The Antiquities Act & National Monuments: Analysis of Geological, Ecological, & Archaeological Resources of the Colorado Plateau

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I. INTRODUCTION

The federal lands of the United States are a landscape of natural and historical superlatives meant to benefit all of its current and future citizens. Congress maintains absolute power over land owned by the federal government but has delegated some of its land management authority to the president. Under the provisions of the Antiquities Act of 1906 ("Antiquities Act" or "Act"), the president may designate

historically and scientifically significant areas of public land as National Monuments.[1] Presidents with different domestic policy agendas and from both political parties have used this authority in order to preserve the United States' natural and historical features.[2] Since 1906, sixteen of nineteen presidents have designated more than 150 national monuments on federal lands.[3] The success achieved by the Antiquities Act can be measured because Congress has continuously ratified presidential designations.[4] For example, more than half of the national parks created by Congress were first national monuments created by the president.[5] But these designations have sometimes been controversial and led to litigation.[6]

In December 2016 President Barack Obama designated Bears Ears National Monument in southeast Utah to preserve thousands of archaeological deposits and Native American sacred sites located on federally owned land.[7] Opposed to the designation, the Utah state legislature passed HCR011, which urged President Donald Trump to rescind the monument.[8] But no president has ever abolished a national monument and although the Antiquities Act grants the president the authority to designate new monuments it does not provide the authority to abolish an existing designation.[9] As a result, resolution of disputes related to Bears Ears and the Antiquities Act as a whole may ultimately require judicial determination.

Bears Ears is located on the Colorado Plateau (Plateau), a distinct physiographic region, or a territory defined by its unique landforms which extends across extreme western Colorado, northeast Arizona, northwest New Mexico, and the southeast half of Utah.[10] Much of the history of the Antiquities Act takes place on the Colorado Plateau. Disputes within its boundaries motivated the drafting of the Act and led to several federal court cases including the first Supreme Court case to interpret its provisions.[11] Despite these legal challenges, monument

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1. 16 U.S.C. 431 (2012).
2. *See generally* Mark Squillace, *The Monumental Legacy of the Antiquities Act of 1906*, 37 GA. L. REV. 473 (2003).
3. CAROL VINCENT, CONG. RES. SERV., R41330, NATIONAL MONUMENTS AND THE ANTIQUITIES ACT 1-2 (2016).
4. *Id.* at 1.
5. *See* Squillace, *supra* note 2, at 585-610.
6. *See generally id.*
7. Proclamation No. 9559, 82 Fed. Reg. 1149 (Dec. 28, 2016).
8. H.C.R. 011, 2017 Leg., Gen. Sess.
9. *See generally* VINCENT, *supra* note 3.
10. Proclamation No. 9559, 82 Fed. Reg. at 1149.
11. *See e.g.*, Cameron v. United States, 252 U.S. 450 (1920).

designations within the Plateau have gone on to become some of the United States' most popular national parks with tens of millions of visitors each year.[12]

There is a reason for this high attendance. The Colorado Plateau sits atop a globally rare geodynamic phenomenon[13] and arguably contains the highest concentration of overlapping geological, ecological, and archaeological resources in North America. However, underneath this landscape there are significant deposits of uranium, coal, oil, and other fossil fuels.[14] As a result, those with commercial interests in federal land often conflict with groups seeking monument designation.[15] These conflicts are likely to continue. Although Bears Ears[16] has become a national monument, two other monument proposals for unprotected public lands located on the Colorado Plateau, Greater Grand Canyon Heritage,[17] and Greater Canyonlands,[18] remain active and could be considered by future presidents.[19]

In order to support existing monuments and inform future monument proposals on the Plateau, the discussion that follows will (1) review the political history of the Antiquities Act and associated judicial precedent to demonstrate that the Act is a politically and economically effective law that preserves the separation of powers and places discernable limits on the president's authority vis-à-vis modification of existing monuments; and, (2) will analyze identifiable

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12. *Annual Park Ranking Report For Recreation Visits In: 2015*, IRMA PORTAL, https://irma.nps.gov/Stats/SSRSReports/National%20Reports/Annual%20Park%20Ranking%20Report%20(1979%20-%20Last%20Calendar%20Year) (last visited May 1, 2017).

13. Alan Levander et al., Letter, *Continuing Colorado Plateau Uplift by Delamination-Style Convective Lithospheric Downwelling*, 472 NATURE 461, 461-63 (2011).

14. *See e.g.*, U.S. GEOLOGICAL SURVEY, USGS FACT SHEET FS-145-99, FEDERALLY OWNED COAL AND FEDERAL LANDS IN THE COLORADO PLATEAU REGION (1999); RANDY T. SIMMONS & RYAN YONK, ENERGY IN NATIONAL MONUMENTS: FINAL REPORT 7 (Aug. 2013).

15. *See generally* Judy Fahys, *Bears Ears Monument Debate Divides San Juan County*, NAT'L PUB. RADIO (July 13, 2016), http://kuer.org/post/bears-ears-monument-debate-divides-san-juan-county#stream/0.

16. *See* BEARS EARS INTER-TRIBAL COALITION, PROPOSAL TO PRESIDENT BARACK OBAMA FOR THE CREATION OF BEARS EARS NATIONAL MONUMENT (2015) [hereinafter BEARS EARS PROPOSAL].

17. *See* CTR. FOR BIOLOGICAL DIVERSITY ET AL., CONSERVING THE GRAND CANYON WATERSHED: A PROPOSAL FOR NATIONAL MONUMENT DESIGNATION 1 (2014).

18. *See generally* S. UTAH WILDERNESS ALL., PETITION OF SOUTHERN UTAH WILDERNESS ALLIANCE, ET AL. THE PROTECTION OF THE GREATER CANYONLANDS (2011) [hereinafter GREATER CANYONLANDS PROPOSAL]; *see also* SCOTT GROENE ET AL., GREATER CANYONLANDS NATIONAL MONUMENT: AN OPPORTUNITY, A LEGACY 6 (Stephen Trimble ed., 2014).

19. Interestingly, parts of the Greater Canyonlands proposal overlap with the Escalante National Monument proposal issued by the National Park Service in 1936. *Compare* GREATER CANYONLANDS PROPOSAL, *supra* note 18, at 6; *with* NAT'L PARK SERV., PROPOSED ESCALANTE NATIONAL MONUMENT (1936).

scientific phenomenon found on the Colorado Plateau to demonstrate that national monuments designated to protect these phenomenon will satisfy the legal standard set by the Antiquities Act and Supreme Court precedent.

II. THE ANTIQUITIES ACT OF 1906

A. Legislative History

1. The Impetus for Drafting: Mesa Verde & Chaco Canyon

When Richard Wetherill and his brothers followed a lost cow into a remote area of southwest Colorado during the winter of 1888, they stumbled upon the hauntingly intact cliff dwellings of the Ancestral Pueblo People at Mesa Verde and other remnants of the vast ancient civilization that thrived there over a thousand years ago.[20] The effect on the brothers was profound. One described the experience "like treading 'holy ground'" and commented on the extraordinary level of preservation "[t]hings were arranged in the rooms [] as if people might just have been out visiting somewhere."[21] Little did they know this was only one of many remarkable sites in the vicinity.

Richard Wetherill immediately organized initial excavations.[22] As news of the structures spread, Baron Nordenskiöld, a Swedish nobleman with a passion for archaeology, appeared at the site. According to one of the Wetherill brothers, upon seeing the ruins, "his enthusiasm . . . increased almost beyond his control."[23] Needing no one's permission, Nordenskiöld immediately began larger scale excavations.[24] Although he meticulously documented his findings, the Baron also packed up all the discovered artifacts for transportation to Sweden.[25] United States authorities attempted to arrest him before departure but the judge dismissed the case as he could find no law to uphold the arrest or seize any of the artifacts, and in 1891 Nordenskiöld was allowed to leave the

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20. RONALD F. LEE, NAT'L PARK SERV., THE ANTIQUITIES ACT OF 1906 ch. 4 (2000), http://npshistory.com/publications/antiquities-act-1906.pdf.

21. DAYTON DUNCAN & KEN BURNS, THE NATIONAL PARKS: AMERICA'S BEST IDEA 74 (2009).

22. LEE, *supra* note 20, at ch. 4 ("Neither the walls nor the contents of these ruins were to remain intact for long. Richard Wetherill . . . [was] soon digging in the rooms. Joined at various times by three other brothers . . . .").

23. DUNCAN & BURNS, *supra* note 21, at 76-77.

24. *See id.*

25. Richard West Sellars, *A Very Large Array: Early Federal Historic Preservation—The Antiquities Act, Mesa Verde, and the National Park Service Act*, 47 NAT. RESOURCES J. 267, 278 (2007).

country.[26] He published an extensive account of his archaeological excavations at Mesa Verde shortly after his return.[27]

Despite the government's defeat and failure to stop the export of artifacts, the controversy served as an important catalyst to raise awareness about the wealth of resources on federal lands that remained unprotected.[28] Meanwhile, Richard Wetherill began searching for undisturbed archaeological sites in the regions surrounding Mesa Verde and eventually filed a homestead claim amongst the monolithic constructions of Chaco Canyon.[29] But while Wetherill may have been using the most current and scientifically sound excavation techniques, professional archaeologists were outraged and called on the federal government to act.

By 1890, Yellowstone, Yosemite, and Sequoia had all been created as national parks.[30] But Congress decided something different was needed and in 1899[31] a committee was formed to draft a bill that would serve to protect naturally occurring objects under a new conservation designation called a national monument.[32] Iowa Congressman John F. Lacey and others joined the drafting and, after seven years of negotiation, settled on the provisions of the Antiquities Act of 1906.[33]

2. Plain Language: More Than Just "Antiquities"

The core provisions of the Antiquities Act of 1906 (Act) as enacted by Congress are surprisingly succinct:

> The President of the United States is authorized in his discretion to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be national monuments and may reserve as a part thereof parcels of land, the limits of which in all cases shall be confined to the

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26. DUNCAN & BURNS, *supra* note 21, at 77.

27. GUSTAF NORDENSKIÖLD, THE CLIFF DWELLERS OF THE MESA VERDE OF SOUTHWESTERN COLORADO: THEIR POTTERY AND IMPLEMENTS (1893); *see also* Sellars, *supra* note 25, at 278 n.12.

28. LEE, *supra* note 20, at ch. 4; Sellars, *supra* note 25, at 278.

29. Sellars, *supra* note 25, at 278.

30. Yosemite Grant Act, Pub. L. No. 98-425 13 Stat. 325 (1864); Act Establishing Yellowstone National Park, Pub. L. No. 105-391, 17 Stat. 32 (1872); Sequoia Park Act, CH. 926, 26 Stat. 478 (1890).

31. Archaeological Inst. of Am., *General Meeting of the Archaeological Institute of America*, 4 AM. J. ARCHAEOLOGY 149, 149-50 (1900).

32. Squillace, *supra* note 2, at 478.

33. *Id* at 480-86. For a discussion of John F. Lacey's pivotal role, *see* Sellars, *supra* note 25, at 280-98.

> smallest area compatible with the proper care and management of the objects to be protected.[34]

Many commentators who have discussed the legislative history and provisions of the Antiquities Act have concluded it meant only to protect small parcels of land[35] in the vicinity of archaeological sites.[36] However, this conclusion confuses the initial motivations underlying the decision to begin drafting the bill with its actual intended purpose as enacted for several reasons.[37] First, while threats to archaeological sites like Mesa Verde and Chaco Canyon certainly provided the impetus for drafting, Congress took the opportunity to legislate more broadly and drafted plain language that granted the President discretionary authority to protect all "objects of historic or scientific interest" on federal land, which, for any number of reasons, are unlikely to receive congressional protection.[38] Second, the enacted language represents a legislative compromise between those who sought to limit presidential power to the honor protection of specific archaeological sites and those who favored a more expansive authority to reserve large tracts of land solely based on scenic beauty.[39] Third, as discussed below in Section II.C, the Supreme Court has rejected the claim that the Antiquities Act was meant only to protect archaeological sites.[40]

The areas available for protection under the Antiquities Act are well defined[41] and federal precedent has established that national monument protections only apply to property already owned by the government or voluntarily relinquished by private landowners.[42] The executive branch has echoed this view in congressional testimony offered by Department

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34. 16 U.S.C. § 431 (2012).

35. David H. Getches, *Managing the Public Lands: The Authority of the Executive To Withdraw Lands*, 22 NAT. RESOURCES J. 279, 301-02 (1982).

36. James R. Rasband, *Utah's Grand Staircase: The Right Path to Wilderness Preservation?*, 70 U. COLO. L. REV. 483, 501 (1999).

37. *See* Squillace, *supra* note 2, at 504.

38. 16 U.S.C. § 431 (2012). Theodore Roosevelt was a notorious preservationist and although preliminary drafting of the Antiquities Act began before his election, its passage during his presidency demonstrates that Congress, in allowing for protection of areas of "scientific interest," was well aware of the manner in which the Act would be used. Indeed, by the end of his presidency a few years after the Act's passage, Roosevelt had designated seventeen national monuments, many of which have become national parks. Squillace, *supra* note 2, at 490.

39. Squillace, *supra* note 2, at 484-85.

40. Cappaert v. United States., 426 U.S. 128, 138 (1975).

41. *See generally* VINCENT, *supra* note 3.

42. United States v. California, 436 U.S. 32, 40 (1978) (describing the Antiquities Act as only applying to land owned by the federal government); Buono v. Kempthorne, 527 F.3d 758, 766 (9th Cir. 2008) (stating the Antiquities Act "does not authorize government officials forcibly to take private property to provide such care or to enter private land.").

of the Interior (DOI) officials.[43] Although private tracts of land are sometimes included within proposed boundaries to ensure adequate protection for targeted resources, "[t]o date, no presidential declaration of a monument has converted private property to federal property."[44] Though somewhat rare, private property donations have become subject to protection under the Antiquities Act and some Presidential proclamations have deliberately included provisions allowing for monument expansion should the government acquire title to adjacent or nearby land.[45]

B. Judicial Review & Congressional Responses: Passing Controversy

Although broad, executive authority under the Antiquities Act is subject to limitations familiar in a separation of powers analysis.[46] First, judicial review of presidential designations is always available to ensure compliance with the provisions of the Antiquities Act. Second, Congress can abolish or alter a national monument and could even amend or repeal the Antiquities Act.

