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The Comparative Analysis of State Environmental Policy

ABSTRACT

Since the enactment of the National Environmental Policy Act (NEPA) of 1969, comparative state environmental policy studies have ranged from case studies to systematic input-output analyses. At the present time, however, we still do not know a great deal about the conditions that promote or inhibit state environmental management. This is due to a number of problems that have plagued previous research including, for example, a lack of theory, a reliance upon cross-sectional (versus longitudinal) analysis, limited measures of environmental effort, and inadequate techniques of analysis. The purposes of this article are to review and critique much of this literature, to identify sources of data on states' environmental efforts, and to suggest some remedies for these problems for the next generation of research inquiry.

INTRODUCTION

This is a particularly exciting time to study environmental politics and policy in the fifty American states. Federal environmental policy in the period from 1969 (when the National Environmental Policy Act was enacted) to 1990 has had a significant impact on the states as a result of specific requirements, monetary incentives, and environmental quality standards. During the 1990s, it is reasonable to predict that much effort will be devoted to implementation by the states of federal environmental policies enacted during the 1970s and 1980s. Thus, as a first order of business, it is important to assess the extent to which the states have successfully implemented these federal policies (or not) and the determinants of this behavior in an era of "regulatory federalism."¹

Secondly, the Reagan administration's policy of "devolution and defunding" augers change in approach and priority and could undermine what progress has been achieved to date in the environmental area. Whether the states have continued the same level of support for pollution control

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1. Advisory Commission on Intergovernmental Relations, *Regulatory Federalism: Policy, Process, Impact and Reform* (1984).

after the federal government reduced its contribution is a proposition that needs further examination.² At the very least, the Reagan administration's decentralization policy suggests an increased emphasis on the role of the states in environmental management; empirical assessments of the extent to which the states have met this challenge would provide much insight into the politics and economics of the states themselves.

In addition, the states have recently enhanced their institutional capabilities to assure greater responsiveness for environmental management (as well as other areas).³ Presumably, states are no longer the "weak link" in the intergovernmental system. It would be interesting to examine the extent to which strengthened institutions at the state level have resulted in more innovative state environmental actions. Thus, for all these reasons, it is an appropriate time to examine the extent to which the states have assumed responsibilities in the environmental area, as well as the determinants of this behavior.

The purpose of this article is to review and critique much of the previous environmental politics and policy literature, as well as to provide an agenda for the future study of this area by students concerned with state environmental management. The analysis proceeds in four parts. First, we briefly review some of the extant literature on state environmental management. Second, we identify some criticisms of research in this area (as well as comparative state policy in general). Next, we provide some suggestions that we think will improve the study of comparative state environmental policy in the future. Finally, we offer some summary observations about the utility of research in this area for advancing our theoretical understanding of state politics and policy more generally.

STATE ENVIRONMENTAL MANAGEMENT: A BRIEF REVIEW OF THE LITERATURE

Previous research on state environmental policy ranges from case studies to comparative quantitative analyses. More specifically, there have been numerous attempts to assess what the states have done in terms of environmental management, as well as the determinants of that behavior.⁴

2. Lester, *New Federalism and Environmental Policy*, 16 *Publius* 149-65 (Winter 1986); Davis & Lester, *Decentralizing Federal Environmental Policy: A Research Note*, 40 *W. Pol. Q.* 555-65 (1987); Davis & Lester, *Federalism and Environmental Policy*, in *Environmental Politics and Policy: Theories and Evidence* (J. Lester ed. 1989).

3. A. Bowman & R. Kearney, *The Resurgence of the States* (1986).

4. See, e.g., E. Haskell & V. Price, *State Environmental Management: Case Studies of Nine States* (1973); Lester, *Partisanship and Environmental Policy: The Mediating Influence of State Organizational Structures*, 12 *Env't and Behavior* 101-31 (1980); Lester, et al., *Hazardous Wastes, Politics, and Public Policy: A Comparative State Analysis*, 36 *W. Pol. Q.* 257-85 (1983); C. Duerksen, *Environmental Regulation of Industrial Plant Siting* (1983); S. Ridley, *The State of the States: 1987* (1987); S. Ridley, *The State of the States: 1988* (1988); Crotty, *The New Federalism Game: Primacy Implementation of Environmental Policy*, 16 *Publius* 53-67 (1987); Crotty, *Assessing the Role of Federal Administrative Regions: An Exploratory Analysis*, 48 *Pub. Admin. Rev.* 642-48 (1988); Regens & Reams, *State Strategies for Regulating Groundwater Quality*, 69 *Soc. Sci. Q.* 53-69 (1988).

However, we still know very little about the conditions that promote or inhibit state environmental management.

Nevertheless, data on state environmental management suggest that some states are more heavily committed to environmental protection than are others. Two types of available data (that is, fiscal and non-fiscal) provide an indication of effort in this area. For example, the U.S. Department of Commerce collected data on environmental quality control

TABLE 1. State Expenditures for Environmental Quality Control.

	1970 Per Capita Expenditure (Dollars)	1980 Per Capita Expenditure (Dollars)	1970-80 % Change
Alabama	\$.46	\$ 1.73	276%
Alaska	.51	36.16	6990
Arizona	.49	4.14	745
Arkansas	.35	2.43	592
California	1.02	8.12	696
Colorado	.52	5.93	1040
Connecticut	.51	5.65	1008
Delaware	1.43	38.20	2571
Florida	.41	1.96	378
Georgia	.50	4.33	766
Hawaii	.53	9.85	1758
Idaho	.93	6.86	638
Illinois	.18	7.21	3906
Indiana	.17	4.61	2612
Iowa	.13	3.01	2215
Kansas	.36	2.03	464
Kentucky	.72	4.21	485
Louisiana	.69	2.40	248
Maine	.74	7.89	966
Maryland	.67	11.22	1575
Massachusetts	1.35	11.10	722
Michigan	.30	5.90	1867
Minnesota	.36	5.69	1481
Mississippi	.38	1.73	355
Missouri	.28	4.97	1675
Montana	.77	6.57	753
Nebraska	.23	3.70	1509
Nevada	.90	4.07	352
New Hampshire	.95	23.01	2322
New Jersey	.45	5.48	1118
New Mexico	.57	5.60	882
New York	.72	9.51	1221
North Carolina	.72	4.32	500
North Dakota	.41	3.46	744
Ohio	.28	35.28	12500
Oklahoma	.37	2.42	554
Oregon	.97	8.78	805
Pennsylvania	.41	4.94	1105
Rhode Island	.43	12.22	2742
South Carolina	.60	3.34	457
South Dakota	.39	4.01	928
Tennessee	.16	3.76	2250
Texas	.49	2.33	376
Utah	.44	2.57	484
Vermont	1.37	13.83	909
Virginia	.66	3.00	355
Washington	.98	9.24	843
West Virginia	.67	6.11	812
Wisconsin	.89	8.40	844
Wyoming	1.06	5.85	452

