 (1996); Moreno-Mateos et al., *supra* note 24; Jeremy Hance, *Protecting Original Wetlands Far Preferable to Restoration*, MONGABAY.COM (Jan. 26, 2012), http://news.mongabay.com/2012/0126-hance_wetlands_restoration.html?utm_campaign=General+news&utm_medium=Twitter&utm_source=SNS.analytics (citation omitted).

74. Capiella & Fraley-McNeal, *supra* note 10, at 18.

75. Plocher et al., *supra* note 1, at 3.

76. U.S. CONST. art. I, § 8, cl. 3.

77. 33 U.S.C. § 1362 (2012).

78. Proposed Rule, *supra* note 15; see also *Clean Water Act Definition of “Waters of the U.S.”*, EPA, <http://water.epa.gov/lawsregs/guidance/wetlands/CWAwaters.cfm> (last visited

The CWA requires a permit for discharging “dredged or fill materials” into jurisdictional wetlands⁷⁹ under its Section 404 program. The Corps is given the primary responsibility of issuing 404 permits for the fill of wetlands while the EPA undertakes an oversight role.⁸⁰ The “no net loss” policy adopted under the first Bush administration requires that 404 permitting be tied to mitigation activities to reduce the loss of wetland area.⁸¹ Before a permit is issued, parties must demonstrate they have attempted to avoid damage to wetlands and, if avoidance is impossible, that they have minimized wetland destruction and compensated for any damages that may occur. Compensation can be achieved through mitigation activities that offset the destruction of wetlands through wetland protection or restoration elsewhere. These activities can include mitigation banking, in-lieu fee permitting, and permittee-responsible mitigation.⁸²

B. SWANCC and Rapanos: Administrative Limits on the Clean Water Act

The CWA’s influence over the nation’s wetland resources is not boundless, however, and the Supreme Court has found administrative limits on the CWA’s scope within the text of the statute itself—though those limits are quite unclear in their own scope. These administrative limits were highlighted in two relatively recent cases, *SWANCC*⁸³ and *Rapanos*.⁸⁴ Importantly, these two cases have also caused a great deal of concern over the scope of the federal government’s environmental authority under the Commerce Clause.⁸⁵

Sept. 23, 2014).

79. 33 U.S.C. § 1344 (2012).

80. The EPA’s oversight role is very limited in practice, however. Though the EPA maintains veto authority over Corps permitting, it only exercised this power eleven times between 1972 and 2007. CRAIG PITTMAN & MATTHEW WAITE, *PAVING PARADISE: FLORIDA’S VANISHING WETLANDS AND THE FAILURE OF NO NET LOSS* 167 (2009).

81. United States Department of Agriculture, Natural Resources Conservation Service, Wetlands, <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/water/wetlands/>.

82. 33 C.F.R. 230 (2012).

83. *Solid Waste Agency of N. Cook Cnty. v. U.S. Army Corps of Engineers (SWAANC)*, 531 U.S. 159, 163 (2001).

84. *Rapanos v. United States*, 547 U.S. 715, 726 (2006).

85. Blake Hudson, *Commerce in the Commons: A Unified Theory of Natural Capital*

SWANCC involved parties who sought to purchase an abandoned gravel pit in which to dispose of nonhazardous wastes.⁸⁶ Water within the pit, however, had contributed to the emergence of a habitat for endangered migratory birds.⁸⁷ The Corps denied the parties a permit for the proposed use under its Section 404(a) authority,⁸⁸ applying what it referred to as the Migratory Bird Rule. The rule asserted that the Corps's jurisdiction extended to intrastate waters "[w]hich are or would be used as habitat by . . . migratory birds which cross state lines."⁸⁹ The government argued "the protection of migratory birds is a 'national interest of very nearly the first magnitude,' . . . [and], as the Court of Appeals found, millions of people spend over a billion dollars annually on recreational pursuits relating to migratory birds."⁹⁰

Though plaintiffs raised a number of constitutional challenges to the rule, the Court proceeded to decide the case upon statutory interpretation grounds, avoiding constitutional questions about the scope of the Commerce Clause.⁹¹ The Court construed the CWA as not granting the Corps the authority to reach isolated wetlands like the abandoned mining pit and held the CWA did not apply to intrastate land merely because of the presence of migratory birds.⁹²

The Court again addressed the scope of the CWA's application to wetlands in *Rapanos*.⁹³ In *Rapanos*, a number of property owners challenged the Corps's 404 permitting authority over portions of property connected to wetlands by man-made drains. The Court rejected the Corps's claim that the CWA gave it the power to regulate wetlands notwithstanding tenuous connections to "navigable waters."⁹⁴ The Court, as in *SWANCC*, based its conclusion solely upon statutory interpretation grounds, construing

Regulation Under the Commerce Clause, 35 HARV. ENVTL. L. REV. 375, 416–18 (2011).

86. *SWANCC*, 531 U.S. at 163.

87. *Id.* at 164.

88. 33 U.S.C. § 1344(a) (2012); *SWANCC*, 531 U.S. at 165.

89. Final Rule for Regulatory Programs of the Corps of Engineers, 51 Fed. Reg. 41,206, 41,217 (Nov. 13, 1986) (to be codified at 33 C.F.R. pt. 328.3).

90. *SWANCC*, 531 U.S. at 173.

91. *Id.* at 174.

92. *Id.*

93. *Rapanos v. United States*, 547 U.S. 715 (2006).

94. *Id.* at 730–32.

the CWA narrowly and refusing to address the constitutional issues raised by the property owners.⁹⁵ The decision, however, was a plurality decision, with four Justices maintaining a narrow jurisdictional view of wetlands with strong surface connections to waters that are navigable in fact, four Justices deferring to the Corps's determination of wetland jurisdiction, and Justice Kennedy declaring that wetlands with a "significant nexus" to navigable waters were covered under the CWA.⁹⁶

C. Constitutional Limits on Future Federal Isolated Wetland Legislation?: "Significant Constitutional and Federalism Questions"

Though the Court refused to address the constitutional claims raised by plaintiffs in *SWANCC*,⁹⁷ it still opined on how those claims might manifest were they before the Court. For example, the Court stated:

These are significant constitutional questions raised by respondents' application of their regulations 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. . . . We thus read the statute as written to avoid the significant constitutional and federalism questions raised by respondents' interpretation⁹⁸

Similarly, in *Rapanos* the Court stated it would not read the CWA so expansively as to allow the act to extend to an area traditionally reserved for state governments, arguing:

Regulation of land use, as through the issuance of the development permits sought by petitioners in both of these cases, is a quintessential state and local power. . . . The extensive federal

95. *Id.* at 739. See Ilya Somin, *A False Dawn for Federalism: Clear Statement Rules After Gonzales v. Raich*, 2006 CATO SUP. CT. REV. 113, 127. Somin argues that "*Rapanos* probably does not impose significant limits on the scope of federal authority under the CWA." *Id.* at 130.

96. *Rapanos*, 547 U.S. at 717, 726, 788.

97. Plaintiffs claimed that Congress lacked the power under the Commerce Clause to grant jurisdiction over wetlands subject to the Migratory Bird Rule. *SWANCC*, 531 U.S. at 166.

98. *Id.* at 174.

jurisdiction urged by the Government would authorize the Corps to function as a *de facto* regulator of immense stretches of intrastate land—an authority the agency has shown its willingness to exercise with the scope of discretion that would befit a local zoning board.

... [T]he Corps' interpretation stretches the outer limits of Congress's commerce power and raises difficult questions about the ultimate scope of that power.⁹⁹

To be clear, the Court did not state that such an intrusion would be *per se* unconstitutional, but rather it stated the Court would need a clear statement from Congress claiming such authority before it could engage in constitutional analysis.¹⁰⁰ While the Court did not decide the constitutional questions it raised, the casting of doubt on federal authority over isolated wetlands has implications for the ultimate protection of many wetlands important to the nation—including wetlands with ecological and economic importance like Ebenezer Preserve. The next section demonstrates the value of wetlands like Ebenezer Preserve, and the archaic, unreliable protections afforded to them in the absence of local and state protections and in the event that they may fall outside the ambit of federal jurisdiction under the CWA. The following section lays the foundation for Part IV's discussion of how, in the absence of local or state protections, federal protections should, and could, constitutionally be implemented for isolated wetlands.

