National Park System Advisory Board

Citizen advisors chartered by Congress to help the National Park Service care for special places saved by the American people so that all may experience our heritage.

Appendix A

Where the Parks Are (And Are Not): A Comparative Analysis By State

National Park System Advisory Board

Planning Committee

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In confirming the recommendation of the Second Century Commission that the growth of the national park system in the 21st Century should be guided by a plan, the Planning Committee of the National Park Advisory Board has had the opportunity to delve into some of the details of the proposed plan. Director Jon Jarvis has asked the Board and Committee to identify gaps in the current system as precursor to such a plan. The Call to Action describes, "… a comprehensive National Park System plan that delineates the ecological regions, cultural themes, and stories of diverse communities that are not currently protected and interpreted." (Call to Action, page 9)

The Planning Committee is addressing this task in a variety of ways. Sub groups are looking at natural and cultural resources, large landscapes, urban opportunities, and increasing the diversity of park visitors.

One of the starting points for such an inquiry is a description of the existing National Park System. The Committee is also using a variety of techniques to characterize the system. This paper looks at the distribution of the system by state. Recognizing that resources do not adhere to state boundaries, it remains true that there is a considerable amount of data organized on state lines. The purpose of this analysis is to mine that data for insights into the current system.

To start with we looked at the distribution of park acreage. Subsequent analyses attempt to weight other factors in the distribution.

3.5% of the United States is occupied by national park areas, excluding Alaska the number becomes 1.5%

Using acreage as a measure the system is heavily western. If Alaska is included 91.0% of the system is west of the 98th meridian (roughly the eastern boundary of Colorado). If Alaska and Hawaii are excluded 72.6% is west of that line.

Next we looked at the state by state distribution of national parks by dividing park acreage by the total area of each state. (Since parks exist outside of the 50 states those units have been included, for a total of 55 analyzed units). Table 1 clusters the results in descending order.

TABLE ONE
States where NPS areas comprise more that 10% of the total area, (4):
Virgin Islands (5 units, 55.8%); American Samoa (1 unit, 18.2%); District of Columbia (18 units, 15.8%); Alaska (16 units, 12.8%).

States where NPS units comprise more than 5% of the total area, (4):
California (24 units, 7.8%); Florida (11 units, 6.3%); Hawaii (7 units, 5.3%); New Mexico (13 units, 5.0%).

States where NPS units comprise more than 1% of the total area, (14):
Washington (11units, 4.3%); Arizona (20 units, 4.1%); Utah (12 units, 3.9%); Wyoming (6 units, 3.8%); Michigan (4 units, 2.0%); New Jersey (3 units, 1.8%); Guam (1unit, 1.5%); Montana (5 units, 1.4%); Tennessee (7 units, 1.4%); Virginia (15 units, 1.3%); North Carolina (8 units, 1.2%); Nevada (2 units, 1.1%); Colorado (10 units, 1.0%); Idaho (5 units, 1.0%).

States where NPS units comprise more than 0.5% of the total area, (7):
Massachusetts (14 units, 0.9%); Maryland (13 units, 0.9%); Texas (13 units, 0.7%); West Virginia (4 units, 0.6%); South Dakota (5 units, 0.6%); Pennsylvania (16 units, 0.5%); Minnesota (4 units, 0.5%).

States where NPS units comprise more than 0.1% of the total area, (16):
Kentucky (3 units, 0.4%); Mississippi (7 units, 0.4%); Maine (2 units, 0.4%); New Hampshire (1 unit, 0.4%); Vermont (1 unit, 0.4%); Arkansas (6 units, 0.3%); Oregon (4 units, 0.3%); Wisconsin (2 units, 0.3%); Missouri (6 units, 0.2%); New York (19 units, 0.2%); North Dakota (3 units, 0.2%); South Carolina (6 units, 0.2%); Georgia (10 units, 0.2%); Connecticut (1 unit, 0.2%); Nebraska (5 units, 0.1%); Ohio (7 units, 0.1%).

States where NPS units comprise less than 0.1% of the total area, (10):
Louisiana (4 units, 0.07%); Indiana (3 units, 0.07%); Alabama (5 units, 0.06%), Kansas (4 units, 0.02%); Oklahoma (2 units, 0.02%); Iowa (2 units, 0.01%); Illinois (1 unit, 0.0%); Puerto Rico (1 unit, 0.0%); Rhode Island (1 unit, 0.0%); Delaware (0 units, 0%).

