Journal of Environmental and Sustainability Law

Missouri Environmental Law and Policy Review
Volume 12
Issue 2 *Spring 2005*

Article 3

2005

A Proposal to Greatly Expand National Parks in the Lower Forty-Eight States: An Investment in our Planet's Future

William A. Wines

ARTICLE

A PROPOSAL TO GREATLY EXPAND NATIONAL PARKS IN THE LOWER FORTY-EIGHT STATES: AN INVESTMENT IN OUR PLANET'S FUTURE

William A. Wines[1]

I. INTRODUCTION

"The West of which I speak is but another name for the Wild;
and what I have been preparing to say is,
that in Wildness is the preservation of the World."[2]

"Don't it always seem to go
That you don't know what you've got
Till it's gone
They paved paradise
And put up a parking lot."[3]

Now would be an excellent time to make a major investment in our National Parks. We have allowed our National Park system to atrophy in the lower forty-eight states[4] while generally expanding it outside the lower forty-eight states,[5] and putting much of it beyond the vacation-travel of the average American family.[6]

---

[1] Associate Professor of Legal Environment & Business Ethics, Department of Finance, The Richard T. Farmer School of Business Administration at Miami University, Oxford, Ohio.

William Arthur Wines holds a B.S.B.A. with distinction from Northwestern University and a J.D. from the University of Michigan. He is admitted to the practice of law in Minnesota and the State of Washington. He is a former staff editor of the American Business Law Journal; and his research has appeared in over two dozen journals including the American Business Law Journal, Arizona Law Review, Economics of Education Review, Denver Journal of International Law and Policy, Journal of Business Ethics, Labor Law Journal, Marquette Law Review, and Nebraska Law Review. He is the author of two volumes of readings in business ethics and a forthcoming (2005) textbook on business ethics. His writings have won numerous awards including the Irwin-B.P.I. award for the best paper at the MALSB meetings and the William O. Douglas Award for best paper at the PNALSB meetings.

Professor Wines gratefully acknowledges the research assistance of Carrie Russell, M.B.A., Miami University '03; Samir Bhatia, M.B.A., Miami University '04; Andres Ocariz, M.B.A., Miami University '04; and Jason Tate, M.A., Miami University '05; as well as the outstanding assistance of Ms. Paula M. Hensley, senior administrative assistant, Finance Department, The Richard T. Farmer School of Business Administration, Miami University, Oxford, Ohio.

An earlier version of a smaller portion of this paper was presented to the annual meeting of the Pacific Southwest Academy of Legal Studies in Business (PSALSB), February 21-22, 2003 at Palm Springs, California.

The views expressed herein are those of the author; and nothing in this article should be construed as representing the views of Miami University, the Trustees of Miami University, or the State of Ohio.

[2] HENRY D. THOREAU, THE PORTABLE THOREAU 609 (Carl Bode ed., Houghton Mifflin 1963) (1947).

[3] Joni Mitchell, *Big Yellow Taxi, on* LADIES OF THE CANYON (Reprise Records 1970).

[4] See *infra* Appendix A for a comparison of total acreage in National Parks to acreage in the lower forty-eight states.

[5] *Id.*

[6] It is estimated that 75% of American families who travel on vacation travel by automobile, 19% travel by airplane, and 3% travel by bus, train, or boat. DEP'T. OF TRANSP., BUREAU OF TRANSP. STATISTICS, 1995 AM. TRAVEL SURVEY 3 (Oct. 1997), *available at* http://www.bts.gov/publications/1995_american_travel_survey /us_profile/entire.pdf (The median number of miles driven in personal use vehicles was 368, round trip). *Id.* Driving only 368 miles round trip basically excludes travel by automobile to Alaska; and driving to Hawaii was out of the question to begin with. Also, American vacations average 10.2 days of paid leave per year after 3 years on the job. Catherine Valenti, *Are You Suffering from Vacation Deprivation?: Americans Get Short-Changed When It Comes to Holiday Time*, ABC News, *at* http://abcnews.go.com/Business/story?id=86551&page=1 (last visited Jan. 25, 2005).

Visitation to U.S. National Parks exceeds 60 million people annually,[7] but visitation adjusted for U.S. population has actually declined.[8] While the total acreage of National Parks, generally, is up,[9] the acres of National Parks available per visitor are down.[10] When we look only at the lower forty-eight states, the figures for acreage per visitor are dramatically lower.[11]

This article will first examine the history and purposes of the U.S. National Parks system. Then, it will look at the changes over time in the size of the parks, the number of visitors, and the U.S. population. The article will also examine the global population on the premise that our national parks are a global, rather than just a national, jewel.[12] Based upon the foregoing analysis, this article will argue for a significant expansion of the National Parks System. Its arguments will proceed from various perspectives, and include arguments based upon the higher level of protection afforded wilderness areas in National Parks compared to National Forests. The article will also advocate maintaining ratios of wilderness to visitors and populations. Other arguments will include: (a) those based upon environmental and ecological concerns; (b) arguments based upon moral and ethical concerns; and (c) arguments based upon the stated purpose and missions of the National Parks.

Based upon the conclusions of the above analyses and arguments, the article will briefly sketch out a legislative approach that might be used to address these concerns. This section will be the most tentative, and is primarily meant to illustrate both the scope of the remedies required and the paucity of current legislative vision and leadership in this area.

II. CURRENT STATUS OF THE NATIONAL PARKS

A. Current Statistics

The National Parks system, as of the year 2000, encompassed slightly less than twenty million acres in the lower forty-eight states.[13] That year alone, nearly fifty-eight million people visited National Parks located in the continental United States.[14] The population of the United States in 2000, according to the Census Bureau, was 281,421,906.[15] Thus, every American had 0.068 acres of National Park in the lower forty-eight states set aside for him or herself.[16] Put another way, each American's heritage amounted to less than one-tenth of an acre of land.

Taking a broader perspective, the U.S. National Parks represent a global heritage,[17] and a gift from the People of the U.S. to the people of the world.[18] The population of the planet exceeded 6 billion on October 12,

---

[7] *See infra* Appendix C.

[8] *Id.* See Appendix B, *infra*, for a graph of national park visitors to U.S. population by decade from 1920-2000.

[9] *See infra* Appendix C. See also Appendix A, *infra*, for a graph of national park acreage by decade from 1920-2000.

[10] *See infra* Appendix C. *See also infra* Appendix B.

[11] *See infra* Appendix C. See also Appendix B, *infra*, for a graph comparing this data.

[12] JOHN C. FREEMUTH, ISLANDS UNDER SIEGE 142-43 (Univ. Press of Kan. 1991). Yosemite is a world heritage site, meaning it is considered valuable as international natural heritage. *Id.* Glacier is a biosphere reserve, which means it is considered to be valuable as indicative of international natural regions. *Id.* Yellowstone is both a world heritage site and a biosphere reserve. *Id.* The criteria for world heritage sites and biosphere reserves were created by the United Nations. *Id.*

[13] *See infra* Appendix C.

[14] *See infra* Appendix C.

[15] On April 1, 2000, the population of the United States was 281,421,906. MARC J. PERRY & PAUL J. MACKUN, U.S. DEPT. OF COMMERCE, POPULATION CHANGE AND DISTRIBUTION: CENSUS 2000 BRIEF 5 (2001), *available at* http://www.census.gov/prod/2001pubs/c2kbr01-2.pdf.

[16] *See id; see also infra* Appendix C. The relevant calculation is 19,143,372.22 acres divided by 281,421,906 people equals 0.068 acres per person.

[17] *See supra* note 11 and accompanying text.

[18] *See id.*

1999.[19] Projections for the world's population in 2030 and 2050 are 7.5 billion and 8.91 billion respectively.[20] Thus, somewhat ironically, on Columbus Day,[21] 1999, we had 0.0032 acre of protected, irreplaceable national parks per person on the planet left in the lower forty-eight.[22]

B. History and Mission of U.S. National Parks

In 1872, the U.S. Congress passed a bill to establish Yellowstone National Park, the world's first national park.[23] Yellowstone currently encompasses approximately 2.2 million acres spread over Montana, Wyoming, and Idaho.[24] The first white man to see the natural wonders of Yellowstone is believed to be John Colter,[25] a member of the Lewis and Clark expedition,[26] and later a storied mountain man,[27] who traveled through the area alone and on foot in the winter of 1807-1808.[28] When Yellowstone became the first national park on the planet in 1872,[29] the estimated population of the United States was approximately 40 million people.[30] When John Colter saw Yellowstone, which was referred to on some maps as "Colter's Hell,"[31] the

---

[19] According to estimates by the United Nations, the world population reached 6 billion on October 12, 1999. UNITED NATIONS, THE WORLD AT SIX BILLION 1, *available at* http://www.un.org/esa/population/publications/sixbillion/sixbilpart1.pdf (last visited Jan. 25, 2005), having nearly doubled in about 40 years. *Id.* at 5.