III. A NEED FOR FEDERAL ISOLATED WETLAND LEGISLATION?: EBENEZER PRESERVE CASE STUDY

A. A Wetland of National Importance: Ecological Overview

1. Regional geology and hydrology

Ebenezer Swamp is located on Spring Creek at the southern end of the Cahaba Valley in western Shelby County, Alabama. This region of the Cahaba Valley is located within the Appalachian fold and thrust belt and is situated on top of a series of carbonate rocks of Cambrian and Ordovician age.¹⁰¹ Large-scale folding and faulting of

99. *Rapanos*, 547 U.S. at 738 (citations omitted).

100. *Id.* at 738.

101. WILLIAM M. WARREN, SINKHOLE OCCURRENCE IN WESTERN SHELBY COUNTY,

these sedimentary bedrocks has resulted in complex geologic structure and groundwater flow patterns. Groundwater moving through the carbonate bedrock beneath the Cahaba Valley forms a part of the Valley and Ridge Aquifer system.¹⁰² Generally, the geologic and hydrologic conditions in a youthful carbonate valley such as the Cahaba Valley are such that groundwater moves from higher to lower elevations, returning to the surface as springs where the water table intersects the land surface. As seen in Figure 2, ground water also reappears as stream flow in stream channels, coinciding with the lowest point in the valley cross section.¹⁰³ The carbonaceous bedrocks beneath southern Cahaba Valley form a karst terrain, where sinkholes occur.¹⁰⁴ Several municipal water systems (e.g., the cities of Montevallo, Calera, and Wilton) and numerous private water consumers in the region use wells and pumps to draw water from these aquifer systems for a variety of domestic and commercial uses. The waters of the Valley and Ridge Aquifer system issue from countless springs throughout the region and many of these springs are found in association with wetland habitats.¹⁰⁵

ALABAMA, GEOLOGICAL SURVEY OF ALABAMA (1976).

102. Lois D. George et al., *The Hydrogeology of Ebenezer Swamp and Vicinity—Preservation of a Ground-Water Dependent Ecosystem*, in *SINKHOLES AND THE ENGINEERING AND ENVIRONMENTAL IMPACTS OF KARST* 414–22 (L.B. Yuhr, C.A. Alexander & B.F. Beck eds., 2008); WARREN, *supra* note 101.

103. *See infra* Figure 2.

104. *See* George et al., *supra* note 102; WARREN, *supra* note 101.

105. WARREN, *supra* note 101.

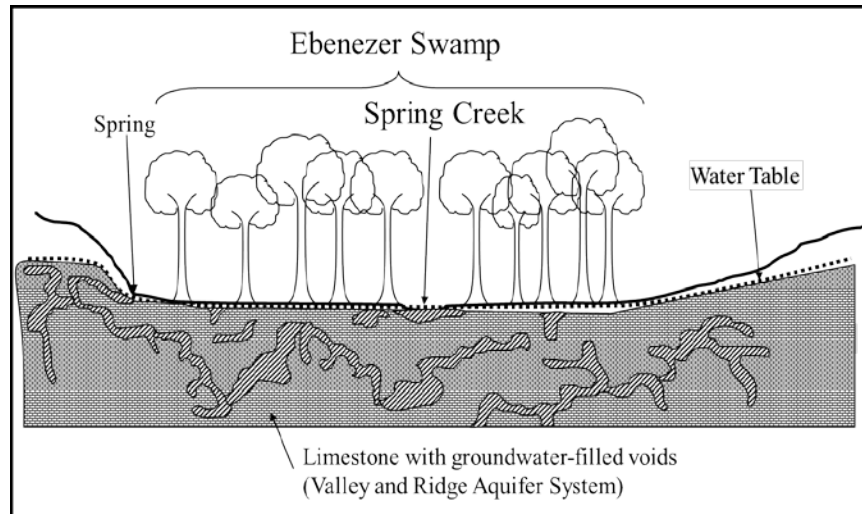


Figure 2 Schematic cross-section of basin showing geologic and hydrologic conditions in a youthful carbonate valley.

2. Ebenezer Preserve hydrology

Ebenezer Preserve sits on a pivotal point in the local watershed and its ecology is determined in large part by the hydrology of the site (that is, its water cycle).¹⁰⁶ North of Ebenezer Swamp, the upper portion of Spring Creek is fed by annual streams. Annual streams carry water intermittently, usually during and after rainfall events, and are dry the rest of the time. Despite the episodic additions of surface water from the north, Ebenezer Swamp is perpetually wet and Spring Creek issues from it as a perennial stream. The disparity between the northern and southern ends is due to the contribution of groundwater from numerous artesian (i.e., free-flowing) springs along the creek within the boundaries of the Preserve. This is typical of all streams located on top of Valley and Ridge carbonate terrains.¹⁰⁷ Ebenezer Swamp is underlain by Ketona and Bibb

106. George et al., *supra* note 102.

107. *See supra* Figure 2.

dolomite of the Cambrian Age, which forms the matrix for a portion of the Valley and Ridge Aquifer system, the source of Ebenezer Swamp's groundwater inputs.

Surface water and groundwater move into and through the site at very different speeds. Surface water moves quickly in open flow above the soil surface when the subsurface is saturated, while groundwater moves through cavities and pores in the soil and bedrock forming the aquifer.¹⁰⁸ The amount of surface water flowing at any given time fluctuates from nothing during dry periods to "peak flow" after a rainfall. Groundwater-fed spring flows, however, are continuous and persistent, drawing on the reservoir-capacity of the aquifer. Within the boundaries of Ebenezer Swamp, the stream surface of Spring Creek is also the surface of the water table.¹⁰⁹ Likewise, the points at which the many artesian wells issue water along the western margin of Spring Creek also mark the surface of the water table.¹¹⁰ One such spring is Ebenezer Spring, which is adjacent to the Ebenezer United Methodist Church, affording public access to the spring. The springhead is encircled by a low-walled cistern of indeterminate age. Watercress thrives in the cool clear water issuing from the cistern on its way into the Preserve.

Locals have visited Ebenezer Spring for both water and watercress for a century or more (Ebenezer United Methodist Church was established in 1818, along the western margin of what would later become known as Ebenezer Swamp) and long-term residents have never known Ebenezer Spring to go dry. The combination of groundwater inputs from numerous springs like Ebenezer Spring and surface water input after rainfall events is what keeps Spring Creek flowing, even during dry seasons, and permits the establishment of mature upland hardwood swamp wetlands, such as Ebenezer Preserve.

3. Ebenezer Preserve ecology

Ebenezer Swamp formed over the last 10,000 years at a point of confluence between ephemeral surface water runoff from the surrounding watershed (a drainage area of approximately 6.2 square

108. WARREN, *supra* note 101.

109. *See supra* Figure 2.

110. *Id.*

miles, or 4200 acres, in extent) and perennial groundwater issuing from the underlying Valley and Ridge Aquifer system. The most recent ice episode of the Quaternary Period, known as the Wisconsinan Continental Glaciation, peaked in the late Pleistocene (circa 18,000 years Before Present (B.P.)), and major vegetation patterns present at that time persisted until approximately 10,000 years B.P., when climatic warming and ice sheet retreat resulted in widespread changes in the vegetation.¹¹¹ By the beginning of the Holocene Period (10,000 years B.P.), the climatic regimes of the southeastern United States were much as they are today.¹¹² Major modern forest types were flourishing, but “the understory flora had not yet come to resemble modern herbaceous floras.”¹¹³ During the subsequent Hypsithermal Period (circa 8700–5000 years B.P.), significant warming and drying of the climate reduced the ranges of mesic plant species (i.e., those adapted to environments having a balanced supply of moisture) to shrinking riparian and riverine areas.¹¹⁴ By the end of the Hypsithermal Period (circa 5000 years B.P.), all of the vegetative elements of the modern southern riparian and riverine habitats were in place.¹¹⁵

Today, Ebenezer Preserve consists of approximately 120 acres of wooded wetlands and is home to numerous species of fungi, plants, and animals, nine of which are considered imperiled, threatened, or endangered.¹¹⁶ Ebenezer Preserve is an upland hardwood seepage swamp, as it occurs above the Gulf Coast coastal plain and fall line, marking the southern limits of the Cumberland and Piedmont plateaus and the Appalachian Mountains. The Preserve is forested primarily with hardwood trees and receives its principal water inputs from springs. The forest is dominated by tupelo gum (*Nyssa aquatica*), with occasional red maple (*Acer rubrum*), loblolly pine

111. Paul A. Delcourt & Hazel R. Delcourt, *Paleoclimates, Paleovegetation, and Paleofloras during the late Quaternary*, in *FLORA OF NORTH AMERICA* 71, 71–96 (Nancy R. Morin et al. eds., 1993).