Park acreage is from the “Statistical Abstract of the United States 2011-2012, Department of Commerce, Table 1253”, (2009 data). State areas (land and water) were taken from “The World Almanac and Book of Facts 2012”. Park units counted from the “National Park Index 2010”.

RESULTS OF % ACREAGE COMPARISON

Recognizing that using only acreage as a measure has its shortcomings, it is still apparent that the National Park System is unevenly distributed among the states. If one arbitrarily assigned the standard that 1 % of the area of each state should be set aside as national parks, 33 states (and territories) would fall short. All of those states, except Oregon, are east of the 98th meridian.

ADDITIONAL FACTORS

In our subsequent analysis we looked at additional factors in assessing the distribution of the National Parks System among the states.

Factor 1
We simply ranked the results from Table one from one to fifty five. The Virgin Islands at 55.8% is first, Delaware at 0% is fifty five.

Factor 2
We divided the population of the state by the national park acreage. This attempts to measure the equity of access among the states. In Alaska the number is 0.01, that is every person in Alaska has 100 acres of national park area. It ranks first of 55. In Illinois there are 987,000 people for every acre of national park. It ranks 54th of 55.

Factor 3
We divided recreation visits by the population of the state. This gives weight to a non-acreage factor that would value urban parks and cultural areas that are small but well visited. It is also an indicator of economic impact. The District of Columbia with 59.29 recreation visits per capita is first of 55. Wyoming with 10.45 visits per capita is second. Connecticut with 0.01 (1 recreation visit per 100 state residents) is 54th.

Factor 4
We summed the total acreage of national parks, national forest, national wildlife refuges, and state parks expressed as a percentage of state area. This attempts to recognize that other forms of protection and recreation can affect the opportunity of individuals to access public lands. The top five states (or territories) in this ranking were: Virgin Islands (56.5%), Idaho (39.3%), Alaska (36.8 %), California (33.9%), and Oregon (26.4%). The 53rd to 55th rankings were: Rhode Island (1.2%), Iowa (0.5%), and Kansas (0.4%).

Data Sources
Acreage of national parks by state: Statistical Abstract, Table 1253, op. cit.
Acreage of the states and territories: The World Almanac, op. cit.
Population of the states and territories: The World Almanac.
National park recreation visits by state: Statistical Abstract, Table 1253.
Acreage of national forests by state: Statistical Abstract, Table 869, (2006 data).
Acreage of national wildlife refuges by state: Annual Report of Lands Under Control of the Fish and Wildlife Service, (FY 2011).
Acreage of state parks by state: Statistical Abstract, Table 1252, (2007 data).

Factor 5
We averaged Factors 1 through 4 by ranking, and ranked the averages from 1 to 55. Some examples:

Virgin Islands: Factor 1 (55.8%, rank 1); Factor 2 (2.2, rank 6); Factor 3 (6.02, rank 3);Factor 4 (56.5%, rank 1); Factor 5, average of Factors 1 to 4 ranked against other states (1+6+3+1=11, 11 divided by 4 = 2.75, ranks 1 among 55).

Wyoming: Factor 1(3.8%, rank 12); Factor 2 (0.2, rank 2); Factor 3 (10.45, rank 2); Factor 4 (19.0, rank 12); Factor 5 (12+2+2+12=28, 28/4=7, ranks 2 among 55).

Tennessee: Factor 1 (1.4%, rank 16); Factor 2 (16.5, rank 20); Factor 3 (1.27, rank 17); Factor 4 (5.1%, rank 33T); Factor 5 (16+20+17+33=86, 86/4=21.50, ranks 20 among 55).

Missouri: Factor 1 (0.2%, rank 40); Factor 2 (71.7, rank 34); Factor 3 (0.66, rank 29); Factor 4 (4.0%, rank 30T); Factor 5 (40+34+29+39=142, 142/4=35.50, ranks 38 among 55).

Illinois: Factor 1 (0.0003%, rank 54); Factor 2 (987,000, rank 54); Factor 3 (0.0362, rank 51; Factor 4 (2.5%, rank 46); Factor 5 (54+54+51+46=205, 205/4=51.25, ranks 53 among 55).