[20] *Id.*

[21] *See, e.g.*, JARED M. DIAMOND, GUNS, GERMS & STEEL: THE FATES OF HUMAN SOCIETIES (1997). *See also* HOWARD ZINN, A PEOPLE'S HISTORY OF THE UNITED STATES 5-8 (New York Press rev. ed., 1995) (1980). In early October 1492, Columbus and his party reached land in the Bahaman Islands; they were greeted very hospitably by Arawak Indians bearing gifts. *Id.* at 5. Zinn reports that the Spaniards returning on the second Columbus expedition worked the Indians at a furious pace -- so that thousands died. *Id.* at 6.

> By the year 1515, there were, perhaps, fifty thousand Indians left. By 1550, there were five hundred. *Id.* A report of the year 1650 shows none of the original Arawaks or their descendents left on the island. [. . .] Bartolome' de las Casas, . . . a young priest, participated in the [Spanish] conquest of Cuba. [. . .] When he arrived on Hispanola, Las Casas says, there were 60,000 people living on this island [in 1508], including the Indians; so that from 1494 to 1508, over three million people had perished from war, slavery, and the mines.

Id. at 7-8.

Samuel Eliot Morison, the Harvard historian and "most distinguished writer on Columbus," described the policy initiated by Columbus and his followers as "complete genocide." *Id.* at 8.

[22] *See supra* note 18 and accompanying text; *infra* Appendix C. The relevant calculation is 19,143,372.22 acres divided by 6,000,000,000 people equals 0.003190562 acres per person; that means that there are 139 square feet (0.003190562 acres multiplied by 43,560 square feet per acre) of National Park land per person.

[23] *Yellowstone Nat'l Park*, Nat'l Park Serv., *available at* http://www.nps.gov/yell/ (last visited Jan. 25, 2005).

[24] *Yellowstone in the Afterglow*, Nat'l Park Serv., *available at* http://www.nps.gov/yell/publications/pdfs/fire/htmls/intro.htm (last visited Jan. 25, 2005).

[25] See RICHARD WHITE, "IT'S YOUR MISFORTUNE AND NONE OF MY OWN": A NEW HISTORY OF THE AMERICAN WEST 119-21 (Univ. of Okla. Press 1991) which provides an excellent overview of John Colter's travels in 1807-08 that led him to be the first white man to explore the Grand Tetons, Jackson Hole, and what is now Yellowstone National Park. See also BURTON HARRIS, JOHN COLTER: HIS YEARS IN THE ROCKIES (Bison Book Edition 1993) (1952) for a detailed and scholarly history of the year John Colter spent in the Rockies after taking leave of the Lewis & Clark expedition.

[26] WHITE, *supra* note 24, at 120. John Colter was a hunter from the Shenandoah Valley of Virginia; he traveled with Lewis and Clark to the Pacific Coast, but received permission to leave the expedition on its return when it reached the Mandan villages on the upper Missouri. *Id.*

[27] For a summary of some of the "incredible" stories about Colter's adventures in the Rocky Mountains, see *Id.* at 120-21.

[28] *Private John Colter*, PBS, *available at* http://www.pbs.org/lewisandclark/inside/jcolt.html (last visited Jan. 25, 2005).

[29] *See supra* note 22 and accompanying text.

[30] *See* Ann Gray & John Hernandez, *Historical Census Information*, Princeton University, (Jul. 16, 2003), *available at* http://firestone.princeton.edu/politics/guides/histcensus.htm.

[31] According to some historians, "Colter's Hell" was synonymous with Yellowstone Park for nearly fifty years. *See* HARRIS, *supra* note 24, at 88.

U.S. population was about 7 million.[32] When Colter first visited in 1807-08, the population center of the United States was about 40 miles north-northwest of Washington, D.C.,[33] but by the time Yellowstone became a national park, the population center was in Kentucky, 8 miles SW of Cincinnati, Ohio.[34] Yet by 1998, there were 286.7 million total recreational visits to all areas administered by the National Park Service,[35] a figure that exceeded the population of the country in the 2000 census.[36] In the year 2000, the population center of the United States was in Central Missouri.[37]

The National Park Service did not come into existence until 1916, the year Yellowstone turned 44 years old.[38] Civilian superintendents attempted to administer the park in its early years,[39] but proved unable to control widespread hunting and trapping.[40] The Army took control of the park in 1886 to protect the wildlife,[41] and a detachment of U.S. Cavalry occupied the park until the formation of the park service in 1916.[42] Since then, Yellowstone National Park has become one of the largest wildlife preserves in the United States.[43]

The history leading to the creation of the National Park Service is instructive. Over the strenuous objections of John Muir,[44] the founder of the Sierra Club[45] and the leading conservationist of his day,[46] Congress allowed the City of San Francisco to dam Yosemite's Hetchy Hetchy Valley for a reservoir in 1913.[47] One historian called this decision, "the worst disaster ever to come to any national park."[48] Hetchy Hetchy illustrated the uneven and unfair institutional representation of "utilitarian conservationism"[49] in government over the preservationists such as Muir.[50] Utilitarian conservationism had become represented by the U.S. Geological Survey and the Forest and Reclamation services,[51] but no comparable agency spoke for park preservation in Washington D.C.[52]

Stephen T. Mather, a wealthy and prominent Chicago businessman, was among those who recognized this problem.[53] When Mr. Mather mentioned his concerns to the Secretary of the Interior, Franklin P. Lane, Secretary Lane invited Mather to become his assistant for park matters.[54] Horace M. Albright, then only

---

[32] Gray & Hernandez, *supra* note 29. The 1810 U.S. Census reported a population of 7.2 million persons. *Id.*
[33] THE WORLD ALMANAC AND BOOK OF FACTS 2000 385 (World Almanac Books 1999).
[34] *Id.*
[35] *Id.* at 573.
[36] *See supra* note 14 and accompanying text and *infra* Appendix C. The reported population of the United States in 2000 was 281.4 million. *Supra* note 14 and accompanying text.
[37] *See* U.S. CENSUS BUREAU, DEP'T. OF COMMERCE, POSITION OF THE GEOGRAPHIC CENTER OF AREA, MEAN AND MEDIAN CENTERS OF POPULATION: 2000, *available at* http://www.census.gov/geo/www/cenpop/geogctr.pdf (last visited Jan. 25, 2005). The mean population center was near the center of Missouri, while the median population center was in Southwest Indiana. *Id.*
[38] *See infra* note 41 and accompanying text.
[39] MARY SHIVERS CULPIN, NAT'L PARK SERV., "FOR THE BENEFIT AND ENJOYMENT OF PEOPLE": A HISTORY OF CONCESSION DEVELOPMENT IN YELLOWSTONE NATIONAL PARK, 1872-1966 33 (2003).
[40] *Id.*
[41] *Id.*
[42] *Id.*
[43] *See* 1999 DOI ANN. RPT. (2000), *available at* http://www.doi.gov/pfm/acct99/frontcov.pdf.
[44] Barry Mackintosh, *The National Park Service: A Brief History*, Nat'l Park Serv., *at* http://www.cr.nps.gov/history/hisnps/NPSHistory/npshisto.htm (last visited Jan. 25, 2005).
[45] *John Muir Exhibit*, Sierra Club, *at* http://www.sierraclub.org/john_muir_exhibit/ (last updated Jan. 11, 2005).
[46] *Id.*
[47] Mackintosh, *supra* note 43.
[48] *Id.*
[49] *Id.*
[50] *Id.*
[51] *Id.*
[52] *Id.*
[53] *Id.*
[54] *Id.*

twenty-five years old, became Mather's principal aide upon Mather's arrival in D.C. in 1915.[55] Together, Mather and Albright led an impressive crusade for a national parks bureau.[56] They emphasized the economic value of national parks as tourist meccas,[57] hired a publicist,[58] obtained funding from seventeen railroads[59] and issued a lavishly illustrated brochure, entitled *The National Parks Portfolio*, which was sent to congressmen and other influential citizens.[60] *The Saturday Evening Post*, *National Geographic*, and other popular magazines chimed in with supportive articles.[61]

