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DISSERTATION

DIRECT DEMOCRACY AND ENVIRONMENTAL CONFLICT IN THE STATES

Submitted by
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In partial fulfillment of the requirements for the degree of Doctor of Philosophy
Colorado State University
Fort Collins, Colorado
Summer 2000

COLORADO STATE UNIVERSITY

June 21. 2000

WE HEREBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER OUR SUPERVISION BY WILLIAM SALKA ENTITLED DIRECT DEMOCRACY AND ENVIRONMENTAL CONFLICT IN THE STATES BE ACCEPTED AS FULFILLING IN PART REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

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ABSTRACT

DIRECT DEMOCRACY AND ENVIRONMENTAL CONFLICT IN THE STATES

While much existing literature has examined whether voters are capable of making rational decisions on issues presented to them through the ballot measure process, little research has empirically examined the demographic and economic factors that influence those votes. This project seeks to identify the determinants of state-wide votes on environmental initiatives and referenda in California, Colorado, Florida, Michigan, and Oregon. Particular emphasis is focused on differences in voting patterns between urban and rural counties. Other possible determinants at the county level include demographic characteristics such as party affiliation and education, and economic conditions such as median income and employment in resource related industries. Based on this analysis, it is clear that all three groups of variables are important in explaining differing voting patterns among counties within each state.

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Chapter One: "DIFFERENCES IN SUPPORT FOR ENVIRONMENTAL PROTECTION"

INTRODUCTION

Both the continuous flow of popular press reporting on the environment and the results of some of the work reported in our scholarly literature make it clear that there is substantial disagreement among Americans with regard to preferences for environmental protection. Whether it be a state-wide initiative on animal leg-trapping, federal attempts to abate air pollution, or local efforts at land-use control, there is considerable controversy and political conflict over the appropriate ways to protect the environment. This conflict is curious in light of numerous public opinion polls that suggest high levels of public support for environmental protection (Dunlap 1991).

While citizen opinion on the environment may divide in any number of ways, differences in policy preferences between urban and rural constituencies have been reported with some frequency in our scholarly literature. For example, Clive S. Thomas (1991) predicted that future political conflict in the western United States will stem primarily from disagreement between rural and urban residents over environmental issues. Robert Bartlett (1993) found that rural Westerners possess a distinct political culture that is less receptive to environmentalist values and ethics, and more accepting of resource use, than are citizens in most other regions of the United States. Riley Dunlap (1993) has

findings similar to those of Bartlett, but notes that the three Pacific coast states tend to be somewhat more environmentally friendly than those in the Rocky Mountain west. Finally, a study by Witt and Alm (1995) suggests that despite concerted efforts to consistently view environmental politics in terms of urban-rural conflict, there exists some evidence indicating that urban and rural communities are not necessarily at opposing ends of the environmental spectrum.

As America enters the new millennium, the federal government continues to shift responsibility for a number of policy areas out of Washington, D.C. to the states. One such policy area deals with natural resources and environmental protection. As the national government continues to pursue balanced budgets and state governments increase their capacities to initiate and administer public policy, increasing numbers of environmental policy decisions are being made at the sub-national level. While increases in levels of environmental protection may potentially impose significant impacts on virtually all sectors of society, only limited scholarly research has been done on environmental policymaking in the states.

State policy decisions are typically made in one of two manners: through state legislatures, in all fifty states; or through initiatives and referenda in roughly half the states. While scholarly work has focused on policymaking in state legislatures (some recent examples are Hamm and Moncrief 1999, Rosenthal 1998, Loomis 1994, Straayer 1990), we have only begun to examine the determinants and impacts of policymaking through the ballot measure process. Given the growing importance of the states in making public

policy, some study of the determinants of voting behavior in initiative and referendum elections seems appropriate.

In light of past findings regarding urban-rural differences in environmental policy and the growing importance of state decisionmaking in this area, this study will seek to provide further evidence of the determinants of support for environmental protection at the county level. It will extend the scholarly probe into urban-rural differences in policy preferences as expressed through votes on environmental ballot measures during the 1990s in a number of states. As no single variable can be used to explain county wide environmental preferences, this study will also assess whether counties differ in their support based on the demographic characteristics of residents or the economic conditions found there. This assessment will be made by examining the popular preferences of citizens as aggregated in votes by county on state-wide environmental ballot measures.

The county is an important unit of analysis due to its position between state and local governments. While much environmental policy is made at the state or national levels, many of these policies are implemented at the county level. Counties also have important policymaking authorities of their own, primarily with regard to land-use planning and waste management. Further, previous studies examining urban-rural differences have typically focused on counties as their units of analysis (Bennett and McBeth 1998, Alm and Witt 1997).

The focus of this study, then, is on differing levels of support for environmental protection among urban and rural counties, but also examines whether those differences are based on other demographic and economic characteristics. The five states included in

this study are California, Colorado, Florida, Michigan, and Oregon. By examining both western and non-western states, an attempt can be made to discover whether the urban-rural distinction reported in the west exist in other regions of the United States. While this study will be primarily based on quantitative analysis, the use of several ballot measures across five states allows considerable qualitative examination, comparing the politics that surround the initiative and referendum process in America, and issues surrounding environmental protection in general.

URBAN-RURAL DIFFERENCES ON ENVIRONMENTAL POLICY

In his analysis of contemporary politics in the American West, Clive S. Thomas (1991) suggests that the most significant factor driving policymaking in that region is the increased conflict between urban and rural areas. More importantly, Thomas argues that this tension has centered around environmental issues, noting that environmental protection and quality of life are going to be the most significant problems facing policymakers as the West continues to urbanize and pressure is placed on traditional uses of the environment.

The scholarly literature on environmental politics in the West, however, is broken into a couple of streams. The first stream addresses Western environmental politics in general, suggesting the presence of a unique environmental culture or ethic within that region. The second stream addresses variations in support for environmental protection within the West, investigating whether there are significant differences in levels of support among urban and rural residents and offers possible explanations for those differences.

A UNIQUE WESTERN CULTURE?

A number of authors have contributed to a search for a "unique" Western environmental ethic, most implying that environmentalism in the West is different from other regions of the United States. These authors attempt to explain the presence of this unique ethic by tracing its roots to the historical development and culture of the West.

David Feldman (1993) has attributed the environmental ethic found in the West to its climate and geographic nature. He suggests that the abundance of some resources (land, timber, forage, and minerals) combined with the scarcity of others (primarily water) have made the struggle for existence in the West more difficult than in other regions. This "struggle to survive" has fostered a particular environmental ethic among Westerners, one that encourages development and economic exploitation of resources rather than their preservation.

Feldman traces this unique ethic primarily to the arid nature of the region. This aridity is evidenced in "prior appropriation," a type of water law unique to the West, designed to protect the first users of water courses (for an excellent introductory discussion of the prior appropriation doctrine, see Wilkinson 1992). Feldman argues that much of this unique Western environmental ethic can be understood through reference to prior appropriation, which was developed in response to the need to cope with the water scarcity that existed when the region was being settled. As settlers moved west and faced an increasingly harsh climate, they realized the need to use their intellect to harness and control nature if they were to survive. This struggle for survival ultimately led settlers to call on the federal government for help.

Feldman goes on to discuss the components of this unique culture, what he calls the "frontier ethic." The first component entails general (though not complete) opposition to government intervention in resource use. This ethic affects policy in two ways. The frontier ethic generally favors government subsidies and federal money for water projects and other development, but opposes policies that place control of resources in the hands of distant federal bureaus. This ethic also produces distrust of agencies that seek to protect the environment, as these policies do not produce wealth but rather seek to lock away resources. The second component of this ethic promotes local control of resources, with management decisions left to those in the immediate vicinity of the resource. This often leads to the creation of "iron triangle subgovernments," in which regional commodity users seek to promote resource use, while attempting to block groups or interests outside the region from entering the subsystem. The final component of this frontier ethic stresses the importance of efficiency considerations in justifying policies. Efficiency here is generally defined as promoting resource use for economic development or benefits, over resource preservation. According to Feldman, then, the arid nature of the West has produced a unique environmental ethic that promotes use over preservation, bringing it into conflict with the objectives of the environmental movement.

Robert Bartlett (1993) has also identified a unique Western environmental ethic, which he suggests makes the West less receptive to environmental values and ethics than are most other parts of the United States. Bartlett, however, attributes this unique ethic to the region's political culture, which he suggests has evolved through shared environments and experiences. He defines the "West" as all states west of New Mexico to the south and

North Dakota to the north, excluding Washington, Oregon, and California. The Pacific coast states are excluded by Bartlett because they are have large coastal populations centered around urban cultures that are able to dominate the more traditional Western culture found elsewhere in those three states.

While Bartlett argues that the West's unique culture fits within the larger American political culture, he argues Western culture is distinct in that it is more materialistic, stresses control and modification of the environment to a greater extent, and embraces individualism and autonomy not only as a personal trait, but also as political and economic values. Like Feldman, Bartlett argues that the physical environment of the West has greatly influenced its political culture, as the arid climate demands environmental management to control natural forces. Vast open space also contributes to individualism by promoting a sense of distance and isolation. These vast spaces, however, may produce an almost fatal carelessness and excessive resource use, as resources are perceived to be limitless. Further, the ever present federal land ownership serves as a constant reminder of dependence on, and control by, outsiders. This dependence flies in the face of the promise of autonomy and individualism that Westerners find so appealing. Finally, the clear links between the use of natural resources and local and regional economic dependence on those resources reinforce materialist values and the pursuit of developmental goals.

Riley Dunlap (1993) also investigated the possibility of a unique Western environmental culture, but employed more empirically based methods to do so. Dunlap found that Western states ranked very high in terms of environmental quality, but many of those same states rank low in their development of governmental policies aimed at

protecting the environment. Here Dunlap also distinguishes between Pacific coast states and the Rocky Mountain west, finding governmental policies to be more protective in the western coastal states. Thus his findings support Bartlett's notion of a distinction between these two groups. Dunlap attributes this difference to the early urbanization of coastal cities such as San Francisco, Portland, and Seattle, which led to greater overall urbanization in those three states, while most Rocky Mountain states have remained largely rural throughout their histories. This suggests that, overall, urban residents may view the need for environmental protection differently than do rural residents.

Dunlap finds that environmental policies in the Rocky Mountain West are both fewer and less stringent than those of the coastal states. He also finds this to be true when comparing the policies of the Rocky Mountain states with states in other regions. Thus, not only are the Rocky Mountain states' environmental policies less protective than those of the Pacific coast states, they are also generally less protective than those of other states outside the west. He attributes this distinction to the "frontier mentality" found in the Rocky Mountain west, suggesting that this mentality is literally a hold over from frontier days where individualism, property rights, opposition to government regulation, free enterprise, and the necessity of "taming" nature and putting its abundant resources to use were emphasized. All of these characteristics tend to counter values that would support increased environmental protection.

Dunlap moves beyond an examination of state policies to a comparison of survey data collected from across the country. Here he finds little evidence to suggest that there are significant differences in individual support for environmental protection across

regions. He found that respondents from both the east and west, while concerned about slightly different issues, expressed roughly the same level of support for environmental protection, while respondents from the Midwest and southern regions were not far behind. Based on these findings, Dunlap argues that it is not accurate to assume residents of the West differ significantly from residents in other regions in their concern about environmental problems.

Dunlap goes on to suggest a number of possible explanations for his findings. First, he argues that since public concern over the environment had reached such high levels by the late 1980s, it seems reasonable to assume that concern has diffused throughout the nation. Second, the media has played a key role in raising public awareness about environmental issues, with a great deal of that media attention coming from sources that cover at the entire nation. Thus, citizens are exposed to many of the same sources of information regardless of where they live. Finally, Dunlap notes that America is becoming more homogeneous, as citizens are exposed to the same media, travel more about the country, and are becoming increasingly urbanized.

Dunlap's findings may suggest that while Western residents might have had a unique environmental ethic at one time, recent trends may be altering or diluting this ethic. Samuel Hays (1991) supports this claim, suggesting that over the past three decades, environmental objectives have emerged in the West with considerable strength and influence, reshaping public attitudes. Hays notes that until World War Two, agriculture and natural resource extraction dominated western economic and political views. The West has seen rapid changes, however, as new residents have brought new attitudes

towards natural resources. Those new residents have joined an indigenous environmental community and both groups have become more vigorous in challenging the previously dominant extractive industries.

As evidence of these changes, Hays points to the recent increase in the number of citizen environmental groups across the West, and national surveys that demonstrate a higher level of environmental concern than popular perceptions suggest. These new attitudes result from substantial shifts in Western demography, primarily in the rapid growth of urban areas and the influx of new inhabitants attracted by the higher quality environments. These demographic shifts have not been complete however, as Hays notes the presence of a strong and mobilized environmental opposition consisting of groups and individuals supporting traditional patterns of resource use. These forces tend to come from rural areas, leading Hays to suggest the presence of an urban-rural split among western residents. This indicates that the West as a region is not necessarily less supportive of environmental protection, as residents of urban areas have generally adopted the perspectives of the environmental movement. Rural residents, however, have tended to hold on to the once dominant ethic that promotes environmental exploitation.

Hays' assertion that new inhabitants join with indigenous environmentalists to voice opposition to long standing resource management practices is supported by Formann and Kusel (1990). These authors surveyed rural residents that had recently migrated from urban areas, and residents who had lived in rural areas for considerably longer periods of time. They found that new residents brought with them environmentalist values that stimulated an existing minority voice in rural areas. Those two groups

combined to express dissatisfaction with existing practices and pressed for changes in environmental policies. This suggests that some rural residents in the West have always held environmentalist views, but have become more active as they are joined by new residents who share those views.

URBAN-RURAL DIFFERENCES

A number of scholars have examined the perception of a growing split between urban and rural residents over environmental matters. Freshwater and Deavers (1992) identified three recent trends they suggest will further increase the tension between urban and rural residents within states. The first trend is the growing divergence of real earnings between urban and rural areas, which suggests that rural areas are becoming a marginal part of most states' economies. The second trend entails growing conflict between urban and rural interests reflecting different values, particularly over the preservation of the environment. These authors suggest that rural residents tend to be more concerned with using natural resources for the economic benefit of their community, while urban residents tend to favor preservation and recreational uses. The final trend consists of the inability of the rural populace to participate in technological advances, which places rural areas at a disadvantage in terms of economic growth and related standards of living. Further, these authors note that traditional rural industries, such as those involved in resource extraction and agriculture have declined, or at best have seen slow growth in recent decades. They suggest that "the environmental conflict is becoming an urban-rural conflict as the urban majorities impose their standards of environmental quality on rural areas" (Freshwater and Deavers 1992, p.62). Thus for many, the environmental conflict in the West is

characterized by the "Old West" versus "New West," where farmers, ranchers, loggers, and miners are viewed as under siege from the new urban environmentalists.

When examining differences in environmental policy preferences between urban and rural areas, a number of hypotheses have been offered to explain those differences. Broadly, these are: urban-rural differences, economic conditions, and the demographic characteristics of residents.

DIFFERENCES BASED ON PLACE OF RESIDENCE

Early work at the state level identified place of residence, in urban or rural areas, as important in explaining differences in environmental preferences. Results have been mixed, with some studies finding urban residents to be more supportive of environmental protection policies, while other studies have found no significant differences. For example, positive associations between urban residence and environmental concerns have been reported by Tremblay and Dunlap (1978), Althoff and Greig (1977), Buttel and Flinn (1978a, 1978b), and Van Liere and Dunlap (1981), Lowe and Pinhey (1982). In their findings, urban residents tended to be more environmentally minded because they live in areas that suffer from greater environmental degradation. Daily exposure to degradation, it is argued, increases urban residents' awareness of environmental problems, leading them to be more supportive of environmental protection. Further, living in urban areas is thought to encourage residents to view human activities as the source of environmental problems, but also promote the belief that further human activity is needed to correct those problems.

Rural residents, living in more natural environments, tend to be exposed to less severe environmental degradation. They are thought to view nature as possessing the capacity to support greater resource exploitation and perceive little need for human intervention to correct problems. Further, rural residents have historically been exposed to greater use of the environment for economic gain, thus are more apt to view nature as a resource to be exploited. Tremblay and Dunlap (1978) coined the phrase "differential exposure theory" to describe this notion that individuals and communities differ in their preferences for environmental protection because they live in rural or urban areas.

A number of other studies have, however, reported no differences between urban and rural residents with regard to environmental concerns. Lester Milbrath (1975) found no difference in environmental concern between two communities that differed greatly in their level of development. Witt and Alm (1995, 1996) use both aggregate and survey/interview data in an effort to determine whether urban and rural residents differ to a significant degree in their environmental values. Their findings suggest that urban and rural residents do not display substantially different values regarding environmental protection, with a majority of rural residents in their survey expressing attitudes that were considered "environmentalist."

Contributing to the complexity of this issue, some scholars have suggested that, while rural residents expressed less environmental concern than urban residents, those differences were the result of factors that go deeper than place of residence. Lowe et al. (1980) used multivariate analysis to show that urbanism did not have any significant independent effects on levels of support for environmental protection. These authors

instead suggested that other variables present in either urban or rural environments, primarily the industries found in each, influence environmental concern. As such, they advanced the idea that the presence of industries that exploit natural resources or are sources of substantial pollution, tend to promote lower levels of environmental support among locals. This is likely the case because residents perceive those industries as providing economic benefits to the community, a hypothesis discussed at length below. Given the conflicting findings reported in the literature, additional investigation into the question of whether there is something unique to rural residents that would tend to lead them towards lower levels of support for environmental protection seems appropriate. The issue then becomes whether urban and rural residents have differing environmental views simply because they live in urban or rural areas, or whether economic conditions or the demographics of residents in these different areas influence the environmental views promoted at the county level.

DIFFERENCES BASED ON ECONOMIC FACTORS

While many scholars have examined differences in environmental preferences based on place of residence, more recent efforts have examined other possible explanations for these differences. From these studies, debate has arisen over whether the demographic characteristics of residents, such as levels of education or party affiliation, are the most influential or whether economic factors must be taken into account. For the purposes of this paper, this debate will be framed in terms of demographic characteristics versus economic factors such as willingness or ability to pay for environmental protection.

On the economic side of the debate, Kahn and Matsusaka (1997) use their study of sixteen ballot measures in California to argue that differing levels of support for environmental protection can be explained solely by economic variables such as income and a county's economic dependence on natural resource and construction industries. They found that counties with higher median incomes tended to be more supportive of environmental protection, and counties where relatively large numbers of residents are employed in resource exploitive industries tend to oppose environmental protection. This finding is supported by Lowe et al. (1980), discussed earlier. Kahn and Matsusaka argue further that demographic characteristics such as ideology, age, and party affiliation are mere proxies for deeper economic interests, and are not independently significant when the economic variables are entered into the model.

Several authors have argued that support for expenditures on environmental protection is influenced by actual economic conditions (Elliot et al. 1995, Buttel 1975). According to these scholars, as real income increases, the publics' willingness to support increased spending on environmental protection also increases. During economic downturns, however, those most affected, particularly those in lower economic classes, shift their priorities away from environmental concerns to matters of more immediate economic well being. These findings suggest that citizens with higher incomes possess a greater ability to pay for environmental protection, as they are typically able to meet their material needs. Citizens with lower incomes, on the other hand, are thought to be more concerned with meeting their material needs, and thus perceive themselves to be less able to afford more stringent environmental policies. According to this argument, citizens with

lower incomes will perceive a tradeoff between economic security and environmental protection. Faced with this perceived tradeoff, citizens with lower incomes are expected to place their economic priorities above their environmental priorities.

In yet another study, Freudenburg (1991) examined four rural communities in Colorado and suggested that only particular residents could be considered anti-environmental. He found that residents employed in the mining industry, and those in growth reiated professional occupations, expressed the lowest levels of support for environmental protection, while other rural residents expressed considerably higher levels of concern. Similar to Kahn and Matsusaka (1997), this study suggests that citizens whose economic security is dependent on the industries most affected by environmental regulation tend to oppose that regulation based on economic self-interest. If aggregated to the county level, one could argue that particular counties whose economies are based to a large degree on such industries may also be less supportive of environmental regulation. This may be especially true given the fact that many rural counties continue to face greater economic problems than their urban counterparts.

While some scholars have found evidence in support of the hypothesis that levels of support are influenced by economic conditions, others have found evidence to the contrary. Bennett and McBeth (1998) found that a majority of rural counties in Idaho were more economically diverse than expected. The authors suggest that this finding calls into question the notion that rural counties are dependent on natural resource use and will oppose efforts that threaten economic security in those areas. Rather, many rural communities are no longer solely dependent on natural resource extraction. More diverse

economies, then, may allow those communities to support greater environmental protection, even if those efforts threaten once dominant extractive industries.

Alm and Witt (1997) also examined environmental preferences in Idaho and found evidence countering the economic condition hypothesis as well. Their research suggests that spending on environmental protection in each county, their measure for environmental support, was not significantly related to resource employment in that county. This suggests that dependence on resource related industries was not an important factor in determining levels of support for environmental protection. Along these lines, McBeth and Bennett (1998) found no difference between the environmental concerns of local elected officials in urban or rural municipalities in Idaho, suggesting that economic diversification across that state is making political and social attitudes of those officials more homogenous. Finally, Power's (1991) study of communities surrounding Yellowstone National Park demonstrated that those communities were no longer solely dependent on extractive industries, and were instead reliant on service based employment. This shift actually created a perceived need for *increased* environmental protection in those rural areas to support the tourist industry that those service-based jobs relied upon.

DIFFERENCES BASED ON DEMOGRAPHIC CHARACTERISTICS

While there is evidence that suggests economic variables may be decreasing in importance when examining community support for environmental protection, another line of work has suggested that variables measuring the demographics of community residents may also be important. These studies, then, use the demographic characteristics of residents to explain varying levels of support for environmental protection among

communities. Most of these studies examine public opinion and support for environmental protection. Within this literature that addresses public opinion regarding the environment, a number of variables have been identified that help explain differing levels of concern. These studies have generally examined survey data in an attempt to determine the characteristics that lead some people to be more supportive of environmental protection than others.

The first comprehensive examination of the influence of individual attributes on environmental concern comes from Van Liere and Dunlap (1980). These authors examined the literature which existed at that time in an effort to determine what individual characteristics were associated with support for environmental protection. From this literature, which examined bivariate correlations between environmental concern and a number of individual characteristics, the authors were able to develop five hypotheses, suggesting that age, socioeconomic status, residence (urban or rural), gender, and political ideology and party affiliation were all determinants of environmental concern. The study then examined a number of works that tested all or some of these hypotheses.

Based on their study, all that Van Liere and Dunlap found were moderate correlations between environmental concern and age, education, and ideology. The authors discovered that much evidence existed suggesting age was weak to moderately correlated with environmental concern, and that correlation was negative. This hypothesis suggests that as people got older, they accumulate greater material and social resources, thereby gaining stronger ties to the existing economic and social orders. This is thought to promote conservative tendencies among older generations, as it is generally perceived that

environmental protection entails negative impacts on existing economic and social concerns. These correlations regarding age are consistent with the findings of Mohai and Twight (1987) and Buttel (1979).

Education was also found to be consistently correlated with environmental concern, with this association being moderate, and positive. The theory behind this concept suggests the following. First, higher levels of education are associated with higher social status. Middle and upper class citizens are generally better able to provide for their material needs and thus can afford the luxury of being concerned about environmental protection. Further, upper class citizens possess greater resources, allowing them to take advantage of recreational opportunities provided by a cleaner environment. Second, more educated citizens have a better understanding of the ways in which the political system works and are therefore more politically active. Given these higher levels of knowledge and activity, coupled with material security, one would expect citizens with higher levels of education to both possess and express support for greater environmental protection.

Respondents with liberal ideologies were also found to be more concerned about environmental protection, but the studies examined by Van Liere and Dunlap suggested only a weak and inconsistent relationship between members of the Democratic Party and such support. The liberal ideology is most consistent with support for environmental protection as liberals tend to prefer government intervention into the economy to prevent or correct market failures. As many environmental problems are considered negative

market externalities, a particular type of market failure, then one would expect liberals to support increased environmental protection.

While Van Liere and Dunlap found little evidence that party affiliation influenced support for environmental protection, a number of other studies have had opposite findings (Kraft 1997, Mazmanian and Sabateir 1981, Buttel and Flinn 1978a, Engelbert 1961). These studies have found that members and supporters of the Democratic party tend to be more supportive of environmental protection as that party, adhering most closely to the liberal ideology, also tends to favor government intervention into the economy to prevent or correct market failures. Conservatives and members of the Republican Party, on the other hand, tend to prefer less government intervention into the market and less government regulation overall. Thus members of those groups are expected to be less supportive of environmental protection.

While Van Liere and Dunlap's review of the literature existing as of 1980 provide useful insights into the determinants of support for environmental protection, their study is somewhat limited by time and the statistical methods employed. The authors limited their survey to studies that examined only bivariate associations. This method has largely been replaced by the more robust multivariate analysis that will be employed in this study.

In a more recent work, Jones and Dunlap (1992) tested various hypotheses concerning individual level support for environmental protection in an effort to determine whether individual attributes or economic variables were most influential in explaining support for environmental protection. Utilizing yearly data obtained from the National Opinion Research Center and employing regression analysis, they concluded that there

was little empirical evidence to support the argument that economic variables had a significant affect on levels of support. Rather, the authors reported that the individual attributes age, education, ideology, and party affiliation were substantially stronger and more stable factors in opinion formation regarding environmental protection.

Morrison (1986) also attempted to counter the economic theorists by suggesting that environmental concerns will slowly diffuse through the population, resulting in broader citizen support over time for environmental protection. Finally, Alm and Witt (1996) have linked many of these demographic variables to county level support or opposition to environmental protection. They found that rural counties in Idaho tend to be less supportive of environmental protection than urban counties. They attributed this split to differences in income levels, employment in natural resource related industries, and party affiliation between residents of urban versus rural counties.

CONCLUSION

Overall, then, a number of hypotheses arise from the literature related to urban-rural differences in support for environmental protection. The first suggests that there was once an environmental ethic, unique to the West, which promoted resource use over preservation. Evidence that this ethic may be evolving suggests two new questions: (1) whether the West continues to differ from other regions in its levels of environmental support, and (2) whether greater concern for environmental protection comes primarily from urban residents alone, or whether all Westerners are becoming more environmentally minded. Of course we should remember that it is still not clear in the literature whether an urban-rural split even exists in the West or in other regions of the United States.

Based on the literature reviewed here, three competing explanations may be offered for urban-rural differences. The first explanation suggests that urban residents tend to be more environmentally minded simply because they are exposed to greater environmental degradation than are rural residents. The second explanation argues that rural residents tend to be less supportive of environmental protection because (1) rural economies are more dependent on resource exploitation which is threatened by protective policies, and (2) rural incomes tend to be lower, hindering the ability of rural residents to pay the costs they perceive to be associated with those policies. The final explanation suggests that residents of urban and rural areas have different demographic characteristics such as age, education, ideology and party affiliation. These differences may explain differing levels of support for environmental protection, if in fact such differences exist.

Controversies clearly remain as the literature provides no conclusive explanation for differing levels of support for environmental protection among urban and rural counties. A number of competing hypotheses have been offered, all of which are susceptible to empirical testing. This study is designed to do such testing through the examination of voting returns on state-wide initiatives and referendum.

Chapter Two: "THE INITIATIVE AND REFERENDA AS DIRECT DEMOCRACY" DEVELOPMENT AND HISTORY

THE PROCESS

With initiatives and referendum, citizens vote directly on issues placed before them on the ballot. This process is often referred to as direct democracy because it allows citizens to legislate directly through the ballot box, rather than relying on their elected representatives. There are several categories of ballot measures on which citizens vote. There are "constitutional amendments" which are submitted, or referred, to the voters by the state legislature. This process generally requires a super-majority in the legislature; in some states the amendment must be approved in two consecutive legislative sessions. As of 1998, all states but Alabama allowed for some version of this amendment process. A second type of ballot measure is the "constitutional amendment by initiative" which, in contrast to a legislatively referred constitutional amendment, reaches the ballot by a citizen initiative petition, for which its advocates obtain a specified number of signatures of registered voters. This process is allowed in sixteen states. Third, the "statutory initiative" allows citizen advocates to propose changes in existing law through the initiative petition process.

This third process, and the constitutional initiative, work in one of two ways. The more difficult process is called the "indirect" initiative, in which proposals must first

receive legislative approval to reach the ballot or, if approval is not granted, additional signatures must be gathered. This process, used by nine states, is justified as preventing frivolous proposals from reaching the ballot. The less difficult initiative process is called the "direct" initiative, whereby petition signatures of a specified number are required for the measure to reach the ballot, without the need for legislative approval. This process is used in seventeen states. The final type of ballot measure is the "statutory referendum." It allows voters an opportunity to essentially veto a law passed by the legislature, or approve a measure that was considered by the legislature, but failed to pass. Overall, twenty five states allow statutory referenda, in one of three ways: the issue may reach the ballot through citizen petition, once it has passed through the legislature; the legislature may be allowed to vote to submit a law that has passed to the voters; or in most states allowing this process, both mechanisms are available. In an effort to increase the number of ballot measures examined in this study, proposals raised by any of the above processes are included, and quantitative analysis will treat all types the same. For a description of states that allow the various types of ballot measures, see Table 2.1.

The number of signatures required to place a measure on the ballot varies from state to state, but is generally a set percentage (typically between five and eight percent) of the number of residents voting in a previous statewide election. A handful of states require some spread of signatures across counties, and all states have some process for verifying the validity of the signatures gathered. The legal arrangements for each of the five states in this study will be discussed below.

While there has been considerable scholarly investigation into ballot measures, most of that work has focussed on the history of this process, and investigations into arguments for and against the use of direct democracy. It should be noted that this project is not intended to revisit those questions, but will turn in a new direction investigating the determinants of voting behavior on these measures.

Table 2.1: Initiative and Referendum Processes in the States*

Legislative Referendum Constitutional Change	Direct Initiative Constitutional Change	Indirect Initiative Constitutional Change	Direct Initiative Statutory Change	Indirect Initiative Statutory Change	Legislative Referendum Statutory Change	Citizen Petition Referendum Statutory Change
All States Except Alabama	Arizona Arkansas ***California*** ***Colorado*** ***Florida*** Illinois *Michigan* Missouri Montana Nebraska Nevada North Dakota Ohio Oklahoma ***Oregon*** South Dakota	Massachusetts Mississippi	Arizona Arkansas ***California*** ***Colorado*** Idaho Illinois Missouri Montana Nebraska Nevada North Dakota Ohio Oklahoma ***Oregon*** South Dakota Utah Washington	Alaska Maine Massachusetts ***Michigan*** Nevada Ohio Utah Washington Wyoming	Arizona Arkansas ***California*** ***Colorado*** Delaware Idaho Illinois Kentucky Maine Maryland Massachusetts ***Michigan*** Missouri Montana Nebraska Nevada New Mexico North Dakota Ohio Oklahoma ***Oregon*** South Dakota Utah Washington	Alaska Arizona Arkansas ***California*** ***Colorado*** Idaho Kentucky Maine Maryland Massachusetts ***Michigan*** Missouri Montana Nebraska Nevada New Mexico North Dakota Ohio Oklahoma ***Oregon*** South Dakota Utah Washington Wyoming
Total: 49	Total: 16	Total: 2	Total: 17	Total: 9	Total: 23	Total: 23

*States included in this study are in bold and italics.
Source: *The Book of the States: 1998-99.*

THE EMERGENCE OF DIRECT DEMOCRACY

GENERAL DESCRIPTION

The initiative and referendum process was first promoted by reform minded groups in the 1880s. Proponents were primarily members of the Socialist Party or single-issue folks seeking dynamic political reform. State legislatures and more mainstream citizens tended to dismiss both the groups and the process as being too radical (Cronin 1989). Direct democracy began to gain serious consideration only after it became part of the platform of the Progressive Reform movement in 1885. It attracted attention in the United States after reformers discovered that the system was already operating effectively in Switzerland (Schmidt 1989). The initiative and referenda cause became part of the platform of the National League in 1896 as direct legislation by the people had become almost an obsession among Populists (Schmidt 1989).