This Section will review existing caselaw that discusses the Antiquities Act and the congressional amendments to its provisions that have restricted presidential authority to designate monuments in certain states. Moreover, it is important to underline at the outset that Congress has passed a significant amount of legislation related to Antiquities Act designations but most of this has been to expand monuments or fold them into a higher conservation designation.[47]

1. Supreme Court Precedent: Challenges to Executive Authority

When Theodore Roosevelt designated Grand Canyon National Monument in 1908, a miner named Ralph Cameron made invalid mineral claims within its boundaries in order to charge visitors for access to the Grand Canyon's most popular hiking trail.[48] Judicial resolution of these circumstances eventually reached the Supreme Court in *Cameron v.*

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43. *See The National Monument Compliance Act: Hearing Before the Subcommittee on National Parks & Public Lands of the Comm. on Res.,* 106th Cong. 46 (1989) (statement of John D. Leshy, Solicitor, Department of the Interior).

44. VINCENT, *supra* note 3, at 6.

45. *Id.* at 7 n.40 ("[N]early all of President Clinton's monument proclamations had such a provision . . . ."); *see, e.g.*, Proclamation No. 7317, 65 Fed. Reg. 37,243 (June 9, 2000); Proclamation No. 7263, 65 Fed. Reg. 2817 (Jan. 11, 2000).

46. *See generally* Kelly Fanizzo, *Separation of Powers and Federal Land Management: Enforcing the Direction of the President Under the Antiquities Act*, 40 ENVTL. L. 765 (2010).

47. *See* Squillace, *supra* note 2, at 585-610.

48. *See* Cameron v. United States, 252 U.S. 450, 458 (1920).

United States, the first case to address the constitutionality of the Antiquities Act.[49] Cameron argued that President Roosevelt did not have the authority to protect the Grand Canyon. The Court's opinion focused on other issues but dealt with this challenge summarily holding that the Grand Canyon clearly met the "objects of historic or scientific interest" standard established by the Act.[50] Implicit in this holding was the Court's recognition that the size of a monument does not violate the Act's "smallest area compatible" requirement provided that the area protected by designation was otherwise of "scientific interest."[51]

The Supreme Court dealt with a similar issue in *Cappaert v. United States*, in which ranchers joined by the state of Nevada challenged federal water use restrictions meant to preserve endangered species within the adjacent Death Valley National Monument.[52] Petitioners argued that presidential designations under the Antiquities Act should be confined to the protection of archaeological sites.[53] The Court, however, found no such limitation and without need for much discussion held that the rare species protected by the monument qualified as "objects of historic or scientific interest." Twenty years later, Congress would use this national monument as the basis for creation of Death Valley National Park.[54]

In *United States v. California*, the most recent Supreme Court case touching the Antiquities Act, the Court considered whether federal or state governments had jurisdiction over the islands and waters comprising Channel Islands National Monument.[55] The Court again upheld the president's authority to designate the monument, but concluded a subsequent statute conveyed control over its area to the state of California.[56] In 1980, Congress created Channel Islands National Park out of the existing monument.[57]

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49. *See generally id.*

50. *Id.* at 455-56. The Court reasoned: "The Grand Canyon . . . 'is an object of unusual scientific interest.' It is the greatest eroded canyon in the United States, if not the world, is over a mile in depth, has attracted wide attention among explorers and scientists, affords an unexampled field for geologic study, is regarded as one of the great natural wonders, and annually draws to its borders thousands of visitors." *Id.*

51. Squillace, *supra* note 2, at 492.

52. Cappaert v. United States, 426 U.S. 128, 131 (1975).

53. *Id.* at 141-42.

54. 16 U.S.C. § 410aaa (2012).

55. United States v. California, 436 U.S. 32, 33 (1978).

56. *Id.* at 36-37. Importantly, the Court held that the president may designate national monuments for bodies of water situated on or over federal lands or otherwise in the territorial sea of the United States. *Id.* at 36 n.9 (citing *Cappaert*, 426 U.S. at 138-42).

57. Act To Establish Channel Islands National Park, and for Other Purposes, Pub. L. No. 96-199, 94 Sta. 67 (1908).

2. The Jackson Hole Controversy?

In 1943 President Franklin Roosevelt, responding to nearly two decades of Congressional impasse in the expansion of Grand Teton National Park, designated Jackson Hole National Monument against fierce opposition to the land use restrictions.[58] In 1945, the state of Wyoming filed suit in federal court challenging the President's authority to designate Jackson Hole.[59]

In *Wyoming v. Franke* the State claimed that Jackson Hole satisfied neither the "an historic or scientific interest" nor the "smallest area compatible" requirements of the Antiquities Act.[60] After evaluating the substance of the designation, the district court rejected these claims.[61] In its discussion, the court identified that the controversy at hand was in essence a conflict between the legislative and executive branches that did not warrant judicial interference.[62] Importantly, the court explained that although "authority over disposition of government lands inherently rests in the Legislative branch," the Antiquities Act represented a valid delegation of this authority to the executive branch and the burden was on Congress to pass remedial legislation that altered or withdrew this delegation.[63]

Tension between the legislative and executive branches continued after the case as Congress refused to appropriate any funds for Jackson Hole.[64] However, in 1950, Congress negotiated a compromise with President Roosevelt and agreed to fold monument lands into the existing Grand Teton National Park[65] but amended the Antiquities Act to prohibit future presidents from making national monument designations in Wyoming.[66] But this amendment did not apply to Congress who decades

58. Getches, *supra* note 35, at 304; Proclamation No. 2578, 3 C.F.R. 327 (Mar. 13, 1943).

59. *See generally* Wyoming v. Franke, 58 F. Supp. 890 (D. Wyo. 1945).

60. *See id.* at 892.

61. *Id.* at 896.

62. *Id.* at 896 ("In short, this seems to be a controversy between the Legislative and Executive Branches of the Government in which, under the evidence presented here, the Court cannot interfere.").

63. *Id.* ("[I]f the Congress presumes to delegate its inherent authority to Executive Departments which exercise acquisitive proclivities not actually intended, the burden is on the Congress to pass such remedial legislation as may obviate any injustice brought about as the power and control over and disposition of government lands inherently rests in its Legislative branch."); *see also id.* at 895 ("[I]f a monument were to be created on a bare stretch of sage-brush prairie in regard to which there was no substantial evidence that it contained objects of historic or scientific interest, the action in attempting to establish it by proclamation as a monument, would undoubtedly be arbitrary and capricious and clearly outside the scope of the Monument Act.").

64. Getches, *supra* note 35, at 304.

65. 16 U.S.C. § 406d-1 (2012).

66. 16 U.S.C. § 431a (2012); Squillace, *supra* note 2, at 498.

later acted to create another national monument in Wyoming, Fossil Butte.[67]

Importantly, in the 1960s, Wyoming's governor and the chief opponent of designation at the time of the controversy publicly stated, "I fought . . . as hard as I could and I lost and I want you all to know that I'm glad I lost, because I now know I was wrong. [The expanded] Grand Teton National Park is one of the greatest natural heritages of Wyoming and the nation and one of our great assets."[68]

3. The Alaska Designations

In 1971, Congress passed legislation giving the Secretary of the Interior two years to conduct studies related to protection of 80 million acres of Alaskan wilderness.[69] The Secretary completed studies by the 1973 deadline and proposed legislation that provided for an additional five years of protection while Congress debated possible designations and uses for these lands.[70] When the five-year deadline was set to run Congress still had not acted, which meant that these areas would reopen to mining and other commercial activities.[71] To reserve these federal lands for future study, President Carter exercised his power under the Antiquities Act and designated or expanded seventeen national monuments in Alaska totaling almost 56 million acres.[72]

Strongly opposed to these designations, both the state of Alaska and Anaconda Copper, a mining company, filed suit.[73] In *Alaska v. Carter* the State argued that presidential designations under the Antiquities Act triggered the environmental impact statement requirement of the National Environmental Policy Act (NEPA).[74] The court rejected this argument and held that the President was not a government agency subject to NEPA.[75] Conversely, the mining litigation in *Anaconda Copper Co. v. Andrus* challenged President Carter's designation on substantive rather than procedural grounds arguing generally that this

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67. An Act To Establish the Fossil Butte National Monument in the State of Wyoming, and for Other Purposes, Pub. L. No. 92-537, 86 Stat. 1069 (1972).

68. CONRAD WIRTH, PARKS POLITICS AND THE PEOPLE ch.11 (quoting former Wyoming Governor, Cliff Hansen).

69. 43 U.S.C. § 1616(d)(2)(a)-(d)(C) (1971).

70. 43 U.S.C. § 1616(d)(2)(D) (2012); Squillace, *supra* note 2, at 503.

71. Squillace, *supra* note 2, at 503-504.

72. *See* Proclamation Nos. 4611-27, 3 C.F.R 69 (Dec. 1, 1978) (designating National Monuments in Alaska).

73. Alaska v. Carter, 462 F. Supp. 1155, 1156 (D. Alaska 1978); Anaconda Copper Co. v. Andrus, 14 Env't Rep. Cas. 1853, 1853-54 (D. Alaska 1980).

74. *See generally Carter*, 462 F. Supp. 1155.

75. *Id.* at 1166.

was beyond the scope of the Antiquities Act.[76] The court found ample justification for designation of these lands as objects of scientific interest.[77]

The almost complete cessation of resource extraction in parts of Alaska outraged those in the mining and related industries.[78] Their legal challenges were unsuccessful but Congress did not ignore the protests of the mining industry and in 1980 passed the Alaska National Interest Lands Conservation Act (ANILCA).[79] Similar to Wyoming, Congress restricted the use of the Antiquities Act in Alaska by future presidents and required congressional approval for withdrawal of lands over 5000 acres.[80] However, despite this limitation, Congress ratified, as well as expanded, the millions of acres protected by President Carter and designated or redesignated roughly 700 million acres of public land as new conservation zones, including 50 million acres of national parks.[81]

4. The Clinton and Bush Designations

Reminiscent of Theodore Roosevelt, President Clinton created and expanded several National Monuments including Grand Staircase Escalante, located on the Colorado Plateau.[82] These designations sparked two legal challenges both of which ended up in the D.C Circuit.[83]

The petitioners in *Mountain States Legal Foundation v. Bush* challenged six monuments in four states and claimed that the President had acted in violation of the Property Clause of the Constitution.[84] Relying on Supreme Court precedent, the D.C. Circuit found no violation of the Property Clause that would support a claim and upheld dismissal of the case.[85] Similarly, in *Tulare County v. Bush*, the petitioners challenged Giant Sequoia National Monument[86] as violating both the "objects of historic or scientific interest" and "smallest area"

76. *See Anaconda Copper*, 14 Env't Rep. Cas, at 1853-54.
77. *Id.*
78. Squillace, *supra* note 2, at 503-504.
79. Alaska National Interest Lands Conservation Act, 16 U.S.C. §§ 3101-3233 (2012).
80. *Id.*
81. *Id.*; *see* Squillace, *supra* note 2, at 581 n.604.
82. *See e.g.*, Proclamation No. 7397, 3 C.F.R. 7354 (Jan. 17, 2001).
83. *See e.g.*, Mountain States Legal Found. v. Bush, 306 F.3d 1132 (D.C. Cir. 2002); Tulare C ty v. Bush, 306 F.3d 1138 (D.C. Cir. 2002).
84. *See Mountain States Legal Found.*, 306 F.3d, at 1133-34.
85. *See Tulare Cty.*, 306 F.3d, at 1143.
86. Proclamation No. 7295, 3 C.F.R. 24095 (Apr. 15, 2000).

requirements, but again the court dismissed the case.[87] Plaintiffs in both cases appealed to the Supreme Court, but certiorari was denied.[88]

The most recent case to discuss the Antiquities Act considered a challenge to the 140,000-square-mile Papahanaumokuakea Marine National Monument designated by President George W. Bush in 2006.[89] The Proclamation restricted the commercial harvest of several important marine species but allowed those with existing permits to continue their fishing operations within the monument for an additional five years.[90] In 2011, the two fisherman filed a lawsuit in Hawaii District Court asserting that their fishing rights had been lost as a result of the proclamation.[91] But the court in *Dettling v. United States* found the plaintiffs' arguments deficient and dismissed their complaint.[92]

Since designation, every community adjacent to one of these challenged monuments experienced a decrease in unemployment and an increase in per capita income.[93] But these economic benefits are not automatic and the town of Escalante and other municipalities in Utah, were vocal, but unsuccessful, in their initial opposition of the Grand-Staircase Escalante National Monument.[94] However, these views may have changed, the masthead on the Escalante Chamber of Commerce website reads "Heart of Grand Staircase-Escalante National Monument" and has links to recreational opportunities.[95]

Nevertheless, despite evidence of economic improvement for communities adjacent to new national monuments, the Utah state legislature has called on President Donald Trump to abolish the Bears Ears National Monument.[96] But no president has attempted to abolish an

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87. *Tulare Cty.,* 306 F.2d at 1140-41, 44.

88. *Mountain States Legal Found.*, 306 F.3d at 1132, *cert. denied*, 540 U.S. 812 (2003); *Tulare Cty.*, 306 F.3d 1138, *cert. denied*, 540 U.S. 813 (2003).

89. Proclamation No. 8031, 71 Fed. Reg. 36,443 (June 26, 2006). The name was changed to Papahanaumokuakea Marine National Monument in 2007. Proclamation No. 8112, 72 Fed. Reg. 10,031 (March 2, 2007).

90. Proclamation No. 8031, 71 Fed. Reg. 36,443 at 36,447 (June 26, 2006).

91. *See generally* Dettling v. United States, 983 F.Supp.2d 1184 (2013).

92. *Id.*

93. *Preserve Land Freedom for Americans Act of 2011, Hearing on H.R. 302, 758, 817, 845-46 and 2147 Before H. Subcomm. on Nat'l Parks, Forests and Pub. Land*, 112th Cong. 25-29 (2011) (statement of Ray Rasker, Executive Director, Headwaters Economics).

94. Amy O'Donoghue, *Ruling Rejects Local Opposition to Grand Staircase Plan*, DESERT NEWS (Apr. 14, 2009, 12:00 AM), http://www.deseretnews.com/article/705297252/Ruling-rejects-local-opposition-to-Grand-Staircase-plan.html.

95. ESCALANTE CHAMBER OF COMMERCE, www.escalanteut.com (last visited Apr. 13, 2017).

96. *See generally* H.C.R. 011, 2017 Leg., Gen. Sess.

existing designation and there are many who contend that such a power does not exist.[97]

C. Modification & Abolishment of Existing National Monuments

Under Article IV of the Constitution, Congress maintains total power over the United States' federal lands and can take any number of actions with respect to national monuments.[98] Pursuant to this power, Congress has passed legislation to designate dozens of national monuments, abolish several existing monuments, and alter the boundaries or land use rules for countless others.[99] The Antiquities Act represents a partial delegation of this land management authority to the president and provides the constitutional basis for a sitting president to designate national monuments. However, neither its provisions, nor judicial precedent, address whether subsequent presidents have the implied power to alter or abolish national monuments designated by their predecessors.[100]

1. Presidential Abolishment of a Monument: Unconstitutional

a. Separation of Powers and Other Issues

A national monument is a legal designation that can be created by Congress or by the president.[101] Monument designations can be abolished by Congress through legislation, but it is unclear whether monument designations can be abolished by the president through proclamation.[102] Although this issue is not addressed in the Antiquities Act or its associated caselaw, the evidence presented in this analysis suggests that an implied power to abolish monuments does not exist.

