A Comparative Analysis: Implications of the Coastal Zone Management Act of 1972

A Senior Honors Thesis

Presented in Partial Fulfillment of the Requirements for graduation
with research distinction in Political Science in the undergraduate colleges
of The Ohio State University

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The Ohio State University
January 2010

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I. Introduction

With over seventy-five percent of the population of the United States now residing in a coastal state, it is becoming increasingly important to ensure the proper implementation of legislation such as the Coastal Zone Management Act (CZMA) of 1972. This particular law has widespread implications for the United States and its surrounding territories, including the proper conservation of coastal resources, the accessibility of coastal zone areas to the general public, and the management of both present and future development of these zones. This thesis attempts to identify the determinants of progress in implementing the CZMA; and more specifically, whether progress is related to two independent variables: governmental structures and funding levels. "Progress" is defined as positive gains made in any of ten categories by a given state or region within the past ten years. These ten categories comprise a series of contextual indicators used by the National Oceanic and Atmospheric Administration (NOAA) in this organization's periodic evaluation of the CZMA. Determining whether or not progress is related to these indicators will yield additional insight with regards to effectively managing coastal programs in the twenty-first century.

This thesis focuses on two goals. First, we seek to identify which regions of the United States have consistently experienced the greatest amount of progress in the twenty-first century in response to the CZMA. We compare progress made at the regional level in order to gain a large-scale understanding of recent activity. Each of the thirty states—except for Alaska and Hawaii—that are involved in the program are sorted into one of six different regions in order to facilitate these comparisons. Alaska and Hawaii are analyzed as their own separate entities. To measure progress achieved, we review a variety of contextual indicators as set forth by the OCRM (Office of Ocean and Coastal Resource Management), an office of the NOAA that

collects this information as part of the annual review of the legislation. Secondly, we identify how the presence of the two aforementioned variables influences this progress. These variables include governmental structures and the amount of funding that a state or region has received in response to the CZMA. While many other variables have also influenced progress related to coastal management, the overall goal of this research is not to identify the impact of every variable, but rather to focus on the role of particular economic and political influences in contributing to progress in the twenty-first century.

The CZMA is primarily overseen by the NOAA as well as the OCRM. Two major programs were formed upon enactment of the legislation in 1972, the Coastal Zone Management Program and the National Estuarine Research Reserve Program. As mentioned above, this legislation emphasizes the development and implementation of coastal zone management plans at the state level. The NOAA is responsible for the distribution of grants that are awarded to coastal states, which assist in off-setting the costs of managing their programs. These awards can be granted only in compliance with the standards set forth by the CZMA. Once the federal government approves a state's coastal zone plan, Congress appropriates a base sum of money to be given to the state through the NOAA. Additional funds are also provided on the basis of the length and population of a coastal state's shoreline. There are three grant categories: Coastal Zone Management grant awards, Coastal Zone Enhancement grant awards, and Coastal Nonpoint Pollution Control grant awards.[1] In addition, monetary rewards are given annually to the five local governments that exhibit the greatest amount of response to the CZMA throughout a given year.[2] With the added incentive of the federal consistency standard—which requires any federal activities that occur in a coastal zone to be consistent with the coastal program standards

of that state—the federal government continues to encourage coastal states to participate in this nationwide effort to develop and enhance its shorelines.

Since 1976, thirty states as well as five territories and commonwealths have submitted and gained approval for their respective coastal zone management plans, and the legislation has undergone several amendments to adjust to the needs of changing times. In 1990 and 1996, the Act was amended to provide for the development of the Coastal Zone Enhancement Grants program, which encourages states (where applicable) to focus on the restoration of coastal zones in each of nine different areas, including public access, marine debris, and aquaculture. The 1990 Amendment also resulted in the creation of the Coastal Nonpoint Pollution Control program, which seeks to prevent pollution from agricultural sources, forestry sources, dams, urban development, and marinas.[3] All thirty states have responded to these various amendments and currently remain active in the implementation of their respective programs.

The CZMA also contains a clause concerning the evaluation of the programs that have resulted from the legislation. In order to stay consistent in these evaluations, the OCRM is commissioned to perform annual reviews of the effectiveness of the program through the use of various performance measures and contextual indicators. Performance measures include the reporting of benchmarks such as public access and coastal water quality. Contextual indicators involve the collection of data concerning areas of interest to the program such as changes in coastal population.[4] Public opinion, though rarely offered or collected, is also considered by the OCRM in the evaluation process.