Direct democracy was one of numerous Reform movement proposals designed to end corruption in city and state government. Through the last quarter of the nineteenth century, reform movements sprang up in city after city as reformers attempted to dismantle the party organizations that thrived on the votes of recent immigrants. The movement sought to reform the structures of government in an effort to reduce the influence of what its members perceived to be corrupt party machines, but also to reign in out-of-touch state legislatures (Harrigan 1989). This reform period was labeled by historians as the Progressive Era (Judd and Swanstrom 1994). Structural changes proposed by the reformers, and often adopted by states and municipalities, included such

mechanisms as voter registration requirements, the use of the Australian (secret) ballot, and nonpartisan elections, as well as the initiative, referendum, and recall.[1]

In the debate over direct democracy, proponents claimed that these devices would diminish the corrupt influences on the state legislatures, induce legislators to be more attentive to public opinion and the broader public interest, undermine bossism, and generally strengthen democracy in America. Opponents countered by arguing that citizens would be misled by demagogues, lied to and manipulated by leaders of narrow interest groups, and compromised and overwhelmed by highly technical, complex questions (Cronin 1989). Further, it was argued that direct democracy went against the fundamental belief in republican government upon which the U.S. Constitution was founded (Schmidt 1989). Despite these objections, the reformers were often victorious, as today twenty three states and countless local jurisdictions use the initiative, referendum, and recall processes as a way of allowing citizens to express directly their will in the making of governmental policy.

ADOPTION IN THE WEST

While Progressive Era reforms gained support nation-wide and many local jurisdictions across the country adopted the new ballot measure process, direct democracy at the state-wide level is largely a Western phenomena. About four-fifths of the states adopting these processes are west of the Mississippi River. David Schmidt (1989), noting that the obstacles facing ballot measure advocates varied from state to state, has offered

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[1]Recall elections are held to remove elected officials at some point during the term for which they were elected. They are typically targeted at a specific official and are held after the required number of signatures of registered voters is gathered.

some explanations for the heavy concentration of the process in the West. These explanations focus primarily on forces that opposed adoption in other regions of the U.S. Schmidt argues that the Progressive movement in the East, unlike in the West, was not built on a Populist foundation which fostered a self-reliant, egalitarian political culture. The movement in the East did not seek sharp changes in the existing social structure, but rather sought to foster a responsible elite which could control popular impulses and direct them into more moderate channels. Eastern urban areas also had high proportions of immigrants. There is considerable evidence that suggests the Reform movement in the East sought to remove the political power that those immigrants had gained through party machines (Judd and Swanstrom 1994). Given their opposition to political power being held by those newcomers, the reformers were disinclined to give the immigrant masses, with their large numbers and voting power, more influence over governmental decisions through direct democracy.

Schmidt suggests that the ballot measure faced opposition in the South for slightly different reasons. In contrast to the self-reliant egalitarianism of the West, Southern politics were still steeped in autocratic, and racist, traditions. The political culture there fostered elite, not mass, input into political decisions, and led to fear that initiatives and referenda might provide African-Americans with political power. Further, with high illiteracy rates in the South, the initiative and referendum process was seen as having less utility.

Finally, rural politicians in both the South and the East, feared that the urban masses, once empowered by the ballot measure process, might overrule the decisions of

malapportioned state legislatures which were dominated by representatives from rural areas. These rural politicians were often willing to allow the process to be adopted in the cities, but not statewide. The key difference between these two regions and the West stems from the fact that residents of Western cities were typically white natives who moved from other states or rural areas within the state, not foreign countries. They did not pose the same threats to rural residents that urban immigrants or African-Americans did.

While the initiative and referendum process was adopted in many states, there were identifiable opponents to direct democracy who ultimately brought an end to the Progressive Era. These included big business and its allies in the Republican Party, big city bosses and their party machines, Southern white racists, and the liquor industry which feared prohibition initiatives. These groups gained power during the early part of the twentieth century when the fear of Communism made calls for reform seem unpatriotic, even treasonous (Schmidt 1989).

HISTORICAL USE OF DIRECT DEMOCRACY

Since the turn of the century, only a handful of additional states have adopted the ballot measure process. The states that use it seem to do so in a cyclical fashion, with eras of extensive use followed by eras of little use. For example, from 1900 to 1944, Progressives and then New Deal reformers were successful in passing numerous ballot initiatives aimed at making state governments more honest, efficient, and responsive. These measures were mostly aimed at governmental reform and reorganization, requiring such processes as primary elections, the direct election of U.S. Senators, the ability to

Table 2.2: Initiative Usage by Number of Ballot 1898-1998

State	Year Process Adopted	Total Number on Ballot	Average Number per Year	Number Adopted	Number Rejected	Percent Adopted
Oregon	1902	300	3.13	110	190	37%
California	1911	263	3.02	90	173	34%
Colorado	1912	195	2.27	74	121	38%
N.Dakota	1914	167	1.99	75	92	45%
Arizona	1912	144	1.67	58	86	40%
Washington	1912	124	1.44	60	64	48%
Oklahoma	1907	82	0.90	40	42	49%
Arkansas	1909	77	0.87	46	31	60%
Missouri	1906	66	0.72	26	40	39%
Montana	1904	64	0.68	32	32	50%
Ohio	1912	62	0.72	16	46	26%
Michigan	1908	58	0.64	20	38	34%
Massachusetts	1918	54	0.68	29	25	54%
S.Dakota	1898	45	0.45	14	31	31%
Nebraska	1912	39	0.45	13	26	33%
Nevada	1904	37	0.44	24	13	65%
Maine	1908	32	0.36	13	19	41%
Alaska	1959	31	0.79	18	13	58%
Idaho	1912	25	0.29	13	12	52%
Utah	1900	15	0.15	3	12	20%
Florida	1972	14	0.54	9	5	64%
Wyoming	1968	6	0.20	3	3	50%
Illinois	1970	1	0.04	1	0	100%
Mississippi	1992	1	0.17	0	1	0%
Total		1902	19.02	787	1115	41%

Source: The I&R Institute Fact Sheet, 1999. Reprinted with permission.

recall elected officials, and home rule for local governments (Schmidt 1989). A number of other measures were aimed at the protection of labor, welfare provisions, women's suffrage, and prohibition. In the post World War II era, however, the nation entered a more conservative mood that muted calls for reform. Thus, the next two decades saw a decrease in the number of measures on the ballot. This decline was reversed during the tumultuous times of the late 1960s. The number of measures proposed in each election cycle has continued to increase slowly ever since.

Initiatives have been employed to a greater degree than have referenda since the turn of the century, despite the fact that more states allow the referendum process. Between 1898, when South Dakota adopted the initiative process, and 1998 there were 1,902 initiatives placed on the ballot in the twenty-four states where it is allowed. Table 2.2 illustrates initiative usage by number for each state between 1898 and 1998. As can be seen, numerous states have employed the initiative process to varying degrees since the turn of the century.

ACADEMIC ASSESSMENTS OF DIRECT DEMOCRACY

David Schmidt (1989) has done perhaps the most comprehensive examination of the use of ballot measures in the United States. Schmidt attempted to take a broad sweeping approach, examining several hundred initiatives in twenty-three states from 1976 to 1984, testing the validity of what he perceived to be the seven primary objections to direct democracy.

ARE THEY POORLY WRITTEN?

Schmidt examined the argument that initiatives were poorly written and often ruled unconstitutional by the courts. His findings suggest that this is not the case, as he argues that initiatives are often more carefully drafted than are legislative bills, as in all states but Massachusetts the wording of the measure cannot be altered once the petition drive begins. Further, Schmidt found that only a small percentage of initiatives approved during this time period were later found to be unconstitutional.

SPECIAL INTEREST TOOLS?

Schmidt examined the argument that the ballot measure process is the tool of special interest groups that are biased either to the right or the left, and that one side or the other has been more effective in using the process to impose its views on citizens. According to Schmidt, the argument is that one side of the political spectrum or the other has been able to manipulate the initiative process to its advantage. While he finds that most initiatives lean to the right or the left, the bias overall was fairly balanced, suggesting that neither side had disproportionate success in the use of the initiative process overall.

VOTER TURNOUT

A third argument against direct democracy is that this process fosters minority rule, since few citizens actually vote in the elections. While voter turnout is relatively low in the U.S. when compared to other representative democracies, it would seem that direct democracy actually fosters rather than hinders voter turnout. Schmidt found that in the states that allowed the initiative process, voter turnout tended to range between one and a half to seven percent higher than in states that did not allow the process. This finding has

been widely supported by other studies (Zisk 1987, Cronin 1989). Thus, it would seem that while only a minority of those eligible to vote in U.S. elections actually do vote, a larger minority is likely to vote in states that allow direct democracy.

BALLOT CLUTTER

A fourth objection Schmidt examined is that ballot measures tend to cause "ballot clutter." According to this argument, as ballot measures are added to the list of candidates, the ballot becomes too long, eventually leading to "voter drop off." Voters simply get tired or bored with filling out the ballot and stop voting before their ballot is completed. While it is true that some elections contain a substantial number of ballot measures (occasionally exceeding ten), Schmidt found that on average there were only two measures on each ballot in each state per year, suggesting that ballots were not becoming overly cluttered.

BAD CHOICES?

Yet another argument suggests that voters may use the process to unwisely reduce their tax burdens, thereby crippling a state's budget. There is anecdotal evidence to support this claim as a handful of states (for example California in 1978, Oregon in 1990, Colorado 1992, Washington 1999) have passed tax limitations that severely reduced the state's fiscal resources. However, Schmidt finds that overall, this is a rare occurrence, as substantial reductions in tax rates occurred in only three of the nineteen cases he examined.

EFFECTS OF MONEY

Direct democracy critics contend that campaign expenditures are often the deciding factor in initiative campaigns, and the side that spends the most money more often wins the election. Schmidt found that of the 142 campaigns for which spending data were available, in only 23 races was money decisive. In only about one-eighth of the campaigns did one side grossly outspend the other and win. In those cases, the winning side out spent the losers by a two-to-one margin or greater.

While Schmidt provides an overall examination of the issues surrounding the debate over direct democracy, a number of scholars have examined some of these issues in greater depth, focussing primarily on the issues of campaign expenditures and voter competence. One such study was done by Betty Zisk (1987), in which she examined the campaigns and outcomes of major ballot issues in four states from 1976 to 1982. As one part of her study, Zisk examined the influence of campaign expenditures and the media. She concluded that campaign expenditures were the single most powerful predictor of election outcomes. In forty of the fifty measures examined, the high spending side won. This was true for virtually all types of initiatives. Further, polling data examined by Zisk suggested that in roughly half the cases, voter opinion was reversed in the direction of the high spending side, and for all but two of those issues, the reversal was enough to change the outcome of the election. This evidence led Zisk to argue that in a number of cases, campaign spending was effectively used to shape or mold public opinion in the direction of the high spending side.

While money seems to be clearly important in the outcomes of initiative and referendum elections, more in depth examination suggests the critical factor is the way in which that money is used. Campaign expenditures may be used for activities ranging from logistical support for canvassing and grassroots organizing, to full-scale media blitzes including paid advertising and direct mailings. Zisk found that measures involving high economic stakes, such as the closing of a nuclear power plant or issues of taxation, attracted the highest levels of spending, in which "high spending" was classified as being in excess of $250,000.[2] Most spending was on media coverage, primarily paid advertising on television or radio. It was in these high spending campaigns that Zisk found money to have the greatest influence.

Zisk also found that high spending was generally more effective in opposition to a measure than in support, and that one-sided spending was typically deceptive or focused on aspects of the issue that were superficial or irrelevant. This might suggest that one-sided spending may be aimed at confusing voters in the hopes that they will oppose a measure that may in fact be in their best interest. Further, even when high levels of spending were balanced on both sides of an issue, Zisk found that both campaigns effectively distorted the issue and greatly oversimplified what was being voted on, thereby generally compounding the confusion of the voters.

This finding that media intensive campaigns tend to distort issues is supported by Lowenstein (1982). Lowenstein studied ballot measures in California from 1968 to 1980,

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[2]It should be noted that this figure is considerably lower than the average amount spent for or against the measures examined in this study.

finding that media intensive campaigns typically served to effectively distort the issue, often promoting an image of the issue that was deceptive, superficial, or irrelevant. His findings with regard to one-sided spending support those of Zisk, in that Lowenstein demonstrates that one-sided spending is more effective in opposition than in support of a ballot proposal. Lowenstein goes on to argue that the result of many campaigns probably would have been different had spending been more balanced. The author suggests that this finding, combined with distorted campaigns, may be problematic if low-spending opponents lack the resources to effectively publicize counter arguments.

Similarly, Cronin (1989) argues that while the expenditure of large sums of money does not automatically guarantee the outcome of an election, money well spent (typically on television) or spent at a far higher level on one side or the other, is as effective as money in traditional candidate elections. Just as in candidate campaigns, Cronin found that money was effectively used on ballot propositions to buy crucial resources such as media access, sophisticated surveys, phone banks, mobilization drives, consultants, and mass mailings. Cronin found, by examining a number of races in various states, that high, one-sided spending had about a 25% success rate when promoting an issue, and a 75% success rate when opposing an issue. His findings reflect those of the authors discussed above, in that money spent in opposition is the most influential. That spending seems to be effective in redefining the issue in either negative terms, or simply confusing the voters prompting a majority of them to oppose the measure.

A recent study conducted by Elisabeth Gerber (1999), examines the effects of campaign spending on ballot measure elections in greater detail. Gerber sought to address

the question of whether narrow special interest groups were successfully using the ballot measure process for their own benefit, thereby misusing a process which was intended to place political power in the hands of the masses. Gerber distinguished between economic groups and citizen groups, examining the ballot measure strategies and campaign expenditures of each group used. She found that economic groups were more effective in defeating ballot measures, as they were better equipped to mobilize considerable financial resources and buy negative advertising. Citizen groups, on the other hand, were more effective at passing ballot measures, as those groups were better equipped to mobilize a majority of voters, provided the group was capable of raising the resources to wage a successful campaign. Overall, Gerber suggests that both citizen and economic groups are able to effectively use campaign expenditures to gain influence in ballot measure elections. Economic groups, however, are more successful using those resources to defeat measures, while campaign resources are better used by citizen groups to pass measures.

Bowler and Donovan (1998) suggest that campaign expenditures have a different affect on voting behavior. While Cronin, Gerber, and others suggest that high levels of spending may have a distorting affect on voters' perceptions of issues, Bowler and Donovan suggest that high levels of spending likely leads to greater attention paid to the issue by the media and political elites, thereby providing voters with more information. Using surveys of California voters on a number of ballot measure campaigns conducted during the late 1980s, the authors found that voters tended to be more aware of propositions that attracted higher levels of spending (Bowler and Donovan 1998, 152). They go on to argue that campaign expenditures are not necessarily effective in changing

voters' opinions about the issues, but rather in attracting greater attention and providing partisan and/or ideological cues that voters may use when deciding on complex propositions.

Bowler and Donovan also found that campaign expenditures on behalf of a proposition do in fact lead to a greater percentage of votes for the measure. Unlike the other authors, they find that while spending in opposition to a proposal may increase opposition to the measure, this strategy may also backfire. In a number of cases they examined, high spending in opposition actually led to an increase in the percentage *supporting* the measure, suggesting that high spending actually made voters aware that groups the voters did not support were opposing the measure (Bowler and Donovan 1998, 154). This, they argue, suggests that campaign expenditures may not be as effective in manipulating public opinion as previous studies have suggested.[3]

The finding that increased spending leads to greater information and not necessarily manipulation, is also supported by Gerber and Lupia (1995). They argue that increased spending on both sides increases the ability of voters to make informed decisions by revealing the groups that support or oppose the measure. Gerber and Lupia argue that when voters know who is for or against a proposal, they are better equipped to evaluate that proposal and are more likely to vote in a manner consistent with their own preferences. The Bowler and Donovan and Gerber and Lupia studies thus counter

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[3]An alternative explanation that the authors do not examine is that one side realizes, through public opinion polls, that it is losing and is therefore prompted to spend larger amounts of money on the campaign. As such, this correlation may be spurious and simply reflect wide-spread opposition that already existed among voters.

previous findings by suggesting that increased campaign spending may provide useful information, or cues, to voters, rather than simply confusing them.

ARE VOTERS COMPETENT?

Voters' decisions on ballot questions is potentially the purest form of issue voting that occurs in the U.S. Theoretically, questions are posed to the voter without reference to long-standing partisan loyalties and party platforms, or to the personalities, charisma, or rhetorical skills of candidates who espouse a particular position. Thus it could be argued that the outcomes of ballot measure elections most purely reflect the preferences of citizens and thereby represents the purest form of democracy.

Many modern opponents of direct democracy, however, argue that the average citizen cannot be trusted to vote intelligently on highly complex and technical issues, and thus those decisions are better left to the experts in the state legislature. Schmidt responds to this critique by arguing that voters are intelligent enough to make competent decisions and have ample time and information to become informed.

Zisk's findings, however, are more pessimistic. She argues that while it is clear some "knowledgeable voters" perform a sort of benefit-cost analysis on particular issues, there is little evidence to suggest that those calculations are based on anything more than rationalizations of long standing ideological preferences. Further, Zisk discovered a tendency among voters to reduce complex, technical issues into more simple terms. Once issues are reduced into "simple choices," Zisk argues that voters will generally base their decisions on reference group cues, endorsements by public figures, or even use their vote as a means to express anger, fear, or cynicism about government in general. Thus, while

ballot measures may theoretically provide voters with an opportunity to calculate and express their "true" preferences, Zisk argues that voters do not capitalize on their opportunity to do so.

Perhaps the most in-depth examination of voter competence on ballot measures was done by Cronin (1989). Cronin examined survey data from several states that use the ballot measure process and concluded that voters are neither as competent as supporters of direct democracy may like, nor as ill-informed as critics charge. He provides evidence suggesting that on most issues, especially those that are well publicized, voters do grasp the meaning of the issue, and do act rationally. Polls indicate that early in the campaign, opinion about the issue tends to polarize quickly as voters jump to one side or the other prematurely. As the campaign progresses and more information becomes available, voters tend to reconsider their views, even reversing their original position. Cronin argues that this indicates voters are making rational calculations and are therefore making informed decisions. He points out, though, that proponents of the process continue to overestimate the ability and desire of voters to gather the information necessary to make competent decisions. In his analysis, however, Cronin neglects the possibility that voters may be basing their revised positions on the intensive media campaigns that other authors have suggested may distort issues.

DETERMINANTS OF VOTES IN BALLOT MEASURE ELECTIONS

A whole host of studies have been conducted on the determinants of votes in candidate elections, but there has been only limited investigation into what determines voting behavior in ballot measure elections. The studies that do exist, with one key

exception, generally focus on single issues (particularly taxation and expenditure issues) within a fairly narrow context, for example a metropolitan area or single state, and few studies have been done on the determinants of votes on environmental issues. Previous studies of ballot measure voting have also tended to test traditional variables (such as socioeconomic status, party affiliation, and ideology) consistently found to be significant in determining votes in candidate elections.

An early study by Harlan Hahn (1970) examined the determinants of voting behavior in six local referenda on the Vietnam War. He found a strong inverse relationship between opposition to the war and increasing socioeconomic status (SES), particularly median income. This led Hahn to conclude that middle and lower class voters were making a conscious decision to oppose a war that was placing a disproportionate burden on them.

One of the more comprehensive studies conducted on referenda voting was done by Hahn and Kamieniecki (1987). These authors argue that a distinction must be made between tax and expenditure referenda, which impose a clear financial burden on voters, and non-expenditure issues, which entail questions that regulate behavior but are not as clearly associated with economic costs and benefits as are expenditure measures. With both types of issues, the authors attempt to determine the effects of voters' socioeconomic status (SES, measured by income and education) on actual electoral outcomes.

Hahn and Kamieniecki's findings indicate that SES attributes are closely related to voting behavior on non-expenditure referenda, such as legalized gambling, limitations on pornography, and state regulation of boxing and wrestling matches. The authors conclude

that voters tended to perceive these issues in "symbolic" terms, with higher status voters willing to apply restrictions on public or community related activities, thus reflecting their deeply rooted personal attitudes and values about "proper" behavior.

These results are similar to the findings of Morgan and Meier (1980), who studied the determinants of voting behavior on referenda in Oklahoma. The referenda examined by these authors centered on moral issues, primarily gambling. Morgan and Meier found that high status voters tended to oppose the legalization of gambling, while lower status voters tended to be supportive.

Hahn and Kamieniecki also studied the determinants of votes on tax and expenditure issues. They examined 228 referenda in twenty-nine cities in an effort to identify correlations between support for those issues and the SES composition of each community. The authors found high correlations between SES variables and votes on general tax increases, with high status voters more likely to support increases in taxes that were not earmarked for any particular purpose. This led Hahn and Kamieniecki to speculate that the abundant resources available to high status voters enabled them to provide unusual and almost unqualified support of increased taxes at the local level. These same high status voters, however, were more likely to oppose measures calling for increases in health care or welfare services, implying they were unwilling to give tangible benefits to residents perceived to be undeserving. Overall, the authors concluded that with both expenditure and non-expenditure measures, the SES composition of a community had an important impact on voting behavior.

Given these findings, it seems plausible to expect that the economic and demographic characteristics of the counties in this study should offer some explanations of differing levels of support for environmental ballot measures.

Chapter Three: "DATA AND METHODS"

INTRODUCTION

As noted in the introduction to this study and illustrated in the literature review above, there are a number of competing hypotheses that seek to explain why Americans differ with respect to support for environmental protection. These hypotheses can be separated into three broad groups of variables: place of residence, economic conditions, and demographic characteristics. This study will test these competing hypotheses, and seek to illustrate the determinants of environmental concern at the county level, using aggregate votes on state-wide environmental ballot measures. The dependent variable is the percentage of votes per county in favor of all environmental measures presented during the 1990s in Oregon, California, Colorado, Michigan, and Florida. As such, the percentage of votes in favor of each ballot measure in each county represents a separate observation point in this study. A more detailed discussion of the specific ballot measures used will be provided when discussing each state. Data for the dependent variables was obtained from the Secretary of State's Office in each of the states. Before discussing further the independent variables used in this study, a justification of the use of ballot measures to assess determinants of support for environmental protection is warranted.

JUSTIFICATION FOR THE USE OF BALLOT MEASURES

Many of the standard measures for assessing public support for environmental protection, such as survey research or contingent valuation studies, have been criticized for providing inadequate measures of *actual* levels of support at both the individual and community levels (Kahn and Matsusaka 1997, Mitchell and Carson 1989). The major critique is that these methods provide to respondents only hypothetical scenarios without the association of any real, tangible costs. It may be argued that while citizens are supportive of environmental protection in theory, when asked to make specific sacrifices, support may decline.

Freudenburg (1991) has gone so far as to argue that it is inadequate to assess environmental concern with national survey data, as questions in these surveys are too vague and ambiguous. Within these abstract, hypothetical situations, respondents may envision a number of different environmental issues and other considerations associated with the question. He argues that these considerations may cloud the respondent's opinion. Freudenburg suggests that more accurate findings may result from studies that investigate environmental concern within the context of specific proposals that will actually have an impact on respondents.

The problem, however, does not lie solely with the use of abstract questions in national surveys. Contingent valuation studies, one solution to problems associated with vague survey questions, also suffer from the problem of posing hypothetical questions. Contingent valuation studies attempt to measure a respondent's "willingness to pay" for increased environmental protection in a specific case. For example, respondents may be

asked to provide an actual dollar value that reflects the amount they would be willing to pay to provide cleaner air in their community, or protect nearby open spaces. The critique of these studies is that they also rely on hypothetical situations. Respondents are aware that whatever value they place on increasing environmental protection in a specific instance, that amount will not actually be assessed upon them or others. This may lead respondents to overvalue the amount they would be willing to pay for increased environmental protection. While contingent valuation surveys strive for more realistic scenarios, they remain limited by the hypothetical nature of the costs imposed on respondents.

Voting on state-wide measures provides an excellent opportunity to assess whether different segments of the population possess different environmental preferences while avoiding the potential problems arising from posing hypothetical questions. Environmental ballot measures have real tangible costs associated with them. State-wide measures provide voters with simple yes-or-no choices while clearly illustrating the associated costs. As Kahn and Matsusaka (1997) suggest, if one accepts the assumption that those who value environmental protection at higher levels are more likely to vote in favor of ballot measures that seek that protection, it can be argued that this method of assessing environmental preferences gives a more accurate measure of individual support for environmental protection than do more standard measures.

The ballot measure method of assessing support for environmental protection does not suffer from the problems that arise with traditional methods. With ballot measures, the issues to be decided are real, the decisions are binding, a lengthy pre-election campaign

period exposes voters to arguments for and against measures and allows time for reflection. A wide variety of issues are considered, and there are no intervening agents that may alter an individual's decision (Kahn and Matsusaka 1997). Further, some states such as Oregon, require that the expected costs of proposed measures be calculated and published in the voter's pamphlet. It is reasonable to suggest, thus, that voting results on state-wide ballot measures may provide a more accurate indicator of support for increased environmental protection than do methods that ask only hypothetical questions.

While the use of county level data to examine the determinants of support for environmental protection will be useful, the reader should be cautioned that this method is not without problems of its own. The primary issue is the possibility of "aggregation bias." The most important and troublesome source of this bias occurs when the grouping of individual responses, such as aggregating all votes within a county, produces specification error in the aggregate parameter estimates. As a result, the expected values of unstandardized coefficients at the aggregate and individual levels may not be equal. That is to say, correlations found to be significant at the aggregate level cannot automatically be assumed to be significant at the individual level. For example, if the study were to find a significant correlation between counties with high median incomes and increased support for environmental protection, one could not necessarily conclude that it is the wealthier individuals within that county that are more supportive of that protection. For this reason, the results presented in this study apply only to environmental preferences at the county level. The reader is strongly cautioned against generalizing these findings to the individual level.

Thus, this method of determining what variables influence levels of support for environmental protection may only be used with aggregate data. It may, however, provide an effective alternative method for illustrating the characteristics associated with varying levels of support for environmental protection.

JUSTIFICATION OF STATES SELECTED

Not all states allow direct democracy, thus the states eligible for this project were somewhat limited. The states which were selected were targeted for a variety of reasons, including regional distribution and the types of ballot measures used, in an effort to examine as many hypotheses as possible.

REGIONAL DISTRIBUTION AND URBAN-RURAL CHARACTERISTICS

California, Oregon, and Colorado were selected because they are Western states, while Michigan is in the Midwest, and Florida is in the South. This will allow investigation into whether urban-rural differences exist in the west and whether such differences are also found in other regions, something that has not been yet been addressed in the literature.

Further, all of these states were selected because they have significant urban-rural distinctions contained within their borders. Oregon, Colorado, and Michigan all have substantial metropolitan areas and fairly urbanized regions, while the remainder of each state is primarily rural. Oregon has the Portland Metropolitan area, as well as a fairly densely populated region running south within the Willammette Valley to the city of Eugene. The remainder of the state is rural with no other county outside that region containing a city with more than 50,000 residents.

Colorado is similar to Oregon in that it contains a metropolitan area in and around the city of Denver, and has a number of urban pockets spreading across the Front Range of the Rocky Mountains, from Fort Collins in the north to Pueblo in the south. As with Oregon, outside of this region no counties in Colorado contain a city with more than 50,000 residents.

Michigan is somewhat more developed, possessing a larger population than Oregon and Colorado, and having more urban areas. Like Oregon and Colorado, Michigan has the Detroit Metropolitan area, but also has other urban centers scattered across the southern one-third of the state, such as Grand Rapids and Ann Arbor. No counties in the northern two-thirds of Michigan contain cities with more than 50,000 residents.

Florida and California, as temperate-climate, coastal states, exhibit different development patterns, but still contain significant urban-rural distinctions. Florida, situated on a peninsula separating the Gulf of Mexico from the Atlantic Ocean, has substantial urban areas along both of its coasts, particularly in the southern half of the state. The northern interior of of the state, with the exception of the capitol in Tallahassee, has no significant urban areas. The southern interior of Florida is largely uninhabited, as it consists primarily of swampland which has impeded any substantial development there.

California, situated on the Pacific Ocean, also has substantial urban development along its southern coast, running roughly from San Francisco in the middle of the state to San Diego in the south. With only a few exceptions, northern California and most of its

interior has remained largely undeveloped (in terms of residential development, though not federal water projects) and is primarily rural. Overall, all five of the states chosen for this study exhibit stark urban-rural splits that should illustrate distinctions in the preferences of residents in those areas, should such a distinction exist.

ECONOMIC DIFFERENCES

While selecting both Western and non-Western states that have stark urban-rural differences was an important concern for this study, it was not the sole criteria used. These states were also chosen based on their diverse economic bases, as a way of evaluating whether different dominant industries might influence environmental voting. While all states still rely to a significant degree on agriculture, many states in this study have expanded their economic bases into other areas. As such, Oregon and Colorado are the two states included that continue to be heavily dependent on resource exploitive industries, but the geography and climate of each state have produced different comparable advantages for different industries. In Oregon, high levels of annual precipitation and a moderate climate have made logging and farming the dominant industries. Colorado, on the other hand, is considerably more arid, which has hindered the development of the logging industry and wide-scale agriculture, at least to the degree found in Oregon. Colorado's geography and climate are, however, well suited to ranching and mining, two industries that have historically been important in that state's economy.

Michigan, like other Midwestern states, while reliant to a significant degree on agriculture, has focused its economy to a greater extent on manufacturing. The American automobile industry has historically been centered in Detroit, while other areas of the state

have capitalized on the abundance of water and hardwood forests to produce paper. Thus it will be interesting to see whether the greater dependence of Michigan residents on manufacturing industries, with their own associated environmental problems, will lead them to vote differently on environmental ballot measures than do residents of Oregon and Colorado, who are more tied to resource exploitive industries.

California offers a nice economic blend to the study. While California has the largest economy of all U.S. states (and larger than many independent countries), that economy is also one of the most diverse. California is the top agricultural producer in the United States, but also has substantial financial, insurance, and real estate industries, coupled with considerably higher levels of tourism than the three states already discussed (Gray 1999). Thus California's urban-rural divisions, coupled with its more diversified economy, should provide an excellent test of the effects of place of residence versus economic variables in this study.

Finally, Florida provides an interesting example as it is one of the few states in which the so called service sector has surpassed manufacturing and agriculture as the single largest economic sector, though agriculture continues to play an important role in the state's economy (Gray 1999). Much of this service sector is devoted to tourism, as the state works to attract visitors from across the U.S. and the world. Given this economic dependence on the tourist industry, one might expect that residents of Florida may wish to provide relatively high levels of environmental protection in an effort to make the state as appealing as possible. Thus, coastal counties, regardless of population size,

may demonstrate higher levels of support for environmental protection, as it is those counties which receive the largest economic benefits from the tourist industry.

