
NATURAL RESOURCES JOURNAL

Volume 48
Issue 2 *Spring*

Spring 2008

Preservation, Resource Extraction, and Recreation on Public Lands: A View from the States

Steven M. Davis

STEVEN M. DAVIS*

Preservation, Resource Extraction, and Recreation on Public Lands: A View from the States**

ABSTRACT

Compared to federal land management, there is a dearth of research and overarching data on state public land holdings, despite their prominence. By providing a comprehensive profile of state public land holdings, this study will attempt to describe the diversity between and within state public land systems as well as identify patterns in state land management as a whole. Additionally, this research attempts to draw some tentative conclusions about how each state's portfolio of public land is oriented toward preservation, resource extraction, and recreation and how these three emphases are weighted and prioritized by each state.

I. INTRODUCTION

The roughly two-thirds of a billion acres of federal land and the agencies that manage this land have been the subject of some fairly intense scrutiny. In fact, the U.S. Forest Service and, to a lesser extent, the National Park Service, are among the most studied agencies in the entire federal bureaucracy.[1] Likewise, federal forest, energy, grazing, wildlife,

---

* Professor of Political Science, Social Science Department, Edgewood College, 1000 Edgewood College Dr., Madison, WI 53711, davis@edgewood.edu. The author wishes to thank his research assistants Danielle Wilson and Ben Rickelman for their help with this project.

** This title is a nod to political scientist Daniel Elazar's seminal work AMERICAN FEDERALISM, A VIEW FROM THE STATES (1966).

1. For just a very small sample of such scholarship, see JEANNE NIENABER CLARKE & DANIEL C. MCCOOL, STAKING OUT THE TERRAIN: POWER AND PERFORMANCE AMONG NATURAL RESOURCE AGENCIES (2d ed. 1996); PAUL J. CULHANE, PUBLIC LAND POLITICS: INTEREST GROUP INFLUENCE ON THE FOREST SERVICE AND THE BUREAU OF LAND MANAGEMENT (1981); WILLIAM C. EVERHART, THE NATIONAL PARK SERVICE (1972); RONALD A. FORESTA, AMERICA'S NATIONAL PARKS AND THEIR KEEPERS (1984); JOHN C. FREEMUTH, ISLANDS UNDER SIEGE: NATIONAL PARKS AND THE POLITICS OF EXTERNAL THREATS (1991); MICHAEL FROME, THE FOREST SERVICE (1971); SAMUEL P. HAYES, CONSERVATION AND THE GOSPEL OF EFFICIENCY: THE PROGRESSIVE CONSERVATION MOVEMENT, 1890–1920 (1959); HERBERT KAUFMAN, THE FOREST RANGER: A STUDY IN ADMINISTRATIVE BEHAVIOR (1960); RANDAL O'TOOLE, REFORMING THE FOREST SERVICE (1988); RICHARD WEST SELLARS, PRESERVING NATURE IN THE NATIONAL PARKS: A HISTORY (1997); TOURISM AND NATIONAL PARKS: ISSUES AND IMPLICATIONS (Richard W. Butler & Stephen W. Boyd eds., 2000); A VISION FOR THE U.S. FOREST SERVICE: GOALS FOR ITS NEXT CENTURY (Roger A. Sedjo ed., 2000); Harmony A. Mappes, *National Parks: For Use and*

and wilderness policy have been the focus of a great deal of scholarly attention.[2] In contrast to the federal lands, the public land holdings of the states, despite their size and significance—over 200 million acres,[3] and much higher visitation[4] and revenue production[5] than federal land—remain something of a mystery. There has been a relative dearth of research on state lands and a lack, specifically, of comprehensive comparative data.[6]

"Enjoyment" or for "Preservation"? and the Role of the National Park Service Management Policies in That Determination, 92 IOWA L. REV. 601 (2007); Paul A. Sabatier et al., *Hierarchical Controls, Professional Norms, Local Constituencies, and Budget Maximization: An Analysis of U.S. Forest Service Planning Decisions*, 39 AM. J. POL. SCI. 204 (1995); and Alex Williamson, *Seeing the Forest and the Trees: The Natural Capital Approach to Forest Service Reform*, 80 TUL. L. REV. 683 (2005).

2. Similarly, a small example of such research might include CRAIG W. ALLIN, THE POLITICS OF WILDERNESS PRESERVATION (1982); DAVID A. CLARY, TIMBER AND THE FOREST SERVICE (1986); SAMUEL TRASK DANA, FOREST AND RANGE POLICY (1980); FORESTS UNDER FIRE: A CENTURY OF ECOSYSTEM MISMANAGEMENT IN THE SOUTHWEST (Christopher J. Huggard & Arthur R. Gomez eds., 2001); WILLIAM L. GRAF, WILDERNESS PRESERVATION AND THE SAGEBRUSH REBELLIONS (1990); RODERICK NASH, WILDERNESS AND THE AMERICAN MIND (1967); DOUG SCOTT, THE ENDURING WILDERNESS: PROTECTING OUR NATIONAL HERITAGE THROUGH THE WILDERNESS ACT (2004); JACQUELINE VAUGHN & HANNAH J. CORTNER, GEORGE W. BUSH'S HEALTHY FORESTS: REFRAMING THE ENVIRONMENTAL DEBATE (2005); WILLIAM VOIGT, JR., PUBLIC GRAZING LANDS: USE AND MISUSE BY INDUSTRY AND GOVERNMENT (1976); Charles Davis, *Politics and Public Rangeland Policy*, *in* WESTERN PUBLIC LANDS AND ENVIRONMENTAL POLITICS 87–109 (Charles Davis ed., 1997); David Davis, *Energy on Federal Lands*, *in* WESTERN PUBLIC LANDS AND ENVIRONMENTAL POLITICS, *supra* at 141–68; Walter Rosenbaum, *Energy Policy in the West*, *in* ENVIRONMENTAL POLITICS AND POLICY IN THE WEST (Zachary Smith ed., 1993); G. Emlen Hall, *The Forest Service and Western Water Rights: An Intimate Portrait of* United States v. New Mexico, 45 NAT. RESOURCES J. 979 (2005); and William J. Wailand, *A New Direction: Forest Service Decisionmaking and the Management of National Forest Roadless Areas*, 81 N.Y.U. L. REV. 418 (2006).

3. This study is focused on state conservation lands and trust lands and so this figure is not an exhaustive accounting of all state-owned lands. There are tens of millions of additional acres of land controlled by prisons, universities, and transportation and agricultural departments that are not included in this study.

4. DANIEL D. MCLEAN ET AL., STATE PARKS: A DIVERSE SYSTEM 2 (State Park Info. Resources Ctr. Report 00-1, 2000), *available at* http://www.naspd.org/research/sprr/rr00-1.pdf.

5. STEPHANIE BERTAINA ET AL., COLLABORATIVE PLANNING ON STATE TRUST LANDS 6 (2006), *available at* http://snre.umich.edu/ecomgt/trustlands/PDFs/CPSTL_FullReport.pdf.

6. The best existing information focusing on state parks is from the NATIONAL ASSOCIATION OF STATE PARK DIRECTORS, 2007 ANNUAL INFORMATION EXCHANGE (2007) [hereinafter AIX REPORT]. Unfortunately, since some state park systems are part of highly centralized super-agencies (typically a state's Department of Natural Resources (DNR)), while other states have narrowly focused and autonomous park agencies, there are huge discrepancies in the system acreage reported in the Annual Information Exchange. For example, the Maryland DNR's reported acreage includes parks, forests, natural areas, and wildlife areas while the decentralized Parks Department in Wyoming reports only state park land.

What data does exist is largely focused on state parks[7] and the mostly western state trust lands.[8] What this study will attempt to do is fill in some of these gaps with a comprehensive profile of state public land holdings by use classification. In doing so, some preliminary comparative analysis will be made possible, both between the federal and state systems and between individual states. This study, then, will attempt to describe the diversity between and within state public land systems and identify patterns in state land management as a whole.

Historically, public land management in the United States has been motivated by three broad objectives that appear in varying degrees in agencies' enabling legislation and mission statements as well as in the give-and-take of everyday policy decisions and in more far-reaching political conflicts. These objectives are (1) *Preservation*—to preserve and protect native ecosystems, natural landscapes, and biodiversity in general; (2) *Resource Extraction*—to produce marketable commodities from public land such as timber, oil, coal, minerals, and livestock in order to boost local economic development and/or produce revenue; and (3) *Recreation*—to manage public lands to provide passive and active recreational opportunities to the general public and to bolster tourism as a form of economic development. This study will attempt to draw some tentative conclusions about how each state's portfolio of public land is oriented toward each of these three management objectives. What does the way in which these lands are organized and classified (and thus managed) tell us about how these three emphases are weighted and prioritized by each state?

II. OVERVIEW OF STATE LAND HOLDINGS

Some distinctive patterns emerge amid the wide variability of the 50 states' public land holdings that hint at how these management emphases are prioritized by different states and regions. Public lands tend

---

7. AIX REPORT, *supra* note 6; MCLEAN ET AL., *supra* note 4; DANIEL MCLEAN ET AL., STRATEGIC INFLUENCE SCANNING: A DECADE OF TRENDS IN THE STATE PARKS (State Park Info. Resources Ctr. Report 00-2, 2000), *available at* http://www.naspd.org/research/sprr/rr00-2.pdf [hereinafter STRATEGIC INFLUENCE SCANNING]; HOLLY LIPPKE FRETWELL & KIMBERLY FROST, STATE PARKS' PROGRESS TOWARDS SELF-SUFFICIENCY (PROP. & ENVTL. RES. CTR. REPORT, 2006), *available at* http://www.perc.org/pdf/Parks_Final.pdf; DONALD LEAL & HOLLY FRETWELL, PARKS IN TRANSITION: A LOOK AT STATE PARKS, PROPERTY AND ENVIRONMENTAL RESEARCH CENTER REPORT RS-97-1 (1997), *available at* http://www.perc.org/perc.php?id=213.

8. *See, e.g.*, JON SOUDER & SALLY FAIRFAX, STATE TRUST LANDS: HISTORY, MANAGEMENT, & SUSTAINABLE USE (1996); BERTAINA ET AL., *supra* note 5; PETER CULP ET AL., TRUST LANDS IN THE AMERICAN WEST: A LEGAL OVERVIEW AND POLICY ASSESSMENT (Sonoran Institute 2005), *available at* http://www.trustland.org/publications/trustlands-report.pdf; Melinda Bruce & Teresa Rice, *Controlling the Blue Rash: Issues and Trends in State Land Management*, 29 LAND & WATER L. REV. 1 (1994).

to fall within fairly similar categories across the states (Table 1). One category, *trust lands*, is worth noting here. Concentrated in 18 mostly western states and usually dedicated to producing revenues for schools, trust lands are so distinctive in their physical characteristics, the way they are managed, and the laws that govern them that they really do not directly compare to the rest of the state land estate.

But because trust lands comprise three-quarters of all state land in the United States,[9] they are too large and important to ignore. For this reason, all the data tables in this study give individual state figures with and without trust lands included.[10] They will be discussed in much greater detail below.[11]

Table 2 ranks the overall size of each state's holdings in relation to the state's total land mass. Overall, state trust and conservation lands account for 8.9 percent of the U.S. land mass. If trust lands are included, the median percentage of a state's land that is state-owned is 3.7 percent and the mean is 6.2 percent. The states with the most public state land are overwhelmingly from the Northeast (mean of 9.0 percent), the Pacific states (mean of 14.5 percent with trust lands, 7.7 percent without), and the Mountain West (with a mean of 7.0 percent if trust lands are included).[12] While the whole Midwest region had a mean of 5.2 percent, the subset of states in the Upper Midwest (Minnesota, Michigan, Wisconsin) averaged 11.0 percent. Since the trust lands were largely granted by the federal government at statehood, there might well be a qualitative difference worth noting between the western and northeastern states in terms of their commitment to the *idea* of public land. The Northeast and Upper Midwest, for the most part, pieced together their holdings through a painstaking and often expensive process of land purchases, condemnations, and tax forfeitures rather than through a single large-scale federal grant. Indeed, if one looks at the ranking of western states without their trust lands, they would be seen to dominate the bottom (most with a fraction of one percent land mass in state land and a mean of 0.5 percent). Aside from their large granted trusts, the Mountain West's seeming disinterest in accumulating conservation lands might be due to the abundance of federal land (ranging between 31 to 92 percent of each state) or perhaps socio-cultural attitudes

9. Approximately 150 million of 200 million acres of state land are trust lands, although 100 million of that figure is in Alaska, mostly as an unclassified statehood grant from the federal government. So if Alaska is not included, state trust land accounts for about half of all state land.

10. The only exception is when a state's trust lands are a fairly small and insignificant component of their public land holdings, as is the case in Wisconsin, Alabama, and Nevada.

11. *See infra* notes 55–71 and accompanying text.

12. For a list of which specific states are considered to be in which region, see Table 2, notes c–h.

TABLE 1: State Public Lands Holdings[a]

	State Parks[b]	Special Status Parks[c]	State Forests[d]	Wildlife Mgmt. Areas[e]	State Natural Areas[f]	Wilderness Areas[g]	Trust Lands	Total[h]	Total Without Trust
AL	48	—	15	189	87	—	45	334	334
AK	3,353	—	2,080	3,000	—	1,359 (S)[i]	99,700[j]	108,134	8,434
AZ	68	—	—	34	30	—	9,229	9,331	102
AR	53	—	—	280	25*	—	—	333	333
CA	1,554	—	71	576	147	466 (S)	471	2,819	2,348
CO	219	—	71[k]	370[l]	140*	—	2,800	3,388	588
CT	34	—	170	25	10*	—	—	229	229
DE	20	—	15	48	3*	—	—	83	83
FL	726	—	1,457[m]	2,201[n]	246	—[o]	—	4,629	4,629
GA	84	—	64	307	58	—	—	455	455
HI	27	—	524	375	111*	10 (U)[p]	168[q]	1,206	1,038
ID	46	—	—	194	—	—	2,466	2,706	240
IL	149	—	21	167[r]	94*[s]	—	—	374	374
IN	177[t]	—	149	99	30*	—	—	425	425
IA	55	—	44	270	9*	—	—	369	369
KS	33	—	—	111	—	—	—	144	144
KY	46	—	36	127	23*	2 (S)[u]	—	233	233
LA	41	—	8	757	<1	—	—	807	807
ME	100	210[v]	565[w]	91	69	180 (U)	—	965	965
MD	94	—	228[x]	106	21[y]	44 (S)	—	449	449
MA	88	—	342[z]	120	100	—	—	556[aa]	556
MI	280	—	3,938	400	130*	46 (S)	—	4,618	4,618
MN	260	—	3,200	1,200	184*	18 (S)	5,395[bb]	8,329	2,934
MS	24	—	—	126	1*	—	642	793	151
MO	202	—	3	914[cc]	62*	23 (S)	—	1,119	1,119
MT	36	—	730[dd]	650	—	—	5,151	5,837	686
NE	135	—	—	96	—	—	1,340	1,571	231
NV	133	—	—	52	—	—	3	187	184
NH	111[ee]	—	100[ff]	33	6	—	—	244	244
NJ	121	—	244[gg]	320	65*[hh]	—	—	750	750
NM	183	—	—	165	—	—	8,900	9,248	348
NY	330	2,900	762[ii]	205	25[jj]	2,470 (S)[kk]	—	4,229	4,229
NC	197	—	3[ll]	343	217*	—	—	543	543
ND	18	—	13	90	7*	—	713	841	127
OH	174	—	185	150	27*	—	—	509	509
OK	77	—	—	305	—	14 (U)	745	1,127	383
OR	97	—	780[mm]	140	4*	—	771	1,669	898
PA	291	—	2,120	1,400	83	122 (S)[nn]	—	3,811	3,811
RI	9	—	—	46[oo]	—	—	—	55	55
SC	81	—	76	90	106*[pp]	11 (U)	—	326	326
SD	35	71	—	140	2	—	750	996	246
TN	141	—	162	450	108*	~18 (U)	—	754	754
TX	589	—	7	309	78	—	820	1,725	905
UT	150	—	—	413	—	—	3,500	4,063	563
VT	50	—	207	133	19	—	—	390	390
VA	63	—	52	200	42*	—	—	341	341
WA	134	—	620[qq]	462	119*[rr]	—	2,242	3,458	1,216
WV	83	—	79	136	—	—	—	299	299
WI	84	—	670[ss]	580	300*	27 (S)	78	1,469	1,391
WY	121[tt]	—	—	165	—	—	3,600	3,886	286
State Total	11,224	3,181	19,811	19,160	2,788	4,810	149,529	201,156	51,672
US/ Fed.	79,006	—	453,968	95,382	—	107,437	—	628,400	628,400[uu]

(TABLE 1: Continues)