Congress responded positively,[62] and on August 25, 1916, President Woodrow Wilson approved legislation creating the National Park Service within the Department of the Interior.[63] The Act made the Park Service responsible for national parks and monuments, the Hot Springs Reservation in Arkansas, and "*such other national parks and reservations of like character as may be hereafter created by Congress.*"[64] Secretary Lane named Mather the Park Service's first director[65] and Albright assistant director.[66]

The enabling legislation provided that in managing the areas under its control, the Park Service was "*to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.*"[67] "Through the 1920's, the national park system was [mostly] a western park system."[68] "Only Acadia National Park in Maine lay east of the Mississippi."[69] If the parks were to benefit and be accessible to more people, the system would have to move eastward.[70] Soon after Franklin D. Roosevelt took office in 1933, Albright took him on a trip to Shenandoah National Park[71] and spoke of his desire to acquire all the military parks.[72] FDR agreed, and directed Albright to prepare an executive transfer order.[73] Effective August 10, 1933, the Park Service acquired not only the military parks held by the War Department, but also the fifteen national monuments held by the Forest Service and the national capital parks, which included the Washington Monument, the Lincoln Memorial and the White House.[74] This directive made the Park Service and the system truly national in scope and location.[75]

---

[55] *Id.*
[56] *Id.*
[57] *Id.*
[58] *Id.*
[59] *Id.*
[60] *Id.* A copy of THE NATIONAL PARKS PORTFOLIO (1931) is available on the National Park Service's website at http://www.cr.nps.gov/history/online_books/portfolio/.
[61] Mackintosh, *supra* note 43.
[62] *Id.*
[63] *Id.* Nat'l Park Serv. Organic Act of 1916, ch. 408, § 1, 39 Stat. 535 (1916) (current version at 16 U.S.C. §§ 1-4 (2000)).
[64] Mackintosh, *supra* note 43 (emphasis added) (quoting Nat'l Park Serv. Act, 16 U.S.C. § 2).
[65] The National Park Service Organic Act of 1916 gives the Secretary of the Interior the ability to appoint directors. *Id. See also* 16 U.S.C. § 1.
[66] Mackintosh, *supra* note 43.
[67] *Id.* (emphasis added) (quoting Nat'l Park Serv. Act, 16 U.S.C. § 1).
[68] *Id.*
[69] *Id.*
[70] *Id.*
[71] *Id.*
[72] *Id.*
[73] *Id.*
[74] *Id.*
[75] *Id.*

C. *The Global Aspect of Our National Parks*

Visitors to the national parks in the United States come from all parts of the planet.[76] For instance, foreign visitors typically account for almost half of the visitors at Grand Canyon National Park.[77] Not only is the United States national park system the first in the world.[78] but some national parks in the United States have been designated as world heritage sites.[79] It is too late to build national parks of any significant size in Europe or in many places in Africa or Asia.[80] Moreover, in places in Africa where there is room for national parks, the people live so close to the margin of survival that there is no economic base to establish and maintain a parks system.[81] Consequently, the future of our national parks is a concern to more than just Americans.

III. THE STATISTICAL ARGUMENT

In 1999, the world's population exceeded 6 billion people.[82] In 2000, in the United States alone, the total population exceeded 281 million.[83] The population of the planet earth is expanding geometrically; in 1700, the earth held 500 million people.[84] By 1840, the number had reached 1.0 billion people; by 1930, 2.0 billion; by 1960, 3.0 billion; by 1975, 4.0 billion; by 1988, 5.0 billion; and it is predicted that we will reach 10.0 billion by the year 2070.[85] This represents a doubling of the population of the world in just 82 years.[86] The 1988 estimate was that the U.S. population would double in 100 years.[87]

---

[76] U.S. CENSUS BUREAU, DEP'T OF COMMERCE, 1995 STATISTICAL ABSTRACT OF THE UNITED STATES 267 (1995), *available at* http://www.census.gov/prod/1/gen/95statab/parks.pdf.

[77] *Visiting State Parks May Be Easier Than You Think*, Nat'l Tour Ass'n, *at* http://www.crosssphere.com/index.php?s=&url_channel_id=28&url_subchannel_id=&url_article_id=342&change_well_id=2 (last visited Jan. 25, 2005).

[78] *See supra* note 22 and accompanying text.

[79] FREEMUTH, *supra* note 11, at 142. The United Nations designated biosphere reserves include, among others, Big Bend, Channel Islands, Denali, Everglades, Great Smoky Mountains, Noatak, Olympic, Organ Pipe, Rocky Mountain, Sequoia-Kings Canyon, Virgin Islands, Yellowstone, Isle Royale, Big Thicket, and Glacier. *Biosphere Reserves: United States of America*, United Nations Educ., Scientific, and Cultural Org. (UNESCO), *at* http://www2.unesco.org/mab/br/brdir/directory/contact.asp?code=USA (last updated Nov. 1, 2002). The World Heritage Sites include: Everglades, Grand Canyon, Great Smoky Mountains, Mammoth Cave, Mesa Verde, Olympic, Redwood, Wrangell-St. Elias, Yellowstone, and Yosemite national parks, as well as several historic sites. *World Heritage List*, UNESCO, *at* http://whc.unesco.org/pg.cfm?cid=31(last visited Jan. 31, 2005) .

[80] For instance, Scotland has just created their first "national park" in 2002. Fordyce Maxwell, *Future Starts Here For our National Parks*, THE SCOTSMAN, Jul. 19, 2004, *available at* http://news.scotsman.com/topics.cfm?tid=241&id=823112004. These parks include, and are built around, communities of people, and have distinctly economic aims. *Id.* For a list of statistics on protected areas of different countries see *Protected Areas Information: 1996 Global Protected Areas Summary Statistics*, UNEP World Conservation Monitoring Center, *at* http://www.wcmc.org.uk/protected_areas/data/summstat.html (last updated Aug. 10, 2004). The United States has 11.12 % of its land protected, which is a very small amount compared to many other countries in the world. *See id.*

[81] For instance, Kenya, far from one of the poorest nations in Africa, has had problems with its effort to police "no-hunting" rules in its national preserves and parks for decades. *See, e.g.*, J.M. Kioko, *Family of Ten Elephants Gunned Down in Tsavo East, One Poacher Killed, Three Still on the Run*, Kenya Wildlife Serv., *at* http://kenya.com/wildlife/wildlife_004.htm (last visited Jan. 25, 2005) (describing the decimation of the Elephant herd in the Tsavo Ecosystem in the 1980's when the elephant count was reduced from over 25,000 to fewer than 5,000, which has increased to 9,284 as of January 2004).

[82] *Supra* note 18 and accompanying text.

[83] *Supra* note 14 and accompanying text.

[84] Paul R. Ehrlich & Anne H. Ehrlich, *Population, Plenty, and Poverty*, 174 NAT'L GEOGRAPHIC, Dec. 1998, at 914, 916-17. The projections by the Professors Ehrlich have been shown to be slightly conservative; they did not predict 6.0 billion until the calendar year 2000. *Id.*

[85] *Id.*

The amount of roadless wilderness left on the planet earth dwindles every year.[88] The population of Kenya doubles every 17 years;[89] the population of Brazil will double every 34 years.[90] The lands in countries such as these are already under great pressure from an agrarian population explosion.[91] Only the United States and Canada have vast expanses of roadless wildernesses left in temperate climate zones that support a large variety of flora and fauna.[92] The U.S. has been blessed with an abundance of magnificent land and wildlife.[93] At issue is whether we shall pass it on in any sustainable and significant way for future generations.

From the foregoing, it should be evident that we are living in a very limited window of opportunity. On the one hand, we have a world population explosion and a significant but less dramatic American growth rate.[94] On the other hand, the wilderness is disappearing[95] and, according to some experts, the Earth is witnessing a faster dying off of species than at any time since the dinosaurs roamed.[96]

Consequently, these data suggests we, the United States, should seriously address the expansion of our National Parks. We need to do it for many reasons, not the least is the preservation of our heritage for future generations.[97]

IV. THE ECOLOGY ARGUMENT

A. Illustration: Delay of Environmental Regulations

On Inauguration Day, January 20, 2001, newly sworn-in President George W. Bush's chief of staff Andrew Card ordered a freeze of the regulatory process, halting agency rules that had traversed years of review and were waiting only for implementation dates.[98] The Senate Committee on Governmental Affairs looked into the impact the executive action had on three important rules that were "final" before President Bush took office.[99]

---

[86] *Id.*

[87] *Id.* at 918.