Florida also makes for an interesting case due to its relatively diverse population. The state has long been a favorite retirement spot for elderly Americans. Many residents of the Northeast annually move to Florida's coastal towns, while the majority of native Floridians live in the interior or northern half of the state. This gives the state a unique mix of political cultures, with the Northeastern migrants bringing with them a political culture that is quite distinct from the traditional Southern political culture exhibited by natives. Further, the high number of Cuban immigrants in the Miami area add a third distinct group to Florida's political process, allowing this study to examine any differences in attitudes that may exist among these three segments of Americans.

BALLOT MEASURE ELECTORAL LAWS

The final criteria on which the states in this study were chosen entails the different electoral laws governing the ballot measure process in each. As such, an attempt was made to select states that represented as many of the different types of ballot measures as possible. Oregon, Colorado, and California represent states that allow the broadest range of ballot measure options to their citizens. Each state allows direct initiatives for constitutional amendments and statutory enactments, and each allows legislative referendum and referendum through citizen petition. Again, direct initiatives need not be approved by the legislature before being placed on the ballot, while indirect initiatives require such approval or additional signatures from registered voters. The broad processes allowed in these three states reflect the historic acceptance of direct democracy

in the west. Florida allows the initiative and referendum only for constitutional changes, but not for statutory enactments. Florida also has one of the most restricted initiative and referendum processes, which will be discussed below. Finally, Michigan offers perhaps the most unique mix, allowing the direct initiative for constitutional changes, but is one of only five states to employ the indirect initiative for statutory changes, while not allowing the direct initiative as well. Michigan also allows for both legislative referendum and referendum through citizen petition. This diverse blend of electoral laws in the states should allow for comparisons of whether the electoral laws surrounding the ballot measure process in each state have any impact on the use and passage of initiatives and referenda.

INDEPENDENT VARIABLES AND HYPOTHESES

As noted above, three basic groups of explanatory variables will be used to assess the determinants of environmental preferences. So that results could be compared across all five states, data for the independent variables were gathered from a single source, *The 1998 County and City Extra* (Gaguin and Littman 1998). This is an annual publication that provides statistical information for every state, county, metropolitan area, congressional district, and city larger than 20,000 residents in the U.S. Data in this publication is drawn primarily from the U.S. Census Bureau, but also other federal sources that comply with the Census Bureau's standards for data collection. Data for all variables in this study is aggregated at the county level.[4]

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[4]Again, the reader should be cautioned only to interpret the results that follow at the county level. Due to the possibility of aggregation bias, it is inappropriate to generalize the findings to the individual level.

URBAN-RURAL VARIABLES

Perhaps of primary importance, this study will examine whether significant differences in support for environmental ballot measures exist between urban and rural voters. Considerable literature suggests that urban residents tend to be more supportive of environmental protection than rural residents (Alm and Witt 1997; Bartlett 1993; Dunlap 1993; Freshwater and Deavers 1992; Thomas 1991; Van Liere and Dunlap 1981; Buttel and Flinn 1978a, 1978b; Althoff and Greig 1977).

The degree to which a county is urban or rural will be measured by the number of persons per square kilometer within each county. This variable is designed to identify urban and rural counties in order to test whether exposure to different levels of environmental degradation that stems from place of residence alone influences environmental preferences. This measure by itself, however, may be problematic as there are a number of counties which are essentially urban but would not be considered so with this variable. This problem will arise when a county is geographically large and contains a city of substantial size. While the majority of the county's residents may live within the urban area, the overall population of that county is averaged over the total land area. If the county is geographically large, there is the possibility of classifying a county as rural, thus ignoring the urban residents within it. To control for this possibility, a second urban-rural variable will be included. This will be a dummy variable that indicates whether the county contains one or more cities with 50,000 or more inhabitants. These two variables together should indicate whether urban and rural counties in fact vote differently on environmental initiatives.

It is expected that urban counties on average will vote in support of the ballot measures at higher levels than rural counties. Further, both measures of urban versus rural counties will be significantly associated with greater support for environmental protection in *bivariate* analysis, with urban counties exhibiting higher levels of support than rural counties. However, it is also hypothesized that significance at the bivariate level will disappear once the demographic and economic variables are entered into a *multivariate* model. This would indicate that urban residents tend to be more supportive of environmental protection than are rural residents, but that those differences are explained by other variables that go beyond whether a county is urban or rural.

DEMOGRAPHIC CHARACTERISTIC VARIABLES

Given the evidence that suggests individual attributes influence preferences on environmental protection, a number of county demographic variables are included. The literature has suggested that an individual's level of education influences support for environmental protection (Jones and Dunlap 1992, Van Liere and Dunlap 1980). As one's level of education increases, support for environmental protection is also expected to increase. In this study, education will be measured by the percentage of county residents over the age of twenty-five who have obtained a four year college degree. The hypothesis, then, is that counties with relatively higher percentages of residents who have obtained a college degree will tend to be most supportive of environmental ballot measures.

The literature has also suggested that an individual's party affiliation and political ideology are significant determinants of support for environmental protection (Kraft 1997,

Mazmanian and Sabatier 1981, Buttel and Flinn 1978a, Engelbert 1961). Both people who hold the liberal ideology and members of the Democratic Party have tended to be most supportive of environmental protection, as both groups generally favor governmental intervention into the economy to prevent or correct environmental damage and negative externalities. A problem arises, however, in that there exists no clear measure of ideology at the county level. To solve this problem, party affiliation will be used as a proxy for ideology, and essentially the two concepts will be measured by one variable. While it is hoped that this variable will provide some information about the affects of ideology on voting behavior, it should be noted that no definitive conclusions on that subject may be drawn from this study, given the absence of an explicit measure of that concept.

Party affiliation will be measured by the percentage of residents in each county who voted for the Republican Party's nominee, Robert Dole, in the 1996 presidential election. The Republican candidate is used in the hopes that this measure will provide the purest assessment of party affiliation. Given that the Republican candidate lost that election and trailed in the polls throughout most of the campaign, it seems plausible to expect that most independent and Democratic voters tended to support either the independent or Democratic candidates. Those most strongly attached to the Republican party likely remained loyal and voted for their party's losing candidate. The hypothesis regarding party affiliation, then, is that counties with higher percentages of residents voting for the Republican presidential candidate will tend to express lower levels of support for environmental ballot measures.

The final demographic variable, age, is more difficult to measure. The literature suggests that older individuals tend to be less supportive of environmental protection than are their younger counterparts (Jones and Dunlap 1980, Mohai and Twight 1987, Van Liere and Dunlap 1980, Buttel 1979, 1975). The U.S. Census Bureau, however, does not report the median age in each county, nor is that information available from other sources for all the states included in this study. While median age would be the variable of choice to assess the impacts of age on environmental preferences, the lack of available data has forced the use of a different measure. While the U.S. Census Bureau does not report median age by county, it does report the percentage of county residents within different age groups, generally in ten year increments. Given the availability of this data, the variable measuring age is an aggregate of the percentage of county residents below the age of thirty-five, indicating which counties have relatively younger populations. Counties with younger residents are expected to be more supportive of environmental protection than are counties with older residents.

ECONOMIC VARIABLES

A third group of independent variables will measure economic conditions within each county. This group of variables will test whether economic factors influence support for environmental protection. The first such variable will measure the extent to which a county's economy is dependent on natural resource related industries. A number of scholars (Kahn and Matsusaka 1997, Alm and Witt 1997, Fruedenburg 1991) have suggested that counties with greater dependence on resource exploitive industries such as agriculture, ranching, and logging, tend to be less supportive of environmental protection,

as that protection would likely have a negative impact on the county's economy. Given these findings, this study will include a variable that measures the percentage of a county's residents whose principal occupation is resource related. These resource related industries are agriculture, ranching, mining, and logging. It is expected that counties with relatively high percentages of residents employed in these resource related industries will tend to be less supportive of the environmental ballot measures examined in this study.

The variable measuring resource dependence is expected to be correlated more strongly with support for ballot measures that would impact the industries included in that variable. For example, we might expect that residents of a county that is dependent on the timber industry would oppose a ballot measure that would restrict logging practices. This hypothesis is based on the assumption that opposition would arise due to the potential negative economic impacts associated with the measure. That same county may not, however, be as likely to oppose a measure impacting the fishing industry or a measure that would have little or no economic impacts at all. As such, this is an imperfect measure of a county's dependence on resource related industries, as there are economic sectors, such as the fishing or tourist industries, which are not included in this variable. This omission is due to the fact that such data does not exist at the county level. Thus, while the variable measuring resource dependence is imperfect, it is the best available.

An additional explanation for less support for environmental protection from resource dependent counties suggests that residents of those counties are more accustomed to the exploitation of nature for economic gain. As such, those residents may perceive less of a need for environmental protection in general and thus oppose efforts to

increase that protection. Residents of counties that are less dependent on resource related industries may have less experience with the use of natural resources, and instead focus on the aesthetic or recreational uses of the environment. Those residents, then, are likely to support efforts to increase protection of the environment.

Along with dependence on resource related industries, the literature also suggests that a county's income level influences support for environmental protection (Kahn and Matsusaka 1997, Elliot et al. 1995, Buttel 1975). These scholars argue that individuals with higher incomes possess a greater ability to pay for environmental protection and will therefore tend to be more supportive of that protection. While income has been considered a demographic variable by some scholars, it is considered an economic variable in this study because of its economic nature. To examine this hypothesis, the median household income for each county will be included to measure the overall economic prosperity of that county relative to the others in each state.[5] It is expected, then, that counties with higher levels of median household income will tend to be more supportive of environmental measures.

SUMMARY OF STATISTICAL HYPOTHESES

Given the past findings reported in the literature, a number of hypotheses must be tested in an effort to understand varying levels of support for environmental protection among counties in the selected states. In summary, the hypotheses being statistically tested in this study are as follows:

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[5]A second measure of economic prosperity, the percentage of all persons falling below the poverty line in each county, was originally included in the study but was ultimately removed due to high singularity with the variable measuring median income.

H1: Counties with greater numbers of residents per square kilometer are more urban and will be more supportive of environmental ballot measures.

H2: Counties in which there is a city with 50,000 or more residents will exhibit urban characteristics and will be classified as an urban county in this study. Those urban counties will be more supportive of environmental ballot measures.

H3: While the urban-rural variables will be significantly correlated with support for environmental ballot measures in bivariate analysis, that significance will disappear as other variables are entered into a multivariate model, indicating that urban and rural counties do express different environmental preferences, but those differences stem from factors other than whether the county is urban or rural in nature.

H4: County support the Republican presidential candidate in 1996 (Robert Dole) is inversely related to support for environmental ballot measures.

H5: Counties with residents that have higher levels of education (as measured by the percentage of residents 25 years or older possessing a four year college degree) will be more supportive of environmental ballot measures.

H6: Counties with younger populations (as measured by the percentage of residents below thirty-five years old) will be more supportive of environmental ballot measures.

H7: Counties in which relatively larger percentages of residents are employed in resource related industries will be less supportive of environmental ballot measures.

H8: Counties with higher median household incomes will be more supportive of environmental ballot measures.

METHODS

Two tests will be conducted to examine the hypothesis which suggests urban counties are more supportive of environmental protection than rural counties, without controlling for other variables. First, the average votes in favor of each environmental ballot measure for urban counties will be compared to the average across rural counties, in each state. As such, the percentages of votes in favor of each measure are averaged for all urban counties, then averaged for all rural counties, allowing those averages to be compared within each state. Counties are divided into urban or rural categories based on the presence of a city with 50,000 or more inhabitants. Counties containing these cities of

substantial size are classified urban. Comparisons of the averages for each type of county will illustrate whether urban-rural differences actually exist within each state.

If such differences are found, a second test will be conducted to determine if these differences are statistically significant. Bivariate correlations will be calculated between the two urban-rural variables and support for each ballot measure. The significance of those correlations will then be tested.

Even if urban-rural differences are found, and those differences are statistically significant, we cannot conclude that those differences are the sole result of population density in each county. Instead, other variables found in urban or rural areas may be influencing these differences. Multivariate analysis must be conducted to test the independent effects of these factors. To examine these multivariate correlations, ordinary least squares (OLS) regression is used. This analysis seeks to determine which variables are significantly correlated with support for each ballot measure across all counties in that state, while controlling for the other variables included in each regression model. Again, the percentage of votes in favor of each ballot measure in each county is the unit of analysis for this study. Tolerance scores were calculated to test for multicollinearity and singularity. Due to high singularity, the income and education variables were combined for California. A White's Test was conducted on all OLS models to test for heteroskedasticity. The results of those tests indicated there were no significant problems.[6]

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[6]A variable measuring the total amount of undeveloped land in each county was originally included in the analysis. This variable was dropped, however, because it created problems with heteroskedasticity and was not significantly correlated with support for any

NON-STATISTICAL HYPOTHESES

While the primary method employed in this project is quantitative, the study is also designed to allow qualitative comparison of the ballot measure process across the states, in an effort to learn more about ballot measure voting in general, as well as preferences on environmental issues. This analysis will move in a number of directions.

It is reasonable to expect that not all environmental issues are alike, and campaigns surrounding different types of ballot measure are also likely to be different. Specifically, measures that have substantial economic impacts may be treated differently by voters than other types of measures. To examine this possibility, all measures are divided into two broad categories. The first, called *economic measures*, includes ballot measures that are associated with substantial economic impacts. This category will contain measures designed to regulate the activities of an identifiable resource-related industry. Such industries may range from loggers to real estate developers. Also included in this category are measures that would use specific taxes to provide for environmental goods, for example the creation of a sales tax earmarked for the provision of open spaces. The second category, called *non-economic measures*, will include issues that are not associated with significant economic costs. An example would be a measure designed to alter existing hunting regulations. Given the different expected economic impacts associated with these two types of environmental ballot measures, it seems plausible to predict differences in the manner in which each type is handled during the campaign and by voters themselves. A number of hypotheses will be investigated here.

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measures in bivariate or multivariate analysis.

First, it seems likely that measures involving substantial economic regulation or public expenditures will attract greater opposition than those measures that would have less concentrated economic impacts. For example, one might expect that a measure designed to regulate agricultural pesticide use would attract intense opposition due to the negative economic impacts some interest groups and citizens might associate with such a measure. A measure intended to prohibit animal leg trapping on the other hand, would have few adverse economic impacts associated with it, and may then attract less opposition. Given the economic stakes involved, it is expected that economic measures will attract greater campaign expenditures spent in both support and opposition, than will non-economic measures. These differences in campaign expenditures, then, will be indicative of the level of conflict surrounding each type of measure.

A second hypothesis is that economic interests will be more able and willing to spend money on behalf of their preferred outcome, thus producing lopsided spending patterns. That is, economic interests that are either threatened by a particular measure or stand to benefit from it, will spend more money to promote their interests in the ballot measure campaign. These groups will essentially outspend their "public interest" opponents.

Mancur Olson's seminal work, *The Logic of Collective Action* (1965), offers an explanation for this lopsided support. Olson suggests that private interest groups, such as those pursuing economic interests, will be better equipped to raise resources to pursue their political agendas. This is because political victories bring "selective benefits," or real, tangible benefits, for private group members. The same is not true, however, for more

public oriented groups, such as environmental groups. These so-called "public interest" groups seek collective benefits, amenities such as clean air or wilderness preservation. These collective benefits cannot be produced solely for group members, but rather benefit everyone regardless of whether an individual contributed to the cause. Olson suggested that these collective benefits will produce a "free rider problem," in which individuals would have little incentive to join a group pursuing collective benefits, choosing instead to take a "free ride" on the successes of others, while not personally contributing anything to the group's success.

Selective benefits versus collective benefits would lead to the expectation that more private interest groups, including those pursuing economic interests, would form than would public oriented groups. The finding that private interest groups will arise in greater numbers is well supported in the literature, but perhaps best illustrated by another seminal work, E.E. Schattschneider's *The Semi-Sovereign People* (1960). Further, private interest groups also tend to spend more money to influence the election of public officials than do their public interest opponents (Conway and Green 1998, Herson 1998). It may be expected, thus, that economic groups will typically mobilize greater monetary resources and outspend their opponents in ballot measure elections as well.

A third hypothesis is based on the findings of Gerber (1999). Gerber suggests that economic interests will be more successful spending money to defeat ballot measures than passing them, as those groups are better equipped to mobilize the financial resources necessary to purchase negative advertising. Economic interests, however, are less able to mobilize majorities in favor of measures they support. Based on this, it is expected that

economic interests will be more successful in defeating measures they oppose than in passing measures they support.

It also seems plausible to expect that counties who are dependent on natural resource related industries will oppose ballot measures designed to impose increased costs or regulations on those industries, as it would be in their economic self interest to do so. If, however, these counties' economies have become more diversified, a trend suggested by Bennett and McBeth (1998), economic variables will likely not be as important in determining levels of support for measures attacking resource related industries. Another hypothesis, then, is that the variable measuring each county's dependence on resource related industries will be more influential in determining levels of support for economic ballot measures than non-economic measures. It should be noted, however, that not all economic ballot measures affect the industries included in the resource dependence variable. For example, we may not expect counties that are dependent on farming to be particularly concerned with a measure that would impose restrictions on the state's fishing industry. Given this potential, analysis will be done in each chapter to determine the types of measures that are associated with the resource dependence variable.

Finally, the literature that has examined urban-rural differences in support of environmental protection has largely focussed upon Western states. It seems plausible, however, to suspect that these differences exist in other regions of the United States. As such, a final hypothesis is that urban-rural differences with regard to support for environmental protection will exist in all five states, indicating that this conflict is not unique to the western United States.

The qualitative hypotheses, then, are as follow:

H9: Economic measures will attract greater campaign expenditures both for and against the measure, than non-economic measures.

H10: Economic interests will outspend their opponents during ballot measure campaigns.

H11: The lopsided spending by economic interests will be most effective in opposition to ballot measures those interests oppose and less effective when spent on behalf of measures that economic interests support.

H12: The variable measuring the percentage of residents employed in resource related industries will be more influential in determining levels of support for economic measures than non-economic measures.

H13: Urban-rural differences will be present in all five states, indicating that urban-rural conflict over environmental protection is not unique to the Western United States.

In the chapters that follow, these hypotheses will be tested using environmental measures from five states. Each state will be analyzed in a single chapter. We will conclude with a chapter evaluating the validity of each of these thirteen hypotheses.

Chapter Four: "BALLOT MEASURES IN OREGON"

Having developed a number of hypotheses in chapters one through three, it is now time to test them. The first state to be examined is Oregon, which has the second longest history of ballot measure use in the United States, having adopted the process in 1902. Oregon is located in the Pacific Northwest, bordered on the north and south by Washington and California, to the east by Idaho, and to the west by the Pacific ocean. The analysis will turn to an examination of the seven environmental ballot measure elections held from 1990 to 1998, and follows a brief discussion of the economic conditions in Oregon and the ballot measure process used there.

OREGON'S ECONOMY

Oregon's natural resources have historically been the center of that state's economy, attracting people for both jobs and recreation. Oregon has gained a reputation for its fertile agricultural lands, expansive forests, and abundant fisheries (Oregon Secretary of State 1999). Agriculture has long been an important industry in the state, given the temperate climate and average annual precipitation of 39 inches. Agriculture makes up roughly 18% of the Oregon economy (Oregon Secretary of State 1999). Agricultural production in Oregon ranges from growing vegetables and berries in the Willamette Valley in the western part of the state, to wheat and livestock in the drier eastern regions.

Timber production has also been historically important in Oregon. Logging increased dramatically in the 1970s following both regional and national trends in increased demand for lumber products. Employment in the timber industry began to decline in the early 1980s however, as interest rates soared and home construction declined. This decline in the national wood products market, coupled with greater automation, led to a decline in timber related jobs. This trend was continued by drastic reductions in timber harvests on federal forest lands within Oregon as a result of the northern spotted owl controversy. (For a discussion of this controversy and the impacts it had on Oregon and other Pacific Northwest states, see Yaffe 1994.) For example, 9 billion board feet of timber were harvested from Oregon's forests in 1971. That number was more than halved to 4.1 billion board feet by 1997 (Oregon Secretary of State 1999). The impact of this decline in the wood products industry was particularly concentrated in rural counties, as those areas had less diversified economies and were more dependent on timber production. With substantial declines in Oregon's timber industry, efforts were made to diversify the state's economy.

Diversification efforts involved many industries, and the manufacture of so called "high technology" became particularly important. In the mid-1990s, a number of companies were enticed into moving to Oregon and constructing large semiconductor factories, producing microcomputer chips, or communications technology. By 1997, 28% of Oregon's manufacturing workers were employed in high-technology industries (Oregon Secretary of State 1999). The vast majority of these high technology manufacturing firms,

as well as other manufacturing industries, are located within the more densely populated Willamette Valley and Portland Metropolitan Area.

Overall, of the $10.1 billion in exports from Oregon in 1997, $1.2 billion consisted of wood products, $2 billion consisted of agricultural products, and $5.1 billion consisted of high technology products (Oregon Secretary of State 1999). While these numbers suggest that Oregon has successfully diversified its economy, shifting from a dependence on natural resources to the manufacture of computer chips and other high-tech products, most of the growth in manufacture has occurred in and around urban areas. Many rural areas within Oregon remain heavily dependent on natural resource industries, and those areas have seen substantial economic hardships. Diversifying these rural areas remains a "major challenge" for state leaders (Oregon Secretary of State 1999, 178.)

THE BALLOT MEASURE PROCESS IN OREGON

As mentioned above, Oregon was the second state in the Union to adopt the ballot measure process, doing so by amending the state constitution through popular vote in 1902. Shortly thereafter, the initiative and referendum process became known nationally as the "Oregon System," and reflected the progressive nature of Oregon politics (Oregon Secretary of State 1999). Under the system adopted in 1902, which remains in place today, Oregon voters may amend their constitution and alter or pass statutes through direct initiatives and legislatively referred or citizen petitioned referenda. The only form of direct democracy not allowed in Oregon is the indirect initiative. As such Oregon, along with California and Colorado, has the most extensive ballot measure system of all states included in this study.

Since 1902, by far the most used ballot measure process in Oregon has been the legislative referendum. Between 1902 and 1998, the legislature has referred 363 measures to the people, of which 206 have passed (Oregon Secretary of State 1999). Also since 1902, 99 of the 288 initiatives placed on the ballot have passed, and 25 of the 61 referenda placed on the ballot by citizen petition have passed (Oregon Secretary of State 1999). Over time, Oregon voters have been asked to decide on a total of 712 measures, having passed 330 of them for a 46 percent approval rate overall. From 1990 to 1998, 89 ballot measures were voted on in Oregon, covering a broad range of topics. This large number, relative to most other states, indicates the high degree to which Oregonians use the ballot measure process.

To place a measure on the general election ballot (with the exception of a legislative referendum), supporters must obtain a specified number of signatures from registered voters. As with most states, the number required is a percentage of the total votes cast in the statewide election held prior to filing the petition. Citizen petitioned referenda require the fewest signatures with four percent of the total voting in the previous gubernatorial election, or 48,841 in 1998. Initiative petitions for statutory changes come next requiring six percent, or 73,261 signatures in 1998. Finally, initiative petitions for constitutional amendments require the highest percentage of signatures at eight percent, or 97, 681 in 1998 (Oregon Secretary of State 1997). Overall then, Oregon has had much experience with the ballot measure process, fitting Oregon nicely within this study.

BALLOT MEASURES EXAMINED

Between 1990 and 1998, seven ballot measures were voted on in Oregon that dealt with environmental issues. Of the seven, all were placed on the ballot through initiative petition, six of which sought to make statutory changes and one which sought to amend the constitution. This relatively large figure indicates the high degree to which Oregonians put this process to use. Brief summaries follow:[7]

> Measure #6, 1990 (Economic): "Product Packaging Must Meet Recycling Standards," *Recycle*: this initiative would have amended existing statute to require that all consumer packaging used in Oregon meet certain recycling standards. The vote was held in the November general election in 1990. The initiative failed with 42.3 percent of the statewide vote in favor.
>
> Measure #6, 1992 (Economic): "Bans Trojan (nuclear) Power Operation Unless Earthquake and Waste Storage Conditions Met," *Nuclear:* this initiative would have amended existing statute to prohibit the operation of all nuclear power plants within the state until a permanent federal waste disposal site was licensed and earthquake safety provisions were met. The vote was held during the November general election in 1992. The initiative failed with 42.7 percent of the statewide vote in favor.
>
> Measure #14, 1994 (Economic): "Amends Chemical Mining Laws," *Mining:* this initiative would have amended the state constitution, imposing new requirements on chemical mining operations. Those changes would have added operating and reclamation requirements, banned certain mining practices, imposed fees to finance habitat protection, and ended mining tax credits. The vote was held during the November general election in 1994. The initiative failed with 42.4 percent of the statewide vote in favor.
>
> Measure #18, 1994 (Non-Economic): "Bans Hunting Bears With Bait," *Hunting:* this initiative would have changed existing statute to ban the hunting of black bear with bait, and ban the hunting of black bear and cougars with dogs. The vote was held during the November general election in 1994. The initiative passed with 51.8 percent of the statewide vote in favor.

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[7]Whether the measure was classified as economic or non-economic is stated in parentheses after the year in which the election was held. The word in italics after the title of each measure represents the measure's designation the tables below.

Measure #34, 1996 (Non-Economic): "Repeals the 1994 Bear/Cougar Initiative," *Repeal:* "this initiative would have amended existing statute by repealing the 1994 hunting initiative (Measure #18 above) and requiring all future wildlife management decisions be the sole responsibility of the state Wildlife Commission. The vote was held during the November general election in 1996. The initiative failed with 42 percent of the statewide vote in favor.

Measure #38, 1996 (Economic): "Livestock Prohibition," *Livestock*: this initiative would have amended existing statute and prohibited the presence of livestock near certain polluted waters within state owned or adjacent lands. The vote was held during the November general election in 1996. The initiative failed with 36 percent of the statewide vote in favor.

Measure #64, 1998 (Economic): "Timber Harvest Practices," *Timber:* this initiative would have amended existing statute and prohibited clear cutting and other timber harvest practices, as well as imposing more restrictive regulations on forest management and harvesting. The vote was held during the November general election in 1998. The initiative failed with 19.4 percent in favor.

NON-ECONOMIC VERSUS ECONOMIC MEASURES

Of the seven Oregon ballot measures used in this study, two can be classified as non-economic ballot measures and five as economic. Recall from chapter three that economic measures are those measures that would entail substantial economic impacts on an identifiable industry or impose a significant tax burden on voters. Non-economic measures, on the other hand, are not associated with any significant or concentrated economic costs.

NON-ECONOMIC MEASURES

The two non-economic measures deal with alterations of hunting regulations within the state. Measure #18 (1994) and Measure #34 (1996) would have banned certain types of hunting or lifted those bans, respectively. As each measure would only affect a relatively small group of hunters, not an identifiable industry or economic group, and have

only a minimal impact on the state's economy, it seems clear that there were no major economic stakes involved with either of these measures. It should be noted, too, that Measure #34 (1996) is the only Oregon ballot measure in which a "yes" vote represents the anti-environmental position, as voters in support of that measure were voting in favor of lifting certain hunting restrictions. For the following analysis then, we would expect the results for Measure #34 to be the opposite of the results for all other measures.

ECONOMIC MEASURES

The five economic measures from the Oregon sample are quite different from the non-economic measures. The first economic measure, voted on in 1990, is Measure #6. This measure would have required all product packaging to meet recycling standards. Passage would clearly have entailed economic costs to numerous industries that packaged or sold consumer goods, as well as those firms producing packaging material. Due to the high costs expected to be imposed on these industries, this measure was classified as economic.

The second economic measure, Measure #6 (1992), would have closed Oregon's only nuclear power plant, located north of the city of Portland. This closure would likely have entailed a substantial decrease in the power supply facilities operated by Oregon's largest private electric company, Portland General Electric, which owned the nuclear plant. Beyond adversely impacting Portland General Electric, this reduction in supply would have impacted the consumers throughout Oregon, given the collective marketing of all electricity produced in the Pacific Northwest by the (federal) Bonneville Power Administration. (For a discussion of the function and role of the Bonneville Power

Administration, see Davis 1999). Given the potential impacts to both Oregon's largest private electric company and Oregon's electricity consumers, this measure is classified economic.

The remaining three economic measures would have had clear economic impacts on identifiable resource related industries. Measure #14 (1994) would have imposed substantial restrictions on Oregon's mining industry. Measure #38 (1996) would have restricted cattle grazing in certain riparian areas, thereby reducing the amount of grazing lands available while requiring the construction of additional fences to keep cattle out of streams and rivers. Finally, Measure #64 (1998) would have imposed fairly severe restrictions on Oregon's already declining timber industry. Overall, then, the ballot measures examined provide a nice blend of economic and non-economic measures with which to test the hypotheses.

REVIEW OF HYPOTHESES

In an effort to discover the determinants of support for environmental protection, expressed through votes on ballot measures, a number of tests will be run using several variables. The first test will compare the average percentage vote in favor of each measure for all urban counties, versus the average of all rural counties. To conduct this test, each county was classified as either urban or rural based on whether the county contained a city with 50,000 or more residents. The percentage vote in favor of each measure was then averaged for each group, allowing a comparison of votes between urban and rural counties. This test will indicate whether urban counties in Oregon do in fact

vote in support of environmental ballot measures at higher levels than rural counties. The significance of these differences will be tested using bivariate regression.

After examining whether urban and rural counties vote differently, multiple regression will be used to determine whether those differences are due solely to place of residence, or whether the demographic attributes of county residents and economic conditions in each county may provide better explanations for those differences. Finally, campaign expenditures both for and against each measure will be examined to determine whether economic measures attract greater conflict than non-economic measures. It is expected that this increased conflict will be evidenced by larger amounts of campaign expenditures than is seen for non-economic measures. Also of interest is whether campaign spending in campaigns for economic measures is lopsided.

FINDINGS

URBAN-RURAL DIFFERENCES

As predicted, urban counties in Oregon tend to be more supportive of environmental ballot measures than do rural counties, as evidenced through voting percentages and bivariate analysis. Counties with cities of substantial size were classified urban, while counties without any large cities were classified rural.[8] Based on this division, it seems clear that urban counties in Oregon tend to be more supportive of environmental protection when voting on all seven ballot measures included in this study.

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[8] As of 1998, Oregon had five counties that could be classified urban under this criteria. They are: Clackamas, Lane, Marion, Multnomah, and Washington. All five except Lane fall within the Portland metropolitan area. The remaining thirty-one counties were classified rural.

On average across all seven measures, votes in favor of environmental protection were fifteen percent higher in urban counties as compared to rural counties. The average votes in favor of each measure grouped by urban and rural counties are reported in Table 4.1.

Table 4.1: Percentages of Votes in Favor of Each Measure Averaged Across Urban Versus Rural Counties, Oregon 1990-1998

	Recycle 1990	Nuclear 1992	Hunting 1994	Mining 1994	Repeal* 1996	Grazing 1996	Logging 1998
% Yes: Urban	44.7%	46.2%	57.0%	46.0%	38.0%	40.4%	21.7%
% Yes: Rural	33.4%	31.5%	37.5%	30.4%	57.2%	21.9%	12.6%
Difference	11.3%	14.7%	19.5%	15.6%	19.2%	18.5%	9.1%

*A "yes" vote represents a desire to repeal the 1994 "Hunting" measure, and is thus considered anti-environmental protection.

Based on comparison of the average votes in favor of each measure between urban and rural counties, urban counties have been more supportive of environmental measures, at least during the 1990s. While the data presented in Table 4.1 indicate that urban counties tended to be more supportive of environmental protection, a second test is necessary to determine whether those differences are statistically significant. Bivariate analysis (Pearson's r) was conducted to test the statistical significance of correlations between support for each measure and both urban-rural variables. The bivariate correlations between both urban-rural variables were significantly correlated with support for all seven Oregon measures. This finding indicates that urban counties did express significantly higher levels of support for those measures than did rural counties. The question now becomes whether those differences stem solely from a person's place of residence, or whether other variables may be influencing those differences. To answer this question, multiple regression must be used.