[a] All figures in thousands of acres. For sources of this data, see Appendix A.
[b] Includes State Parks, State Recreational Areas, Beaches, and State Historic Sites owned, leased, or held in easement by state.
[c] State Parks and Preserves administered by special agency separate from state park agency, often with special legislative or constitutional mandate.
[d] Includes other multiple use lands.
[e] Includes Wildlife Management Areas, Wildlife Areas, Wildlife Refuges, Game Lands, and Fisheries Areas, but only those owned by state or held in easement and not leased.
[f] Includes State Natural Areas, Nature Preserves, and other state-specific variations. An asterisk (*) denotes that natural areas are part of a comprehensive state natural areas program as defined by the Natural Areas Association (see Appendix B). Natural Areas without an asterisk are simply a type of management unit within a park system or DNR that recognizes special natural features and offers greater protection or else part of a less-than-comprehensive program. Many, but not all State Natural Areas programs consist of *overlay* acreage, that is, areas that are embedded within existing parks, forests, wildlife areas, etc. Some programs also consist of federal, local, and even private areas. In such states, therefore, natural areas acreage is not included in the total state holdings.
[g] Wilderness designations are overlaid on top of other categories of land use and as such are not included in totals.
[h] This is not necessarily an exhaustive accounting of all state-owned land as lands held by agricultural and transportation departments, prisons, and universities are generally not included unless they are specifically managed for conservation purposes. Rows may not add up exactly due to rounding.
[i] S = an administratively or legislatively mandated wilderness *system*.
[j] Includes a 1,000,000 acre Mental Health Trust with the rest being undesignated land left after 1959 statehood grant.
[k] Consists of Trust Land held as Colorado State Forest in a permanent status.
[l] An additional 481,333 acres are leased from Trust Lands.
[m] Includes 924,756 acres of State Forest and 530,923 acres of Water Management District land not used as Wildlife Areas.
[n] Includes WMAs on land owned by state Water Management Districts.
[o] Florida had a wilderness system that was instituted in 1970, but dismantled in 1989.
[p] U = specific unit(s) managed as wilderness without a formal wilderness system.
[q] Unclassified trust lands. Technically, most of Hawaii's state lands have their origin as 1959 statehood grant.
[r] Includes State Habitat Areas and State Conservation Areas.
[s] Includes 45,081 acres of State Nature Preserves and 39,161 acres of Land and Water Reserves (both dedicated by State Nature Preserves Commission) as well as 9,638 acres of State Natural Areas that are simply a unit category in the state park system and not dedicated preserves.
[t] Includes 61,917 acres of State Parks and 115,290 acres of State Reservoirs, which are managed by Parks Division for both recreation and multiple use.
[u] This is not a Wilderness System, but rather the state-owned parts of corridors along a Wild River System.
[v] Baxter State Park—14% or 29,537 acres is open to logging and multiple use management.
[w] Public Reserved Lands are forested multiple use lands.
[x] Includes 136,467 acres of State Forest; 28,114 acres of Natural Resource Management Areas, which are managed for multiple use and wildlife; and 63,265 acres of as-of-yet unclassified forestlands.
[y] Includes 12,210 acres of Natural Environment Areas and 9,204 acres of Heritage Conservation Fund Sites.
[z] Includes 241,890 acres of state forest and 100,000 of Watershed Lands, which are mostly forested and managed for multiple use.
[aa] Includes 6,258 acres of miscellaneous DCR lands.
[bb] This includes 2,536,522 of School Trust Lands and 2,858,468 of Tax-Forfeited Lands, which are held by the state as a revenue trust for counties. Approximately 1,726,000 acres of School Trust Lands are used as State Parks, Forests, and Wildlife Management Areas so the totals do not add up.
[cc] This acreage is mostly Conservation Areas with a few Wildlife Areas and Lakes. Conservation Areas are managed for both multiple use and wildlife.
[dd] State Forests are comprised of Trust Lands.
[ee] This includes 55,648 acres of forested state parks that are managed as multiple use rather than primarily recreation.
[ff] This includes 9,688 acres of multiple use land around dams managed by Department of Environmental Services – Bureau of Dams.
[gg] This includes 2,039 acres of New Jersey Water Supply Authority Lands, which are managed for multiple use.
[hh] This includes 42,284 acres of State Natural Areas and 22,716 acres of Natural Lands Trust sites.
[ii] Of this approximately 25,000 are managed as Unique Lands without logging.
[jj] There are approximately 25,000 of Unique Lands, a protected category of which 10,060 acres are officially dedicated as State Nature Preserves.
[kk] Of this, 1,170,312, acres are wilderness and 1,300,000 are classified as Wild Forest, which is a slightly less stringent designation than wilderness.
[ll] Educational State Forests – used primarily for educational purposes rather than timber production.
[mm] 124,000 acres of this are Trust Land.
[nn] Wild Area, which is a slightly less stringent designation than Wilderness.
[oo] This acreage consists of Management Areas, which are jointly managed by Divisions of Fish and Wildlife and Forests for multiple use and wildlife.
[pp] This includes 80,217 acres of dedicated Heritage Preserves and 24,377 acres of park-administered natural areas.
[qq] This acreage is technically Forest Board Trust Lands, which are tax delinquent lands that reverted to state ownership. It is considered separate from the Granted Trust in the Trust Lands column.
[rr] Includes 31,000 acres of Nature Preserves and 88,000 acres of Natural Conservation Resource Areas.
[ss] Includes 520,000 acres of State Forest and 150,000 acres of State Flowages and Rivers.
[tt] Most of this is leased from the federal government.
[uu] This is the total of these specific land use categories. If one includes other categories such as reclamation land, military bases, etc., there is a total of 671,759,298 acres of federal land.

toward land that lean distinctly libertarian. With the notable exception of Florida (sixth in rank with 13.3 percent state land), states in the South and Great Plains tend to cluster in the bottom half as well (with means of 2.7 percent and 1.8 percent respectively and 0.5 percent for the Great Plains region without its trust land).

Table 3 shows how state land holdings are divided by major use classification. Here one finds considerable variation between individual states. Additionally, there is quite a difference between totals with and without trust lands. This is because the trust lands are overwhelmingly dedicated to resource extraction, since they are most often constitutionally or legislatively required to produce revenue (usually for schools[13]). This monoculture of use for so large a chunk of state land subsequently produces distinct results. If any pattern at all emerges from Table 3, it is that resource extraction-oriented classifications tend to dominate (84 percent with trust land, 38 percent without), while dedicated natural areas and wilderness classifications account for the least amount of state land. Regionally, lands dedicated to resource extraction are most abundant and natural areas/ wilderness holdings most scanty (or often non-existent) in the Mountain West.[14]

---

13. For example, according to the Colorado Constitution, "the state school lands are an endowment of land assets held in a perpetual, inter-generational public trust for the support of public schools..." and "the disposition and use of such lands should therefore benefit public schools including local school districts...." COLO. CONST. art. IX, § 10.

14. It should be noted at this point that this study includes only Wildlife Management Areas (WMA) that are directly owned by the state or held in a permanent conservation easement purchased by the state. Not included are the many millions of acres of private and federal land leased for this purpose, especially in many southern and western states. In some states like West Virginia, leased WMA acreage outnumbers state-owned acreage by a factor of ten. There are two main reasons leased acres are not included in this study. First, these leases, especially those on private land, can be quite temporary. Alabama, for example, has seen a great many leased acres withdrawn in the last decade. ALA. DEP'T OF CONSERVATION & NATURAL RES., 2005-2006 ANNUAL REPORT 45 (2006), *available at* http://www.outdooralabama.com/about/05-06_AnnualReport.pdf. In fact, a survey of wildlife land managers found that 54 percent believe lease arrangements to be a "fair" or "poor" approach to acquiring land to manage, presumably for this very reason. RESPONSIVE MGMT., STATE FISH AND WILDLIFE AGENCY WILDLIFE HABITAT AND RECREATION LAND NEEDS ASSESSMENT (1999), *available at* http://www.responsivemanagement.com/download/reports/LandNeeds.pdf. Also, many of the remaining leases are on federal land such as National Forest, Bureau of Land Management (BLM), or Bureau of Reclamation lands, and this study is specifically designed to examine state and not federal land. On the other hand, leased acres, private and federal, are included in this study in the state park figures (this occurs mostly in a few western states). Unlike WMAs, the leased acres in parks tend to make up just a very small fraction of the overall park holdings (with the exception of Wyoming and Nevada) and the leases tend to be long term and as close to a permanent arrangement as possible with state park management being exclusive rather than shared with federal land managers as it often is on WMA leased from the federal government.

TABLE 2: Percentage of Total State Lands as Public Land[a]

Rank	State	% of total land as state land[b]
1	AK	.2959
	U.S. (Federal Land)	**.2958**
2	HI	.2937
3	MN	.1627
4	NJ	.1580
5	NY	.1378
6	FL	.1333
7	PA	.1320
8	AZ	.1284
9	MI	.1265
10	NM	.1189
11	MA	.1104
	TOTAL STATE LAND (Pct total U.S.)	**.0886**
12	WA	.0810
13	RI	.0809
14	UT	.0771
15	CT	.0730
16	MD	.0711
17	VT	.0659
18	MT	.0658
19	DE	.0656
20	WY	.0623
21	MN (w/o Trust lands)	.0573
22	ID	.0511
23	CO	.0510
24	ME	.0486
25	NH	.0423
26	WI	.0419
27	NE	.0320
28	WA (w/o Trust lands)	.0285
29	TN	.0282
30	LA	.0279
31	CA	.0278
32	OR	.0271
33	MS	.0262
34	OK	.0256
35	MO	.0253
36	CA (w/o Trust lands)	.0231
36	AK (w/o Trust lands)	.0231
37	SD	.0204
38	OH	.0194
38	WV	.0194
39	ND	.0189
40	IN	.0184
41	NC	.0173
42	SC	.0168
43	OR (w/o Trust lands)	.0146
44	VA	.0134
45	GA	.0122
46	UT (w/o Trust lands)	.0107
47	IL	.0104
48	IA	.0103

(TABLE 2: Continues)

TABLE 2: continued		
Rank	**State**	**% of total land as state land[b]**
48	TX	.0103
49	AL	.0102
50	AR	.0099
51	KY	.0091
52	CO (w/o Trust lands)	.0088
53	OK (w/o Trust lands)	.0087
54	MT (w/o Trust lands)	.0074
55	TX (w/o Trust lands)	.0054
56	MS (w/o Trust lands)	.0050
56	SD (w/o Trust lands)	.0050
57	NE (w/o Trust lands)	.0047
58	WY (w/o Trust lands)	.0046
59	ID (w/o Trust lands)	.0045
59	NM (w/o Trust lands)	.0045
60	ND (w/o Trust lands)	.0029
61	NV	.0027
61	KS	.0027
62	AZ (w/o Trust lands)	.0014
	Pacific States Mean[c]	**.1451**
	Northeastern States Mean[d]	**.0896**
	Pacific States Mean (w/o trust lands)	**.0766**
	Western States Mean[e]	**.0699**
	Midwestern States Mean[f]	**.0519**
	Midwestern States Mean (w/o trust lands)	**.0387**
	Southern States Mean[g]	**.0270**
	Great Plains States Mean[h]	**.0183**
	Western States Mean (w/o trust lands)	**.0052**
	Great Plains States Mean (w/o trust lands)	**.0049**

[a] This does not include all state-owned lands, but rather conservation and trust lands. State lands held by universities, transportation and agricultural departments, and prisons are generally not included in these figures. 1.000=100%.

[b] The total acreage for each state is from CONGRESSIONAL RESEARCH SERVICE, CRS REPORT TO CONGRESS: FEDERAL LAND MANAGEMENT AGENCIES: BACKGROUND ON LAND AND RESOURCES MANAGEMENT, (2004) at 3.

[c] Pacific states are WA, OR, CA, HI, and AK.

[d] Northeastern states are: NJ, NY, NH, MA, RI, CT, DE, PA, MD, VT, and ME.

[e] Mountain West states are: MT, WY, NV, AZ, NM, UT, ID, and CO.

[f] Midwestern states are: OH, MI, MN, WI, IL, IA, MO, and IN.

[g] Southern states are: AR, KY, TN, SC, NC, LA, WV, GA, AL, FL, VA, and MS. If the trust lands of MS are not included, then the average for the South is .0252.

[h] Great Plains states are: SD, ND, KS, NE, OK, and TX.

TABLE 3: Percentage of State Land Holdings by Major Use Classification

State	% Park/Rec. Land	% Multiple Use/ Extractive Land	% Wildlife Land	% Natural Areas & Wilderness[a]
U.S. (Fed. Lands)[b]	**.13**	**.72**	**.15**	**.17**
AL	.14	.18	.57	.26
AK	.03	.94	.03	.01
AK(w/o Trust)	.39	.25	.36	.16
AZ	.01	.99	<.01	<.01
AZ (w/o Trust)	.66	.00	.34	.29
AR	.16	.00	.84	.08
CA	.55	.19	.20	.22
CA (w/o Trust)	.66	.03	.25	.26
CO	.06	.83	.25[c]	.04
CO (w/o Trust)	.37	.12[d]	.63	.24
CT	.15	.74	.11	.04
DE	.24	.18	.57	.03
FL	.16	.31	.48	.05
GA	.18	.14	.68	.13
HI	.02	.57	.31	.10
ID	.02	.91	.07	.00
ID (w/o Trust)	.19	.00	.81	.00
IL	.40	.06	.44	.25
IN	.42	.35/.62[e]	.23	.07
IA	.15	.12	.73	.02
KS	.23	.00	.77	.00
KY	.20	.15	.56	.11
LA	.05	.01	.94	<.01
ME	.29[f]	.62	.09	.26
MD	.21	.37	.30[g]	.15
MA	.16	.62	.22	.18
MI	.06	.85	.09	.04
MN	.03	.83	.14	.02
MN (w/o Trust)	.09	.50[h]	.41	.07
MS	.03	.81	.15	<.01
MS (w/o Trust)	.16	.00	.83	<.01
MO	.18	.82	.82[i]	.08
MT	.01	.88	.95	.00
MT (w/o Trust)	.05	.00	.11	.00
NE	.09	.85	.06	.00
NE (w/o Trust)	.58	.00	.42	.00
NV	.71	.02	.28	.00
NH	.45[j]	.64	.14	.03
NJ	.16	.33	.43	.09
NM	.02	.96	.02	.00
NM (w/o Trust)	.53	.00	.47	.00
NY	.76[k]	.18	.05	.59
NC	.36	.00	.63	.40
ND	.02	.86	.11	.01
ND (w/o Trust)	.14	.10	.70	.05
OH	.34	.36	.29	.05

(TABLE 3: Continues)

TABLE 3: continued				
State	% Park/Rec. Land	% Multiple Use/ Extractive Land	% Wildlife Land	% Natural Areas & Wilderness[a]
OK	.07	.66	.27	.01
OK (w/o Trust)	.20	.00	.80	.04
OR	.06	.86	.08	.01
OR (w/o Trust)	.11	.73	.16	.02
PA	.08	.56	.37	.05
RI	.16	.84	.84 [l]	.00
SC	.25	.23	.28	.36
SD	.11	.75	.14	<.01
SD (w/o Trust)	.14	.00	.57	.01
TN	.21	.21	.60	.17
TX	.34	.48	.18	.05
TX (w/o Trust)	.65	.01	.34	.09
UT (w/o Trust)	.27	.00	.73	.00
UT	.04	.86	.10	.00
VA	.14	.15	.59	.12
VT	.13	.53	.34	.05
WA	.04	.83	.13	.03
WA (w/o Trust)	.11	.51	.38	.10
WV	.28	.26	.46	.00
WI	.06	.51	.39	.20
WY	.03	.93	.04	.00
WY (w/o Trust)	.42	.00	.58	.00
All States	**.07**	**.84**	**.10**	**.04**
All States (w/o Trust)	**.28**	**.38**	**.37**	**.15**

[a] Natural Areas and Wilderness Areas are very often overlaid on the other categories of land, so percentages do not add up to 100. Other classifications also sometimes fall into two categories equally, so rows similarly do not always add to 100.

[b] Acreages for Federal land use categories are from CONGRESSIONAL RESEARCH SERVICE, CRS REPORT TO CONGRESS: FEDERAL LAND MANAGEMENT AGENCIES: BACKGROUND ON LAND AND RESOURCES MANAGEMENT 8 (2004).

[c] This includes an extra 481,333 acres of Wildlife land leased from the Trust Lands and not included in the figures in Table 1.

[d] This is technically on trust land, but it is held as a permanent state forest.

[e] The latter percentage includes State Reservoirs, which are managed by the Park agency, but for multiple use. The first percentage is for State Forest land alone.

[f] This includes Baxter State Park, a special status park, except for the 29,537 acres managed for timber production, which is included in multiple use category.

[g] Includes Natural Resource Management Areas, which are also included in multiple use category, as they are managed for dual purposes.

[h] This is an approximation, since some State Forest Land is on Trust Land.

[i] This is mostly Conservation Area acreage, which is also counted for multiple use land as it has dual purpose.

[j] This includes the parks acreage managed for multiple use.

[k] This includes Adirondack and Catskills Preserves, which are special status parks managed by a separate agency. Without them, New York's traditional parks and recreation category would measure .08.

[l] "Management Areas" are also counted for multiple use land as they have dual purposes.

Federal land management is a somewhat decentralized affair with two major departments (Interior and Agriculture) housing four agencies, the National Park Service, U.S. Forest Service, Bureau of Land Management, and U.S. Fish and Wildlife Service, each with very distinct identities, histories, and organizational cultures.[15] By comparison, the states offer both greater and lesser levels of centralization than the federal model. Table 4 sorts the states' land management bureaucracies into three categories. *Centralized* bureaucracies have all their lands managed by a single department level agency; for example, the Department of Natural Resources (DNR) in Michigan, Minnesota, Illinois, and Ohio, or the Hawaiian Department of Lands and Natural Resources. Such centralized super-agencies will most often feature separate divisions for state parks, forestry, wildlife, and perhaps natural areas, but these divisions typically lack the distinct identity and organizational autonomy that the federal subdepartment agencies possess. Indeed, this was precisely the aim of past reorganizations that centralized many states' land management.[16]

The second category, *somewhat centralized*, consists of state bureaucracies where land management responsibilities are shared between two departments. Some of these states, like Massachusetts and Florida, have a general natural resource or environmental protection department and a separate wildlife department, while other states such as Wisconsin, Nebraska, Mississippi, and South Dakota feature a single unitary super-agency alongside another smaller agency that manages only trust lands. Among the states with trust lands, only Alaska, Washington, and Minnesota have regular natural resource agencies also managing the trust lands. In most cases, trust lands are part of a parallel system that generally serves to decentralize state land management.