First, a 1938 Attorney General's Opinion produced for President Franklin Roosevelt concluded that the president did not have this implied power.[103] The Opinion explained that since the president has no inherent power over public lands and the authority to create national monuments was delegated by Congress, any monument designation is equivalent to

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97. *See generally* ALEXANDRA WYATT, CONG. RES. SERV., R44689, ANTIQUITIES ACT: SCOPE OF AUTHORITY FOR MODIFICATION OF NATIONAL MONUMENTS (2016).

98. U.S. CONST., art. IV.

99. WYATT, *supra* note 97, at 6-7.

100. *See* 16 U.S.C. § 431 (2012); Squillace, *supra* note 2, at 551-52.

101. VINCENT, *supra* note 3, at 1. ("Both the President and Congress can create 'national monuments,' a type of conservation unit created from federal lands.").

102. *Id.*

103. Proposed Abolishment of Castle Pickney Nat'l Monument, 39 Op. Att'y Gen. 185-89 (1938).

an act of Congress that cannot be undone by the executive branch.[104] Opinions from past attorney generals were cited to bolster this reasoning.[105]

Second, modern analysts contend that "Congress granted the President 'one way' authority to create, but not to revoke" existing national monuments because an implied power to abolish would be inconsistent with the "impetus to pass the law . . . [specifically the] concern that spectacular public land resources might be harmed before Congress could act to protect them."[106] The legislative record supports this argument because Congress consistently upgrades national monuments into more protective conservation units like national parks but this process can occur many years after the initial designation.[107] For example, Pinnacles National Monument was designated in 1908 and upgraded more than a century later when Congress folded it into Pinnacles National Park in 2013.[108] In these type of examples, Congress could have acted sooner to upgrade the monument, but, for whatever reason, did have the opportunity to do so until decades after the initial designation.

An implied power to abolish monuments, if exercised, would arguably foreclose a future legislature's opportunity to review a designation and Congress has sometimes waited over a century to take advantage of this opportunity. Based on the evidence cited above, this analysis contends that the exclusive power to review monuments is reserved for future legislatures and cannot be exercised by the current president. Thus, an implied power to abolish monuments would arguably serve undermine the core purpose of the Antiquities Act.

Third, when Congress was drafting FLMPA in the 1970s to overhaul existing land management laws one of its committee reports stated "[the bill] would specifically reserve to Congress the authority to modify or revoke withdrawals for national monuments created under the Antiquities Act."[109] Although this language did not become part of FLMPA and was directed toward the Secretary of the Interior as opposed

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104. *Id.*

105. *Id.* at 187 (quoting 10 Op. Att'y Gen. 359 (1862)). Almost all commentators analyzing this opinion have concluded that the President may not unilaterally revoke an already established monument. *See e.g.*, Squillace, *supra* note 2, at 554.

106. Squillace, *supra* note 2, at 553-54.

107. *See generally id.*

108. *See* 16 U.S.C. § 410ooo-1 (2013).

109. H.R. Rep. 94-1163, at 9 (1976).

to the president,[110] it indicates that Congress intended to retain and not implicitly delegate, their power to abolish monuments.

Finally, if the president has the implied power to abolish a monument, questions related to the existence of other implied powers, which are discussed fully in the next section, may become moot. This is because the implied power to change the size of a monument or modify its management could arguably be exercised under the umbrella of an implied power to abolish monuments. However, it is unclear whether there are these other implied powers under the Antiquities Act and if the president attempted to change the size or management of a monument, the legality of this action might be challenged in court. But the president might be able to avoid adjudication of the dispute simply by exercising the implied power to abolish the initial designation and then the express power to designate a new monument of the desired size or management. If the president has both powers, this type of outcome would be entirely consistent with the exercise of those powers.

The above analysis means to suggest that if the president has both the express power to designate monuments and the implied power to abolish them, the combination of these two powers would provide the president with the ability to avoid judicial review of their actions and, as a result, make an end run around the provisions of the Antiquities Act. In addition, while it is uncertain whether the president has other implied powers to change the size or management of a monument, those other implied powers could arguably be exercised by the president under the umbrella of an implied power to abolish. Thus, this analysis suggests that recognition of the other implied powers is a prerequisite to recognition of an implied power to abolish. To this end, if a court were to find that one of the other implied powers did not exist, that finding would foreclose an implied power to abolish monuments.

In practice, no president has ever abolished a National Monument.[111] Other Executive Actions can sometimes be repealed when a new administration takes office,[112] but monument designation does not involve the exercise of an executive branch power and the president's constitutional authority to designate national monuments depends on a delegation of congressional power pursuant to a specific piece of legislation, the Antiquities Act.[113] Thus, an implied power to abolish

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110. WYATT, *supra* note 97, at 6.

111. WYATT, *supra* note 97, at 3.

112. *Id.*

113. *See* Squillace, *supra* note 2, at 566 ("[Future] Presidents may disagree with the judgment made by their predecessors, either to establish monuments or to include particular lands

existing monuments would allow the president to undo legislative acts, which is not only inconsistent with the purpose of the Antiquities Act but also an unconstitutional violation of the separation of powers.

b. Responses to Possible Counter Arguments

Notwithstanding the analysis above, those claiming the existence of an implied power to abolish monuments might argue that a designation by the president is an exercise of executive power that does not equal an act of Congress and that when Congress delegated the authority to create national monuments it implicitly delegated the authority to abolish them. However, this analysis argues that even if these arguments were accepted and an implied power to abolish monuments read into the Antiquities Act, the scope of this implied power would render it unconstitutional.

Assuming the president has this implied power, its source would arguably have been a delegation by Congress of their own power to abolish national monuments. But Congress has the power to abolish any national monument, not just those designated by the president, and national monuments are indistinguishable as legal designations regardless of whether they were designated by the legislative branch or executive branch.[114] A delegation of this congressional power to the president, if implied, would arguably grant the executive branch the authority to abolish national monuments designated by the legislative branch. Thus, even if it is assumed that presidential designations are not equivalent to acts of congress and that an implied power to abolish monuments exists, the scope of that power, as implied, could extend to monuments designated by Congress and violate the Constitution.

Those seeking to abolish monuments might then claim that an implied restriction is attached the proposed implied power and argue that Congress did not delegate all of its power to abolish monuments only the power to abolish monuments created by the president. However, to speculate on what restrictions might be attached to a congressional delegation of power that must be implied into the Antiquities Act is an impossible exercise absent evidence of legislative intent.

Furthermore, if it is claimed that there is one implied restriction on the proposed implied power, it is equally likely that there are other implied restrictions. Perhaps there would be implied time restrictions on

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within their boundaries. But their recourse, and the recourse of other citizens unhappy with such decisions, is in the Congress, or perhaps in the courts on the grounds that the President abused his discretion. It is not in the executive branch.").

114. VINCENT, *supra* note 3, at 1 ("Both the President and Congress can create 'national monuments,' a type of conservation unit created from federal lands.").

the abolishment of a monument. These implied restrictions could set a lower limit such that presidents cannot abolish any monument created within the past five years because Congress reserved the right to review those monuments for possible redesignation should they become popular Implied time restrictions could also set an upper limit because Congress implicitly intended that a president's implied power would lapse after the monument had been in existence for fifty years or some other threshold period of time. It is important note that if there was not an implied upper limit time restriction on the exercise of an implied power to abolish, every future president would be vested with the power to abolish any existing designation regardless of age. Therefore, in the absence of an implied time restriction, an implied power to abolish would provide all future presidents with the authority to revoke any existing designation, including more than a dozen existing national monuments that have been in existence for over a century.

Thus, even if it were assumed that there was an implied power to abolish monuments and further assumed that were restrictions on that power, there is no evidence in the legislative history of the Antiquities Act or elsewhere to determine the number and nature of those restrictions.

As a result, claims that the Antiquities Act grants the president an implied power to abolish monuments must fail even if the premises of those claims are accepted on their terms. Their argument requires that Congress implicitly delegated its power to abolish monuments to the president, but included in this implicit delegation one, but only one, unspoken restriction. For the reasons set forth above, this argument is unsustainable.

2. Presidential Modification of a Monument: Constitutionality Uncertain

a. Monument Expansion

Unlike the implied powers discussed above, the provisions of the Antiquities Act and century of executive practice provide strong evidence to support the existence of an implied power for the president to expand monuments. This power can be derived from the provisions of the Act because it is analogous to the power to designate monuments.[115] The president could always designate a new adjacent monument under the Act, but since the objects to be protected are the same as the initial designation, presidents have interpreted the Antiquities Act as granting

115. Wyatt, *supra* note 97, at 4 ("Antiquities Act authority to add new acres to national monuments appears analogous to the authority to create monuments in the first place.").

the implied power to instead expand the original monument so that it is the "smallest area compatible" with protection of those objects.[116]

Since this power arguably must originate from an implicit delegation of the congressional power to expand monuments, it would extend to monuments designated by congress. However, since a president cannot amend legislation creating the monument, this power would have to be indirectly exercised. Although expansion of a congressionally-created monument has never been attempted, this analysis suggests that the president could exercise this implied power by designating an adjacent monument and then requesting that Congress enact legislation to fold it into the original. While this would not technically result in expansion of the initial monument, designation of an adjacent monument so that it can be added to the original achieves the same result. Furthermore, the political history of Antiquities Act contains several analogous examples of presidents who have used this same process to designate new monuments that were eventually added to an adjacent national park.[117] For instance, in 1937 President Franklin Roosevelt designated a national monument in Southern Utah that Congress later folded into Zion National Park.[118]

As a matter of precedent, the implied power to expand national monuments has never been addressed in court.[119] However, in the past century, presidents have expanded dozens of their predecessors' national monuments and the power to do so has never been directly challenged in federal court.

b. Monument Reduction

It is unclear whether the Antiquities Act grants the president the implied power to diminish an existing national monument.[120] While the implied power to expand monuments can be compared to the express power to create them, "diminishment of national monuments may raise distinct issues."[121] Some analysts contend that the same logic cited against an implied power to abolish monuments should also proscribe an implied power to diminish them; if monument designations are

116. *Id.* ("After their establishment by a President, national monuments have often been expanded [] over time by subsequent Presidents.").

117. *See e.g.*, Proc. 2221, 50 Stat. 1809 (Jan. 22, 1937).

118. *See id.*; Zion National Park, 84th Cong., 70 Stat. 527 (July 11, 1956).

119. *See generally* Wyatt, *supra* note 97.

120. *Id.* at 4-5.

121. *Id.* at 4.

equivalent to acts of Congress the power to diminish, abolish, or otherwise undo that designation is reserved to the legislative branch.[122]

But there appears to be an important difference between an implied power to abolish a monument and an implied power to reduce its boundaries. Whereas there is no evidence to support the existence or determine the scope of an implied power to abolish, there is at least a modicum of precedent for presidents to reduce the size of existing monuments and some evidence of discernable restrictions on the exercise of that power.[123]

Until the 1960s presidents occasionally diminished national monuments.[124] These reductions were presumably based on the president's determination that certain areas should be excluded from a monument so that it is the "smallest area compatible" with the objects to be protected.[125] Similarly, the 1938 Attorney General Opinion discussed above contemplates the existence of an implied power to reduce monuments pursuant to the "smallest area compatible" provision of the Antiquities Act.[126]

Executive practice and the 1938 Attorney General Opinion indicate that there is at least some precedent for presidents to reduce national monuments.[127] But no president has reduced the size of a national monument in the past sixty years, and without relevant caselaw, it is unclear whether the existence of such an implied power could be established in federal court.

However, if such a power exists, the 1938 Attorney General Opinion and other evidence cited above suggest that the size of a diminished monument must nonetheless be "compatible with the proper care and management of the objects to be protected" by the original designation in order to satisfy the provisions of the Antiquities Act.[128]

c. Modification of Monument Management

It is unclear whether the Antiquities Act grants the president implied powers to modify the management of a national monument by

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122. *See* Squillace, *supra* note 2, at 566-68.

123. Wyatt, *supra* note 97, at 5 ("[D]espite some potential ambiguity in the phrasing of the Antiquities Act, there is precedent for Presidents to reduce the size of national monuments by procalamation.").

124. *Id.* at 4.

125. *Id.* at 5.

126. *See* 39 Op. Att'y Gen. 185, 188 (1938).

127. *See* Wyatt, *supra* note 97, at 4-5.

128. *Id.* at 5.

proclamation.[129] It is also unclear what those powers might be with respect to the millions of acres of federal land designated as national monuments.[130] There is a particularly high level of uncertainty in this respect because, as explained by the Congressional Research Service, national monuments "conceivably could be modified in a variety of ways other than in size [and a] President could, for example, attempt to transfer management of a monument from one agency to another; expand, authorize or prohibit uses such as mining or grazing; or allow for new rights of way . . . ."[131] However, if the president has other implied powers to modify monument management, these powers have almost never been exercised.[132]

There is only one example where presidential modification of a monument did not involve a boundary adjustment.[133] In 1936, President Franklin Roosevelt modified the restrictions on Katmai National Monument so that "valid claims under the public-land laws . . . existing when the proclamations were issued and since maintained" were no longer extinguished by the designation and could now be pursued.[134]

No president has attempted a management modification since 1936 but the "question of monument management modifications has become more pronounced over time as national monument proclamations have grown more detailed and specific."[135] When the president includes management provisions in a monument's proclamation, "diversion from such provisions could face greater legal opposition."[136]

Even the most recent proclamations, however, do not address every management detail and older proclamations may not address management at all.[137] Thus, if it is assumed that there are implied powers to modify monument management, there would be uncertainty as to the scope of the president's authority to exercise those powers vis-à-vis matters not addressed in the proclamation.

Some analysts contend that courts can address issues of scope by analogizing management modification to monument abolishment if there is a sufficient reduction in a monument's restrictions or expansion of its

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129. *See id.* at 5-6.
130. *Id.*
131. *Id.* at 5.
132. *See* Squillace, *supra* note 2, at 585-610.
133. *Id.*; Proclamation No. 2177, 35 Stat. 3523 (1936).
134. Proclamation No. 2177, 35 Stat. 3523 (1936).
135. Wyatt, *supra* note 97, at 5.
136. *Id.* at 6.
137. *Id.*

uses.[138] However, as discussed in the next Section, this analysis suggests that a court could also find that a management modification violates the provisions of the Antiquities Act because the monument, as modified, is no longer "compatible with the proper care and management of the objects to be protected."[139]

d. Monument Modification: Judicial Review & Threshold Requirements

A president's implied power to expand, reduce, or modify the management of an existing monument has been neither foreclosed nor established in federal court.[140] If the president's attempted exercise of an implied power were challenged in court, the extent to which a given monument could be modified would likely require a fact-specific inquiry in light of the nature of those objects. The analysis that follows will discuss factors relevant to the judicial resolution of such disputes.