MULTIVARIATE ANALYSIS

Given the similarities among the estimates for the economic and non-economic ballot measures in Oregon, all seven measures will be discussed in the same section. As can be seen from Table 4.2, with all seven Oregon measures, a number of variables consistently show significant correlations with support for each ballot measure. Perhaps the most striking result provided through this multivariate analysis, is the apparent insignificance of both urban-rural variables for all but one measure. This suggests that regardless of whether urban and rural counties are designated as such based on population density or the presence of a city of substantial size, a county's urban or rural character seems to have little impact on how residents vote.

This should however, not be taken to show that urban and rural residents vote in the same manner or have identical preferences. To the contrary, Table 4.1 (above) illustrates that voters in urban counties do tend to vote in favor of environmental measures at higher levels. Further, both urban-rural variables display a statistically significant correlation with *all* ballot measures in bivariate analysis. The significance of the urban-rural variables, however, disappears when other variables are entered into the model, suggesting that *differences in voting on environmental issues in Oregon stem less from a voter's actual place of residence than from other factors present in urban or rural areas.* This finding is consistent with the hypotheses which suggest that while urban and rural residents do tend to vote differently on environmental measures, those differences stem from factors other than place of residence.

The one exception to this finding is that the urban-rural variable that measures the presence of a city with more than 50,000 inhabitants was significantly correlated with the ballot measure that sought to close Oregon's only nuclear power plant. The positive direction of this correlation suggests that voters in the five urban counties were more supportive of this measure than were voters in rural counties, simply because those five counties were urban. This finding of significance may be explained by the fact that four of the five counties are in or near the Portland metropolitan area, which also contains the nuclear power plant that was to be shut down. Residents of that four county area may have been more supportive of closing the plant out of fear of the potential adverse effects of nuclear power, since those potential threats were located close to those voters.

Aside from the urban-rural variables, three variables consistently show significant correlations with support for each ballot measure. Again, the reader should keep in mind when interpreting the parameter estimates in Table 4.2, the "Repeal" measure is the only Oregon ballot measure for which a "no" vote reflected pro-environmental sentiments. Of the three consistently significant variables, two of these variables (percent with a college degree and percent voting Republican) can be considered demographic variables, while the third (percent employed in resource related industries) is an economic variable. These findings suggest that particular demographic characteristics and economic variables are significant determinants of support for environmental protection, at least when aggregated at the county level.

Table 4.2: Voting Determinants of Environmental Ballot Measures in Oregon, 1990-1998#

Variables	Recycle 1990 E	Hunting 1992 NE	Repeal 1994 NE	Nuclear 1992 E	Mining 1994 E	Livestock 1996 E	Logging 1998 E
Population Density	0.007 (0.09)	0.003 (0.02)	-0.004 (-0.03)	0.006 (0.08)	0.001 (0.01)	0.009 (0.07)	0.01 (0.16)
City w/ 50,000+	4.69 (0.23)	7.81 (0.23)	-7.50 (-0.21)	7.47* (0.32)	2.13 (0.07)	5.31 (0.16)	2.92 (0.18)
Median Income (in $1,000)	0.48 (0.29)	0.08 (0.03)	0.59 (0.21)	0.52* (0.29)	0.069 (0.03)	0.568 (0.22)	0.44** (0.33)
% Resource Employment	-.024** (-0.43)	-0.25* (-0.28)	0.287* (0.30)	-0.338** (-0.55)	-0.336** (-0.40)	-0.378** (-0.43)	-0.08* (-0.19)
% Republican	-0.30** (-0.34)	-0.74** (-0.51)	0.836** (0.54)	-0.21* (-0.21)	-0.704** (-0.52)	-0.631** (-0.44)	-0.401** (-0.56)
% College Education	0.397* (0.33)	0.267 (0.14)	-0.477 (-0.23)	0.36* (0.27)	0.47* (0.26)	0.497* (0.26)	0.317** (0.33)
% Below 35 Years Old	-0.17 (-0.11)	-0.029 (-0.01)	-0.379 (-0.14)	0.022 (0.01)	-0.18 (-0.08)	0.184 (0.07)	0.072 (0.06)
Adj.Rsquared	.641	.672	.696	.761	.769	.766	.782
N of Cases	36	36	36	36	36	36	36

The first number represents the unstandardized coefficient, the second number ( ) represents the standardized coefficient.
#Whether the measure was classified as Economic or Non-Economic is denoted with an "E" or "NE" under the year in which the election was held.
*$p<0.05$
**$p<0.01$

Of the demographic variables, education and party affiliation are fairly consistently associated with concern for environmental protection. For all but the "Hunting" and "Repeal" measures, the percent with a college degree was positively correlated with greater support for environmental protection. This finding suggests that counties with relatively high levels of education tend to favor increased environmental protection. This is consistent with the hypothesis regarding education that was drawn from the literature.

Conversely, counties that demonstrated greater support for the Republican presidential candidate in 1996 tend to be less supportive of environmental protection in all seven elections. This suggests that counties with relatively high numbers of voters that support the Republican party, tend be less supportive of environmental protection. This finding is also consistent with the hypothesis regarding party affiliation.

While supporting the theory that demographic characteristics influence environmental preferences, the Oregon models also lend support to the notion that economic conditions affect those preferences. The extent to which a county's economy is based on resource related industries is significantly correlated with opposition to all seven ballot measures. These correlations suggest that counties with higher percentages of residents employed in these industries tend to be less supportive of environmental protection than are urban counties with more diversified economies. Further, these correlations seem strongest for the "Nuclear," "Mining," and "Livestock" measures, three issues that would have had substantial economic impacts if passed. However, the significance of this variable in relation to support for the other four measures indicates that resource dependent counties were more likely to oppose environmental protection in general, regardless of the potential economic impacts of each measure.

Overall then, significant correlations were consistently found between support for each ballot measure and party affiliation, education, and dependence on resource related industries. All of these correlations were in the same direction as the hypotheses drawn from the literature.

As important as the finding of significant correlations is that fact that income and age do not seem to be correlated with levels of support for the environmental ballot measures examined, a finding that counters hypotheses discussed above. Income was only found to be significantly correlated with the "Nuclear" measure, while age was not significantly associated with support for any of the seven measures. The insignificance of the age variable may stem from the way in which it is measured. Recall that median age was not available at the county level, thus the percentage of residents falling below the age of thirty-five was substituted. That substitute variable, however, lacked substantial variation across the thirty-six Oregon counties, and this may have caused age to appear insignificant when the influence age, if measured differently, may be significant. In the absence of statistical data to the contrary, however, we must assume that age was not a significant determinant of voting in the ballot measure elections examined.

CAMPAIGN EXPENDITURES

As noted in chapters two and three, it makes little sense to examine ballot measure voting without some assessment of the role of campaign expenditures for and against each measure. A number of hypotheses have been developed that seek to explain the impact of campaign expenditures. Fortunately, expenditure data is available for all the Oregon elections used in this study, thereby allowing an examination of all four expenditure hypotheses. Before examining those hypotheses, however, expenditure figures are provided in Table 4.3 for the two non-economic measures, and Table 4.4 for the five economic measures. Each table shows the number of committees formed to support or oppose each measure, and the total expenditures from all committees in support or

opposition. In Oregon, any individual or group wanting to spend one hundred dollars or more to influence a ballot measure election must create a campaign committee and register that committee with the Oregon Secretary of State's Office. These committees are similar in nature to the political action committees (PACs) required by the Federal Election Campaign Act of 1971, which governs campaign finance at the national level, in that committees in Oregon, like PACs, must report contributions and expenditures in each campaign.

Table 4.3: Campaign Expenditures For and Against Non-Economic Ballot Measures in Oregon, 1990-1998

Measure:	Hunting 1994	Repeal 1996
Number of Committees in Support	1	1
Expenditures in Support	$268,948	$331,705
Number of Committees in Opposition	5	2
Expenditures in Opposition	$548,249	$496,647
Election Outcome	Passed: 51.8% in favor	Failed: 42% in favor

Source: Oregon Secretary of State, Elections Division, 1994, 1996.

ECONOMIC MEASURES ATTRACT MORE MONEY

The first hypothesis suggests that ballot measures classified as economic will attract higher levels of campaign spending both for and against those measures. Recall that this expectation is based on the assumption that the greater economic stakes (in terms of either costs or benefits) associated with economic measures will provide greater

incentives for both opponents and supporters to spend in an effort to influence the outcome of those elections.

As can be seen with a comparison of Table 4.3 and Table 4.4, the hypothesis that economic measures attract higher levels of campaign spending generally holds true. Total spending (both for and against) in each of the non-economic measure campaigns did not exceed one million dollars. Contrast this with total spending in four of the five economic measure campaigns and it seems clear that the latter category does attract higher levels of campaign spending. For all economic measures except the 1996 proposal to limit livestock grazing in certain riparian areas, the total amount spent in each election ranges from $2.9 million spent for and against the recycling initiative in 1990 up to $5.9 million spent for and against the proposal to close Oregon's only nuclear plant in 1992. These findings, then, generally support the hypothesis that economic measures do in fact attract higher levels of campaign expenditures than do non-economic measures.

ECONOMIC INTERESTS WILL OUTSPEND OPPONENTS

The second hypothesis dealing with expenditures suggests that economic interests will tend to outspend their opponents when seeking to influence the outcomes of elections for economic ballot measures that would impact those economic actors. Again this hypothesis is based on the assumption that economic interests will have incentives for spending either to defeat a measure that threatens their interests or support a measure that would benefit them. These incentives would stem from the selective benefits that those interests stand to gain should their side win. Public interest groups, on the other hand, likely face a free-rider problem in soliciting contributions, are therefore more limited in the

amount they can spend in any given ballot measure campaign.

Table 4.4: Campaign Expenditures For and Against Economic Ballot Measures in Oregon, 1990-1998

Measure:	Recycle 1990	Nuclear 1992	Mining 1994	Livestock* 1996	Logging! 1998
Number of Committees in Support	4	1	2	1	2
Expenditures in Support	$544,764	$939,580	$51,408	$96,551	$93,604
Number of Committees in Opposition	1	2	1	1	2!
Expenditures in Opposition	$2,442,881	$4,916,457	$3,739,036	$7,526	$3,469,974
Election Outcome	Failed: 42.3% in Favor	Failed: 42.7% in Favor	Failed: 42.4% in Favor	Failed: 36% in Favor	Failed: 19.4% in Favor

*Findings reported for this measure should be viewed with caution. While there were only two committees formed solely for the purpose of supporting or opposing this measure, there were a number of other committees that spent money in support of or opposition to this measure, but also spent money in other ballot measure campaigns in that year. The actual amount spent for and against this measure cannot be known as it is not clear what amounts were spent solely on this measure.
!While two committees were formed to solely oppose this measure, four additional committees, formed to influence other measure campaigns, also spent money in opposition. Because the precise amount spent by those four committees in opposition to this measure is unavailable, the amount reported is the amount expended by the two committees formed solely to oppose the measure.
Source: Oregon Secretary of State, Elections Division, 1990, 1992, 1994, 1996, 1998.

Again, the campaign data for four of the five economic measures voted on in Oregon support this hypothesis. It should be noted that all five economic measures examined sought to impose costs on economic interests. There were no economic measures placed on the ballot that would have benefitted industries, thus economic interests devoted their resources to opposing each ballot measure examined. For all but the 1996 measure regulating livestock grazing, the side opposing each economic measure

significantly out spent the proponents of each measure. This lopsided spending, tipped toward those groups opposing each measure, ranged from the $1.9 million spent by opponents to the 1990 recycling proposal in excess of the amount spent by supporters of that measure, to $3.9 million in excess spent by the opponents of the 1992 measure that sought to close Oregon's nuclear plant. Economic interests did in fact out spend their opponents, perhaps because of the greater stakes involved for those economic groups and the likelihood that they possess substantial advantages in raising money, over their more public oriented opponents.

ECONOMIC INTERESTS ARE MOST EFFECTIVE DEFEATING MEASURES

The third hypothesis suggests that economic groups will be more effective when spending in opposition to measures they oppose, than when they spend on behalf of measures they support. This hypothesis is based on the assumption that economic interests possess the monetary resources to inform voters of the economic stakes involved with each measure, thereby creating opposition. While economic interests may be able to effectively use their resources to generate opposition, it is hypothesized that they will be unable to muster the necessary resources to attract the majority support needed to pass a measure they support. As such, we expect economic interests to defeat more economic measures than they are able to pass.

The data from the economic measures examined from Oregon support one half of this claim. All five economic measures failed with no more than 43 percent vote in favor. As all five measures would have negatively impacted economic interests, the failure of

each means that those economic interests prevailed in the electoral outcome. Further, the economic interests opposing each measure significantly out spent the proponents. While this lopsided spending no doubt assisted in the defeat of each measure, the importance of the spending both for and against cannot be known given the data available from Oregon.

Finally, no measures qualified for the ballot that would have benefited economic interests. The absence of such measures may suggest that economic interests in Oregon did not view the ballot measure process as an effective way to advance their interests, at least regarding environmental regulations, during the 1990s. The fact that no pro-economic measures qualified during that decade may support the notion that economic interests are less effective in passing measures beneficial to them, as economic groups may not have viewed the resources required to propose a measure as a wise investment.

ECONOMIC VARIABLES MOST INFLUENTIAL ON ECONOMIC MEASURES

The final expenditure hypothesis states that spending by economic interests provides better cues to voters, convincing the voters that their own economic interest may be threatened (or enhanced) should a measure pass. This assumption is based on the idea that higher campaign expenditures provide more and better information to voters, outlining the economic stakes involved. Were this hypothesis accurate, we would expect that economic attributes would be more influential than other determinants in influencing a voter's decision on economic measures. We would expect that the economic attributes of each county would be significant for these measures in the OLS regression presented above. The data from Oregon provides only marginal support for this hypothesis, as the

variable measuring the percent employed in resource related fields is significant for all the economic and non-economic measures, with coefficients marginally larger for the economic measures. Thus, these findings offer no conclusive support for this hypothesis, and instead suggest that resource dependent counties tend to be less supportive of environmental protection regardless of the economic stakes involved.

DISCUSSION

Oregon provides evidence supporting a number of the hypotheses. First, while urban counties tend to be more supportive of environmental ballot measures than rural counties, higher levels of support from urban counties tend to be based on factors other than simple place of residence for urban and rural voters. As such, both demographic characteristics *and* economic conditions seem to influence levels of support for environmental protection, suggesting that both groups of variables must be used when examining the determinants of support for environmental ballot measures. Of the demographic variables, party affiliation and education seem to be most influential, while a county's dependence on resource employment seems to be a significant economic condition.

The data gathered and provided by the state of Oregon regarding campaign expenditures also sheds light on the hypotheses concerning campaign spending. Based on the Oregon data, a number of points seem clear. First, the economic measures voted on in the 1990s did generally attract substantially greater amounts of campaign spending overall than did the two non-economic measures. This suggests that the economic stakes involved with those economic measures created incentives for affected individuals and

groups to contribute money to ensure electoral victory. Further, if expenditure levels can be used as a measure of controversy surrounding each proposal, then it seems clear that the economic measures attracted more conflict than did the non-economic measures.

While economic measures did attract higher levels of campaign expenditures than non-economic measures, the spending in economic measure campaigns was heavily lopsided in favor of economic interests. As discussed, each economic measure would have negatively impacted economic interests, thus opposition to each measure came primarily from the groups that would have been adversely impacted. This finding suggests that economic interests are both able and willing to substantially outspend their opponents in an effort to protect their interests.

The Oregon data further suggests that economic interests will be effective in protecting themselves through campaign expenditures designed to defeat threatening proposals. Of the five economic ballot measures examined, all would have adversely impacted economic groups, and all were defeated. While it is not clear how proposals designed to benefit economic groups would have fared, since none qualified for the ballot in the 1990s, the fact that no such measures were placed on the ballot may indicate that business interests within Oregon did not view the ballot measure process as an effective venue to advance their interests.

Chapter Five: "BALLOT MEASURES IN CALIFORNIA"

Home to over 33 million residents, California is the largest state in the Union and has the seventh largest economy in the world. Like Oregon, California has also had a long tradition of direct democracy, first adopting the process in 1911. While once heavily dependent on defense-related jobs, throughout the 1990s California has been able to expand its economy which today is more diversified than any other U.S. state.

CALIFORNIA'S ECONOMY

As recently as the late 1980s, the California economy was heavily dependent on defense industries in the manufacturing and government sectors. With the dramatic end of the Cold War in 1989, the state saw substantial reductions in defense spending and the closure of a number of military bases (Office of Economic Research 1999). California has, however, been able to foster non-defense-related economic growth by expanding its trade, technology, and tourism industries. Today, the state has one of the most diversified economies, producing high-technology products, agricultural produce, and numerous services for both domestic and international businesses.

While agriculture and natural resource production remain important industries in California, the state has been able to expand its manufacturing base, particularly in the area of high technology. In fact, high technology industries are the largest industries within California's manufacturing sector. These industries include the manufacture of computers,

electronic components, and communications equipment. Overall, manufacturing accounted for 14.2 percent of California's Gross State Product (GSP)[9] in 1998 (Office of Economic Research 1999).

Along with manufacturing, the California economy has expanded into the service sector. This sector is the largest in the economy in terms of employment, providing 31 percent of all jobs (Office of Economic Research 1998). These service industries entail such things as advertising, computer programming and other services used by businesses as well as health care and the entertainment industry. Overall, service industries accounted for about 23 percent of California's GSP in 1998 (Office of Economic Research 1999). Other important industries, related to the service sector are finance, insurance, and real estate. These industries also accounted for about 23 percent of GSP in 1998.

Somewhat distinct from the above industries, agriculture has historically been very important in California. In fact, California has been the nation's leader in farm production for over 50 years, with farm receipts totaling $26.8 billion in 1997 (Office of Economic Research 1998). While not contributing as much to the state's GSP as other industries, agriculture provides substantial employment. For example, in 1997, agriculture only accounted for 2.1 percent of the GSP, but provided 429,000 jobs.

Finally, the timber and mining industries, two economic activities that are important in other states, are less central to California's economy relative to the industries discussed above. The timber industry has witnessed substantial declines since the late

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[9]GSP measures the total value of goods and services produced by a state and is similar to the Gross Domestic Product of a country.

1980s, with employment decreasing by over 13 percent between 1987 and 1997 (Office of Economic Research 1998). This decline occurred for reasons similar to those in Oregon. In 1997, the timber industry provided just 55,900 jobs. Compared to California's other industries, the mining sector is also relatively small. In 1997, mining provided 29,400 jobs in California, 72 percent of which were in oil and gas extraction.

Overall, California's relatively diverse economy may provide the most unique mix of industries of any state in this study. While once dependent on resource production and defense-related fields, California has been able to successfully diversify its economy. As with other states, however, this diversification has focussed largely on urban areas, leaving rural areas disproportionately dependent on declining resource related industries (Office of Economic Research 1998, 3). According to Peter Schrag (1999), a longtime California journalist, the income gap between urban and rural workers has substantially increased during the 1990s, resulting not so much from higher wages at the top of the income scale, but rather from declining wages among rural workers, primarily in the agricultural sector. This gap between urban and rural areas has likely created tension between residents of each area, thereby fostering conflicting views regarding the appropriate use of natural resources and debate over other environmental issues.

THE BALLOT MEASURE PROCESS IN CALIFORNIA

In 1911, California voters approved a ballot measure process similar to the one adopted in Oregon nine years earlier. The system created at that time, and remaining in place today, allows Californians to use the direct initiative process to both amend their state constitution and create or alter existing statutes. Citizens may also reject a law that

has passed the legislature through both the legislative and citizen petitioned referendum processes. As such California, along with Oregon and Colorado, has the most extensive system of direct democracy of all states included in this study.

Compared to the initiative, the referendum has been used relatively little in California. From 1912 to 1982, there were only fifty referenda proposed for the ballot, either by the legislature or through citizen petition. Of those fifty, thirty-nine qualified for the ballot, and twenty-five passed. There were no referenda placed on the California ballot between 1982 and 1998. The initiative process has, however, been used to a far greater degree. Since 1911 when California began allowing initiatives, 263 have been placed on the ballot, 90 (or 34 percent) have been adopted, while 173 were rejected. From 1990 to 1998, 59 initiatives were placed on the California ballot with topics covering a diverse range of issues. In terms of the overall usage of this process, California is second only to Oregon in the total number of measures placed on the ballot through the initiative process.

In order to place a measure on the general election ballot (with the exception of a legislative referendum), supporters must obtain a specified number of signatures from registered voters. As in other states, the number required is a percentage of the total votes cast in a state-wide election held prior to filing the petition. In California, citizen petitioned referenda and initiatives seeking to alter statutes require the same percentage of signatures, or five percent of the total votes in previous gubernatorial election. In 1998, this amounted to 419,260 signatures. For initiatives seeking to amend the state

constitution, the burden is higher at eight percent. In 1998, the number of signatures required to place a constitutional amendment on the ballot was 670,816.

BALLOT MEASURES EXAMINED

Between 1990 and 1998, twelve ballot measures were voted on in California that dealt with environmental issues. Of these twelve, all were placed on the ballot through the initiative process. Brief summaries of the twelve follow:[10]

> Proposition 117, 1990 (Non-Economic): "Wildlife Protection," *Wildlife*: this proposition banned the hunting of mountain lions, created a fund to acquire and restore wildlife areas and wetlands, and allocated $30 million a year to the fund for 30 years. The vote was held in the June primary election in 1990. The initiative passed with 52.4 percent of the statewide vote in favor.
>
> Proposition 128, 1990 (Economic): "Public Health Bonds," *Public Health*: this initiative consisted of multiple topics, the most controversial of which was a provision that would have banned pesticides that caused cancer or reproductive harm. The measure also proposed the reduction in greenhouse gases by 40 percent but did not specify how to do so, and finally it authorized $300 million in bonds to buy redwood forests. The vote was held in the November general election in 1990. The initiative failed with 35.7 percent of the statewide vote in favor.
>
> Proposition 130, 1990 (Economic): "Forest Acquisition, Timber Harvesting Practices, Bond Act," *Timber #1*: this initiative would have banned clear-cutting of forests, authorized $742 million in bonds to purchase old-growth redwood forests, and restricted the timber industry's membership on the state Board of Forestry which regulates logging practices within the state. The vote was held in the November general election in 1990. The initiative failed with 47.9 percent of the statewide vote in favor.
>
> Proposition 132, 1990 (Economic): "Marine Resources," *Marine:* this initiative would have banned the use of gill nets for commercial fishing off the coast of California. The vote was held in the November general election in 1990. The initiative passed with 55.8 of the statewide vote in favor.

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[10] As with the other states, the word in italics following the title of each measure represents the measure's designation in the tables below. Whether the measure was classified as economic or non-economic is indicated in parentheses after the year.

Proposition 135, 1990 (Economic): "Pesticide Regulation," *Pesticide:* this initiative proposed to increase the state's monitoring of pesticide residuals on food and require the state to collect and dispose of pesticides that could not be used. The vote was held in the November general election in 1990. The initiative failed with 30.4 percent of the statewide vote in favor.

Proposition 138, 1990 (Economic): "Forestry Programs, Timber Harvesting Practices, Bond Act," *Timber #2:* this initiative sought to modify the manner in which the state granted logging permits, generally to the advantage of the timber companies, prohibit the sale of forests for ten years, and called for but did not authorize a $300 million bond issue for forest restoration. The vote was held in the November general election in 1990. The initiative failed with 28.5 percent of the statewide vote in favor.

Proposition 141, 1990 (Economic): "Toxic Chemical Discharge," *Chemical:* this initiative called for a reduction in the emission of chemicals declared toxic into California streams, rivers, and lakes, and created a state agency to monitor those reductions. The vote was held in the November general election in 1990. The initiative failed with 48.5 percent of the statewide vote in favor.

Proposition 180, 1994 (Non-Economic): "Park Lands, Historic Sites, Wildlife and Forest Conservation Bond Act," *Park Bonds*: this initiative sought to authorize bonds worth nearly $2 billion. The money would be used to acquire, develop, and conserve parklands, historic sites, and wildlife and natural areas. The vote was held in the June primary election in 1994. The initiative failed with 43.2 percent of the statewide vote in favor.

Proposition 185, 1994 (Economic): "Public Transportation Trust Fund, Gasoline Sales Tax," *GasTax:* this initiative proposed to increase California's gasoline tax by 4 percent and devote the proceeds to electric rail and clean buses; light rail, commuter, and intercity rail systems; and wetlands, riparian habitat, and parks. The vote was held in the November general election in 1994. The initiative failed with 19.5 percent of the statewide vote in favor.

Proposition 204, 1996 (Economic): "Safe, Clean, Reliable, Water Supply Act," *Water:* this initiative would provide for a bond issue of $995 million to provide funds to ensure safe drinking water, increase water supplies, clean up pollution in rivers, streams, bays, and coastal areas, protect life and property from flooding, and protect fish and wildlife. The initiative appropriated money from the general fund to pay for the bonds issued. The vote was held in the November general election in 1996. The initiative passed with 62.8 percent of the statewide vote in favor.

Proposition 4, 1998 (Non-Economic): "Trapping Practices. Bans Use of Specified Traps and Animal Poisons," *Trapping:* this initiative would prohibit the trapping of mammals for recreation or commerce, prohibit the use of steel-jawed leghold traps, and prohibit the use of poisons in place of traps. The vote was held in the November general election in 1998. The initiative passed with 57.5 percent of the statewide vote in favor.

Proposition 7, 1998 (Economic): "Air Quality Improvement. Tax Credits," *Air Quality:* this initiative authorized the State Air Resources Board to award $218 million in state tax credits annually until January 2011, to encourage air-emissions reduction through acquisition, conversion, and retrofitting of: vehicles, buses, and heavy-duty trucks; hearth products; construction vehicles and equipment; lawn and garden equipment; ambient air pollution destruction technology; off-road, non-recreational vehicles; port equipment; and agricultural waste through research and development. Basically, this measure sought to impose an incentive system on air quality control within California. The vote was held in the November 1998 general election. The initiative failed with 43.6 percent of the statewide vote in favor.

NON-ECONOMIC VERSUS ECONOMIC MEASURES

Of the twelve California ballot measures used in this study, three can be classified as non-economic measures and nine as economic. Given the large number of measures examined, data provided in the tables below are grouped according to whether the measure was classified as economic or non-economic.

NON-ECONOMIC MEASURES

The three non-economic measures all dealt with wildlife protection and/or habitat conservation. The first, Proposition 117 (1990), was aimed at protecting California's wildlife by banning mountain lion hunting and establishing a fund to protect wildlife habitat. While this measure did impose costs on California taxpayers, those costs were relatively small and wide spread across residents, thus creating only minimal economic impacts.

The second non-economic measure is Proposition 180 (1994). This proposal was similar to Proposition 117 in that it sought to authorize public bonds to preserve natural areas. While this measure drew stronger opposition than the measure discussed above, the costs to taxpayers for repaying the bond debt was still expected to have little real impact on individual residents. The third non-economic measure, Proposition 4 (1998), sought to ban the use of traps and poisons for the purpose of capturing mammals for either recreation or commerce. Of the three non-economic measures, this trapping ban had the fewest identifiable economic costs and is most clearly a non-economic measure.

ECONOMIC MEASURES

The economic measures in California differ substantially from the non-economic measures in that the former have easily identifiable costs or benefits associated with them, for certain segments of the population. California is also unique in that economic interests, specifically agricultural interests and the timber industry, were willing to use the initiative process in the 1990s to qualify propositions that would have benefitted those industries. Also interesting is the use of "counter initiatives" by industry groups in California. Counter initiatives are ballot measures proposed in response to other measures already on the ballot (Kahn and Matsusaka 1997). For example, one measure may seek to impose fairly stringent environmental regulations on a particular industry. In response to that measure, the industry under attack would itself seek to qualify a measure regarding regulation of that industry, thereby giving voters a more moderate alternative. California law stipulates that if two or more measures on the same issue are approved by voters in the same election, the measure receiving the highest number of votes in favor prevails

(Schrag 1999). In California during the 1990s, two such counter initiatives qualified for the ballot, both in 1990. These measures were proposed and supported by economic interests in an effort to defuse a perceived threat from the propositions sponsored by the environmental groups in the same election (Kahn and Matsusaka 1997).

The first initiative and counter initiative were Proposition 128 and Proposition 135. Proposition 128, popularly called the "Big Green" for its broad environmental goals, was sponsored by a number of environmental groups. This initiative sought to do many things, the most controversial of which was to ban all pesticides suspected of causing cancer or reproductive harm, a provision that would have had substantial impacts on the agricultural industry. The broad nature of this measure and the substantial economic costs associated with it, ensured opposition from a wide array of economic interests, but specifically the agricultural and chemical industries.

In response to the threat posed by Proposition 128, a number of business groups proposed Proposition 135. This pro-business initiative sought to increase the state's monitoring of pesticide residuals on food and require the state to collect and dispose of all pesticides that could not be used. As such, the financial burden of pesticide regulation would have been shifted largely from industry groups to the state government. This counter initiative was no doubt proposed as a more moderate alternative to Proposition 128, and was certainly more palatable to the economic interests involved.

The second initiative and counter initiative were Proposition 130 and Proposition 138. Both initiatives dealt largely with the forest lands within the state, the former measure being proposed by environmental groups and the latter being sponsored by

segments of the timber industry. Proposition 130 would have imposed significant restrictions on the timber industry, most importantly by reducing the timber industry's membership and influence on the state Board of Forestry, the entity which regulates logging in California.

In response to Proposition 130, the timber industry sponsored Proposition 138 which would have conferred substantial benefits on that industry. This measure sought to alter the manner in which the state granted logging permits, thereby making it easier for timber companies to receive those permits. The measure also sought to prohibit the sale (and thus preservation) of state forests for ten years, thereby ensuring private timber companies access to that timber throughout the 1990s.

As with Proposition 135, Proposition 138 would have benefitted the industry that the original initiative sought to regulate. Taken together, these two counter initiatives demonstrate the willingness of economic interests to use the ballot measure process to their advantage, in these cases by offering more moderate alternatives to measures already on the ballot.

A fifth economic measure voted on in 1990, Proposition 132, sought to ban the use of gill nets for commercial fishing off the coast of California. This measure is classified as economic due to the costs it was expected to impose on California's commercial fishing industry, as that industry would be forced to switch from gill nets to more environmentally sensitive methods of harvesting fish. Proposition 141 is the next economic measure, also voted on during the 1990 general election. This proposition called for a reduction in the amounts of toxic chemicals released into California's streams

and lakes. In order to enforce these requirements, a new state agency would have been created to monitor the reduction. Given the economic costs likely associated with such reductions, this measure is classified as economic.

The seventh economic measure was voted on in the 1994 primary election. This measure, Proposition 185, sought to create a public transportation trust fund to finance mass transit within and between California cities. Proceeds from the trust fund could also be used to protect wetlands and parklands. This measure is classified as economic not because it creates a fund for environmental purposes, but because the proceeds for that fund would come from a four percent increase in California's gasoline tax, rather than from general revenues. Thus the creation of a earmarked tax would impose clear costs on California motorists and transportation industries, possibly prompting residents to vote their pocketbooks and oppose the measure.