Finally, the last category, *decentralized* bureaucracies, contains those states with a highly fragmented land management bureaucracy of three or more departments. Typically, states in this category, such as Kentucky, Tennessee, Oregon, and South Carolina, will have separate, co-equal departments for state parks, forests, fish and game, and, if relevant, trust lands. It might be expected that fish and game agencies that enjoy autonomous departmental status are those that maintain very strong client support from their hunting and fishing constituencies, a distinct organizational culture, and the political clout and external support necessary to maintain that independence.

What follows in this study is an attempt to use the preceding land use data and classifications to identify what patterns emerge in the various states and regions. In doing so, this study will examine how the management emphases of preservation, resource extraction, and recreation are reflected in how state land holdings are distributed by classification.

---

15. CLARKE & MCCOOL, *supra* note 1.

16. *See* Minn. Dep't of Natural Res., History of the DNR, http://www.dnr.state.mn.us/aboutdnr/history/dnr.html (last visited May 30, 2008).

TABLE 4: Level of Centralization in State Land Management Bureaucracy

Centralized[a]	Somewhat Centralized[b]	Decentralized[c]
CT	AK	AZ
HI	AL	CA
IL	AZ (w/o trust)	CO
IN	AR	ID
IA	CO (w/o trust)	KY
KS	DE	LA
MD	FL	ME
MI	GA	NV
MN	ID (w/o trust)	NH
MS (w/o trust)	MA	ND
NE (w/o trust)	MS	OK
NJ	MO	OR
NM (w/o trust)	MT	SC
OH	NE	TN
RI	NV (w/o trust)	VA
SD (w/o trust)	NM	WA
TX (w/o trust)	NY	WY
UT (w/o trust)	NC	
WV	OK (w/o trust)	
WI (w/o trust)	PA	
	SD	
	TX	
	UT	
	VT	
	WI	
	WY (w/o trust)	
Without trust lands 40% (20)	38% (19)	22% (11)
With trust lands 26% (13)	40% (20)	34% (17)

[a] State public lands are managed by one department-level agency.
[b] State public lands are managed by no more than two department-level agencies.
[c] State public lands are managed by three or more department-level agencies.

III. PRESERVATION AS A LAND MANAGEMENT ORIENTATION

The preservationist approach to land management stresses the protection of natural resources and landscapes for reasons that reflect inherent value, and thus go beyond mere utility to human beings.[17] Early in the nineteenth century, justifications for preservation tended to be made on aesthetic or spiritual grounds. Naturalist and explorer John Muir, deeply influenced by American Transcendentalism, referred to untamed nature as a "window opening into heaven" and a "mirror reflecting the Creator," while for early twentieth century wilderness advocate Bob Marshall it represented "perhaps the best opportunity for...pure esthetic rapture." [18] But as the science of ecology advanced, such arguments were increasingly superseded by biological justifications rooted in the need to protect "reservoirs of natural materials and ecological processes that contribute to... biological diversity," as New York's state constitution puts it.[19] Similarly, Wisconsin's State Natural Areas Program defines its mission as protecting "outstanding examples of Wisconsin's native landscape of natural communities" and preserving "genetic and biological diversity," as well as "providing benchmarks for determining the impact of use on managed lands" and protecting "some of the last refuges for rare plants and animals."[20] Compare these mandates written in the modern era to the National Park Service's "fundamental purpose to conserve the scenery and the natural and historic objects,"[21] a mission scripted in 1916.

Another element of preservationism in land management involves a concept less scientific and tangible than biodiversity: the desirability of maintaining large primitive tracts of land as a counterpoint to civilization and a realm where any traces of the built environment are absent and solitude and reflection are possible.[22] This notion appears in the language of the Federal Wilderness Act of 1964:

> A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this chapter an area of undeveloped Federal land

17. J. Baird Callicott, *Whither Conservation Ethics?*, *in* BEYOND THE LAND ETHIC: MORE ESSAYS IN ENVIRONMENTAL PHILOSOPHY 321-31 (1999).

18. NASH, *supra* note 2, at 125, 204.

19. N.Y. State Dep't of Envtl. Conservation, State Land Classifications, http://www.dec.ny.gov/outdoor/7811.html (last visited May 30, 2008).

20. Wis. Dep't of Natural Res., State Natural Areas Program, http://www.dnr.state.wi.us/org/land/er/sna/ (last visited May 30, 2008).

21. National Park Service Organic Act, 16 U.S.C. §§ 1-4 (1916).

22. This argument is especially well made in EDWARD ABBEY, DOWN THE RIVER (1982).

> retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation....[23]

It has been through this law and the resulting 107 million acres of wilderness areas dedicated by Congress over the past four decades[24] that the preservationist impulse has had its most direct manifestation at the federal level.[25] It is clear, of course, that the primitive solitude that the Act speaks of and the protection of biodiversity (a word not yet coined in 1964) are by no means mutually exclusive; in fact, federal wilderness areas can, in many ways, be considered the backbone of biodiversity preservation in the United States (whether or not that was Congress's original intent).

At the state level, preservation-oriented land management is most directly achieved through two land use classifications: state wilderness areas and state natural areas,[26] which together account for approximately four percent of state land (or 14 percent if trust land is not considered). Although state wilderness tends to be a rather obscure classification, limited to a handful of states, these areas have been well documented by

23. Wilderness Act, 16 U.S.C. §§ 1131-1136 (1964).

24. Wilderness.net, Fast Facts About America's Wilderness, http://www.wilderness.net/index.cfm?fuse= NWPS&sec=fastFacts (last visited May 30, 2008).

25. Along with the 107 million acres of official Wilderness Areas, an additional 58.5 million were protected in January 2001 when outgoing President Bill Clinton signed an administrative rule, popularly known as the *Roadless Rule*, 36 C.F.R. § 294 (2001), which gave substantially similar protection as wilderness status to most of the remaining roadless areas left on Forest Service lands. This rule was revised in 2003 and then vacated altogether in 2004 by the Bush Administration. Environmentalists, however, contend that environmental impact assessments were not properly or adequately done when the Administration made the decision to rescind the rule. Consequently, litigation has successfully kept the Rule intact thus far for about 50 million acres, which inhabit, as of late 2007, a sort of political limbo. Natural Resources Defense Council, The National Forest Roadless Rule, http://www.nrdc.org/land/forests/qroadless.asp (last visited Aug. 20, 2008); Press Release, Earthjustice, Court Reinstates Roadless Rule (Sept. 20, 2006), *available at* http://www.earthjustice.org/news/press/006/court-reinstates-roadless-rule.html.

26. The latter goes by many names depending on the state, including Natural Areas, Nature Preserves, Ecological Reserves (CA, ME); Wildlife and Environment Areas (FL); Forest Reserves (MA); Land and Water Reserves (IL); Natural Environment Areas (MD); Unique Areas (NY); Natural Heritage Conservation Area (OR); Natural Lands (NJ); Scientific and Natural Areas (MN); and Heritage Preserves (SC).

researchers.[27] This study identifies only eight states having formal programs for setting aside wilderness areas (see Table 1).[28] Wilderness status, which is granted administratively in some states and legislatively in others, generally parallels the federal model in terms of the definition and management of wilderness. Typically, this means no roads, no mechanized transport, and no resource extraction activities. In addition to the states that have an official wilderness program, as Table 1 shows, five other states (Maine, Hawaii, Tennessee, Oklahoma, and South Carolina) have specific *units* of parks, forests, or wildlife areas managed (and even labeled) as wilderness, but without the benefit of a formal statewide wilderness system. This study finds that 4.8 million acres of state land are classified as wilderness (either as part of a system or as a stand-alone unit). However, 89 percent of those are in just three states, New York, Alaska, and California, with just over half in New York's enormous system alone.

Far more evenly distributed across the states are the 2.7 million acres of state natural areas or their equivalents. In fact, some variant of state natural areas exists in 38 states, with most having no more than a few percent of the country's total natural areas acreage.[29] Unlike the large, unbroken tracts that tend to characterize wilderness areas, natural areas tend to be quite small, very often with unit acreage in the hundreds or even teens. Indeed, the Natural Areas Association finds only five states having an average unit acreage of over 2,000 acres.[30] State natural areas, then, are most often relatively small sites containing exceptional biodiversity or a unique ecological community or some other high-quality resource, be it geological, hydrological, or biological. While some natural areas are stand-alone units, many more are designated portions of already existing state parks, forests, or wildlife areas (and in some states, federal, county, city, and even private land as well). In most cases, there is public access to state natural areas, but for some of the more fragile or sensitive sites, access can be severely limited or cut off altogether. However, even where access occurs, it is generally intended for only the most benign uses such as hiking,

27. George H. Stankey, *Wilderness Preservation Activity at the State Level: A National Review*, 4 NAT. AREAS J. 20 (1984); Mark Peterson, *Wilderness by State Mandate: A Survey of State-Designated Wilderness Areas*, 16 NAT. AREAS J. 192 (1996); Chad P. Dawson & Pauline Thorndike, *State-Designated Wilderness Programs in the United States*, 8 INT'L J. WILDERNESS 21 (2002).

28. For the purposes of this study, Pennsylvania, with a *Wild Areas* program that falls a bit short of the classic definition of wilderness, is also included as having a wilderness program.

29. Wisconsin has the largest natural areas acreage with 300,000 acres, or 11 percent of the total.

30. RICHARD THOM ET AL., STATUS OF STATE NATURAL AREA PROGRAMS 2005 REPORT (2005) http://www.naturalarea.org/SSNAP05.ASPX (last visited Aug. 20, 2008).

birdwatching, photography, or research. Likewise, permanent infrastructure and facilities tend to be quite limited in natural areas.

Although preservation would seem to imply a policy of leaving nature alone (and indeed for many years it did), natural areas are increasingly the focus of fairly intense management. Their relatively small size tends to make natural areas especially vulnerable to external threats and invasive species, but this characteristic also makes intense management feasible. Without controlled burns and active programs of brush cutting, for example, maintaining prairie, savannah, or open woodland ecosystems would simply be impossible. Ironically, maintaining biodiversity in the age of invasive species and shrinking habitat can require management as aggressively hands-on as any logging program in a state forest.

Taken together, then, natural areas and wilderness areas form the core sites for states' preservation-oriented management. To a lesser extent, the 19 million acres of state Wildlife Management Areas (WMA), making up 36 percent of all state lands,[31] also serve to further the preservationist ethos. WMA management, however, is more ambiguous than it might at first seem. An enormous diversity characterizes state fish and game or wildlife agencies, their missions, and how the agencies view those missions. Unlike the federal Wildlife Refuge system's mandate, which is heavily focused on conservation of biodiversity and recovery of endangered species,[32] many (though certainly not all) state wildlife agencies see their primary mission as the production and maintenance of stable game populations.

This diversity of missions appears among specific agency mission statements. On one hand, for example, California's Department of Fish and Game "maintains native fish, wildlife, plant species and natural communities for their intrinsic and ecological value," while on the other end of the spectrum, Montana's seeks to "manage fish and wildlife resources with pride in Montana's hunting and angling heritage," and Alaska's sets out to "protect, maintain, and improve the fish, game, and aquatic plant resources of the state, and manage their use and development in the best interest of the economy and the well-being of the people of the state, consistent with the sustained yield principle."[33] Kentucky, meanwhile, promises to "conserve and enhance fish and wildlife resources and provide opportunity

31. This includes only the land owned outright or through conservation easements; there are many millions more acres leased. *See supra* note 13.

32. Robert Fischman, *The Significance of National Wildlife Refuges in the Development of U.S. Conservation Policy*, 21 J. LAND USE & ENVTL. L. 1, 12-13, 16-17 (2005).

33. Cal. Dep't of Fish & Game, About the Department of Fish and Game, http://www.dfg.ca.gov/about/ (last visited Aug. 20, 2008); Mont. Fish, Wildlife & Parks, FWP Goals & Objectives, http://fwp.mt.gov/insidefwp/goals/default.html (last visited Aug. 20, 2008); Alaska Dep't of Fish & Game, ADF&G Mission Statement, http://www.adfg.state.ak.us/mission.php (last visited Aug. 20, 2008).

for hunting, fishing, trapping, boating and other wildlife related activities."[34]

At least in the states that emphasize game production, then, hunters and organized sportsmen's groups form a far more important constituency than at the federal level. Compounding this importance is the tendency in many states to rely heavily on the sale of hunting and fishing tags to fund the vast majority of wildlife agencies' operational and land acquisition budgets.[35] This creates an even more pronounced sense in fish and game departments of client groups as "paying customers." Consequently, providing these customers their *product*—game—becomes the chief priority.[36] Conversely, there is no such direct paying customer or narrowly focused client when it comes to non-game or threatened and endangered species. Thus, it is quite common for some state fish and game agencies to manage their WMA in such a way as to maximize production of various high-demand game species such as deer, elk, pheasant, or certain types of waterfowl. This might entail growing forage crops within WMA boundaries or artificially maintaining clearings, edge habitats, or aspen groves.[37] But

34. KY. DEP'T OF FISH & WILDLIFE RES., PLANNING THE FUTURE FOR KENTUCKY'S FISH AND WILDLIFE (May 2007), *available at* http://www.kdfwr.state.ky.us/pdf/strategicplan 2008-2012.pdf.

35. In fact, in approximately half of the states, wildlife agencies receive *no* general funds whatsoever, while in the rest it is generally five to fifteen percent of budgets. Thoreau Inst., *State Fish and Wildlife Agencies*, *in* STATE LANDS AND RESOURCES, *available at* http://www.ti.org/FWtext.html. The federal wildlife refuge system also receives money for land acquisition through the sale of so-called federal "Duck Stamps" for hunting migratory birds, but none of its operational budget is from the sale of hunting tags. Fischman, *supra* note 32, at 11.

36. Bruce & Rice, *supra* note 8, at 40.

37. While there is no comprehensive survey of all wildlife managers' priorities, the consultant group Responsive Management has done this for the state of Georgia and the results do seem to support the notion, in Georgia at least, of a bias toward game production. For instance, 49 percent of DNR Wildlife Division employees found the priority of "managing game" to be *extremely important*, as opposed to 45 percent for "protecting threatened or endangered species," 29 percent for "managing non-game species," and 20 percent for initiating recovery plans for endangered species. Likewise, when rating land acquisition priorities, 48 percent rated WMA as *extremely important*, compared to 38 percent for natural areas for rare species. By their own admission, 87 percent of DNR employees rated their performance as *excellent* for game management compared to 72 percent giving the same rating for non-game management and 70 percent for endangered species management. Finally, 91 percent and 59 percent of DNR employees respectively *strongly approve* of hunting and trapping as opposed to 50 percent and 14 percent of the general Georgia public. RESPONSIVE MGMT., DIRECTION FOR THE DECADE 9, 24, 32 (2002), *available at* http://www.responsivemanagement.com/download/reports/GAdirectiondist.pdf. Still, this is not to suggest that all WMA or all state wildlife agencies are focused solely on the production of popular game species. In many states, such as California, there is also a great deal of wildlife agency activity and effort aimed at identifying and preserving threatened and endangered species.

this enhancement of game habitat may not coincide with the enhancement of overall biodiversity of flora or fauna.[38]

On the other hand, WMA share a lot of characteristics with natural areas: they tend to be biologically rich tracts with limited public access, limited recreational opportunities, and relatively little infrastructure (unlike many parks and recreation areas). As previously mentioned, even the most game-oriented state wildlife agencies can hardly be characterized as *unconcerned* about endangered or non-game species. So the question arises, are WMA about preservation or resource production? Looking at the diversity of both wildlife agencies and the many individual wildlife areas they manage, the answer has to be both.

Table 5 attempts to rank states on the extent to which their public lands are oriented toward preservation by scoring the extent of wilderness, natural areas, and, to a lesser extent, wildlife lands within their public land holdings.[39]

The states with the highest preservation scores are, literally, all over the map, with the Northeast (New York, Maryland), the South (North Carolina, South Carolina, Kentucky, Tennessee), the Midwest (Wisconsin, Illinois, Missouri), the Mountain West (Colorado, Arizona), and the Pacific (California) all represented. The mean scores for the Midwest, South, Pacific (without trust land), and Northeast all cluster fairly close together. On the other hand, the states with the lowest preservation scores (dramatically lower than the other regions) are all from the Mountain West and the Great Plains, due most likely to the scarcity of both state wilderness areas and natural areas programs.[40] While the abundance of federal land, and especially federal wilderness, might explain the dearth of preservation land in the Mountain West, this excuse would not extend to the Plains states, which have quite low levels of federal ownership.[41]

---

38. Indeed, many of the most conservative species have very specific habitat needs, often deep, mature forest, which is the exact opposite of the habitat needs of the most popular game species, which prefer a mix of woods and fields and lots of edge. WIS. DEP'T NAT. RESOURCES, WILDLIFE AND YOUR LAND SERIES WM-216, CALLING ALL WILDLIFE: WILDLIFE MANAGEMENT BASICS 7 (1997), *available at* http://www.dnr.state.wi.us/org/land/wildlife/publ/calling wildlife.pdf.

