

# Social Movement Size, Organizational Diversity and the Making of Federal Law

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*During the 1960s and 70s the United States environmental movement experienced dramatic growth in both absolute size and in the diversity of organizational structures and issues represented within the movement. We assess the importance of change in movement size and compositional diversity on two important stages within the legislative process. Findings indicate that U.S. environmental movement size is positively associated with the incidence of Congressional environmental agenda-setting activities, but not the passage of environmental laws. An increased diversity of issue representation within the movement is consistently and positively associated with the incidence of agenda setting and law-passage activity. The growth of EMOs attending simultaneously to both traditional conservation and “new” quality of life issues, in particular, is associated with elevated rates of policy activity.*

An explicit goal of many social movement organizations is to garner political attention to issues of interest and affect relevant national level policy. The Natural Resources Defense Council, for example, states that it is “dedicated to protecting and building upon America’s framework of environmental laws...” (2005) Similarly, Greenpeace U.S.A. notes that “while we are best known for hanging banners and chasing whalers” a major accomplishment of the group has been “effective work for new laws and policies.” (2005) But, how effective are SMOs at influencing the law making process? Summaries of the extant empirical literature examining SMO effects on law making indicate that the relevant body of work has produced mixed or inconclusive results (Andrews and Edwards 2004; Burstein and Linton 2002; Smith 1995; see Van Dyke, Soule and Taylor 2004 for a summary of research on movement outcomes “beyond the state”). One approach to resolving these discrepant findings is to focus on different outcomes of interest, alternative stages of the political process which are theoretically more susceptible to movement influence than law

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passage (Jones and Baumgartner 2004; King, Cornwall and Dahlin 2005; Soule and King 2006).

In addition, there is a need to examine the relevant characteristics of social movement organizational populations themselves that may enhance (or diminish) political leverage.<sup>1</sup> Previous research assessing the political impact of SMOs has primarily employed measures of social movement size or resource capacity. Historical accounts of the environmental movement make clear that the modern mobilization period (post-1960) is, indeed, characterized by rapid and extensive growth in the size of the population of environmental movement organizations, both in terms of number of organizations and the aggregate resources controlled by these groups. But, also important to the development of modern environmentalism were dramatic shifts in the composition of movement organizational structures and goals. Specifically, the population of EMOs becomes increasingly professionalized, less dependent upon individual members, and adopts goals focused around "new" or "second-generation" environmental pollution issues (Brulle 2000; Gottlieb 1993; Hays 1987; McLaughlin and Khawaja 2000; Mertig, Dunlap and Morrison 2002; Schlosberg 1999). It is these compositional changes, resulting in the increased diversity of the movement, which are considered the most important development in modern environmentalism and which distinguish the modern mobilization period from the predecessor "conservationist" movement. Are changes in the goals and organizational forms adopted by a movement related to its effectiveness in the policy-making process? Despite the theoretical importance of SMO goals and structure in social movement research generally (McCarthy and Zald 2002), the link between these population characteristics and political outcomes remains understudied.

This research further contributes to the understanding of social movement outcomes by addressing a second significant weakness in the empirical literature, the overwhelming focus on law passage activity (Burstein and Linton 2002; Giugni 1998). Though law passage is a highly consequential and visible stage of the policy process, making it the political outcome of movement activity most often examined, it represents only the end-point of the policy making process. For these very reasons, law passage is particularly unlikely to be directly influenced by social movements or interest groups. A pre-cursor to law passage, and an arguably equally important stage in the policy making process, agenda setting is likely to be more susceptible to social movement influence (Baumgartner and Jones 1993; Kingdon 1984).

After summarizing the modern U.S. environmental movement's development, differences and similarities between the agenda setting and law passage stages in the political process are reviewed. Next, theories about how SMOs influence the political process are summarized,

focusing especially on how changes in the composition of a population of SMOs may enhance a movement's political leverage. The results of analyses prove inconclusive when examining the effect of movement size at the law passage stage, as in previous research. Size is, however, consistently associated with greater incidence of Congressional agenda setting activities. While change in the representation of social movement organizational structures are unrelated to political success, greater diversity in goals among the population of national EMOs is positively related to *both* Congressional agenda setting and law passage activity.