Using the Factor 5 rankings the states align like this:

Top third (19)	Middle third (18)	Bottom third (18)
Virgin Islands	Tennessee	Missouri
Alaska	North Carolina	Wisconsin
Wyoming	Michigan	New York
Utah	West Virginia	Georgia
Montana	New Jersey	South Carolina
Arizona	Oregon	Nebraska
California	Mississippi	Connecticut
Washington	Arkansas	Alabama
Hawaii	Massachusetts	Louisiana
New Mexico	North Dakota	Indiana
District of Columbia	Minnesota	Ohio
Nevada	Maine	Oklahoma
South Dakota	Vermont	Puerto Rico
Colorado	Maryland	Kansas
Florida	Texas	Iowa
Idaho	New Hampshire	Illinois
Virginia	Pennsylvania	Rhode Island
Guam	Kentucky	Delaware
American Samoa		

CONCLUSION

In spite of the attempt to select measuring factors that diversify the results, the rankings display a decided western orientation. Twelve of the top 19 rankings go to states west of the 98th meridian. Only three eastern states are in that grouping; the District of Columbia (technically not a state), Virginia, and Florida.

By contrast, all of the states in the bottom third are east of the 98th meridian.

It is not clear what the implications of this analysis are for the future growth of the national park system, but if equity of access and distribution are factored in to the objectives for a future system, more growth in the lower ranked states ought to be considered.

Since these are not public land states, additions based on less than fee ownership are likely to become more common. Indeed, the growth of National Heritage Areas is something of a contrast to the distribution of national parks examined here. Of the 49 Heritage areas listed in the NPS FY 2013 Budget Request, 20 are in states listed in the bottom third, an additional 25 are in the middle third, 11 are in the top third. (The total adds to more than 49 because of multi state National Heritage Areas.) Perhaps Congress has used this legislative approach as a partial solution to spreading the benefits of the national park idea more evenly.

A STATISTICAL APPENDIX TO WHERE THE PARKS ARE (AND ARE NOT)

	% NP/ST	POP/NP	VIS/POP	% PUB.L
ALABAM	0.067 RANK 47	210 RANK 44	0.1652 RANK 4O	4.3 RANK 37
ALASKA	12.8 RANK 4	0.01 RANK 1	3.21 RANK 6	36.8 RANK 3
ARIZONA	4.1 RANK 10	2.16 RANK 5	1.68 RANK 14	22.0 RANK 9
ARKANS	0.308 RANK 37	27.8 RANK 29	1.O4 RANK 20	9.2 RANK 22
CALIFOR	07.8 RANK 5	4.59 RANK 12	0.95 RANK 22	33.9 RANK 4
COLORA	1.01 RANK 21	7.46 RANK 16	1.08 RANK 19	26.0 RANK 6
CONNECT	0.221 RANK 38	481 RANK 50	0.01 RANK 54	6.7 RANK 28
DELAWA	0 RANK 55	0 RANK 55	0 RANK 55	3.3 RANK 43
D.COLUM	15.8 RANK 3	84.8 RANK 37	59.3 RANK 1	15.8 RANK 16
FLORIDA	6.3 RANK 6	7.1 RANK 15	0.51 RANK 31	13.0 RANK17
GEORGIA	0.165 RANK 41	154.0 RANK 42	0.67 RANK 27	4.0 RANK 39T
HAWAII	5.3 RANK 7	3.68 RANK 11	3.17 RANK 8	9.4 RANK 21
IDAHO	0.96 RANK 22	3.0 RANK 8	0.3152 RANK 36	39.3 RANK 2
ILLINOIS	0.0 RANK 54	987,000 RANK 54	0.0362 RANK 51	2.5 RANK 46
INDIANA	0.066 RANK 48	421 RANK 49	0.34 RANK 33	2.1 RANK 47