39. It is important to note that these calculations do not incorporate the absolute size of a given states' preservation-oriented acreage, but rather how that acreage compares to its overall public land holdings. So while Alaska has a huge wilderness system, this must be seen in the context of a phenomenally large public land system as a whole. Conversely, Arizona, without its trust lands, has the nation's lowest percentage of state land (0.14 percent) and yet those limited acres are fairly well-oriented toward preservation.

40. THOM ET AL., *supra* note 30.

41. *Id.*

TABLE 5: Preservation Orientation of State Public Land Holdings

Rank	State	Preservation Score[a]
1	NY	56.7[b]
2	NC	51.4
3	SC	48.8
4	WI	44.7
5	CO (w/o trust lands)	38.0
6	MO	37.1
7	IL	36.9
8	TN	36.6
9	CA (w/o trust lands)	36.0
11	MD	35.1
12	AZ (w/o trust lands)	33.7
13	CA	32.8
14	MN (w/o trust lands)	32.0
15	KY	31.5
16	ME	28.8
17	VA	27.9
18	AR	27.0
19	MI	26.2
20	MN	25.7
21	HI	25.5
22	PA	24.4
23	AK (w/o trust lands)	24.3
24	GA	23.6
25	WA (w/o trust lands)	23.5
26	ND (w/o trust lands)	23.3
27	NJ	23.2
28	MA	22.9
	U.S. (Federal Lands)	**22.5**[c]
29	IA	21.3
30	MS (w/o trust lands)	20.8
31	DE	20.3
32	IN	19.6
33	AL	19.1
34	OH	18.8
35	CO	17.3
36	TX (w/o trust lands)	16.5
37	LA	16.0
38	CT	15.9
39	OK (w/o trust lands)	15.6
40	WA	15.5
41	FL	15.3
42	OR (w/o trust lands)	14.5
43	VT	13.4
44	ND	13.0
45	MS	12.9
45	OR	12.9
46	SD (w/o trust lands)	12.7
47	AK	12.1
48	TX	11.3
49	MT (w/o trust lands)	10.5
50	NH	9.3
50	RI	9.3
51	OK	9.0

(TABLE 5: Continues)

	TABLE 5: continued	
Rank	State	Preservation Score[a]
51	ID (w/o trust lands)	9.0
52	KS	8.6
53	UT (w/o trust lands)	8.2
54	SD	7.3
55	WY (w/o trust lands)	6.4
56	AZ	5.8
57	NM (w/o trust lands)	5.3
58	WV	5.1
59	NE (w/o trust lands)	4.6
60	NV	3.1
61	MT	1.2
62	UT	1.1
63	ID	0.8
64	NE	0.7
65	WY	0.5
66	NM	0.2
	Midwestern States Mean[d]	**28.8**
	Southern States Mean[e]	**26.3**
	Pacific States Mean (w/o trust lands)	**25.0**
	Northeastern States Mean	**23.5**
	Pacific States Mean	**19.8**
	Mountain West States Mean (w/o trust lands)	**14.3**
	Great Plains States Mean (w/o trust lands)	**13.6**
	Great Plains States Mean	**8.3**
	Western States Mean	**3.8**

[a] This score is on a 0-100 scale with 100 being most oriented toward preservation of biodiversity and/or wild landscapes. For details on scale methodology and sources, see Appendix B.

[b] In the calculations for New York, full value was given to their state natural areas program (State Natural and Historical Preserves), despite the fact that the program is not considered *comprehensive* by the Natural Areas Association. This exception was made because New York's natural areas have an usually high level of legislative and state constitutional protections more typical of a comprehensive program. See Appendix B for details about scale methodology.

[c] If 50 million acres of Forest Service roadless areas currently protected as de facto wilderness under the Clinton-era *Roadless Rule* are included, then the federal preservation score is 27.4. The Bush Administration has tried to dismantle the rule, but it is currently tied up in the federal courts and as of late 2007 is still in effect.

[d] For a list of which states comprise which regions, see Table 2 notes c-h. Without Minnesota's trust lands, the mean is 29.6.

[e] Without Mississippi's trust lands, the southern mean is 26.8.

IV. MULTIPLE USE AND RESOURCE EXTRACTION

In the formative years of American conservationism in the late nineteenth and early twentieth centuries, the counterpoint to Muir's preservationism was the utilitarian philosophy of Gifford Pinchot, the first Chief of the U.S. Forest Service. Pinchot, a close ally of fellow Progressive Theodore Roosevelt, held a view of land management rooted in what he considered scientific, rational principles that would benefit the public good by providing abundant resources in a way that assured their continued productivity.[42] As such, he found himself at odds with the preservationists who stressed nature's inherent worth, as well as business and agricultural interests whose rapacious and unsustainable exploitation of natural resources had held sway until that point. Pinchot's utilitarianism has proved to be quite a durable tradition in the annals of American land management. Not surprisingly, then, land that is managed for the production of material resources is the dominant classification at both the state and federal level. Typically, a unit of this type of land is administered according to multi-year plans that stipulate the resources for which given tracts will be managed.[43] In accordance with these plans, leases for timber, minerals, grazing, or energy production are sold to private sector bidders and roads are often built as part of the plan to access the given resources.[44]

National Forests and Bureau of Land Management (BLM) lands together account for nearly 454 million acres or 72 percent of federal lands,[45] and these are managed under the principles of *multiple use* as laid out in the Multiple Use Act of 1960 and the Federal Land Policy Management Act of 1976.[46] While these laws stipulate that the public land in question be

42. BENJAMIN KLINE, FIRST ALONG THE RIVER 55-58 (2d ed. 2000).

43. These requirements are laid out in the National Forest Management Act, 16 U.S.C. § 1604 (1976).

44. Federal timber sales and energy, mineral, and grazing allotment leases have been quite controversial in this regard as, to begin with, they lease access to the resources (and, in the case of energy and minerals, obtain royalties) at far below market rates. Furthermore, in the case of timber, the government subsidizes the sale by absorbing the construction and remediation costs of steep, eroding roads that lead to the sale site as well as the costs of reclaiming and replanting the clear cut sites. Thus, resources on federal lands are treated more as political goods for distribution than as valuable sources of revenue. Here environmentalists and libertarians come to rare agreement that political favoritism rather than the market is setting prices and determining value. *See* Christopher McGrory Klyza, *Reform at a Glacial Pace: Mining Policy on Federal Lands, in* WESTERN PUBLIC LANDS AND ENVIRONMENTAL POLITICS, *supra* note 2, at 111-40; Charles Davis, *Politics and Public Rangeland Policy, in* WESTERN PUBLIC LANDS AND ENVIRONMENTAL POLITICS, *supra* note 2, at 87-109.

45. It should be noted, however, that almost ten percent of that acreage or 42.2 million acres is federal wilderness and thus off-limits to resource production.

46. Multiple Use-Sustained Yield Act, 16 U.S.C. §§ 528-531 (1960); Forest and Rangeland Renewable Resources Planning Act, 16 U.S.C. §§ 1600-1614 (1974).

managed for a multiplicity of uses, including non-consumptive ones such as water, wildlife, and recreation, this is, of course, easier said than done, as high-impact uses tend to preclude the others. Critics have argued that federal land managers tend to apply these fairly ambiguous multiple use mandates with wide discretion and in ways that most often favor resource production.[47] Meanwhile, an occasional limited exception is usually sufficient for the manager to claim to be abiding by the multiple use principle.

On the other hand, since multiple use management also has to conform with other, more protective federal environmental laws such as the Clean Water Act, the Endangered Species Act, the National Environmental Policy Act (NEPA), or the National Forest Management Act, resource production on federal lands tends to be fraught with political conflict, controversy, and litigation.[48] Federal land managers face a wide array of constraints and internally or externally imposed environmental limitations that prevent the most resource-oriented managers from always getting their way.

State multiple use and trust lands – where protective federal laws do not apply – tend to be managed more aggressively for resource production than the federal lands. The U.S. Government Accountability Office (GAO) has found, for example, that the board feet of timber harvested on state and federal land in the Pacific Northwest between 1993 and 1995 was nearly identical at 1.77 billion board feet (bbf) and 1.81 bbf, respectively, yet the state land harvest came from less than one-quarter of the acreage (3.1 million state acres versus 12.5 million federal acres).[49] The GAO report speculates that there are several reasons for this, including differences in state and federal mandates, the fact that state timber programs in the Pacific Northwest pay their own way operationally through a percentage of gross sales receipts, and states in that region lack an administrative appeals process to challenge timber sales.[50]

---

47. BENJAMIN TWIGHT, ORGANIZATIONAL VALUE AND POLITICAL POWER: THE FOREST SERVICE VERSUS THE OLYMPIC NATIONAL PARK (1983); Stark Ackerman, *Observations on the Transformation of the Forest Service: The Effects of the National Environmental Policy Act on U.S. Forest Service Decision Making*, 20 ENVTL. L. 703 (1990); Steven Davis, *Does Public Participation Really Matter: Some Evidence from a National Forest*, 25 SE. POL. REV. 253 (1997); Benjamin Twight & Fremont Lyden, *Multiple Use vs. Organizational Commitment*, 34 FOREST SCI. 474 (1988).

48. National Forest Management Act, 16 U.S.C. §§ 472a, 476, 500, 513-516, 521b, 528, 576b, 594-2 , 1600-1602, 1604, 1606, 1608-1614 (1976); Endangered Species Act, 16 U.S.C. §§ 1531-1534 (1973); Federal Water Pollution Control Act, 33 U.S.C. § 1151 et seq. (1972); National Environmental Policy Act, 42 U.S.C. §§ 4321-4347 (1970).

49. U.S. GEN. ACCT. OFF., GAO/RCED-96-108, PUBLIC TIMBER: FEDERAL AND STATE PROGRAMS DIFFER SIGNIFICANTLY IN THE PACIFIC NORTHWEST REPORT TO THE CHAIRMAN, COMMITTEE ON RESOURCES, HOUSE OF REPRESENTATIVES 3 (May 1996).

50. *Id.* at 2-4.

The most important factor in more aggressive state management may be the difference between state and federal mandates in providing the basis for court challenges. In 1995 there was a ratio of federal versus state legal challenges to timber sales in Washington and Oregon of approximately 13 to 1.[51] Being more even-handed in its approach to ecological versus utilitarian claims, federal environmental law seems to offer more fertile ground for successful litigation by environmental groups.[52]

Alaska's stated mission for its State Forests illustrates this more unapologetic approach to resource production prevalent at the state level: "DNR manages the state forests for a sustained yield of many resources. The primary purpose is timber management that provides for the production and utilization of timber resources...."[53] The very names of several states' land management departments, such as New Hampshire's Department of Resources and Economic Development and New Mexico's Department of Energy, Minerals, and Natural Resources, betray this unabashed emphasis on resource production.

Table 6 shows the resource production orientation of the states' public land holdings. The major land classifications that are considered as geared primarily toward resource extraction are state forests and similar multiple use lands,[54] as well as the enormous system of state trust lands. Wildlife Management Areas, as seen in the last section, represent a hybrid category posing something of a classification conundrum. Although in one sense geared to preservation by their very nature, WMA can also be seen as producing resources (game). More explicitly, some states under the principle of multiple use actually authorize limited amounts of logging, agriculture, or energy production within the boundaries of wildlife areas as

51. *Id.* at 11. There should be no doubt that the federal courts have played an absolutely central role in federal land management policy making in the last several decades. For several years in the early 1990s, for example, there was a total injunction on timber sales in all old growth forests of the Pacific Northwest after a ruling by Federal District Judge William Dwyer in May 1991 regarding the status of the northern spotted owl. BRUCE MARCOT & JACK WARD THOMAS, OF SPOTTED OWLS, OLD GROWTH AND NEW POLICIES: A HISTORY SINCE THE INTERAGENCY SCIENTIFIC COMMITTEE REPORT USDA FOREST SERVICE PACIFIC NORTHWEST RESEARCH STATION (General Technical Report: PNW-GTR-408, 1997).

52. This is, of course, a broad generalization about the differences in state and federal environmental law. The fact is that a few states, such as California, have broad environmental policy acts that parallel or even exceed federal environmental protections. While recognizing some significant exceptions, on the whole, the carrying out of extractive activities on state land is largely a more streamlined process than at the federal level.

53. Alaska Dep't of Nat. Resources, Division of Forestry, http://www.dnr.state.ak.us/forestry/stateforests.htm (last visited Aug. 20, 2008).

54. This would include Indiana's State Reservoirs, Wisconsin's State Flowages, Massachusetts's Watershed Lands, Missouri's Conservation Areas, Rhode Island's Management Areas, Maine's Public Reserved Lands, Florida's Water Management District Lands, and Maryland's Natural Resource Management Areas.

long as those uses are deemed compatible with wildlife populations.[55] A few states, such as Rhode Island and Missouri, dispense with such distinctions altogether and manage certain lands as true multiple use areas with resource production and wildlife conservation as side-by-side goals.

The most intense resource extraction is found on the state trust lands, by far the largest component of state lands dedicated to utilitarian purposes (or, for that matter, any purpose). As previously discussed, the trust lands are a breed apart from the rest of the state land estate. Trust lands, which Souder and Fairfax call "a quiet corner of public resource management,"[56] trace their origin to eighteenth-century legislation that reserved two sections of each township to support public education in the new states.[57] As states joined the Union, the federal government granted them these school lands, but many states sold, gave away, or otherwise squandered their grants and thus never used them for their intended purpose. Consequently, Congress imposed much tighter regulation on the use of trust land later in the nineteenth century.[58] Since most western states did not enter the Union until after Congress clamped down, it is they who still possess the lion's share of trust lands.[59] Overall, public schools are the beneficiaries of approximately 80 percent of the trust lands with the remaining 20 percent aiding universities, prisons, counties, mental health care, and hospitals.[60]

55. *See, e.g.*, 2 COLO. CODE REGS. § 406-407(G) (2007).

56. SOUDER & FAIRFAX, *supra* note 8, at 1.

57. Townships laid out in the Land Ordinance of 1785 are 36 square miles and a section is one square mile portion of a township. Later, several western states saw their grants increased to four sections per township.

58. BERTAINA ET AL., *supra* note 5, at 9–10.

59. Alaska and Hawaii were given large statehood grants of federal land apart from school trusts and other states occasionally were given or created additional grant lands for roads or other institutions besides schools.

60. In addition to its school lands, Minnesota has a trust managed for county revenue made of tax-forfeited lands, while Washington has a separate trust of tax delinquent forest lands that are managed as State Forest.

TABLE 6: Multiple Use/Extractive Orientation of State Public Land Holdings

Rank	State	Multiple Use Score[a]
1	AZ	99.0
2	NM	96.8
3	AK	94.9
4	WY	94.0
5	ID	93.5
6	MT	92.0
7	ND	89.9
8	UT	89.5
9	OR	88.3
10	MI	88.2
11	MN	87.8
12	WA	87.3
12	NE	87.3
13	MS	86.2
14	RI	84.0
15	CO	83.6
16	MO	81.7
17	SD	80.0
18	OR (w/o trust lands)	78.3
19	CT	77.9
	U.S. (Federal Lands)	**77.7**
20	OK	75.1
21	IN	69.9[b]
22	NH	68.2[c]
23	HI	67.8
24	PA	64.9[d]
25	ME	64.8
26	VT	64.5
27	WI	64.1
28	MN (w/o trust lands)	63.6
29	WA (w/o trust lands)	63.7
30	TX	54.0
31	MA	50.7[e]
32	NJ	47.4
32	FL	47.4
33	MD	46.7
34	OH	46.2
35	WV	41.6
36	TN	41.4
37	DE	37.2
38	AL	36.8
39	AK (w/o trust lands)	36.6
39	GA	36.6
40	IA	36.3
41	VA	34.8
42	KY	33.6
43	ND (w/o trust lands)	33.7

(TABLE 6: Continues)

TABLE 6: continued		
Rank	**State**	**Multiple Use Score**
44	CO (w/o trust lands)	33.0
45	SC	32.5
46	LA	32.3
47	MT (w/o trust lands)	31.6
48	AR	28.0
49	MS (w/o trust lands)	27.8
50	ID (w/o trust lands)	26.9
51	OK (w/o trust lands)	26.5
52	CA	26.0
53	KS	25.7
54	UT (w/o trust lands)	24.4
55	NC	21.1
56	IL	20.3
57	WY (w/o trust lands)	19.3
58	NY	19.2[f]
59	SD (w/o trust lands)	19.0
60	NM (w/o trust lands)	15.8
61	NE (w/o trust lands)	13.9
62	TX	12.2
63	CA (w/o trust lands)	11.2
63	AZ (w/o trust lands)	11.2
64	NV	10.8
	Western States Mean[g]	**82.4**
	Pacific States Mean	**72.9**
	Great Plains States Mean	**68.7**
	Midwestern States Mean[h]	**61.8**
	Northeastern States Mean	**56.9**
	Pacific States Mean (w/o trust lands)	**51.5**
	Southern States Mean[i]	**39.4**
	Great Plains States Mean (w/o trust lands)	**21.8**
	Western States Mean (w/o trust lands)	**21.6**

[a] This score is on a 0-100 scale with 100 being most oriented toward multiple use and extractive activities. For details on scale methodology and sources, see Appendix B.
[b] This score calculation includes State Reservoirs, which are in the Parks Division but managed as multiple use land.
[c] This includes forested state park acreage that is managed for multiple use and timber production.
[d] Those state forest acres managed as Wild Forest were left out of the calculation.
[e] Those state forest and other DCR acres managed as old growth *Forest Reserves* are left out of the calculation.
[f] Those state forest acres managed as *Unique Areas* are left out of the calculation.
[g] For a list of which states are included in which regions, see Table 2 notes c-h.
[h] Without Minnesota's trust lands, the mean is 58.8.
[i] Without Mississippi's trust lands, the average for the South is 34.5.