The two final economic measures, Proposition 204 and Proposition 7, while not counter initiatives, were sponsored and supported by business groups, and thus clearly sought to benefit those groups. Proposition 204, voted on in the 1996 general election, sought to authorize a bond issue of $995 million to provide funds to ensure safe drinking water, clean up polluted water, and otherwise bring the state of California closer to compliance with state and federal clean water regulations. While this proposition did receive support from environmental groups, its most avid supporters (as evidenced from campaign contributions in support of the measure) were business interests ranging from agricultural producers to chemical companies (California Secretary of State 1999). Business support for this measure is best explained by the fact that the proposal sought to

use money from the state treasury to reduce water pollution. Without state financing of such efforts, industries causing that pollution would be responsible for financing the cleanup.

Proposition 7, voted on in the 1998 general election, was also sponsored and supported by economic interests (again as evidenced by campaign contributions in support of this measure). Similar to Proposition 204 which sought to use public money to clean up California's water, Proposition 7 sought to use public money to purchase polluting vehicles, thereby lessening the reduction burdens of point source air polluters, such as factories. This initiative also sought to create a market-based, incentive system to clean up California's air, and provide state tax credits to firms that reduced their air emissions (rather than a more traditional command and control approach which would simply require such reductions from polluting firms). Overall, Proposition 7 sought to reduce air pollution through an incentive based system, something historically preferred by polluting industries for numerous reasons over a more traditional command and control approach (for a discussion of incentive based versus command and control approaches to regulation, see Freeman 1997, or Tietenberg 1985). Taken together, Propositions 204 and 7 represent efforts by economic interests to use the ballot measure process to promote their preferred methods (either with public money, market based approaches, or both) to comply with existing environmental regulations.

FINDINGS

URBAN-RURAL DIFFERENCES

As hypothesized, urban counties in California, like those in Oregon, tend to be more supportive of environmental protection than rural counties. This is seen by comparing voting percentages between the two types of counties. The fifty eight counties were divided into urban and rural categories based on the presence of a city with 50,000 or more residents. Counties with cities of substantial size were classified as urban, while counties without any large cities were classified as rural.[11] On average across all twelve measures, votes in favor of environmental protection were seven percent higher in urban counties than rural counties. The average votes in favor of each measure are presented in Table 5.1 for non-economic measures, and Table 5.2 for economic measures.

Table 5.1: Percentage of Votes in Favor of Each Non-Economic Measure, Averaged Across Urban Versus Rural Counties, California 1990-1998.

	Wildlife 1990	Park Bonds 1994	Trapping 1998
% Yes: Urban	48.9%	40.1%	53.9%
% Yes: Rural	38.6%	30.8%	46.5%
Difference	10.3%	9.3%	7.4%

To further examine urban-rural differences, bivariate correlations were calculated between both urban-rural variables and support for each measure. With just one exception, those correlations were statistically significant for all measures examined. The

[11]As of 1998, California had twenty-one counties containing cities with 50,000 or more residents. Those counties are: Fresno, Kern, Los Angeles, Merced, Monterey, Napa, Orange, Sacramento, San Diego, San Francisco, San Louis Obisbo, Santa Barbara, Santa Clara, Santa Cruz, Shasta, Solano, Sonoma, Stanislaus, Tulare, Ventura, Yolo.

exception was the Pesticide measure, for which there was not a statistically significant relationship between either variable and support for the measure. This finding is not surprising, however, given the very small difference (two percent) in average support between urban and rural counties.

While the average percentages of support for environmental protection between urban and rural counties were different at statistically significant levels in most cases, it should be noted that those differences are relatively small. The largest difference is 10.9 percent, while most others fall below ten percent. While urban counties are generally more supportive of environmental protection than rural counties in California, the reader should not infer too much from this finding. Given the relatively small differences in support between urban and rural counties, further tests must be done to determine whether those differences stem solely from a person's place of residence, or whether other variables may be influencing those differences.

Table 5.2: Percentages of Votes in Favor of Each Economic Measure, Averaged Across Urban Versus Rural Counties, California 1990-1998.

	Public Health 1990	Timber #1 1990	Marine 1990	Pesticide 1990*	Timber #2 1990*	Chemical 1990	GasTax 1994	Water 1996	Air Quality 1998
%Yes: Urban	32.7%	45.2%	54.7%	33.3%	29.4%	45.9%	19.8%	60.7%	40.9%
%Yes: Rural	25.6%	35.2%	47.7%	35.3%	34.5%	41.0%	14.1%	49.8%	34.1%
Difference	7.1%	10.0%	7.0%	2.0%	5.1%	4.9%	5.7%	10.9%	6.8%

*Both the Pesticide and Timber #2 measures were "counter-initiatives," therefore a "yes" vote represents the anti-environmental position.

MULTIVARIATE ANALYSIS

The results of the multivariate analysis are reported in Table 5.3 for the non-economic measures and Table 5.4 for the economic measures. As can be seen from those tables, a number of variables consistently show significant correlations with support for each ballot measure. As was the case with Oregon, perhaps the most interesting finding is the lack of significance for either of the urban-rural variables for all but three measures. Again, this general lack of significance should not be taken to show that urban and rural residents vote in the same manner or have the same environmental preferences. Rather, Tables 5.1 and 5.2 and bivariate analysis illustrate that urban voters do tend to be more supportive of environmental measures than rural voters. The importance of the urban-rural variables disappear, however, once other variables are entered into the multivariate regression model. This suggests that differences in voting on environmental ballot measures are influenced more by demographic characteristics and economic conditions than simple place of residence.

The three exceptions to this finding are all economic measures. As can be seen from Table 5.3, the variable measuring population density was significantly correlated with support for the "Public Health," "Chemical," and "GasTax" measures.[12] These correlations were positive, indicating that urban counties were more supportive of those

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[12]It is interesting to note that each of these measures exhibit some of the smallest differences in support between urban and rural counties, as seen in Table 5.2 above. Urban counties voted on average only 7.1 percent higher in support of the "Public Health" measure, 4.9 percent higher in support of the "Chemical" measure, and 5.7 percent higher in favor of the "GasTax" measure. This indicates that urban-rural differences may exist at statistically significant levels even when average differences in support for environmental measures between urban and rural counties are relatively small.

three measures, simply because they were urban. The significance of population density for the GasTax measure is likely explained by the fact that that measure would have provided public transportation benefits largely to urban areas, perhaps prompting urban voters to be more supportive of a measure that would have directly benefitted them.

Close examination of Tables 5.3 and 5.4 will show a change in the variables used to assess the determinants of votes for the California measures, as compared to the Oregon measures. Due to singularity between the income and education variables in California, those variables were combined into an Income/Education variable. Essentially, median household income (in $1,000s) was multiplied by the percentage of county residents over the age of twenty-five that possessed a four year college degree or more. While both variables appeared to be significant when regressed independently against each dependent variable, high degrees of similarity between the two variables required their being combined. Thus the reader should be cautioned that it is no longer possible to assess the independent affects of each variable on the level of support for each measure.

NON-ECONOMIC MEASURES

As can be seen from Table 5.3, four variables are consistently correlated with the three non-economic measures examined in this study. In fact, the only variables that are not correlated with each measure are those that measure the degree of urbanness in each county. This suggests that for the non-economic California measures, all demographic and economic variables are significant determinants of support for environmental ballot measures, while the urban-rural variables have little impact.

Of the demographic variables, age and party affiliation were both significantly correlated with all three measures. Party affiliation is negatively correlated with those measures, indicating that counties that exhibited higher levels of support for the

Table 5.3: Voting Determinants of Non-Economic Environmental Ballot Measures in California, 1990-1998

Variables	Wildlife 1990	Park Bonds 1994	Trapping 1998
Population Density	0.001 (0.06)	0.001 (0.09)	0.001 (0.06)
City w/ 50,000+	1.3 (0.06)	-0.58 (-0.03)	0.99 (0.05)
% Resource Employment	-0.28** (-0.23)	-0.14* (-0.11)	-0.37** (-0.35)
Income/Education	0.02** (0.54)	0.01** (0.45)	0.01** (0.40)
% Republican	-0.32** (-0.27)	-0.61** (-0.51)	-0.47** (-0.47)
% Below 35 Years Old	0.62** (0.34)	0.35** (0.19)	0.27* (0.18)
Adj. Rsquared	.759	.886	.787
N of Cases	58	58	58

The first number represents the unstandardized coefficient, the second number ( ) represents the standardized coefficient.
*p<0.05
**p<0.01

Republican presidential candidate in the 1996 general election tended to be less supportive of the non-economic ballot measures. Age, on the other hand, was positively correlated with each measure. This suggests that California counties with relatively larger percentages of young residents (thirty-five and below) tend to be more supportive of

environmental protection. Both of these findings are consistent with the hypotheses regarding those variables.

Of the variables measuring economic conditions, the percentage of each county's residents employed in natural resource industries is significantly related to all three non-economic measures. This relationship is negative, suggesting that counties with relatively high percentages of residents employed by resource related industries tended to be less supportive of those measures. This finding is also consistent with the hypothesis that economic dependence on resource related industries is negatively correlated with support for ballot measures seeking environmental protection. As with Oregon, resource dependent counties in California were less supportive of environmental ballot measures, even when those measures did not threaten resource related industries.

Finally, the variable that measures each county's relative income and education is also significant. Again, due to singularity, these two variables were combined. The positive nature of this relationship may be interpreted to suggest that counties where residents earn relatively high incomes and possess higher levels of education, tend to be more supportive of environmental protection. This finding is also consistent with the hypotheses regarding those two variables. However, the fact that the two variables were combined prevents any analysis of their independent effects on the votes in favor of each measure.

The results from the multivariate analysis of California's non-economic measures are consistent with those from Oregon, and suggest that variables measuring both

demographic characteristics and economic conditions are significantly related to overall support for environmental protection.

ECONOMIC MEASURES

As can be seen from Table 5.3, the economic measures examined provide a slightly different mix of significant determinants of support for those measures. Before examining the results of the multivariate analysis for the economic measures, however, recall that the "Pesticide" and "Timber #2" propositions were initiatives proposed by business groups to

Table 5.4: Voting Determinants of Economic Environmental Ballot Measures in California, 1990-1998

Variables	Public Health 1990	Timber #1 1990	Marine 1990	Pesticide 1990!	Timber #2 1990!	Chemical 1990	GasTax 1994	Water 1996	Air Quali 199
Population Density	0.002* (0.15)	0.001 (0.09)	0.001 (0.04)	0.001 (0.09)	-0.001 (-0.08)	0.002** (0.24)	0.002** (0.24)	0.001 (0.10)	0.00 (0.10
City w/ 50,000+	0.88 (0.04)	2.68 (0.11)	1.85 (0.09)	-1.23 (-0.10)	-1.06 (-0.08)	0.28 (0.02)	0.96 (0.06)	1.96 (0.09)	0.50 (0.03
%Resource Employment	-0.13* (-0.12)	-0.18* (-0.14)	-0.23* (-0.20)	0.30** (0.37)	0.011 (0.01)	0.04 (0.05)	0.048 (0.05)	-0.10 (-0.09)	-0.0 (-0.0
Income/ Education	0.009** (0.39)	0.014** (0.51)	0.014** (0.56)	-0.004 (-0.23)	-0.006** (-0.40)	0.008** (0.46)	0.007** (0.35)	0.011** (0.43)	0.011 (0.57
% Republican	-0.52** (-0.51)	-0.42** (-0.35)	-0.30** (-0.27)	0.16 (0.23)	0.21* (0.30)	-0.33** (-0.42)	-0.47** (-0.54)	-0.39** (-0.35)	-0.28 (-0.3
% Below 35 Years	0.07 (0.04)	0.30* (0.16)	-0.05 (-0.03)	0.27 (0.23)	-0.24* (-.23)	0.058 (0.05)	-0.07 (-0.05)	0.70** (0.41)	0.35* (0.28
Adj.Rsquared	.867	.807	.739	.394	.459	.805	.883	.738	.806
N of Cases	58	58	58	58	58	58	58	58	58

The first number represents the unstandardized coefficient, the second number ( ) represents the standardized coefficient.
!As each of these measures sought to reduce the level of environmental protection, a "yes" vote represents the anti-environmental viewpoint. Therefore, the coefficients for both of these measures should be interpreted opposite of the others.
*$p<0.05$
**$p<0.01$

counter more extreme propositions supported by environmental groups. In light of this, a "yes" vote for each of those propositions reflects the anti-environmental preference, thus coefficients for each of those two measures should be interpreted as being the opposite of the others.

Unlike the results for California's non-economic measures, the correlations for the economic measures are not so tidy. Only two variables are consistently correlated with most of the economic measures to a statistically significant degree. One is party affiliation, which is significantly correlated with all except the "Pesticide" proposition of 1990. The directions of these correlations suggest that counties with higher percentages of residents who supported the Republican Party's presidential candidate tended to be less supportive of the environmental measures. Again, this finding is consistent with the hypothesis regarding party affiliation.

The second consistently significant variable is the Income/Education variable, which is also significant for all measures except the 1990 "Pesticide" proposition. The directions of the correlations for this variable suggest that counties where residents posses relatively high median household incomes and levels of education tend to be more supportive of the environmental measures than were counties that scored relatively low on both of those measures. Again, because those two variables were combined, the independent effects of each cannot be known.

The remaining variables provide only inconsistent results. The age variable, a demographic characteristic, was significantly correlated with only four of the measures. The remaining economic variable, percent employed in resource related fields, was also

significantly related to only four of the measures. Those four economic measures, however, dealt with natural resource issues, specifically the regulation of the agriculture, timber, and fishing industries. As each of these measures would have impacted those resource related industries, it is not surprising that counties dependent on those industries expressed greater opposition to regulations in those areas. Four of the remaining five measures, for which this variable was not significant, dealt more with environmental issues such as air and water quality, as opposed to natural resource issues. As those measures would have had few impacts on any of the industries included in that variable, we might expect that it would be less influential in determining votes on those issues. The one resource related issue for which this variable was not significant was the timber counter initiative. This measure, however, gained little support overall, as evidenced by the fact that it received only twenty-nine percent of the state-wide vote.

CAMPAIGN EXPENDITURES

Like Oregon, much of the campaign expenditure data for California has been collected and made available. The exceptions are for the years 1992 and 1994, when budget cuts in California prevented the collection of this information in a usable form. By 1996 however, funding had been restored and the responsibility for gathering this data had shifted to the Elections Division in the Secretary of State's office, allowing analysis of the amounts spent in the 1990, 1996, and 1998 elections. That information is provided for non-economic measures in Table 5.4 and for economic measures in Table 5.5. Each table illustrates the number of committees formed to support or oppose each measure, and the total expenditures from all committees in support or opposition.

ECONOMIC MEASURES ATTRACT MORE MONEY

The first hypothesis regarding campaign spending predicts that economic measures will attract higher levels of campaign spending both for and against, than will non-economic measures. Again this hypothesis is based on the assumption that the economic stakes involved will provide stronger incentives for both sides to attempt to influence the election. As can be seen from a comparison of Tables 5.5 and 5.6, economic ballot measures as a whole did attract considerably more money than their non-economic counterparts. In fact, when the amount spent for each campaign (for which data were available) is calculated, economic measures attracted an average of more than $6 million, as compared to about $1.5 million for non-economic measures.

Table 5.5: Campaign Expenditures For and Against Non-Economic Ballot Measures in California, 1990-1998

Measure:	Wildlife 1990	Park Bonds 1994	Trapping 1998
Number of Committees in Support	1	Data Not Available	1
Expenditures in Support	$1,035,458		$1,517,340
Number of Committees in Opposition	1		1
Expenditures in Opposition	$204,627		$550,755
Election Outcome	Passed: 53.4% in Favor		Passed: 57.5% in Favor

Source: California Fair Practices Commission 1990a, 1990b; California Secretary of State, Elections Division, 1999.

Spending was not uniform for all measures, however. In five of the eight campaigns for economic measures, over $1 million was spent, the largest sum being $19 million for and against the "Public Health" initiative in 1990. The three remaining propositions for which data were available, attracted considerably less, or no, independent campaign expenditures. Neither the timber counter initiative nor the proposition that sought to regulate chemical discharges (both in 1990) had committees formed solely to spend for or against those measures. In the case of the chemical proposition, no committees were created to influence that election. In the case of the timber counter initiative, committees were formed to influence the first timber proposition, and it is likely that the advertising purchased by both sides in that initiative campaign also provided arguments for and against the counter initiative.

Finally, the initiative that sought to ban gill nets off the coast of California attracted only a little over $700,000. While this sum is substantial, it is far less than the amounts spent in campaigns for the other economic measures. Taken together, the limited amounts spent for and against these three measures suggests that not all economic measures will attract high levels of spending. Rather, some measures may, for various reasons, not attract the high levels of attention and spending that others do.

ECONOMIC INTERESTS OUTSPEND OPPONENTS

The second hypothesis dealing with campaign spending suggests that economic interests will tend to outspend their opponents in economic ballot measure campaigns. This is predicted given the greater economic costs or benefits at stake for economic groups, and the greater ability of those groups to muster resources. With two exceptions

Table 5.6: Campaign Expenditures For and Against Economic Ballot Measures in California, 1990-1998

Measure:	**Public Health 1990**	**Timber #1 1990**	**Marine 1990**	**Pesticide* 1990**	**Timber #2** 1990**
Committees in Support	5	2	1	2	none
Expenditures in Support	$6,202,080	$6,975,179	$717,129	$5,775,355	
Committees in Opposition	5	2	1	1	none
Expenditures in Opposition	$12,806,780	$11,488,182	$33,368	$94,493	
Election Outcome	Failed: 35.7% in Favor	Failed: 47.9% in Favor	Passed: 55.8% in Favor	Failed: 30.4% in Favor	Failed: 28.5% in Favor
Measure:	**Chemical 1990**	**GasTax 1994**	**Water Quality 1996*****	**Air Quality 1998*****	
Committees in Support	none	Data Not Available	2	3	
Expenditures in Support			$1,181,918	$2,942,254	
Committees in Opposition	none		none	1	
Expenditures in Opposition				$11,805	
Election Outcome	Failed: 48.5% in Favor	Failed: 19.5% in Favor	Passed: 62.8% in Favor	Failed: 43.6% in Favor	

*The Pesticide initiative was a counter initiative to the Public Health measure, therefore spending on behalf is in support of the anti-environmental position.

**The second Timber initiative was a counter initiative to the first Timber measure. No committees were created solely to support or oppose this measure, but committees created to influence the Timber #1 campaign also spent money to influence this measure's campaign.

***The Water Quality (1996) and Air Quality (1998) measures were sponsored and supported by economic interests as each measure sought to appropriate money from the General Fund to finance these measures, rather than imposing the costs on the polluting industries. Environmental groups, however, also spent on behalf of the Water Quality measure.

Source: California Fair Practices Commission 1990b; California Secretary of State, Elections Division 1999.

(the proposition that sought to ban the use of gill net fishing and the chemical initiative), economic interests in California did in fact outspend their opponents in the economic measure campaigns.

Of the six economic measures in which economic interests out spent their opponents, two were opposed by the economic groups, while four were supported. This makes California interesting in that those groups clearly used the ballot measure process to pursue their interests. One measure opposed by economic interest groups was the 1990 proposition that sought to ban the use of certain pesticides (Proposition 128). In this campaign, environmental groups spent about $6.2 million on behalf of the measure while business groups spent more than double that amount, $12.8 million, in opposition. The second measure opposed by economic interests showed similar spending patterns. This measure, which sought to impose greater restrictions on the timber industry, attracted just under $7 million in support, but over $11 million in opposition. Overall, these figures illustrate the willingness of economic groups to spend substantial amounts in opposition to propositions that threaten their interests.

Economic interests in California have also proven willing to propose ballot measures of their own in an effort to protect or promote their interests. As with measures that threaten them, measures they supported also attract lopsided spending in favor of the economic interests involved. For example, the counter initiative that sought to provide a more moderate alternative to the measure seeking to ban certain pesticides, attracted almost $5.8 million in favor compared to only about $95,000 in opposition. It should be noted however that much of the spending that would normally have gone into opposing

this counter initiative was most likely spent on behalf of the original measure instead. Further, for the other two measures sponsored by economic interests, the one in 1996 that sought to use public funds to clean up water pollution and the one in 1998 which sought to provide a market based approach to air pollution control, both attracted considerable resources in favor. These figures illustrate the willingness and ability of economic groups to mobilize substantial resources to protect their interests through the initiative and referendum processes.

ECONOMIC INTERESTS ARE MOST EFFECTIVE DEFEATING MEASURES

The third hypothesis suggests that economic groups will be more effective when spending in opposition to measures they oppose than when spending on behalf of measures they support. Due to the willingness of business groups to use the ballot measure process to advance their interests, California provides a nice case with which to test this hypothesis.

Of the economic measures that attracted substantial amounts of campaign money, two were opposed by economic interests. Both were in 1990, and were the proposition seeking to ban certain pesticides and the proposition that sought to impose a number of restrictions on California's timber industry. Both were defeated, in part no doubt because of the lopsided opposition spending. Of the measures proposed and supported by economic interests, three attracted substantial amounts of campaign spending. That spending was lopsided in support of each measure. These three were the counter initiative to the proposition that sought to ban pesticides in 1990, the proposition dealing with

water pollution in 1996, and the proposition dealing with air pollution in 1998. Of the three, only the water pollution measure in 1996 passed.[13] These findings support Gerber's (1999) claim that economic interests will have a more difficult time promoting their interests through the ballot measure process than protecting themselves from threatening measures.

ECONOMIC VARIABLES MOST INFLUENTIAL ON ECONOMIC MEASURES

The final expenditure hypothesis suggests that spending by economic interests provides better cues to voters, leading them to protect their economic interests. As such, it was hypothesized that the economic base of each county would be more influential when voting on economic measures than on non-economic measures. The findings from multivariate analysis, however, provide inconclusive evidence to support this hypothesis. The percent employed in resource related industries is significant for all non-economic measures, suggesting that resource dependent counties were less supportive of environmental protection even if that protection would not have affected the resource related industries that were economically important to the county. The resource dependence variable is significant for less than half of the economic measures. The four measures for which this variable is significant, however, all deal with issues related to natural resources. This may have prompted counties that are more dependent on resource related fields to vote their economic interests over their environmental preferences on

[13]It is interesting to note that of these three measures, the water pollution measure was the only one that was *also* supported by environmental groups.

those four economic measures. As such, these findings indicate that when voters are faced with a perceived tradeoff in terms of providing greater environmental protection at the risk of negatively impacting economically important resource related industries, many voters may vote against the measure, thus opting for economic security over increased environmental protection.

Alternatively explanation for these findings might be that counties that are more dependent on resource related industries may be more accustomed to environmental degradation caused by those industries. Being socialized to accept resource use and its associated impacts may lead residents in resource dependent counties to perceive less need for environmental protection. These residents, then, will likely oppose ballot measures seeking increased protection at higher levels than residents of other counties who are less familiar with historical resource uses.

DISCUSSION

Much like Oregon, the data from California provides considerable evidence in support of the hypotheses. Of importance is the finding that while urban counties are more supportive of environmental ballot measures than rural counties, in most instances those higher levels of support are relatively small and tend to be based on factors other than simple place of residence. Both demographic characteristics and economic conditions seem to influence levels of support for environmental protection. Again, this clearly suggests that both types of variables must be used when assessing the determinants of support for environmental ballot measures.

The data available about campaign expenditures also offer a number of interesting findings regarding the role and influence of campaign spending. First, it is clear given the data that economic measures do tend to attract more campaign spending, and that spending is often lopsided in favor of economic interests. This is consistent with the findings from Oregon, and suggests that given the economic stakes involved with those measures, affected groups in general, but economic interests in particular, will see greater incentives in mobilizing resources in an effort to influence the outcome of the election. This supports our expectation that economic measures will attract more conflict and thus greater attention, at least in terms of campaign spending.

Unlike Oregon, California allows a fuller test of the hypothesis that economic interests will be more successful defeating measures they oppose, than in passing measures they support. Of the nine economic measures examined in California, five were opposed by economic interests, while four were supported. Of the five measures opposed by economic interests, four were defeated while one passed. Success was not as great, however, when it came to passing measures that were supported by economic groups. Of the four measures supported by those interests, three failed (two by substantial margins) and only one passed.

Also interesting is the willingness of economic interests to use the ballot measure process to advance their own goals. Unlike economic groups in Oregon, who simply mustered resources to defend themselves against threatening propositions, economic interests in California were more willing to sponsor and support their own measures. In two of these cases, industries threatened by propositions already on the ballot ran "counter

initiatives" designed to give the voters a more moderate (and less threatening) alternative. In the other two instances, industry groups sponsored and supported propositions either designed to use public money (rather than private) to comply with water pollution standards or promote the use of an incentive based system of air pollution regulations. In all cases, business interests in California took a more proactive stance in using direct democracy to their advantage, than is normally seen in other states.

Chapter Six: "BALLOT MEASURES IN COLORADO"

Moving east from California and Oregon but remaining in the western United States, Colorado is the third state in this study. Like the two states examined previously, it also has a long tradition of direct democracy, first adopting the process in 1912. While once dependent on natural resource related industries, Colorado has also diversified its economy in recent decades, moving towards the manufacturing and service sectors.

COLORADO'S ECONOMY

One primary goal of Colorado state government has been to diversify its economy and shift away from dependence on resource related fields. Colorado has the fifth fastest growing Gross State Product (GSP) in the nation (Colorado Office of Economic Development 1999). While agriculture and mining were once economic mainstays in Colorado, those sectors have been in relative decline and represent a decreasing share of the state's total output. The agricultural sector, which includes forestry and fishing, employed just under 11,000 workers in 1996 (Colorado Office of Economic Development 1999). The mining industry, which largely deals with hard rock mining, provided slightly more jobs with 15,446 in 1996 (Colorado Office of Economic Development 1999). Combined, these industries represented just 4 percent of Colorado's GSP. While once very important to the state's economy, these industries have witnessed declines in overall importance similar to those in Oregon and California.

Somewhat linked to Colorado's agricultural industry is its growing manufacturing base. Colorado has witnessed increases in the production of non-durable goods. Most of this growth has entailed processing the food grown within the state. Printing and publishing are also important components of the non-durable manufacturing sector (Colorado Office of Economic Development 1999). The state is attempting to increase its high-technology industries, seeking to attract firms producing computers and other high-tech products. Overall, manufacturing provided about 192,000 jobs for Coloradans in 1996 and represented 12 percent of the GSP (Colorado Office of Economic Development 1999).

The sector of Colorado's economy that has experienced the largest growth in recent years has been the multi-faceted service sector, employing almost 572,000 workers in 1996. This sector employs more than any other in Colorado (Colorado Office of Economic Development 1999). Much of this employment is in the health care field, as Colorado serves as a regional medical center to neighboring states as well as to its own residents. The state is also a regional center for professional services, as the legal, engineering, and architectural fields have been steadily expanding throughout the 1990s (Colorado Office of Economic Development 1999). A large part of the service sector is related to tourism. Tourists are drawn to Colorado in the winter for its world class skiing, and in the summer for its numerous other outdoor recreational opportunities. As such, Colorado currently ranks eighth in the nation for total tourist spending (Colorado Office of Economic Development 1999). Overall, the service sector is the largest sector in terms of GSP, representing 22 percent of overall state production. A final industry of

importance, one that is similar to the service industries, is the finance, insurance, and real estate sector, representing 17 percent of Colorado's GSP.

Economic trends in Colorado have mirrored trends in the other states examined. While the state has made significant improvements in the diversity of its economy, most of those improvements are concentrated in urban areas. Rural areas remain largely dependent on the declining resource-related industries. It is the rural dependence on these industries that is likely to foster or reinforce existing urban-rural tensions.

THE BALLOT MEASURE PROCESS IN COLORADO

The ballot measure process adopted in Colorado in 1912 is similar to those created in Oregon and California. Coloradans may amend their constitution and create or alter existing statutes through the direct initiative. They may also use the referendum to alter statutes, either through legislative or citizen initiation. As such Colorado, like the other two western states in this study, has a relatively broad ballot measure process.

From 1912 to 1998, Colorado citizens placed 195 initiatives on the ballot. Of those 195, 74 were adopted, for a 38 percent approval rate overall. Colorado ranks third behind only Oregon and California in the total number of initiatives placed on the ballot over the past century. Use of the ballot measure process in Colorado has increased in recent decades. From 1990 to 1998, there were 44 initiatives placed on the ballot, seven of which dealt with environmental measures.

In order to place a measure on the ballot (with the exception of a legislative referendum to amend the state constitution, which requires two-thirds in each chamber of the General Assembly), supporters must obtain a specified number of signatures from

registered voters. Colorado is unique in that the number required is a percentage of the total number that voted in the previous Secretary of State election, as opposed to the more standard method which uses a percentage of those voting in the previous gubernatorial election. Colorado is also unique in that the percentage of signatures required to qualify an initiative or citizen petitioned referendum on the ballot is the same, five percent, for both constitutional and statutory changes. The minimum number of signatures required to qualify a measure for the 1998 ballot was 54,242.

BALLOT MEASURES INCLUDED

Between 1990 and 1998, seven measures qualified for the ballot in Colorado that dealt with environmental issues. Of those seven, all were placed on the ballot through citizen initiative. Brief summaries follow:[14]

> Amendment #8, 1992 (Non-Economic): "Lottery Revenues for Parks, Recreation, and Wildlife" *Lottery:* this amendment would provide for the permanent dedication of net proceeds from every state supervised lottery program for the preservation, protection, enhancement, and management of the state's wildlife, park, river, trail, and open spaces. The vote was held in the November general election in 1992. The initiative passed with 54.9 percent of the statewide vote in favor.
>
> Amendment #10, 1992 (Non-Economic): "Black Bear Hunting" *Hunting:* this amendment would revise the Colorado statutes to ban the baiting of bears, ban the hunting of bears during the spring and summer, and ban the hunting of bears and cougars with dogs. The vote was held during the November general election in 1992. The initiative passed with 65.9 percent of the statewide vote in favor.
>
> Amendment #14, 1996 (Non-Economic): "Prohibited Methods of Taking Wildlife" *Trapping:* this initiative would amend the Colorado constitution to prohibit certain methods of taking wildlife on public lands, including a ban on leg traps, instant kill

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[14]As with the other states, the word in italics following the title of each measure represents the measure's designation in the tables below. Whether the measure was classified as economic or non-economic is indicated in parentheses after the year in which the election was held.

body gripping traps, and snares, except for specific circumstances that involve human health or safety or the management of fish and non-mammalian wildlife. The vote was held during the November general election in 1996. The initiative passed with 52.1 percent of the statewide vote in favor.

Amendment #16, 1996 (Economic): "State Trust Lands" *TrustLand:* this initiative would change the Colorado constitution to alter the mission of the State Board of Land Commissioners' previous duty of maximizing revenue from state trust lands to allow greater preservation and protection of those lands as open spaces and wildlife habitat. The vote was held in the November general election in 1996. The initiative passed with 51.9 percent of the statewide vote in favor.

Amendment #13, 1998 (Economic): "Uniform Livestock Regulations" *Livestock1*: this initiative would have set uniform regulations on livestock operations, primarily feed lots, throughout the state, thereby preempting all local regulations. The vote was held during the November general election in 1998. The initiative failed with 38.7 percent of the statewide vote in favor.

Amendment #14, 1998 (Economic): "Regulation of Swine Feeding Operations" *Livestock2:* this initiative was a counter initiative to Amendment #13 (above). This measure sought to create regulations to limit the runoff of waste from commercial swine feeding operations and impose limits on the use of that waste as fertilizer. While this measure sought to prevent water pollution from waste runoff, it was also intended to minimize odor emissions from those operations. To accomplish these objectives, the state and local governments were authorized to promulgate regulations to those ends and impose fees on the operations to accomplish the goals of the measure. The vote was held during the November general election in 1998. The initiative passed with 64.2 percent of the statewide vote in favor.