[88] Matt Scroch, *In Depth: Roadless Lands Are Essential to Landscape Conservation*, CALL OF THE WILD (Arizona Wilderness Coalition Winter 2003), *at* http://www.azwild.org/newsletter/2003_01_story4.shtml. See also *Conservation of Land, Water, & Open Spaces Is Congress's Chance to Shine On Environmental Issues*, Luntz Research Companies (American Views of Land and Water Conservation Summer 1999), *at* http://www.lta.org/publicpolicy/luntz.htm for polls/surveys of American people that contain such information as "[o]ne-third of Americans would prefer to use the budget surplus to invest in parks and open spaces rather than receive a tax cut." *Id.*

[89] Ehrlich & Ehrlich, *supra* note 83, at 918.

[90] *Id.*

[91] *Id.*

[92] CIA, THE WORLD FACT BOOK: UNITED STATES, *available at* http://www.odci.gov/cia/publications/factbook/print/us.html (last updated Jan. 13, 2005).

[93] *See generally* S. Shen, *Biological Diversity and Public Policy*, BIOSCIENCE 709-12 n.37 (1987). In addition to stating the importance of the United States' natural abundance, this article argues that "estimates of the proportion of major terrestrial ecosystem types that are not protected in the United States vary from 21 to 52%." *Id.* at 711.

[94] *See supra* notes 14 and 18 and accompanying text.

[95] *See supra* note 87 and accompanying text.

[96] *See generally* Joby Warrick, *Mass Extinction Underway, Majority of Biologists Say*, WASHINGTON POST, Apr. 21, 1998, at A04.

[97] The Park Service was originally directed "to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." *Supra* note 66 and accompanying text.

[98] MAJORITY STAFF OF SEN. COMM. ON GOV'TL AFFAIRS, REWRITING THE RULES, 3 (Oct. 24, 2002), *available at* http://www.senate.gov/~gov_affairs/envrollbacksreport.pdf (hereinafter COMM. REPORT). *See also* Associated Press, *Bush Blocks Clinton's Orders* (Jan. 20, 2001), *available at* http://quest.cjonline.com/stories/012001/gen_0120017487.shtml. Presidents Reagan and Clinton used similar techniques to block the last minute executive orders of their predecessors. *Id.*

[99] *See* COMM. REPORT, *supra*.

First, the order stopped the Department of Agriculture's rule conserving Roadless areas in national forests, issued in 2001, sought to protect roadless areas against piecemeal decisions by the Forest Service that would alter and fragment ecologically valuable areas.[100] It prohibited most road construction and logging in roadless areas of national forests.[101] Second, the action affected the Department of Interior's rule regulating hard rock mining on public lands, In November 2000.[102] The rule had been in development for almost a decade and sought to mitigate hard rock mining's harmful effects on soil, air, ground water, surface water, land-based and water-based vegetation, and wildlife.[103] Finally, the action affected the EPA's rule capping the permissible level of arsenic in drinking water. We have long known that arsenic in drinking water poses a wide variety of health risks for those consuming the water.[104] In January 2001, after nearly twenty years of study, the EPA issued a rule lowering the permissible limit for arsenic in drinking water.[105] This rule brought the U.S. standard in line with the standard set by the World Health Organization (WHO) and followed in Europe.[106]

Looking at only the roadless initiative, we have the opening to roading, logging and mining of 58.5 million acres of pristine National Forests nationwide.[107] This amount of roadless area is almost three times larger than the total landmass of the National Parks in the lower forty-eight states.[108]

B. Report by World Wildlife Fund Suggests Benefits of Wilderness

A recent report of a study sponsored by the World Wildlife Fund (WWF) supports calls for the protection of roadless areas.[109] The study was compiled using extensive literature reviews, peer-reviewed science, the latest satellite imagery and computer mapping that reflect nearly a decade of studies conducted by WWF and the Conservation Biology Institute.[110] In summary, the report establishes that Roadless areas are:

- Less susceptible to catastrophic fires;
- More resistant to insects and forest health problems;
- Potentially beneficial to local economies;
- Vital to public municipalities that supply drinking water; and
- Crucial to conserving wildlife and plants, especially many threatened or endangered species.[111]

---

[100] Russell Smyth, *Roadless Rage Hits National Forests*, MONTROSE DAILY PRESS, Aug. 8, 2004, *available at* http://www.montrosepress.com/articles/2004/08/08/local_news/2.txt.
[101] *Id.*
[102] *The Clinton Administration and Reform of the Mining Law of 1872*, U.S Dep't of Interior, *at* http://www.doi.gov/news/archives/010118a.htm (last visited Jan. 25, 2005).
[103] *Id.*
[104] *See Arsenic in Drinking Water*, World Health Org., *at* http://www.who.int/mediacentre/factsheets/fs210/en/ (last updated May 2001) (outlining the effects of arsenic in drinking water).
[105] *See* OFFICE OF WATER, EPA, EPA-816-K-02-018, IMPLEMENTATION GUIDANCE FOR THE ARSENIC RULE (2002), *available at* http://www.epa.gov/safewater/ars/implement.html (displaying the EPA's policies on arsenic in the environment).
[106] *See id.*
[107] *Congressional Members Introduce Roadless Legislation,* Greater Yellowstone Coalition, *at* http://www.greateryellowstone.org/news/news_archives/roads/roadless_area_legislation.html (last visited Jan. 25, 2005). A bi-partisan group of representatives has introduced legislation, the National Forest Roadless Area Conservation Act of 2002, which now has 177 cosponsors and would re-establish protection for roadless areas inside National Forests. 66 Fed. Reg. 3244 (June 5, 2002), *available at* http://thomas.loc.gov/cgi-bin/query/z?c107:H.R.4865.IH.
[108] *See supra* notes 3 and 6 and accompanying text.
[109] *Scientific Basis for Roadless Area Conservation*, World Wildlife Fund (WWF), *at* http://worldwildlife.org/forests/roadless1.cfm (last visited Feb. 1, 2005).
[110] *Id.*
[111] *Id.*

An executive summary of the full report is available online from the American Lands Alliance,[112] but the nature of the evidence goes beyond the scope of this manuscript. For the purposes of this article some of the findings of WWF report emphasize the crucial nature of roadless wilderness in conserving endangered plants and wildlife.[113]

For instance, in northwest Montana, grizzly bears avoided habitat within 3,000 feet of open roads.[114] In Wisconsin, Michigan, Ontario, and Minnesota, studies have shown a strong correlation between road density and the absence of wolves.[115] Wolves tend to avoid areas in which the density of roads exceeds 0.9 miles per square mile.[116] Studies in Arizona and Utah show that cougars concentrate mostly in areas of low road density and avoid so-called "roaded" areas.[117] Other studies indicate cougar density is lowest when road density exceeds 0.4 miles per square mile.[118] Finally, road densities of 1.0 miles per square mile decrease habitat effectiveness for elk by 50% compared to roadless watersheds.[119] As road density increased to 6.0 miles per square mile, elk habitat use fell to zero.[120]

C. Environmental Costs of Further Delay

The introduction of roads, usually logging roads that are subsidized by taxpayers,[121] causes environmental damage and habitat degradation.[122] The United States already has about 400,000 miles of logging roads;[123] enough to drive around the globe approximately sixteen times.[124] For decades, Congress has not fully funded the cost of Forest Service maintenance of these roads.[125] As a result, road "blowouts" are a major cause of trout and salmon spawning area destruction in the Pacific Northwest.[126]

> On a global scale, the World Wildlife Fund has this to say about the deforestation of the planet: Home to more than half the world's terrestrial species, forests are the great storehouses of natural life. But the over-exploitation of forests – for timber, fuel, agricultural land, and other basic needs – has wiped out more than half of the world's original forest cover. Effectively addressing the threats to forests will require a combination of 1) significant increases in protected areas, where logging and other major resource extraction is strictly off limits, and 2) a fundamental shift in how timber markets operate.[127]

---

[112] *Science Review*, Am. Lands Alliance, *available at* http://www.americanlands.org/archive.php?subsubNo=1086831612&articleNo=old_1092427735&page=archive.php?search=wwf (last visited Feb. 1, 2005).
[113] *See id.*
[114] *Id.* (internal citations omitted).
[115] *Id.* (internal citations omitted).
[116] *Id.*
[117] *Id.* (internal citations omitted).
[118] *Id.*
[119] *Id.* (internal citations omitted).
[120] *Id.*
[121] *Id.*
[122] *Id.*
[123] *Id.*
[124] *Id.*
[125] David Atcheson, *Clearcuts and Corporate Welfare*, Better World, at http://www.betterworld.com/BWZ/9608/forest.htm (last visited Jan. 25, 2005).
[126] *Id.*
[127] This quotation can be found at http://www.adpsr-norcal.org/menu/ResourceGuide/links.html (last visited Feb. 1, 2005).