SOURCE: U.S. Dept. of Commerce, Bureau of the Census, Environmental Quality Control, FY 1970; FY 1980 (Numbers 61 and 103).

expenditures from FY1969-FY1980.⁵ These data show that the states of California, Delaware, Maryland, Massachusetts, New Hampshire, Ohio, Rhode Island, and Vermont spent the most in terms of per capita expenditures, while the states of Mississippi, Oklahoma, South Carolina, Texas, Utah, and Virginia spent the least. Unfortunately, due to budgetary cut-backs in 1981, continuous data do not exist for the period FY1981-present. Without such data, it will be difficult to assess the impacts of President Reagan's New Federalism on state environmental spending. Recent efforts by The Council of State Governments have provided new data on state environmental protection expenditures which will help to fill in the vacuum created by the elimination of the Census Bureau data. Some of these data are presented in Table 2.⁶ The Council hopes to continue this data collection effort and eventually plans to fill in the missing data for the years FY1981-1985.

A third source of data on states' commitment to the environment is provided by The Conservation Foundation and is both fiscal and non-fiscal in nature.⁷ A study conducted in 1983 suggests that states like Minnesota, California, New Jersey, Massachusetts, and Oregon are the most heavily committed to the environment, while states like Oklahoma, New Mexico, Idaho, Mississippi, Missouri, and Alabama are the least committed (see Table 3). These data were based on 23 indicators of environmental and land-use management, which ranged from voting records of a state's congressional delegation on selected national environmental issues to the existence of state laws that address specific environmental problems. The overall focus was on regulatory programs and expenditures for environmental quality. Thus, the higher the score, the greater the commitment to environmental protection.

Finally, a fourth source of data on what the states have done with regard to protection of their environment is provided by the Fund for Renewable Energy and the Environment (FREE).⁸ This is an annual study that was first produced in 1987. It is non-fiscal in nature and reports an assessment of where the states stand on key environmental topics such as air pollution reduction, soil conservation, solid waste and recycling, hazardous waste management, groundwater protection, and renewable energy and conservation (see Table 4). Once again, the higher the score, the greater the commitment to environmental protection. According to these data, the states of Massachusetts, Wisconsin, California, and New Jersey are the

5. See, e.g., U.S. Department of Commerce, Bureau of the Census, Environmental Quality Control, FY1980 (1982).

6. R. Brown & L. Garner, Resource Guide to State Environmental Management (1988).

7. C. Duerksen, *supra* note 4.

8. S. Ridley, *supra* note 4.

TABLE 2. State Environmental Expenditures, FY 1986

Ranked by Total Environmental Expenditures	Ranked by Per Capita Expenditures	Ranked by % State Environmental Expenditures of Total State Expenditures
1. California \$ 1,199,938,000	Alaska \$ 326.00	Wyoming 15.00
2. Pennsylvania 332,549,763	Wyoming 135.33	Oregon 4.44
3. Wisconsin 260,289,169	South Dakota 75.90	South Dakota 4.31
4. New York 227,274,090	Montana 69.55	California 3.53
5. New Jersey 200,750,000	Wisconsin 55.31	Idaho 3.49
6. Illinois 181,897,000	Idaho 51.97	Montana 3.46
7. Michigan 173,007,900	California 50.70	Alaska 3.00
8. Florida 171,267,941	Oregon 49.01	New Hampshire 2.89
9. Washington 160,334,318	Delaware 47.74	Wisconsin 2.79
10. Alaska 130,973,900	Vermont 42.94	Pennsylvania 2.71
11. Oregon 129,052,806	Washington 38.80	Vermont 2.39
12. Missouri 123,279,074	New Hampshire 32.41	Missouri 1.96
13. Massachusetts 122,313,035	North Dakota 31.08	Washington 1.91
14. Texas 100,921,072	Pennsylvania 28.03	Mississippi 1.83
15. Ohio 92,169,500	New Jersey 27.25	North Dakota 1.82
16. Kentucky 88,448,194	Rhode Island 26.16	West Virginia 1.60
17. Virginia 87,316,466	Missouri 25.07	Delaware 1.57
18. Maryland 85,748,214	Utah 24.60	Kentucky 1.51
19. North Carolina 77,193,938	New Mexico 24.59	Nevada 1.41
20. Minnesota 73,482,950	Mississippi 24.38	New Jersey 1.39
21. Louisiana 73,079,329	Kentucky 24.16	Utah 1.36
22. Tennessee 70,911,499	West Virginia 23.68	Massachusetts 1.32
23. Georgia 68,986,592	Maine 22.31	Colorado 1.30
24. Colorado 64,319,886	Colorado 22.26	Michigan 1.25
25. Wyoming 63,604,967	Nevada 21.77	New Mexico 1.25
26. Mississippi 61,453,623	Massachusetts 21.32	Rhode Island 1.23
27. Alabama 60,252,564	Maryland 20.33	Maine 1.21
28. Montana 54,739,315	Hawaii 19.21	Tennessee 1.18
29. South Dakota 52,450,000	Michigan 18.68	Illinois 1.14
30. South Carolina 50,018,484	Minnesota 18.03	Louisiana 1.12
31. Idaho 49,063,734	Florida 17.57	Nebraska 1.09
32. Iowa 47,090,046	Louisiana 17.38	Iowa 1.07
33. Indiana 46,551,743	Virginia 16.33	Maryland 1.06
34. West Virginia 46,183,752	Iowa 16.16	Virginia 1.04
35. Oklahoma 43,892,933	South Carolina 16.02	North Carolina 1.04
36. Arizona 41,287,553	Illinois 15.92	Alabama 0.99
37. Connecticut 38,666,000	Alabama 15.47	Florida 0.98
38. Utah 35,947,156	Tennessee 15.45	South Carolina 0.97
39. New Mexico 32,046,123	Arizona 15.19	Arizona 0.95
40. Kansas 30,445,137	North Carolina 14.62	Connecticut 0.89
41. Arkansas 30,372,330	Oklahoma 14.51	Arkansas 0.88
42. New Hampshire 29,850,570	Nebraska 13.32	Minnesota 0.88
43. Delaware 28,359,508	Arkansas 13.29	Kansas 0.87
44. Maine 25,096,481	New York 12.94	Oklahoma 0.85
45. Rhode Island 24,767,942	Kansas 12.88	Georgia 0.83
46. Vermont 21,944,786	Georgia 12.63	Hawaii 0.72
47. Nebraska 20,918,705	Connecticut 12.44	Indiana 0.69
48. North Dakota 20,293,798	Ohio 8.54	Ohio 0.60
49. Hawaii 18,540,533	Indiana 8.48	Texas 0.55
50. Nevada \$ 17,413,195	Texas \$ 7.09	New York 0.54