Amendment #16, 1998 (Economic): "Rio Grande Water Fees" *Waterfee:* this initiative would impose a fee on water withdrawn from the aquifer for agricultural purposes within the Rio Grande Water Conservation District. The vote was held during the November general election in 1998. The initiative failed with 24 percent of the statewide vote in favor.

NON-ECONOMIC VERSUS ECONOMIC MEASURES

Unlike the states examined thus far, the environmental initiatives voted on in Colorado during the 1990s are fairly balanced between economic and non-economic measures. Of the seven measures used in this study, three are classified as non-economic

and four are economic. Data provided in the tables below will be grouped based on how each measure was classified.

NON-ECONOMIC MEASURES

The three non-economic measures dealt with either parks and open-spaces or wildlife. The first such measure was Amendment #8 in 1992, which sought to designate proceeds from state lottery programs for protection and enhancement of the state's open spaces and wildlife habitat. While there are certainly opportunity costs to such as designation, this measure is classified as non-economic because money for this increased protection would come from lottery revenues that were already being generated, rather than from a new tax on a particular activity or industry.

The second and third non-economic measures both dealt with restrictions on the harvesting of wildlife. The first, Amendment #10 in 1992, prohibited certain methods of hunting bears and cougars. This measure was classified non-economic because, while negatively impacting a segment of hunters, it was not expected to have any significant impacts on an identifiable industry or economic group. Similarly, Measure #14 in 1996 sought to prohibit the trapping of mammals on public lands within the state. This measure was classified as non-economic because while limiting the activities of trappers, it was also not expected to have any substantial economic impacts.[15]

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[15]While one might expect that measures seeking to limit the methods through which large predators can be controlled may attract opposition from the livestock industry, this does not seem to be the case, at least to a substantial degree. The relative lack of opposition from the livestock industry to measures of this type is evident from the lack of campaign expenditures by those industries that were spent in opposition to these measures. This is the case for all wildlife measures in Colorado, California, and Oregon.

ECONOMIC MEASURES

The economic measures voted on in Colorado in the 1990s dealt with the regulation of certain identifiable industries. The first, Amendment #16 in 1996, sought to allow greater preservation of state trust lands. Originally, these lands were granted to the state of Colorado by the federal government to support public schools within the state. As such, these lands were to be managed for maximum revenue generation in order to provide the schools with the greatest proceeds possible. Since the best way to maximize revenues from these lands is to utilize the natural resources found on them, they have historically been used for such things as grazing, mining, and to a lesser extent (in Colorado), logging. This measure was classified as economic because its passage shifted the emphasis in management decisions from resource use to greater preservation. Increased preservation would likely be detrimental to the industries that relied on those lands for resources.

The second economic measure, Amendment #13 in 1998, was an initiative sponsored and supported largely by the livestock industry. It sought to provide uniform standards for the operation of feedlots and other livestock production across the state, thereby preempting any local efforts to impose more stringent standards on that industry. This measure is classified as economic because it sought to regulate an identifiable industry. Further, passage would have reduced some environmental regulations, thus benefitting the industry that sponsored the initiative.

In response to Amendment #13, Amendment #14 was sponsored by environmental groups and private citizens who were concerned with water and air pollution associated

with large commercial feedlot operations. As such, Amendment #14 authorized the state and local governments to impose more stringent regulations on swine operations to prevent those forms of pollution. Due to the impacts of these regulations and the fees imposed on the operations to finance these programs, this measure is classified as economic.

The final economic measure was Amendment #16 in 1998. This one sought to impose fees on water withdrawn for agricultural uses from the aquifer in one of Colorado's water conservation districts. This initiative would have increased the cost of agricultural production in that district, and is classified as economic due to the financial costs it would have imposed on the agricultural industry. This measure was also supported by economic interests, primarily livestock producers outside the district. Thus this initiative is unique in that it attracted both support and opposition from economic groups.

FINDINGS

URBAN-RURAL DIFFERENCES

As may be seen in Tables 6.1 and 6.2, urban counties did tend to vote in favor of environmental ballot measures to a greater degree than rural counties. All sixty-three Colorado counties were divided into urban or rural categories based on the presence of a city with 50,000 or more residents. Counties with cities of substantial size were then classified as urban.[16] On average across each type of county, votes in favor each measure

[16]As of 1998, Colorado had ten counties containing cities with 50,000 or more residents. Those counties are: Adams, Arapahoe, Boulder, Denver, Douglas, El Paso, Jefferson, Larimer, Pueblo, and Weld.

were just under thirteen percent higher for urban as compared to rural counties. Further, bivariate analysis was conducted to test the significance of these differences. Correlations between both urban-rural variables were statistically significant in relation to support for all seven measures. These correlations were positive, indicating that urban counties were generally more supportive of each ballot measure than their rural counterparts. Differences between urban and rural counties are suspect, however, for two of the measures examined. Differences for both the "Livestock1" and "Lottery" measures were below ten percent. As those numbers are relatively small, the reader is again cautioned not to infer too much from those average differences.

Table 6.1: Percentages of Votes in Favor of Each Non-Economic Measure, Averaged Across Urban Versus Rural Counties, Colorado 1990-1998

	Lottery 1992	Hunting 1992	Trapping 1996
% Yes: Urban	55.5%	68.3%	53.9%
% Yes: Rural	46.4%	51%	34.3%
Difference	9.1%	17.3%	19.6%

While these averages and bivariate analysis indicate that urban counties did tend to support environmental ballot measures to a greater degree than their rural counterparts during the 1990s, it cannot be automatically assumed that those differences stem solely from the urban or rural nature of each county. Multivariate analysis must be conducted to test for effects of the demographic and economic variables while controlling for the effects of each variable on the others.

Table 6.2: Percentages of Votes in Favor of Each Economic Measure, Averaged Across Urban Versus Rural Counties, Colorado 1990-1998

	TrustLand 1996	Livestock1 1998	Livestock2 1998	Waterfee 1998
%Yes: Urban	52.9%	39.6%	65.3%	25.8%
%Yes: Rural	38.3%	33.8%	54.6%	13.8%
Difference	14.6%	5.8%	10.7%	12%

MULTIVARIATE ANALYSIS

Given the similarities among the estimates for the economic and non-economic ballot measures in Colorado, all seven measures will be discussed in the same section. The results of the multivariate analysis for all Colorado measures are reported in Table 6.3. As can be seen from that table, three variables demonstrate fairly consistent significance in association with support for each measure. It should be noted, however, that neither of the urban-rural variables were associated with support for any of the ballot measures to a degree that was statistically significant. As with the other states, this insignificance should not be taken to suggest that urban and rural counties express the same levels of support for each measure. Rather, different voting patterns between urban and rural counties, discussed above, seem to be explained by variables other than simple place of residence.

Note that of the seven ballot measures, support for one of those measures was not correlated with any of the variables included in the model. The measure, which was the pro-industry initiative that sought to preempt any local efforts to regulate livestock operations, received relatively little support from voters, as it sought to impose regulations that were relatively lax in comparison to standards that were already in place in some localities. This initiative failed with less than 39 percent of the vote in favor of the

measure. Urban-rural differences were also the smallest for this measure at 5.8 percent (see Table 6.2). The low level of support, combined with limited differences in average votes between urban and rural counties and the extremely low adjusted Rsquared, may

Table 6.3: Voting Determinants of Environmental Ballot Measures in Colorado, 1990-1998#

Variables	Lottery 1992 NE	Hunting 1992 NE	Trapping 1996 NE	TrustLand 1996 E	Livestock1 1998 E	Livestock2 1998 E	Waterfee 1998 E
Population Density	0.004 (0.04)	0.003 (0.03)	0.001 (0.01)	0.001 (0.01)	0.004 (0.09)	0.003 (0.05)	0.006 (0.12)
City w/ 50,000+	4.61 (0.13)	5.68 (0.16)	5.49 (0.13)	1.38 (0.04)	1.47 (0.08)	2.69 (0.10)	3.65 (0.18)
%Resource Employment	-0.11 (-0.13)	-0.006 (-0.09)	-0.06 (-0.06)	-0.15* (-0.17)	-0.034 (-0.08)	0.015 (0.02)	0.09* (0.19)
Income (in $1,000)	0.59** (0.37)	0.70** (0.45)	0.067** (0.36)	0.03 (0.18)	0.000 (0.11)	0.0004* (0.31)	0.066** (0.74)
Education	0.64** (0.45)	0.53** (0.38)	0.69** (0.42)	0.75** (0.51)	0.24 (0.33)	0.33* (0.31)	0.067 (0.08)
%Republican	-0.46** (-0.37)	-0.42** (-0.35)	-0.70** (-0.48)	-0.51** (-0.39)	-0.13 (-0.20)	-0.35** (-0.37)	-0.18** (-0.25)
%Below 35 Years Old	-0.04 (-0.01)	0.28 (0.07)	0.55 (0.13)	-0.19 (-0.43)	0.06 (0.03)	0.07 (0.19)	0.19 (0.08)
Adj.Rsquared	.724	.751	.820	.814	.161	.476	.654
N of Cases	63	63	63	63	63	63	63

The first number represents the unstandardized coefficient, the second number ( ) represents the standardized coefficient.
#Whether the measure was designated Economic or Non-Economic is indicated with an "E" or "NE" below the year in which the election was held.
*p<0.05
**p<0.01

explain the lack of significance for any of the variables in relation to support for this measure. These factors suggest that opposition was widespread among most Colorado voters, regardless of their place of residence, demographic characteristics, or economic

conditions. The perceived extreme nature of this measure may have prompted this wide-spread opposition.

For the remaining measures, two demographic variables are consistently correlated with support for most of them. As with the other states examined, party affiliation seems to be the strongest predictor. The party affiliation variable was significantly and negatively correlated with support for each measure, except one. This finding is consistent with the hypothesis, and suggests that counties that supported the Republican Party's presidential candidate in 1996 tended to be less supportive of the environmental ballot measures examined.

The education variable was also significantly correlated with county wide votes in favor of five of the seven measures. These correlations were positive, indicating that counties with relatively high levels of education tended to be more supportive of environmental ballot measures. This finding was also consistent with the hypothesis regarding education. The final demographic variable, age, was not significant for any of the measures. As with other states however, this finding of insignificance may be due more to the manner in which age is measured than to the variable's actual influence on each county's level of support for each initiative.

Of the economic condition variables, median household income in Colorado was the strongest predictor. This variable was significantly correlated with support for five of the seven measures. These correlations were also positive, indicating that counties with relatively high income levels tended to be more supportive of the environmental ballot measures than poorer counties.

The variable that measured each county's dependence on resource related industries provides an interesting finding. This variable was significantly correlated with two of the measures, indicating that counties with greater dependence on those industries tended to be less supportive of those measures than were counties with more diversified economies. One measure for which this variable was negatively correlated, was the initiative that sought to shift the management of state trust lands from maximizing resource production to greater preservation. This indicates that resource dependent counties were less supportive of this measure. As this measure would have limited the access of the resource related industries to some public lands, it is logical to expect greater opposition to the measure from counties dependent on those industries.

The second measure for which this variable was significant was the initiative that sought to impose a waterfee on withdrawals from the aquifer for agricultural purposes in one of Colorado's water conservation districts. Unique to this measure is the fact that the percent employed in resource related industries is *positively* correlated with support. This suggests that counties with greater dependence on those industries actually supported a measure that would have negatively impacted the agricultural industry. This finding, however, can be explained by the fact that only the agricultural producers in the Rio Grande Water Conservation District would have been negatively impacted. Producers in all other areas of the state would likely benefit from the increased costs imposed on producers in that district, prompting counties in other areas to vote in favor of the measure. The resource employment variable is not significant for the remaining five measures, three of which are non-economic. The fact that the resource dependence

variable was not correlated with the measure that sought to impose more stringent regulations on feedlots is counter to the hypothesis. As this measure clearly sought to impose substantial costs on the livestock industry, we would expect counties dependent on that industry to oppose this measure. This finding may be explained, however, by the fact that the measure applied only to swine operations and not to cattle or sheep producers. As the latter operations are far more common in Colorado, it is probable that counties dependent on cattle or sheep production may not have opposed the measure, as it would have had little impact on those operations.

CAMPAIGN EXPENDITURES

As in the other states, campaign expenditure data in Colorado is reported by committees that are formed to support or oppose ballot measures during each campaign. Based on this information, it seems clear that ballot measure campaigns in Colorado attract substantially smaller expenditures than do campaigns in the previous two states examined. While it is not uncommon for expenditures in ballot measure campaigns in California and Oregon to run into the millions of dollars, spending in only two of the seven Colorado measure campaigns even approached $1 million. The data regarding those expenditures is presented in Table 6.4 for the non-economic measures and 6.5 for the economic measures.

ECONOMIC MEASURES ATTRACT MORE MONEY

An examination of Tables 6.4 and 6.5 suggests that for the most part, economic measures attract higher levels of campaign spending than do non-economic measures. Total spending for and against each campaign surrounding the non-economic measures

averaged just over $288,000. Total spending in the three economic measure campaigns for which consistent data are available, however, averaged over $1 million. As with the other two states, three of the four economic measures in Colorado during the 1990s did attract substantially higher levels of campaign expenditures than did the non-economic measures. This finding supports the hypothesis that the economic stakes involved with economic measures lead to a greater mobilization of resources.

Table 6.4: Campaign Expenditures For and Against Non-Economic Ballot Measures in Colorado, 1990-1998

Measure:	Lottery 1992	Hunting 1992	Trapping 1996
Number of Committees in Support:	2	3	2
Expenditures in Support:	$316,193	$129,493	$185,440
Number of Committees in Opposition:	1	2	2
Expenditures in Opposition:	$83,874	$110,800	$38,279
Election Outcome:	Passed: 54.9% in Favor	Passed: 65.9% in Favor	Passed: 52.1% in Favor

Source: Colorado Secretary of State, Elections Division, 1999.

ECONOMIC INTERESTS OUTSPEND OPPONENTS

Evidence from Colorado supporting the hypothesis that economic interests will outspend opponents is less clear. The 1998 measure that sought to impose fees on agricultural water users in one water conservation district presents a unique type of measure in that economic interests made substantial expenditures both for and against this

initiative. As would be expected, opponents of this measure were generally agricultural firms from the impacted conservation district. Supporters, on the other hand, tended to be livestock producers from outside that district. Thus, the localized nature of the impacts created a situation in which economic interests fell on both sides of the issue. Spending for and against this measure was virtually even, with supporters out spending opponents by just a little over $50,000. Given the unique circumstances surrounding this measure, the fact that economic interests mobilized substantial resources in both support for and opposition to this initiative is not surprising, nor is the fact that neither side significantly out spent the other.

Table 6.5: Campaign Expenditures For and Against Economic Ballot Measures in Colorado, 1990-1998

Measures:	TrustLand 1996	Livestock1* 1998	Livestock2* 1998	Waterfee 1998
Number of Committees in Support:	1	1	2	1
Expenditures in Support:	Not Available	$934,628	$414,356	$992,000
Number of Committees in Opposition:	1	1	1	1
Expenditures in Opposition:	$32,193	$467	See Note	$938,703
Election Outcome:	Passed: 51.9% in Favor	Failed: 38.7% in Favor	Passed: 64.2% in Favor	Failed: 24% in Favor

Source: Colorado Secretary of State, Elections Division 1999.
*Recall that "Livestock1" and "Livestock2" were counter-initiatives. "Livestock1" was supported by the pork industry and related interests. The committee created to support that measure also spent in opposition to "Livestock2" which sought to impose more stringent standards on the pork industry. Thus, the $934,628 spent on behalf of "Livestock1" was also spent in opposition to "Livestock2."

The data surrounding the campaign for the measure that sought to create statewide regulations on the livestock industry (Livestock1), however, more clearly supports the hypothesis. Recall that this measure was proposed and supported by the swine industry in an effort to create fairly lax statewide regulations which would trump any local regulations. Given the potential benefits, that industry spent just under $1 million in support of the measure. Opponents to the measure, on the other hand, were only able to muster about $500 in opposition. The lopsided spending by the economic group in this instance does support the hypothesis that economic interests have considerable incentive to mobilize large amounts of money to promote their interests.

The counter-initiative, on the other hand, attracted considerably higher expenditures in support. Recall that this measure sought to impose regulations on the swine industry. As was predicted, the pork industry campaigned against this measure, merging the campaign in support of "Livestock1" with the campaign in opposition to this counter-initiative. What was not predicted, however, was the substantial expenditures *on behalf* of "Livestock2." As this measure sought collective benefits, we would have predicted the supporters would have difficulty mustering substantial resources in favor. An examination of the contributors to the committee formed to support this measure, however, supports our original hypothesis and suggests that this measure is a unique case. While environmental groups did contribute to this campaign, their contributions were relatively small (below $10,000 per group). Most of the contributions came from private citizens, and a majority of the money ($257,500) came from a single individual and his corporation. As hypothesized, the environmental groups seeking the collective benefit of

clean water were unable to muster substantial resources to support this measure. The measure was instead sponsored and supported by private citizens living in rural areas who sought to prevent the odor associated with neighboring swine operations (Straayer 2000).

ECONOMIC INTERESTS MOST EFFECTIVE DEFEATING MEASURES

The evidence gathered from Colorado provides limited support for the hypothesis that economic interests will be more successful defeating measures they oppose, than passing measures they support. Both economic measures that were supported by economic interests failed. One of those measures was also opposed by different economic groups. The other measure was more traditional in that economic interests spent only in support, with environmental groups in opposition. The failure of this measure supports the hypothesis.

One measure that was opposed by economic interests was "Livestock2." Despite substantial spending in opposition to this initiative by those interests, the measure passed. The other measure that was opposed by economic interests but supported by environmental groups sought to allow greater preservation of the state's trust lands. While passage was expected to negatively impact the industries that sought to utilize natural resources on those lands, this measure did not attract substantial spending in opposition. This suggests that the resource related industries that would have potentially been affected did not perceive the measure as sufficiently threatening to mobilize resources. Thus, while this measure passed, it did not face significant spending in opposition.

ECONOMIC VARIABLES MOST INFLUENTIAL ON ECONOMIC MEASURES

The final hypothesis suggests that economic variables will be more influential on votes on economic measures than on non-economic measures. The findings from Colorado provides more conclusive evidence in support of this hypothesis than do those from the two states previously examined. In multivariate analysis, the variable measuring each county's dependence on resource related industries is not significant for the three non-economic measures. This indicates that counties with greater dependence on those industries did not vote significantly differently on those measures than did counties that are less dependent. That variable is, however, significant for two of the four economic measures. This suggests that counties with greater dependence on those resources did in fact vote in their economic interest by opposing two measures that threatened the industries that were economically important to them.

The lack of significance for the other two economic measures can also be explained. Both measures dealt largely with regulations covering the swine industry. Within the livestock industry in Colorado, swine production is a relatively small sector compared to cattle and sheep producers. As those latter industries would have been largely unaffected by both measures, it is not surprising to find that the resource dependence variable was not significantly associated with either measure. Overall, then, Colorado provides strong support for the hypothesis that voting on economic measures is influenced by a county's dependence on resource related industries when a measure would affect those industries.

DISCUSSION

As with Oregon and California, Colorado provides considerable evidence in support of our hypotheses. Of primary importance is the insignificance of the urban-rural variables in determining levels of support in each county for all seven environmental ballot measures. While urban counties generally supported those measures at higher levels than rural counties, multivariate analysis indicates that those high levels of support stem not from simple place of residence, but rather from the demographic and economic variables included in the multivariate models.

Of the demographic variables, party affiliation and education were the strongest predictors of county-wide support for each measure. On the economic side, income was significantly correlated with support for five of the seven measures, while the resource dependence variable was significant for two of the economic measures, but not significant for any of the non-economic initiatives. This latter finding lends support to the hypothesis that economic variables will be more influential in determining county-wide votes on ballot measures that would adversely affect resource related industries.

Similar to California, economic interests in Colorado were also willing to propose a ballot measure that would have benefitted themselves. The initiative in 1998 which sought to create unified standards on the state's livestock industry, really sought to impose fairly lax standards on the swine industry. As such, passage of that measure would have provided economic benefits through reduced operating costs. This indicates that at least some economic groups in Colorado were willing to use the ballot measure process for their own advantage. As was predicted, however, that industry was unable to convince a

majority of voters to support that initiative and it failed by a substantial margin. This measure also prompted a counter initiative, something that occurred in California as well. Passage of that measure opened the pork industry to increased regulations by both state and local governments. Given this outcome, its seems as though the pork industry would have been better off had they stayed with the status quo and not proposed the original initiative in the first place.

The findings based on the campaign spending data are also similar to the findings in Oregon and California. One finding of note is that ballot measure campaigns in Colorado attracted substantially less money than did campaigns in California and Oregon. While overall levels of spending were lower relative to those other states, the economic measures in Colorado did generally attract higher levels of expenditures than the non-economic ones. Further, spending in the economic measure campaigns illustrates the fact that economic interests are willing to mobilize considerable resources in an effort to outspend their opponents. This evidence supports that hypothesis that economic interests will be both willing and able to muster substantial resources to protect their interests through the ballot measure process.

Chapter Seven: "BALLOT MEASURES IN MICHIGAN"

While the first three states in this study are in the western United States, the fourth, Michigan, is in the Midwest. Michigan's long tradition with a unique ballot measure process, combined with an economy that is unlike any of the three previously examined, makes it an interesting case for this study.

MICHIGAN'S ECONOMY

While the three states examined above have made considerable efforts in recent decades to diversify their economies, moving away from declining resource related fields, Michigan's economy has historically relied less on resource based industries. This has allowed the state to avoid problems associated with transitions from resource dependence to other economic sectors, problems that in the other states have particularly affected rural areas. Michigan, as with other so called "rust-belt" states, has instead been faced with a declining manufacturing industry as firms and workers move elsewhere.

Agriculture and mining have historically been less important sectors in Michigan's economy than in the three other states. Agricultural production accounted for only 241,000 jobs in 1998, and the mining industry provided just 7,000 (Michigan Senate Fiscal Agency 1999). Together, these industries employed only about six percent of Michigan's workers.

Instead of agriculture and mining, Michigan's economy has historically centered

around manufacturing, particularly the automobile industry. In 1998, manufacturing industries provided almost 1 million jobs in Michigan, of which 270,000 were in the automobile industry (Michigan Senate Fiscal Agency 1999).

Following a larger trend throughout the United States, Michigan's economy has been shifting away from manufacturing and toward the service sector. Service industries in Michigan employ over three times more workers than do goods producing industries. The services sector alone, broadly defined, employed almost 1.3 million workers in 1998, more than any other sector (Michigan Senate Fiscal Agency 1999). Next is retail trade, employing about 850,000 workers in 1998 (Michigan Senate Fiscal Agency 1999).

Overall, Michigan has not been able to attract as many of the growth producing high-technology industries as have California, Oregon and, to a lesser extent, Colorado. Rather, economic growth in Michigan has centered around the service sector, and its overall Gross State Product grew only slowly during the 1990s.

THE BALLOT MEASURE PROCESS IN MICHIGAN

As with our western states, Michigan has a long tradition of direct democracy. The ballot measure process was first adopted in Michigan in 1908, but has been used considerably less than in the three states discussed above. Citizens in Michigan may alter both existing statutes and the state constitution through the initiative process. Citizens and the legislature itself may also place referenda on the ballot for approval by voters. Michigan, then, is similar to the previous three states in that it allows citizens a diverse range of options regarding ballot measure processes.

Michigan is unique to this study, however, in that it is one of only four states in the U.S. to require the indirect initiative process for citizens seeking to alter existing statutes. In order to qualify a statutory initiative for the ballot, supporters must collect a number of signatures equal to eight percent of the total number of votes cast in the previous gubernatorial election. This number was 242,168 in 1998. Once these signatures are gathered, the initiative is submitted to the state legislature prior to the next general election. The legislature then has forty days from the date it receives the initiative to enact or reject the proposed law. If the legislature enacts the proposal, it becomes law without a vote by the people. If the legislature does not enact the proposed initiative, it is placed the ballot in the next general election. The legislature may also propose a different measure on the same issue. Should the legislature choose to propose an alternative measure, that too is placed on the ballot as a separate proposal. If both measures are approved by the voters in the election, the one receiving the highest number of votes in favor is accepted, and the other rejected. This process, then, allows the state legislature to approve a proposed initiative without a vote of the people, or propose an alternative deemed more appropriate by majorities in each chamber. As will be discussed below, the latter occurred in 1996 in the area of wildlife management.

Citizens may also petition to amend the constitution through the more common direct initiative process, or force a law passed by the legislature placed on the ballot for a referendum. The number of signatures required to place a constitutional amendment on the ballot is ten percent of the total number voting in the previous gubernatorial election, or 302,710 in 1998. Placing a citizen petitioned referendum on the ballot requires

signatures equaling five percent of the total number voting in the previous gubernatorial election, or 151,355 in 1998.

Michigan has used the ballot measure process less frequently than the three states examined previously. In the ninety years from 1908 to 1998, 58 initiatives were placed on the ballot. Twenty of these initiatives were ultimately adopted, for a 34 percent approval rate overall. During the 1990s, only six measures were placed on the ballot, four of which could be classified as dealing with environmental issues.

BALLOT MEASURES INCLUDED

Between 1990 and 1998, four environmental measures qualified for the ballot. Of those four one was an initiative and three were referendum. Brief summaries follow:[17]

> Proposal P, 1994 (Non-Economic): "An Amendment to Establish a State Parks Endowment Fund" *Parks:* this referendum sought to amend the state constitution to create an endowment of $800 million to provide funds for the acquisition and improvement of state parks. Money for the endowment was to come from royalties and rents on the extraction of oil, gas, and minerals from state owned lands. The vote was held during the November general election in 1994. The referendum passed with 71.3 percent of the statewide vote in favor.
>
> Proposal D, 1996 (Non-Economic): "Bear Hunting Restrictions" *Hunting:* this initiative sought to prohibit the hunting of bears during the Spring months and prohibit the use of bait or dogs. The vote was held during the November 1996 general election. The initiative failed with 38.3 percent of the statewide vote in favor.
>
> Proposal G, 1996 (Non-Economic): "An Amendment Regarding the Management of Michigan's Wildlife Populations" *Wildlife:* this referendum came as a legislative response to Proposal D (above) which was proposed as an indirect initiative. This referendum sought to make regulations regarding the taking of game the sole authority of the Natural Resources Commission, thereby removing that authority

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[17]The word in italics following the title of each measure represents the measure's designation in the tables below. Whether the measure was classified as economic or non-economic is indicated in parentheses after the year in which the election was held.

from the director of the Department of Natural Resources and voters with future initiatives. The amendment also would have mandated that the Commission utilize "principles of sound scientific management" in making decisions regarding game regulations, and seek to minimize human/bear encounters. The vote was held during the November general election in 1996. The referendum passed with 68.7 percent of the statewide vote in favor.

Proposal C, 1998 (Economic): "Clean Michigan Initiative Act" *Bonds:* this referendum, placed on the ballot by the legislature, would have authorized bonds, up to $675 million, to finance programs that would clean up contaminated sites, protect and improve water quality, prevent pollution, and generally reclaim degraded areas. The vote was held during the November general election in 1998. The referendum passed with 62.7 percent of the statewide vote in favor.

NON-ECONOMIC VERSUS ECONOMIC MEASURES

Of the four Michigan environmental measures used in this study, three are classified as non-economic measures while only one is considered economic. Given the small number of ballot measures available, data presented in tables below will examine economic and non-economic measures together.

NON-ECONOMIC MEASURES

As with the other states, Michigan's non-economic ballot measures dealt with the provision of state parks or the management of wildlife. The first non-economic measure, Proposal P in 1994, sought to create an endowment for the acquisition and improvement of state parks. On the surface, this measure might appear to be better classified as economic, as it sought to use royalties and rents from the extraction of gas, oil, and minerals from state lands, thus negatively impacting those industries. This measure, however, did not impose any new or additional costs on the mining industry. Rather, it simply shifted payment of those rents and royalties already being paid by those companies

from the state treasury to the endowment. The mining industry was then largely unaffected by this proposal and did not expend any resources in opposition.

The other two non-economic measures dealt with wildlife management. The first, Proposal D in 1996, sought to prohibit bear hunting in the Spring, and prohibit the hunting of bears with bait or dogs. While this measure would have negatively impacted a select group of hunters, there were few economic impacts associated with it, thus it is classified as non-economic.

The third non-economic measure, Proposal G, also in 1996, sought to shift wildlife management decisions away from the director of the Department of Natural Resources (an elected official), placing the authority solely in the hands of the Natural Resources Commission. This measure was proposed by the state legislature in response to the above initiative that sought to restrict bear hunting within the state. Thus, citizen groups, through the indirect initiative process, proposed new regulations on bear hunting in Michigan. The legislature did not approve that initiative, so it went onto the 1996 general election ballot. The state legislature did, however, propose an alternative through the referendum process, placing that measure on the same ballot. This referendum would have left game management decisions to Natural Resources Commission, and not in the hands of the voters.

ECONOMIC MEASURES

The only economic measure dealing with the environment that Michigan voters faced during the 1990s was Proposal C in 1998. This legislatively referred measure sought to authorize a bond to finance environmental protection and restoration programs

throughout the state. This measure sought to use public money to provide levels of environmental protection that otherwise would have been financed by firms within the industries that had caused the environmental degradation, saving those firms considerable money. As such, this proposal was supported by economic interests as well as environmental groups.

FINDINGS

URBAN-RURAL DIFFERENCES

For all but one environmental ballot measure in Michigan, urban counties did tend to vote in favor of those measures at higher levels than rural counties. To demonstrate this, all eighty-three Michigan counties were classified as urban or rural based on whether a county contained a city with 50,000 or more residents.[18] Average votes in favor of each measure are grouped by urban versus rural counties and reported in Table 7.1.

Table 7.1: Percentages of Votes in Favor of Environmental Ballot Measures, Averaged Across Urban Versus Rural Counties, Michigan 1990-1998

	Parks 1994	Hunting 1996	Wildlife 1996	Bonds* 1998
%Yes: Urban	73.8%	38.7%	68.7%	63.7%
%Yes: Rural	65.8%	28%	71%	51.7%
Difference	8%	10.7%	(2.3%)	12%

*The "Bonds" measure is the only measure classified as economic.

The fact that urban counties were more supportive of all but one measure suggests that urban-rural differences in support for environmental protection is not a phenomena

[18]As of 1998, Michigan had thirteen counties with cities containing 50,000 or more residents. Those counties are: Calhoun, Genesee, Ingham, Kalamazoo, Kent, Lapeer, Macomb, Monroe, Oakland, Ottawa, St. Clair, Washtenaw, and Wayne.

unique to the west. Rather, rural voters in Michigan tended to express lower levels of support for the environmental ballot measures examined, than did their urban counterparts. Bivariate analysis was also conducted to determine the significance of these differences. For all but the wildlife measure, there was a significant correlation between both urban-rural variables and support for each measure. The positive nature of these correlations indicates that urban counties were generally more supportive of environmental protection. While differences for three of the four measures were statistically significant in bivariate analysis, it should be noted that overall differences between average support in urban versus rural counties were relatively small, with only one exceeding ten percent. This may indicate that urban-rural conflict, while present, may be less severe in Michigan than in the western states previously examined, particularly Oregon and Colorado.