Deforestation is a major global problem.[128] which is not yet as serious in the U.S. as in lesser developed nations.[129]

Meanwhile. in the national parks. there is a cost of foot-dragging by our Government. First, Park Rangers in Yellowstone have started to wear gas masks in the "crown jewel" of our park system to cope with emissions from snow mobiles.[130] *The New York Times* editorialized that news photos of these Park Rangers were "clearly not in the best interests of a president who made enhancing the parks the center (some would say the only piece) of his environmental agenda in the 2000 campaign."[131] The *Times* also noted that there were 130.000 miles of designated snowmobile trails in the United States,[132] of which only 600 miles are in national parks.[133] Somehow. enforcing the ban and leaving the snowmobilers with 129,400 miles of trails for their machines did not seem too drastic to the editors of *The New York Times*.[134]

In sync with *The New York Times*. the editorial writers for the *Great Falls Tribune*, a Montana publication. noted that "although automobiles outnumber snowmobiles by 16 to 1 [in Yellowstone National Park].[135] the snow machines are responsible for 90 percent of the park's hydrocarbon pollution."[136]

Finally. park employees ran out of patience and on December 3, 2002 joined in a federal lawsuit brought by various environmental organizations to prevent President Bush's administration from delaying a phase-out of snowmobile use in Yellowstone National Park.[137] The park employee group, Public Employees for Environmental Responsibility (PEER) noted that in the last comment period 80% of 360,000 emails and letters received by the Park Service favored a ban on snowmobiles.[138] They argue that the presence of snowmobiles will strain an already stretched budget by requiring purchase of respirators, outfitting employees with hearing protection devices. and redesigning park entrances.[139]

D. Some "Bottom-line" Arguments

While the politicians and the bureaucrats dither and dance around the issues in Washington D.C., it is a fairly well accepted fact that the grizzly bear population in Yellowstone National Park is not genetically viable.[140] The pool of genes is too small to allow the bears to survive as a species.[141] The number of breeding sows is down.[142] and the "handwriting is on the wall." so to speak. Shall we allow these magnificent animals to die out with disease or hereditary defects for lack of national resolve? Shall we wait until the last natural

---

[128] *Id.*
[129] *Id.*
[130] *Park Rangers With Respirators*. NEW YORK TIMES. March 6. 2002, *available at* http://www.greateryellowstone.org/news/news_archives/snowmobiles/snowmobiles_ed_nytimes.html (last visited Feb. 1, 2005).
[131] *Id.*
[132] *Id.*
[133] *Id.*
[134] *Id.*
[135] *Park Plan Stinks, No Matter How You Cut It*. GREAT FALLS TRIBUNE, Nov. 11, 2002, *available at* http://www.greateryellowstone.org/news/news_archives/snowmobiles/snowmobiles_gftrib_ed02.html (last visited Feb. 1, 2005).
[136] *Id.*
[137] *Lawsuit Filed to Block Yellowstone Snowmobile Decision*, Greater Yellowstone Coalition (Dec. 3, 2002), *available at*http://www.greateryellowstone.org/news/news_archives/snowmobiles/snowmobiles_peer_lawsuit.html.
[138] *Id.*
[139] *Id.*
[140] *See* Alliance for the Wild Rockies. *at* http://www.wildrockiesalliance.org/issues/grizzly/griz_futurepast.html (last visited Jan. 25, 2005).
[141] *Id.*
[142] *Id.*

salmon runs in the Pacific Northwest go extinct before we act?[143] These are some of the real possibilities that we face. Time is running; and, as we all know, extinction is forever.

The Alliance for the Wild Rockies, a grass-roots environmental group based in Missoula, Montana,[144] has spent years designing and promoting the Northern Rockies Ecosystem Protection Act (NREPA)[145] to enhance the chances of Grizzly Bear survival.[146] It calls for the creation of wild corridors between the Yellowstone Grizzlies and the Grizzlies in Glacier National Park and in the Salmon-Sellkirk Wilderness, among others.[147] This bill, despite having approximately 184 sponsors in the House,[148] has yet to make it out of committee[149] despite economic studies and experts who say that the bill will create more jobs in road removal than will be lost to logging.[150]

In a well-written and well-researched book, John Freemuth reviewed policy and political issues related to external threats to the national parks.[151] Although very cautious politically, Professor Freemuth's analysis covers some central issues[152] and rejects many as too radical.[153] One suggestion that appealed to Freemuth, and also appeals to this author, comes from an idea from the late Tom Lucke, former chief of Water Resources Branch of the Park Service, and deals with biosphere reserves.[154] Freemuth notes:

> This is a somewhat radical suggestion, since it turns an old argument on its head. For years, the Forest Service has argued with some success that it could manage areas for recreation and preservation as well as the Park Service while still allowing for multiple uses. For critical areas like Yellowstone, the reserve may be necessary. What may be needed are multiple-use management policies that look toward the protection of the core of the ecosystem, or biosphere reserve.[155]

In a biosphere reserve, the core area is protected from development, and development is gradually allowed to increase as one moves away from the core.[156] This article would suggest that this approach be used. However, given the external threats to the National Parks, especially to the three crown jewels (Yosemite, Yellowstone, and Glacier) and to some biosphere reserves, such as Denali, this article would extend the jurisdiction of the Park Service to include adjacent areas where development could represent an external threat and require filing of an EIS with the service having authority to license or deny a permit for development.

---

[143] *Id.*
[144] *See* Alliance for the Wild Rockies, *at* http://www.wildrockiesalliance.org (last visited Jan. 25, 2005).
[145] *See* Alliance for the Wild Rockies, *at* http://www.wildrockiesalliance.org/issues/nrepa/index.html (last visited Jan. 25, 2005). NREPA is "the legislative realization of AWR's vision." *Id.*
[146] *Id.*
[147] Northern Rockies Ecosystem Protection Act (NREPA) of 2003, H.R. 1105, 108th Cong. (1st Sess. 2003), *available at* http://www.wildrockiesalliance.org/issues/nrepa/ (last visited Jan. 25, 2005).
[148] Bill Summary and Status of NREPA, *available at* http://thomas.loc.gov/cgi-bin/bdquery/z?d108:HR01105:@@@P (last visited Jan. 25, 2005).
[149] *Id.*
[150] *See Economic Benefits of NREPA*, Wild Rockies Action Fund, *at* http://www.wildrockies.org/nrepa/brochure/nrepa_economics.html (last visited Jan. 25, 2005).
[151] *See generally* FREEMUTH, *supra* note 11.
[152] *See id.*
[153] *See id.*
[154] *Id.* at 143.
[155] *Id.*
[156] *Id.*

V. THE ARGUMENT FROM HISTORY AND LEGISLATIVE PURPOSE

A. The Enabling Legislation of 1916

The Act creating the National Park Service anticipated the expansion of the system.[157] It provided jurisdiction for "such other national parks and reservations of like character as may be hereafter created by Congress."[158] We have had virtually no significant increase in the National Park acreage in the lower forty-eight states for fifty years.[159] However, since 1950, the population of the U.S. has grown from 151.3 million to 281.4 million people, an increase of 86%;[160] during this same time, visitors to the National Parks in the lower forty-eight have increased from 14.7 million to 57.8 million, an increase of over 293%.[161] Yet, the area of the National Parks has remained virtually constant.[162] This represents a dereliction of duty by our Congress and a lack of leadership in the Executive branch.

The 1916 Act also directed the Park Service "to conserve the scenery and the natural and historical objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them *unimpaired* for the enjoyment of future generations."[163] The snow mobiles in Yellowstone, to take but one example, have caused a change in the biosphere and a change in migration habits of the wild life.[164] The increases in traffic and visitors without a concomitant increase in roadless habitat have contributed to the uncertain future of the grizzly bear population in the park.[165] We have not been true to our inheritance, nor to our calling.