II. History and Process

In order to evaluate the progress of coastal zone management that has occurred in response to the enactment of the CZMA, it is first necessary to gain a historical perspective of the legislation. This legislation resulted from congressional concern in the 1960s regarding the development of coastal zone areas of the United States. Congress recognized the need for coastal zone expansion, yet lacked the means to provide for this growth. The coastal zones were defined to be inclusive of the oceanic shorelines as well as those along the Great Lakes. In 1966, the enactment of the Marine Resources and Engineering Development Act resulted in domestic policy reforms that included the development and maintenance of a long-term national program benefitting marine science. The implementation of this Act prompted the formation of the Commission on Marine Sciences, Engineering, and Resources, as well as President Johnson's appointment of fifteen members to the Stratton Commission (named after its chair, Julius A. Stratton), including Senator Warren Magnuson of Washington as a Congressional advisor. After two years of deliberations, the Commission submitted *Our Nation and the Sea: A Plan for National Action* in 1969, which greatly influenced the passage of the CZMA on October 27, 1972.[5]

When the Coastal Zone Management Act was enacted in 1972, it was one of many laws related to environmental management and protection that arose out of the "environmental decade," that spanned the late 1960s to the mid 1970s.[6] The CZMA was inherently unique for its time, however, in that it established a program in which coastal states participate on a strictly voluntary basis. While the program was established without required compliance standards, the federal government chose to offer incentives such as grants, which were available to the states upon the submission and implementation of their coastal management plans. A federal

consistency standard was also implemented at the time, which ensured the states that any actions taken by the federal government in the context of their respective coastal zones would be consistent with the standards set forth by each state. The National Oceanic and Atmospheric Administration (NOAA) gained the responsibility of overseeing this legislation at the federal level. In 1977, the NOAA underwent a reorganization that resulted in the formation of five offices that reflected the increased need for coastal zone management, including the Office of Ocean and Coastal Resource Management (OCRM), which currently oversees programs formed in response to the CZMA.

Since its enactment in 1972, the CZMA has been amended several times in order to reflect the changing needs of coastal management. In the 1970s, amendments facilitated the development of the nation's coast in such a manner that would allow for the acquisition of offshore energy resources.[7] For the states that exceeded the minimum standards of coastal zone management with the implementation of their respective plans, amendments passed in the 1980s provided for the appropriation of additional grant funding. Programs resulting from the CZMA that pertained to the construction and maintenance of estuarine sanctuaries also benefitted from the 1980s amendments. Congress further amended the CZMA in 1990 to establish the Coastal Nonpoint Pollution Control Program. In order to effectively reduce nonpoint pollution, the co-administrators of the program, the NOAA and EPA, advised an improvement in communication between coastal management officials and experts in the field of water quality. The NOAA refers to nonpoint pollution, also known as polluted runoff which is prominent in and around coastal areas, as "the greatest threat to coastal waters."[8]

As part of the NOAA, the OCRM provides federal funding to the states in collaboration with other agencies to ensure the maintenance of coastal programs. The distribution of

approximately $68 million occurred during the fiscal year ending in 2008. Critics of the annual appropriations process that the NOAA uses to award coastal grants to states have historically viewed the process as inherently flawed. One such critic is the Government Accountability Office (GAO), which focuses on an annual limit of $2 million in grant awards per state that has been mandated by Congress as the fundamental issue in the process. Ideally, the CZMA requires the NOAA to distribute an annual base sum of funds to each state strictly on the basis of the coastal population and amount of shoreline miles in the state. For the past 20 years, however, the congressionally-imposed funding limit has forced the NOAA to distribute funding in such a way that states with smaller coastal populations and shorelines are receiving additional grants solely because the larger states reach the limit based on size alone. Therefore, the appropriations process is no longer as competitive as it was once intended.[9]

In recent history, the NOAA has implemented a system for measuring the success of the programs that states have created in response to the CZMA. As previously mentioned, this system utilizes a series of performance measures and contextual indicators in order to determine the amount of success a given coastal management program has experienced relative to others. Prior to the installation of this system, accountability for the success of these programs was largely absent. In fact, the OCRM only began efforts to collect, measure, and analyze the data related to progress in 2007. Despite the overall lack of measurement prior to the start of the twenty-first century, the disparities that exist among the success rates of coastal management programs across the United States are salient. This thesis seeks to account for and explain these disparities.