SOURCE: R. Steven Brown and E. Garner, *Resource Guide to State Environmental Management*. (Lexington, KY: The Council of State Governments, 1988).

TABLE 3. States Commitment to Environmental Protection

State-by-State Breakdown by Indicator

State	Indicator																							TOTAL
	1 1 1	2 2 2	3 3 3	4 4 4	5 5 5	6 6 6	7 7 7	8 8 8	9 9 9	10 10 10	11 11 11	12 12 12	13 13 13	14 14 14	15 15 15	16 16 16	17 17 17	18 18 18	19 19 19	20 20 20	21 21 21	22 22 22	23 23 23	
Alabama	1	0	0	1	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0	0	1	0	19
Alaska	0	0	-	1	0	0	1	2	0	-	1	2	0	2	2	2	0	2	0	1	0	0	0	23
Arizona	1	2	1	0	1	1	1	2	0	0	2	0	0	3	3	0	0	2	1	0	0	2	1	34
Arkansas	1	0	1	1	1	2	1	0	2	0	0	2	2	0	0	3	2	2	1	2	2	0	2	27
California	2	4	4	0	3	1	0	1	2	2	2	3	5	4	2	0	1	4	2	1	2	2	2	46
Colorado	2	0	2	1	2	0	1	2	0	-	1	1	0	0	3	1	1	5	3	0	1	1	1	26
Connecticut	3	4	2	0	2	1	1	1	0	1	2	0	3	0	0	0	1	5	1	0	2	1	2	32
Delaware	3	2	3	1	0	1	1	0	1	0	2	1	1	1	0	0	0	4	2	1	0	0	0	29
Florida	2	0	3	0	0	1	1	2	1	2	2	1	2	4	0	1	0	5	2	0	0	0	0	31
Georgia	2	3	3	0	1	2	1	0	3	1	2	1	1	0	0	1	0	2	1	0	2	0	1	23
Hawaii	3	4	-	0	2	0	1	2	0	2	2	2	1	3	0	0	2	2	2	2	2	0	1	34
Ideah	0	0	1	1	2	0	1	0	0	-	0	1	0	3	0	0	0	3	0	1	1	2	0	18
Illinois	2	0	1	1	4	1	1	0	0	2	1	2	0	0	2	2	3	0	0	2	2	2	2	39
Indiana	3	4	3	1	1	1	1	2	2	1	1	1	1	2	0	1	2	3	1	0	2	1	2	39
Iowa	3	0	3	1	1	1	1	0	2	0	1	0	3	1	0	3	2	1	1	0	2	2	2	29
Kansas	1	0	2	1	1	0	1	2	0	-	1	1	2	1	0	0	2	2	1	0	1	1	1	23
Kentucky	2	3	3	1	1	1	1	0	3	2	1	2	3	3	0	1	1	4	1	2	1	1	1	34
Louisiana	3	0	1	1	0	1	0	0	2	0	0	2	0	2	2	0	2	3	1	2	2	0	0	21
Maine	3	0	3	0	0	1	1	2	1	0	2	1	0	2	0	1	2	3	1	1	1	1	1	23
Maryland	3	4	1	0	0	1	0	0	2	1	2	1	3	1	0	2	1	0	0	0	0	2	2	32
Massachusetts	4	4	2	1	5	1	1	2	2	1	1	2	1	2	0	1	6	2	0	2	1	1	44	
Michigan	3	4	1	0	2	0	0	2	2	2	1	1	0	0	2	0	2	2	2	0	2	1	1	30
Minnesota	2	4	4	1	0	0	1	1	2	0	2	1	3	3	2	0	2	5	1	1	2	2	2	47
Mississippi	1	2	0	0	1	3	0	0	0	0	0	2	0	0	2	0	2	0	0	1	2	0	0	15
Missouri	2	0	1	0	1	0	1	0	0	0	1	1	0	0	0	2	0	2	1	0	1	0	1	14