### **The United States Environmental Movement**

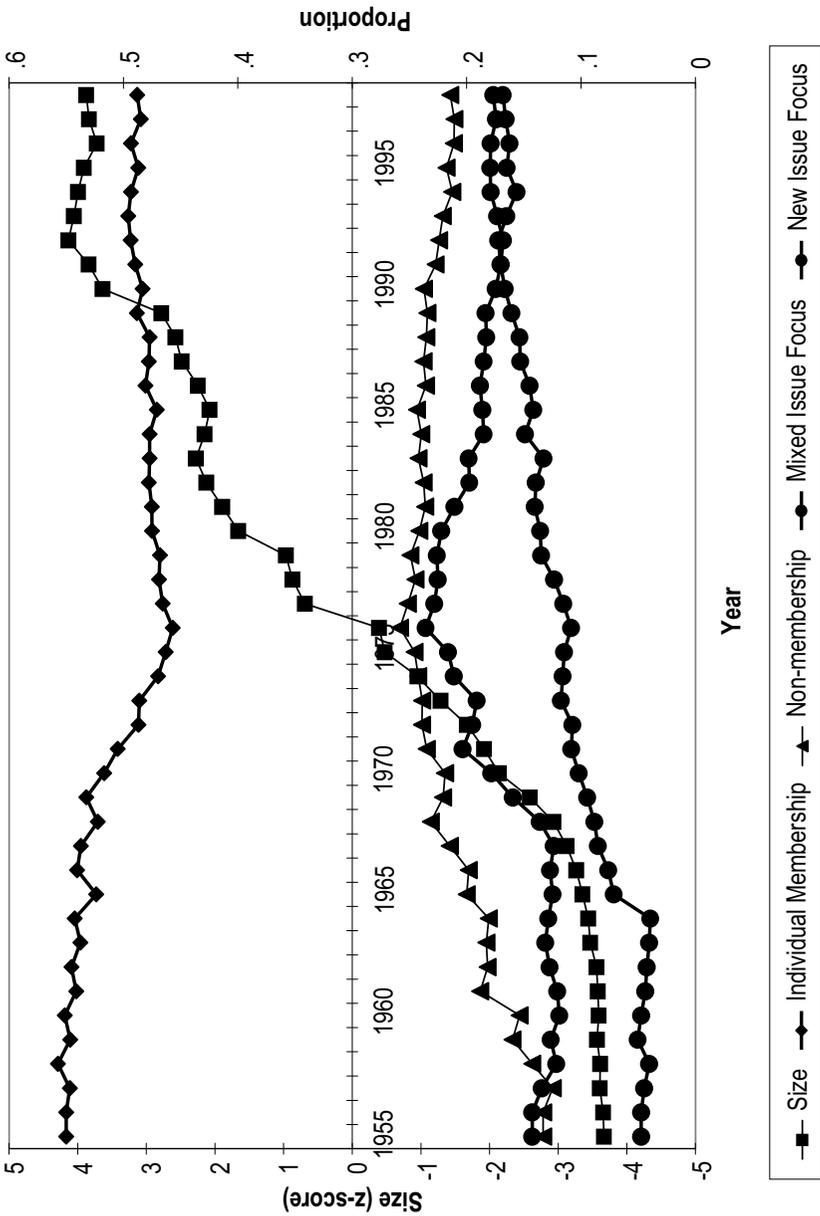
In the late 1960s and early 1970s the environmental movement entered an extensive period of mobilization and organizational building that marks the beginning of the modern movement in America. This period is distinguished by the rapid proliferation of both new or second-generation environmental issues and, simultaneously, a whole new breed of national EMOs focused on these issues (Brulle 2000; Gottlieb 1993; Mertig et al. 2002; Mitchell, Dunlap and Mertig 1992; Schlosberg 1999). Within years, a movement that had been largely defined by interest in the conservation of natural resources and wildlife had come to include human health effects of pollution and other quality of life issues as central concerns. Though discovery of the negative impact of pollution on human health was not new in the 1960s (Gottlieb 1993; Melosi 1980), many suggest that the shift in issue representation was so dramatic that it signified development of a distinct new social movement (e.g. Dalton 1994; Hays 1987). At minimum, the increased diversity of issues represented is thought to have broadened the scope and constituency of the environmental movement and contributed to growth of both new and existing EMOs (McLaughlin and Khawaja 2000; Mertig et al. 2002).

The new breed of EMOs which proliferated during this period, such as the Environmental Defense Fund (founded 1967 and now named Environmental Defense) and Natural Resources Defense Council (NRDC, founded 1970), play central roles in histories of the environmental movement. They are considered distinct from earlier groups in part because of their focus on issues of environmental quality. But, of equal importance to the distinctiveness of these new EMOs is their heavy reliance on full-time paid staffs of scientists, lawyers and lobbyists rather than an active membership (Mitchell et al. 1992).

The mobilization of the modern environmental movement was accompanied by development of an extensive federal environmental public policy system. The year 1970 marked the beginning of an environmental era in American public policy (Andrews 1999; Petulla 1988; Portnoy 1990),

beginning with the establishment of the National Environmental Protection Agency. The major institutionalizing event within the field, the establishment of the EPA centralized in one agency federal responsibility for environmental protection and regulation. More than 30 major pieces of legislation dealing with the environment were passed by the federal government in the 1970s

Figure 1. The Size and Composition of National EMOS, 1955-1998



(Miller 1991). By the close of the decade, environmental issues were firmly institutionalized within the American political system.

President Ronald Reagan's administration presided over the steady erosion of federal environmental protections, initially producing a backlash of support for environmental issues and movement organizations. National EMOs, especially those focused on issues of wildlife and natural resource conservation, experienced a surge in membership during the 1980s. The perceived inability of these groups to protect previous legislative gains, however, combined with the growth of a grassroots based environmental justice movement extremely critical of the national EMOs, contributed to a growing crisis of legitimacy within the national movement by the close of the 1980s (Bullard 1990; Dowie 1995; Shabecoff 1993; Szasz 1994). The national environmental movement is generally perceived to have entered a period of retrenchment, or at least re-organization, during the 1990s (Cohen 2006).

These historical accounts of change in the national environmental movement are displayed visually in Figure 1, using data from this project. Discussion is confined here to substantive patterns of change; all data and measures are described in more detail in the methodology section. The overall size, or aggregate resource capacity, of the national environmental movement continually expands between the late 1960s and early 1990s, before stabilizing. Coinciding with growth in the size of the EMO population are shifts in the composition of organizational structures. Historically, the majority of EMOs were composed of individual members. During the 1970s especially, increasing proportions of EMOs adopted a non-membership organizational structure. The percentage of non-membership organizations doubles over the 20-year period 1955-1975. Growth in non-membership organizations stabilizes over the 1980s, before a slowly declining trend takes over in the 1990s.

Trends in changing issue representation are distinct as well. At every year organizations were classified as focusing exclusively on new environmental pollution and quality issues, traditional issues of natural resource and wildlife conservation, or a combination of these two areas. The percentage of national EMOs attending exclusively to new environmental issues triples over the observation period, steadily increasing from less than 5 percent of the population in 1955 to nearly 18 percent by the close of the observation period. The relative representation of EMOs with a mixed issue agenda also rapidly increases from 13 percent in 1967 to a 1976 peak of 23 percent before receding somewhat to 18 percent in the mid 1980s, a level that persists across the remainder of the observation period. In short, the empirical data appear to support qualitative-historical accounts of the environmental movement that emphasize both rapid growth and change in the structure of the field. Since the 1950s, the movement has

diversified and professionalized, with the most dramatic changes taking place over the 1970s. Subsequent post-1970s shifts in the composition of the movement are more gradual, with the notable exception of continual growth in focus on new environmental issues. Do changes in national EMO population characteristics enhance (or inhibit) political leverage? The argument put forth here suggests that social movement political influence is highly variable across different stages in the policy process.