If the expansion of national monuments were challenged the court's review would be fairly straightforward. Assuming the court recognizes the president's implied power to expand monuments as analogous to the power to create them, the only issue left to be resolved is whether the monument, as expanded, is the "smallest area compatible" with protection of the designated objects.[141] Since the provision containing this language has been interpreted by the Supreme Court in other Antiquities Act cases, the court's decision would likely be based on precedent.[142]

While presidents have often expanded monuments, they have rarely reduced and almost never modified the management of existing designations. As a result, it is uncertain whether a court would find sufficient evidence to establish the existence of an implied power to reduce or modify the management of a national monument.

Assuming that one or both of these implied powers exists, this analysis means to suggest that the same standard of judicial review is applicable when the attempted exercise of either implied power is challenged in court.

In order to ensure that all relevant factors are considered in these cases, the court should engage in a quantitative as well as qualitative analysis to determine not only the amount of federal land that would be

138. *Id.*
139. *See generally* 16 U.S.C. 431 (2012).
140. *See generally* Wyatt, *supra* note 97.
141. *See generally* 16 U.S.C. 431 (2012).
142. *See e.g.*, Cameron v. United States, 252 U.S. 450 (1920).

impacted by the management modification or removed from the monument, but also the direct or indirect effects of that removal or modification on the objects to be protected. While the number of acres modified or removed from the original designation would arguably be relevant to the court's analysis, this would not be outcome-determinative. Thus, even if the area modified or removed from the monument is small, it should nonetheless be deemed unlawful if that reduction or modification has the direct or indirect effect of threatening the protected objects or otherwise undermines the purpose of the original designation.

For purposes of illustration, consider the hypothetical reduction or management modification of a monument designated to protect an area containing archaeological sites and a unique species of bird that can only be found within the monument's assumed boundaries. If a forested area within the imagined monument contained the rare bird's primary food source and the president attempted to modify the management of this area or remove it from the monument in order to allow the harvest of timber, this action would be unlawful because the bird is an object to be protected by the original designation and reduction of the monument would have the direct effect of threatening the species. Similarly, if the bird seasonally migrates from one section of the imagined monument to another and must stop at the shores of a specific lake to rest in order to complete the journey, removal of that lake from the monument or modification of its management by the president, for purposes of allowing commercial development along its beaches, would be unlawful due to the indirect effect of threatening the species.

The hypothetical examples above serve to illustrate another important point with respect to the reduction or management modification of monuments. If the modification or reduction at issue directly or indirectly threatens the bird it is irrelevant whether it threatens the archaeological sites. The Antiquities Act requires that all national monuments be compatible with the proper care of the objects, plural, to be protected.[143] Thus, if a reduced or modified monument is incompatible with respect to one of the protected objects, it is arguably incompatible as a whole for purposes of the Antiquities Act.

In conclusion, courts reviewing monument reductions or management modifications should focus their analysis on the direct or indirect effects this action would have on the historic or scientific objects to be protected by the original designation. As the Congressional Research Service has stated, "[t]he overriding management goal for all

143. *See* 16 U.S.C. 431 (2012).

national monuments is protection of the objects described in the proclamations."[144]

If a court finds that reduction or modification of the monument would endanger any of those objects it should be set aside as violating the provisions of the Antiquities Act. Alternatively, the court could view the scope of the modification or the size of the reduction at issue, "as effectively amounting to an abolishment of the monument" and strike it down on those grounds.[145]

D. Preservation of Separation of Powers & Evidence of Statutory Effectiveness

It is important to keep in mind the Supreme Court's description of what occurs when the president designates a national monument: "A reservation under the Antiquities Act thus means no more than that the land is shifted from one federal use, and perhaps from one federal managing agency, to another."[146] Based on the evidence presented above, there are several mechanisms that demonstrate how the Antiquities Act preserves the separation of powers and why it is so effective: (1) judicial review of monument designations remains available; (2) Congressional oversight exists; (3) the Antiquities Act remained conspicuously intact despite the broad reforms in FLMPA; and finally, (4) Congress has consistently ratified monument designations by folding them into national parks or other more protective conservation units. Moreover, since 1982, every community adjacent to a newly designated monument has reported a decrease in unemployment and an increase in per capita income.[147]

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144. Wyatt, *supra* note 97, at 2.

145. *Id.* at 5.

146. United States v. California, 436 U.S. 32, 40 (1978).

147. *Preserve Land Freedom for Americans Act of 2011, Hearing on H.R. 302, 758, 817, 845-46 and 2147 Before H. Subcomm. on Nat'l Parks, Forests and Pub. Land*, 112th Cong. 25-29 (2011) (statement of Ray Rasker, Executive Director, Headwaters Economocis). The outdoor recreation economy is particularly prevalent in Utah and according to the Outdoor Research Foundation "research also demonstrates that the outdoor recreation economy contributes approximately $5.8 billion annually to Utah's economy, supporting 65,000 jobs across the state." OUTDOOR INDUSTRY FOUNDATION, Billion Annual Contribution to the U.S. Economy (2012); *The Outdoor Recreation Economy*, Outdoor Industry Association (2012) (economic analysis conducted by Southwick Associates, Inc.). Intensive economic analysis has proven the positive impacts nearby national monuments could have on communities.

1. Judicial Review

The courts can review any national monument designation.[148] Since the Act establishes discernible limits on the exercise of presidential power, federal courts have reiterated that judicial "review is available to ensure that [national monument designations] are consistent with constitutional principles and that the President has not exceeded his statutory authority."[149] When addressing these issues, the Supreme Court has consistently upheld the president's well-defined authority to reserve sections of federally owned land that contain identifiable objects of scientific or historic interest.[150] In any event, the plain language of the Act has withstood a century of sporadic legal as well as political challenges and created a line of federal and Supreme Court precedent that has upheld a consistent standard of review in Antiquities Act cases[151] in light of relevant separation of powers principles.[152] Under this predictable standard, judicial review of presidential action under the Antiquities Act remains available, but since presidents rarely exceed their authority, congressional action remains the most effective means of abolishing or altering national monuments.

2. Congressional Oversight

Congress retains absolute authority to alter, abolish, or create any national monument and has done so periodically based on various factors.[153] Thirty-eight national monuments have been congressionally created.[154] Congress has abolished fewer than ten monuments—some of which were simply redesignated as state parks.[155]

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148. Mountain States Legal Found. v. Bush, 306 F.3d 1132, 1136 (D.C. Cir. 2002).

149. *Id.* at 1136.

150. *See, e.g.*, Cameron v. United States, 252 U.S. 450 (1920); Cappaert v. United States 426 U.S. 128 (1976); United States v. California, 436 U.S. 32 (1978).

151. *See, e.g.*, *Cameron*, 252 U.S. at 450; *Cappaert*, 426 U.S. at 128; *California*, 436 U.S. at 32; Mountain States Legal Found. v. Bush, 306 F.3d 1132 (D.C. Cir. 2002); Utah Ass'n of Ctys. v. Bush, 316 F. Supp. 2d 1172, 1185 (D. Utah 2004); Alaska v. Carter, 462 F. Supp. 1155, 1159 (D. Alaska 1978); Wyoming v. Franke, 58 F. Supp. 890, 896 (D. Wyo. 1945).

152. *See* Fanizzo, *supra* note 46.

153. *See generally* Squillace, *supra* note 2.

154. Heidi M. Biasi, *The Antiquities Act of 1906 and Presidential Proclamations: A Retrospective and Prospective Analysis of President William J. Clinton's Quest To 'Win the West,'* 9 BUFF. ENVTL. L.J. 189, 189-90 n.4 (2002) ("[Congressionally created] Monuments include: . . . Canyon de Chelly (AZ)(1931); . . . Pecos (NM)(1965); . . . Hohokam Pima (AZ)(1972); Fossil Butte (WY)(1972); John Day Fossil Butte (WY)(1974); Congaree Swamp (SC)(1976); EL Malpais (NM)(1987); Poverty Point (LA)(1988) . . . Petroglyph (NM)(1990).").

155. *See* Squillace, *supra* note 2, at 550 n.453.

Congress could pass legislation to amend the Antiquities Act, which they have done twice; or even repeal it, as many have argued for them to do.[156] But despite two opportunities to overhaul the Antiquities Act after the Wyoming and Alaska controversies, Congress instead enacted narrow amendments that restricted executive authority in those states.[157] This legislation passed after the Jackson Hole and Alaska designations suggests a healthy separation of powers relationship and demonstrates that Congress is capable of acting when the legislature feels the provisions of the Act are not being followed. In practice, Congressional action vis-à-vis national monuments has overwhelmingly resulted in expanded boundaries or conservation redesignation.[158]

3. Designated Survivor: Federal Land Management Policy Act of 1976

When Congress passed the Federal Land Management Policy Act (FLMPA) in 1976, it repealed almost all legislation related to executive branch authority over federal lands and also made certain land management decisions subject to congressional approval.[159] As a result, FLMPA limited the actions available to the Secretary of the Interior and the president with respect to public land use.[160]

Importantly, in addition to repealing the president's formal authority under most land management statutes, FLMPA also repealed any authority of the president to make land use decisions implied by congressional acquiescence in the actions of prior presidents.[161] However, despite its otherwise sweeping reform and without explanation, FLMPA left the Antiquities Act conspicuously intact.[162] This omission is particularly conspicuous because critics of the Antiquities Act often charge that successive presidents have expanded their authority beyond

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156. *See e.g.*, Richard M. Johansen, *Public Land Withdrawal Policy and the Antiquities Act*, 56 WASH. L. REV. 439, 440 (1981) (arguing for repeal of the Antiquities Act).

157. *See* 16 U.S.C. § 431 (2000).

158. *See id.*; Fanizzo, *supra* note 46.

159. 43 U.S.C. § 1701 (4) (1976).

160. *See generally id.*

161. *See generally id.*

162. Sanjay Ranchod, Note, *The Clinton National Monuments: Protecting Ecosystems with the Antiquities Act*, 25 HARV. ENVTL. L. REV. 535, 548 (2001) ("New statutory withdrawal authority [under FLPMA] was delegated not to the president, but directly to the Department of the Interior for an enumerated list of purposes under a specific set of procedural requirements. However, the [] Act was mysteriously left intact, and is the most important statute authorizing executive withdrawals to survive the FLPMA's sweeping repeal of executive authority.").

its provisions and made designations that, while not formally rejected by Congress, nonetheless exceeded the delegated powers.[163]

The singular mention of the Antiquities Act in the FLMPA is in § 204(j), which specifies that the Secretary of the Interior may not designate, modify or revoke any public land withdrawal created by an Act of Congress, and may not take any action to "modify or revoke any withdrawal creating national monuments under the [Antiquities] Act of June 8, 1906."[164] This FLMPA provision originated in House bill, H.R. 13777, which, according to the relevant committee report "would also specifically reserve to Congress the authority to modify and revoke withdrawals for national monuments created under the Antiquities Act . . . [which] will insure that the integrity of the great national resource management systems will remain under the control of Congress."[165]

Some commentators argue that the language of the committee report indicates that in prohibiting modification or revocation of national monuments by the secretary, Congress also intended to control the actions of the President and thus intended to implicitly repeal the Antiquities Act and control monument designations under the land use requirements imposed by FLMPA.[166] This argument is inconsistent with FLMPA for several reasons.

First, the FLMPA language only addresses limitations on actions that may be taken by the secretary, which should be characterized as mere record-keeping changes when implementing a national monument legally created by the president under the Antiquities Act, which FLMPA neither amended nor repealed.[167]

Second, that argument assumes that the purpose of the § 204(j) provision prohibiting the secretary from revoking national monuments was meant to, through some transient principle, control the actions of the president. However, this transient principle is untenable because, as explained in Section II.D, the president lacks the constitutional authority to abolish existing national monuments.[168] Third, and most importantly, the Supreme Court is reluctant to find a statute repealed by implication, particularly a statute like FLMPA, which meticulously dismantled or modified the majority of land management statutes but did not amend

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163. PAMELA BALDWIN, CONG. RES. SERV., RS20647, AUTHORITY OF A PRESIDENT TO MODIFY OR ELIMINATE A NATIONAL MONUMENT, 2 (2000).

164. 43 U.S.C. § 204(j) (1976).

165. H.R. Rep. 94-1163, at 9 (1976).

166. *See* Mark C. Ruznik, *Modern Remedies for Antiquated Laws: Challenging National Monument Designation Under the 1906 Antiquities Act*, 11 ENGAGE 29, 33-34 (2010).

167. BALDWIN, *supra* note 163, at 4-5.

168. *See infra* Section II.D.

the Antiquities Act.[169] In addition, the uncodified section 701(a) of FLMPA states that its provisions should not be interpreted to repeal any existing law by implication.[170] Thus it is not surprising that, since 1976, Presidents have continued to use the Antiquities Act in much the same way as their predecessors.

4. Political Effectiveness: Initial Protection Ahead of Higher Redesignation

More than half of the United States' national parks were first designated as national monuments even though "initial designation by Congress may have been inconceivable."[171] In many cases, congressional action was so slow that later presidents expanded a monument's boundaries, often multiple times, before it was eventually redesignated as a national park or other conservation unit. An extreme but illustrative example of this process is Pinnacles National Monument, which became a national park in 2013.[172] Pinnacles National Monument was one of the first national monuments ever created, and it was enlarged five times under the Antiquities Act before it received national park protections more than 100 years after its initial designation.[173]

But while creation of a national park may not have been possible at the time of designation, monument status provided for crucial protections often decades ahead of redesignation. For example, when President Theodore Roosevelt learned the giant crystallized logs of Arizona would be pulverized for use as industrial abrasive or otherwise destroyed,[174] he designated Petrified Forest National Monument in 1906, more than fifty years before it would receive national park status.[175] Furthermore, monument designation may also be a significant cost saving measure in the long run if government expends money remediating earlier damage. Had the Grand Canyon mining interests prevailed in *Cameron v. United States* and further impaired the landscape, the federal government would have paid for remediation projects at the entrance to the park's most popular trail—an expenditure few would dispute today.

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169. *See* TVA v. Hill, 437 U.S. 153, 189 (1977) (quoting Morton v. Mancari, 417 U.S. 535, 549 (1974)).