112. Wayne Owen, *The History of Native Plant Communities in the South*, in *SOUTHERN FOREST RESOURCE ASSESSMENT* 47, 49 (David N. Wear & John G. Greis eds., 2002).

113. *Id.*

114. *Id.*

115. *Id.*

116. Amended Complaint at 19, *Univ. of Montevallo Found. v. Middle Tenn. Land Dev. Co.*, No. CV-05-624 (Ala. 30th Dist. Ct. 2005).

(*Pinus taeda*), sweet bay (*Magnolia virginiana*), tulip tree (*Liriodendron tulipifera*), and sycamore (*Platanus occidentalis*). The dominant animal life form is the beaver (*Castor canadensis*); water impounded behind several beaver dams along Spring Creek has a pronounced effect on the ecology of the Preserve. Other animal inhabitants include the American woodcock (*Philohela minor*), turkey (*Meleagris gallopavo*), great blue heron (*Ardea herodias*), pileated woodpecker (*Dryocopus pileatus*), water moccasin (*Agkistrodon piscivorus*), copperhead (*Agkistrodon contortrix*), raccoon (*Procyon lotor*), opossum (*Didelphis marsupialis virginiana*), and numerous species of freshwater invertebrates. Ebenezer Preserve is also home to many herbaceous plant species, including six species of orchids (*Ponthieva racemosa*, *Platanthera flava*, *P. clavellata*, *Listera australis*, *Spiranthes ovalis*, and *Tipularia discolor*), a critically imperiled species of cone-flower (*Rudbeckia auriculata*), and the endangered Tennessee yellow-eyed grass (*Xyris tennesseensis*). Spring Creek and Ebenezer Swamp form a portion of the headwaters for the ecologically diverse and environmentally sensitive Cahaba River Watershed. The Cahaba is the longest remaining free-flowing river in Alabama, has more species of fish per mile than any river in North America, and is one of eight river biodiversity hotspots in the United States.¹¹⁷

4. Ebenezer Preserve utilization

Ebenezer Preserve has a long history of public utilization. The previous private owners of the property generously permitted local scouting groups to camp and explore the habitat, hosted local birding clubs for annual counts, and granted free access to local educational institutions, such as the University of Montevallo, Samford University, and Birmingham Southern University, for field trips and research activities. In 1998, the University gained title to much of the property within the boundary of the swamp via a grant stating the property should be “held in perpetuity by the Grantee and used by the Grantee and the University of Montevallo in connection with its academic mission and program; and . . . maintained in its natural state to the greatest extent reasonably

117. RIVERS OF LIFE: CRITICAL WATERSHEDS FOR PROTECTING FRESHWATER BIODIVERSITY 30 (Lawrence L. Master et al. eds., 1998).

possible.”¹¹⁸ The University has pursued a policy of encouraging public use by increasing public access. To date, the University has constructed approximately 1000 feet of ADA-compliant boardwalk through a portion of the swamp—which is outfitted with seventeen interpretive plaques, benches, and viewing areas—and added public restrooms, as well as an outdoor classroom. These projects have been supported, in part, through the procurement of federal appropriations. The Ebenezer Preserve boardwalk is accessible to all visitors seven days a week, from dawn until dusk, during periods of clement weather, without need of reservation or scheduling, for self-guided tours. The University provides free scheduled guided tours to civic groups, school groups, clubs, and private groups as requested.

Ebenezer Swamp continues to serve as a fieldtrip destination for local colleges and universities and has served as a resource in various research projects over the years for students in a variety of disciplines, such as art, biology, business, and mass communication. The Preserve has been a location for numerous biology student research projects, including studies of tupelo gum tree age structure, analyses of soils and sediments for heavy-metal contamination, analysis of swamp water for mutagenic chemicals, analyses of general water quality, and the cataloging of vascular and non-vascular plant, avian, insect, fish, and amphibian species. Much of this work has been presented at annual meetings of the National Council on Undergraduate Research. The University’s art department has used the Preserve as a field site for a course on design and creation and installation of public art pieces, with three such pieces now gracing the boardwalk trail. Students of the mass communications program have used the Preserve as a location for the production of informational and educational videos as part of their coursework. Additionally, the Preserve has hosted numerous visits by local grammar, elementary, and high school groups, home schooling co-ops, gardening clubs, and botanical societies. The Preserve has hosted visits by various leadership groups including Montevallo High School’s Leaders of Tomorrow, Shelby County’s Youth Leadership, and Alabama’s Boys State programs. Other institutions of higher learning also make use of the Preserve as a field site, including Samford University and Birmingham Southern College.

118. Amended Complaint, *supra* note 116, at 12–13.

The University continues to promote and expand the educational and research potential of the Preserve. The University recently acquired the original farmhouse that sits adjacent to the Preserve with the intent of converting it into a visitors' center with hands-on interpretive features, living collections, and audiovisual presentations. Future plans call for an observational tower and real-time meteorological and hydrological monitoring stations.

B. Interstate Threat to Ebenezer Swamp: Land Use Development

Wetland resources have been in decline since European settlement, and many of those remaining occur in disturbed landscapes. Given their position on the landscape and that many occur on private lands, it is likely that much of the isolated wetland resource will continue to be under development pressure.¹¹⁹

In the early part of 2005, the University became aware of the efforts of an entity doing business as the Middle Tennessee Land Development Co., LLC (Middle Tennessee) to acquire the title to approximately 412 acres in the vicinity of Ebenezer Swamp, upon which it intended to develop a 239-acre quarry operation. Middle Tennessee's intent was to quarry the Newala Limestone beneath this portion of the valley—an operation it estimated would require forty years and would extract \$400 million worth of resources. The proposed quarry would have been located approximately 900 feet upstream from Ebenezer Swamp. Currently, there are eight active limestone/dolomite quarries in operation within the immediate area of western Shelby County and Ebenezer Swamp. An acquired familiarity with the effects of these local quarry operations gave the University good reason to be concerned about the likely adverse effects of the proposed quarry on Ebenezer Swamp. The University was informed by the work of William M. Warren on sinkhole occurrence in Shelby County¹²⁰ and the personal observations of one of the authors (Hardig).

The potential risks to the Preserve of a quarry operation in its immediate vicinity were already well known to one of the authors (Hardig) because several years previously he had been approached by

119. Leibowitz & Nadeau, *supra* note 12, at 682.

120. See WARREN, *supra* note 103.

local citizens concerned about the reopening of another local limestone quarry near Brierfield, Alabama. Specifically, the concerned individuals asked the author (a botanist) to make a survey of the area immediately surrounding the idle Brierfield quarry for possible rare and/or endangered species, the presence of which might be taken into consideration during the permitting process. The author familiarized himself with the flora, fauna, and geology and hydrology of the area, being greatly informed in the latter two areas by the work of Warren, and then compiled many hours of ground-level observations that did not uncover any protected species but did make him well acquainted with the process of quarrying and its effects on central Alabama ecologies and landscapes.