B. History as Preface

When the civilian administrators failed to protect Yellowstone's wildlife against illegal hunting and trapping, the federal government called in the Army to do the job.[166] Later, when it became apparent that development had an upper hand on preservation, a National Park Service was created within the Department of the Interior to balance the scales.[167] When in the 1920's, it was apparent that the parks were too far away from the population, FDR moved decisively to acquire national parks East of the Mississippi River.[168] As a people, we have, until about 1950, safeguarded and expanded our natural heritage as needed.[169]

With the external threats to the parks[170] and our wildlife (particularly the wolves and the grizzly bears) well documented,[171] we must have the national resolve to move forward to protect our heritage for future generations. Clearly, the jury is still out; and it may have already been out too long. Time is not on the side of the disappearing species[172] and the evaporating wetlands.[173]

---

[157] *See generally supra* note 63.
[158] *Id.*
[159] *See infra* Appendix C. *See also infra* Appendix B.
[160] *See infra* Appendix C.
[161] *Id.*
[162] *Id.*
[163] 16 U.S.C. § 1 (2000) (emphasis added).
[164] *See supra* note 135.
[165] *See supra* note 139.
[166] *Supra* notes 39 and 40 and accompanying text.
[167] *Supra* note 41 and accompanying text.
[168] *Supra* note 43.
[169] *See generally infra* Appendices A, B and C.
[170] *See generally* FREEMUTH, *supra* note 11.
[171] *See generally supra* notes 114 and 139 and accompanying text.
[172] *Id.*

VI. CONCLUSIONS AND RECOMMENDATIONS

The U.S. Forest Service has shown itself to be in thrall to the forest products industry,[174] even though less than 4% of our wood fiber needs come from public lands.[175] The Bureau of Land Management seems to have been co-opted by the Beef Producers.[176] Only the National Park Service seems to have the independence necessary to protect wilderness against the extractive industries.[177]

As we write this, an area of roadless wilderness larger than the entire National Park landmass in the contiguous United States is under the control of the Forest Service.[178] We believe that all of this roadless land, all 58.5 million acres of pristine National Forest land,[179] should be transferred immediately to the National Park Service. This land should be integrated, wherever possible, into existing National Parks, and should be supplemented by additional lands, either by trade or under eminent domain, so as to guarantee to the maximum extent possible the free migration of Grizzly bears, wolves and elk, so as to increase their range, habitat and chances of genetic viability.[180]

---

[173] *See* Natural Resources Defense Council reports that although the George W. Bush White House claimed on Earth Day 2004 that it was going to increase wetlands by 3 million acres each year, it was interpreting through a rule-making directive a federal court decision in such a way as to eliminate Clean Water Act protection for streams and wetlands. *See* http://www.nrdc.org/bushrecord/realfacts.asp (last visited Aug. 13, 2004).

[174] For illustrations in the State of Idaho, see Wines, Buchanan, & Smith, *The Critical Need for Law Reform to Regulate the Abusive Practices of Transnational Corporations: The Illustrative Case of Boise Cascade Corporation in Mexico's Costa Grande and Elsewhere*, 26 DENV. J. INT'L L. & POL'Y 453, n.3 (1998) (discussing below-cost sales, extension of timelines for cutting "salvage" timber, and authorizing clear-cutting in old growth areas of Idaho's National Forests); *see also* Associated Press, *Forest Service Sued Over Sierra Logging Plan: Environmentalists Say Project Is a Ruse to Hike Timber Harvests* (Sept. 29, 2004), *available at* http://msnbc.msn.com/id/6130616/print/1/displaymode/1098/ (last visited Jan. 25, 2005) (discussing a lawsuit to prevent U.S. Forest Service from using a federal law for reducing wildfire as a backdoor permit to eventually log 340,000 acres in the Sierra Nevada on the pretext of protecting 6,400 acres from wildfires); Bettina Boxall, *Sequoia Plan Trims Timber Cutting*, LA TIMES, Jan. 17, 2004, *available at* http://forests.org/articles/print.asp?linkid=28530 (discussing U.S. Forest Service retreat on about one-third of proposed logging plans for Giant Sequoia National Monument, and it also describes environmentalists complaints that U.S.F.S. while ignoring protections granted under President Clinton would under the pretext of reducing wildfire allow cutting of one-hundred year old trees at a rate sufficient to fill over 2,000 logging trucks per year).

[175] *Leaf Board Votes Unanimously to End Commercial Logging on Our National Forest Lands*, Leavenworth Audubon Adopt a Forest (LEAF). *at* http://www.leavenworth-leaf.com/archive/End%20Commercial%20Logging.htm (last visited Jan. 25, 2005).

[176] *See, e.g.*, Jacob Goldstein, *Bidding Wars Escalate Over Ranch Land: At Auctions Environmental Activists Buy Leases to Keep Ranchers from Using the Acreage for Grazing*, THE CHRISTIAN SCIENCE MONITOR, Jan, 8, 2002, *available at* http://www.csmonitor.com/2002/0108/p2s2-ussc.html (describing the bitter struggle between ranchers and environmentalists over bidding to remove state trust lands, an area larger than Pennsylvania, from cattle grazing); Press Release, WWP (Western Watersheds Project), A New Clean Water Act Lawsuit Is Filed Against The BLM In Nevada By Western Watersheds Project, Forest Guardians and Committee For the High Desert (Oct. 23, 2002), *available at* http://www.wcei.org/WWP_HOMENF.html (accusing the BLM of conducting studies that show cattle are degrading water quality in streams and springs on BLM land where they graze and then doing nothing to correct the problems, thus forcing lawsuits by environmental groups); and Holly Lippke Fretwell, *A Grazing Buy-Out?*, ROCKY MOUNTAIN NEWS, Fall 2003, *available at* http://www.perc.org/publications/opeds/grazing.php (discussing alternatives for grazing lease buy-outs but states flatly that taxpayers subsidize cattle grazing on BLM land by $2.00 per acre per year up to a total of $500 million per year).

[177] *See supra* note 43.

[178] *See National Park or National Forest*, Owens Forest Products, *at* http://www.owensforestproducts.com/ff.html (last visited Jan. 26, 2005).

[179] *58.5 Million Acres of Protected National Forest*, Fund for Public Interest Research Jobs, *at* http://www.ffpir.org/success1.htm (last visited Jan. 26, 2006). In January of 2001, President Clinton created a roadless wilderness initiative that set aside 58.5 million acres of protected forests, which are under the control of the National Forest Service. *Id.*

[180] *See generally supra* notes 113, 114, and 118 and accompanying text.

Acquisition of this land mass will still not increase the parks' share of the lower forty-eight states beyond 5% of the total area.[181] This is a small price to pay for making the National Parks healthy. Additional land acquisition should be contemplated when this accession has been "digested" by the National Park Service. It is, perhaps, not too radical a notion to talk about another doubling of the National Parks in the lower forty-eight states by the year 2050. After all, if President George W. Bush is correct about faith-based initiatives being a thing of the future.[182] we as a People should be willing to tithe from our vast natural wealth to preserve a crucial heritage for future generations of Americans.

As the legendary actor John Wayne in one of his famous roles as George Washington McLintock, a 19th century cattle baron, explained to his film daughter Rebecca [Stephanie Powers] about his estate plan:

> Somethin' I ought to tell ya ... They [young male suitors] think you're gonna inherit it [his vast land holdings in the Southwest]. Well, you're not! I'm gonna leave most of it, well, to the nation really for a park where no lumber mill will cut down all the trees for houses with leaky roofs; no one will kill all the beaver for hats for dudes, nor murder the buffalo for robes.[183]

In the same spirit, we should make a significant investment in the future of our planet and nation by converting our roadless lands into National Parks before the short-term profit maximizers subdivide it and pave it and put up parking lots.

[181] The relevant calculation is (58,500,000 roadless acres + 19,143,372 lower 48 state park acres) / 1,897,947,135 total acres = 0.0409 = 4.09% of total lower forty-eight acreage. *See supra* note 178 and accompanying text and *infra* Appendix C.

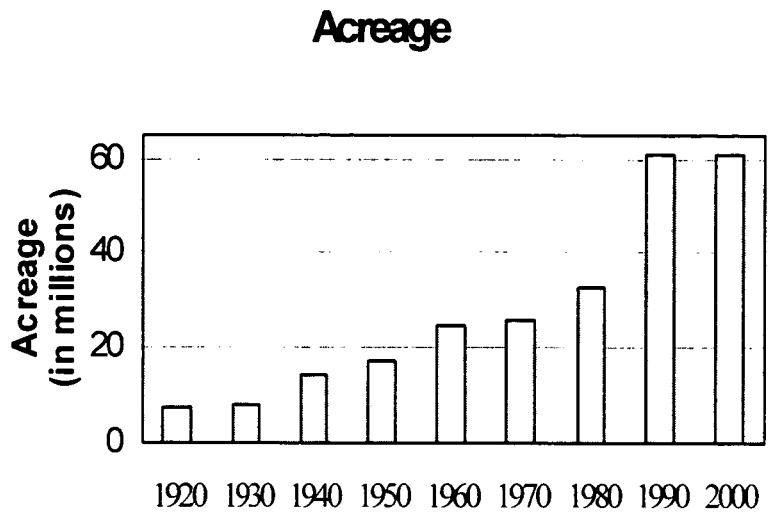
[182] George W. Bush, *State of the Union*, The White House (Jan. 24, 2004), *available at* http://www.whitehouse.gov/stateoftheunion/2004/. In President Bush's 2004 State of the Union Address, he emphasized the importance of faith-based communities and groups. *Id.*

[183] MCLINTOCK (Batjac/United Artists 1963).