Montana	2	4	2	1	3	1	1	2	1	1	1	2	2	1	0	2	0	3	2	2	1	0	2	37
Nebraska	1	2	1	0	1	1	1	2	0	0	1	2	1	1	2	0	1	2	0	1	1	1	0	23
Nevada	1	2	3	0	1	0	0	0	0	1	2	3	2	2	0	0	3	0	1	0	0	1	0	22
New Hampshire	3	0	0	0	4	1	0	0	0	1	1	2	2	0	0	0	2	1	1	1	1	1	1	21
New Jersey	3	4	3	1	0	0	1	2	2	1	2	2	1	1	2	0	2	0	2	1	0	2	2	45
New Mexico	0	0	0	1	1	0	1	0	1	0	1	2	1	2	1	0	2	2	1	0	2	1	0	18
New York	3	4	1	1	3	0	1	1	2	1	2	2	3	0	2	1	2	2	0	0	2	2	2	33
North Carolina	1	4	1	1	2	1	1	2	0	1	0	1	1	0	0	1	2	0	0	2	0	1	0	26
North Dakota	3	0	1	0	1	1	1	2	1	0	0	1	3	0	0	1	0	2	1	1	1	1	1	22
Ohio	2	0	2	1	0	0	1	2	0	0	1	1	3	0	0	2	0	2	2	1	1	1	1	30
Oklahoma	2	0	2	1	1	2	0	0	2	0	1	2	0	0	2	1	0	1	0	0	2	0	0	19
Oregon	3	0	2	1	4	1	1	2	2	2	2	2	3	2	0	0	5	2	1	2	1	1	1	42
Pennsylvania	2	0	2	1	2	1	1	0	2	-	1	2	0	0	0	3	1	3	1	0	2	3	2	26
Rhode Island	4	2	2	0	4	1	1	2	0	0	3	0	0	1	0	0	4	0	0	1	1	1	1	26
South Carolina	1	0	4	1	1	2	1	0	2	1	2	2	2	0	2	0	3	0	0	0	0	0	1	25
South Dakota	1	4	3	0	1	0	1	1	2	0	1	1	2	0	1	0	3	2	0	1	1	1	1	26
Tennessee	2	0	2	0	1	1	1	1	2	0	1	2	0	0	2	1	0	3	0	0	2	0	2	23
Texas	1	2	3	0	0	2	0	2	0	0	2	1	1	1	0	2	0	4	0	0	1	0	1	22
Utah	0	2	1	1	1	1	1	0	0	0	0	2	0	1	0	3	0	6	2	1	0	1	1	23
Vermont	3	0	2	0	5	1	1	0	0	0	2	3	3	0	2	0	2	5	0	1	1	0	2	32
Virginia	0	4	2	1	1	1	0	0	2	0	2	0	3	2	0	2	0	4	0	0	0	1	2	30
Washington	3	4	2	0	2	0	1	1	2	1	2	2	3	0	0	2	0	2	5	1	1	1	3	36
West Virginia	1	0	4	1	1	0	0	2	-	0	2	0	1	2	2	0	2	0	1	0	1	2	1	23
Wisconsin	3	4	3	1	2	1	1	1	2	0	2	1	3	0	2	0	2	3	2	0	2	1	2	37
Wyoming	2	0	4	0	2	0	1	0	0	0	0	0	2	2	1	2	2	0	2	0	2	0	1	23

SOURCE: Christopher J. Duerksen, Environmental Regulation of Industrial Plant Siting. (Washington, D.C.: The Conservative Foundation, 1983), pp. 224-225.

TABLE 4. States Commitment to Environmental Protection

	AIR PROGRAMS	SOL CONSERVATION PROGRAMS	GROUNDWATER PROGRAMS	HAZARDOUS WASTE PROGRAMS	SOLID WASTE PROGRAMS	RENEWABLE ENERGY POLICY CONSERVATION	TOTAL	RANK
AL	3	3	2	3	3	2	16	26
AK	7	3	3	2	2	1	18	25
AZ	7	3	7	3	2	3	27	19
AR	1	3	2	5	3	4	18	25
CA	10	3	7	9	9	10	48	7
CO	4	6	4	3	4	3	24	21
CT	9	6	9	4	9	7	44	4
DE	1	8	6	3	4	2	24	21
FL	7	4	9	8	6	7	41	7
GA	4	5	7	4	3	3	26	20
HI	4	4	3	2	2	4	19	24
ID	2	1	6	1	2	6	18	25
IL	7	9	5	7	7	6	41	7
IN	6	5	4	6	7	8	36	10
IA	3	10	3	3	7	7	39	8
KS	2	3	8	8	4	2	29	17
KY	7	3	1	6	8	3	28	18
LA	5	3	3	7	2	1	21	23
ME	3	6	7	6	6	8	36	10
MD	3	8	7	6	6	4	34	12
MA	6	4	8	9	6	8	41	7
MI	8	7	8	9	8	3	43	5
MIN	5	6	3	9	9	4	38	9
MS	1	3	2	4	2	2	14	28
MO	5	6	7	8	1	4	31	15
MT	2	5	6	3	1	6	23	22
NE	4	6	6	2	6	7	31	15
NV	2	6	4	2	2	7	23	22
NH	6	3	3	7	5	4	32	14
NJ	9	6	7	10	10	5	47	3
NM	1	2	8	3	1	6	23	22
NY	5	5	10	8	8	7	43	5
NC	8	7	8	6	6	7	42	6
ND	1	3	4	2	3	3	16	26
OH	8	8	4	3	3	4	34	12
OK	3	3	3	4	7	3	29	17
OR	6	2	7	5	7	8	35	11
PA	8	6	3	3	3	5	32	14
RJ	6	4	6	4	7	3	30	16
SC	6	3	7	3	2	6	31	15
SD	1	8	6	2	2	4	23	22
TN	3	3	4	7	3	7	29	17
TX	7	2	2	3	3	7	26	20
UT	3	4	3	2	1	3	16	26
VT	3	3	3	6	4	7	28	18
VA	8	7	6	2	3	7	33	13
WA	8	1	6	3	3	3	29	17
WV	2	3	2	4	1	1	13	27
WI	9	8	8	7	8	9	49	1
WY	1	3	8	1	2	1	16	26

SOURCE: Scott Ridley, *The State of the States, 1987*. (Washington, D.C.: Fund for Renewable Energy and the Environment).

most active, while the states of Arkansas, Mississippi, West Virginia, and Wyoming are the least active in this area.

These data have been used as dependent variables in studies of comparative state environmental policy. One of the greatest problems with research in this area is that longitudinal expenditure data (beyond the period 1969-1980) presently do not exist. In addition, non-expenditure data are only recently available and are limited by their cross-sectional nature.

Explaining State Environmental Management

Within the literature on state environmental policy, there are at least four basic explanations for policy responses to the problems posed by environmental pollution. These four explanations may be identified as: (1) the severity argument; (2) the wealth argument; (3) the partisanship argument; and (4) the organizational capacity argument.