The University's principal concern was the effect the quarrying operation would have on the amount of groundwater available to sustain Ebenezer Swamp. The limestone and dolomite excavated from other local quarries is the same limestone and dolomite that forms the matrix of the Valley and Ridge Aquifer system. Without virtually continuous pumping, these quarries would quickly fill with water from the aquifer. Consequently, the quarries must be dewatered. One such quarry, approximately four miles southeast of Ebenezer Swamp, in the area of Dry Valley, is being dewatered for limestone quarrying operations. In 1973, the calculated dewatering rate in Dry Valley was 14,000 gallons per minute, causing a large depression in the profile of the underlying water table.¹²¹ The groundwater pumped out of the quarries leaves the valley as surface-water runoff in Dry Creek. Since 1976, all dug and drilled water wells in Dry Valley have been dry because the water table was lowered below their maximum depth (Figure 3). Sinkholes began developing in Dry Valley during 1964 and the rate of formation and affected area has been steadily increasing since. It is estimated that more than 1000 sinkholes and related features (subsidence, scour holes, and other features previously described) have occurred in the approximately ten square miles affected by the water-table decline. Additionally, once-perennial springs that historically fed lower Spring Creek have stopped flowing as a result of the dewatering operation and depressed water table.¹²²

121. *See infra* Figure 3 (adapted from WARREN, *supra* note 103).

122. *Id.*

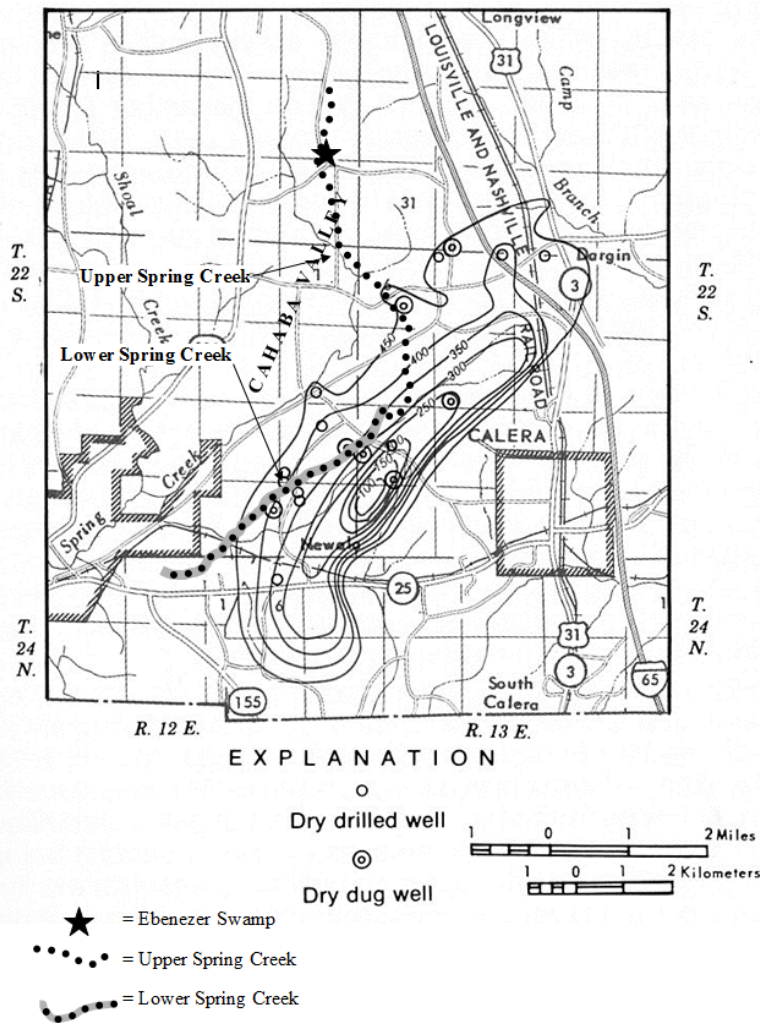


Figure 3. Approximate potentiometric surface in Dry Valley, October 1973. (Datum is mean sea level. Contour interval = 50 ft (15 m).

In 2001, the lower portion of Spring Creek, beginning south of its intersection with County Road 22 and continuing to its confluence with Dry Creek (Figure 3), went dry during a prolonged period of drought, despite the fact water continued to flow from Ebenezer Swamp into the upper portion of Spring Creek. The most

probable explanation for this development is that reduced surface flow associated with drought, combined with a lowering of the water table due to dewatering in the adjacent Dry Valley quarries (Figure 3), lowered the stream surface to a point where it flowed in the bedrock beneath the stream bottom. Many specimens of fish perished when the stream “dried” up. This condition persisted until the first major rains of the year, a short time after which the stream surface rose above the stream bottom and flow returned to normal. This episode is symptomatic of the effects of water table alterations on wetlands, and demonstrates the complex hydrology affecting important national resources regardless of “navigability” of waters or the presence or absence of geopolitical boundaries.

Significant resistance to the proposed quarry by local residents, two municipalities (Montevallo and Alabaster), and the University developed quickly. The former president of the University held a meeting involving the mayors of Calera, Montevallo, and Alabaster to discuss appropriate actions of resistance. While the mayor of Calera was not inclined to participate, the mayors of Montevallo and Alabaster were unanimous in their opposition to the proposed development. The mayor of Alabaster proposed raising administrative challenges to the Alabama Department of Environmental Management (ADEM) permitting process based on a lack of due diligence on its part, and organizing public meetings to inform and engage the local populace. The administrative challenges ultimately proved fruitless, but the public meetings were very effective for distributing relevant information and in promoting a grassroots organization coordinating letter-writing campaigns targeted at ADEM and state officials. The University decided to seek a legal injunction through the court system on the grounds that the quarry operation would ruin the ecological and educational value of Ebenezer Swamp.

As described in greater detail below, the basis of the University’s lawsuit was that the groundwater connections between the quarry site and Ebenezer Swamp are so extensive that the quarry’s operation upstream and within the Preserve’s source water area¹²³ would ensure degradation, and eventual destruction, of the

123. “Source water area” refers to the upstream/upslope area from which the water found in and under the swamp arises.

Preserve. To support its argument, the University hired the services of P.E. LaMoreaux and Associates, Inc. (PELA) to perform a hydrogeologic investigation. PELA reviewed published information, performed site reconnaissance visits to both Ebenezer Swamp and the proposed quarry site, examined drilling logs from an earlier study of the quarry site, performed additional drilling and geophysical logging on the quarry site, and modeled predicted drawdowns on the water table that would be caused by dewatering at the quarry site.¹²⁴ The University's personnel spent much of the summer of 2005 finding and documenting the numerous (more than 80) springs and seeps located within the Ebenezer Swamp boundary. The case of *University of Montevallo v. Middle Tennessee Land Development Co., LLC* was tried in the Circuit Court of Shelby County, Alabama, in 2006.

C. *University of Montevallo v. Middle Tennessee Land Development Co., LLC*

The University claimed “devastating and irreparable impact” would ensue if the quarry was developed.¹²⁵ The University's argument was based primarily on the loss of an education and research resource for students at all levels of education and the general citizenry; loss of recruitment of prospective students; loss of good will within the local and regional community (which expected the University to exercise care of the resource); loss of investments in the enhancement of the Preserve; and harm to the University's reputation for having failed to hold in perpetuity and maintain the Preserve in its natural state, as it was entrusted to do.¹²⁶ The University's legal claims were based, first, on unreasonable use of groundwater, second, on nuisance, and third, on a theory of public trust. All of these, of course, are state common-law claims—University lawyers believed the Preserve was isolated enough from traditional navigable waters that the University would have no federal CWA claim for the draining of the wetland by a neighboring property owner.

Addressing the claim of unreasonable use of water, the

124. George, et al., *supra* note 104.

125. Amended Complaint, *supra* note 116, at 6.

126. *Id.* at 33–34.

University established that the Preserve and Middle Tennessee shared the aquifer below the respective properties. The University argued that the use of water by Middle Tennessee was per se unreasonable since the primary reason the water was being pumped from the aquifer was because it was a “barrier to the extraction of the minerals, and is thus wasted rather than being used.”¹²⁷ The University further argued that as owner of the land it was also the owner of the groundwater underlying the land under Alabama law,¹²⁸ and therefore could bring a claim for damages to it. The complaint alleged that the Preserve is “totally dependent upon the groundwater in the aquifer which underlies it. The wetlands are formed by the nature-provided mineral and chemical composition of the groundwater in the aquifer.”¹²⁹ The complaint further argued that if the water was removed from the aquifer under the Preserve through pumping for mining limestone, the Preserve could never be restored.