Trust lands are unique among public lands in that they are managed with a fiduciary duty to the beneficiaries of the trust rather than in the general public interest. In fact, some even interpret this to mean that trust lands are not exactly *public* in the same way that other public land such as state parks are.[61] Thus, the mission statements, statutes, and, in many cases, state constitutional provisions that govern trust lands offer a very clear directive that affords precious little discretion to land managers: trust lands must be managed to produce revenue for schools (or any other dedicated beneficiary). Wyoming's Office of State Lands reflects this approach perfectly when it describes its mission: "[t]o support the Board of Land Commissioners in applying total asset management principles in order to optimize and diversify trust asset revenue and preserve and enhance trust asset values."[62]

This strong impetus toward revenue production for trust beneficiaries translates into fairly intense extractive policy on state trust lands. The more than 600 million acres of federal land average $1.29 billion in gross annual revenues, while the state trust lands, at approximately one-sixth the acreage, generate $4.5 billion or roughly 15 times more revenue per acre.[63] Acre for acre, grazing and agriculture dominate as trust land uses in the often arid Mountain West, yet this contributes relatively negligible amounts to trust funds, especially in proportion to acreage.[64] Far more lucrative activities are timber harvesting, mineral and energy production, and land sales near urban areas.[65]

The fact that the largest portion of trust land is dedicated to grazing, an activity that produces negligible revenue and costly environmental impacts (erosion, water pollution, and desertification), can only be explained, according to critics, by the deeply rooted and highly disproportionate power of ranching interests in the Mountain West.[66] This undue influence may prevent trust land managers from exploring other more sustainable (and, in the long run, more lucrative) uses for those vast tracts

---

61. *See* Ariz. State Land Dep't, Frequently Asked Questions, http://www.land.state.az.us/support/faqs.htm (last visited Aug. 20, 2008).

62. Wyo. Off. of State Lands & Invs., About State Lands, http://slf-web.state.wy.us/admin/aboutus.aspx (last visited Aug. 20, 2008).

63. BERTAINA ET AL., *supra* note 5, at 6.

64. Without including Alaska's enormous unclassified trust, grazing and agriculture together account for the primary use of approximately 40 of the 50 million acres of trust land, yet earn (in 1990) $60.8 million out of a total of $869.8 million, or about seven percent. SOUDER & FAIRFAX, *supra* note 8.

65. Even then, only one state, New Mexico, produces enough trust revenue to contribute more than 10 percent to its state education budget. In all other states, trusts contribute only single digit percentages or less. Thus, the intent of the eighteenth-century architects of this system remains largely unrealized. CULP ET AL., *supra* note 8, at 69.

66. *See* Bruce & Rice, *supra* note 8, at 22.

of desert and grassland that contain no minerals, coal, or oil. The low returns of grazing may create a vicious circle whereby marginal land is managed for income with increasing aggressiveness, which in turn further reduces its long-term viability and productivity, and, thus, its future income.[67]

Environmental law experts Melinda Bruce and Teresa Rice bemoan what they see as the rigid, tradition-bound, and unimaginative way in which trust land mandates are interpreted by the states, especially when compared to the adaptability and dynamism that has marked the last several decades of federal land management policy.[68] "Federal land policy," they argue, "is still responding to the rhythm of change now driven by the increasing demands for the preservation of public land....In contrast...a numbing sameness pervades state governments' approach to managing the bulk of state lands."[69] Later studies are more optimistic, though, noting shifting pressures and increasing space for more conservation and recreation-oriented management, some of it forced by the need for compliance with the Endangered Species Act and some of it due to changing political demands.[70] Environmentalists, for example, are pushing for ways to compensate trusts through cash or land exchanges in order to preserve certain resources.[71] Also, just as they are leased for agriculture or mining, certain especially rich parcels of trust lands are occasionally leased to Fish and Game Departments as wildlife management areas. However, this is probably not because trust managers have suddenly reinterpreted their mandates to make preservation of biodiversity a priority, but more likely because such leases generate income equivalent to or even greater than what other uses would bring.

A final feature of the state trust lands tending to limit any sort of comprehensive, sustainable management is their intense fragmentation. In many states, the trust lands retain the original pattern of two or four granted sections per township, resulting in a checkerboard pattern of small discontinuous parcels scattered across the landscape and often embedded

67. *Id.*

68. A few exceptions might be Wisconsin's Board of Commissioners of Public Land, who manage the state's relatively small forested trust lands as a balance of sustainable harvest, wetland protection, and preservation of old growth by transferring it to other agencies. Minnesota, meanwhile, manages at least half of its huge trust as regular wildlife areas or state forests without distinguishing between regular and trust acres. Finally, there is Colorado, whose voters in 1996 created a special Stewardship Trust of slightly more than ten percent of the state's overall trust lands, which are managed much more sensitively for long-term productivity and other values besides just revenue production (although they are expected to produce school revenue as well).

69. Bruce & Rice, *supra* note 8, at 23.

70. *See, e.g.*, CULP ET AL., *supra* note 8, at 2–3, 180; BERTAINA ET AL., *supra* note 5, at 14–16.

71. BERTAINA ET AL., *supra* note 5, at 15.

within other, often federal jurisdictions.[72] Montana, for instance, has nearly 5.2 million acres of trust land splintered into 16,000 individual parcels. This scattering is the basis for the commonly used term *blue rash* to describe the state trust lands as they show up on detailed color-coded U.S. Geological Survey land use maps.

Given the enormous acreage of the trust lands, their concentration in the West, and their laser-beam focus on revenue generation, it is no surprise that Western states score highest on the index measuring the resource production orientation of state land holdings (see Table 6). Only five states in the top 20 are not in the West or Great Plains and two of those (Minnesota and Mississippi) have large trust holdings themselves. Michigan, Connecticut, and Rhode Island, on the other hand, score high strictly on the basis of their disproportionately large state forest systems (or in the case of Rhode Island, Management Areas). Interestingly, Western and Great Plains states measured without their trust lands tend to score quite low (the lowest among regions) as many lack regular state-owned multiple use lands (such as State Forests); instead, their meager non-trust holdings are usually dominated by state parks, recreation areas, and wildlife management areas.

V. RECREATION AND TOURISM

While certain forms of passive recreation occur on nearly all categories of state land, it is the state parks and recreation areas where recreation generally is the primary purpose.[73] Recreation, broadly conceived, has always been a part of the land managers' mandate. Indeed, the original mandates of the National Park Service (NPS) and most state park systems clearly reflect a dual mission that synthesizes preservation and recreation. While the NPS, with great difficulty and a fair degree of controversy, has largely pulled off this dual mandate,[74] the states, according

72. A few states have had some success in consolidating trust lands into larger blocks through land swaps. For an example from Washington, see Wash. Dep't of Fish & Wildlife, Land Exchange, http://www.dnr.wa.gov/BusinessPermits/Topics/Land Exchanges/Pages/amp_exc_wdfw_land_exchange.aspx (last visited Aug. 20, 2008).

73. Additionally, three states have rather well-known special status parks (South Dakota's Custer, Maine's Baxter, and New York's Adirondack and Catskills), which are administered outside of the regular state park agencies according to special legislative or state constitutional provisions. While Custer is run similarly to a standard state park, Baxter and New York's special parks are managed in a way almost exclusively geared toward preservation (except for the 14 percent of Baxter that is managed for timber production).

74. *See* William Lowry, *National Parks Policy*, *in* WESTERN PUBLIC LANDS AND ENVIRONMENTAL POLITICS, *supra* note 2, at 16–96. The fact that NPS policy has, at various times, angered developers and access advocates on one side and environmentalists on the other can, perhaps, be taken as a sign that the agency meaningfully responds to and incorporates both parts of its dual mandate. For a critique that argues that the National Park

to some commentators, have not balanced both elements nearly so successfully.[75]

The dominant thrust and purpose of many state park systems, then, is to promote recreational activities, both passive and active, aimed at attracting tourism and revenue. The primary mission of state parks, as defined by one commentator, is to provide "resource-based outdoor recreation opportunities to the public at modest cost."[76] Indeed, it is no longer exceptional to find state parks with golf courses, swimming pools, resorts, marinas, conference centers, ski facilities, hundreds of improved and electrified campsites, and, of course, many miles of access roads to reach all these amenities.

The costs of such high-impact recreation on preservation values (both biological and aesthetic) are often quite profound.[77] Most importantly, the infrastructure of developed recreational facilities (buildings, sewage lines, electricity, storage sheds, motorized equipment, playing fields, golf courses, and, most significantly, roads) serves to fragment wild landscapes into smaller, much less biologically sustainable parcels.[78] Recreational

---

Service is too accommodating to recreation, see EDWARD ABBEY, DESERT SOLITAIRE 39–59 (1st ed. 1968).

75. *See* J. Mark Morgan, *Resources, Recreationists, and Revenues: A Policy Dilemma for Today's State Park Systems*, 18 ENVTL. ETHICS 279 (1996).

76. MCLEAN ET AL., *supra* note 4, at 2.

77. *See, e.g.*, Kathy Andereck, *The Impacts of Tourism on Natural Resources*, 86 PARKS & RECREATION 27 (1993).

78. The science of habitat fragmentation is quite well-documented. *See, e.g.*, REED NOSS ET AL., ENDANGERED ECOSYSTEMS OF THE UNITED STATES: A PRELIMINARY ASSESSMENT OF LOSS AND DEGRADATION (1995); John Faaborg et al., *Habitat Fragmentation in the Temperate Zone: A Perspective for Managers*, *in* STATUS AND MANAGEMENT OF NEOTROPICAL MIGRATORY BIRDS 331–38 (Deborah Finch & Peter Stangel eds., USFS General Technical Report RM-229, 1993); Alan Franklin et al., *What Is Habitat Fragmentation?*, 25 STUDIES IN AVIAN BIOLOGY 20 (2002); Denis Saunders et al., *Biological Consequences of Ecosystem Fragmentation: A Review*, 5 CONSERVATION BIOLOGY 18 (1991). Fragmentation's negative effects on biodiversity involve both the disruption of feeding and mobility patterns as well as the increase of *edge habitats* at the expense of interior habitats. Less common *habitat specialists* are conservative species of flora and fauna that typically have very precise and inflexible habitat needs, which are then disrupted. The introduction of edge habitats that occurs with roads, buildings, and other types of clearings has an effect that extends well beyond the edge zone itself and negatively impacts adjacent habitat. There is, for example, an increase in nest predation by adaptable, edge-dwelling generalists (raccoons, coyotes, cowbirds, just to name a few) as well as an increase of the risk of introducing pernicious and destructive invasive species like garlic mustard, buckthorn, purple loosestrife, rats, cats, or wild pigs. Edge also introduces subtle changes in sunlight, soil moisture, and wind velocity. One study estimated that a residential development site of one acre with one-quarter mile of paved driveway degrades an additional 40 acres through the processes detailed above. Andrea Jellinek, *Choosing a Future for the Baraboo Hills Forest*, NATURE CONSERVANCY WIS. CH. BULL., 1998, at 7.

development can also introduce significant amounts of pollution,[79] constant noise, and a scattering of human-built structures and the corresponding visual clutter into what is theoretically meant to be a sanctuary of nature.

While the NPS has a reputation of taking its preservation mandate more seriously, part of the reason that preservation seems to hold its own in the national parks has more to do with the size and nature of national park versus state park units than with the intent of land managers. National parks most often have acreages in the tens or hundreds of thousands (and, in a few cases, millions) and can thus absorb even the most intense recreational development, while state parks, with an average unit size of just over 2,700 acres,[80] and nearly 18 times more visitor hours per acre,[81] are far more vulnerable to the impact of heavy recreational development. So, while Yellowstone or Yosemite both contain very heavily built-up areas full of intrusive infrastructure and development, they also contain hundreds of thousands or even millions of acres of pristine, unfragmented backcountry. By comparison, Figure 1 suggests the very different fragmentary effect when an 857-acre state park has to absorb a significant amount of recreational development.

Originally, not all state park systems were so focused on what the critic Edward Abbey scorns as "industrial tourism."[82] The Progressive Era origins of a number of state park systems lent a strong scientific and conservationist tone to early park management.[83] Since then, however, three major developments have helped to push park systems more in the direction of recreation and tourism. First, New Deal work relief schemes in the 1930s and 1940s began a process of infrastructural development in many state parks.[84] Next came the explosive post-war economic growth and with it increased affluence and near-universal auto-oriented mobility. Increasingly, park managers saw their role as reaching out to snag the motoring tourist, which in more recent times has entailed an "arms race" of sorts

79. The worst-case scenario is represented by the image of Yellowstone rangers wearing gas masks as they work the entrance stations during snowmobile season. Blaine Harden, *Snowmobilers Favoring Access to Yellowstone Have Found an Ally in Bush*, N.Y. TIMES, Mar. 6, 2002, *available at* http://query.nytimes.com/gst/fullpage.html?res=980DE3DA1530F935A35750C0A9649C8B63&sec=&spon=&pagewanted=print. For an example of all-terrain vehicle pollution and trail damage at the state level, see Matthew Brown, *Debate Over Off-Roading Revs Up Town*, BERGEN (NJ) RECORD, Jan. 13, 2002, *available at* http://sierraactivist.org/article.php?sid=4712.

80. AIX REPORT, *supra* note 6, at 9.

81. MCLEAN ET AL., *supra* note 4. The NPS had 295 million visitor hours in 1995 for a 79 million acre system or 3.73 visitor hours per acre. State parks, meanwhile, had 740 million visitor hours for an 11.2 million acre system or 66.07 visitor hours per acre.

82. ABBEY, *supra* note 74.

83. REBECCA CONARD, PLACES OF QUIET BEAUTY: PARKS, PRESERVES AND ENVIRONMENTALISM (1997).

84. *Id.*

against ever more sophisticated competition (water parks, outlet malls, resorts, amusement parks, etc.) for a share of a market that has developed a strong taste for high-volume entertainment.

The final and perhaps most important factor in the shift toward recreation has been the periodic state budget crises that became routine in the 1980s and that dovetailed with the ascension of free-market ideologies within state policymaking networks. In a fiscal climate of increasingly scarce resources,[85] state legislators, often encouraged by libertarian think tanks,[86] have been ever more willing to intrude into park operations, thereby forcing park managers (theoretically, the technical experts) into subordinate roles.[87] Policy-wise, this has translated into a push to have park agencies begin to "pay their own way" through increased user fees, facility-generated income, and corporate sponsorships.[88] From this free-market vantage point, operational budgets coming from general fund appropriations are derided as "subsidies."[89]

According to resource management specialist J. Mark Morgan, this attitude has also led to a prioritization of revenue generation over the preservation of natural features as park agencies scramble to attract a bigger slice of the tourism market:

> the primary justification used by lawmakers in the facility selection process appears to be based on revenue potential. This way of thinking has led to a predictable pattern of commercialization in some state park systems. Anecdotal evidence of this trend includes development of numerous luxury-oriented facilities (lodges, restaurants, conference services, ski resorts, fitness centers, etc.) which bear little or no resemblance to the natural resources present on site.[90]

---

85. According to McLean, there has been a 12-percent decline in the purchasing power of operational budgets between 1990 and 1995. STRATEGIC INFLUENCE SCANNING, *supra* note 7, at 9.

86. *See, e.g.*, FRETWELL & FROST, *supra* note 7; LEAL & FRETWELL, *supra* note 7.

87. Morgan, *supra* note 75, at 282.

88. General fund appropriations as a percentage of total operating budgets for state park systems fell from an overwhelming majority in the first half of the century to an average of 61 percent in the 1980s according to Morgan, and then fell to 46.7 percent in 1999 as shown in the McLean report. Morgan, *supra* note 75, at 284; STRATEGIC INFLUENCE SCANNING, *supra* note 7, at 11. Examples of exclusive marketing rights and/or corporate sponsorship would include Pepsi and state park systems in New Hampshire, Delaware, and Ohio, as well as South Carolina's agreements with BMW, Fuji, and Honda. FRETWELL & FROST, *supra* note 7, at 10, 30, 35; LEAL & FRETWELL, *supra* note 7, at 23.

89. *See* Thoreau Inst., *Introduction to State Land and Resources Agencies*, *in* STATE LAND & RESOURCES, *available at* http://www.ti.org/Introtext.html.