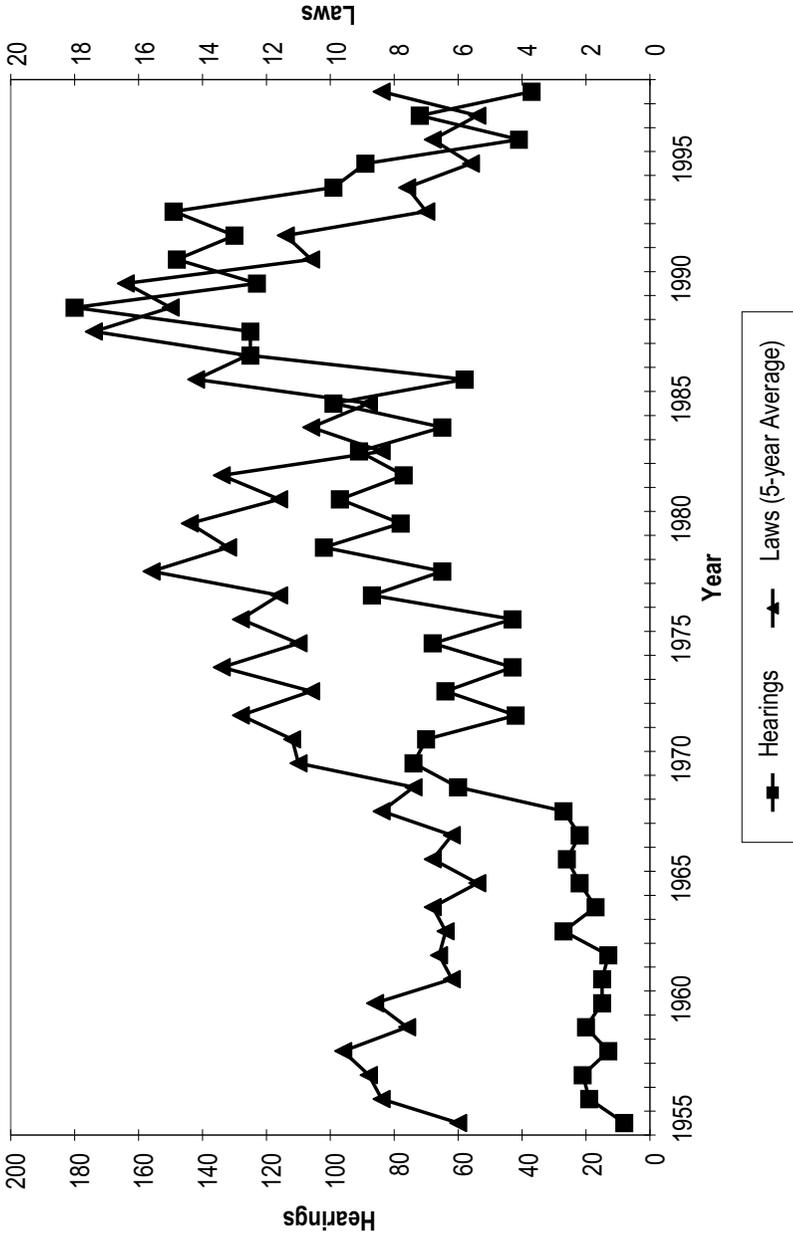
## **Social Movements and the Political Process**

### *Agenda Setting and Law Passage*

Empirical research on the political efficacy of social movements, largely focused on law passage activity, has produced inconsistent results. Law passage is an important and visible stage in the policy making process (Andrews and Edwards 2004; Burstein and Linton 2002; Giugni 1998), but also an incredibly contingent and consequential stage subject to strict rules of procedure and that is likely less responsive to social movement or interest group demands than earlier stages (King et al. 2005; Soule and King 2006). Empirical analyses need to catch up to theory by focusing greater attention on other aspects of the political process which are theoretically more susceptible to social movement influence. In particular, political agenda setting plays an important theoretical role as a precursor to policy change (Baumgartner and Jones 1993; Cobb and Elder 1975; Jones and Baumgartner 2005; Kingdon 1984; Rochon 1998; Walker 1977).

Political agenda setting is the process by which issues rise or fall on the political agenda, the set of problems and issues being seriously considered by policy makers. It represents an initial phase of the legislative process. Before decisions can be made and policies enacted on any given issue it must first garner the attention of political decision makers. In this regard, success at the agenda setting stage is a necessary, if not sufficient, precursor to actual policy change. It is at the agenda setting stage where social movements are thought to have the greatest potential to influence the policy-making process (Andrews and Edwards 2004). As an initial stage in the law making process, agenda setting is both less consequential and subject to less stringent rules than law passage (King et al. 2005; Soule and King 2006). For example, successfully placing an issue on the Congressional agenda does not require a majority of Congressional approval, as the passage of laws does, and can be undertaken by stark minorities or even individual activist legislators or Congressional committees (Walker 1977). Consequently, agenda setting responds more easily to changing information flows and demands by special interests than does law passage (Jones and Baumgartner 2004).

Figure 2. Congressional Agenda Setting and Law Passage Activity, 1955-1998



H1: Movement size will be positively related to the incidence of Congressional agenda setting and law passage activities.

H2: Movement size will demonstrate a weaker association with law passage than agenda setting activity.

A major impediment to empirical analyses of legislative agendas has been the lack of systematic data. Here, I follow the lead, and employ the data, of two of the leading researchers in the area (Baumgartner and Jones 1993; Jones and Baumgartner 2005; 2004) in analyzing the incidence of Congressional hearings held on environmental issues as an indication of the importance of this policy arena on the Congressional agenda. Hearings provide information to the wider Congress through the generation of information and, importantly, from the very decision to hold a hearing on a particular topic (Diermeier and Feddersen 2000). And, the information provided at hearings by social movement organizations and interest groups has important consequences for law passage (Burstein and Hirsh forthcoming). The convening of hearings on an issue signals its importance to (at least some member of) Congress and, collectively, provides an indication of its priority on the Congressional agenda. Hearings also provide outlets for interest groups to express policy preferences and allow members of Congress to develop policy proposals that are then available in the event that conditions conducive to policy change occur.