Further, for one measure, rural counties expressed slightly more support than did urban counties. This is the only measure where this occurred in the entire study. This unique finding may be explained by the fact that the measure receiving more support from rural counties would have placed wildlife management decisions in the sole hands of professionals on the Natural Resources Commission. Given Michigan state law (discussed above), passage of this measure with a higher margin than the competing initiative to limit black bear hunting would have meant the black bear initiative failed regardless of the percentage vote in favor. As rural counties opposed the hunting initiative at higher levels than did urban counties, one might expect rural voters to favor the measure that had the potential of defeating the hunting initiative, regardless of whether that initiative received a majority. Further, passage of the wildlife referendum meant that future hunting

regulations would be imposed by the Commission, removing those decisions from Michigan voters, the majority of whom live in urban counties. Thus, slightly higher levels of support for this measure from rural counties does not necessarily indicate that those counties were more supportive of environmental protection than were urban counties. This finding may instead indicate that some rural voters simply wished to remove future wildlife management decisions from the voters in urban counties.

However, as with the other states, it cannot be assumed that the urban-rural differences that were found stem solely from place of residence. Rather these urban-rural differences must be examined within a multivariate model that also includes the demographic and economic variables as well.

MULTIVARIATE ANALYSIS

The results of the multivariate analysis for all Michigan measures are reported in Table 7.2. As can be seen from that table, the seven variables examined provide somewhat less consistent correlations with support for each measure than was the case with the regression models in the previous three states. This may suggest that the variables used are less influential in determining county wide votes in Michigan than in the other states.

The urban-rural variable measuring population density, is significantly correlated with support for two of the measures. The positive correlations indicate that urban counties were more supportive of those two measures, independent of the demographic and economic variables. This provides limited support to the hypothesis that urban counties tend to be more supportive of environmental ballot measures than are rural

counties, simply because those counties are urban or rural.

Table 7.2: Voting Determinants of Environmental Ballot Measures in Michigan, 1990-1998#

Variables	Parks 1994 NE	Hunting 1996 NE	Wildlife 1996 NE	Bonds 1998 E
Population Density	0.000 (0.00)	0.012** (0.28)	-0.005 (-0.21)	0.012* (0.22)
City w/ 50,000+	0.88 (0.05)	3.36 (0.18)	-0.59 (-0.05)	0.31 (0.01)
%Resource Employment	-0.007 (-0.01)	-0.065 (-0.08)	-0.057 (-0.11)	-0.07 (-0.07)
Income (in $1,000)	0.04** (0.40)	0.007 (0.07)	0.022* (0.36)	0.49** (0.43)
Education	0.22 (0.19)	0.56** (0.50)	-0.39** (-0.56)	0.35** (0.27)
%Republican	-0.10 (-0.10)	-0.20* (-0.19)	-0.14* (-0.23)	-0.12 (-0.10)
%Below 35 Years Old	0.25 (0.18)	-0.17 (-0.13)	0.12 (0.14)	0.17 (0.11)
Adj.Rsquared	.496	.566	.231	.643
N of Cases	83	83	83	83

The first number represents the unstandardized coefficient, the second number ( ) represents the standardized coefficient.
#Whether the measure was classified as Economic or Non-Economic is indicated with an "E" or "NE" under the year in which the election was held.
*p<0.05
**p<0.01

Of the demographic variables, education and party affiliation were significantly correlated with support for some of the measures. Education was positively correlated with two of the measures, indicating that counties with higher levels of education tended to be more supportive of those measures, a finding that is consistent with our hypothesis.

The education variable was, however, negatively correlated with the initiative that sought to reserve wildlife management decisions to the Natural Resources Commission. This correlation suggests that counties with relatively higher levels of education were less supportive of that initiative than were counties with lower education levels. Recall, however, that this referendum was a legislative response to the indirect initiative that sought to restrict bear hunting. Given these options, it seems plausible to suspect that some voters may have preferred to allow management decisions be made by the voters, rather than prohibiting such actions in the future.

Party affiliation was also negatively correlated with those two competing measures. This indicates that counties that were more supportive of the Republican Party's 1996 presidential candidate tended to be less supportive of both measures. This finding is consistent with the hypothesis regarding party affiliation. Finally, the variable measuring age in each county was not correlated with any of the measures. Again, however, this insignificance is possibly due to the way in which each county's average age was measured.

Of the economic variables, only income was correlated with any of the measures. Each county's median household income was positively correlated with three of the four measures. This indicates that counties with relatively high income levels tended to be more supportive of those environmental measures than were counties with lower average incomes. This finding is also consistent with our hypothesis.

The resource employment variable was not significantly correlated with support for any of the measures. There are two possible explanations for this. One is that the

industries included in that variable - agriculture, livestock, mining, and logging - are relatively small sectors in Michigan's economy, at least when compared to the states previously examined. As such, the percentages of each county's residents employed in these industries were relatively small, and may have had little impact on the voting. A second possible explanation is that none of the four measures would have conferred any significant costs or benefits on those industries. This may have prompted voters within each county, whether employed in those industries or not, to cast their vote based on determinants other than the industry in which they were employed. Given the data presented here, however, it cannot be determined which of these explanations, if either, is accurate. One point that is clear, however, is that residents from counties that are relatively more dependent on resource related industries in Michigan do not oppose environmental protection simply because of that dependence.

CAMPAIGN EXPENDITURES

As with our other states, campaign expenditure data for ballot measures in Michigan is reported for each committee that is formed to support or oppose initiatives and referenda. Expenditure data for both the non-economic and economic measures are reported in Table 7.3 below. While the limited number of ballot measures provides less information than we have for the other states, the data presented offers evidence in support of at least one of our hypotheses.

ECONOMIC MEASURES ATTRACT MORE MONEY

Table 7.3 shows that the one economic measure did stimulate more campaign spending than the three non-economic measures. Recall that the economic measure

authorized publicly financed bonds to pay for a number of environmental improvements. Since public money was to be used to clean up degradation generally caused by private actions, this measure attracted considerable support from economic interests, but also from environmental groups. Over $3 million was spent in support of this measure, with most of that money coming from economic groups. No opposition committees were formed. This supports the notion that the greater economic stakes involved with economic measures will prompt business groups to spend in support of their interests, as that investment may provide considerable payoffs.

Table 7.3: Campaign Expenditures For and Against Non-Economic and Economic Ballot Measures in Michigan, 1990-1998

Measure:	Parks 1994	Hunting 1996	Wildlife 1996	Bonds* 1998
Number of Committees in Support:	1	1	6	1
Expenditures in Support:	$144,139	$1,311,798	$1,671,159	$3,321,980
Number of Committees in Opposition:	None	6	None	None
Expenditures in Opposition:		$1,512,516		
Election Outcome:	Passed: 71.3% in Favor	Failed: 38.3% in Favor	Passed: 68.7% in Favor	Passed: 62.7% in Favor

*The only economic measure voted on in the 1990s was "Bonds 1998."
Source: Michigan Department of State, Bureau of Elections 1994, 1996, 1998.

The next most expensive measure was the one that sought to ban certain types of bear hunting. It triggered considerable spending both for and against, about $2.8 million in total. The referendum that was placed on the ballot by the legislature to counter the

hunting initiative attracted about $1.6 million in support, with no committees formed in opposition. Finally, the measure in 1994 that sought to create an endowment for Michigan state parks attracted just $144,000 in support, with no opposition.

REMAINING CAMPAIGN EXPENDITURE HYPOTHESES

Given the limited number of Michigan ballot measures available for this study, the remaining three hypotheses regarding campaign expenditures cannot be meaningfully tested. Examination of the hypothesis that economic interests will outspend their opponents cannot be tested since there was only one, and it was supported by both environmental groups and economic interests. Further, there was no opposition spending with which to test this hypothesis.

A test of the hypothesis that suggests economic interests will be more effective defeating measures they oppose than passing measures they support is also problematic given the data available. Again, the only economic measure was one supported by economic interests, and that measure passed by a fairly large margin (almost 63 percent). We cannot conclude that efforts by economic interests were solely responsible for passage of this measure, however, as environmental groups were also supportive. Thus it is not clear whether it was the environmental nature of this measure or the support given by economic interests that led to its passage.

Finally, the resource related variable was not significantly correlated with any of the four measures. As discussed above, this finding may be explained by the fact that resource related industries measured by that variable were small relative to other states, and thus not very influential. Alternatively, this variable may not have been significant due

to the fact that none of the measures would have resulted in substantial costs or benefits to any of those industries. Either way, the data from Michigan does not appear to support the hypothesis that suggests the dependence on resource related industries will be more influential in determining votes on economic measures than on non-economic measures.

DISCUSSION

The data from Michigan seems to be somewhat less supportive of the hypotheses than has the data drawn from the other states examined. Perhaps most interesting are the findings regarding urban-rural differences. For three of the four measures, urban counties did record higher levels of support than rural counties. The one measure that was supported by rural counties to a higher degree was the referendum that sought to place wildlife management decisions solely in the hands of professional wildlife managers, and thus out of the hands of voters. Rural counties may have supported this measure at a higher level because it would have prevented urban counties, in which a majority of Michigan residents live, from dictating wildlife management through the ballot measure process. Overall, these findings indicate that urban-rural differences in support for environmental protection exist outside of the western United States, something that has not yet been demonstrated in our literature.

Multivariate analysis of the determinants of support for the environmental ballot measures in Michigan provides findings similar to those in the other states examined, although the findings from Michigan are less consistent. Counties with higher levels of education tended to be more supportive of the environmental measures, as that variable was significantly correlated with three of the four measures. Party affiliation was also

significantly correlated with support for two of the measures, suggesting that counties that expressed greater support for the Republican Party tended to be less supportive of those measures.

Of the economic variables, only income was significantly correlated with support for any of the measures. Counties with higher income levels tended to be more supportive of environmental protection, as that variable was positively correlated with three of the four measures examined. The resource dependence variable was not significantly associated with any of the measures. As discussed above, however, this finding may be explained by the fact that none of the four measures examined would have conferred any substantial costs or benefits on the industries measured by that variable.

Findings based on the campaign expenditure data were less useful than those drawn from the multivariate analysis. Due to the limited number of environmental ballot measures available, only one campaign expenditure hypothesis could be tested. That hypothesis suggested that economic ballot measures attract higher levels of campaign spending than non-economic measures. This was supported by the Michigan data. The one environmental ballot measure that was classified as an economic measure did attract higher campaign expenditures than did the three non-economic measures. The reader should, however, be cautioned not to draw too much from this finding given the limited number of economic ballot measures available. This limited data set also prevented the testing of the three remaining campaign expenditure hypotheses.

Chapter Eight: "BALLOT MEASURES IN FLORIDA"

The final state is Florida. Located in southwest corner of the United States, it had the fourth largest population in the country during the 1990s. Unlike the other states in this study, Florida has a relatively short history of direct democracy, adopting the process in 1972. Only Mississippi has adopted the process more recently, doing so twenty years later.

FLORIDA'S ECONOMY

Florida's temperate climate and rich topsoil have historically placed it close behind California in agricultural production. The service sector, however, has been a considerably larger component of Florida's economy for at least the past fifty years and it is now Florida's most important economic sector, in terms of both size and employment (Gray 1999). This sector is dominated by tourism related activities, as Florida's miles of shoreline and the Everglades National Park attract millions of visitors each year. Additionally, Florida has served as a magnet for retirees fleeing the frigid winters of the Northeast and Midwest. Services provided to these people make up a substantial share of Florida's service sector. Overall, this sector represents 24 percent of the Gross State Product (GSP) and accounts for roughly 1.9 million jobs (Bureau of Economic and Business Research 1998).

The second largest sector in Florida's economy, which is linked to services, is

finance, insurance, and real estate. As with other states that attract a disproportionate share of retirees, this sector has seen considerable growth in recent decades. In 1997, it represented 22 percent of the GSP and provided 493,000 jobs (Bureau of Economic and Business Research 1998). Retail trade comes next, representing 11.2 percent of the GSP and employing about one million people in 1997 (Bureau of Economic and Business Research 1998). Overall, then, roughly 57 percent of Florida's GSP consists of economic sectors that do not produce goods of any kind, but instead provide services to others.

Manufacturing, on the other hand, represented just 7.6 percent of the GSP and employed only a little over 500,000 workers in 1997 (Bureau of Economic and Business Research 1998). The construction industry represented 4.7 percent of GSP and provided only 424,000 jobs. As mentioned, the relative importance of Florida's agricultural sector, which has traditionally centered around citrus fruits and sugar cane, has been reduced in recent decades. This reduction is attributable not so much to declines in demand for those products, but to an increase in the importance of the tourist industry. Other resource related industries, such as forestry, mining, and fishing, also represent only small parts of Florida's economy. In fact, when combined, the agriculture, forestry, fishing, and mining industries account for only a little more than 2 percent of Florida's GSP and provided just 160,000 of the state's 6.8 million jobs in 1997 (Bureau of Economic and Business Research 1998). Thus, it is clear that Florida has the most service based and least resource dependent economy of all the states in this study.

THE BALLOT MEASURE PROCESS IN FLORIDA

The direct democracy system created in Florida in 1972 is the most unique of any state examined here. Florida's system is very limited and reflects an effort to allow direct democracy while preventing some of the adverse effects associated with it. This suggests that Floridians have learned from other states' experiences and sought to create a system of direct democracy that corrected some of the perceived problems found elsewhere. One unique feature of the Florida system is that the initiative and referendum process can be used only to alter the state constitution, not state statutes. There are three manners, however, through which a constitutional amendment may be proposed. The first two methods, the direct initiative and legislative referendum, are similar to the processes found in other states.

The third method is unique to Florida, however. This method requires that a constitutional review be done periodically. Under this provision, which is contained in the constitution, a Constitutional Revision Commission is convened every twenty years. This commission is made up of the attorney general and appointees selected by the heads of every branch of the Florida state government. As such, fifteen members of the Commission are selected by the governor. The Speaker of the House and President of the Senate select nine members each. Three additional members are then selected by the Chief Justice of the state Supreme Court. This Commission convenes to examine the state constitution with an eye toward proposing improvements. Based on that examination and public hearings, the Commission submits proposed revisions, if they produce any, to the Secretary of State. Those proposals are then placed on the next general election ballot for

a vote by the people. This process was created to require the state to periodically address the need for changes in the constitution, while leaving the proposal of those changes up to experts appointed by government officials, rather than solely in the hands of citizen groups or the state legislature.

Florida's late adoption of the initiative and referendum process may have influenced the type of process that was created. This system is not only limited to allowing just constitutional amendments, but it imposes a number of other barriers as well. Proposed amendments, regardless of their source, must involve only one issue, something a number of other states require. No constitutional amendment proposed through the initiative process may be used to restrict the ability of Florida's state or local governments to raise revenue, ensuring that the power of taxation will remain firmly in the hands of Florida's elected officials.

Florida is also unique to the states in this study in that it is considerably more difficult to place an initiative on the ballot, and the process requires the approval of the state Supreme Court *before* a citizen petitioned initiative may be voted upon. Thus, citizen groups in Florida face a rigorous two-step qualifying process. To comply with the first step, supporters of the initiative must gather a number of signatures. The actual number is eight percent of the total number of residents that voted in the previous presidential election (in 1998 this number was 435,329). But those signatures must be obtained from at least half of Florida's twenty-three congressional districts. As such, it is not sufficient to simply gather signatures in twelve congressional districts. Instead, supporters must gather signatures equaling eight percent of the previous presidential vote

in each of those twelve districts. This ensures that citizen support for each proposal be both substantial and widespread across the state, thereby preventing supporters from gathering all or most of the necessary signatures in metropolitan areas only. The requirement of this relatively high percentage and the need to demonstrate support across at least half of the state was designed to prevent all but the most popular citizen initiatives from qualifying for the ballot. In fact, this process is so onerous that thirty-seven initiative petitions were circulated in 1996, but only four actually made it through the process and qualified for the ballot.

Once the Attorney General's Office certifies that the necessary signatures have been obtained, the initiative is forwarded the state Supreme Court. The court then decides whether the proposal is constitutional (generally in regard to the single subject requirement) and unambiguously written. Thus, in Florida, the state Supreme Court may nullify a proposed amendment *before* it is passed by the voters. Overall the process created in Florida was meant to provide a mechanism through which citizens could control their government with the ballot measure process, but it also sought to place substantial restrictions on that process to avoid misuse. These stringent qualifying requirements were put in place primarily to prevent the ballot clutter and unwise initiatives discussed in Chapter Three.

Compared to the other states included in this study, Florida has made little use of the ballot measure process. This is in part due to the short time in which the process has been allowed, and in part because of the difficulty in qualifying measures. However, it is a system in which measures that do reach the ballot are more likely to pass. Measures that

reach the ballot in Florida have a 66 percent approval rating, higher than any other state. Overall, from 1972 to 1998, fifteen amendments were placed on the ballot and ten passed.

BALLOT MEASURES EXAMINED

Between 1990 and 1998, eight constitutional amendments qualified for the ballot in Florida. Of these eight, five dealt with environmental issues. Brief summaries of each measure follow:[19]

> Amendment 3, 1994 (Economic): "Limiting Marine Net Fishing," *Netfish:* this measure sought to limit the use of nets for catching saltwater fish, shellfish, or other marine animals by prohibiting the use of gill or entangling nets in all Florida waters, and it prohibited the use of other nets larger than 500 feet in mesh area in near shore and inshore Florida waters. The measure also provided administrative and criminal penalties for violations. The vote was held in the November general election in 1994. The measure passed with 71.7% of the statewide vote in favor.
>
> Amendment 4, 1996 (Economic): "Fee on Everglades Sugar Production," *Sugar:* this initiative required the South Florida Water Management District to levy an "Everglades Sugar Fee" on all raw sugar grown in the Everglades Agricultural Area. Proceeds from the fee would be used for purposes of water conservation and protection of natural resources and abatement of water pollution in the Everglades. The fee was to be imposed for at least the next twenty-five years. The vote was held during the November general election in 1996. The initiative failed with 45.6% of the statewide vote in favor.
>
> Amendment 5, 1996 (Economic): "Responsibility for Paying Costs of Water Pollution Abatement in the Everglades," *Paycost:* this initiative sought to require those that cause water pollution within the Everglades Protection Area or the Everglades Agricultural Area be primarily responsible for paying the costs of water pollution abatement in those areas. The vote was held during the November general election in 1996. The initiative passed with 68.1% of the statewide vote in favor.
>
> Amendment 6, 1996 (Non-Economic): "Everglades Trust Fund," *Everglades:* this

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[19]As with the other states, the word in italics following the title of each measure represents the measure's designation in the tables below. Whether the measure was classified as economic or non-economic is indicated in parentheses after the year in which the election was held.

initiative sought to establish an Everglades Trust Fund to be administered by the South Florida Water Management District for the purposes of conservation and protection of natural resources and abatement of water pollution in the Everglades. The Trust Fund would be supported by a number of sources, including state money, as well as gifts and federal funds. The vote was held during the November general election in 1996. The initiative passed with 57.3% of the statewide vote in favor.

Constitutional Revision 5, 1998 (Non-Economic): "Conservation of Natural Resources and Creation of the Fish and Wildlife Conservation Committee." *Conserve:* This amendment was part of the twenty year review by the Constitutional Revision Commission that suggests revisions to the state constitution. The amendment sought to do a number of things. First, it would create a Fish and Wildlife Conservation Commission and remove the legislature's exclusive authority to regulate fish and wildlife. Second, it authorized the sale of bonds to finance the acquisition and improvement of lands for conservation and outdoor recreation, and restricted the disposal of state lands. Finally, the amendment required that the state make "adequate provision" for the conservation of natural resources. The vote was held in the November general election in 1998. The amendment passed with 72.3% of the statewide vote in favor.

NON-ECONOMIC VERSUS ECONOMIC MEASURES

Of the five environmental ballot measures drawn from Florida, two are classified as non-economic measures while three are considered economic. Due to the limited number of measures available, data presented below combines both types into single tables.

NON-ECONOMIC MEASURES

Both non-economic ballot measures dealt with conservation issues. The first, Amendment 6 (1996), sought to create a trustfund to finance conservation efforts in and around the Everglades. While the Everglades National Park is a federally administered unit, the park covers only a fraction of the everglades area. Development and other encroachments have threatened much of the territory outside the park, which is also classified by the federal government as a wetland area that requires protection. This ballot

measure sought to provide money to purchase and protect much of that area, while cleaning up water pollution within the Everglades. While the money for the trustfund was to be provided in part by state taxes, that tax burden was to be broadly spread across Florida residents and would not significantly impact one group or economic sector. For this reason, Amendment 6 is classified as non-economic.

The second non-economic measure is Constitutional Revision 5 (1998). This measure was proposed by the Constitutional Revision Commission and had minimal predicted fiscal impacts. The measure sought to create a commission charged with promoting the conservation of natural resources and fish and wildlife. While the amendment also authorized the sale of public bonds to finance the purchase and improvement of state lands, repayment of those bonds would be spread across all taxpayers and would not impact any one group or industry. Thus, this measure was also classified as non-economic.

ECONOMIC MEASURES

One of the economic measures sought to regulate Florida's fishing industry, and two dealt with financing the cleanup of water pollution in the Everglades. The first, Amendment 3 (1994), sought to restrict the fishing industry by banning the use of gill nets and large mesh nets. These restrictions required the industry to use methods that were more selective in the types of fish and marine animals that were harvested. Those methods are, however, less efficient, thereby imposing increased operating costs on the fishing industry. For this reason, Amendment 3 was classified as an economic measure.

While Amendment 3 attacked the fishing industry, Amendment 4 (1996) was a direct assault on Florida's sugar producers. This measure sought to hold those producers responsible for the water pollution their operations caused within the Everglades. This accountability was to be provided by imposing a fee on all sugar grown in the Everglades Agricultural Area. Revenues generated by this fee would then be used for water pollution abatement and other conservation efforts within that area. Due to its potential impacts on the sugar industry, Amendment 4 was classified as an economic measure.

The final economic measure, Amendment 5 (1996), was very similar to Amendment 4 but had a slightly broader reach. Like Amendment 4, this amendment sought to hold water polluters responsible for the damage they caused to the Everglades, but Amendment 5 went beyond just sugar producers to all polluters in and around that area. Thus, this measure would have held agricultural producers responsible for the pollution they caused, but would also allow the state to impose fines and regulations for other pollution on nearby residential areas and all other surrounding development. Given the potential costs associated with this proposal, it was also classified as an economic measure.

FINDINGS

URBAN-RURAL DIFFERENCES

As hypothesized, urban counties in Florida, like those in all the other states examined in this study, tended to be more supportive of the environmental ballot measures than rural counties. This is seen by comparing the voting percentages between the two types of counties (in Table 8.1). All sixty-seven counties were placed in the urban or rural

category based on the presence or absence of a city with 50,000 or more inhabitants. Counties with cities of substantial size were classified as urban, while all others were classified rural.[20] On average across all five measures, votes in favor of each environmental measure were over fourteen percent higher in the urban counties. Further, bivariate analysis showed positive correlations between both urban-rural variables and support for each measure. These correlations were statistically significant. This provides evidence that urban counties were more supportive of the environmental measures than rural counties.

Table 8.1: Percentages of Votes in Favor of Each Measure, Averaged Across Urban Versus Rural Counties, Florida 1990-1998

	Netfish 1994	Paycost 1996	Sugar 1996	Everglades 1996	Conserve 1998
%Yes: Urban	71.4%	67.7%	45%	56.9%	71.6%
%Yes: Rural	52%	55%	33.1%	44%	57.8%
Difference	19.4%	12.7%	11.9%	12.9%	13.8%

Table 8.1 seems to show clearly that urban counties were more supportive of the environmental issues voted on in the 1990s. Further, bivariate regression indicated that these differences were all statistically significant. This indicates that urban-rural differences exist in Florida and are therefore not exclusive to the western United States. As with the other four states, however, we cannot assume that these differences stem

[20]As of 1998, seventeen Florida counties contained cities of substantial size as defined above. They were: Alchua, Bradford, Brevard, Broward, Duval, Escambia, Hillsborough, Lee, Leon, Dade, Orange, Palm Beach, Pinellas, Polk, Sarasota, St. Lucie, and Volusia.

solely from place of residence, but must use multivariate analysis to investigate the influence of the economic and demographic variables on these differences.

MULTIVARIATE ANALYSIS

The results of the multivariate analysis are reported in Table 8.2 for both the economic and non-economic measures. As that table shows, a number of variables are consistently correlated with the five ballot measures. As was the case with most other states examined, however, neither of the urban-rural variables were significantly correlated with support for any of the measures. This does not indicate that urban counties in Florida vote in the same manner as rural counties or that voters in each of those areas have the same environmental preferences. A comparison of the votes by each type of county shows that urban areas were more supportive of environmental protection than rural areas. The importance of the urban-rural variables as explanatory factors disappears, however, once the other variables are entered into the analysis. As with the other states examined, this suggests that there are deeper explanations for urban-rural conflicts, ones which go beyond simple place of residence.

Of the remaining variables, those measuring the demographic features of each county seem to be the best predictors of how it will vote. Unlike the other states examined, the variable measuring age is significantly correlated with all of the Florida measures. The significance of this variable in Florida, as opposed to three of the other states, may stem from the fact that Florida's population is considerably more diverse in terms of age. As such, there is considerably greater variance in the percentage of county residents that are below thirty-five years old. This percentage is fairly low in coastal

counties, but is considerably higher for the interior counties. Thus, it is likely that there was enough variation in that variable to provide statistical significance.

Table 8.2: Voting Determinants of Environmental Ballot Measures in Florida, 1990-1998#

Variables	Netfish 1994 E	Paycost 1996 E	Sugar 1996 E	Everglades 1996 NE	Conserve 1998 NE
Population Density	0.002 (0.02)	0.007 (0.09)	0.002 (0.024)	0.0037 (0.054)	0.007 (0.103)
City w/ 50,000+	8.63 (0.19)	1.55 (0.05)	-0.44 (-0.015)	0.97 (0.035)	4.055 (0.149)
%Resource Employment	0.544** (0.224)	-0.253* (-0.16)	-0.13 (-0.085)	-0.115 (-0.078)	0.204* (0.141)
Income (in $1,000)	0.218** (0.51)	0.056 (0.205)	0.094** (0.348)	0.08** (0.308)	0.115** (0.452)
Education	0.136 (0.05)	0.944** (0.484)	0.949** (0.494)	0.942** (0.511)	0.35* (0.194)
%Republican	-0.387 (-0.148)	-0.122 (-0.07)	-0.436** (-0.265)	-0.346** (-0.219)	-0.417** (-0.269)
%Below 35 Years Old	-0.904** (-0.32)	-0.795** (-0.435)	-0.832** (-0.463)	-0.741** (-0.429)	-0.638** -0.377)
Adj.Rsquared	.586	.679	.806	.808	.753
N of Cases	67	67	67	67	67

The first number represents the unstandardized coefficient, the second number ( ) represents the standardized coefficient.
#Whether the measure was classified as economic or non-economic is designated "E" or "NE" under the year in which the election was held.
*p<0.05
**p<0.01

The direction of the correlations between age and support for each measure is, however, opposite of the one hypothesized. The literature states that younger people are more supportive of environmental protection, thus we predicted that counties with

relatively young populations would express greater support for environmental ballot measures. This was not the case, however, as the negative correlations found in Florida indicate that counties with relatively younger populations tended to be *less* supportive of those measures. This finding may be explained by the fact that Florida's coastal counties generally attract its older residents, whereas the counties in the interior tend to have younger populations. Thus, it is likely that the other characteristics exhibited by the counties in Florida's interior, such as greater resource dependence and lower median incomes, are prompting opposition to the environmental measures, regardless of the relatively young populations found there.

The remaining demographic variables indicate correlations in the hypothesized directions. The variable measuring education is significantly correlated with support for four of the five measures, and that correlation is positive. This indicates that counties with higher levels of education tended to be more supportive of those measures than counties whose residents had less education. Party affiliation was significantly correlated with support for three of the five measures. This correlation was negative, supporting the findings from other states that show counties which express more support for the Republican Party's presidential candidate tended to be less supportive of those measures.

The economic variables were also correlated with a number of the measures. Of these variables, income was the strongest predictor as it was correlated positively with support for four of the five measures. This positive correlation suggests that counties with relatively high levels of income tended to be more supportive of the measures examined.

The variable that measured the percentage of each county's residents employed in resource related industries was significantly correlated with support for three of the five measures. This variable was negatively correlated with support for the measure that sought to require those responsible for water pollution in the Everglades to pay the costs of cleaning up that pollution. The direction of this correlation indicates that counties with economies that are more dependent on resource related industries exhibited greater opposition than counties with more diverse economies. The resource dependence variable was, however, positively correlated with support for two other measures. Counties that were more dependent on resource related industries expressed higher levels of support for the measure that sought to impose stronger regulations on Florida's fishing industry. While this finding may seem counter intuitive, it can be explained by the fact that this variable does not include the fishing industry as one of the resource related industries.[21] The most important industry included in that variable, at least in Florida's case, is agriculture. Since most of Florida's agriculture takes place in the interior and not on the coast, counties that are dependent on agriculture would not be affected by more stringent regulations on the fishing industry and thus would have little reason to oppose that measure.

The resource employment variable was also positively correlated with support for the measure that sought to create a commission responsible for the management of Florida's fish and wildlife and related habitat. This measure also authorized the sale of

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[21]Recall that the percentage of each county's residents employed in the fishing industry was omitted from that variable because that information is not available at the county level.

government bonds to finance conservation efforts and pollution abatement. The counties that are more dependent on resource related industries likely supported this measure at higher rates due to that latter provision, as passage of this measure shifted some of the burden for pollution abatement away from the agricultural industry and onto the state government. Overall, then, the positive correlations found between resource dependence and these three measures suggests that economic variables are important determinants of support for environmental protection, regardless of the economic impacts associated with that protection. These findings also provide evidence that voters are able to determine which measures may be in their best interest and vote accordingly.

CAMPAIGN EXPENDITURES

Unlike the other states examined here, campaign expenditure data are not available for Florida in an accessible form. The Secretary of State's Office in Florida does collect campaign expenditure data, but the information is reported in relation to the political committees formed to spend the money, and is not available with regard to each ballot measure. As such, to find data on how much is spent for and against each measure, the names of the committees engaged in that spending must be available. The Secretary of State's Office does not collect this data, nor does any other organization in the state, to the best of the author's knowledge. Therefore, because campaign expenditure is not available, those hypotheses cannot be tested for Florida. This is not terribly problematic, however, as the primary goal of this study is to examine the voting determinants of urban and rural counties on environmental issues. Two remaining hypotheses, however, may be examined with the data available.

ECONOMIC VARIABLES MOST INFLUENTIAL ON ECONOMIC MEASURES

It was hypothesized that not all environmental ballot measures are alike. Instead, dependence on natural resource related industries would be more influential in determining county-wide support or opposition to measures that sought to adversely affect those industries. The findings from Florida regarding this hypothesis are, however, mixed. All three economic measures would have adversely affected resource related industries, yet the variable measuring each county's dependence on resource related industries is significantly related to only two of those measures. One of these relationships was positive, indicating that counties that were more dependent on those industries were actually more supportive of that measure. Recall, however, that measure was the one imposing more stringent regulations on Florida's fishing industry, but employment in that industry was not included in that variable. Thus, counties that were dependent on the industries measured by the variable would not have been adversely affected by that measure's passage.

For the two non-economic measures, the variable measuring dependence on resource related industries was significantly correlated with support for one of those measures. This relationship was positive. This variable was significantly correlated with the ballot measure that would have shifted some of the financial burden for pollution abatement in counties dependent on those industries to the state government, thereby

benefitting those counties' economies. It is likely that this provision prompted support for that measure among those counties.