90. Morgan, *supra* note 75, at 282.

FIGURE 1: Elk City State Park, Kansas

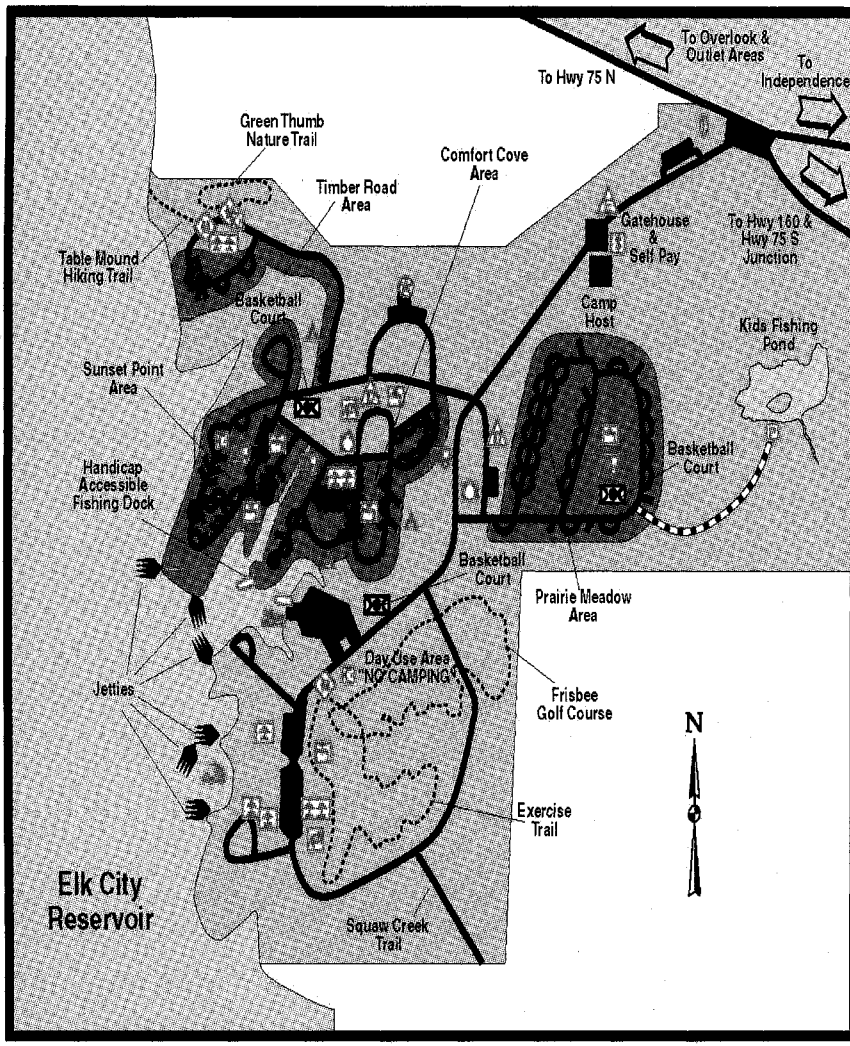

Figure 1: Kansas State Park Guide Booklet, WILDLIFE & PARKS, KANSAS STATE PARKS 13 (n.d.) *available at* http://www.kdwp.state.ks.us/news/content/download/427/2083/file/KS%20State%20Park%20Guide%20 Booklet.pdf.

Furthermore, these enhanced revenue-generating amenities and costly facilities have required a relatively large increase in capital expenditures: $1.6 billion in the 1980s alone was spent on new facilities.[91] The capital necessary to finance this building boom within the state parks has led to increased debt and, in turn, the need for even greater streams of new revenue (usually in the form of additional or higher user fees) to service the debt, as well as to make up for the decline in general fund appropriations. Morgan argues that this cycle has caused the modern fee-paying recreationist to emerge as a powerful new constituency of the state parks, which in turn perpetuates the parks' orientation toward high-impact recreation. "Have state governments," Morgan asks, "simply responded to the growing needs of their clientele, or instead created an artificial demand structure based on recruitment and retention of 'modern' park visitors?"[92]

As states increasingly cater to high-impact recreationists by offering highly fragmented parks full of roads and golf courses and electrified campsites, they tend to create intolerable conditions for traditional users who seek a quieter, more primitive, and more natural experience. The latter group will eventually seek out greener pastures elsewhere to find their solitude in a process critics term "invasion and succession."[93] In this new context, park managers are increasingly forced to concentrate on law enforcement and techniques of behavior modification at the expense of their traditional roles as naturalists, educators, and resource managers.[94] Morgan warns,

> Through commercialization, politicians may have conveyed the following messages: "the only good park is one that produces revenue and the only good park visitor is one that spends money." In their zeal to increase revenue, legislators may have unwittingly narrowed the constituency of state parks, rather than broadened the base of public support.[95]

If these scenarios are true, then state park agencies have merely traded one set of constituents for another, more lucrative set, but at the price of

---

91. *Id.* at 284. From 1990 to 1999, average annual capital expenditures increased twice as much as operating expenditures—34 percent versus 17 percent. This is in actual dollars; adjusted for inflation, operating budgets actually declined by 3.3 percent over the time period. STRATEGIC INFLUENCE SCANNING, *supra* note 7, at 9, 22.

92. Morgan, *supra* note 75, at 283.

93. Roger Clark et al., *Values, Behavior, and Conflict in Modern Camping Culture*, 3 J. LEISURE RES. 143 (1971). Sax also notes this dichotomy between high and low impact users of the national parks and finds that modern "entertainment-oriented" users, despite their visit to a park, end up insulating themselves from nature and totally missing the point of why parks exist. JOSEPH SAX, MOUNTAINS WITHOUT HANDRAILS: REFLECTIONS ON THE NATIONAL PARKS (1980).

94. Morgan, *supra* note 75, at 286.

95. *Id.* at 285.

grotesquely distorting the original vision and purpose for the parks. To reverse this trend would require state park agencies to find a way to make the recreation they offer (and emphasize) more compatible with preservation, and rebalance their priorities so that the stature of preservation is elevated, much as the National Park Service has attempted to do.

Table 7 ranks state lands according to their orientation toward recreation on a scale comprised of several variables related to park system acreage, as well as the type and number of facilities present in each park system. This ranking reveals a fairly dense regional concentration of states with the highest recreation scores. Thirteen of the top 20 scoring states are in the South, southern Great Plains, or adjacent to the Ohio River Valley. Kentucky stands quite alone as the top ranking recreation state, scoring far above all other states with its dual system of *Resort* Parks and *Recreation* Parks that are quite heavily endowed with recreational infrastructure (especially resort hotels). It is noteworthy that the Kentucky Parks Department is ultimately under the authority of what is called the Commerce Cabinet (a super-departmental level of Kentucky state government).

A similar commercial emphasis can be seen in the way other top-scoring states' park systems are administratively organized: Oklahoma's Tourism and Recreation Department; Louisiana's Department of Culture, Tourism, and Recreation; and West Virginia Parks' location within their Department of Commerce.

There is no such clear geographic concentration for states with lower recreational scores for their public lands. For the most part, they tend to be states with very large acreages of multiple use and/or wildlife lands and comparatively small park systems (such as Wisconsin, Michigan, Vermont, Connecticut, or Maine) that are managed in a less intensive way than other states', or else these are states with very large park systems, like Florida or Alaska, featuring only the lightest development.[96]

96. For example, Alaska, with a monumental 3.4 million acre park system – the nation's largest – has no improved campsites and no lodges, restaurants, golf courses, marinas, pools, or stables.

TABLE 7: Recreation Orientation of State Public Land Holdings

Rank	State	Recreation Score[a]
1	KY	85.2
2	KS	57.3
3	IN	52.8
4	WV	52.1
5	MS (w/o trust lands)	48.0
6	AL	42.0
7	MS	44.5
8	OK (w/o trust lands)	43.0
9	OH	42.9
10	TN	39.7
11	OK	39.4
12	RI	36.3
13	WY (w/o trust lands)	33.1
14	AR	28.9
15	LA	27.5
16	NY (w/special status parks)	27.0
17	GA	25.7
18	IL	25.4
19	WY	23.6
20	TX (w/o trust lands)	23.3
21	NE (w/o trust lands)	23.0
22	AZ (w/o trust lands)	22.4
23	DE	20.9
24	CA (w/o trust lands)	20.3
25	NM (w/o trust lands)	20.1
26	NV	19.7
27	CO (w/o trust lands)	18.5
28	CA	17.4
29	TX	15.2
30	ND (w/o trust lands)	14.4
31	MO	14.2
32	SD (w/o trust lands)	14.1
33	NY	13.9
34	VA	13.7
35	SC	13.3
36	SD	13.2
37	NC	13.1
37	UT (w/o trust lands)	13.1
38	MD	12.6
39	NH	12.4
40	ID (w/o trust lands)	11.4
41	ND	11.3
42	IA	10.9
43	AK (w/o trust lands)	10.6
44	CO	10.4
45	NJ	10.3

(TABLE 7: Continues)

TABLE 7: continued		
Rank	**State**	**Recreation Score**
46	NE	9.7
47	PA	9.0
48	ME (w/special status park)	8.7
49	MI	8.2
49	FL	8.2
50	VT	7.9
51	OR (w/o trust lands)	7.3
52	UT	7.0
53	CT	6.8
53	ID	6.8
53	WA (w/o trust lands)	6.8
53	NM	6.8
54	MA	6.0
55	OR	5.9
56	AZ	5.2
57	WI	4.9
57	WA	4.9
58	HI	4.0
59	MN (w/o trust lands)	3.9
60	MT (w/o trust lands)	3.8
61	ME	3.0
62	MT	2.6
63	MN	2.4
64	AK	1.7
	Southern States Mean[b]	**32.8**
	Great Plains States Mean (w/o trust lands)	**29.2**
	Great Plains States Mean	**24.4**
	Midwestern States Mean[c]	**22.7**
	Western States Mean (w/o trust lands)	**15.3**
	Northeastern States Mean[d]	**12.6**
	Western States Mean	**10.3**
	Pacific States Mean (w/o trust lands)	**9.8**
	Pacific States Mean	**6.7**

[a] This score is on a 0-100 scale with 100 being most oriented toward recreation. For details on scale methodology and sources, see Appendix B.
[b] For a list of which states are included in which regions, see Table 2 notes c-h. If the trust lands of Mississippi are not included, then the average for the South is 33.1.
[c] Without Minnesota's trust lands, the mean is 22.9.
[d] If New York and Maine's special status parks (Adirondacks, Catskills, and Baxter) are included, the average for the Northeast is 14.4.

CONCLUSION

This study has attempted to offer a broad overview of the 50 states' public land holdings to see what patterns emerge and how these holdings reflect preservation, resource extraction, and recreation-oriented management objectives. What is most remarkable is the sheer diversity of the public land estate at the state level. In relative size, state systems range from a few tenths of one percent of the state's land mass all the way up to a tenth, a seventh, or even a third of the state. Table 3 shows how these holdings are also quite different from one another in terms of how land is allocated according to major use classifications. Finally, as Table 4 shows, the states range from having very highly centralized, nearly unitary land management bureaucracies to extremely decentralized ones, with no one model at all dominant among states. Compared to the federal government, then, states can be said to have bureaucratic structures for land management more, less, and about as centralized. State by state, one can see an enormous array of organizational histories—some long and storied, others brief and colorless—as well as differing degrees of autonomy, from higher level agencies and/or elected officials, missions (imposed and/or organizationally derived), responsiveness and closeness to constituent groups, and organizational cultures (prioritizing to varying extent biological diversity, multiple use, resource production, revenue and markets, and so on). These differences can be noted both between states and within those states having several natural resource agencies.[97]

To the extent that patterns can be discerned from this great diversity of state public land systems, one can see a few important trends. Overall, state public lands are most abundant in the Northeast, Pacific, and Mountain West, and most sparse in the Great Plains and South (and Mountain West when trust lands are not considered). While states tend to focus much attention and effort on achieving all three management objectives of preservation, resource production, and recreation, the latter two goals together tend to marginalize preservation if one looks at state land as a whole.

Lands that are available for resource extraction activities are the most common classification at the state level.[98] Furthermore, these state lands tend to be managed much more intensely for resource extraction and produce much more revenue per acre than federal multiple use land. This

97. These differences in mission, culture, autonomy, etc., between and within state public land agencies are a terribly important issue that would provide a fruitful avenue for a more systematic investigation than is possible here.

98. However, trust lands aside, true multiple use lands at the state level are only half as common as at the federal level (37 percent versus 72 percent).

is at least in part because state land management mandates tend not to offer the same standard of environmental protection that federal laws do, thereby denying to environmentalists many of the grounds for successful legal challenge that they enjoy in the federal realm. State laws also tend not to require the same level of citizen participation and access to the policymaking process that the federal National Environmental Policy Act (NEPA) mandates at the federal level. Taken together, these factors tend to make state land agencies and their decisionmaking processes much more resistant to environmentalists' policy demands. Additionally, some states in regions such as the Mountain West, Great Plains, and the South are marked by political cultures and policy networks that grant environmental groups and their demands much less legitimacy than in other areas.[99] Thus, environmentalists would likely gain much more access to the federal decisionmaking process on public lands in Mississippi or Wyoming than to the state-level decisionmaking process in those same states.

States have also shifted toward a more aggressive recreation policy in the last few decades, spending billions of dollars on elaborate infrastructure that increasingly fragments fairly small state park units. However, the extent to which states have gone down this path varies greatly, with the South, the Great Plains, and parts of the Midwest displaying this tendency most clearly. The federal government manages more acres (proportionate to the size of their overall holdings) for preservation than do about four-fifths of the states (see Table 3).[100] The federal wilderness system is 20 times larger than all state systems together. On the other hand, the many comprehensive and well-run state natural areas programs that intensively review, nominate, monitor, and manage high-quality natural areas are one area related to preservation where states perhaps outperform the federal government. Overall, 17 percent of the federal land estate versus only 4 percent of state land is managed primarily for preservation.[101]

If both state and federal wildlife refuges (which this study has already identified as *semi-preservationist* in character) are included, one finds a ratio of 32 percent of federal lands versus 14 percent of state land that is managed with at least some preservation in mind. It is significant to note, however, that with trust lands excluded, the state figure climbs all the way up to 52 percent. However, state and federal wildlife areas are not exactly the same creatures. While both allow hunting and offer only limited recreation and some restricted multiple use and extractive activities, federal refuge management tends to incorporate preservationist management goals

99. *See* Scott P. Hays et al., *Environmental Commitment Among the States: Integrating Alternative Approaches to State Environmental Policy*, 26 PUBLIUS: J. FEDERALISM 41 (1996).

100. Although, if trust lands, which by definition cannot be managed for preservation, are excluded, that shrinks to three-quarters of the states.

101. Without trust lands included, the gap narrows from 17 percent to 14 percent.

more consistently.[102] This might be because of the differing mandates of the U.S. Fish and Wildlife Service (USFWS)—with its explicit endangered species focus and ecological management approach—and many state Fish and Game Departments, which are focused on game production. Consequently, for the USFWS, there is a greater relative distance from hunting constituencies and sportsmen's organizations compared to the relationship such groups enjoy with the typical state wildlife agency. Additionally, the federal agency's operational budget is not tied, as are many state wildlife agencies' budgets, to hunting tag receipts.

In sum then, differences in the classification of public lands, state and federal, as well as management differences in wildlife, multiple use, trust, and park areas seem to lead to a greater emphasis on resource extraction and recreation at the state level than at the federal level. However, the difference *between* states is a great deal more significant than the difference between the states as a whole and the federal government.

For anyone concerned about the integrity of our public lands, state land management matters deeply. Unlike federal land, which is highly concentrated in certain states and regions, state land is obviously distributed in every region and corner of the country. State land also tends to be much closer to major population centers. So despite the 3:1 ratio of federal to state land in this country, it is the latter that the average citizen is much more likely to encounter, a fact borne out by comparing visitation statistics.[103] Whether it enlightens and inspires them, funds their schools, provides a place to golf, or protects the last remnants of biodiversity, the state lands and their management are a critical environmental issue.

102. In fact, Fischman argues that the National Wildlife Refuge System Improvement Act of 1997 (Pub. L. No. 105-57 amending 16 U.S.C. § 668dd-ee) created "the most ecological standard in all U.S. Public Land law." Fischman, *supra* note 32, at 17.

103. *See supra* notes 4, 81.

APPENDIX A
SOURCES FOR TABLE 1 DATA

1. ALABAMA: AIX REPORT, *supra* note 6; ALA. FORESTRY COMM'N, ANNUAL REPORT 2005–2006, at 25 (2006); Ala. Dep't of Conservation & Nat. Resources (DCNR), Uplands, http://www.outdooralabama.com/public-lands/stateLands/landsTrust/Uplands.cfm (last visited Oct. 16, 2007); Telephone Interview with Greg Lein, Ala. DCNR Div. of Pub. Lands (July 3, 2007); Telephone Interview with Dave Hayden, Div. of Wildlife & Freshwater Fisheries (June 5, 2007).

2. ALASKA: Alaska Dep't of Nat. Resources, Div. of Parks & Outdoor Recreation, Financial Overview, www.dnr.state.ak.us/parks/asp/budget ovrvew.htm (last visited Oct. 5, 2007); Alaska Dep't of Nat. Resources, Div. of Forestry, Alaska's State Forests, http://www.dnr.state.ak.us/forestry/stateforests.htm (last visited Feb. 6, 2007); e-mail from Janet Hall Schempf, Alaska Dep't of Fish & Game (June 8, 2006); Peterson, *supra* note 27; ALASKA DEP'T OF NAT. RESOURCES, DIV. OF MINING, LAND & WATER, FACT SHEET: LAND OWNERSHIP IN ALASKA 1 (2000), *available at* http://www.dnr.state.ak.us/mlw/factsht/land_own.pdf.

3. ARIZONA: ARIZONA STATE PARKS BROCHURE 8 (n.d.), *available at* www.azparks.gov/images/agencybrochweb.pdf (last visited Oct. 17, 2007); ARIZ. STATE PARKS DEP'T, ARIZONA 2008 STATEWIDE COMPREHENSIVE OUTDOOR RECREATION PLAN DRAFT 43 (2007), *available at* http://www.pr.state.az.us/partnerships/planning/SCORP08_PrelimDraft.pdf; e-mail Interview with Jorge Canaca, Land Resources Program Manager, Ariz. Game & Fish Dep't (Apr. 17, 2007); Ariz. State Land Dep't, Historical Overview, http://www.land.state.az.us/history.htm (last visited Oct. 17, 2007).