A record of Congressional action on environmental topics is presented in Figure 2. Note that because of a very distinct cyclical pattern in the incidence of law passage, where most laws are passed every second year of a Congress, a five-year moving average is presented in order to make longer-term trends more apparent (yearly values are used in all analyses). Congressional attention to the environment via hearings is stable and low (generally less than 20 hearings per year), until more than doubling in 1969 from the previous years total of 60 hearings. Between 1970 and the mid-1980s, environmental concerns remain highly salient on Congressional issue agendas with 60 to 100 hearings a year. Another doubling in hearings activity occurs between 1986 and 1987 (from 58 to 125), with the number of environmental hearings peaking in 1989 and remaining very high through the early 1990s before receding somewhat to the levels of the 1970s and early 1980s.

Legislative action on the environment displays a very similar temporal pattern compared to agenda setting. In 1970, 17 laws were passed; it was the first time more than 10 environmental bills passed in a year. Until the mid-1980s, legislative activity related to environmental issues continued

at this heightened pace, with between 11 and 17 laws enacted per year, with two peaks in 1980 (26 laws passed) and 1988 (31 laws passed). The mid-1980s ushered in a period of relatively less Congressional activity on the environment, with sustained declines after 1992. Congressional activity receded to levels similar to those prior to the mobilization of the environmental movement beginning about 1968. To what extent are the rhythms of Congressional attention to and activity on environmental issues shaped by the growth and shift in composition of the national environmental movement?

### **Movement Size and Composition**

Research on SMO political outcomes has been organized around a “core hypothesis” (Burstein and Linton 2002), derived from resource mobilization theory, that mobilization itself is positively associated with political outcomes of interest. A larger movement organizational infrastructure is thought to facilitate influence on political agendas by allowing a movement to claim a larger numbers of adherents and, more generally, bring greater amounts of resources to bear on the political process (see Edwards and McCarthy 2004 for a summary of research on the types and uses of social movement resources). In addition, larger SMO infrastructures are more likely to have a wide geographic presence, which is important to influencing a Congress based on district representation (Skocpol 1992). The movement infrastructure model posited by Andrews (2001) extends this core hypothesis by suggesting that large SMO infrastructures may also be more effective to the extent that size is correlated with diversity. In particular, greater diversity in organizational structure is hypothesized to enhance political effectiveness by allowing for the simultaneous adoption of multiple methods of influence (diverse tactical repertoires).

The approach adopted here builds on the movement infrastructure model, emphasizing the potential beneficial effects of large and diverse organizational infrastructures as well as diversity in organizational goals. By goals, I am referring to the specific issues around which EMO such as the NRDC and EDF mobilize attention and resources. In most agenda-setting models, SMOs operate as issue generating organizations that identify and problematize new issues and push for their inclusion on the limited space of government institutional agendas (e.g., Baumgartner and Jones 1993; Rochon 1998). This implies that changes in the representation of issues within a social movement population have important implications for political outcomes of interest. Studies on the impact of SMO goal diversity have been very rare, producing mixed findings (e.g., Armstrong 2002; Gamson 1975). Previously reviewed histories of the environmental movement, however, strongly suggest

that increased goal diversity is positively associated with the pace of legislative activity on the environment.

A diversity of both organizational goals and structures increases appeal to different constituencies and may thus enhance a movement's political efficacy indirectly through positive effects on movement size. As the movement infrastructure model suggests, goal and structural diversity may also result in heightened political efficacy by resulting in greater tactical diversity.<sup>2</sup> In a diverse organizational field, highly professionalized SMOs can adopt a range of institutionalized tactics (Staggenborg 1988), while other organizations may simultaneously focus on novel or extra-institutional tactics. By employing professional staff scientists, lawyers and lobbyists, SMOs can act as stable policy-making partners, providing important information and assistance in framing issues to Congressional members and staff (Burststein and Hirsh forthcoming; Milbrath 1963). At the same time, the size of a social movement organizational infrastructure is positively associated with protest capacity (Minkoff 1997). Finally, diversity in SMO structures and goals may also enhance political efficacy by providing the flexibility to exploit openings which arise in the operating environment. For instance, EMOs which attend to politically neglected issues are primed to take advantage of political opportunities which develop as a result of focusing events such as the Exxon Valdez oil spill or Chernobyl nuclear release (Birkland 1997; Kingdon 1984).

H3: Increased issue diversity within the environmental movement will be positively associated with the incidence of both Congressional agenda setting and law passage activities.

Histories of the environmental movement also suggest that changes in EMO structure, particularly the rise of highly professionalized non-membership organizations, spurred Congressional attention to environmental issues. Many analysts, however, question the apparent benefits of movement professionalization. Most famously, Piven and Cloward (1977) assert that, at least for poor people's movements, organization building itself is detrimental to achieving desirable political outcomes. A number of analysts have also critiqued the apparent legislative successes of the mainstream national environmental organizations in particular, suggesting that a focus on professional expertise among national EMOs has come at the expense of the mass-based engaged membership necessary to engender sustained political change (Dowie 1995; Shabecoff 1993). Other movement scholars have advanced the opposite argument, that professionalization and resulting organizational stability are positively associated with movements achieving desirable political outcomes

(Cress and Snow 2000; Gamson 1975; Staggenborg 1988). Still others have asserted that rather than professionalization per se, it is the diversity of organizational structures that is important, as movements with more diverse organizational infrastructures are more innovative and responsive to changing environmental conditions (Andrews 2001; Clemens 1997). We test for effects of the changing composition of EMO organizational structures across two important stages in the political process.

H4: The increased prevalence of non-membership organizations, relative to individual membership organizations, will be positively associated with the incidence of both Congressional agenda setting and law-passage activities.

H5: Increased diversity of organizational forms will be positively associated with the incidence of both Congressional agenda setting and law-passage activities.