170. BALDWIN, *supra* note 163, at 4-5.

171. Squillace, *supra* note 2, at 550.

172. 16 U.S.C. § 410ooo-1 (2013).

173. Squillace, *supra* note 2, at 588.

174. DUNCAN & BURNS, *supra* note 21, at 114.

175. *See* Proclamation No. 697, 34. Stat. 3266 (1906) (Petrified Forest National Monument). Petrified Forest was not declared a National Park until 1958. Petrified Forest Park Act, 72 Stat. 69 (85th Cong. 1958).

Since its passage in 1906, presidents from all political parties have created a more than 150 national monuments; only three administrations have declined.[176] Congress has ratified more than half of these national monuments through expansion or redesignation for higher protection.[177] It appears that Presidents can better weather the condemnations of those with interests in protected lands, many of whom rescinded criticism.[178]

The Antiquities Act preserves the separation of powers and more than a century of empirical evidence demonstrates its effectiveness. Judicial review of designations remains available, Congressional oversight exists, and Congress has consistently ratified Monuments into national parks or other more protective categories. Future Presidents should thoughtfully consider all national monument proposals from the perspective of their predecessors.

III. THE COLORADO PLATEAU

In an almost unbroken executive practice, fifteen of the sixteen presidents to designate a national monument have created or expanded a monument on the Colorado Plateau.[179] These monuments have gone on to become national parks, as well as some of the most visited sites in the country and represent different manifestations of natural phenomenon identified in this region.

A. Geological Phenomenon

1. Lithospheric Downwelling & Elevation Gain

Almost all of the world's physiographic provinces gain elevation as a result of geomorphic processes that are both easily identifiable and relatively well understood by scientists. When two tectonic plates meet and one collides with or slides beneath the other, the region contiguous with the contested fault line is thrust into the air. This creates mountains and other regions of high elevation. The Colorado Plateau's high elevation is not due to tectonic activity but something altogether different and extremely rare, a geomorphic process known as lithospheric downwelling.

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176. VINCENT, *supra* note 3, at 1.

177. *See* Squillace, *supra* note 2, at 585-610.

178. WIRTH, *supra* note 68, at ch. 11.

179. *Id.*; *see also* Press Release, The White House, Presidential Proclamation—Establishment of the Chimney Rock National Monument (Sept. 21, 2012), https://obamawhitehouse.archives.gov/the-press-office/2012/09/21/presidential-proclamation-establishment-chimney-rock-national-monument.

Beneath the Earth's crust is the mantle followed by the core. The upper part of the mantle, called the lithosphere, is solid rock while the lower part, called the asthenosphere, is molten rock. The density of the lithosphere almost always causes this layer of the earth to be buoyant and effectively float on the viscous asthenosphere. But, sometimes, part of the lithosphere breaks off and begins to sink. When the liquid asthenosphere fills the resulting gap, a corresponding area of the earth's surface begins to rapidly gain elevation.[180] But while scientists have proven the existence of this phenomenon and identified steps in the geologic process, the origin of lithospheric downwelling remains unknown.

About 5 million years ago,[181] the Colorado Plateau experienced this rare geomorphic process—lithospheric downwelling—which is comparable to an invisible hand lifting a plate without disturbing its contents.[182] The region gained more than 300 meters of elevation in a short time but remained relatively flat. As a result, when the Colorado Plateau gained elevation, gravitational forces significantly increased the flow rate of the Colorado River and its tributaries. This resulted in rapid erosion and carved a maze-like landscape, which exposed geologic structures that are billions of years old.[183]

Due to advances in highly sophisticated seismic velocity technology, three dimensional scans can produce accurate representations depicting the geologic makeup of the Earth's mantle, hundreds of miles beneath its crust. Geologists have recently proven the existence of this geomorphic process, lithospheric downwelling, beneath the Colorado Plateau.[184] By all measures, this is conclusive evidence that indicates lithospheric downwelling is responsible for the Colorado Plateau's elevation gain.[185] As a result, the Colorado Plateau joins a growing set of prominent physiographic provinces found throughout the world that display

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180. Levander et. al., *supra* note 13, at 461-63.

181. ANNABELLE FOOS, GEOLOGY OF THE COLORADO PLATEAU 4, 6 (1999), https://www.nature.nps.gov/geology/education/foos/plateau.pdf.

182. Michael Gurnis, *Long-Term Controls on Eustatic and Epeirogenic Motions by Mantle Convection*, 2 GEOLOGICAL SOC. AM. TODAY 141, 141 (1992) ("No [] concept[] [is] probably as important for continental geology but so misunderstood as . . . epeirogeny.").

183. *See generally* Lijun Liu & Michael Gurnis, *Dynamic Subsidence and Uplift of the Colorado Plateau*, 38 GEOLOGY 663 (2010).

184. Oguz H. Gögüs & Russell Pysklwec, *Near Surface Diagnostics of Dripping or Delaminating Lithosphere*, 113 J. GEOPHYSICAL RES. 1, 2 (2008), onlinelibrary.wiley.com/doi/co.1029/2007JB005123/pdf ("[T]his process causes "the replacement of the dense mantle lithosphere by more buoyant mantle [which] can cause isostatic surface uplift.").

185. Levander et. al., *supra* note 13, at 461-63.

scientifically compelling surface features associated with this particular geomorphic process.

There is an interesting connection between these distinct geodynamic occurrences and some of the most studied ancient civilizations. For example, parts of the Atiplano Plateau[186] in South America were inhabited by the Inca,[187] parts of the Central American Plateau[188] were inhabited by the Maya,[189] and significant portions of the Tibetan Plateau[190] were inhabited by the Tibetan Empire. Each of these prehistoric civilizations had at least some of their cities and territories within the boundaries of a physiographic province that gained elevation due to lithospheric downwelling. However, this analysis is confined to the United States and will focus on the Colorado Plateau as home to the Chacoan civilization, which will be discussed at length in Section III.C.[191]

2. Volcanic Margins

Just as the case in other global occurrences of lithospheric downwelling, major volcanic accumulations can be found in the margins of the Colorado Plateau. This metamorphic frame provides a geologic contrast to sedimentary rocks predominantly found on the Plateau. Although the geological time period differs among formations and some are more visible than others, this type of volcanic framing is geologically associated with lithospheric downwelling across the world, particularly in the transition zones to adjacent physiographic regions.[192] Therefore, these expanded areas should be considered part of the unified scientific event of downwelling and similarly eligible for monument designation.

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186. *See generally* M.N. Ducea et al.,, *Mantle-Drip Magmatism Beneath the Altiplano-Puna Plateau, Central Andes*, 41 GEOLOGY 915 (2013).

187. *Compare id.* at 916-17, *with* Mark S. Aldenderfer, *Moving Up in the World: Archeologists Seek To Understand How and When People Came To Occupy the Andean and Tibetan Plateaus*, 91 AM. SCI. 542, 542-43 (2003).

188. *See generally* Robert D Rogers et al., *Epeirogenic Uplift Above a Detached Slab in Northern Central America*, 30 GEOLOGY 1031 (2002).

189. *Compare id.* at 1032, *with* Robert J. Sharer et al., *The Copán Corte: A Window on the Architectural History of a Maya City*, 33 EXPEDITION 46, 46-47 (1991).

190. *See generally* Karen Paczkowski et al., *Drip Instabilities of Continental Lithosphere: Acceleration and Entrainment by Damage*, 189 GEOPHYSICAL J. INT'L 717 (2012).

191. Mark Aldenderfer & Zhang Yinong, *The Prehistory of the Tibetan Plateau to the Seventh Century A.D.: Perspectives and Research from China and the West Since 1950*, 18 J. WORLD HIST. 1, 2 (2004).

192. *See e.g.*, Mihai N. Ducea, *Fingerprinting Orogenic Delamination*, 39 GEOLOGY 191, 191 (2011); Alexander Sanchez, Mafic Volcanism on the Colorado Plateau: Basin and Range Transition Zone, Hurricane, Utah (1995) (unpublished MS thesis, University of Nevada Las Vegas Paper 1410), http://digitalscholarship.unlv.edu/cgi/viewcontent.cgi?article=2411&context=thesesdissertations.

3. Paleontological Resources

Framed by volcanic margins, the heart of the Colorado Plateau consists of sedimentary rock and contains a wide variety of fossils and other paleontological resources. For example, a geologic formation on the border of Utah and Arizona known as the Navajo Sandstone has yielded fossils of dinosaurs and other animals from the Early Jurassic period about 200 million years ago. Fossil evidence from this time period is quite rare; according to paleontologists, "this is the only record of a late Early Jurassic vertebrate fauna in North America and one of the only records of this time worldwide."[193] Paleontologists also point out that of the few areas containing these rare fossils, the "lower Jurassic sediments of the Colorado Plateau represent one of the best terrestrial sediment records of this time anywhere within the world."[194] In this region lie two slightly older fossil bearing formations, the Kayenta Formation and the Moenave Formation, which sometimes overlap with the Navajo Sandstone.[195] The Kayenta Formation in particular has yielded a wide variety of dinosaur skeletons and other fossilized remains.[196]

The paleontological resources in the Navajo Sandstone region are one of many examples of fossil beds on the Colorado Plateau. Notably, the Cedar Mountain Formation,[197] Green River Formation,[198] and White River Formation[199] in the northern part of the Plateau have yielded a wide range of important fossils from different geologic time periods.

Because lithospheric downwelling caused the region to gain elevation without crustal deformation, the fossils contained on the Colorado Plateau remained well-preserved. As a result, dinosaur

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193. Randall B. Irmis, *A Review of the Vertebrate Fauna of the Lower Jurassic Navajo Sandstone in Arizona, in* VERTEBRATE PALEONTOLOGY OF ARIZONA, MESA SW. MUSEUM BULL. NO. 11 55 (Robert McCord ed., 2005).

194. *Id.*

195. *See* Spencer Lucas et al., *Arizona's Jurassic Fossil Vertebrates and the Age of the Glen Canyon Group*, *in* VERTEBRATE PALEONTOLOGY IN ARIZONA, N.M. MUSEUM OF NAT. HIST. AND SCI. BULL. NO. 29 98 (Andrew Heckert & Spencer Lucas eds., 2005) ("the Moenave Formation, the Kayenta Formation, and the Navajo Sandstone. All of these units yield both trace [] and body fossils of tetrapods."). *Id.* at 95.

196. *Id.* at 98.

197. *See, e.g.*, James I. Kirkland et al., *Depositional Constraints on the Lower Cretaceous Strikes Quarry Dinosaur Site: Upper Yellow Cat Member, Cedar Mountain Formation, Utah*, 31 PALAIOS 421 (2016).

198. *See, e.g.*, Roy E. Plotnick & Dena M. Smith, *Exceptionally Preserved Fossil Insect Ears from the Eocene Green River Formation of Colorado*, 86 J. PALEONTOLOGY 19 (2012).

199. *See e.g.*, Daniel I. Hembree & Stephen T. Hasiotis, *Palesols and Ichnofossils of the White River Formation of Colorado: Insight into Soil Ecosystems of the North American Midcontinent During the Eocene-Oligocene Transition*, 22 PALAIOS 123 (2007).

skeletons excavated from the Colorado Plateau are among the most complete specimens ever recovered and are displayed across the world.[200] Not only are these fossils well-preserved, the erosive forces at work on the Colorado Plateau created canyons up to 600 meters in depth, which revealed fossils that would have been otherwise unreachable by humans.[201]

For example, the Kayenta Formation would be more than 300 meters beneath the surface and recovery of its large dinosaur fossils it contains would require an unreasonable expenditure.[202] However, due to the erosive forces on the Plateau, fossils that would have otherwise been hidden deep beneath the surface are now exposed and can be excavated in a cost-effective manner.[203] The speed of this erosion is noteworthy; in 5 million years, these forces exposed fossils more than 200 million years old.

National monuments have often been designated to reserve federal land containing fossils and other paleontological resources.[204] The dense concentrations of these resources on the Colorado Plateau provide another basis for monument designation and dimension of scientific importance.[205]

4. Dramatic Geologic History

The Colorado Plateau offers endless portals into the dramatic geological history of the region. For example, during a geologically intense period between 700 and 75 thousand years ago,[206] several small

200. Lucas et al., *supra* note 195, at 95-98.

201. Depth of the Grand Canyon is 6093 feet, over two miles.

202. Lucas et al., *supra* note 195, at 96.

203. Donald Deblieux et al., *An Overview of the Paleontology of Upper Triassic and Lower Jurassic Rocks in Zion National Park Utah, in* THE TRIASSIC-JURASSIC TERRESTRIAL TRANSITION, N.M. MUSEUM OF NAT. HIST. BULL. NO. 37 490 (Jerry D. Harris et al. eds., 2006) ("[The] long history of [geodynamic] activity, means that much of the [Plateau's] rock is exposed, allowing paleontologists to find the fossils preserved in these rocks.").

204. *See, e.g.*, Dinosaur National Monument, 39 Stat. 1752 (Oct. 4, 1915).

205. *Id.*; *see also* Deblieux, *supra* note 203, at 490.

206. Ryan Crow et al., *History of Quaternary Volcanism and Lava Dams in Western Grand Canyon Based on Lidar Analysis, 40Ar/39Ar Dating, and Field Studies: Implications for Flow Stratigraphy, Timing of Volcanic Events, and Lava Dams*, 4 GEOSPHERE 1, 22-23 (2008) ("Because the 40Ar/39Ar method provides a way of detecting excess argon while not being affected by burial or surface degradation, [professional geologists] consider these ages to be the most reliable age determinations and use them to assess the reliability of other dates . . . ."). *Id.* at 22.

volcanoes on the rim of the Grand Canyon periodically erupted[207] and created a series of thirteen lava dams on the Colorado River.[208]

Some of the lava dams formed within a matter of days, others formed more slowly but reached almost 300 meters in height and created vast inland lakes that may have extended across the Colorado Plateau.[209] However, these lakes were temporary, and within a geologically brief 20 thousand years, sometimes less, each dam eventually failed.[210] Several were severely breached[211] and unleashed some of the largest floods in terrestrial history.[212]

As the lava dams failed, the lakes drained and deposited nutrient rich sediment that "still remain as isolated exposures" and serve as oases for plants and wildlife.[213] The largest silt deposit occurred in Havasu Canyon, which for tens of thousands of years has supported an explosion of foliage in an otherwise harsh arid environment and is now part of Havasupai tribal lands.[214] From 1947 until the 1980s, the Bureau of Reclamation had multiple active proposals to dam the Grand Canyon.[215]

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207. *See generally* Karl Karlstrom et al., *40Ar/39Ar and Field Studies of Quaternary Basalts in Grand Canyon and Model for Carving Grand Canyon: Quantifying the Interaction of River Incision and Normal Faulting Across the Western Edge of the Colorado Plateau*, 119 GEOLOGICAL SOC'Y AM. BULL. 1283 (2007).