As for nuisance, the University argued that not only would the mining’s effects on the water table damage the Preserve, but also that the removal of soil and vegetation overlaying the mine would lead to erosion contaminating the waters of the Preserve. The contamination would negatively impact fish and plant species, and would also remove an important water purification mechanism leading to increased contaminants and pollutants in both the aquifer and the surface water. Sinkholes developing in areas not mined would also threaten the Preserve. Moreover, “[d]ust created by the quarrying operations would clog pores leading to the aquifer and diminish the recharge rate for the aquifer,”¹³⁰ choke vegetation at the Preserve, leach into the soil causing further vegetation death, and remove food sources for the fauna there. Finally, the University claimed that discharged wastewater would ultimately make its way into the Preserve, and that blasting during the mining process would loosen soils, divert surface and groundwater, and interfere with

127. *Id.* at 26. See *Martin v. City of Linden*, 667 So. 2d 732 (Ala. 1995); JANICE HOLBEN ET AL., 78 AM. JUR. 2D *Waters* § 231 (“[T]here is no right to draw water from a common underground reservoir merely for the purpose of wasting it to the injury of other landowners having an equal right to and means of access thereto.”).

128. Amended Complaint, *supra* note 116, at 13.

129. *Id.* at 22.

130. *Id.* at 30.

biological life cycle processes.

While a typical nuisance in Alabama is considered an action that “works hurt, inconvenience, or damage” to a property owner’s property, the injury here had not yet occurred.¹³¹ The University, therefore, relied upon the doctrine of “anticipatory nuisance,” which is described in the Alabama Code as “injunction before completion.”¹³² The code states “[w]here the consequences of a nuisance about to be erected or commenced will be irreparable in damages and such consequences are not merely possible but to a reasonable degree certain, a court may interfere to arrest a nuisance before it is completed.”¹³³ The University claimed the quarrying operation would constitute both a public and private nuisance—private because of the damages to the University’s property and public because the quarrying would injure a wide range of citizens, including present and future students.

Finally, on the claim of public trust, the University cited cases from other states supporting the conclusion that wetland resources like Ebenezer Preserve were subject to public-trust protections.¹³⁴ The donation of the tract for preservation in perpetuity, to be maintained in a natural state, indicated the University was to act as a trustee over the Preserve, and presumably since the University was an organ of the state, this duty extended to the state.

Based upon these three claims, the University sought a declaratory judgment and preliminary and permanent injunctive relief against Middle Tennessee. Trial was held in August and September of 2006. The court issued an order in October 2006. The court started out by noting that the proposed mining activity was legal, as it was not barred by any zoning or other land use constraints.¹³⁵ The court stated, however, that the University could succeed on its claims if it proved that “the quarry operation will

131. *Id.* at 6 (citation omitted).

132. ALA. CODE § 6-5-125 (2005).

133. *Id.*

134. Ill. Cent. R.R. Co. v. Illinois, 146 U.S. 387 (1892); Robbins v. Dep’t of Pub. Works, 244 N.E.2d 577, 578 (Mass. 1969) (prohibiting highway construction which would have replaced “wetlands of considerable natural beauty with a large capacity for the storage of water during flood seasons and [which] are often used for nature study and recreation”).

135. Order at 2, Univ. of Montevallo Found. v. Middle Tenn. Land Dev. Co., No. CV-05-624 (Ala. 30th D. Cir. Ct. 2006).

constitute a nuisance; that injunctive relief is necessary to prevent irreparable injury; and that Plaintiffs have no adequate remedy at law.”¹³⁶ The court cited the law of anticipatory nuisance from the Alabama Code. Rather than directly address the University’s unreasonable use claim for groundwater, the court stated the nuisance doctrine was the controlling theory “in the context of property damage caused by a continuing activity involving the use of underground water.”¹³⁷ Highlighting the difficulty any party has in proving anticipatory nuisance, the court said “the granting of anticipatory injunctive relief ‘is one of the extraordinary powers of the court, and should be cautiously and sparingly exercised.’”¹³⁸ Plaintiffs can only succeed on an anticipatory nuisance claim if they prove to a “reasonable degree certain” that a nuisance and irreversible damage will occur if the disputed activity is allowed.¹³⁹

The court framed the issue in the case as whether “the University’s Ebenezer Wetlands Preserve [can] co-exist with Middle Tennessee’s rock quarry operation.”¹⁴⁰ The court weighed the scientific data and testimony of the plaintiff’s and the defendant’s expert witnesses. The court found that “[o]nce the groundwater flow is changed or disturbed, these conditions can not simply be reversed. A broken and permeable subsurface can not be put back together.”¹⁴¹ The court granted the plaintiff’s request for declaratory judgment and issued an injunction, with two caveats: First, “the existing ecological system of the Ebenezer Wetlands Preserve [must] remain[] inviolate,” and second, the University must “continue[] to utilize the Preserve for educational and research purposes.”¹⁴²

136. *Id.* at 2.

137. *Id.* at 2–3 (citation omitted).

138. *Id.* at 3 (quoting *St. James’ Church v. Arrington*, 36 Ala. 546, 548 (1860)).

139. Amended Complaint, *supra* note 116, at 36.

140. Order, *supra* note 135, at 4.

141. Supplemental Order at 2, *Univ. of Montevallo Found. v. Middle Tenn. Land Dev. Co.*, No. CV-05-624 (Ala. 30th D. Cir. Ct. 2007).

142. Order, *supra* note 135, at 6.

D. Implications of University of Montevallo v. Middle Tennessee Land Development Co. LLC

Not all isolated wetlands are as lucky as Ebenezer Preserve. If, as we have heard before, “bad facts make bad law,” then the case of Ebenezer may be one of “good facts making good law.” We need isolated wetland protections on a broader scale and in a more holistic fashion, yet very few isolated wetlands are owned by universities, have received federal monies, are used extensively for educational and research purposes, and are threatened by neighbors whose proposed use of their land is diametrically opposed to the wetland user, but whose actions would destroy the wetland. Indeed, the primary threats to isolated wetlands are typically the parties owning the property containing the wetland and who would like to develop it, as in *SWANCC*. Overall, protection of isolated wetlands through archaic common law claims, like anticipatory nuisance—an incredibly difficult claim to prove in the first instance—is not enough to protect these important national resources.

The first normative argument this Article makes is that if state and local governments continue to refuse to protect isolated wetlands in a more holistic manner, then the federal government should establish a minimum standards framework for that protection. The second argument this Article makes is that, notwithstanding the low political likelihood of passing federal isolated wetlands regulation, a constitutional foundation for such legislation should be established to preemptively answer the “constitutional questions” that concerned the court in *SWANCC* and *Rapanos*.¹⁴³ After all, political will can change in an instant. Commons analysis can help answer those constitutional questions in the case of isolated wetlands, as demonstrated in the next section.

IV. COMMONS ANALYSIS SUPPORTS FEDERAL REGULATION OF ISOLATED WETLANDS UNDER THE COMMERCE CLAUSE

A. Defining Commons

Garrett Hardin’s *Tragedy of the Commons*¹⁴⁴ is a familiar tale, and

143. See *supra* notes 99–102 and accompanying text.

144. Garrett Hardin, *The Tragedy of the Commons*, 162 *SCIENCE* 1243, 1244 (1968).

one told with much iteration in this volume's selection of articles. The tale ultimately details the plight of individuals who have access to a shared resource—a commons. Any individual is free to enter and consume resources from the commons, but each is also incentivized to “rationally” maximize personal economic gain by the continual consumption of resources. Though each individual gains the entire benefit of each unit of consumption, the negative, aggregated costs of consumption are spread among all individuals within the commons resource system. As a result, each individual engages in a simple cost-benefit analysis and determines that because individual returns will invariably outweigh individual costs it is always in the individual's best interest to consume more resources. This individual behavior, however, is collectively deficient, and ultimately the resource is destroyed over time.