## Data and Methods

### *Dependent variables*

Yearly counts of environmental laws enacted from 1968 through 1998, the first dependent variable, come from the Policy Agendas Project Public Laws Database. This database contains information on each public law passed in the United States between 1947 and 1998.<sup>3</sup> Each law is coded according to 19 major topics, from which all laws in the "Environment" topic were selected.

To assess agenda setting activities within the United States Congress a yearly count of Congressional hearings (combined Senate and House) convened each year 1968-1998 on environmental issues is used (data from the Policy Agendas Project). One major advantage of these data is that hearings are coded according to the same scheme as for laws.

### *Independent Variables*

#### *The Environmental Movement, How Large?*

Data on national environmental movement organizations were drawn from the *Encyclopedia of Associations, Volume 1, National Organizations of the U.S.* (Gale Research Inc. 1956-2003). The *EOA* has been widely used as a census for bounding national populations of SMOs (e.g., Baumgartner and Jones 1993; Minkoff 1997; Nownes 2004). Though somewhat more likely

to include the largest and most well-known of groups, the EOA does seem to provide an adequate sampling frame for populations of national SMOs (Martin, McCarthy and Baumgartner 2005). National EMOs were initially identified using ten editions of the *EOA* (2003, 2000, 1995, 1990, 1985, 1980, 1975, 1970, 1962, 1956) to select all those groups which identified environmental conservation/protection as a primary organizational purpose or concern. This was established through a combination of keyword headings, association name, and organizational description.<sup>4</sup> Those organizations whose membership was drawn primarily from industry and/or governmental agencies, as well as those focused on advancement of a professional group, were deleted from the sample. After an initial list of national EMOs was established, every entry for these organizations in any edition of the *EOA* was collected, data-entered, and all entries in close proximity examined for additional relevant organizations. When this process was complete, 658 distinct national EMOs were identified as having been in existence at some point during the period under study, and more than 10,500 organization-year observations recorded.

The total number of U.S. national EMOs active in each year was computed from organizational birth and death information contained in the *EOA*. Additionally, annual observations were summed to compute direct resource based population measures, based on individual membership and staff levels (budgetary data was not included in the *EOA* prior to the late 1980s and is thus unavailable for analysis here). Measures of the total number of active EMOs, aggregate membership, and aggregate staff are all highly correlated over the period under analysis (.88 or above). An index of z-scores is used to compute a summary size measure that reflects aggregate movement resource capacity.

### *The Environmental Movement, How Diverse?*

The issue representation of individual EMOs was identified through a content analysis of self-reported descriptions contained in the *EOA* (for further detail see Johnson 2006). For each organization-year under observation, it was recorded whether an organization indicated that it attends (1. exclusively to traditional environmental issues of natural resources and wildlife *conservation*, (2. exclusively to new or second-generation issues of environmental *quality* and pollution, or (3. to a *mix* of at least one traditional and one new environmental issue. Conservation issues are operationalized to include any indication of concern with general environmental or resource conservation/protection/preservation or more specific issues of wildlife, endangered species, non-hazardous waste, energy conservation, water conservation, marine protection, wetlands, forests, land management, parks and public lands. EMOs are coded as attending to environmental quality issues if they include in their

self-description mention of general environmental quality and pollution or more specific air pollution, water pollution, hazardous waste, pesticides, nuclear waste, human health or environmental justice issues. Information on individual EMOs is aggregated to the population level to derive the yearly proportion of EMOs attending to 1.) conservation, 2.) quality, 3.) or a mix of conservation and quality issues. This information is used to compute a yearly index of issue diversity  $D = 1 - \sum_{p=1}^N P_i^2$  where  $p$  is the percent of organizations in a category and  $N$  equals the total number of categories (Blau 1977). The greater the value of the diversity index, the more heterogeneous the population.

EMO organizational structure is coded into the four standard categories typically employed in social movement research (McCarthy and Zald 2002): 1.) individual members only, 2.) organizational members only 3.) a combination of individual and organizational members, and 4.) not a membership organization. Again, this information is aggregated to the population level and an index of EMO structural diversity is computed. Histories of the environmental movement suggest that the growth of a professionalized movement sector was particularly important in accounting for legislative gains. Non-membership organizations may play a unique and important role in fostering legislative attention and action on issues of interest. We test for the particular impact of these groups with measures of the proportion of EMOs which have no-members and the proportion of EMOs which rely exclusively on individual members as well as a variable computed as the ratio of non-membership to individual membership organizations in the population.

### ***Controls***

Democrats have long been identified as allies of the environmental movement in the United States (Dunlap and Allen 1976; Guber 2001) and the presence or absence of elite allies is a key component in most conceptualizations of the political opportunity structure (McAdam 1996) that is expected to be positively correlated with both agenda setting activities and favorable political outcomes. One measure of the structure of political opportunities references Democratic Party advantage in Congress, computed as the number of Democrats minus Republicans in the House of Representatives and Senate. Additionally, a Democratic President dummy variable, coded as 1 when a Democrat is President, is included in all models.

A dichotomous variable, coded 1 during Congressional election years, is also included in all models. National elections represent periods of instability in political alignments (Meyer and Minkoff 2004). During election

years, political parties and individual legislators are subject to heightened scrutiny by the electorate and thus can be expected to push through important legislation in an attempt to present themselves in the best light possible. As such, it is expected that the passage of environmental laws will increase during election years. At the same time, electoral campaigning requires large investments of time on the part of individual legislators running for office, leaving less time available for important activities such as conducting Congressional hearings. These electoral realities are reflected in the temporal workload of Congressional sessions whereby more hearings are scheduled in the first year of a Congress and more bills passed in the second year.

As a final POS measure, the formation of the EPA is a landmark event in the development of U.S. environmental policy that is expected to have a positive and significant effect on both environmental agenda setting activities and actual policy outcomes. A dummy variable is included for the years surrounding the founding/formation of the EPA (1969-1971).