The final hypothesis suggested that urban-rural differences over environmental protection were not unique to the west, but would exist in other regions of the United States. The data from Florida support this assumption, as votes in favor of each ballot measure were, on average, fourteen percent higher in urban counties. Further, those differences were statistically significant in bivariate analysis.

DISCUSSION

As with the other states, Florida provides considerable evidence in support of most of the hypotheses. Urban counties were more supportive of the ballot measures examined than rural counties. As stated above, this indicates that urban-rural differences regarding environmental protection are not unique to the western states. But, these differences were explained by the other variables in each model, as neither of the urban-rural variables were significantly correlated with support for any of the measures in multivariate analysis.

The influence of the remaining demographic and economic variables in Florida was similar to those variables' influence in the other states. The only findings that were unique to Florida were the variables measuring the percentage of residents employed in resource related industries and age, in that the direction of those correlations were opposite of the one hypothesized. The resource dependent variable was positively correlated with two of the five measures that sought greater environmental protection, suggesting that counties that were more dependent on resource related industries were actually more supportive of increased protection. Again, however, with the former measure there was little incentive

for resource dependent counties to oppose it, and with the latter measure there was considerable incentive for those counties to support it.

The other unique correlation was between the variable measuring age and support for each measure. The literature suggests that younger people will be more supportive of environmental protection for a number of reasons. Based on this, we predicted a positive correlation between these two variables. This correlation in Florida was negative, however, indicating that it was the counties with older residents that were more supportive of each measure.

This finding might be explained by the settlement patterns in Florida. Older residents, mostly northern retirees, tend to reside in coastal counties, while Florida's younger residents tend to live in the interior. It is these interior counties which exhibit the greatest opposition to each measure, but that opposition likely stems from other factors, primarily education, party affiliation, income, and resource dependence. Thus, the significance of the negative correlation between age and support for each measure may be spurious.

Chapter Nine: "CONCLUSION: WHAT HAVE WE LEARNED?"

Based on the findings from the thirty-five ballot measures examined, it seems clear that urban-rural differences do exist with regard to support for environmental protection. In all five states, urban counties were more supportive of environmental protection than rural counties, although these differences were larger in some states than others. It is also evident, however, that place of residence alone is not sufficient in explaining different preferences among counties. Instead, demographic and economic variables must also be used to more fully explain these distinctions. This concluding chapter will discuss these and the other findings.

URBAN-RURAL DIFFERENCES

A summary table (Table 9.1) is provided below, indicating the number of measures in each state that were significantly correlated with each variable in the regression models. The evidence presented in the preceding chapters supports the first three hypotheses discussed in chapter three. These hypotheses address urban-rural differences in each state. The first two predicted that urban counties would be more supportive of environmental protection than rural counties. The findings reported above generally support this claim for both urban-rural variables. When the average votes in favor of each measure were compared between urban and rural counties, urban counties were more supportive of environmental protection for all ballot measures except one. Average differences ranged

from fifteen percent higher for urban counties in Oregon, to seven percent higher in California. This indicates that urban counties did vote in favor of environmental protection at higher levels than rural counties in all five states examined.

The differences between votes in urban and rural counties were also statistically significant in bivariate correlations for all but two ballot measures. These bivariate correlations indicated that both urban-rural variables were significantly associated with support for each ballot measure. These correlations were positive, indicating that counties that were more densely populated or contained a city with more than 50,000 residents, tended to express higher levels of support for environmental protection. These urban-rural differences also existed in Michigan and Florida, the two non-western states, indicating that urban-rural differences are not unique to the west. This is something that has not yet been addressed in the literature.

It should be noted, however, that urban-rural differences were considerably smaller in California and Michigan than in the other three states examined. Average differences between urban and rural counties in both of these states tended to be around or below ten percent. This suggests that urban-rural conflict may be lower in those states than elsewhere. A possible explanation for the relatively small differences found in California could be the fact that that state has a more diverse economy relative to the other states in the study. As both urban and rural counties in California become more economically diverse and rural counties become less dependent on resource related industries, environmental preferences among urban and rural residents may move closer together, thereby lessening urban-rural conflict. Similarly, Michigan's economy has traditionally

centered around manufacturing and has been less dependent on resource related industries. This, combined with a relatively homogenous population, may explain the small differences between urban and rural residents in that state.

The third hypothesis predicted that place of residence alone would not be the sole determinant of support for environmental protection within each county. Rather, demographic and economic variables would be more influential. The multivariate analysis that was conducted strongly supports this hypothesis. With most ballot measures, the significance of both urban-rural variables disappeared when the economic and demographic variables were entered into the regression model. This suggests that, while urban and rural counties do express different levels of support for environmental protection, those differences may be attributed to other factors found in those distinct areas. As such, it seems clear that deeper explanations must be provided for these differences, beyond simple place of residence.

Place of residence, or the urban-rural variables, is not unimportant, however. One or the other urban-rural variables were statistically significant for six of the thirty-five ballot measures. Here the variable measuring population density was a more powerful predictor of support, relative to the dummy variable measuring the presence of a city of substantial size. The density variable was statistically significant for five of the six ballot measures, while the city variable was only significantly correlated with support for one ballot measure. Overall, these findings suggest that place of residence is independently important in explaining different preferences between counties in some cases. Thus it is

clear that all three types of variables must be included to have a fully specified regression model.

Along these lines, it is interesting to note that five of the six measures for which one or the other urban-rural variables were significantly associated with support for environmental protection in the multivariate analysis were in California and Michigan. The significant variable for all five measures was the one measuring population density. This indicates that for three measures in California and two in Michigan, population density was statistically significant, independent of the demographic and economic variables. As discussed above, however, these two states had the lowest levels of urban-rural conflict overall. This suggests that differences in support for environmental protection between urban and rural counties may be statistically significant even when voting differences are relatively small.

TYRANNY OF URBAN MAJORITIES?

Overall, however, differences between urban and rural counties are not as glaring as we may be led to believe. Underlying much urban-rural conflict, particularly in the west, has been the notion that residents of urban areas within each state continuously attempt to impose their environmental preferences on rural residents. The specific argument here is that urban residents, with their numerical majorities within each state, are using their sheer numbers to impose their environmental views on rural minorities. As such, there is a perception that "urban environmentalists" are attempting to lock away resources in their state so that those resources may be enjoyed by urbanites seeking recreational opportunities and a higher quality environment. The argument is that urban

residents are not concerned with rural economies and simply want to preserve those areas for recreational or aesthetic purposes. Further, there is a perception that without the large number of urban voters, environmental ballot measures that hurt rural economies would not pass. This perception has led to considerable tension and likely contributes to the notion that urban voters are tyrannizing rural residents when it comes to environmental policy.

The evidence presented above, however, does not support this notion. While urban counties did express higher levels of support for all but one of the environmental ballot measures examined, differences between urban and rural counties were typically small. These urban-rural differences were largest in Oregon, but those differences averaged only fifteen percent. As such, none of the measures saw dynamic urban-rural distinctions, and in no case did urban voters overwhelmingly support a measure that was adamantly opposed by rural voters. Instead, support and opposition tended to be fairly balanced in all counties. Further, measures that passed did so with considerable support from rural voters as well as urban voters. This suggests that there is considerable support for environmental protection in rural counties and urban counties did not single-handedly dictate environmental policy, despite perceptions to the contrary.

DEMOGRAPHIC CHARACTERISTICS

Of the other variables that may explain differing levels of support for environmental protection, it is clear that a county's demographic characteristics are extremely important. The fourth hypothesis predicted an inverse relationship between support for the Republican Party and support for environmental protection. Overall, this

variable was significantly correlated with more ballot measures than any other. Party support was significantly correlated with twenty-nine of the thirty-five measures. Those

Table 9.1: Summary of Regression Results: Cumulative Significance Counts in Previous Regression Models

Variable	Oregon	California Noneconomic	California Economic	Colorado	Michigan	Florida	Totals
Population Density	0/7	0/3	3/9	0/7	2/4	0/5	5
City w/ 50,000	1/7	0/3	0/9	0/7	0/4	0/5	1
Median Income	2/7	*	*	5/7	3/4	3/5	13
%Resource Employment	7/7	3/3	4/9	2/7	0/4	4/5	20
% Republican	7/7	3/3	8/9	6/7	2/4	4/5	30
% College Education	5/7	*	*	5/7	3/4	3/5	16
% Below 35 Years Old	0/7	3/3	4/9	0/7	0/4	5/5	12
Totals	22	9	19	18	10	19	

The first number represents the number of measures for which that variable was significant. The second number represents the number of measures in that state.
*Because the Income and Education variables were combined in California, it cannot be known which of those two variables were significant in each regression model.

correlations were negative, suggesting that counties expressing higher levels of support for the Republican Party's presidential candidate in 1996 tended to exhibit lower levels of support for the environmental ballot measures. This finding was consistent with the hypothesis.[22]

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[22]Note that for several ballot measures, a "yes" vote represented the anti-environmental position. For these measures, the direction of the correlation would be the opposite of the one predicted. For the sake of simplicity, however, this analysis will treat

The fifth hypothesis predicted that counties whose residents were more educated would be more supportive of environmental protection. Recall, however, that the education and income variables were combined in California due to singularity between the two. The income-education variable in California was significantly correlated with eleven of the twelve measures. These correlations were positive, indicating that as education and income increased, so did support for each ballot measure. For the remaining states in which education was measured independent of income, the variable was significantly correlated with seventeen of the twenty-two ballot measures. In all cases, the direction of these correlations was positive, indicating that counties with residents possessing higher levels of education tended to be more supportive of environmental ballot measures.

The sixth hypothesis dealt with the final demographic variable. It suggested that the average age of residents in each county would be influential in determining levels of support for environmental protection. Specifically, counties with younger populations were expected to be more supportive of that protection. This variable was significantly correlated with fewer ballot measures than any other examined. Recall, however, that the average age of residents in each county was not available. Instead, the percentage of residents below the age of thirty-five was used to indicate counties with relatively young populations. Due to the fairly homogenous ages of residents across Oregon, Colorado, and Michigan, this variable, as measured, did not exhibit much variation. This limited

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all ballot measures as if the "yes" vote were the pro-environment position. The reader should, however, keep in mind that this is not true in all cases.

variance may explain the lack of significant correlations between age and support for environmental ballot measures in those three states. The variable was, however, significantly correlated with seven of the twelve California measures, and all five measures in Florida. Residents in these states had considerably more diverse ages. In California, the correlations indicated that counties with relatively young populations tended to be more supportive of environmental protection, a finding that is consistent with the hypothesis.

The correlations in Florida, on the other hand, were the opposite of what was hypothesized. The direction of those correlations suggest that counties with relatively older populations tended to be more supportive of environmental protection. It was suggested, however, that this correlation may be spurious due to Florida's settlement patterns. Florida's older residents tend to live in retirement communities in coastal counties, while younger residents tend to live in the interior of the state. The interior counties are the centers for Florida's agricultural industry and tend to be more supportive of the Republican Party. Thus, it is possible that the influence of these economic and demographic characteristics may have been strong enough in the interior counties to overcome the influence of age.

ECONOMIC CONDITIONS

The two final statistical hypotheses dealt with the economic conditions found in each county. The seventh hypothesis predicted that counties with higher median incomes would be more supportive of environmental protection. As noted, the income variable was combined with the education variable in California. That newly created variable was then significantly correlated with eleven of the twelve ballot measures examined in that

state. Again, this correlation was positive. For the other four states in which income was measured independent of education, the income variable was significantly correlated with fourteen of the twenty-two ballot measures. These correlations were also positive, indicating that counties with higher median incomes tended to be more supportive of the environmental ballot measures.

The final statistical hypothesis dealt with the variable that was the strongest predictor of support for environmental protection of the two economic variables. This hypothesis suggested that a county's dependence on industries that would be negatively impacted by environmental protection would be less supportive of that protection. As such, counties in which relatively high percentages of residents were employed in resource related industries were expected to exhibit less support for environmental ballot measures. This variable was significantly correlated with twenty-three of the thirty-five measures examined. These correlations were negative, indicating that counties that were more dependent on those industries tended to be less supportive of environmental protection.

Measuring resource dependence in the manner done in this study was, however, problematic in some cases. Recall that this variable included the percent of residents employed in the agriculture, livestock, mining, and timber industries. While these four industries were the most prominent resource related industries in the five states examined, that list is not exhaustive. The percentage of residents employed in some resource related industries, particularly the fishing industry, was not included in this variable. This is particularly a problem for the analysis of California and Florida as residents of both states voted on measures that had significant impacts on the fishing industries in those states.

Had that industry been included in the resource dependence variable, it is likely that some of the results from the multivariate analysis would have been different.

Another shortcoming of the resource dependence variable is the fact that it does not include a measure of residents employed in industries that serve tourists. All states included in this study are economically dependent on tourism to varying degrees. Much of this tourism, particularly in the three western states, centers around outdoor recreation. As greater restrictions have been placed on resource extraction, many counties have shifted their economies toward providing such recreational opportunities, thus shifting from commodity production to the provision of services for those seeking to enjoy the outdoors. These service industries rely on the natural resources found in those counties to draw tourists, which clearly makes those industries resource dependent. In some cases, a county's economy may even be more dependent on resource preservation to promote recreational opportunities, than on resource extraction. Such cases would clearly influence the preferences of residents. Thus, this omission of a measure of the importance of these industries to each county means that a voting determinant that is likely very important has been left out of the analysis. With both of these problems, however, there is simply no data available at the county level measuring alternative resource related industries, be they the fishing industry or tourism. Thus, while the measure of resource dependence employed here is imperfect, it is the best possible given the data available.

Another finding of note is that the resource dependence variable was significantly associated with some ballot measures that would have had little or no impact on the industries included in the variable. This suggests that resource dependent counties may be

less supportive of environmental protection in general, regardless of the environmental issue involved. This issue is addressed in greater detail below.

ADDITIONAL FINDINGS

While the primary objective of this study was to examine the various factors that influenced support for environmental protection across counties, the data also allowed investigation into other areas. Recall that a distinction was made between economic and non-economic ballot measures. Economic ballot measures were those that entailed substantial economic impacts, while non-economic measures would impose little or no economic costs or benefits. A number of differences between these two types of measures were examined.

ECONOMIC MEASURES ATTRACT MORE MONEY

The ninth hypothesis predicted that economic ballot measures would attract higher levels of campaign spending than non-economic measures. Recall that campaign spending data were not available from Florida, so the following discussion excludes that state. The data that were available, however, clearly supported this hypothesis. On average, across all four states that provide campaign expenditure data, non-economic measures attracted about $950,000 per campaign.[23] Each campaign surrounding economic measures, on the other hand, attracted about $4.2 million. These figures indicate that the campaigns surrounding economic ballot measures attract substantially higher amounts of spending, on average, than do non-economic measures. This figure, however, is clearly inflated by spending in California. In that state, there were more measures voted on overall, and each

[23]This figure combines spending both for and against each measure.

measure attracted more money than those in other states. However, across all four states, economic measures generally attracted higher levels of campaign spending than did non-economic measures in the same state.

It should be noted that campaign spending varied across the states. As discussed, spending was highest in California. There, an average of about $4.5 million was spent on each ballot measure, regardless of whether it was economic or non-economic. The highest amount spent in California was about $19 million, spent for and against the measure that sought to ban certain pesticides. Spending was lowest in Colorado, with about $600,000 being spent on average in each campaign.

ECONOMIC INTERESTS OUTSPEND OPPONENTS

The tenth hypothesis predicted that economic interests, given their incentive and ability to mobilize resources, would outspend their opponents in ballot measure campaigns. Again, data to test this hypothesis were not available from Florida so the following analysis applies only to the other four states. The evidence from those states, however, clearly supports this hypothesis. To illustrate this, the spending on all economic ballot measures was examined. With each measure, spending by the side that was supported by economic interests was averaged for each measure, as was spending by those interests' opponents in the campaign. Across the measures that fit this description, spending on the side of increased environmental protection averaged about $1.4 million per campaign. Spending on the side of economic interests, on the other hand, averaged over double that amount, around $3.3 million per campaign. This indicates that economic

groups were clearly willing and able to mobilize considerably more resources to promote their interests, than were their more public oriented counterparts.

ECONOMIC INTERESTS ARE MOST EFFECTIVE DEFEATING MEASURES

The eleventh hypothesis suggested that economic interests would be effective in defeating environmental ballot measures they opposed, but would have less success passing measures they supported. The data from all five states supports this hypothesis. Table 9.2 indicates the success and failure rates for all economic measures and also indicates the number of measures that were supported or opposed by economic groups. Overall, economic interests initiated or supported eight ballot measures that would have benefitted them. This included measures that were classified as economic that would have either provided benefits to economic groups, such as public funding to clean up water pollution, or would have reduced environmental regulations. Of those eight measures, only two passed. With six of the ballot measures, economic interests were unable to mobilize the support of a majority of voters, regardless of the amount of money that was spent.

Among the remaining ballot measures that were classified as economic, fourteen clearly sought increased environmental protection and were thus opposed by economic interests. Of those fourteen, only five passed while nine were defeated. These figures clearly support the hypothesis, in that economic interests were much more effective defeating measures they opposed than passing the measures that would have benefitted them. A Chi-Square Test, however, indicated that this finding was not statistically

Table 9.2: Passage and Failure Rates for Economic Measures Supported or Opposed by Economic Interests*

	Pass	Fail
Measures Supported by Economic Interests	3	4
Measures Opposed by Economic Interests	4	11

*These relationships were not statistically significant in a Chi-Square Test.

significant. Overall, across all measures examined, seventeen passed and eighteen failed. Thus the odds of an environmental ballot measure passing were about even. The key differences seem to be whether the ballot measure was supported or opposed by economic interests, and whether the measure dealt with economic or non-economic issues (discussed below).

RESOURCE DEPENDENCE IS MOST INFLUENTIAL ON ECONOMIC MEASURES

The final hypothesis predicted that counties would protect their economic interests when threatened. Thus, the variable measuring resource dependence was expected to be more influential in determining votes on economic ballot measures than non-economic measures. Evidence based on the data from the ballot measures examined here, however, is mixed. Of the twenty-two economic measures examined, the resource dependent variable was significantly correlated with thirteen. Those thirteen ballot measures for which the correlation was significant, tended to deal with natural resource issues and thus would have impacted the industries measured by the variable. Conversely, with the cases where no significant correlation existed between resource dependence and support for a measure, the issue being addressed tended to be one that would have no impact on those

industries. These findings lend support to the hypothesis and suggest that some voters are willing to place their economic priorities above environmental concerns when their economic well being was threatened by a ballot measure.

Evidence that counters this hypothesis arises, however, when the correlations between the resource dependence variable and support for the non-economic measures are examined. The non-economic measures would have had little or no impact on the resource related industries included in the variable, thus that variable should not have been significantly correlated with support for any of those measures. There was, however, a significant relationship between resource dependence and support for six of the thirteen non-economic measures.

This finding suggests that resource dependent counties may be less supportive of environmental protection in some instances, even when that protection would not produce negative economic impacts. This may be explained in a couple of ways. One explanation is that residents of resource dependent counties simply tend to oppose environmental protection, regardless of the issue at hand. Perhaps a better explanation is that residents of resource dependent counties are more accustomed to exploitation of the environment and simply perceive less of a need for environmental protection. This explanation is based on the assumption that individuals who perceive the environment to be an economic commodity may be less likely to recognize a need for environmental protection in general. Thus, whether the environmental issue deals with imposing restrictions on a particular industry or prohibiting certain hunting practices, individuals who perceive of the environment as a commodity may simply feel that environmental protection of any sort is

unnecessary. Conversely, residents of counties that have more diverse economies or are not dependent on resource related industries may possess a different conceptualization of the environment. They may focus less on the economic potential found in natural resources and the environment, looking instead at aesthetic and/or recreational potentials. These residents may then be predisposed to support increased environmental protection regardless of the specific issue involved.

ECONOMIC VERSUS NON-ECONOMIC MEASURES

By examining the passage and failure rates of all thirty-five measures across the five states, a number of interesting findings become apparent. Information regarding the success rates for all measures is presented in Table 9.3. The first finding of note is that the majority of environmental ballot measures examined (63%) were classified as economic measures. This indicates that in the five states, most of the measures decided by the voters would have entailed substantial economic impacts. These measures dealt with a wide array of environmental issues and economic sectors, ranging from the regulation of nuclear plants to imposing fees for water usage. If environmental conflict stems in part from economic concerns, as some of the above findings indicate, then this finding is important. The economic nature of many of these measures may explain some of the controversy surrounding the ballot measure process in general, and opposition to environmental protection in particular.

While more economic measures were placed on the ballot, those measures had a lower chance of passing than the non-economic measures. Overall, only thirty-two percent of all economic measures passed. This approval rate is considerably lower than

the approval rate for non-economic measures, which was seventy-seven percent. This indicates that non-economic measures attracted less controversy, something already demonstrated with the above examination of campaign spending data. It is unclear from this data, however, whether higher levels of conflict surrounding economic measures was created by the high levels of spending surrounding each campaign, or whether high spending simply mirrored high levels of conflict that were already present in society. What is clear, however, is that groups seeking to successfully use the ballot measure process to advance their own interests will have a better chance of success if their proposal does not entail substantial economic impacts.

Table 9.3: Passage and Failure Rates For All Economic and Non-Economic Measures*

	Economic Measures	Non-Economic Measures	Total
Passed: #	7	10	17
Percentage	32%	77%	49%
Failed: #	15	3	18
Percentage	68%	23%	51%
Total: #	22	13	35
Percentage	63%	37%	100%

*Results of a Chi-Square Test indicated that these findings were statistically significant.

A UNIQUE WESTERN ETHIC?

Recall the literature discussed in earlier chapters that suggested there is a unique culture in the western states that is less tolerant of resource preservation, supporting instead greater resource use. This unique western environmental ethic is thought to foster policies that favor environmental exploitation over protection. While the data presented here cannot provide conclusive evidence for or against this hypothesis, it may be used to

foster some speculative claims. To explore this topic, examination was done with regard to the types of ballot measures voted on and their success rates in western and non-western states. Colorado, California, and Oregon were classified as western while Michigan and Florida were non-western.

When one examines the types of ballot measures offered and their success rates by region, a number of similarities and differences become apparent. The largest differences between western and non-western states in this study was the number of ballot measures proposed. Here, the three western states used the ballot measure process more frequently to decide questions of environmental policy than did Michigan and Florida. California voters faced the largest number of environmental measures with twelve. Oregon and Colorado came next with seven each. Outside of the west, Michigan voters faced four environmental measures and Floridians faced five.

In terms of substantive policy areas, within the western states examined, hunters and trappers did not fare well. Within all three states, efforts to restrict hunting or trapping practices succeeded, and efforts to repeal earlier restrictions failed. This indicates that voters in the three western states were willing to provide greater protection to wildlife, perhaps indicating declining support for hunting in those states. Michigan voters, on the other hand, went in the opposite direction. In that state, voters rejected a measure that would have placed restrictions on bear hunting and went a step further by prohibiting future ballot measures regarding wildlife management issues, voting instead to leave future decisions in this area solely with the state Natural Resources Commission. Thus, a substantial majority of Michigan voters were unwilling to relinquish some of their hunting

rights and sought instead to ensure that the ballot measure process was not used in the future to restrict those rights. These findings suggest that Michigan voters were less environmentally minded than voters in the western states, at least regarding the issue of hunting.

When it comes to other non-economic ballot measures, however, the results from the states are fairly similar. All other non-economic measures examined dealt in some way with the preservation of open spaces and wildlife habitat. Whether it be the devotion of lottery proceeds to protect open spaces in Colorado or the creation of a trust fund to preserve the Florida Everglades, voters seemed to support these efforts regardless of the region they were in. In fact, five of the six measures that dealt with this issue passed. The one unsuccessful attempt was a California initiative that sought to authorize $2 billion in bonds for these purposes, and may well have failed due to the fiscal implications of the measure. Overall, this suggests that support for the protection of open spaces is fairly universal across the states examined.

An examination of the types and success rates of the economic measures also provides some interesting results. Within the west, we would expect that more voters in Oregon and California would prefer environmental protection than in Colorado. This is due to the fact that Oregon and California are Pacific Coast states, which according to the literature, are thought to be more environmentally friendly than states in the Rocky Mountain west (Bartlett 1993, Dunlap 1993). This, however, is not the case given the data presented here. Overall, it seems that the voting behavior of Colorado majorities was *more* supportive of environmental protection than their Pacific Coast counterparts. In

Oregon and California, any ballot measure that would have imposed restrictions on a resource dependent industry failed.[24] This suggests that majorities in those states were unwilling to accept increased environmental protection if that protection came with negative economic consequences. In Colorado, on the other hand, voters approved two economic measures that imposed greater restrictions on resource related industries, rejected another that would have provided benefits to one industry, and rejected only one measure that would have imposed economic costs on an industry. Given the fact that voters in each state faced very different ballot measures, the reader is cautioned against making too much of these results. However, this does provide at least initial evidence suggesting that Colorado voters may be more environmentally minded than some of their Pacific Coast counterparts. At the very least, the data does not support Dunlap (1993) and Bartlett's (1993) argument that the Pacific Coast states tend to be more supportive of environmental protection.

The two non-western states also provide some interesting findings in this regard. In Michigan, no measures qualified for the ballot that sought to regulate resource dependent industries. The closest was a measure that provided public money to clean up water pollution. In fact, Michigan is unique in that it is the only state in the study that voted on more non-economic than economic measures, with a three to one ratio. While it is not clear why this occurred, one possible explanation could be that Michigan's economy

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[24]The one exception was a California measure that imposed restrictions on the fishing industry. One note of interest is that ballot measures aimed at regulating the fishing industry, one in California and the other in Florida, both passed easily, whereas most efforts to regulate other resource dependent industries failed.

has traditionally been far less dependent on resource related industries than the other four states. This lack of dependence may mean fewer environmental problems associated with resource exploitation, and thus less need for regulation of those industries. Florida, on the other hand, more closely reflected the voting behavior of the Pacific Coast states when voters rejected a measure that would have forced sugar producers in the Everglades to pay for the cost of water pollution abatement, preferring instead to shift the burden of those costs to all residents in and around that area.

Based on these "musings," then, there does not appear to be a clearly unique western environmental ethic. Voters in all states supported the preservation of open spaces and no glaring differences arise from the data presented. If anything, the findings run counter to some hypotheses drawn from the literature. Western voters seem to be more supportive of wildlife protection, while Michigan voters supported hunters' rights. Further, voters in the Pacific Coast states and Florida tended to favor protecting their resource related industries over protection of the environment, to a greater degree than Colorado voters. Yet, hypotheses drawn from the literature would have led us to predict that Colorado, located in the heart of the Rocky Mountain west, would be the least environmentally friendly of all the states examined. This hypothesis was clearly not supported by the findings of this study.

While the data do not provide conclusive evidence of a unique western ethic, there is also little evidence to suggest that voters across all regions are concerned about the same environmental issues. Other scholars (Dunlap 1993, Dunlap 1991, Morrison 1986) have used national survey data to suggest that Americans are becoming more homogenous

in their environmental views and concerns. The argument here is that most Americans are concerned with the same environmental issues and are generally supportive of more environmental protection. This state-level study, however, casts doubt on that argument. While voters in the five states examined may not have differed drastically in their levels of support for environmental protection, the issues that arose were in many cases unique to each state. While some of the same issues were dealt with by ballot measures in all or several states, such as hunting regulations and the preservation of open spaces, a number of issues were unique to one state. For example, California ran an initiative dealing with pollution in a number of its air sheds, while Floridians voted on a measure to clean up water pollution in the Everglades. Oregonians faced efforts to regulate the timber industry and close a nuclear plant, Coloradans dealt with efforts to limit water use, and Michigan voters approved a measure that would provide greater abatement of water pollution caused by years of industrial processes. Thus, as we would expect, environmental ballot measures proposed in each state often dealt with environmental issues that are relevant to residents there. This means that residents across the country are grappling with very diverse environmental problems. Information about those problems, however, cannot be gained by using national surveys. While nation-wide data may be easier to obtain and work with, it does not provide the type of detail necessary to fully understand environmental issues and preferences in each particular region of the country.

IMPLICATIONS

At the present time, there exists considerable disagreement in the literature over explanations for differences in levels of support for environmental protection between

urban and rural counties. In fact, there is dispute over whether such a split even exists. The results presented here indicate that those differences do exist, at least for the ballot measures voted on in 1990s in the five states examined, with urban counties exhibiting higher levels of support for a number of environmental issues. Further, urban-rural differences are clearly not unique to the western United States, as those differences are also found in Michigan and Florida. This is a topic that has not yet been explored in the literature.

These findings are not unimportant. As mentioned, there is widespread belief that environmental conflict in the United States stems from conflict between urban residents who seek cleaner environments and a higher quality of life, and rural residents who continue to view the environment as a material resource that must be exploited for economic security. While this study lends support to this belief, the findings presented offer a deeper understanding of that conflict. While environmental conflict is likely to persist well into the future, knowledge of the sources of that conflict may provide the basis for dialogue regarding possible remedies. While demographic characteristics change only very slowly and incrementally, economic growth and diversification can be facilitated through government policies. Efforts to diversify and strengthen both urban and rural economies may provide greater economic security and reduce the overall level of conflict surrounding environmental protection in the states.

FUTURE RESEARCH

Now that some of the determinants of support for environmental protection at the county level have been identified, future research should proceed in at least three

additional directions. First, exploration should move into additional policy areas. The analysis discussed here was limited solely to environmental protection, but ballot measures are proposed frequently and cover virtually every political issue in existence. Political issues such as taxation, economic regulation, and social issues like homosexual rights are being decided more and more through the ballot measure process. While there have been a few studies examining the determinants of votes on some of these issues (discussed in Chapter Two), most of these works have focused on the municipal level and have been fairly limited in scope. Little work has been done examining the determinants of state-wide votes on measures addressing these issue areas. Future research should examine the determinants of these votes, aggregated at the county level, in an effort to discover if the factors influencing votes on other issues are similar to those for environmental protection. Such analysis would provide important information about the political behavior of voters and the influence of demographic and economic conditions on their decisions.

The second direction for future research is an examination into why economic interests are more willing to use the ballot measure process to their own advantage in some states but not in others. In this study, economic interests initiated and supported measures that would have provided benefits to themselves in California, Colorado, and Florida, but not in Oregon or Michigan. Future studies should examine what it is about the political environment in some states that either helps or hinders the use of the ballot measure process by economic groups.

The final direction for future work entails examining the influence of campaign expenditures. The above analysis has demonstrated that environmental ballot measure

campaigns, particularly economic measures, attract substantial amounts of money. These expenditures no doubt have significant influence on the decisions of many voters. The effects of these expenditures may be viewed as either positive or negative. Substantial campaign expenditures both for and against a measure may be viewed as positive if those expenditures are being used to inform the voters about both sides of the issue so they may make better decisions. It is possible, as Cronin (1989) suggests, that campaign expenditures provide voters with useful information, leading them to make more rational choices. Thus, higher campaign expenditures may provide more information to voters, helping them make more informed decisions.

High levels of campaign expenditures may be viewed negatively, however, if that spending is used to confuse or mislead voters. If campaign money is being used to buy media advertising in the traditional manner of very brief commercials, then it is likely that voters are not being provided enough information on which to base their votes. It is also possible that this type of advertising may oversimplify an issue, perhaps misleading voters. If this is the case, then it may be that voters are being manipulated into voting against their own interests, and instead vote in favor of the interest group that proposed and supported the measure. If this is occurring, then it is clear that the ballot measure process is being misused. Direct democracy was originally intended to reduce the political power of special interests and place that power in the hands of the people. If special interests are now manipulating this process for their own advantage, the original intention of direct democracy has clearly been reversed.

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