The severity argument suggests that rapid and concentrated population growth, extensive industrialization (especially a reliance on the petrochemical and metallurgical industries), and steady rates of public consumption of goods and services create severe pollution problems which, in turn, bring about strong pressures for environmental protection policies. Thus, an obvious source of environmental policy differences among the states is the severity of the pollution problem itself.⁹ However, previous studies suggest that the relationship between problem severity and state environmental protection is mixed, at best, and that more refined indicators of pollution severity are needed before a final assessment of their effect on state environmental policy is known.¹⁰

The wealth argument posits a direct relationship between the socio-economic resource base of a polity and the level of commitment to environmental protection.¹¹ That is, states with greater fiscal resources spend more on environmental protection than those with fewer budgetary resources. This consideration is often overlooked by persons who assume that the failure of government to act in the environmental area is caused by states' "backwardness" or nonresponsiveness to environmental problems. A number of studies of state environmental policy have examined

9. L. Wenner, *One Environment Under Law: A Public Policy Dilemma* (1976).

10. J. Davies, *The Politics of Pollution* (1970); Game, *Controlling Air Pollution: Why Some States Try Harder*, 7 *Pol. Stud. J.* 728-38 (1979); Lester, et al., *supra* note 4; C. Rowland and R. Feiock, *Economic Dependency and Regulation of Hazardous Wastes*, Paper presented at the Annual Meeting of the Southern Political Science Association (Nov. 3-5, 1983).

11. Sacco & Leduc, *An Analysis of State Air Pollution Expenditures*, 19 *J. Air Pollution Control A.* 416-29 (1969).

this argument and concluded that wealth accounts for a significant amount of the variance in state efforts to protect the environment.¹²

A third perspective is based on possibly the most common generalization in the environmental politics literature: environmental policy formation is, to a large extent, explained by political party differences. Dunlap and Gale argued that there are important reasons for expecting significant partisan differences to emerge on environmental issues with Democrats being more supportive of such efforts than Republicans.¹³ In examining this relationship, it has been shown, for the most part, that Democratic partisanship is strongly related to environmental voting within some state legislatures, within Congress, and within the states.¹⁴ Finally, another argument focuses on administrative and legislative reforms as potential predictors of environmental policy outputs. For example, it is argued that reorganization (especially centralization) of the environmental bureaucracy promotes environmental protection policy by helping to eliminate jurisdictional overlaps, jealousies, and conflicts between multiple agencies in this area.¹⁵ Moreover, consolidation of the environmental bureaucracy increases the Governor's span of control and—if he or she is able to appoint the head of the environmental agency—his/her resulting ability to mobilize the bureaucracy in support of his/her objectives is greatly enhanced.

In addition, it is often argued that “professionalism” of the state legislature will result in legislatures that are more responsive to environmental needs, generous in spending and services, and “interventionist” in the sense of having powers and responsibilities of broad scope. Thus, professional legislatures are thought to facilitate environmental protection

12. Game, *supra* note 10; Clarke, *Determinants of State Growth Management Policies*, 7 Pol. Stud. J. 753-62 (1979); Wenner, *Enforcement of Water Pollution Control Laws*, 6 L. & Soc. Rev. 119-36 (1972); Lester, et al., *supra* note 4; Lester, *supra* note 4; Williams & Matheny, *Testing Theories of Social Regulation: Hazardous Waste Regulation in the American States*, 46 J. Pol. 428-58 (1984); Lester & Keptner, *State Budgetary Commitments to Environmental Quality Under Austerity*, in *Western Public Lands: The Management of Natural Resources in a Time of Declining Federalism* (J. Francis & R. Ganzel eds. 1984).

13. Dunlap & Gale, *Party Membership and Environmental Politics: A Legislative Roll-Call Analysis*, 55 Soc. Sci. Q. 670-90 (1974).

14. Ritt & Ostheimer, *Congressional Voting and Ecological Issues*, 3 *Envtl. Aff.* 459-72 (1979); Kenski & Kenski, *Partisanship, Ideology, and Constituency Differences in Environmental Issues in the U.S. House of Representatives: 1973-1978*, 9 *Pol. Stud. J.* 325-35 (1980); Calvert, *The Social and Ideological Bases of Support for Environmental Legislation: An Examination of Public Attitudes and Legislative Action*, 32 *W. Pol. Q.* 327-37 (1979); Lester, et al., *supra* note 4.

15. See, e.g., A. Buck, *The Reorganization of State Governments in the United States* (1938); Garnett, *Reorganizing State Government: The Executive Branch* (1980); Garnett, *Operationalizing the Constitution Via Administrative Reorganization: Oilcans, Trends and Proverbs*, 47 *Pub. Admin. Rev.* 35-44 (1987); Conant, *In the Shadow of Wilson and Brownlow: Executive Branch Reorganization in the States, 1965-1987*, 48 *Pub. Admin. Rev.* 892-902 (1988).

more so than unprofessional legislatures.¹⁶ The available research on these two points suggests that, in some instances, consolidated environmental bureaucracies and professional legislatures do indeed make a positive difference in terms of states' efforts to protect the environment, although the evidence is mixed.¹⁷

While each of these arguments provides some insights into the determinants of state environmental protection policies, no single perspective captures the complexity of the policy process or provides a sufficiently comprehensive explanation of the forces influencing states' commitment to environmental quality. Instead of pitting these four arguments against each other, it seems more constructive to understand their strengths and limitations in the context of a more complex theoretical framework. Before we present an attempt to develop a more comprehensive theoretical framework, we review some of the more salient criticisms of the extant research on comparative state environmental policy. In discussing these criticisms, we also draw heavily from the literature on generic studies of comparative state politics and policy. Such criticisms, while extensive, are quite germane to the study of environmental politics and policy.

OBSTACLES IN THE STUDY OF STATE ENVIRONMENTAL POLITICS AND POLICY

In the early 1970s, a number of scholars began to extensively criticize the comparative state politics and policy research.¹⁸ These criticisms of the generic state policy research are equally applicable to the study of comparative state environmental policy. Among their criticisms were the following: atheoretical "theorizing," unrewarding interpretation, unsound methodology, vacuous conceptualization, wrongheaded conceptualization, presumptuous conceptualization, and inadequate operationalizing of concepts.¹⁹ Before we present our own perspective on future comparative state environmental policy research, we discuss a number of these criticisms in greater depth.

The Atheoretical Nature of State Environmental Politics Research

As we discussed above, most of the available research on comparative

16. See, e.g., Citizens Conference on State Legislatures, *The Sometime Governments: A Critical Study of the 50 American Legislatures* (1971).