There are no systematic trend data available over the entire study period that pertain directly to public opinion towards environmental protection, unfortunately. Instead, a "policy mood" scale (Stimson 1999; Stimson, Mackuen and Erikson 1995) that aggregates responses to several different public opinion questions, including attitudes about environmental issues, to construct a liberal-conservative scale is employed.<sup>5</sup> The measure is available over the entire time period under analysis and represents the percentage of all responses that support a more liberal position, where liberalism represents support for more governmental action. Though not ideal, the policy mood scale appears to track public support for environmental issues rather well (Agnone 2007).

Media attention to environmental issues is operationalized to account for both daily newspaper and periodical coverage. The number of articles per page listed under environmental keywords within the *NY Times Index* and the *Readers Guide to Periodical Literature*, correlated over the observation period at .79, are combined using an index of z-scores.<sup>6</sup>

Environmental degradation is operationalized as yearly U.S. emissions of five air pollutants: particulate matter less than 10 microns, carbon monoxide, sulfur dioxide, nitrogen dioxide and volatile organic compounds (U.S. Census Bureau 2003). Emissions data were standardized and combined using z-scores to create a yearly air pollution index, with each pollutant weighted equally. This index is a direct measure of environmental degradation that combines information on four of the six criteria air pollutants for which the EPA has set health based standards, integrating data on a diversity of types and sources of emissions (Environmental Protection Agency 2000).<sup>7</sup> Because the EPA has long-standing health based standards for these emissions, this type of environmental

degradation is particularly visible and relevant to policy makers (Frickel and Vincent, forthcoming).

Finally, social movement scholars increasingly seek to account for relevant countermovements in their models (Andrews 2002; McCright and Dunlap 2003; Meyer and Staggenborg 1996). Though the relationship has changed considerably in recent years (Hoffman 2001), industry is typically seen as the major historical opponent of the environmental movement. We measure industrial opposition using the yearly budget of the National Association of Manufacturers in millions of dollars relative to GDP in billions of dollars (Allen and Campbell 1994). The NAM is the largest industrial trade association in the United States, representing both large and small manufacturers in all 50 states and in every industrial sector. The organization has played an important role in the U.S. conservative movement and is a politically effective organization explicitly oriented towards influencing federal public policy (Soffer 2001; Workman 1998). The NAM is one important mechanism through which industrial opposition to federal environmental public policy has often been expressed. It is, for example, by its own description, "the leading advocate of a pro-growth, pro-manufacturing agenda." (NAM 2006) We explored a number of potential alternative measures of industrial opposition, including yearly share of GDP contributed by resource extraction related industries and, over a necessarily truncated period of analysis, counts of articles on environmental topics from *Chemical Week* and the *Oil and Gas Journal* (data provided by Hoffman 2001). The results from those models fit the pattern of results in reported models.

### ***Methods of Analysis***

Assembled data were analyzed using Poisson regression techniques. Poisson regression is a special case of the generalized linear model that utilizes counts of events, in this case yearly counts of environmental laws passed and hearings convened, as the dependent variable. Count data often violate three important assumptions of OLS, typically displaying non-negative, skewed distributions, where the variance increases with the mean. Implicitly, Poisson uses a log transformation that prevents the model from producing negative predicted values, adjusts for a skewed distribution, and models the variance in event counts as a function of the mean (Barron 1992; Liao 1994; Long 1997).

### **Results**

Analyses begin with a test of the core hypothesis (Burstein and Linton 2002) that social movement size is positively associated with political

**Table 1: United States Congressional Hearings Convened and Laws Passed on Environmental Issues, 1955-1998**

Variable	Hearings		Laws	
	Model 1	Model 2	Model 3	Model 4
Movement Size <sub>(t-1)</sub>		.2877*** .0481		.0508 .1198
Democratic Congress	.0030*** .0004	.0036*** .0004	.0023* .0010	.0028** .0010
Election year	-.3186*** .0380	-.02897*** .0384	1.1046*** .1125	1.1085*** .1129
Democratic President	-.2588*** .0409	-.2429*** .0407	-.3439** .1096	-.3405** .1098
EPA	.5008*** .0984	.6135*** .1007	.0548 .2311	.0753 .2360
Public Opinion <sub>(t-1)</sub>	.0017 .0057	.0124* .0060	-.0284* .0127	-.0251 .0149
Media Attention <sub>(t-1)</sub>	-.0026 .0146	-.0419** .0160	-.0296 .0467	-.0374 .0502
Environmental degradation <sub>(t-1)</sub>	-0.0418** .0118	.0909*** .0251	.0039 .0265	.0293 .6545
Industry Opposition <sub>(t-1)</sub>	-.2208*** .0116	-.0166 .0357	-.0394 .0219	-.0060 .0816
Intercept	5.1012*** .3320	3.1314*** .4714	3.4540*** .7531	3.0334** 1.2464
Log-Likelihood (d.f)	9657.8683 34	9675.9696 33	642.9570 34	643.0472 33

Notes: \* $p < .05$  \*\* $p < .01$  \*\*\* $p < .001$  (two-tailed test)

activity. In an attempt to explain the discrepant findings of previous research, the conceptualization of relevant political activity is broadened to include agenda setting activities. Table 1 reports the results of Poisson regression analyses modeling the yearly number of Congressional hearings convened and laws passed on environmental issues as a function of social movement size and relevant controls.

Models 1 and 2 examine the incidence of Congressional agenda setting activities (legislative hearings). The baseline Model 1 includes all control variables: national political opportunity structure, public opinion, media attention to environmental issues, environmental degradation, and size of corporate opponents. In Model 2 the size of the national environmental movement industry is added to this baseline. Growth in the total size of the national environmental social movement organizational infrastructure is associated with increased Congressional attention to hearings on environmental issues. Movement size is a significant predictor, at the

.001 level, of the frequency of Congressional hearings and significantly improves the model's fit to the data over the controls-only model. The positive relationship between movement size and Congressional agenda setting activity is consistent and robust across the many models estimated, including those displayed in Table 2, providing support for the first portion of hypothesis 1.