APPENDICES TO WINES ARTICLE

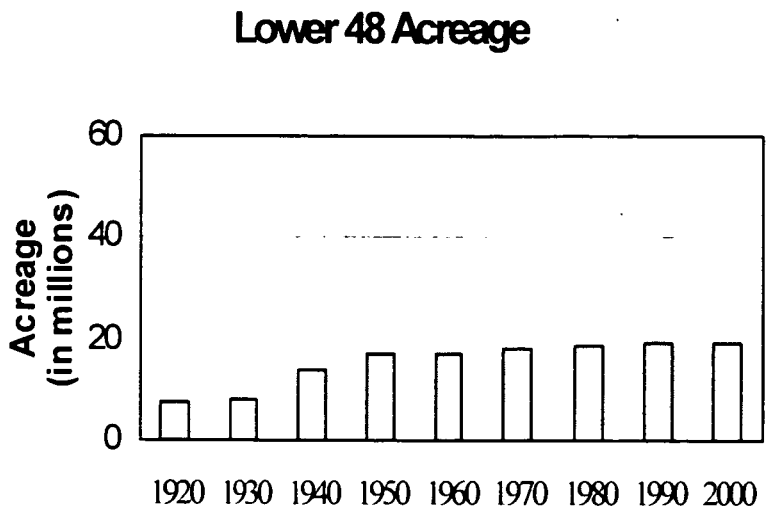
APPENDIX A

TOTAL U.S. NATIONAL PARK ACREAGE: 1920-2000



Source: See Appendix C

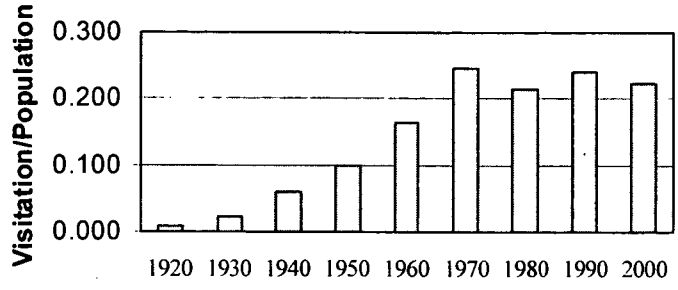
U.S. NATIONAL PARK ACREAGE IN LOWER 48 STATES: 1920-2000



Source: See Appendix C

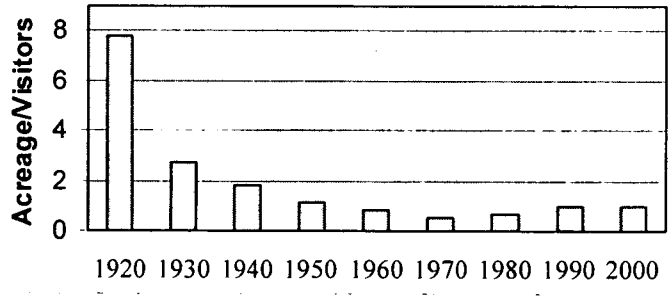
APPENDIX B

RATIO OF NATIONAL PARK VISITATION TO TOTAL U.S. POPULATION



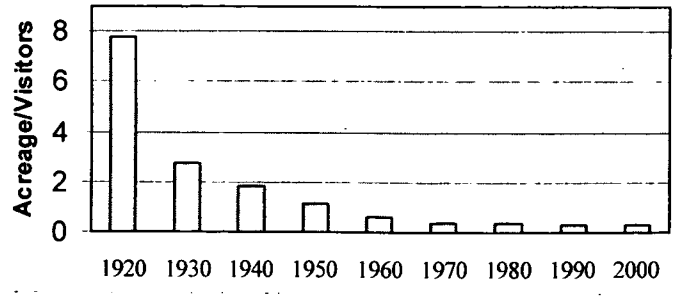
Source: See Appendix C

RATIO OF TOTAL NATIONAL PARK ACREAGE TO TOTAL VISITORS



Source: See Appendix C

RATIO OF NATIONAL PARK ACREAGE OF LOWER 48 STATES TO VISITORS



Source: See Appendix C

APPENDIX C

U.S. NATIONAL PARK ACREAGE AND VISITATION STATISTICS: 1920-2000

1. Total United States

Year	Total U.S. Park Acreage[A]	Total U.S. Park Visitation[B]	United States Population[C]	Park Acreage/ Total Population[D]	Park Visitation/ Total Population[E]	Total Acreage/ Visitors[F]
1920	7.341.359.21	945.553	106.021.537	0.069244	0.008918	7.764091
1930	8.020.169.12	2.908.150	123.202.624	0.065097	0.023605	2.757825
1940	14.113.017.00	7.840.538	132.164.569	0.106784	0.059324	1.800006
1950	17.511.277.11	15.108.030	151.325.798	0.115719	0.099838	1.159071
1960	24.932.271.34	29.614.000	179.323.175	0.139035	0.165143	0.841908
1970	26.024.211.11	49.871.400	203.302.031	0.128008	0.245307	0.521826
1980	32.689.394.01	49.010.476	226.542.199	0.144297	0.216341	0.666988
1990	60.855.858.93	59.995.947	248.709.873	0.244686	0.241229	1.014333
2000	60.948.265.29	62.750.003	281.421.906	0.216573	0.222975	0.971287

2. Lower 48 States

Year	Lower 48 Park Acreage[G]	Lower 48 Park Visitation[H]	Lower 48 Acres/ Visitors[I]
1920	7.341.359.21	945.553	7.764091
1930	7.810.473.74	2.818.572	2.771075
1940	13.903.321.62	7.552.728	1.840834
1950	17.301.581.73	14.745.785	1.173324
1960	17.301.581.73	28.814.100	0.600455
1970	18.393.521.50	48.683.600	0.377818
1980	18.973.785.86	45.886.816	0.413491
1990	19.050.965.86	56.114.014	0.339505
2000	19.143.372.22	57.787.698	0.331271

[A] Acreage data is gross area acreage by fiscal year and was obtained from the National Park Service databases at http://www2.nature.nps.gov/stats/acrebypark01fy.pdf (last visited Feb. 18, 2005).

[B] Visitation data was obtained from the National Park Service from summary decade reports at http://www2.nature.nps.gov/stats/ (last visited Feb. 18. 2005).

[C] *Population, Housing Units, Area Measurements, and Density: 1790 to 1990*, U.S. Census, *available at* http://www.census.gov/population/cen2000/tab04.pdf (last accessed Jan. 27, 2005). For the 2000 U.S. population data, see *supra* note 14 and accompanying text.

[D] The calculation is the total national park acreage for the year, *supra* note A, divided by the total U.S. population for the year, *supra* note C.

[E] The calculation is the total number of national park visitors for the year, *supra* note B, divided by the total U.S. population for the year, *supra* note C. See Appendix B for a graph of this data.

[F] The calculation is the total national park acreage for the year, *supra* note A, divided by the number of national park visitors for the year, *supra* note B. See Appendix B for a graph of this data.

[G] *See supra* note A.

[H] *See supra* note B.

[I] The calculation is the national park acreage of the lower 48 states for the year, *supra* note G, divided by the number of lower 48 state national park visitors for the year, *supra* note H. See Appendix B for a graph of this data.