17. Lester, et al., *supra* note 4; Lester & Keptner, *supra* note 12.

18. Rakoff & Schaefer, *Politics, Policy, and Political Science: Theoretical Alternatives*, 1 *Pol. & Soc.* 51-77 (1970); Hofferbert, *State and Community Policy Studies: A Review of Comparative Input-Output Analyses*, 3 *Pol. Sci. Ann.* 3-72 (1972); C. Jones, *Political Science and State and Local Government* (1973); Munns, *The Environment, Politics, and Policy Literature: A Critique and Reformulation*, 28 *W. Pol. Q.* 646-67 (1975).

19. R. Savage, *The Literature of Systematic Quantitative Comparison in American State Politics* (1976).

state environmental policy has been concerned with the relationship between problem severity or wealth and environmental effort, or ideological debates about the significance of Democratic partisanship to protection of the environment. Much of the existing research in this area relies on the systems framework as an explicit theoretical approach. Yet, as Ben Agger and Robert Savage have pointed out, "the systems approach in actuality merely asserts that things hang together in social life."²⁰ Theory requires, however, that the elements of a model be shown to be connected by a coherent body of thought. Systems analysis tells us very little about how things are related, it only implies that elements are related in a loose, interactive manner. Thus, the "mainstream model" (as used in comparative state politics research as well as some state environmental politics research) is in reality a "metatheoretical language and not a substitute for theoretical linkages."²¹ Clearly, this field is a barren one in terms of genuine theoretical development.

There have been some recent efforts to develop such a theory to explain the behavior of the fifty American states. Mancur Olson, for example, provides a theory to explain differences in the growth rates of the states.²² He suggests that political stability over time results in the development of special-interest organizations that eventually contribute to reduced efficiency of the market economy, and thereby reduce the rate of economic growth. His argument represents a step in the direction of developing synthesizing theories of state politics, as opposed to ideological debates or bivariate hypotheses, both of which have been typical of previous research on state environmental policy.

What is needed is a coherent body of theory to guide comparative state environmental policy research in the future. At most, this generic theory should provide a parsimonious explanation of state efforts to protect the environment as well as other types of state policy behavior. At the very least, it should attempt to synthesize and integrate many of the bivariate arguments discussed above.

The Endogenous Nature of State Environmental Politics Research

Despite occasional warnings to the contrary, it is generally assumed that politics and policy at the state level can be safely studied in isolation from the politics of other levels of American government. Consequently, scholars carry out rather specialized research into national *or* state *or* local politics.²³ In other words, most of the comparative state environ-

20. Agger, *Invisible Politics: A Critique of Empirical Urbanism*, 6 *Polity* 540-55 (1974); R. Savage, *supra* note 19.

21. R. Savage, *supra* note 19.

22. M. Olson, *The Rise and Decline of Nations* (1982).

23. V. Gray, et al., *Politics in the American States* (1983).

mental policy research assumes that only state-level variables affect state environmental policy outputs. In this sense, then, this literature is endogenous (at best) or inaccurate (at worst). For example, Ira Sharkansky suggested that various national forces might be influencing state expenditure patterns over time, while Douglas Rose argued that "states are collections, on an areal basis, of assorted subsystems of national or local politics."²⁴ Thus, in order to understand state politics we need to understand the intergovernmental context in which they occur.

Yet, much of the existing research continues to assume that only state-level variables (or regional variables) affect state policy outputs.²⁵ Part of the reason for this continued assumption may result from mixed empirical findings over the importance of federal aid as an explanatory variable in determinants of state spending.²⁶ Nevertheless, it may be argued that federal-level variables affect state politics and policy in the environmental area. For example, innovative federal legislation (especially the "partial preemptive" type like the Resource Conservation and Recovery Act of 1976) stimulates state governments to take similar action.²⁷ Indeed, it has been suggested that federal activities in the environmental area have been a major influence on state environmental programs. Specifically, federal actions resulted in (1) the development of state pollution control programs where none existed; (2) a sizable growth in state environmental expenditures to match federal contributions; (3) the organization and reorganization at the state level of state environmental organizations to meet new responsibilities and coordinate actions with federal requirements; and (4) steps toward environmental policy coordination and the use of impact statements.²⁸ Similarly, some recent evidence suggests that local governments affect state environmental politics and policy as well.²⁹ For example, local governments sometimes provide financial assistance for state efforts to protect the environment as well as other areas.³⁰ In other instances, local governments often adopt innovative institutional changes or urban policies that are later picked up by the states themselves.

24. Sharkansky, *Regionalism, Economic Status, and Public Policies of the American States*, 49 Soc. Sci. Q. 9-23 (1968); Rose, *National and Local Forces in State Politics: The Implications of Multilevel Analysis*, 67 Am. Pol. Sci. Rev. 1162-173 (1973).

25. See, e.g., Tucker & Herzik, *The Persisting Problem of Region in American State Policy*, 67 Soc. Sci. Q. 84-97 (1986).

26. P. Roeder, *Stability and Change in the Determinants of State Expenditures* (1976).

27. Crotty, *supra* note 4.

28. Jones, *Regulating the Environment*, in *Politics in the American States* (H. Jacob, et al. eds. 1976).

29. E. Lombard, *Intergovernmental Relations and Air Quality Policy: The Case of Colorado* (Sept. 14, 1988) (Paper presented at the Annual Meeting of the American Political Science Association).

30. The Council of State Governments, *The Book of the States, 1986-1987* (1986).

Future research on comparative state environmental policy would benefit from a consideration of factors at national and local levels of government that affect state efforts to protect the environment. Richer explanations can be derived from the observation that state environmental politics and policy takes place within the context of an intergovernmental system.

The Time-Bound Nature of State Environmental Politics Research

One of the clearest conclusions to emerge from the comparative state environmental policy literature is the tentative nature of most of the results. More specifically, the results apply simply to this policy area at a particular point in time and are thus limited by their cross-sectional nature. Indeed, a number of comparative state policy analysts have pointed out that findings from cross-sectional analyses are quite different from those of a longitudinal nature.³¹ More specifically, it is argued that "time series analysis within the American states has demonstrated empirically . . . that reasoning from cross-sectional data alone would have been fallacious."³² Moreover, "it is possible to document that many comparative state policy cross-sectional bivariate coefficients will vary with the time at which variables are measured."³³

Thus, these findings lead one to the conclusion that diachronic analysis is essential if we are to adequately understand the determinants of state environmental policy. Moreover, previous research also suggests that we need to be more sensitive to issues of time, such as relating variables logically and consistently with respect to time, and selecting points-in-time or periods-in-time as appropriate to the research design that is utilized.