Commons scholars have recognized a wide and growing number of resources that may be characterized as part of a commons and may be subject to tragedies of overuse and degradation. Early commons scholarship focused on “traditional” natural resources, such as fisheries, forests, groundwater aquifers, and the atmosphere. Yet scholars have highlighted a number of “new commons” in the form of medical care,¹⁴⁵ parking spots, sidewalk vending, knowledge, government budgets, silence, email inboxes, and even presidential primaries.¹⁴⁶ This scholarship has been further expanded to include systems of governance, like the U.S. federal system,¹⁴⁷ and natural capital resource systems stretching across private properties.¹⁴⁸

Commons scholars have settled on two key elements defining commons resources: depletable and non-excludability. Robert Keohane and Elinor Ostrom characterize commons resources as “depletable natural or human-made resources from which potential beneficiaries are difficult to exclude,”¹⁴⁹ while Oran Young

145. Michael Gochfeld et al., *Medical Care as a Commons*, in PROTECTING THE COMMONS 253, 253 (Joanna Burger et al. eds., 2001).

146. Brigham Daniels, *Governing the Presidential Nomination Commons*, 84 TUL. L. REV. 899, 907 (2010).

147. See HUDSON, *supra* note 5.

148. *Id.*

149. LOCAL COMMONS AND GLOBAL INTERDEPENDENCE 1, 13 (Robert O. Keohane & Elinor Ostrom eds., 1995) (citation omitted). Duncan Snidal posits that commons analysis “focuses on the provision and appropriation of goods that are not joint in consumption (like private goods) but where exclusion is difficult (like public goods). Standard cases are natural

describes them as resources used by a collection of “appropriators” where such resources are “both non-excludable and depletable.”¹⁵⁰ Other commons scholars describe commons resources as “natural or human-made resources in which (a) exclusion is non-trivial (but not necessarily impossible) and (b) yield is subtractable.”¹⁵¹

In addition to the two basic elements of commons resources, the body of resources that make up the commons is known as a “resource system.”¹⁵² A resource system is comprised of “resource units,” which are defined as “what individuals appropriate or use from resource systems.”¹⁵³ The process of withdrawing resource units from a resource system is called “appropriation” and those who withdraw resource units from the system are called “appropriators.”¹⁵⁴

B. Privatized Commons Resources as New Commons: Isolated Wetlands as Privatized Commons Resources

Prior research has discussed at length how natural capital on private land meets the definitional requirements of a commons resource, and therefore may be considered a “new commons.”¹⁵⁵ This research described these resources as “privatized commons

resources, like forests or water, where the quantity available is less than the desired consumption of potential appropriators.” Duncan Snidal, *The Politics of Scope: Endogenous Actors, Heterogeneity and Institutions*, in LOCAL COMMONS AND GLOBAL INTERDEPENDENCE 47, 50 (Robert O. Keohane & Elinor Ostrom eds., 1995).

150. Oran R. Young, *The Problem of Scale in Human/Environment Relationships*, in LOCAL COMMONS AND GLOBAL INTERDEPENDENCE 27, 29 (Robert O. Keohane & Elinor Ostrom eds., 1995) (citation omitted).

151. Steven Hackett et al., *Heterogeneities, Information and Conflict Resolution: Experimental Evidence on Sharing Contracts*, in LOCAL COMMONS AND GLOBAL INTERDEPENDENCE 93, 95 (Robert O. Keohane & Elinor Ostrom eds., 1995) (citation omitted).

152. Ostrom highlights fishing grounds, groundwater basins, grazing areas, irrigation canals, bridges, parking garages, mainframe computers, streams, lakes, oceans, and other bodies of water as examples of “resource systems.” ELINOR OSTROM, GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION 30 (James E. Alt & Douglass C. North eds., 1990).

153. *Id.*

154. *Id.* Ostrom gives a variety of examples of appropriators, such as “herders, fishers, irrigators, commuters, and anyone else who appropriates resource units from some type of resource system.” *Id.* at 31.

155. See HUDSON, *supra* note 5, at 13.

resources,”¹⁵⁶ which are depletable and it is very difficult, in the absence of government regulation, to exclude any private property owner from appropriating their resource unit of natural capital from the resource system¹⁵⁷ that is a collection of private properties.¹⁵⁸ Perhaps the only means of doing so is bringing a common law claim that a neighboring property owner’s removal of natural capital constitutes a nuisance, as Middle Tennessee’s removal of water would have been according to the Shelby County Circuit Court.

Consider the many different types of resource systems described by Ostrom: fishing grounds, groundwater basins, grazing areas, irrigation canals, bridges, parking garages, mainframe computers, streams, lakes, oceans, and other bodies of water.¹⁵⁹ A collection of private properties is yet another resource system, containing vast

156. See Hudson, *supra* note 85, at 377.

157. Ostrom notes that resource units “are not subject to joint use or appropriation.” Ostrom, *supra* note 152, at 31. This is an important distinction, because it means that appropriators *can* exclude other appropriators from the resource unit itself. In this way, private property may operate as a commons since private property owners can certainly exclude other parties from the resource unit of natural capital over which they maintain control. The non-excludability requirement is met, however, because it is exceedingly difficult to exclude other appropriators from the *resource system*—that is, from the natural capital on the collection of private properties and from its appropriation by individual property owners.

158. Some might argue that there is a distinguishing factor between a traditional, “true” commons and natural capital on private lands, namely that with regard to the former no one person has a legal entitlement to prevent anyone else from coming onto the land and removing natural capital, whereas in the latter a number of people do maintain such rights. Another way to frame the latter person’s right, however, is that the right to prevent another party’s removal of natural capital from their land is ancillary to their right to exclude someone’s physical presence from their property. Furthermore, though property owners maintain a legal right to exclude others from their property, they do not maintain an unfettered legal right to appropriate natural capital on their land, as those resources provide public goods across property lines. Thus, there is a moral obligation and limitation inherent in ownership of property, at least with regard to appropriation of natural capital—even in the absence of affirmative legal protections. Consider the scenario where everyone removed all of the forests and other natural capital from their land in the southeastern United States, where there are no prescriptive limitations on forest clearing (but for those arising tangentially related to obligations under the Endangered Species Act or other similar federal or state regulations). This would clearly be unacceptable and would have untold ramifications for water quality, biodiversity, and climate regulation, among a variety of other ills. Indeed, the idea of moral obligation’s relation to property rights has received a robust theorization recently by Peter Gerhart. See GERHART, PROPERTY LAW AND SOCIAL MORALITY (2014). This topic is also the subject of one of our (Hudson) forthcoming articles. See Blake Hudson, *Moral Obligation and Natural Capital Commons on Private Property, Perspectives on Peter Gerhart’s Property Law and Social Morality*, 2 TEX. A&M J. OF REAL PROP. L. (forthcoming 2015).

159. Ostrom, *supra* note 152, at 30.

quantities of natural capital subject to private property rights. The “resource units” making up the system are the privatized commons resources on individual parcels of private property. Thus, the property containing Ebenezer Preserve contains one resource unit of natural capital, over which the University maintains control, while Middle Tennessee’s property contains another. Within a collection of private properties, we can see that developers, such as quarry operators, are appropriators in the business of appropriating natural capital, most often removing it in the process of creating human-made capital. This, of course, can affect the rights of other appropriators, such as the University. Ultimately, though private property rights in land are “unitized, quantified, and salable,” the natural capital within a given environment is a resource system “owned in common” by the collection of rational private property owners in a given area.¹⁶⁰

The term “privatized commons resources” includes two categories of resources: “(1) natural resources contained on land (wetlands, endangered species, or other resources that constitute natural capital) that are appropriated by economic development (retail, housing, industrial, agricultural, etc.) and (2) resources appropriated by individuals and tied to an interstate market (wheat, marijuana, or other resources that constitute natural capital commodities).”¹⁶¹ The filling in or draining of isolated wetlands for economic development clearly falls within the first category. Why is this categorization of isolated wetlands important? Because the primary test used to determine the constitutionality of federal environmental legislation—the substantial effects test—deems constitutional federal regulation of “objects” that are economic in nature. These activities may be grouped to determine if there will be an aggregate effect on interstate commerce (known as “the aggregation principle”).¹⁶² In turn, commons analysis helps determine when resources like isolated wetlands (resource units of natural capital appropriated by individual appropriators from the broader resource system) are objects of regulation that are of an economic character. As described below, any time an appropriator

160. *See id.* at 13.