III. Literature Review

This study seeks to determine which regions have experienced the most consistent progress in their response to the Coastal Zone Management Act (CZMA) throughout the twenty-first century, and how governmental structures and funding influence progress in coastal management. While minimal existing research speaks directly to this topic, some scholarship has addressed the relevance and effectiveness of the Act. Given that the CZMA is a federal law, significant federal entities such as the National Oceanic and Atmospheric Administration (NOAA) and the Government Accountability Office (GAO) have contributed to published studies of the Act's progress. In addition, several scholars have offered opinions regarding this legislation in various law journals. The overall consensus regarding the effectiveness of the CZMA since its enactment reveals that the legislation is largely viewed as necessary, yet somewhat flawed.

Kuhse (2001), for example, refers to the CZMA as "fundamentally flawed legislation" that must be repealed, and he argues that the federal consistency doctrine that is included in the legislation, which enables states to review any federal action that could affect a coastal zone, undermines and burdens federal authority.[10] Mandelker and Sherry (1974) also point to concerns with the CZMA, most notably with regards to jurisdictional matters.[11] The authors explain that the CZMA gives authority to the states to manage their respective coastal zones, and certain regulatory agencies oversee this management. That said, a regulatory agency that manages a coastal zone will not necessarily regulate land usage in other parts of the state. Therefore, different agencies have separate jurisdictions pertaining to land use in a given state, which creates the potential for a conflict of interest. While literature offering criticism of the CZMA is limited, the above arguments summarize the more prominent criticisms that exist.

Authors that view the CZMA as inherently flawed inject doubt into the idea that progress related to this legislation can be measured at all. Other credible sources, however, note the significant contributions that those acting in response to the legislation have made to the field of coastal management. Following the NOAA's evaluation of the CZMA in fiscal year 2006, the Department of Commerce reported that "evaluations showed that coastal programs and reserves are engaging in initiatives to address water quality, and that those activities are generally successful."[12] The report also states that the legislation has provided several educational opportunities for K-12 students while ensuring the continued maintenance of the nation's coasts for the approximately 200 million visitors that annually frequent these areas. Of course, the NOAA is the organization that is primarily responsible for overseeing the state-based implementation of various coastal management programs, so their review of the CZMA is potentially biased. Despite this potential bias, data exists that is consistent with their evaluation of the legislation, which adds validity to the above statements.

All of the above observations specifically address the primary question in this study, which involves determining progress made in response to implementing the CZMA. Other scholars have sought to resolve more specific questions regarding this legislation, which speaks to the second portion of this study on how different factors are related to progress. As Sabatier (1979) notes, "The bulk of literature on policy implementation that has developed is generally quite pessimistic about the ability of important policy initiatives actually to effect the desired social changes."[13] He references various environmental policy initiatives, such as the 1970 Clean Air Amendments, as examples of initiatives that are widely considered to have achieved only "limited success." According to Sabatier, the rationale underlying this lack of success in policy implementation is partially attributable to a failure to recognize certain conditions of such

success. These conditions include active support for the policy from legislators throughout the implementation process in addition to "substantial managerial and political skill" and commitment from the leaders of the implementing agencies. Sabatier's studies in the area of policy implementation are rooted in the works of many other scholars.[14] The conditions of probable success in policy implementation that he puts forth in conjunction with these scholars are analyzed in this thesis as they relate to progress.

The first potential determinant of progress that is considered is governmental structures. For the purposes of this thesis, governmental structures are defined as the level of government (state or municipal) that primarily oversees the implementation of a coastal management program. While effectively no existing literature specifically addresses the disparity between state and municipal government in their oversight of coastal policy implementation, previous authors have considered how government oversight affects other types of policy implementation. McLaughlin (1987), for example, states that, "policy cannot always mandate what matters to outcomes at the local level; individual incentives and beliefs are central to local responses; effective implementation requires a strategic balance of pressure and support."[15] McLaughlin argues that the survival of a policy in a given locality is dependent upon local support—or lack thereof. His argument suggests that municipal government is perhaps the most effective governing entity in cases of local policy implementation, and this thesis will examine these arguments.