The Unsound Methodological Nature of State Environmental Politics Research

A number of scholars have suggested that several methodological problems plague comparative state environmental politics research. One of the first criticisms has to do with the measure of state environmental policy outputs. Typically, state environmental policy is measured in terms of expenditures for environmental protection by the states. Many criticize this approach as being theoretically weak because the variables are chosen more for convenience and ease of access than for theoretical importance and utility.³⁴ Clearly, public spending is only one aspect of environmental

31. J. Treadway, *Public Policy-Making in the American States* (1985).

32. Gray, *Models of Comparative State Politics: A Comparison of Cross-Sectional and Time-Series Analysis*, 20 *Am. J. Pol. Sci.* 235-56 (1976).

33. Tucker, *It's About Time: The Use of Time in Cross-Sectional State Policy Analysis*, 26 *Am. J. Pol. Sci.* 176-96 (1982).

34. P. Roeder, *supra* note 26.

policy and non-fiscal measures should be included as well. Some authors have used non-fiscal measures of state environmental policy in their analyses and their findings suggest that socio-economic factors may be more important in explaining fiscal policy decisions (for example, state expenditures) while political factors may be more important in explaining substantive policy choices (for example, state legislative enactments).³⁵ At the very least, these divergent results suggest that both fiscal and non-fiscal measures of state environmental policy outputs should be utilized in future comparative state research in order to test the proposition that one's choice of output measures seriously affects one's empirical findings.

A second methodological problem concerns the appropriate statistical technique of analysis in examining the relative effects of socio-economic and political variables on state spending for environmental policy. Michael Lewis-Beck suggests that "effects coefficients, derived from path analysis, is the preferred method of assessing the relative importance of different independent variables for explaining a given dependent variable."³⁶ That is, he argues that zero-order correlation coefficients, partial correlation coefficients, and standardized partial regression coefficients (beta weights) generally produce misleading judgments about the relative importance of different variables for public policy. Instead, path analytic techniques can generate coefficients which provide an accurate evaluation of the effects of different independent variables because *both* direct and indirect effects are assessed.

Finally, there is a need for much more comprehensive and systematic collection and analysis of comparative state environmental politics data. Previous research has relied on indicators of the political and economic context of the states and has ignored the potential explanatory value of individual-level data from elite interviews and field investigations. Malcolm Jewell has provided the strongest argument in this area for greater use of in-depth interviews and participant observation techniques in state research, greater interaction between political scientists and state officials, and more current information on significant trends and developments in individual states.³⁷ Implicit in his argument is the need to combine an extensive, large-N (fifty state) comparative analysis with an intensive, small-N (case study) of individual states. To do so also implies that extensive funding and well-organized research projects need to be carried out, that large-scale and long-term research groups are needed to carry out work in the states and finally, a framework for enlisting the support of scholars in each of the fifty states needs to be developed.

36. Lewis-Beck, *The Relative Importance of Socio-Economic and Political Variables for Public Policy*, 71 *Am. Pol. Sci. Rev.* 559-66 (1977).

37. Jewell, *The Neglected World of State Politics*, 44 *J. Politics* 638-57 (1982).

In the following pages, we utilize these several criticisms to suggest some conceptual and methodological improvements in the future study of comparative state environmental politics and policy.

FUTURE DIRECTIONS FOR STATE ENVIRONMENTAL POLITICS RESEARCH

The preceding discussion suggests the need to modify our thinking about state environmental policy and how we might go about explaining state behavior in the future. In the decades of the 1970s and 1980s, comparative state policy studies were primarily concerned with explaining state policy *formation*. In the 1990s, however, it is likely that the primary area of investigation will be directed toward an explanation of state *implementation* of federal programs. To do so, however, requires an analytical framework that is very different from the "mainstream model" used in previous studies of comparative state policy research. Thus, a model of intergovernmental implementation is needed as a starting point for studies concerned with state roles in carrying out federal programs.

An Intergovernmental Model

The basic starting point is to conceptualize the implementation process at the state level as resulting from choices made by the state.³⁸ Yet state choices are in turn a function of inducements and constraints provided to or imposed on the state from elsewhere in the system—above or below—as well as the state's capacity to effectuate its preferences. In addition, state choices are not those of a unitary rational actor, but may be the result of bargaining among parties internal or external to government who are involved in state politics. More specifically:

1. A fundamental assumption of this approach is that there is no uncausal explanation for differences in state implementation of environmental policies. Many factors can account for a particular program's implementation: aspects of the policy itself, features of the state or locality and its administration of the program, and characteristics of the people who make and manage state policies and programs and whose interests are greatly affected by them.
2. The national decision that "triggers" an implementation process constrains by its form and content the choices and behaviors of those who have to execute the instructions that are either codified by law or implicit in the intent of the policymakers, be they lawmakers, the Pres-

38. M. Goggin, A. Bowman, J. Lester & L. O'Toole, Jr., *Implementation Theory and Practice: Toward a Third Generation* (1990); Lester, et al., *Public Policy Implementation: Evolution of the Field and Agenda for Future Research*, 7 *Pol. Stud. Rev.* 200-16 (Autumn, 1987).

ident, members of the judiciary, or agency representatives. Implicit in any discussion of these authoritative decisions is the point that the degree to which they constrain choices varies from one environmental policy to the next.

3. State responses to federal inducements and constraints vary. A state's response is conceptualized as a joint decisional outcome, constrained by the nature and intensity of the preferences of state legislators and local elected officials, the local state agency—with its problematic relationship with the governor and its decentralized components, for example, county offices—and spokespersons for interests importantly affected by what does or does not happen during implementation of an environmental program.

4. State responses are also constrained or structured by the state's capacity to act. For example, a state's ability to implement a national environmental policy directive may be constrained by the availability of fiscal resources, intragovernmental fragmentation, staff resources, or the level of public support for the program. Conversely, state implementation of environmental programs may be promoted by the skills and other resources of state administrative personnel. Moreover, as the comparative state policy literature suggests, there are many other factors that are known to influence state policy outputs, such as severity or salience of the problem, wealth, partisanship, organizational factors, etc.