208. Crow et al., *supra* note 206, at 3 (citing *id.*) ("New 40Ar/39Ar results indicate that Quaternary basalts flowed into western Grand Canyon between ca. 725 and 100 [thousand years ago] and profoundly affected the erosional and geomorphic processes within Grand Canyon by forming lava dams . . . .").

209. Geologists differ as to size of the lakes. *Compare* G. B. Dalrymple & W. K. Hamblin, *K-Ar Ages of Pleistocene Lava Dams in the Grand Canyon in Arizona*, 95 PROC. NAT'L ACAD. SCI. USA 9744, 9744 (1998) ("[S]horelines of the deeper lakes . . . extended far upstream into Utah beyond the present shores of Lake Powell. These lakes were larger in areal extent and impounded more water than Lake Mead and Lake Powell combined."), *with* Crow et al., *supra* note 206, at 3 ("[Some geologists] suggested that lakes in Grand Canyon may have been less extensive . . . than previously thought.").

210. *See* Dalrymple & Hamblin, *supra* note 209, at 9749; Crow et al., *supra* note 206, at 3.

211. *See* Cassandra R. Fenton et al., *Geochemical Discrimination of Five Pleistocene Lava-Dam Outburst Flood Deposits, Western Grand Canyon, Arizona*, 112 J. GEOLOGY 91, 93 (2004).

212. Cassandra R. Fenton, Robert H. Webb & Thure E. Cerling, *Peak Discharge of a Pleistocene Lava-Dam Outburst Flood in Grand Canyon, Arizona, USA*, 65 QUATERNARY RES. 324, 334 (2006) ("The outburst flood resulting from failure of the Hyaloclastite Dam likely ranks within the top 10 floods documented in the United States and within the top 30 floods [] recorded worldwide.").

213. Dalrymple & Hamblin, *supra* note 209, at 9744.

214. *Id.* Around 600 A.D. ancestors of the Havasupai began to take agricultural advantage of the fertile soil. *See* ERNEST ATENCIO, HAVASUPAI TRADITIONAL AND HISTORICAL USE OF THE GRAND CANYON VILLAGE AREA: LITERATURE REVIEW AND ANNOTATED BIBLIOGRAPHY 3 (1996).

215. TIM PALMER, ENDANGERED RIVERS AND THE CONSERVATION MOVEMENT 84-87 (2004).

These dams would have submerged and erased the ecosystem of Havasu Canyon.[216]

On the Plateau, the Grand Canyon lava dams are only one very recent example of a compelling geologic history. According to geologists, the geologic "[h]istory suggests either that the Colorado Plateau to the east is unusually and persistently strong, or that it somehow has escaped the deformational forces which have so perturbed its surroundings."[217] In any event, it seems undisputable among the scientific community that "[n]owhere else in the world are the rocks and geologic features so well exposed, so brilliantly colored, and so excitingly displayed" as found within these landscapes.[218] These geologic conditions have also greatly influenced the evolution of flora and fauna on the Colorado Plateau.

B. Ecological Phenomenon

1. Flora

While the geological processes at work on the Colorado Plateau have produced unusual topographical features, the consequential variety of soil types and elevations "rang[ing] from 3,790 ft. to 10,360 ft. have resulted in a high diversity of ecotypes ranging from salt desert shrub, to lush grasslands, to alpine conifer forests."[219]

Such widely varying environmental conditions have required species to adapt and provided for the development of unique ecosystems.[220] These natural conditions and the region's distinct geologic

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216. *Id.* at 84 ("A Bridge Canyon [dam] site would impound ninety-three miles of the [Colorado] [R]iver . . . and Havasu Creek—a paradise to many—would be eighty five feet under [water].").

217. Philip E. Wannamaker et al., Abstract, *Great Basin-Colorado Plateau Transition in Central Utah: An Interface Between Active Extension and Stable Interior*, *30* UTAH GEOLOGICAL ASS'N 1, 1 (2002).

218. Hellmut H. Doelling et al., *Geology of Grand Staircase-Escalante National Monument, Utah*, 2000 UTAH GEOLOGICAL PUBLICATION ASS'N 28, 4-5 (2000).

219. Allison Jones et al., The Ecological Importance and Biological Uniqueness of the Greater Canyonlands Ecoregion (submitted to S. Utah Wilderness All. 2011).

220. *See* David E. Brown, Thomas C. Brennan & Peter J. Unmack, *A Digitized Biotic Community Map for Plotting and Comparing North American Plant and Animal Distributions*, 3 CANOTIA 1, 1 (2007). Many of these ecosystems depend on organic material living on the surface of the soil called biotic soil crusts, which serve a range of important ecological purposes such as water filtration, protection against erosion, and storage of nutrients vital to plant growth. *See generally* Jayne Belnap, *Surface Disturbances: Their Role in Accelerating Desertification*, 37 ENVTL. MONITORING & ASSESSMENT 39 (1995). Virtually all semi-arid ecosystem processes rely on biotic soil crusts and repeated surface disturbances can cause irreversible damage to soil crusts. GROENE ET AL., *supra* note 18, at 19-20 (quoting Jayne Belnap of the U.S. Geological Survey) ("No matter what thread we pulled—soil fertility or soil stability or biodiversity—there

formations have necessitated isolated evolution of unique plants and animals known as endemic species, which are found on the Colorado Plateau but nowhere else in the world.[221]

Many such species exist only within the vicinity of the hundreds of isolated springs and seeps on the Colorado Plateau. Indeed, "[s]ome of the rarest species in Utah and the most spectacular biotic assemblages are those associated with the springs and seeps that dot the landscape within the canyon country of southern and southeast Utah."[222] While isolation has led to remarkable genetic diversification as species adapt to a given spring, it also makes the recovery or restoration of these ecological communities and their endemic species almost impossible.[223]

2. Fauna

Wildlife, unlike resilient desert plants, must maintain at least periodic contact with water and the comparatively dense vegetation surrounding the thousands of miles of riparian ecosystems, or land regions found bordering rivers or streams.[224] Riparian ecosystems represent less than 1% of the land on the Colorado Plateau but directly support 75% or more of the regions' vertebrate wildlife species.[225] The well-documented human impact on hydrological processes, effects of climate change, and relative scarcity of water obviate its importance to surrounding ecosystems.[226] Yet, the USGS has warned that "[m]any of the conditions that make riparian zones relatively rare and valuable, particularly in a semiarid landscape, also make them fairly sensitive to disturbance and change."[227]

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was always a huge link between that ecosystem process and the soil crust. That's when I became convinced that the crusts were the key to many processes that we consider important in deserts.").

221. *See* Stanley L. Welsh, *Problems in Plant Endemism on the Colorado Plateau*, *in* 2 GREAT BASIN NATURALIST MEMOIRS 191, 191 (1978).

222. Allison Jones, The Ecological Importance and Biological Uniqueness of the San Rafael Swell (submitted to the S. Utah Wilderness All. Nov. 2002) (manuscript at 19).

223. *Id.* ("[B]ecause these springs are generally isolated from other springs and seeps, their recovery from any form of disturbance is likely to be impeded markedly by the difficulty of recolonization from similar habitats that may be miles away. Isolation may also lead to genetic differentiation, in which particular sub-populations of plants and animals have adapted to local conditions in a given spring or seep. Because these communities are often one-of-a-kind and difficult or impossible to replace, they merit the strongest possible protection in the future.").

224. *See, e.g.*, Jones et al., *supra* note 219, at 1-2.

225. MICHAEL J. MAC ET AL., STATUS AND TRENDS OF THE NATION'S BIOLOGICAL RESOURCES 2, 560 (1998).

226. *See generally* U.S. GEOLOGICAL SOC'Y, FACT SHEET 2010-3123, EFFECTS OF CLIMATE CHANGE AND LAND USE ON WATER RESOURCES IN THE UPPER COLORADO RIVER BASIN (2011).

227. MAC ET AL., *supra* note 225, at 560-61.

Hundreds of diverse animal species populate the region. For example, according to the Utah Division of Wildlife Resources (UDWR), "[a]mong the 50 states, Utah ranks 10th in overall biological diversity and 5th for endemism."[228] Utah "also rank[s] 5th in terms of species extinction risk" and UDWR's most recent Wildlife Action Plan, which aims to slow the rate of new federal listings, has identified "141 species of greatest conservation need"—seven are federally listed as Endangered or Threatened."[229] This is important because the Supreme Court in *Cappaert v. United States* upheld the constitutionality of monuments created in whole or in part to conserve the habitat of species in danger of extinction.[230] Since biologists cannot study a species that has gone extinct, the areas of the Colorado Plateau containing these species' habitat qualify as objects of scientific interest.

But the scarcity of water on the Colorado Plateau also meant that another animal, humans, would need to settle close to these resources.

C. Archaeological & Cultural Significance

The archaeological deposits on the Colorado Plateau can serve as the basis for national monument designations under the Antiquities Act.[231] Due to the topography and maze-like terrain common across the Plateau, many of these sites remain unexcavated or undiscovered, and are of significant value to the scientific community. This Section will trace the history of human settlement on the Colorado Plateau and then examine various aspects of the Chaco civilization that once dominated the four corners region.

1. 12,000 Years of Human Occupation

Archaeological evidence found on the Colorado Plateau provides proof that humans have occupied this region for about 12,000 years. Two of the earliest human sites in North America were found on this Plateau and yielded artifacts that date back to the Ice Age.[232] Similarly, in Cowboy Cave[233] the stratification of floor deposits have preserved

228. UTAH DIV. OF WILDLIFE RES., UTAH WILDLIFE ACTION PROGRAM, iv (2015).
229. *Id.* at iv-v.
230. *See generally* Cappaert v. United States., 426 U.S. 128 (1975).
231. *See generally* 16 U.S.C. 431 (2012).
232. JERRY D. SPANGLER, COLO. PLATEAU ARCHAEOLOGICAL ALL., THE GREATER CANYONLANDS REGION: A CULTURAL OVERVIEW 1 (2011).
233. Alan R. Schroedl & Nancy J. Coulam, *Cowboy Cave Revisited*, 7 UTAH ARCHAEOLOGY 1, 16 (1994).

evidence of almost 10,000 years of constant human inhabitation.[234] These deposits included a 9000-year-old woven basket, the oldest discovered in the Americas.[235] Archaeologists explain that these sites are significant because "[e]vidence of America's first hunter[—gatherers] is generally quite rare" due their transient existence and these peoples' "general pattern of seasonal mobility that remained unchanged for almost 8,000 years."[236]

Around 500 B.C., humans began to transition away from their nomadic lifestyle and shift towards agriculture.[237] Within a few centuries humans had established more permanent shelter in the form of subterranean pit houses, which would serve as the architectural precursors for later structures.[238] But when humans developed masonry skills and began to build stone structures, they found that some of their work had already been done for them. Specific layers of sediment deposited on the Colorado Plateau were softer than others, and when the region gained elevation tens of millions of years later, these rock layers eroded more quickly and formed alcoves in most of the Plateau's canyons.[239] These were fortuitous geologic circumstances because eroded alcoves often contained natural sources of fresh water and most were sufficient for occupation by average height humans of the time.[240] As a result, masonry structures called cliff dwellings are common across the Colorado Plateau.

But while some groups were building cliff dwellings, a civilization based out of Chaco Canyon was building large freestanding structures. By 700 A.D., fired pottery and the bow and arrow had been developed, which led to a general increase in the Colorado Plateau's population and marked the beginning of the Chaco Phenomenon.

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234. *Id.*

235. *See generally* Phil R. Geib & Edward A. Jolie, *The Role of Basketry in Early Holocene Small Seed Exploitation: Implications of a CA. 9,000 Year-Old Basket from Cowboy Cave, Utah*, 73 AM. ANTIQUITY 83 (2008).

236. JERRY D. SPANGLER, SECRETS OF THE PAST IN A RUGGED LAND: THE ARCHAEOLOGICAL CASE FOR PROTECTING GREATER CANYONLANDS 3-4 (2014) [hereinafter SECRETS OF THE PAST] ("Evidence of America's first hunters—called Paleoindians—is generally quite rare [but] . . . . Based on the presence of certain distinctive tools at these sites and others, it is believed that Paleoindians first occupied the [Colorado Plateau] between 11,500 and 11,000 years ago."). *Id.* at 3.

237. SPANGLER, *supra* note 232, at 2.

238. *Id.*

239. *See generally* S.W. LOHMAN, THE GEOLOGIC STORY OF CANYONLANDS NATIONAL PARK (1974).

240. *See id.* at 8-14, 20.

2. The "Chaco Phenomenon"

The historical period from around 700 to 1300 A.D. is associated with the "Chaco Phenomenon" when the "core area of Chaco Canyon appears to have served as an administrative, economic and ceremonial nexus of culture that dominated" the Colorado Plateau region.[241] Scientists identify archaeological sites as part of the Chaco civilization when they contain remnants of "great houses," massive masonry structures which contain large ceremonial chambers called "great kivas."[242] Compared to cliff dwellings and other modest building designs prevalent at this time, great houses and great kivas are architecturally complex.[243]

The advanced technology of the Chacoans was not confined to their construction methods. There is evidence to suggest that Chacoans possessed an advanced knowledge of astronomy and used it to precisely position petroglyphs, great houses and other structures in alignment with astronomical events.[244] They employed water management techniques to conserve water in their harsh arid environment and to grow crops such as beans, corn and squash.[245] These sophisticated practices remain largely misunderstood by researchers[246] and reinforce the value of the Plateau as an important region for continued archaeological investigation.[247]

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241. MARTA DE LA TORRE, MARGARET GILT MACLEAN & DAVID MYERS, U.S. NAT'L PARK SERV., CHACO CULTURE NATIONAL HISTORIC PARK: A CASE STUDY 6 (2003).

242. *Id.*

243. Barbara J. Mills, *Recent Research on Chaco: Changing Views on Economy, Ritual, Society*, 10 J. ARCHAEOLOGICAL RES. 65, 65-66 (2002) ("Chaco Canyon . . . contains large structures or great houses that are bigger than any other structures in the contemporaneous Ancestral Pueblo world. The large size, degree of planning, expertise, and complexity shown in great house construction is very different from that found among [other North American groups].").

244. DE LA TORRE ET AL., *supra* note 241, at 6.

245. *Id.*

246. *See, e.g.*, James M. Potter, *Power and Negotiation Through Material Culture: The Case of the Chaco Regional System*, 73-74 KROEBER ANTHROPOLOGICAL SOC'Y PAPERS 26 (1992) ("Much speculation has been expended in an effort to understand just what went on at Chaco, who labored to construct the monumental works there, and why they were built.").