	% NP ACRES	POP/ NPACRE	VISITS/ POP	%PUB. LANDS
IOWA	0.007 RANK 51	1128 RANK 51	0.0791 RANK 46	0.5 RANK 54
KANSAS	0.022 RANK 50	245.9 RANK 45	0.0358 RANK 52	0.4 RANK 55
KENTUCK	0.37 RANK 33	45.5 RANK 32	0.42 RANK32	3.7 RANK41T
LOUISIAN	0.072 RANK 46	188.1 RANK 43	0.10 RANK 44	3.7 RANK 41T
MAINE	0.4 RANK 30	14.7 RANK 19	1.68 RANK 13	1.3 RANK 52
MARYLA	0.92 RANK 23	78.7 RANK 35	0.60 RANK 30	3.2 RANK 44T
MASSAC	0.85 RANK 24	113.1 RANK 40	1.49 RANK 15	6.2 RANK 32
MICHIGA	2.0 RANK 13	13.8 RANK 18	0.16 RANK 41	11.0 RANK 19
MINNESO	0.54 RANK 28	17.6 RANK 21	0.12 RANK 43	7.2 RANK 27
MISSISSIP	0.38 RANK 31	25.0 RANK 27	2.22 RANK 10	5.0 RANK 35
MISSOURI	0.186 RANK 40	71.7 RANK 34	0.66 RANK 29	4.0 RANK 39T
MONTAN	1.4 RANK 17	0.8 RANK 3	4.24 RANK 5	21.1 RANK 10
NEBRASK	0.092 RANK 45	40.0 RANK 30	0.15 RANK 42	4.8 RANK36
NEVADA	1.O9 RANK 20	3.5 RANK 10	2.16 RANK 11	12.8 RANK 18

	%NP ACRES	POP/ NPACRE	VISITS/ POP	% PUB LANDS
NHAMPS	0.36 RANK 34	60.1 RANK 33	0.03 RANK 53	17.0 RANK 15
NJERSEY	1.8 RANK 14	88.6 RANK 38	0.66 RANK 28	10.9 RANK 20
NMEXICO	5.0 RANK 8	5.3 RANK 13	0.81 RANK 25	22.2 RANK 8
NEWYOR	0.2 RANK 39	266.5 RANK 46	0.89 RANK 24	4.2 RANK 38
NCAROLI	1.2 RANK 19	23.5 RANK 26	1.91 RANK 12	6.6 RANK 30
NDAKOT	0.160 RANK 42	9.3 RANK 17	0.94 RANK 23	6.7 RANK 29
OHIO	0.118 RANK 44	338.3 RANK 47	0.25 RANK 38	1.5 RANK 49T
OKLAHO	0.023 RANK 49	367.7 RANK 48	0.33 RANK 34	1.5 RANK 49T
OREGON	0.316 RANK 36	19.2 RANK 22	0.23 RANK 39	26.4 RANK 5
PENNSYL	0.46 RANK 29	92.2 RANK 39	0.70 RANK 26	3.2 RANK 44T
RHODEIS	0.00048 RANK 52	210,400 RANK 53	0.05 RANK 49	1.2 RANK 53
SCAROLI	0.159 RANK 43	141.9 RANK 41	0.33 RANK 35	6.5 RANK 31
SDAKOTA	0.602 RANK 26	2.8 RANK 7	5.08 RANK 4	8.1 RANK 25
TENNESS	1.4 RANK 16	16.5 RANK 20	1.27 RANK 17	5.1 RANK 33T

	%NP ACRES	POP/ NPACRES	VISITS/ POP	%PUB LANDS
TEXAS	0.7 RANK 25	20.2 RANK 24	0.28 RANK 37	1.7 RANK 48
UTAH	3.9 RANK 11	1.3 RANK 4	3.17 RANK 7	21.0 RANK 11
VERMON	0.38 RANK 32	27.0 RANK 28	0.05 RANK 48	8.5 RANK 23T
VIRGINIA	1.3 RANK 18	22.0 RANK 25	2.87 RANK 9	8.0 RANK 26
WASHING	4.3 RANK 9	3.4 RANK 9	1.12 RANK 18	25.7 RANK 7
WVIRGINI	0.6 RANK27	20.0 RANK 23	0.97 RANK 21	8.5 RANK 23T
WISCONS	0.3 RANK 35	42.5 RANK 31	0.08 RANK 45	5.1 RANK 33T
WYOMNG	3.8 RANK 12	0.2 RANK 2	10.45 RANK 2	19.0 RANK 12
AMSAMO	18.2 RANK 2	6.2 RANK 14	0.04 RANK 50	18.2 RANK 14
GUAM	1.5 RANK 15	79.6 RANK 36	1.36 RANK 16	18.7 RANK 13
VIRGINIS	55.8 RANK 1	2.2 RANK 6	6.02 RANK 3	56.5 RANK 1
PUERTOR	0.002 RANK 53	49,680 RANK 52	0.07 RANK 47	1.5 RANK 49T