The other component of a governmental structure that we study in this thesis is the partisanship (i.e. Democratic or Republican) of the state leadership. Lifset (2008) suggests that the field of coastal management was the most strong in the mid-twentieth century, when a bipartisan congressional effort emerged that placed environmentalism at the forefront of

legislation.[16] He argues that since then, this bipartisanship has dwindled at the expense of coastal zones, and Lifset attributes this dwindling bipartisan support of environmentalism primarily to the Republican Party. As he notes, "there was a time when environmental policies enjoyed broad bipartisan support. So it should not surprise us that as historians more closely examine the history of mid-twentieth century environmentalism, they should find that which appears all too rare today: Republicans." This thesis will build on this argument in order to more explicitly identify how partisanship (or bipartisanship) relates to coastal policy implementation.

Aside from governmental structures, a second variable that we focus on is Congressionally-appropriated funding and how it relates to progress. If a relationship between funding and progress exists, we seek to determine if funding influences progress or vice versa. The GAO has analyzed these issues and has argued that determining whether or not the CZMA has been effective is difficult due to an inherent feature of federal grant allocation.[17] More specifically, funding is partially allocated based on the size of a state's coastline and population, and Congress mandates caps in this funding. Hence, larger states reach this funding cap more quickly than smaller states, thus enabling the smaller states to receive additional funding based on growth long after larger states have met the cap. Due in part to this issue, the GAO considers any attempt to measure the effectiveness of the CZMA to be "of limited value." Through further analysis of the relationship between progress and funding in this study, the question of how these caps and other features of funding have affected coastal policy implementation will be investigated.

IV. Definition of Variables

In undertaking this thesis, we focus on ten categories (otherwise known as contextual indicators) that are used by the NOAA in its periodic evaluation of the CZMA to assist in measuring and determining progress. Once the scope of progress that a region has made in each of these areas is determined, it is necessary to identify how this progress is related to different governmental structures and the amount of funding that a state or region has received in response to the CZMA. The following is a guide to the various dependent and independent variables analyzed in this study, along with a regional breakdown of participating states used for comparative purposes.[18]

Dependent Variables

1. Population density. This variable measures the average number of people per square mile that reside in coastal zones. While opportunities in the areas of employment and recreation often elicit an increase in coastal living, a highly concentrated population adversely affects ecosystems (including water quality) due to the degradation of coastal zones and increases in pollution.

2. Percent change in value of coastal tourism and recreation. This variable accounts for changes in the Gross State Product (GSP) within the tourism and recreation industry, which has a large impact on the local economics in many coastal zones. Sufficient planning and maintenance of coastal areas is required in order to provide for these activities, so a positive percent change indicates progress in this area.

3. Percent of national employment attributable to coastal regions. This variable measures the proportion of the population of the United States that maintains employment in coastal areas. A high percentage is indicative of a strong economy, yet it also reveals an increase in population

density. An increase in population density commonly results in the environment becoming more vulnerable to both destruction and pollution. Therefore, an increase in percentage in this variable indicates a potential threat to the quality of coastal zones.

4. Percent of employment dependent on coastal resources. This variable measures the proportion of employees in industries that require regular access to coastal resources. An increasing trend in coastal resources employment is cause for concern, as it could reveal an overall loss in resources.

5. Number of businesses dependent on coastal resources. This variable quantifies the number of businesses that require regular access to coastal resources. As with the previous indicator, growth in this area could be detrimental to the overall quality of coastal zones due to a loss of resources.

6. Percent of national economy attributable to coastal regions. This variable measures the proportion of the national economy that is produced in a given coastal zone, as captured by the Gross State Product, which accounts for all items purchased and sold. As the percentage increases, the relative strength of a region's economy increases as well. Since this growth in economy does not necessarily pose a direct threat to the quality of coastal zones, an increase in percentage indicates progress.

7. Number of invasive species identified in coastal watersheds. This variable measures the number of species in a region that are both non-indigenous and detrimental to coastal areas. This indicator enables officials to interpret the balance of species in a given coastal zone. An increase in the number of invasive species upsets this balance, therefore indicating a lack of progress.

8. Water usage. This variable is measured in millions of gallons per day (Mgal/d), which indicates the amount of freshwater withdrawn on a regional level. An increase in usage over

time is expected due to population growth; however, excess usage could lead to the depletion of a significant portion of the freshwater supply in addition to increased pollution.