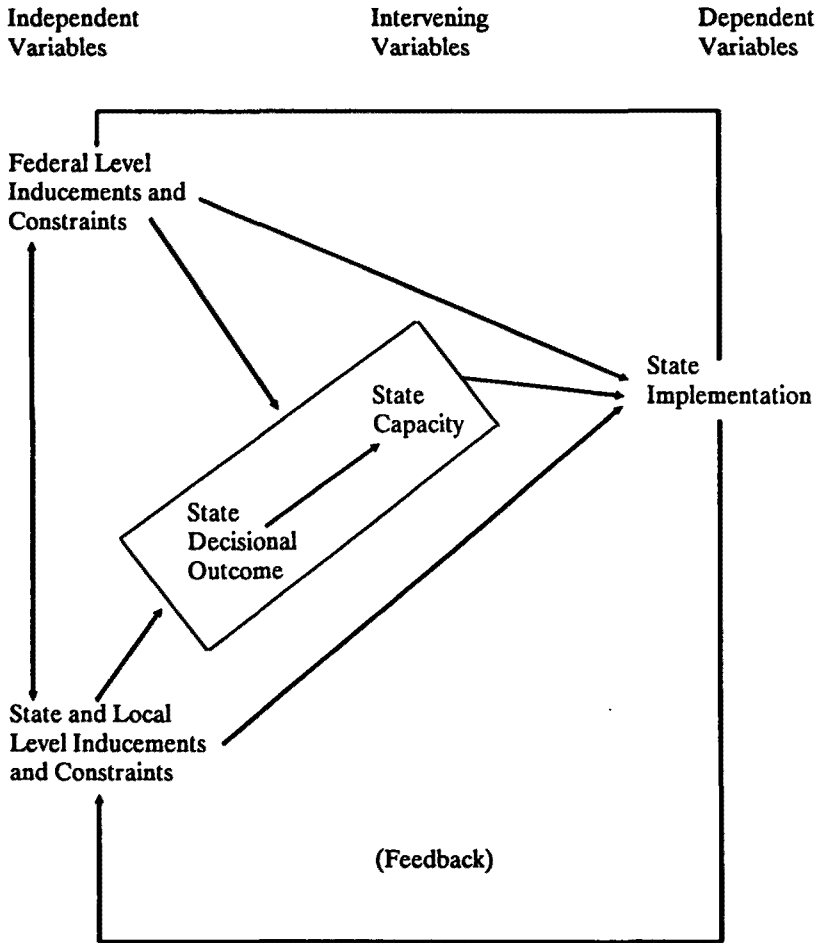
The preceding discussion suggests that future state environmental politics research needs to adopt a conceptual framework that represents the intergovernmental nature of policy implementation in the 1980s (and presumably in the 1990s). Such a framework would respond to the criticisms that previous research in this area has been too concerned with bivariate relationships (in the absence of a genuine theory) or has adopted a "mainstream model," which was endogenic (at best) or inaccurate (at worst) by assuming that only state-level variables influenced state policy outputs.

Some Methodological Recommendations

If the above analysis has validity, obstacles to the further theoretical advance of the state environmental politics and policy literature can be overcome by: 1) collecting data and analyzing relationships in a diachronic (longitudinal) fashion; 2) measuring state environmental policy with both expenditure and non-expenditure data and testing their relationships with predictor variables separately; 3) using path analytic techniques whenever possible; and 4) combining large-N (fifty state) with small-N (case studies of individual states) analyses. More specifically:

1. We should recognize that the comparative state politics literature

FIGURE 1.
A Conceptual Model of Intergovernmental Policy Implementation



SOURCE: Goggin, Bowman, Lester, and O'Toole (1987).

has produced results which are time-dependent, meaning that the results are highly fluid over time. If we desire to develop generalizations about state environmental politics, then it will be necessary to draw our generalizations from longitudinal studies, rather than from studies utilizing limited cross-sections of time. Longitudinal data exist for state environmental quality control expenditures from 1969-1980 and efforts are currently underway to gather similar data from 1981-present.³⁹

2. As noted above, research results differ depending on the measure of the dependent variable (that is, whether it is fiscal or non-fiscal). Thus, it is desirable to test our propositions with dependent variables that are both fiscal and non-fiscal in nature. If the results are consistent across both types of measures of state environmental policy, then we have a basis for making stronger inferences about the determinants of state environmental policy. Until such data are collected and examined, extant conclusions must remain tentative.

3. Path analytic techniques provide the basis for determining total effects of various predictor variables on state environmental policy outputs. Conventional analyses have relied too heavily on simple correlation coefficients, partial correlation coefficients, or standardized partial regression coefficients (beta weights), which only provide an indication of direct effects. The intergovernmental nature of state environmental policy suggests that indirect effects are also important; thus, more rigorous techniques of analysis are needed to assess existing relationships.

4. Finally, we should avoid the pitfall of selecting either quantitative or qualitative approaches. Both quantitative (that is, fifty state) and qualitative (case studies) approaches should be utilized so that we can provide not only a wealth of detail and a rich contextual analysis, but also a means for providing empirical footing to generalizations about state environmental policy.

SOME SUMMARY OBSERVATIONS

This article has attempted to place the study of comparative state environmental policy in a broader theoretical framework than what is usually the case. In so doing, we have suggested an intergovernmental framework that can be used for studying state environmental policy implementation during the 1990s. In addition, our suggestions about ways of approaching and perhaps resolving some of the methodological issues present in comparative state environmental politics research are somewhat tentative and probably incomplete, but they begin to pave the way for future advances in this area of public policy.

39. R. Brown & L. Garner, *supra* note 6.

Of course, the ultimate goal of all state policy research (including that of environmental scholars) is to develop trans-policy generalizations. However, the assumption here is that it is desirable to conduct research within the specific area of environmental policy as a necessary first step toward the eventual development and testing of a generic theory of state policy implementation. Once a body of evidence has accumulated in the environmental policy area (as well as other substantive areas), the task of synthesizing and integrating this research can begin.

Finally, it has been suggested that the 1990s will likely be concerned with state implementation of federal environmental programs that were enacted during the 1970s and 1980s. Thus, it is appropriate to undertake studies of comparative state environmental policy in order to enhance our understanding of intergovernmental implementation. Not only are such investigations beneficial to the development of our knowledge of comparative state politics and policy, but they may ultimately contribute to a genuine theory of state policy implementation in an era of regulatory federalism.