161. *See Hudson, supra* note 85, at 377 n.8.

162. *See Wickard v. Filburn*, 317 U.S. 111, 128 (1942).

engaged directly in interstate commerce appropriates resource units of natural capital from a resource system of private properties, even if completely intrastate, this act of appropriation is the “object” of regulation that in the aggregate must substantially affect interstate commerce. It is economic in nature because the appropriator maintains clear ties to interstate commerce.

Though perhaps inconsistent in outcome, key cases describing the scope of federal power under the Commerce Clause, such as *Wickard v. Filburn*,¹⁶³ *United States v. Lopez*,¹⁶⁴ *United States v. Morrison*,¹⁶⁵ and *Gonzalez v. Raich*,¹⁶⁶ have been quite consistent with regard to at least one legal point: they each validated the constitutional viability of federal legislation directed toward intrastate *economic* activities, finding that those activities could be aggregated and regulated as substantially affecting interstate commerce.¹⁶⁷ The reason the legislation failed in *Lopez* and *Morrison*,¹⁶⁸ and why Commerce Clause authority was not sufficient to sustain the individual mandate portion of “Obamacare” in the more recent *National Federation of Independent Business v. Sebelius* case,¹⁶⁹ was because the intrastate “object” of regulation in those cases was characterized as *non-economic* in nature (that is, carrying a gun near a school, engaging in domestic violence, or refusing to purchase healthcare).¹⁷⁰ Appropriating depletable, non-excludable resources while engaged in an economic endeavor, or introducing depletable, non-excludable resources into an economic market, however, are inherently economic activities. The *Wickard* Court made clear, as

163. 317 U.S. 111 (1942).

164. 514 U.S. 549 (1995).

165. 529 U.S. 598 (2000).

166. 545 U.S. 1 (2005).

167. In *Raich*, Justice Stevens highlighted a unifying theme of Commerce Clause jurisprudence: “Our case law firmly establishes Congress’ power to regulate purely local activities that are part of an economic ‘class of activities’ that have a substantial effect on interstate commerce.” 545 U.S. at 17 (citation omitted).

168. In *Raich*, Justice Stevens distinguished *Lopez* and *Morrison* from cases upholding federal statutes under the Commerce Clause by finding that neither dealt with regulation of activities that were “quintessentially economic.” 545 U.S. at 25.

169. *Nat’l Fed’n of Indep. Bus. v. Sebelius*, 132 S. Ct. 2566, 2587 (2012).

170. Justice Roberts characterized the activity Congress was choosing to regulate as “doing nothing,” and refusing to enter into an economic transaction. *Id.* As a result, the activity Congress was regulating was non-economic. *See id.*

supported by Commerce Clause cases since, that intrastate consumption of privatized commons resources (like wheat grown on one's own property)—even if not directly entering an established commercial market—is economic activity that can be aggregated for the purpose of finding a substantial effect on interstate commerce. Consider the following:

A commons *is itself* a principle of aggregation, because the resources present in the commons are naturally aggregated. The aggregate effects of each herder maximizing economic return and appropriating as much grass as possible from the pasture results in a reduction of resources all across the commons—leading to its potential destruction. . . . Thus the appropriation of privatized commons resources by one party, regardless of the nature of the use (e.g., commercial versus home consumption of wheat or marijuana) or the geopolitical or private property boundaries separating appropriators, substantially affects the economic transactions of other appropriators, i.e., “commerce.”¹⁷¹

The reason the Court in *SWANCC* and *Rapanos*¹⁷² was concerned about “constitutional questions” over federal authority to regulate isolated wetlands was because the Court was unsure of what exactly constituted the “object of regulation” that in the aggregate must “substantially affect” interstate commerce.¹⁷³ Courts have indicated that this question is important because it informs whether the intrastate activity can appropriately be considered “economic” so that it can then be aggregated under the substantial effects test. Scholars have argued that, “a court cannot resolve whether an object or activity is economic or non-economic without identifying what that object or activity is.”¹⁷⁴ The Court in *SWANCC* implied “that if

171. Hudson, *supra* note 85, at 419.

172. The Court in *SWANCC* stated that to answer the constitutional questions presented in that case would require an evaluation of “the precise object or activity that, in the aggregate, substantially affects interstate commerce.” 531 U.S. 159, 173 (2001).

173. Bradford Mank argued “a court must determine the central or ‘precise’ ‘object’ of a regulatory statute,” and “how close the nexus must be between the object and the commercial purposes of the Commerce Clause.” Bradford C. Mank, *After Gonzales v. Raich: Is the Endangered Species Act Constitutional Under the Commerce Clause?*, 78 U. COLO. L. REV. 375, 403 (2007) (footnote omitted).

174. *Id.* (quoting David W. Scopp, *Commerce Clause Challenges to the Endangered Species Act: The Rehnquist Court’s Web of Confusion Traps More Than the Fly*, 39 U.S.F. L. REV. 789, 801 (2005)).

the ‘object’ that must substantially affect interstate commerce was the simple filling of an isolated gravel pit home to migratory birds, severed from any broader economic activity related to interstate commerce, then the application of the Commerce Clause might be in doubt.”¹⁷⁵

The “object of regulation” question has resulted in disagreements in legal analysis among courts on a wide array of environmental subjects. For example, under the CWA, should wetlands themselves or rather commercial activities impacting those wetlands be considered the focus of the statute?¹⁷⁶ Similarly, legal analysis on the question is split among U.S. appellate courts regarding the appropriate justification for upholding the Endangered Species Act (ESA). Appellate courts considering Commerce Clause challenges to the ESA have consistently upheld the statute,¹⁷⁷ but the courts have been unable to formulate a consistent legal basis for doing so.¹⁷⁸ These courts are split over whether the ESA regulates the actual taking of protected species or the commercial activities resulting in the taking of species.¹⁷⁹ In *Rancho Viejo, LLC v. Norton*, for example, the D.C. Court of Appeals held then-Judge Roberts’s “hapless toad”¹⁸⁰ was not the “object of regulation” under the

175. Hudson, *supra* note 85, at 423. The SWANCC Court stated that the “object” of regulation was “not clear, for although the Corps has claimed jurisdiction over petitioner’s land because it contains water areas used as habitat by migratory birds, respondents now, *post litem motam*, focus upon the fact that the regulated activity is petitioner’s municipal landfill, which is ‘plainly of a commercial nature.’” 531 U.S. at 173.

176. See Michael J. Gerhardt, *On Revolution and Wetland Regulations*, 90 GEO. L.J. 2143, 2163 (2002); Christine A. Klein, *The Environmental Commerce Clause*, 27 HARV. ENVTL. L. REV. 1, 38 (2003).

177. Indeed, federal courts in general have been reluctant to rely on *Lopez* and *Morrison* to strike down environmental regulations. See ERWIN CHEMERINSKY, CONSTITUTIONAL LAW: PRINCIPLES AND POLICIES 273 (3d ed. 2006). For a more recent update on courts of appeals’ treatment of the ESA specifically, see Robert Thornton, *9th Circuit Rejects Commerce Clause Challenge to Delta Smelt Biological Opinion*, ENDANGERED SPECIES L. & POL’Y (Mar. 25, 2011), <http://www.endangeredspecieslawandpolicy.com/2011/03/articles/court-decisions/9th-circuit-rejects-commerce-clause-challenge-to-delta-smelt-biological-opinion/>.

178. Mollie Lee, *Environmental Economics: A Market Failure Approach to the Commerce Clause*, 116 YALE L.J. 456, 471–75 (2006); Mank, *supra* note 173, at 428.

179. See generally Bradford C. Mank, *Can Congress Regulate Intrastate Endangered Species Under the Commerce Clause*, 69 BROOK. L. REV. 923 (2004).

180. *Rancho Viejo, LLC v. Norton*, 334 F.3d 1158, 1160 (D.C. Cir. 2003) (Roberts, J., dissenting) (rehearing denied).