9. Water quality index. This variable is calculated based on five different measurements of water quality: dissolved inorganic nitrogen, dissolved inorganic phosphorous, dissolved oxygen, chlorophyll-*a*, and water clarity. Nitrogen and phosphorous are nutrients that contribute to the overall well-being of a coastal zone while also posing a threat to water quality when found in excess. Chlorophyll-*a* measures phytoplankton blooms, which result from excessive nutrients. These blooms have the potential to adversely impact water clarity as well as the concentration of dissolved oxygen. Ample levels of both water clarity and dissolved oxygen are required in order to sustain a healthy eco-system. Thus, the sustainable presence of all of the measurements except for chlorophyll-*a* indicates a high water quality index. Water quality index is rated on a scale ranging from "good" to "poor," with "fair" as the middle rating.

10. Sediment quality index. This variable is based on three different measurements of sediment quality: sediment contaminants, sediment toxicity, and sediment total organic carbon concentration. Pollution from runoff comprised of organic materials such as pesticides lowers sediment quality and threatens a coastal zone as a whole. Sediment quality index is rated on the same scale as water quality index, with ratings ranging from "good" to "poor." According to the NOAA, a rating of "good" indicates that fewer than 5% of coastal sediments are of poor quality, a rating of "fair" indicates that 5-15% of the sediments are of poor quality, and a rating of "poor" indicates that greater than 15% of the sediments are of poor quality.

Independent Variables

1. Governmental Structures:

The first variable, governmental structures, refers to the division of governmental powers within each of the thirty states in providing oversight of coastal zone management plans. Enactment of the CZMA enabled the federal government to provide incentives for eligible states to submit and implement individual coastal management plans, yet the federal government did not mandate which level of government within the states would be responsible for oversight of the plans. Therefore, variation exists among each of the states over how (and which) governments provide oversight. Whether or not one type of structure has proven more effective than another has yet to be determined. A second factor apart from the structure of oversight is whether state leadership is predominantly Republican or Democratic, which could significantly influence policy decisions and induce regional disparities with regards to coastal management.

2. Funding:

The second variable analyzed here is the amount of funding that is received by each state in response to its implementation of the CZMA. This data set is collected from fiscal years 1998-2008. Grant allocation to states takes three different forms, and it is partially-dependent upon the coastal mileage and coastal population of a given state. These three grant mechanisms include coastal zone management grant awards, coastal zone enhancement grant awards, and coastal nonpoint pollution control awards. In this study, we first seek to find whether or not a relationship exists between funding and progress with regards to the implementation of coastal management plans. If such a relationship exists, then it is necessary to determine whether progress drives grant allocation or vice versa.

Delineation of Regions

In order to determine the amount of regional progress that has occurred in response to the CZMA, we compare the data that is produced from the indicators by region (as listed below).

Regions

Alaska

Hawaii

Great Lakes:

Illinois
Indiana
Michigan
Minnesota
New York
Ohio
Pennsylvania
Wisconsin

Gulf Coast:

Alabama
Florida
Louisiana
Mississippi
Texas

Mid-Atlantic:

Delaware
New Jersey
Virginia

Northeast:

Connecticut
Maine
Maryland
Massachusetts
New Hampshire
Rhode Island

Southeast:

Georgia
North Carolina
South Carolina

West Coast:

California
Oregon
Washington

V. Hypotheses

In this study, there are several areas of analysis. The existing literature that addresses these areas enables the development of informed hypotheses. The first variable that is analyzed is the amount of progress that a given region has experienced in response to the CZMA. As previously mentioned, *progress* is defined as positive gains made in each of the ten areas that are defined as contextual indicators. The data that measures this progress (or lack thereof) is drawn from the years 1998 to 2008. After establishing the different levels of progress, we seek to analyze how governmental institutions and funding have influenced this progress. Three testable hypotheses that address each area of analysis are listed below.

Hypothesis #1 – Progress Achieved: *The amount of progress achieved by any given coastal region in its implementation of the CZMA should be related to both the type of governmental structure in place as well as the percentage of grant appropriations received by the region*.

It is important to emphasize again that governmental structures and funding are not the only two variables that influence progress related to the CZMA. Rather than isolating all of these variables, however, this study seeks to identify the extent to which these two variables influence the legislation. In general, The U.S. Department of Commerce considers many of the coastal programs that have been implemented in response to the CZMA to have been successful.[19] Given this claim, a reasonable assumption can be made that the success of these programs is at least partially-dependent upon the funding received by the states in addition to the government entities that determine how to utilize this funding.