APPENDIX D
VISITATION BY U.S. NATIONAL PARK: 1920-2000

National Park	2001 Acreage[J]	1920[K]	1930[L]	1940[M]	1950[N]	1960[O]	1970[P]	1980[Q]	1990[R]	2000[S]
Acadia NP (ME)	47,498.27	66,500	154,734	382,084	485,220	1,638,200	2,776,300	2,779,666	5,440,932	2,469,238
Arches NP (UT)	76,518.98		400	2,512	16,257	71,600	178,500	290,519	620,719	786,429
Badlands NP (SD)	242,755.94			181,993	447,654	878,600	1,303,100	952,652	1,326,475	1,105,824
Big Bend NP (TX)	801,163.21				70,325	75,900	172,600	174,008	257,378	262,320
Biscayne NP (FL)	172,924.07							248,071	573,376	393,151
Black Canyon of the Gunnison NP (CO)	27,705.14									191,506
Bryce Canyon NP (UT)	35,835.08		35,982	103,362	212,976	272,000	345,900	571,541	862,659	1,099,275
Canyonlands NP (UT)	337,597.83						33,400	56,505	276,831	401,558
Capitol Reef NP (UT)	241,904.26			2,000	3,066	102,500	225,900	342,788	562,477	612,656
Carlsbad Caverns NP (NM)	46,766.45		90,104	236,653	467,283	537,000	712,700	672,963	747,016	469,303
Channel Islands NP (CA)	249,561.00						32,000	104,574	144,083	482,571
Crater Lake NP (OR)	183,224.05	20,135	157,693	252,482	310,796	397,700	535,000	455,143	384,941	426,883
Cuyahoga Valley NP (OH)	32,860.01									
Death Valley NP (CA/NV)	3,340,409.65			80,842	189,045	355,900	580,500	618,140	690,965	1,179,094
Denali NP & Pres. (AK)	6,075,029.71							216,361	546,693	363,983
Dry Tortugas NP (FL)	64,701.22									83,704
Everglades NP (FL)	1,508,528.90				123,405	579,200	1,273,500	744,244	957,925	995,390
Gates of the Arctic NP & Pres. (AK)	8,472,526.67								1,010	11,278
Glacier NP (MT)	1,012,572.42	22,449	73,776	177,307	482,298	724,500	1,241,600	1,474,578	1,986,737	1,728,693
Glacier Bay NP & Pres. (AK)	3,283,246.31					900	29,700	95,005	186,427	384,684
Grand Canyon NP (AZ)	1,217,403.32	67,315	172,763	371,613	665,162	1,187,700	2,259,800	2,304,973	3,776,685	4,460,228
Grand Teton NP (WY)	309,994.02		60,000	103,324	189,286	1,429,900	3,352,500	2,555,627	1,588,253	2,590,624
Great Basin NP (NV)	77,180.00								65,026	81,045
Great Smoky Mountains NP (TN/NC)	521,490.18			860,960	1,843,620	4,528,600	6,778,500	8,440,953	8,151,769	10,175,812
Guadalupe Mountains NP (TX)	86,415.97							113,825	192,890	198,762
Haleakala NP (HI)	29,830.15					62,100	197,400	560,238	1,260,601	1,620,083
Hawaii Volcanoes NP (HI)	209,695.38		89,578	287,810	362,245	709,100	822,300	1,692,338	1,096,816	1,514,636
Hot Springs NP (AR)	5,549.78	162,850	167,062	182,583	294,955	719,100	2,092,400	1,160,588	1,123,175	1,338,156
Isle Royale NP (MI)	571,790.11			2,962	3,100	6,400	14,400	14,977	23,495	21,096
Joshua Tree NP (CA)	1,018,121.11				79,129	320,100	643,000	545,357	1,022,396	1,233,935
Katmai NP & Pres. (AK)	4,093,228.90					600	11,800	11,800	10,778	71,389
Kenai Fjords NP (AK)	669,982.99								66,115	254,790
Kobuk Valley NP (AK)	1,750,736.86								2,586	2,646
Lake Clark NP & Pres. (AK)	4,030,024.42								10,196	6,493
Lassen Volcanic NP (CA)	106,372.36	2,000	31,755	104,619	183,815	401,800	466,600	394,425	460,917	374,911
Mammoth Cave NP (KY)	52,830.19			117,751	254,187	519,100	1,726,500	1,495,787	1,924,538	1,749,268
Mesa Verde NP (CO)	52,121.93	2,890	16,656	36,448	88,184	225,700	527,200	539,257	611,375	452,287
Mount Rainier NP (WA)	235,625.00	56,491	265,620	456,637	573,685	1,538,700	1,925,100	1,268,256	1,327,101	1,344,833
North Cascades NP (WA)	504,780.94						295,000	796,079	456,444	25,704
Olympic NP (WA)	922,650.94			91,863	404,125	1,160,400	2,283,100	2,032,418	2,794,903	3,327,722
Petrified Forest NP (AZ)	93,532.57	30,390	105,433	199,420	352,889	911,500	1,151,400	683,121	844,592	605,192

APPENDIX D
VISITATION BY U.S. NATIONAL PARK: 1920-2000

National Park	2001 Acreage[J]	1920[K]	1930[L]	1940[M]	1950[N]	1960[O]	1970[P]	1980[Q]	1990[R]	2000[S]
Platt NP (1906-1976) (OK)	9,888.83	27,023	178,188	309,749	1,291,828	1,150,500	1,586,000			
Redwood NP & SPs (CA)	112,612.98							471,710	348,458	383,253
Rocky Mountain NP (CO)	265,769.14	240,966	255,874	627,847	1,275,160	1,532,500	2,357,900	2,641,937	2,647,323	3,185,392
Saguaro NP (AZ)	91,445.96	5,000	50,000	16,892	36,220	141,000	351,800	611,317	702,328	765,195
Sequoia & Kings Canyon NPs (CA)	864,411.25	51,169	172,768	483,743	717,058	1,370,600	1,894,700	1,681,462	2126405	1,367,934
Shenandoah NP (VA)	199,016.61			950,807	1,279,387	1,780,100	2,411,500	1,699,228	1,771,780	1,419,579
Theodore Roosevelt NP (ND)	70,446.89				71,447	223,200	680,000	595,734	460,718	431,813
Virgin Islands NP (VI)	14,688.87					27,200	126,600	547,918	664,735	703,992
Voyageurs NP (MN)	218,200.17							266,935	223,554	227,371
Wind Cave NP (SD)	28,295.03	38,000	88,000	18,028	79,344	864,600	997,100	473,061	586,464	668,507
Wrangell-St. Elias NP & Pres. (AK)	13,175,902.81								35,976	28,331
Yellowstone NP (ID/MT/WY)	2,219,790.71	79,777	227,901	526,437	1,110,524	1,443,300	2,297,300	2,000,269	2,823,572	2,838,233
Yosemite NP (CA)	761,266.28	68,906	458,566	506,781	820,953	1,150,400	2,277,200	2,490,282	3,124,939	3,400,903
Zion NP (UT)	146,592.31	3,692	55,297	165,029	323,402	575,800	903,600	1,123,846	2,102,400	2,432,348

[J] *Listing of Acreages by Park: Fiscal Year 2001*, Nat'l Park Serv., *available at* http://www2.nature.nps.gov/stats/acrebypark01fy.pdf (last visited Jan. 27, 2005).
[K] *Decade Report 1911-1920*, Nat'l Park Serv., *available at* http://www2.nature.nps.gov/stats/dec1120.pdf (last visited Jan. 27, 2005).
[L] *Decade Report 1921-1930*, Nat'l Park Serv., *available at* http://www2.nature.nps.gov/stats/dec2130.pdf (last visited Jan. 27, 2005).
[M] *Decade Report 1931-1940*, Nat'l Park Serv., *available at* http://www2.nature.nps.gov/stats/dec3140.pdf (last visited Jan. 27, 2005).
[N] *Decade Report 1941-1950*, Nat'l Park Serv., *available at* http://www2.nature.nps.gov/stats/dec4150.pdf (last visited Jan. 27, 2005).
[O] *Decade Report 1951-1960*, Nat'l Park Serv., *available at* http://www2.nature.nps.gov/stats/dec5160.pdf (last visited Jan. 27, 2005).
[P] *Decade Report 1961-1970*, Nat'l Park Serv., *available at* http://www2.nature.nps.gov/stats/dec6170.pdf (last visited Jan. 27, 2005).
[Q] *Decade Report 1971-1980*, Nat'l Park Serv., *available at* http://www2.nature.nps.gov/stats/dec7180.pdf (last visited Jan. 27, 2005).
[R] *Decade Report 1981-1990*, Nat'l Park Serv., *available at* http://www2.nature.nps.gov/stats/dec8190.pdf (last visited Jan. 27, 2005).
[S] *Decade Report 1991-2000*, Nat'l Park Serv., *available at* http://www2.nature.nps.gov/stats/decade912000.pdf (last visited Jan. 27, 2005).