4. ARKANSAS: Telephone Interview with Arkansas State Parks Information Officer (Dec. 12, 2006); Ark. Game & Fish Comm'n, Data, Facts, and Maps (2007), http://www.agfc.com/data-facts-maps/default.aspx (last visited Oct. 17, 2007); ARK. NAT. HERITAGE COMM'N, 2006 ANNUAL REPORT 1–12 (2006), *available at* http://www.naturalheritage.com/resources/report/pdfs/2006%20 Complete%20ANHC%20Annual%20Report.pdf.

5. CALIFORNIA: AIX REPORT, *supra* note 6, CAL. DEP'T OF FORESTRY & FIRE PROT., DEMONSTRATION STATE FORESTS (2006), *available at* http://www. fire.ca.gov/about_content/downloads/StateForests2006.pdf; CAL. DEP'T OF FISH & GAME, LANDS INVENTORY FACT SHEET (2007), http://www.dfg.ca. gov/lands/factsheet.html; Dawson & Thorndike, *supra* note 27; CAL. STATE LANDS COMM'N, LAND MANAGEMENT DIVISION BROCHURE 2 (n.d.), *available at* http://www.slc.ca.gov/Division_Pages/LMD/Documents/lmd_ brochure.pdf.

6. COLORADO: AIX REPORT, *supra* note 6; Colo. Dep't of Nat. Resources, Div. of Wildlife, State Wildlife Areas (n.d.), http://wildlife.state. co.us/LandWater/StateWildlifeAreas/ (last visited Oct. 17, 2007); Colo. Forest Serv., Colorado State Forest (2006), http://csfs.colostate.edu/stateforest. htm (last visited Oct. 17, 2007); Colo. State Land Bd., About Us (2006), http://www.trustlands.state.co.us/Surface/AboutUsr.asp (last visited Oct. 17, 2007); COLO. STATE LAND BD., THE STEWARDSHIP TRUST: A BRIEF HISTORY (n.d.), *available at* http://www.trustlandsstate.co.us/Documents/Stewardship/History.pdf; Colo. State Parks, Colorado Natural Areas Program Statistics (2007), http://parks.state.co.us/NaturalResources/CNAP/NaturalAreasInfo/Statistics/.

7. CONNECTICUT: AIX REPORT, *supra* note 6; CONN. DEP'T OF ENVTL. PROT., STATEWIDE COMPREHENSIVE OUTDOOR RECREATION PLAN 3.16 (2006), *available at* http://www.ct.gov/dep/lib/dep/outdoor_recreation/scorp/SCORP_Chapter3.pdf.

8. DELAWARE: AIX REPORT, *supra* note 6; Del. Dep't of Agric., Forest Service: State Forests (2007), http://dda.delaware.gov/forestry/forest. shtml (last visited Oct. 17, 2007); Del. Advisory Council on Fish & Game, Minutes of Meeting 3 (Feb. 23 1999), *available at* http://www.dnrec.state. de.us/fw/advisory/acfeb99.pdf; News Release, Del. Dep't of Nat. Resources & Env't Control (DNREC), Div. of Parks & Recreation, Delaware Natural Areas Program Celebrates 25th Anniversary – 2003 Designated Year of Natural Areas (Feb. 10, 2003), *available at* http://www.dnrec.delaware. gov/news/newsStory.asp?offset=1625&PRID=777; News Release, DNREC, New State Nature Preserve Protects Old Growth Forest and Maidstone Branch (Apr. 24, 2004), *available at* http://www.dnrec.delaware.gov/news/newsStory.asp?offset=1200&PRID=1241; News Release, DNREC, Delaware Seashore Islands to Be Dedicated as Nature Preserves (June 9, 2004), *available at* http://www.dnrec.delaware.gov/news/newsStory.asp?offset= 1150&PRID= 1302.

9. FLORIDA: Fla. Dep't of Envtl. Prot., Inventory Query Report, http://appprod.dep. state.fl.us/WWW_ORP/Total/Total_Q.asp (last visited Oct. 17, 2007); Peterson, *supra* note 27, at 194.

10. GEORGIA: AIX REPORT, *supra* note 6, GA. DEP'T OF NAT. RESOURCES, PARKS (DNR), RECREATION & HISTORIC SITES DIV., STATEWIDE COMPREHENSIVE OUTDOOR RECREATION PLAN 3.17 (2003), *available at* http://gastateparks.org/content/georgia/pdf/scorp/outdoorrecreation.pdf; Email Interview with Vicki Chastain, Ga. DNR Real Estate Off. (Feb. 15, 2007 & Apr. 26, 2007).

11. HAWAII: AIX REPORT, *supra* note 6; Stankey, *supra* note 27; Haw. Land Div., About the Land Division, http://www.state.hi.us/dlnr/land/ (last visited Oct. 19, 2007); e-mail Interview with Scott Fretz, Wildlife Program Manager, Haw. Dep't Land & Nat. Resources Div. Forestry & Wildlife (Feb. 14, 2007); Off. of Hawaiian Affairs, Statewide Public Lands Summary and Maps (2007), http://www.oha.org/index.php?option=com_content&task=view&id=46& Itemid=129 (last visited Oct. 19, 2007).

12. IDAHO: AIX REPORT, *supra* note 2; e-mail Interview with Bob Martin, Idaho Fish & Game Dep't (June 14, 2007); Idaho Dep't of Lands, Overview of the Idaho Department of Lands (2007), http://www.idl.idaho. gov/overview.htm (last visited Oct. 19, 2007).

13. ILLINOIS: ILL. DEP'T OF NAT. RESOURCES, LAND AND WATER REPORT (2005).

14. INDIANA: AIX REPORT, *supra* note 6; Ind. Dep't of Nat. Resources (DNR), State Parks and Reservoirs (2006), http://www.in.gov/dnr/parklake/properties/parkres.html (last visited Oct. 19, 2007); Ind. DNR, History and Culture (2005), http://www.in.gov/dnr/parklake/about_history.html (last visited Oct. 19, 2007); Ind. DNR, Nature Preserves Div., Nature Preserves of Indiana, http://www.in.gov/dnr/naturepr/preserve .html (last visited Oct. 19, 2007); Ind. DNR, Div. of Fish & Wildlife, About the Indiana Fish and Wildlife Division, http://www.in.gov/dnr/fishwild/about/18areas.htm (last visited Oct. 19, 2007); Ind. DNR, Div. of Forestry, State Forests (2007), http://www.in.gov/dnr/forestry

15. IOWA: AIX REPORT, *supra* note 6; IOWA DEP'T OF NAT. RESOURCES, BIENNIAL REPORT 2003–2004, at 25 (2004), *available at* http://www.iowadnr. com/files/annual0304.pdf; Iowa DNR, Iowa's Wildlife Management Areas (2006), http://www.iowadnr.com/wildlife/wmamaps/pubhunt.html (last visited Oct. 19, 2007); Iowa DNR, State Preserves: History of the Program, http://www.iowadnr.com/preserves/general.html (last visited Oct. 19, 2007).

16. KANSAS: AIX REPORT, *supra* note 6; KAN. DEP'T OF WILDLIFE & PARKS, STATE COMPREHENSIVE OUTDOOR RECREATION PLAN 81 (2003), *available at* http://www.oznet.ksu.edu/Stevenson/SCORP.pdf.

17. KENTUCKY: Ky. State Nature Preserves Comm'n, State Nature Preserves and State Natural Areas (2007), http://www.naturepreserves. ky.gov/stewardship/preserves.htm (last visited Oct. 19, 2007); e-mail Interview with Chris Gilligan, Comms. Director, Ky. Commerce

Cabinet (June 21, 2007); KY. DEP'T OF FISH & WILDLIFE RESOURCES, KENTUCKY WILDLIFE ACTION PLAN, app. 1.4, *available at* http://fw.ky.gov/kfwis/stwg/Appendix/1.4%20public%20land%20ownership.pdf.

18. LOUISIANA: LA. DEP'T OF CULTURE, TOURISM, & RECREATION, STATEWIDE COMPREHENSIVE OUTDOOR RECREATION PLAN 3.34–3.35 (2003), *available at* http://www.crt.state.la.us/parks/LWCF/iSCORP-b.pdf.

19. MAINE: Baxter State Park Authority, About Us: Director's Page, http://www.baxterstateparkauthority.com/aboutus/index.html (last visited Oct. 19, 2007); AIX REPORT, *supra* note 6; ME. DEP'T OF CONSERVATION, STATEWIDE COMPREHENSIVE OUTDOOR RECREATION PLAN 2.3–2.5 (2003), *available at* http://www.maine.gov/doc/parks/programs/SCORP/PDFs/2.pdf; Baxter State Park Authority, Scientific Management Areas (n.d.), http://baxterstatepark authority.com/sciforest/index.html (last visited Oct. 19, 2007).

20. MARYLAND: Md. Dep't of Nat. Resources, Land Unit Types (2006), http://www.dnr.state.md.us/resourceplanning/lut.html (last visited Oct. 19, 2007).

21. MASSACHUSETTS: Dep't of Conservation & Recreation, The Watersheds, http://www.mass.gov/dcr/waterSupply/watershed/shed. htm (last visited Oct. 19, 2007); Mass. Dep't of Fish & Game, Wildlife Management Area Maps (2007), http://www.mass.gov/dfwele/dfw/dfw_wma.htm (last visited Oct. 19, 2007); Mass. Executive Off. of Envtl. Affs. (EOEA), Sustainable Forest Management (2007), http://www.mass.gov/envir/forest/default.htm (last visited Oct. 19, 2007); MASS. EOEA, SUSTAINABLE FOREST MANAGEMENT: WHAT ARE FOREST RESERVES? (n.d.), *available at* http://www.mass.gov/envir/forest/pdf/whatare_forest reserves.pdf; AIX REPORT, *supra* note 6, at 8.

22. MICHIGAN: Mich. Dep't of Nat. Resources, State Park Stewardship Program (2007), http://www.michigan.gov/dnr/0,1607,7-153-30301_31154_32311-34686--,00.html (last visited Oct. 19, 2007); MICH. DNR, FOREST, MINERAL & FIRE MGMT. DIV., SOCIAL AND ECONOMIC ASSESSMENT FOR MICHIGAN'S STATE FORESTS 4 (2006), *available at* http://www.michigan.gov/documents/dnr/MiDNR_SEA_Report_174407_7.pdf; Mich. DNR, DNR at a Glance (2007), http://www.michigan.gov/dnr/0,1607,7-153-10366-121638--,00.html (last visited Oct. 19, 2007); Mich. DNR, Strategic Plan (2007), http://www.michigan.gov/dnr/0,1607,7-153-30301_31154_31260-33689--,00.html (last visited Oct. 19, 2007); Stankey, *supra* note 27, at 25.

23. MINNESOTA: Minn. Dep't of Nat. Resources, Welcome to Minnesota's State Parks (2007); http://www.dnr.state.mn.us/state_parks/index.html (last visited Oct. 19, 2007); Minn. DNR, State Forest Management (2007), http://www.dnr.state.mn.us/state_forests/management.html (last visited Oct. 19, 2007); MINN. DNR, SEC. OF WILDLIFE, ANNUAL REPORT 4 (2003), *available at* http://files.dnr.state.mn.us/wildlife/annualreport2003. pdf; Peterson, *supra* note 27; Gregory Breining, *The Rare Ones*, MINN. CONSERVATION VOLUNTEER, July–Aug. 2004, *available at* http://www.dnr. state.mn.us/volunteer/julaug04/rareones.html; MINN. DNR DIV. OF LAND & MINERALS, PUBLIC LAND AND MINERAL OWNERSHIP IN MINNESOTA: A GUIDE FOR TEACHERS 27 (2000), *available at* http://files.dnr.state.mn.us/lands_minerals/PLteachersguide.pdf; Minn. DNR Land & Minerals Div., State Owned Lands in Minnesota by Land Type (2001), http://files.dnr. state.mn.us/lands_minerals/statelandownership0101.pdf.

24. MISSISSIPPI: AIX REPORT, *supra* note 6, at 9; Telephone Interview with representative of Mississippi State Land Office (May 23, 2007); MISS. DEP'T OF WILDLIFE, FISHERIES & PARKS, STATEWIDE COMPREHENSIVE OUTDOOR RECREATION PLAN 26–27 (2003), *available at* www.mdwfp.com/level2/lwcf/2003SCORP.pdf; Crosby Arboretum, Arboretum Natural Areas (2006), http://www.crosbyarboretum.msstate.edu/pages/natural_areas.php (last visited Oct. 19, 2007).

25. MISSOURI: MO. DEP'T OF NAT. RESOURCES DIV. OF STATE PARKS, 2006 YEAR-END SUMMARY 14 (2006), *available at* http://www.mostateparks.com/resourcecenter/2006annlrpt.pdf; Mo. Dep't of Conservation, Conservation Atlas (2007), http://mdc4.mdc.mo.gov/applications/moatlas/AreaList.aspx?txtUserID=guest&txtAreaNm=s (last visited Oct. 19, 2007); Mike Leahy, *Recent Natural Areas Designations by the Missouri Natural Areas Committee – Spring 2007*, MO. NAT. AREAS NEWSL., Spring 2007, at 16, *available at* http://mdc4.mdc.mo.gov/Documents/14697.pdf; Dawson & Thorndike, *supra* note 27; MO. DNR, STATEWIDE COMPREHENSIVE OUTDOOR RECREATION PLAN 140 (2003), *available at* http://www.mostateparks.com/scorp02_07.pdf.

26. MONTANA: Telephone Interview with representative of Mont. Dep't of Fish, Wildlife & Parks, Land Sec. (Feb. 20, 2007); Mont. Dep't of Nat. Resources & Conservation, Trust Land Mgmt. Div., Trust Land Acreage (2006), http://www.dnrc.mt.gov/trust/about_us/acreage.asp (last visited Oct. 19, 2007).

27. NEBRASKA: AIX REPORT, *supra* note 6, at 9; e-mail Interview with Jim Carney, Regional Parks Manager, Neb. Game & Parks Comm'n (NGPC) (May 14, 2007); Email Interview with Pat Molini, Wildlife Dist. V Manager, Wildlife Div., NGPC (May 9, 2007); BD. OF EDUC. LANDS & FUNDS, SIXTY-FIFTH BIENNIAL REPORT 4 (2006), *available at* http://www.belf.state.ne.us/pdf/belf2004-06.pdf.

28. NEVADA: NEV. DEP'T OF CONSERVATION & NAT. RESOURCES, DIV. OF STATE PARKS, NEVADA'S 2003 STATEWIDE COMPREHENSIVE OUTDOOR RECREATION PLAN 2.71 (2004), *available at* http://www.parks.nv.gov/Scorp/Chapter%202-Outdoor%20Recreation%20Resources%20and%20Providers.pdf; Telephone Interview with representative of Nev. Dep't of Wildlife, Bureau of Wildlife Habitat (May 23, 2007); Nev. Div. of State Lands, State Land Office, http://lands.nv.gov/program/landoffice. htm (last visited Oct. 22, 2007).

29. NEW HAMPSHIRE: N.H. OFF. OF STATE PLANNING, NEW HAMPSHIRE OUTDOORS 2003–2007: STATEWIDE COMPREHENSIVE OUTDOOR RECREATION PLAN 2.11, 2.13, 2.20–21 (2003); AIX REPORT, *supra* note 6.

30. NEW JERSEY: N.J. Dep't of Envtl. Prot. (DEP), Div. of Fish & Wildlife, Wildlife Management Areas (2007), http://www.state.nj.us/dep/fgw/wmaland.htm (last visited Oct. 22, 2007); New Jersey Natural Lands Trust (2007), http://nj.gov/dep/njnlt/ (last visited Oct. 22, 2007); N.J. DEP, Div. of Parks & Forestry, New Jersey State Parks, Forests, Recreation Areas and Marinas (2004), http://www.state.nj.us/dep/parks andforests/parks/parkindex.html (last visited Oct. 22, 2007); N.J. DEP, 2008–2012 NEW JERSEY STATEWIDE COMPREHENSIVE OUTDOOR RECREATION PLAN DRAFT 24, 26, 46 (2007), *available at* http://www.nj.gov/dep/greenacres/pdf/scorp_draft_2008.pdf.

31. NEW MEXICO: N.M. ENERGY, MINERALS, & NAT. RESOURCES DEP'T, 2005 ACCOMPLISHMENTS REPORTS 12 (2005), *available at* http://www.emnrd.state.nm.us/main/documents/EMNRD_ACCOMPLISHMENTS. pdf; Telephone Interview with Mike Gustin, N.M. Dep't of Fish & Game (July 3, 2007); Sonoran Inst., State Trust Lands: Fiduciary Duty in the Changing West (2004), http://www.trustland.org/state/state-nm.cfm (last visited Oct. 22, 2007).

32. NEW YORK: N.Y. Dep't of Envtl. Conservation, Forest Preserve Land Classifications (2007), http://www.dec.ny.gov/lands/5267.html (last visited Oct. 22, 2007); N.Y. OFF. OF PARKS, RECREATION & HISTORIC PRESERVATION, STATEWIDE COMPREHENSIVE OUTDOOR RECREATION PLAN 2003 4.3, 4.8 (2002), *available at* http://nysparks.state.ny.us/agency/scorp/archive/SCORP03-06.pdf; Email Interview with Charles Vandrei, Agency Historic Preservation Officer, N.Y. Dep't of Envtl. Conservation (Mar. 15, 2007); Telephone Interview with Tom Wolfe, N.Y. Dep't of Envtl. Conservation (June 20, 2007); AIX REPORT, *supra* note 6, at 8; Dawson & Thorndike, *supra* note 27, at 23.