247. Mills, *supra* note 243, at 100 ("[A]s several researchers have pointed out, archaeologists interested in Chaco are working mostly with the same field data and collections that have been available for the past 20 years. . . . [A]n understanding of the relationships between the Chaco Canyon community, communities in its 'halo,' and more distant communities within the Chaco region is still much needed.").

3. The Chacoan Regional System: Roads & Outliers

The ongoing study of Chacoan architectural structures and the civilzation's construction of roads adds to the wealth of archaeological material avaialable in the Colorado Plateau.

Evidence from surrounding archaeological sites has confirmed the existence of associated "outlier" communities that display "great house" and "great kiva" architectural styles identical to those first developed at Chaco Canyon.[248] Moreover, carefully constructed Chacoan roads radiated from the canyon in all directions, and seem to lead to associated outlier communities in an apparent web of influence over most of the American southwest.[249] Though archaeologists debate its boundaries, "[a] vast amount of the Colorado Plateau is generally considered to be part of the Chacoan regional system during the 10th through 12th centuries."[250]

Archaeologists have suggested that the Chacoans exerted influence on areas beyond those boundaries because archaeological sites containing great houses have recently been recognized in southeastern Utah on unprotected federal lands.[251]

However, most of these associated sites are unexcavated. Scientists are yet to understand the purpose of the web of roads stemming out from Chaco Canyon. According to scientists, the Colorado Plateau contains thousands of unexcavated archaeological sites which "constitute some of the most scientifically important cultural resources in North America, each with evidence that could help unravel secrets into our collective human past."[252] The Antiquities Act is an ideal mechanism for the recognition and reservation of archaeological resources located on unprotected areas of public land.

4. Millennia of Cultural & Spiritual Connections

The direct living descendants of those who first inhabited the Plateau continue to practice rituals and ceremonies based on the prehistoric traditions of their ancestors. These indigenous spiritual understandings find scripture written in the landscape and tend to

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248. *Id.* ("The apparent intensification in outlier construction during the 11th century produced a more complicated—and more complex—Chacoan society, with multiple webs of social, economic, and ritual interrelationships.").

249. DE LA TORRE ET AL., *supra* note 241, at 6.

250. Mills, *supra* note 243, at 66-67 ("[V]ariation is present among archeologists in how the boundaries of the Chaco region are drawn . . . . However the boundaries of the Chaco area are drawn, they are based on the regional distribution of roads, great houses, and great kivas.").

251. *Id.* at 68 ("Great houses and great kivas have long been known from southwestern Colorado, but only recently have they been recognized in southeastern Utah.").

252. SPANGLER, *supra* note 232, at 3.

worship in naturally-occurring temples like the Grand Canyon. Archaeological evidence found on the Colorado Plateau gestures toward the ancient spirituality of the Chacoans and other groups as the basis for current practices. For example, Chacoan "[r]oads that connect structures to great kivas or that lead to natural features of the landscape support an interpretation of cosmological significance or perhaps their use as ritual pathways."[253]

Other religious sensibilities, such as Christianity and Judaism, built structures to define places of worship and studied scriptures written by humans. As a result, it is unsurprising that government officials sometimes did not understand Native American spirituality. For example, the New Mexico superintendent of Indian Affairs from 1863-1865, Dr. Michael Speck, stated he "belie[ved] that the Navajos and Apaches could only learn such 'civilized' traits as respecting 'the value of property' if their 'wild religious superstitions' could be eradicated."[254] Often misunderstood, religious understandings of the Native Americans have persisted for thousands of years and are represented in recent monument proposals.

Thus, the Bears Ears National Monument Proposal and its referenced literature speak to the role of spirituality vis-à-vis the natural features of the Colorado Plateau.[255] All five tribes authoring the proposal, and perhaps many more, consider themselves linked to the land as stewards of an ancient spirituality. The Navajo Nation in particular has recently published a cultural study, "Diné Bikéyah," which provides detailed descriptions and maps of the tribe's spiritual connection to unprotected features currently located on public lands in San Juan County, Utah.[256] Navajo religious practices identify the Bears Ears and other topographic features in southeast Utah as possessing spiritual significance.[257] Similarly, Hopi oral traditions recall their tribe's

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253. Mills, *supra* note 243, at 82; John Kantner, *Ancient Roads, Modern Mapping: Evaluating Chaco Anasazi Roadways Using GIS Technology*, 39 EXPEDITION 49, 50 fig.2 (1997) (providing evidence indicating Chacoan roads led to Hosta Butte and other prominent land features).

254. Robert A. Roessel Jr., *Navajo History 1850-1923*, *in* 10 HANDBOOK OF NORTH AMERICAN INDIANS: THE SOUTHWEST 506, 515 (Alfonzo Ortiz ed., 1983).

255. *See generally* BEARS EARS PROPOSAL, *supra* note 16.

256. MARK MARYBOY ET AL., DINÉ BIKÉYAH 6 (2012) ("We, the Navajo, who reside in what is now the State of Utah, wish to communicate to our fellow Utah and American citizens our deep connections and commitments to these lands. These perspectives we express here are not new, but they have rarely been voiced beyond our people."). For a diagram mapping Navajo religious connections in southeast Utah, see *id.* at 19.

257. *See* SECRETS OF THE PAST, *supra* note 236, at 11 ("The Navajo consider the mesas and canyons of southern Greater Canyonlands—places like Bears Ears and Comb Wash—to be

ceremonial migrations through southeast Utah and observe what are considered living sites of their ancestors.[258]

For many indigenous communities of the Colorado Plateau, spirituality is and was commonly tied to natural features as well as remnants of their ancestors, creating a bond which grounded communities to their territory. These sacred areas and the archaeological resources they contain are threatened by unregulated human activity but could be reserved for future study under the Antiquities Act.

D. Threats to Archaeological Resources of the Colorado Plateau

1. Demand for Illegally Obtained Ancient Artifacts

For some, Native American artifacts are sought after items available for purchase on the black market.[259] But many Native American tribes believe the spirits of their ancestors linger throughout these archaeological sites and that any looting of these places should be considered as robbery. Yet, the high demand for artifacts illegally excavated on the Colorado Plateau, particularly those obtained within or adjacent to the Chaco regional system, has persisted for over a century.

In 1979, Congress passed legislation to provide for more efficient prosecution of illegal digging, particularly in the American southwest, yet still it continued.[260] As a result, in 1984, a federal task force was created to address the persisting problem of looting on the Colorado Plateau in and around the area of the Chaco regional system.[261] After two years of investigations in the region, sixteen residences were raided, and over 300 artifacts were confiscated.[262] But looters remained undeterred.

With steady demand for artifacts and increased access to remote sites in the 1990s, archaeologists documented many areas where "[t]he looting has [] been systematic, with evidence that looters have used shovels, screens and artificial lighting."[263] Armed with advanced off-road

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sacred ancestral homelands. Navajo healers still use these lands to collect plants and herbs for their ceremonies.").

258. *See generally* Albert H. Schroeder, *Hopi Traditions and Rio Grande Pueblo Migrations*, *in* PREHISTORY AND HISTORY OF THE SOUTHWEST 105-112 (Nancy L. Fox ed., 1985).

259. *See generally* LEE, *supra* note 20. "Rising public interest in the history and art of the southwestern Indians in the 1890's was accompanied by a swelling demand for authentic prehistoric objects" which continues into the 21st century. *Id.* at ch. 4.

260. *See* 16 U.S.C. § 470aa (1979) (Archaeological Resources Protection Act).

261. Jennifer Goddard, *Anticipated Impact of the 2009 Four Corners Raid and Arrests*, 56 CRIME L. & SOC. CHANGE 175, 179 (2011).

262. *Id.* at 180-81.

263. JERRY D. SPANGLER & ANDREW YENTSCH, COLO. PLATEAU ARCHAEOLOGICAL ALL., NO. OSUT82469, FINAL REPORT AND BASELINE SITE CONDITION AND ASSESSMENTS OF ARCHAEOLOGICAL SITES IN TENMILE CANYON, GRAND COUNTY, UTAH 69 (2008).

vehicle technology and open access to federal lands, thieves could now easily transport equipment to illegal digs. In 2009, following a two-year investigation in Utah, federal agents again conducted more than two dozen arrests for trade in illegal artifacts.[264]

Local governments in this region have been targeted in federal investigations for institutionalized acceptance of illegal artifact removal within their jurisdiction. From the local governments perspective, pieces of pottery and other artifacts are merely thousand year old trash located on federal lands adjacent to their community, the removal of which is inconsequential. As a result, some "local communities [have found] social cohesion in archaeological looting" but these social norms may be gradually shifting over time.[265]

2. Increased Access to Archaeological Sites: Off-Road Vehicles (ORV)

Not only has the high demand for illegally obtained ancestral Pueblo artifacts remained steady, an increase in vehicle technology has opened up access to once-unreachable archaeological sites.

a. Background: Recreational Operation of Vehicles on Public Lands

After World War II, military style vehicles with off road capabilities became popular and led to an increased number of recreational motorists.[266] However, by the early 1970s, a scientific consensus emerged identifying the negative impacts of unregulated ORV use on public lands, particularly those with ecological and archaeological resources similar to those found on the Colorado Plateau.[267]

In 1972, President Richard Nixon issued Executive Order 11,644, the first substantive governmental initiative meant to manage ORV use on public lands.[268] This order directed agencies to establish ORV-specific routes or areas and provided for the minimization of impacts from

264. Goddard, *supra* note 261, at 179.

265. *Id.* at 185.

266. *Id.*; John C. Adams & Stephen F. McCool, *Finite Recreation Opportunities: The Forest Service, The Bureau of Land Management, and Off-Road Vehicles Management*, 49 NAT. RESOURCES J. 45, 73-75 (2009).

267. *See e.g.*, MALCOLM F. BALDWIN & DAN H. STODDARD JR., THE OFF-ROAD VEHICLE AND ENVIRONMENTAL QUALITY (2d ed. 1973); ROBERT H. WEBB, AN ANNOTATED BIBLIOGRAPHY OF THE EFFECTS OF OFF-ROAD VEHICLES ON THE ENVIRONMENT (1978).

268. Exec. Order No. 11,644, 37 Fed. Reg. 2877 (Feb. 9, 1972).

vehicle use on federal lands.[269] But most agencies did not adhere to the law, and ORV use, remained virtually unlimited.[270] As a result, in 1979, President Carter issued a companion Executive Order 11,989 that provided for the emergency closure of federal lands negatively impacted by ORV use as well as other similar remedial policies.[271] However, both Executive Orders "provided agency discretion without effectively compelling action" and have been largely disregarded since they were issued.[272]

In the mid-1980s, government agencies began drafting new land management plans as required by FLPMA. Still, the plans often included only simple classifications that generally designated "open, closed or restricted areas."[273] Most importantly, a de facto policy underlying the agencies approach allowed for "open" or unrestricted ORV use in areas of the Colorado Plateau that contained archaeological, paleontological and ecological resources.[274] This default policy meant, "areas where ORVs could not go or went only infrequently, typically remained open to ORV use, even in the wake of an earnest consideration of ORV impacts."[275] As a result of these land use policies, contemporary scientists often struggle to precisely define an ORV "route" among the extensive lattice of primitive tracks across the landscape.[276]

By the 1990s, the off-road industry had developed a lightweight versatile personal ORV called an all-terrain vehicle (ATV) that allowed motorists access to otherwise remote areas.[277] The stability and four-

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269. *See* Adams & McCool, *supra* note 266, at 76-77. This order also included a provision granting discretionary authority to NPS to prohibit ORV use in areas under their jurisdiction when there are negative environmental consequences. NPS, unlike BLM has taken this provision to institute a policy categorically banning ORV use in NPS sites. *Id.*

270. *See generally* Gary A. Rosenberg, *Regulation of Off-Road Vehicles*, 5 B.C. ENVTL. AFF. L. REV. 175 (1976).

271. *See* Exec. Order No. 11,989, 42 Fed. Reg. 26,959 (May 25, 1977), *reprinted as amended by* Exec. Order No. 12,608, 52 Fed. Reg. 34,617 (Sept. 9, 1987).

272. Adams & McCool, *supra* note 266, at 77.

273. *Id.* at 78; USDA FOREST SERV., OFF-ROAD VEHICLE AND TRAVEL MANAGEMENT ACTIVITY REVIEW OCT. 15-18 AND NOV. 2-7 (1987); *see* Federal Land Policy Management Act of 1972, 43 U.S.C. § 1701 (2015).

274. *See* Adams & McCool, *supra* note 266, at 78-79.

275. *Id.* at 79.

276. DOUGLAS S. OUREN ET AL., ENVIRONMENTAL EFFECTS OF OFF-HIGHWAY VEHICLES ON BUREAU OF LAND MANAGEMENT LANDS: A LITERATURE SYNTHESIS, ANNOTATED BIBLIOGRAPHIES, EXTENSIVE BIBLIOGRAPHIES, AND INTERNET RESOURCES 4 (2007) ("[E]xcept where there is a need to specify in more detail, unpaved roads, primitive roads, and unpaved trails, are referred to as 'routes,' regardless of their intended purpose or how they are maintained. 'Routes' also include unauthorized or 'rogue' roads and trails created by OHV users traveling off officially designated roads, primitive roads, and trails.").

277. *Id.* at 78.

wheel drive capabilities of ATVs meant that, unlike most other ORVs, they required no skill or experience to operate.[278] For private landowners in rural communities, this technology has been highly beneficial and allows for much more efficient management of property and agriculture than ever before. However, the use of ORVS and ATVs for off-road recreation increased rapidly. By 2000, annual ORV sales reached beyond one million, 700,000 of which were ATVs.[279]

Off road vehicle technology has continued to advance. In 2008, the top law enforcement official responsible for management of ORV use in the southern Colorado Plateau region, including Utah, testified before Congress that "[i]rresponsible off-roading has become such a menace that it is now the single greatest threat to American landscapes."[280] Similarly, a study conducted by the General Accounting Office in 2009 found that 69% of field unit officials were unable to sustainably manage their existing ORV areas.[281]

Judicial interpretations of the Executive Orders issued by President Nixon and President Carter have established a high level of deference such that land management agencies "enjoy virtually unlimited discretion to permit or to prohibit ORV use."[282] As a result, successful lawsuits are outliers,[283] and plaintiffs challenging agency ORV allocations typically lose regardless of whether they are arguing for or against ORV access to

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278. *Id.* at 78 ("[T]he result [of ATV technology] was the popularization of a vehicle which, because it is wide and relatively stable, requires neither experience nor strength to operate, in contrast with motorcycles.").

279. *Id.* at 81 fig.1.