Model 3 is a baseline model of the more commonly analyzed outcome of law passage, including the same control measures as in the examination of agenda setting. The addition of environmental movement size in Model 4 fails to achieve significance, suggesting that movement size is unrelated to law passage and the rejection of the second part of Hypothesis 1. The null effects of movement size on law passage, in contrast to positive effects on agenda setting, supports Hypothesis 2. Reflecting the discrepant findings in the broader literature examining movement influence on law passage, however, movement size displays varying effects on law passage depending on the specific modeling strategy employed. This stands in stark contrast to the consistent robustness of movement size when modeling the Congressional agenda setting activities. For example, accounting for movement opponents remains fairly rare in the existing literature and not doing so suggests very different results than those displayed here. Specifically, in models omitting a measure of movement opposition, environmental movement size is weakly but positively associated with law passage. As would be expected, the size of the effect is also considerably smaller than for hearings, about one-fourth the size (.3524 to .0623), further supporting H2.

Given the mixed findings of previous research, the contingent and variable relationship between movement size and law passage makes sense, suggesting that the significance of movement size on lawmaking activity depends heavily on the specific modeling strategies employed. This implies that tests of an independent and direct effect of movement size on political outcomes are likely to produce continued inconclusive results when examining law passage. Earlier stages in the political process appear more directly responsive to mobilization size, however. We now examine whether other aspects of movement organizational populations are more consistently related to political activities.

### *Characteristics of SMO Populations*

The size of movement mobilization is, of course, only one potentially relevant aspect of a movement that may impinge on the political process. Of particular theoretical importance is change in the composition of movement organizational structures and goals. Table 2 presents summary results of a series of Poisson regression models exploring the relationship

**Table 2: Environmental Movement Size and Composition Effects on Congressional Agenda Setting and Law-passage Activities**

Variable	Hearings		Laws	
	Estimate	Std. Error	Estimate	Std. Error
<b>Issues</b>				
Model 5				
Issue Diversity	5.8992***	1.6277	10.8637**	3.7732
Movement Size	.2086***	.0522	-.1403	.1361
Log-Likelihood	9682.6768		647.2991	
Model 6				
Env. Quality Focus (prop.)	6.7037*	3.4214	3.5314	6.9887
Movement Size	.2233***	.0580	.0117	.1425
Log-Likelihood	9677.9202		643.1762	
Model 7				
Conservation Focus (prop.)	-7.1891***	1.8926	-13.7335**	4.3494
Movement Size	.2082***	.0519	-.1491	.1351
Log-Likelihood	9683.3218		648.1288	
Model 8				
Mixed Focus (prop.)	7.1223***	2.2208	15.6770**	4.9513
Movement Size	.2772***	.0481	-.0022	.1210
Log-Likelihood	9681.1921		648.2423	
<b>Organizational Structure</b>				
Model 9				
Structural Diversity	-8.9365	4.6979	-.5298	11.0074
Movement Size	.2850***	.0482	.0503	.1202
Log-Likelihood	9677.7727		643.0486	
Model 10				
Individual Membership (prop.)	3.5863	2.6119	-4.4981	6.2333
Movement Size	.2875***	.0482	.0519	.1195
Log-Likelihood	9676.9109		643.3072	
Model 11				
Non-Membership (prop.)	-.0155	3.0630	.9753	6.9455
Movement Size	.2876***	.0494	.0533	.1212
Log-Likelihood	9675.9696		643.0570	
Model 12				
Non-Memb./Ind. Memb. (ratio)	.0273	1.6272	1.3937	3.8555
Movement Size	.2879***	.0492	.0575	.1213
Log-Likelihood	9675.9697		543.1122	

Note: \*p < .05    \*\*p < .01    \*\*\*p < .001 (two-tailed test)

between changes in the composition of the U.S EMO population and political outcomes of interest. All models include the control variables presented in Table 1, though for parsimony coefficients are not reported.

The top half Table 2, models 5-8, focuses on shifting issue representation within the movement and demonstrates consistent results across both

legislative hearings and laws. The increased diversity of issues within the environmental movement is associated with significantly more frequent agenda setting and law passage activities (Model 5). Interestingly, however, the increase in organizations focused exclusively on environmental quality issues (Model 6) is only weakly significant at the agenda setting stage and unrelated to law passage. Instead, it is increases in the proportion of national EMOs focused on *both* conservation and environmental quality issues (Model 8) that seems to spur political activity. And, whereas movement size has a null or smaller effect at the law passage stage relative to agenda-setting stage, the effect size for measures of issue composition are two to three times larger at the law passage stage than at the agenda-setting stage. In total, these models provide support for Hypothesis 3, that issue diversity within the environmental movement will be positively associated with the incidence of both Congressional agenda setting and law passage activities.

Across these summary models, movement size remains a consistently strong positive predictor of Congressional agenda setting activities, though its effect is moderated somewhat by the inclusion of issue representation. This reveals that, in small part, the effect of movement size on agenda-setting activities operates via diversification of the movement. Yet, these findings also indicate that movement size and movement composition exert distinct effects on the agenda-setting process. Movement size remains unrelated to the passage of environmental law, regardless of the specific modeling strategy employed (e.g., excluding or employing alternative measures of corporate opposition).

Models 9-12 in the bottom half of Table 2 display the results of models testing for a hypothesized relationship between the composition of organization structures in the environmental movement (especially the relative abundance of individual membership and non-membership organizations) and the frequency of Congressional agenda setting and law-passage activity. There is no evidence of a significant relationship between the composition of organizational structures within the movement and either agenda setting or law-passage activities. Neither structural diversity, the proportion of individual membership organizations, the proportion of non-membership organizations, nor the ratio of non-membership to individual membership organizations in the population has a significant impact on either legislative hearings or law passage incidence. Consequently, the fourth and final hypothesis is rejected.