ESA.¹⁸¹ Instead, the court found the “regulated activity is Rancho Viejo’s planned commercial development, not the arroyo toad that it threatens.”¹⁸² In contrast, in *GDF Realty Investments v. Norton*,¹⁸³ the Fifth Circuit held the economic impact of the development is not the appropriate focus of ESA regulation, but rather the “interdependence” of endangered species themselves, which has a substantial effect on interstate commerce when aggregated.¹⁸⁴ Professor Mank has argued this jurisdictional split is problematic, because “[t]he [Supreme] Court’s failure to define what objects or activities are most important in analyzing whether a statutory scheme may regulate an activity under the Commerce Clause has caused especially difficult problems for courts deciding whether the ESA is constitutional under the [Commerce] Clause.”¹⁸⁵ Mank argues that the jurisdictional split has significant implications because:

If a court focuses on the ESA’s means in regulating the economic impact of the activities that harm endangered species, then the government likely can regulate large scale construction projects, but not a lone hiker walking through a forest or perhaps even individual homeowners, although in the aggregate both types of activities could cause significant harm to these species. . . . By contrast, under the rationale of *GDF*, the government could regulate a lone hiker or landscaping homeowner who harms any endangered species, no matter how insignificant, because the loss of any endangered species threatens the delicate balance of ecosystems, and harm to ecosystems would cause substantial harms to interstate commerce.¹⁸⁶

Professor Mank further argues:

SWANCC itself failed to provide a clear answer about how lower courts should decide what is the central ‘object’ of a statute—either the statute’s regulatory ‘targets’ or its beneficiaries—and how close the relationship must be between the object of the statute and the

181. *Rancho Viejo, LLC v. Norton*, 323 F.3d 1062, 1071–72 (D.C. Cir. 2003).

182. *Id.* at 1072.

183. 326 F.3d 622 (5th Cir. 2003).

184. *Id.* at 640.

185. Mank, *supra* note 173, at 405 (footnote omitted).

186. Mank, *supra* note 179, at 926–27 (footnotes omitted).

commercial purposes of the Commerce Clause.¹⁸⁷

Commons analysis, however, provides a clear framework within which to analyze the “object of regulation” for legislation aimed at natural capital. The “interdependence” approach of the Fifth Circuit and the “commercial development” approach of the D.C. Circuit cannot logically be separated under the commons appropriation analysis. As noted in prior scholarship:

Regulation of commons resources cannot be separated into regulation of *either* the appropriator *or* the resource being appropriated. One need only look at the structure of the statutes to determine that wetlands, endangered species, uncontaminated land, air, and other resources are inseparable from the activities impacting them—without this interaction there would be no regulation in the first instance. A developer, for example, is an appropriator of the wetlands resource . . . and the substantial effects on interstate commerce arise out of the *act of appropriation* [T]he appropriation substantially affecting interstate commerce is impossible without the constituent sub-elements of an appropriator (the developer) as well as that being appropriated (the wetlands . . .). In other words, the “object or activity” of regulations like the ESA and CWA is the *entire act of appropriation* It is this act of appropriation that in the aggregate substantially affects interstate commerce.¹⁸⁸

Under this analysis, if the appropriator is an entity that would otherwise be considered engaged in interstate commerce, such as a real estate developer, quarry operator, or otherwise, then this designation automatically makes the act of appropriation¹⁸⁹ an economic activity, and thus aggregable under the substantial effects test. The appropriation is aggregable regardless of whether the resource is completely intrastate, as are isolated wetlands. This

187. *Id.* at 929 (footnote omitted).

188. Hudson, *supra* note 85, at 426. The D.C. Circuit in *National Ass'n of Home Builders v. Babbitt*, 130 F.3d 1041 (D.C. Cir. 1997), recognized the commons nature of endangered species when it applied the aggregation doctrine to uphold application of the ESA. The court stated that “[i]n the aggregate . . . we can be certain that the extinction of species and the attendant decline in biodiversity will have a real and predictable effect on interstate commerce,” *id.* at 1053–54, and “we know that in the aggregate the extinction of endangered species will have a substantial effect on interstate commerce”, *id.* at 1053 n.14.

189. Appropriation by that appropriator of the resource unit of natural capital over which they maintain control.

analysis, of course, may not help with the question of how to treat the “lone hiker in the woods” or the individual property owner who wants to fill an isolated wetland to make a baseball diamond or a homemade playground for his or her children. But the primary threats to isolated wetlands come not from landowners making baseball diamonds and playgrounds, but rather from traditional economic activities engaged in by actors with clear ties to interstate commerce, such as retail, housing, industrial, agricultural, or other developers. Thus a commons analysis renders most of the threats to isolated wetlands and other intrastate resources traditionally considered outside the ambit of federal constitutional authority reachable by the federal government under current understandings of the substantial effects test. In this way, a commons analysis facilitates reconciliation of the varied past rationales of the circuit courts so that constitutional tests can be applied in a clearer fashion to future federal environmental legislation.

Specifically in the case of isolated wetlands, commons analysis lays the framework for the constitutionality of federal isolated wetlands regulation. Such regulation, if aimed at regulating or prohibiting the filling of isolated wetlands by retail, housing, industrial, agricultural, or other development (an act of appropriation of individual resource units defined by property boundaries), would be regulating an object that is economic in nature—by way of the appropriator’s ties to interstate commerce. Therefore, even though the wetlands may be completely intrastate and bear no apparent relation to traditional navigable waters,¹⁹⁰ regulation of wetlands at the federal level would be constitutional.¹⁹¹

190. Though any hydrologist will tell you there are always connections between seemingly isolated waters and the entire hydrological system.

191. An important aspect of the site chosen in the case of Ebenezer Preserve was that the out of state company that sought to develop it purchased it effectively as mere land speculation. This raises interesting questions regarding the Commerce Clause because we often look at land use planning as merely a state or local affair—seemingly one justification for leaving land use regulation out of the ambit of prescriptive federal inputs. Yet, though the use to which the land may be put is wholly intrastate, there is a land development market that will always be interstate in nature. In other words, instead of just focusing on the character of the land in question or the use to which the land will be put, one way to frame these development activities is as part of a larger interstate market of land speculation and sales. Most of those sales may occur within an individual state and between residents of that state, just as most of the wheat sold in a wheat producing state may be purchased by citizens within that state. *See Wickard v. Filburn*, 317 U.S. 111, 130 (1942). As with the case of Ebenezer Swamp, however,

CONCLUSION

Isolated wetlands are of great value to the nation, though severely overlooked in natural resource management policy at local, state, and federal levels. Wetlands like Ebenezer Preserve need greater protection than what is currently provided by federal statutes aimed at water quality with unclear jurisdictional reach (the CWA 404 program) or state common law doctrines like anticipatory nuisance that are difficult to prove and are of limited utility under most factual circumstances. This Article is not calling for vast centralization of wetland policy at the federal level. Indeed, a number of problems plague over-centralization of natural resource management.¹⁹² The problem is that over-*decentralization* is as great of a threat, if not more, to responsible resource management.¹⁹³ “Dynamic federalism” interaction among federal, state, and local governments is greatly needed to address threats to isolated wetlands and other natural resources.¹⁹⁴ In the absence of adequate state and local standards, a minimum standards framework at the federal level is needed—a framework within which state and local governments can harness the benefits of decentralized governance while still maintaining the proper incentives to protect resources rather than indiscriminately appropriate them. Commons analysis demonstrates such a framework would be constitutional under the Commerce Clause. What is a commons but an aggregated economic system whereby one appropriator’s utilization of resources directly and substantially affects the availability of those resources to rival appropriators? This is the essence of the Commerce Clause’s substantial effects test. When appropriators engaged in interstate commerce, like quarry developers, appropriate resources like isolated wetlands, this economic act of appropriation is one that in the aggregate affects interstate commerce and the environmental well-being of the nation—both present and future generations.

other parties may be coming from out of state to purchase goods (i.e. land) in that market, develop it, and sell it for a profit. This is inherently interstate commerce.

192. See Jonathan Adler, *Let Fifty Flowers Bloom: Environmental Federalism for the 21st Century* (unpublished manuscript) (on file with author).

193. See HUDSON, *supra* note 5.

194. See *id.* at ch. 5.