280. The Impacts of Unmanaged Off-Road Vehicles on Federal Land, Hearing Before H. Subcomm. on Nat'l Parks, Forests & Pub. Land, 110th Cong. (2008) (statement of Jack Gregory) ("1) the ORV problem is getting steadily worse, with no end in sight; 2) the ORV problem is not just 'a few bad apples'—we are suffering from a major breakdown in attitude from sadly, a high percentage of off-roaders; and 3) route designations without effective enforcement simply does not work and, when done poorly, significantly aggravates problems.").

281. *See, e.g.,* U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-09-509, FEDERAL LANDS: ENHANCED PLANNING COULD ASSIST AGENCIES IN MANAGING INCREASED USE OF OFF-HIGHWAY VEHICLES (2009).

282. Adams & McCool, *supra* note 266, at 64.

> [L]egal sufficiency for permitting or prohibiting ORV use is not a substantive question. Instead, it is a matter of whether the FS or BLM, in prohibiting or permitting ORV use through their land management plans, properly followed planning procedures, conducted the appropriate level of NEPA analysis, and competently executed the NEPA analysis.

Id. at 68.

283. *See, e.g.*, Sierra Club v. U.S. Dep't of Agric., 116 F.3d 1482 (7th Cir. 1997).

public lands.[284] Thus, most areas on the Colorado Plateau that are designated 'open' for ORV use almost always contain rare ecological assemblages and unexcavated or undiscovered archaeological sites.

b. Increased Access=Increased Impact

Researchers categorize ORV impacts on archaeological sites as either direct or indirect.[285] Direct impacts occur when ORVs are driven through cultural deposits and indirect impacts occur when vehicles are used to gain access to archaeological sites situated within rugged topography.[286] Both categories of impacts cause considerable damage to archaeological sites.[287] As ORV technology advanced, archaeologists observed that direct impacts became much more widespread because motorists were using enhanced vehicles capabilities to leave the established trail and, naturally drawn to prominent archaeological sites, were often unintentionally damaging less prominent sites in the surrounding area.[288] When criminals followed these paths, they gained even closer access to countless cultural sites, which were the excavated for sale on the black market, thus increasing indirect impact.

Although studies often document similar patterns, it is a universally accepted conclusion that archaeological sites containing prominent architectural features are more often targeted for vandalism or other damage.[289] This commonality serves to illustrate the unique threats facing the architecturally impressive "great houses" and "kivas" associated with the Chaco phenomenon, which are surrounded by other older and less visible archaeological deposits.

Compared with human-powered transport, ORVs allow more access to archaeological sites on the Colorado Plateau and to historically

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284. *See e.g.*, Colo. Off-Highway Vehicle Coal. v. U.S. Forest Serv., 357 F.3d 1130 (10th Cir. 2004) (upholding restrictions on ORV use); Mountaineers v. U.S. Forest Serv., 445 F. Supp. 2d 1235 (W.D. Wash. 2006) (upholding expenditure for project that promoted ORV use).

285. *See* SPANGLER & YENTSCH, supra note 263, at 220.

286. *See generally id.*

287. *Id.*

288. SPANGLER & YENTSCH, *supra* note 263, at 2 ("Vehicular damage to surface cultural deposits is [] ubiquitous . . . [t]his damage was caused by vehicles leaving the marked trail. . . .").

289. Paul Nickens et al., *A Survey of Vandalism to Archaeological Resources in Southwestern Colorado*, *in* 11 COLORADO BUREAU OF LAND MANAGEMENT CULTURAL RESOURCE SERIES 59 (1981) (explaining that "late sites with masonry architecture . . . would appear to be the most vulnerable to vandalism"); SPANGLER & YENTSCH, *supra* note 263, at 67-68 ("[Sites] found without associated features appear to have suffered the least adverse impacts, whereas alcove sites with deep aeolian deposits and associated features (e.g. architecture, rock art, grinding slicks) appear to have experienced the greatest amount of damage.").

valuable artifacts.[290] Accessibility of sites on the Colorado Plateau has long been linked to their disturbance and archaeologists studying vandalism have established that "controlled vehicular access has been a significant factor on site preservation."[291] For example, archaeological studies in the early 1980s found a conclusive correlation between proximity to dirt roads and vandalism.[292] Numerous archaeological studies have analyzed the problem ORV use and vandalism of cultural sites across the Colorado Plateau all of which provide important empirical evidence to support protective designation.[293]

In 2005, BLM Monticello released a report documenting environmental damage, cultural resource looting and other illegal activities associated with ORVs including a defiant "private OHV user group that is producing OHV maps that the BLM cannot authorize and that the Canyonlands Natural History Association will not sell."[294] Land use plans from 2008 for the area covering the Chaco phenomenon appear to take archaeological deposits into account when designating ORV routes. However, these routes were ultimately decided without survey of nearby cultural resources, and as a result, many crude ORV trails lead to and through fragile archaeological sites.[295] Thus, when the BLM Monticello published its RMP Evaluation in 2015, they emphasized, "the RMP does not fully protect cultural or paleontological resources through special designations [and its] route and travel designations [continue to] fail to address cultural and paleontological needs and protection" nearly a

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290. *Id.* at 59 (explaining that "late sites with masonry architecture . . . would appear to be the most vulnerable to vandalism"); SPANGLER & YENTSCH, supra note 263, at 68-69 (2008) ("[Sites] found without associated features appear to have suffered the least adverse impacts, whereas alcove sites with . . . associated features (e.g. architecture, rock art, grinding slicks) appear to have experienced the greatest amount of damage.").

291. Spangler et al., *Chasing Ghosts: A GIS Analysis and Photographic Comparison of Vandalism and Site Degradation in Range Creek Canyon, Utah*, *in* UTAH MUSEUM OF NATURAL HISTORY OCCASIONAL PAPERS 2006:1, 95-96 (2006).

292. Nickens et al., *supra* note 289, at 59 ("In summary, late sites with masonry architecture located over 20 miles from the nearest town and within 100 m of a dirt road would appear to be the most vulnerable to vandalism.").

293. *See*, *e.g.*, *id.* at 59; *see also* Spangler et al., *supra* note 291, at 95-96.

294. BUREAU OF LAND MANAGEMENT, U.S. DEP'T OF THE INTERIOR, DRAFT RESOURCE MANAGEMENT PLAN & ENVIRONMENTAL IMPACT STATEMENT MONTICELLO FIELD OFFICE, MONTECELLO, UTAH 11-31 (2008) ("There are numerous [ongoing] OHV legal issues, which include: illegal explosive blasting used to open OHV trails into a WSA [wilderness study area]; the uncompleted designation of roads and trails within the FO area; the updating of travel maps; and the San Juan County blanding of OHV routes on BLM-administered public without BLM concurrence. There are [also] OHV–cultural resources conflicts, [and] expectations to provide services to the OHV community . . . .").

295. *See* BUREAU OF LAND MANAGEMENT MONTICELLO FIELD OFFICE, APPROVED RESOURCE MANAGEMENT PLAN EVALUATION REPORT 5 (2015).

decade after approval.[296] Designations of national monuments to reserve archaeological resources could also protect surrounding ecological, geological, and paleontological resources.

IV. SCIENTIFIC & HISTORIC FEATURES OF THE COLORADO PLATEAU: ANALYSIS UNDER THE ANTIQUITIES ACT

The Colorado Plateau first began to gain elevation around five million years ago as a result of the geodynamic phenomenon of lithospheric downwelling. From a strictly geological perspective, five million years is not a lot of time, from a human perspective, it is an eternity. But this geologic perspective provides an important baseline to better understand the natural and historical phenomenon discussed in this analysis.

Consider if the 4.5 billion years of the earth's existence were compressed down into one human year. The 600 meter elevation gain and subsequent erosion of the Colorado Plateau would have taken place over the final eight hours of December 31 and expose rock formations deposited in June. The most significant underlying aspect of this process is that as the Plateau gained elevation it remained relatively level. This elevation gain and the resulting gravitational increase served to accelerate the erosive forces of the Colorado River and its tributaries.

For humans, these were geologically fortuitous circumstances. The erosion of certain layers of rock created alcoves that served as ideal locations for the cliff dwellings of early humans and often contained fresh drinking water. After the cliff dwellings were vacated by their owners, the alcoves containing them served to protect them from the elements, and these thousand-year-old structures have remained remarkably well-preserved for study by archaeologists.

These erosive processes also exposed a pristine, more than 200-million-year-old fossil record that would otherwise be under hundreds of meters of rock and inaccessible by paleontologists. Finally, the Colorado Plateau has gained about 600 meters in elevation in the past 5 million years but the remarkably rapid rate of erosion has carved canyons as deep as 300 meters. In other words, for every two meters of elevation the Colorado Plateau gained, one meter would be eroded away to create canyons. As a result, the depth of these canyons has revealed a comprehensive geological record that is billions of years old and has been invaluable to scientists.

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296. *Id.* at 5.

Against this backdrop, the phenomenon discussed in this analysis provide a chronology of separately identifiable but interconnected and mutually reinforcing factors that establish an evidential foundation, which, when considered against the Supreme Court's judicial precedent, demonstrates that national monuments designated on the Plateau to protect these phenomenon will satisfy the criteria of the Antiquities Act.

The Colorado Plateau represents a rare geomorphic phenomenon and is an elevated, undeformed, and highly eroded landscape of sedimentary rock framed by volcanic boundaries. According to geologists, "[u]nlike surrounding areas, which have undergone significant orogenic and extensional deformations since the Paleozoic, the [P]lateau has survived these tectonic events with little internal deformation."[297] The erosion of this landscape revealed extensive fossil formations and other paleontological resources that are among the most complete records in the world.

These geologic features of the Colorado Plateau contain an intact 12,000-year history of human occupation. Chaco Canyon, its dispersed roads, and outlier communities comprise an archaeological site of significant "historic interest" under the Antiquities Act. The Bureau of Land Management estimates that public lands in San Juan County, Utah, contain an average of twenty-four archaeological sites per square mile.[298] Bears Ears National Monument is located in San Juan County. Without protection, many of these sites will remain accessible to off road vehicles and, due to the ongoing demand for archaeological artifacts, are likely to be vandalized before they can be excavated.

Drought is often an issue in the western United States and water management becomes a crucial issue. Science looks to the Chacoan people for insight into how these ancient farmers were able to grow corn in areas where none can be cultivated today.[299] In the words of a prominent archaeologist, these unexcavated sites represent a "treasure trove of scientific knowledge that could one day unlock the mysteries of human adaptations to the deserts of western North America."[300] The Ancestral Puebloan civilization mysteriously collapsed in 1300 A.D. Still,

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297. Liu & Gurnis, *supra* note 183, at 663.

298. U.S. BUREAU OF LAND MGMT. UTAH STATE OFFICE, SAN JUAN RESOURCE MANAGEMENT FIELD OFFICE APPROVED RESOURCE MANAGEMENT PLAN 4 (Sept. 2015).

299. *See* SPANGLER, *supra* note 232, at 1. This significance is further enhanced by the fact that, as several researchers have pointed out, "archaeologists interested in Chaco are working mostly with the same field data and collections that have been available for the past 20 years." Mills, *supra* note 243, at 36.

300. Spangler, *supra* note 232, at 1.

their descendants continue to carry on a deep spiritual connection with the sacred lands of their ancestors.

The Colorado Plateau is also remarkable for its rare ecosystems that contain diverse plant and animal life. The scientific interest of these biotic communities, many of which contain endemic species found nowhere else in the world, satisfies the Antiquities Act threshold. Riparian areas are particularly vulnerable to damage from unregulated human activities. Although riparian areas and other desert oases represent only 1% of the land on the Colorado Plateau, more than 75% of animal species rely on these areas for survival.[301]

V. CONCLUSION

For over a century, the Antiquities Act has been a politically effective and economically beneficial piece of legislation, which has been used more than 150 times to preserve remarkable features on federal land. These designations have gone on to be some of the most iconic American landscapes and have consistently been approved by Congress and upgraded to national parks or other conservation units. Sixteen presidents from across the political spectrum have designated national monuments.

Still, monuments have sometimes been controversial at the time of designation. But dissatisfied parties are not without redress and can always challenge the designation in court if they believe it does not comply with the Antiquities Act. Federal courts have reiterated that judicial review "is available to ensure that [national monument designations] are consistent with constitutional principles and that the President has not exceeded his statutory authority."[302] But the Antiquities Act provides discernable standards, and the president has rarely exceeded their authority under its provisions. Judicial precedent foreclosed various constitutional challenges to the Antiquities Act, but some commentators have argued there are yet untapped legal principles that should be used in the future.[303] The evidence presented and this analysis demonstrates that any legal challenges to national monuments that protect the resources described in this analysis will fail. Bears Ears National Monument contains several of the natural resources discussed above including thousands of archaeological sites, and this analysis contends that any

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301. *See, e.g.,* Jones et al., *supra* note 219, at 1-2.
302. *See, e.g.,* Mountain States Legal Found. v. Bush, 306 F.3d 1132 (D.C. Cir. 2002).
303. *See generally* Ruznik, *supra* note 166.

legal challenge will be unsuccessful because these protected objects satisfy the requirements of the Antiquities Act.

However, the Utah state legislature is attempting to undo Bears Ears not by challenging it in court, but by calling on the president abolish the monument. However, although the Antiquities Act grants the president the authority to designate new monuments it does not provide the authority to modify or abolish an existing designation, and these issues have not been addressed in court.

Based on the evidence presented in Section II.C.1, this analysis concludes that the existence of an implied power to abolish monuments, and the scope of that power if implied, would represent an unconstitutional violation of the separation of powers. An implied power to abolish monuments combined with the express power to create them would arguably give the president the ability to avoid judicial review and make an end run to avoid compliance with the provisions of the Antiquities Act.

Although there is evidence to establish the existence of an implied power to expand monuments, it is unclear whether the president has implied powers to reduce the size of a designation or modify its management. This analysis does not mean to suggest that the president has these implied powers and instead submits that if a court were to recognize an implied power to reduce a monument or modify its management, the same standard of review would apply to the exercise of either power. The proposed standard of review would assess both quantitative and qualitative factors and focus the court's inquiry on the original objects to be protected by the designation in order to determine whether the monument, as modified, violates the Antiquities Act.

In conclusion, the scientific and historic value of natural resources located on the Colorado Plateau have led presidents to create monuments within its boundaries. Of those presidents who have proclaimed national monuments, all but one have designated or enlarged a monument inside the Colorado Plateau. History now looks to the next administration to carry on the tradition reserving federal land to benefit future citizens.

VI. ADDENDUM

In April 2017 President Trump signed an executive order that requires the Secretary of the Interior to review national monuments designated since 1996 and then prepare a report on whether these designations by prior presidents are in line with the policies of the current administration.[304] What President Trump intends to do with this report, however, is unclear.

304. Exec. Order No. 13,792, 82 Fed. Reg. 20429 (Apr. 26, 2017).