### ***Controls***

Control variables included in analyses act largely as expected. Among the control variables, the most important and consistent determinants of

Congressional activity on the environment appear to be aspects of the political opportunity structure. As expected, Democratic Congressional control is consistently positively associated with the incidence of both agenda setting and law passage activity. Also as expected, election years are associated with fewer agenda setting, but more law-passage, activities. Surprisingly, however, the presence of a Democratic president is associated with less frequent Congressional action. It may simply be that when political allies are in control of the executive branch there is an incentive to deal with relevant issues in the executive arena rather than the legislative one. Or, while Congressional Democrats may be more likely to embrace views that are allied with the goals of the environmental movement, the stance of the chief executive may be less tied to party affiliation. It was, for example, President Nixon, a Republican, who presided over the greatest period of the political institutionalization of environmental issues in the history of the United States and the first President Bush who presided over the second most active period in terms of the number of environmental laws passed (partly as a response to the Rio Earth Summit).

## **Discussion and Conclusion**

In assessing how the size and composition of a social movement's national organizational infrastructure are related to two distinct stages in the policy-making process, this paper presents a more nuanced analysis that moves beyond a narrow focus on the relationship between movement size and law passage. Social movement size is, as expected, significantly and substantially related to increased incidence of Congressional agenda setting activities. Movement size, however, has no significant effect in reported models on the incidence of law passage. That the influence of SMOs is greater at earlier rather than later stages of the legislative process is, I suspect, a highly generalizable finding. At the state level, King et al. (2005) and Soule and King (2006) similarly find that for both suffrage and equal rights amendment legislation, respectively, legislators responded to women's movement mobilization by placing issues on the legislative agenda (though note that agenda setting is measured using bill introductions rather than legislative hearings), but that differences in social movement tactics and organization did not influence law passage.

While there is no evidence presented that movement size directly affects law passage, that does not mean the two are unrelated. There are likely indirect influences of movement size on political outcomes that are not captured in these analyses, considering that agenda setting activity itself has important implications for law passage (e.g., Burstein and Hirsh forthcoming; Jones and Baumgartner 2004). In addition, the ability to influence the agenda can be important to blocking policies opposed by a

particular social movement. Beyond affecting the likelihood or incidence of law passage, to the extent that a social movement is able to define the issues under consideration at the political agenda-setting stage, it may also influence the content of laws, making some policy solutions more acceptable than others.

Reconciling the discrepant findings of previous research examining movement influence on law passage requires both a broader conceptualization of the political process and the examination of aspects of social movements other than size which may impinge on the political process. This paper tests hypotheses concerning the effect of movement composition. The results provide no evidence that the distribution of organizational forms in a movement population significantly affect political outcomes. Neither increased diversity of organizational forms generally nor changes in the proportion of non-membership or individual membership organizations in particular are associated with the incidence of either agenda setting or law-passage activity.

There is, however, strong evidence that the goals adopted by EMOs do significantly affect the pace of both agenda setting and law passage activity. Increased diversity of issue representation within the population of national EMOs is associated with more frequent agenda setting and law passage activities. Interestingly, the growth in representation of EMOs focused exclusively on new or second generation environmental issues over the period under analysis has only a modest association with agenda setting, and no significant association with law passage. Instead, when the population has greater proportions of EMOs embracing a mixed goal structure, attending to both issues of environmental quality and resource conservation, there is more legislative activity on environmental concerns. In interpreting the consistently strong effects of issue diversity on agenda setting and law passage, it may be helpful to draw from punctuated equilibrium theory (Baumgartner and Jones 1993; Jones and Baumgartner 2004; Rochon 1998). This perspective strongly suggests that new problem (or issue) definitions can lead to cascading political action, periods of punctuated equilibrium, in part by resulting in new and expanded venues for action.

To summarize, the results of this paper indicate that movement size does matter at the agenda setting, but not the law passage, stage of the political process. EMO form is unrelated to political effectiveness, but the issues to which EMOs attend have important implications across stages of the political process examined here. Movement size and goal diversity exert distinct effects on policy making, with little overlap. These results suggest the importance of adopting a more processual view of policy making and a more nuanced view of the influence of SMOs that takes into account movement characteristics other than size. Doing so

has the potential to begin resolving the discrepant findings of research heretofore narrowly focused on the relationship between movement size and law passage.

## Notes

1. I am indebted to *Social Forces* reviewer #9 for especially insightful and constructive feedback that pushed for specifying the relationship between EMO population size, compositional change and political outcomes.
2. Researchers have devoted very extensive attention to the political effectiveness of different tactics employed by social movements (e.g., Cress and Snow 2000; Gamson 1975; Piven and Cloward 1979). There is growing evidence that a diversity of tactics generally enhances a movement's political leverage (Cress and Snow 2000; Meyer 1999; Morris 1993), including for the environmental movement specifically (Johnson, Agnone and McCarthy 2006). Though beyond the scope of this paper, a more complete examination of social movement influence would need to account for movement activities as well as SMO population size and composition.
3. The data used here were originally collected by Frank R. Baumgartner and Bryan D. Jones, with the support of National Science Foundation grant number SBR 9320922, and were distributed through the Center for American Politics and Public Policy at the University of Washington and/or the Department of Political Science at Penn State University. Neither NSF nor the original collectors of the data bear any responsibility for the analysis reported here.
4. Conservation, wildlife conservation, environment, environmental quality, environmental protection, environmental health, toxic exposure, nuclear energy, ecology, pollution control and hazardous waste.
5. Stimson provides downloadable data files at: <http://www.unc.edu/~jstimson/time.html>.  
Updated from James A. Stimson. 1999. *Public Opinion in America: Moods, Cycles, and Swings, 2nd Ed.* Westview Press.
6. The incidence of environmental articles in the *New York Times* comes from the Policy Agendas Project.
7. The criteria air pollutants include carbon monoxide, nitrogen oxides, sulfur dioxide, particulate matter, ozone and lead. No measure for ozone emissions is included, as this pollutant is produced by photochemical reactions in the atmosphere rather than direct emissions. Data on air-borne lead emissions were only available from 1970 and thus were excluded from analysis. Volatile organic compounds are included in analyses as they enable and facilitate the formation of other criteria air pollutants.

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