33. NORTH CAROLINA: N.C. Wildlife Fed'n, North Carolina Wildlife Federation Games Lands Project, http://www.ncwildlifefederation.org/home/gamelands.htm (last visited Oct. 23, 2007); N.C. DIV. OF PARKS & RECREATION, STATEWIDE COMPREHENSIVE OUTDOOR RECREATION PLAN 2003, at III-1, III-11 (2002), *available at* http://ils.unc.edu/parkproject/resource/scorp/scorp_ch3.pdf; Email Interview with Kim Douglass, Conservation Planner, Natural Heritage Program (Mar. 8, 2007).

34. NORTH DAKOTA: N.D. Forest Serv., North Dakota State Forests, http://www.ndsu.nodak.edu/ndsu/lbakken/forest/stateforest/state_forest_home.htm (last visited Oct. 24, 2007); *North Dakota Game and Fish Department Wildlife Management Areas*, N.D. OUTDOORS, Sept.-Oct. 2002, at 25–29, *available at* http://www.gf.nd.gov/multimedia/ndoutdoors/issues/2002/sep-oct/docs/wma-areas.pdf; AIX REPORT, *supra* note 6; N.D. Parks & Recreation Dep't, North Dakota State Nature Preserves Program (2003), http://www.ndparks.com/Nature/Preserves.htm (last visited Oct. 24, 2007); N.D. State Land Dep't, Public Use Facts, http://www.land.state.nd. us/data/Surface/Hunting/access1.htm (last visited Oct. 24, 2007); Craig Bihrle, *New WMAs Are Product of Beneficial Land Trade* N.D. OUTDOORS, Nov. 2006, at 5–9, *available at* http://www.gf.nd.gov/multimedia/ndoutdoors/issues/2006/nov/docs/new-wmas.pdf.

35. OHIO: Ohio Dep't of Nat. Resources (DNR), State Forests and Recreation, http://www.dnr.state.oh.us/Home/forests/default/tabid/5622/Default.aspx (last visited Oct. 24, 2007); Ohio, DNR, Wildlife Division Fact Sheet (2004), http://www.dnr.state.oh.us/factsheets/wildlife.htm (last visited Oct. 24, 2007)); OHIO DNR, OUTDOOR RECREATION IN OHIO: A PLAN FOR THE FUTURE 3.20 (2003), *available at* http://www.dnr.ohio.gov/realm/scorp/SCORP.pdf; AIX REPORT, *supra* note 6.

36. OKLAHOMA: OKLA. TOURISM & RECREATION DEP'T, 2001 STATEWIDE COMPREHENSIVE OUTDOOR RECREATION PLAN: THE PUBLIC RECREATION ESTATE 44 (2002), *available at* http://www.otrd.state.ok.us/rd/index%20frame.htm; Telephone Interview with Dakota Cagle, Okla. Dep't of Wildlife Conservation (May 23, 2007); Okla. Comm'rs of the Land Off., Real Estate Management Division, http://www.ok.gov/launch.php?url=http://www.clo.state.ok.us/ (last visited Oct. 24, 2007).

37. OREGON: Or. Dep't of Forestry, General Information: An Overview of Oregon's State Forest Lands, http://egov.oregon.gov/ODF/STATE_FORESTS/state_forests.shtml (last visited Oct. 24, 2007); Or. Dep't of State Lands, About Us, http://www.oregon.gov/DSL/about_us.shtml (last visited Oct. 24, 2007); Telephone Interview with representative of Or. Dep't of Fish & Wildlife Realty Sec. (May 16, 2007); OR. NAT. HERITAGE ADVISORY COUNCIL, 2003 OREGON NATURAL HERITAGE PLAN 155–60 (2003), *available at* http://oregonstate.edu/ornhic/ornh_plan.pdf; AIX REPORT, *supra* note 6.

38. PENNSYLVANIA: Pa. Game Comm'n, About the Pennsylvania Game Commission (2007), http://www.pgc.state.pa.us/pgc/cwp/view. asp?a=481&q=151287&pgcNav=| (last visited Oct. 24, 2007); AIX REPORT, *supra* note 6; Pa. Dep't of Conservation & Nat. Resources (DCNR), Bureau of Forestry, *Ecological Considerations: Natural Areas and Wild Areas*, *in* STATE FOREST RESOURCE MANAGEMENT PLAN (2003), *available at* http://www.dcnr. state.pa.us/forestry/sfrmp/eco.htm#natural; Pa. DCNR, Natural Areas, http://www.dcnr.state.pa.us/stateparks/natural/naturalareas.aspx (last visited Oct. 24, 2007); PA. DCNR, STATE FOREST RESOURCE MANAGEMENT PLAN 2007 UPDATE 5–6, 10 (2007), *available at* http://www.dcnr.state.pa.us/forestry/sfrmp/sfrmp_update_2007.pdf.

39. RHODE ISLAND: R.I. DEP'T OF ENVTL. MGMT., OCEAN STATE OUTDOORS: RHODE ISLAND'S COMPREHENSIVE OUTDOOR RECREATION PLAN 2.13 (2003), *available at* http://www.planning.state.ri.us/landuse/152/152-2.pdf; AIX REPORT, *supra* note 6; R.I. Dep't of Envtl. Mgmt.,

Division of Fish & Wildlife (2006), http://www.dem.ri.gov/programs/bnatres/fishwild/index.htm (last visited Oct. 24, 2007).

40. SOUTH CAROLINA: AIX REPORT, *supra* note 6; S.C. DEP'T OF PARKS, RECREATION & TOURISM, SOUTH CAROLINA STATE COMPREHENSIVE OUTDOOR RECREATION PLAN II.26, II.32–34 (2002), *available at* http://www.discoversouthcarolina.com/files/RPE/scorp/SCORP%202002%20Draft%20-%20II%20-%20Rec%20Assess%20and%20IIA%20-%20Rec%20Resources%20all.pdf; S.C. State Parks, Jones Gap State Park/Mountain Bridge Wilderness Area (2007), http://www.southcarolinaparks.com/park-finder/state-park/962.aspx (last visited Oct. 24, 2007).

41. SOUTH DAKOTA: S.D. DEP'T OF GAME, FISH & PARKS, SOUTH DAKOTA STATE PARK FACTS (2007), http://www.sdgfp.info/Publications/Parks/FactsSheet.pdf; S.D. DEP'T OF GAME, FISH & PARKS, SOUTH DAKOTA STATEWIDE COMPREHENSIVE OUTDOOR RECREATION PLAN 11 (2002), *available at* http://www.sdgfp.info/Publications/Parks/SCORP_MASTER.pdf; S.D. DEP'T OF GAME, FISH AND PARKS, SOUTH DAKOTA PUBLIC HUNTING AREAS 32 (2003), *available at* http://www.sdgfp.info/Publications/Public Hunting Areas.PDF; S.D. DIV. OF PARKS & RECREATION, PARK TIMES: THE GUIDE TO SOUTH DAKOTA'S STATE PARKS AND RECREATION AREAS 17 (2007), *available at* http://www.sdgfp.info/Publications/Parks/ParkTimes.pdf; S.D. Off. of School & Public Lands, Public Hunting (2007), http://www.sdpubliclands.com/publichunting/index.shtm (last visited Oct. 24, 2007).

42. TENNESSEE: AIX REPORT, *supra* note 6; Tenn. Dep't of Agric., Tennessee State Forests, http://tennessee.gov/agriculture/forestry/stateforests/ (last visited Oct. 29, 2007); Stuart Carroll, *Tennessee State Parks Celebrates Its 70th Anniversary!*, TENN. CONSERVATIONIST, Jan.–Feb. 2007, at 3, *available at* http://tennessee.gov/environment/tn_consv/archive/parks70th.pdf; Phil Bredesen, State of Tennessee Proclamation by the Governor (Mar. 2007), *available at* http://state.tn.us/environment/na/pdf/07 proclamation.pdf; Dawson & Thorndike, *supra* note 27, at 24.

43. TEXAS: Email Interview with Douglas Howard, Info. Specialist, Tex. Gen. Land Off. (Mar. 26, 2007); TEX. CTR. FOR POL'Y STUDIES, TEXAS ENVIRONMENTAL ALMANAC 3.1 (1995), *available at* http://www.texascenter.org/almanac/Land/LANDCH3P1.HTML#PUBLIC; Tex. Forest Serv., Texas State Forests (n.d.), http://txforestservice.tamu.edu/main/article.aspx?id=1789 (last visited Oct. 29, 2007); AIX REPORT, *supra* note 6.

44. UTAH: AIX REPORT, *supra* note 6; UTAH DEP'T OF NAT. RESOURCES, DIV. OF WILDLIFE RESOURCES PUB. 00-06, INTERNAL/EXTERNAL OPERATIONAL ENVIRONMENT ASSESSMENT REPORT 86 (2000), *available at* http://www. wildlife.utah.gov/pdf/stratpla.pdf.

45. VERMONT: Vt. Dep't of Forests, Parks & Recreation, Lands Admin. Div., Summary of ANR Lands (2001), http://www.vtfpr.org/lands/landssumm.cfm (last visited Oct. 29, 2007); Vt. Dep't of Forests, Parks & Recreation, Vermont Natural Areas (2001), http://www.vtfpr.org/lands/vtna.cfm (last visited Oct. 29, 2007); Vt. Dep't of Forests, Parks & Recreation, Vt. Fish & Wildlife Dep't, About Us: History (2004), http://www.anr.state.vt.us/fw/fwhome/about_history.cfm (last visited Oct. 29, 2007); AIX REPORT, *supra* note 6.

46. VIRGINIA: AIX REPORT, *supra* note 6; Telephone Interview with Rick Bush, Va. Dep't of Game & Inland Fisheries (June 5, 2007); Va. Dep't of Conservation & Recreation, Natural Heritage: Virginia Natural Area Preserves (2006), http://www.dcr.virginia.gov/natural_heritage/natural_ area_preserves/index.shtml (last visited Oct. 29, 2007); VA. DEP'T OF CONSERVATION & RECREATION, VIRGINIA LAND CONSERVATION DIRECTORY 28 (2006), *available at* http://www.dcr.virginia.gov/land_conservation/documents/landcondir.pdf.

47. WASHINGTON: Email Interview with Linda Burnett, Pub. Affs. Officer, Wash. State Parks Comm'n (June 21, 2007); Wash. State Dep't of Nat. Resources, Washington State Natural

Areas Program (2006), http://www.dnr.wa.gov/nap/index.html#Natural%20Area%20 Preserves (last visited Oct. 30, 2007); INTERAGENCY COMM. FOR OUTDOOR RECREATION, THE 1999 PUBLIC AND TRIBAL LANDS INVENTORY: INVENTORY DATA REPORT B-26 (2001), *available at* http://www.rco.wa.gov/documents/rcfb/PLIP/InventoryDataReport.pdf; Wash. State Dep't of Nat. Resources, State Lands Managed by the Department of Natural Resources, http://www.dnr.wa.gov/base/statelands.html (last visited Oct. 30, 2007).

48. WEST VIRGINIA: AIX REPORT, *supra* note 6; W. Va. State Parks, Facilities Grid (2007), http://www.wvstateparks.com/recreation/WVSP_ facilities_grid.PDF; W. Va. Dep't of Nat. Resources, West Virginia Wildlife Management Areas (2003), http://www.wvdnr.gov/Hunting/WMA Areas.shtm (last visited Oct. 30, 2007).

49. WISCONSIN: Wis. Dep't of Nat. Resources, Park, Wildlife Area, State Forest...What's the Difference? (2006), http://dnr.wi.gov/org/land/wildlife/reclands/difference.htm (last visited Oct. 30, 2007); *State Eyes Major Land Purchase*, CAPITAL TIMES, June 27, 2007, at A2; WIS. DEP'T OF NAT. RESOURCES PUB. FR-360, WISCONSIN STATE FORESTS: 2005 ANNUAL REPORT 3 (2006), *available at* http://www.dnr.state.wi.us/forestry/publications/pdf/FR-360-2006.pdf; WIS. DEP'T OF NAT. RESOURCES, THE 2005-2010 WISCONSIN STATEWIDE COMPREHENSIVE OUTDOOR RECREATION PLAN 3.4 (2005), *available at* http://dnr.wi.gov/planning/scorp/plan/WIS_2005-10_SCORP_ CHAPTER_3.pdf; Wis. Bd. of Comm'rs of Pub. Lands, Trust Lands Management: Current, http://bcpl.state.wi.us/asx/Index.asp?target= TLMANAGE (last visited Oct. 30, 2007); Telephone Interview with Tom Martin, Wis. Dep't of Nat. Resources (June 14, 2007); Wis. Dep't of Nat. Resources, *Lake Laura Hardwoods Designated as 500th State Natural Area in Wisconsin*, DNR NEWS, Aug. 21, 2007, *available at* http://www.dnr.state.wi.us/org/caer/ce/news/DNRNews_Lookup.asp?id=81; Wis. Dep't of Nat. Resources, Find a Wisconsin State Park or Forest (2007), http://dnr.wi.gov/org/land/parks/specific/findapark.html (last visited Oct. 30, 2007).

50. WYOMING: WYO. DIV. OF STATE PARKS & HISTORIC SITES, WYOMING STATEWIDE COMPREHENSIVE OUTDOOR RECREATION PLAN 2.18 (2003), *available at* http://wyoparks.state.wy.us/PlanningDocs/scorp/ch2 .pdf; Telephone Interview with Kerry Olson, Wyo. Game & Fish Dep't (June 5, 2007); Off. of State Land & Investments, Welcome, http://slf-web.state.wy.us/ (last visited Oct. 30, 2007).

51. FEDERAL LANDS: CONG. RES. SERV., CRS REPORT TO CONGRESS: FEDERAL LAND MANAGEMENT AGENCIES: BACKGROUND ON LAND AND RESOURCES MANAGEMENT 3 (2004); Wilderness Inst., Wilderness Fast Facts (2007), http://www.wilderness.net/index.cfm?fuse=NWPS& sec=fastfacts (last visited Oct. 30, 2007).

APPENDIX B
METHODOLOGY FOR SCALES, TABLES 5 THROUGH 7

TABLE 5:

The final score is on a 0–100 scale with 100 being most oriented toward preservation of biodiversity and/or wild landscapes. The scale is comprised of five variables:

1) Acreage of state natural areas or similar designation as a percentage of total public land holdings (regardless of whether those acres are state-owned). Percentages were then converted to a 0–100 scale with 100 being the highest individual measure. *Source*: Table 1 (see Appendix A for Table 1 sources).

2) Whether designated natural areas exist within a comprehensive state program as defined by Thom et.al., *Status of State Natural Areas* (*supra* note 30), something less than a comprehensive program by the same criteria in Thom et.al., or just as an administrative land use category. Comprehensive programs were given a score of 100; less-than-comprehensive programs as well as natural areas as management unit categories were given a score of 50.

3) Percentage of total public land holdings that are designated as *wilderness*, or *wild areas*. Percentages were then converted to a 0–100 scale with 100 being the highest individual measure. *Source*: Table 1 (see Appendix A for Table 1 sources).

4) Whether wilderness areas exist within an official legislatively or administratively created state wilderness system or just as a singular land use category for a particular unit according to Dawson and Thorndike (*supra* note 27) and Stankey (*supra* note 27). States with wilderness systems are given a score of 100, while states with individual wilderness management units outside of the context of a system are given a score of 50.

5) Percentage of total public land holdings that are designated as *wildlife management areas* or some similar designation. Percentages are on a 0–100 scale with 100 as the highest individual measure. *Source*: Table 1 (see Appendix A for Table 1 sources).

Note: The individual scores for variables 1 and 3 are weighted at a 3:1 ratio over the other three variables.

TABLE 6:

The score is on a 0–100 scale with 100 being most oriented toward resource extraction. This score is calculated by taking the percentage of total public land holdings that are trust lands as well as state forests, flowages, dam lands, management areas, reservoirs, watershed lands, or any other similar multiple use designated lands and adding to that the percentage of total public land holdings that are wildlife management areas or similar wildlife/fisheries land weighted at one-third the value of the trust/multiple use/forest land.

TABLE 7:

The final score is on a 0–100 scale with 100 being most oriented toward recreation. The scale is comprised of three variables:

1) Recreational Facilities per thousand acres of parkland (as counted in the state park column in Table 1). This variable is calculated by counting the number of improved campsites per hundred acres of parkland plus the absolute number of lodges, restaurants, golf courses, marinas, swimming pools, and horse stables in the state park system and dividing this overall

figure by thousand acres of parkland. The figure is then put on a 0–100 scale with 100 being the highest individual score. *Sources*: Table 1 (see Appendix A for Table 1 sources); AIX 2007 Report at 11–16 (*supra* note 6).

2) Recreational Facilities by number of park areas. This variable is calculated by counting the number of improved campsites per hundred acres of parkland plus the absolute number of lodges, restaurants, golf courses, marinas, swimming pools, and horse stables in the state's park system and dividing this by the number of individual park units in the state's park system. This figure is then put on a 0–100 scale with 100 being the highest individual score. *Sources*: Table 1 (see Appendix A for Table 1 sources); AIX 2007 Report at 6–16 (*supra* note 6).

3) Percentage of total state public land acreage that is designated as state park land as defined in the first two columns in Table 1. This figure is then put on a 0–100 scale with 100 being the highest individual score. *Source*: Table 1 (see Appendix A for Table 1 sources).

Note: In calculating the final recreation score, the individual component variable scores are then weighed at a 2:2:1 ratio.