Hypothesis #2a – Partisanship of State Governors and Legislatures: *Regions with consistently Democratic leadership should experience the greatest amount of progress in response to the CZMA.*

As Lifset (2008) explains, although there was a brief period in U.S. history when both Democratic and Republican leadership convened to support the environmental movement, consistent support for environmentalism has predominantly been a Democratic priority.[20] A plausible implication of this argument would be that, in coastal regions where Democratic leadership is in the majority, more attention will be given to environmental issues in policymaking. Therefore, since the CZMA is a piece of environmental legislation, regions with Democratic leadership should benefit from the Party's environmental bias.

Hypothesis #2b – Structure of Oversight:

Regions in which municipal governments are primarily responsible for oversight of the CZMA should experience the greatest amount of progress in implementing this legislation.

The second part of the hypothesis deals with which level of government in a given state primarily oversees the implementation of the CZMA. As stated in the literature review, McLaughlin (1987) theorizes that the state that experiences the most success with regards to policy implementation is the state that understands the impact of local pressure.[21] In other words, the success of policy implementation is dependent upon the willingness of the local community to adapt to the policy. Governmental oversight of the CZMA occurs at two levels: state and municipal. Since the state government is, most likely, further removed from the

interests of the locals than is a municipal government, the latter's oversight should be more effective with the locals than that of the former. Given both components of the governmental structures variable, the state or region that should experience the most progress with the CZMA is the one with *both* Democratic leadership and municipal oversight.

Hypothesis #3 – Funding: *Regions that receive, on average, the greatest amount of grant appropriations should experience the most success with regards to implementation of the CZMA.*

In order for a state or region to progress in the field of coastal management, they must first have the necessary funds to do so. This study focuses on the funds received by the individual states in the form of grant appropriations. Of course, if properly utilized, increased funding leads to the opportunity to further a state's coastal management efforts. As the Government Accountability Office alludes to, states that are smaller in area and population are at an inherent advantage in the grant appropriations process.[22] This benefit arguably derives from a congressionally-mandated cap in funding that is based upon a coastal state's area and population. Larger, more populated states naturally reach this cap, while those that are smaller in size have the opportunity to continue to receive funding through grants. As the above hypothesis states, the regions that receive the greatest share of the appropriated grants should also exhibit the greatest amount of progress in response to the CZMA. Since, as observed by the GAO, *smaller* states have the ability to increase in population and continue to receive funding long after the larger states have met the cap, the *smaller* regions of the U.S. should experience the greatest amount of progress in response to the CZMA.

VI. Empirical Analysis

A. Measures of Progress

In order to determine how governmental structures and funding affect the amount of progress that a given region experiences in implementing the CZMA, it is first necessary to measure this progress. As noted above, ten contextual indicators are used to measure regional progress. For the purposes of this analysis, the most "successful" region is the one that demonstrates the most progress among the greatest number of indicators over the past decade. Each of the ten contextual indicators, as established by the NOAA, is listed below.

1.) Population Density

Region	Population Density (people/sq. mi.)
Northeast	813
Mid-Atlantic	799
Hawaii	464
West Coast	401
Southeast	297
Great Lakes	277
Gulf Coast	212
Alaska	1

The above data is drawn from the most recent (2000) census.[23] A high population density does not necessarily contribute to an environment that is well-suited for coastal zones. Since this study seeks to determine the quality of coastal zones, then, the region with the lowest population density is considered to have made the most progress with this indicator. Technically, Alaska had the lowest population density, yet it is an outlier in the data. Thus, the gulf coast appears to have experienced the most progress in its management of this indicator. Whether or not the gulf coast has been able to sustain this low population density since 2000 will only become clear with the published results of the 2010 U.S. census.

2.) Percent Change in the Value of Coastal Tourism and Recreation

Region	% Change
Southeast	7.93
Hawaii	7.55
West Coast	4.14
Northeast	4.11
Mid-Atlantic	3.98
Alaska	3.89
Great Lakes	0.51
Gulf Coast	0.05

This data is periodically updated by the National Ocean Economics program.[24] The most recent update occurred in 2008, while the previous measurement occurred in 2006. In order to arrive at these percentages, the variables such as public access, water quality, and community development are all considered. A pattern emerges in the data whereby three different pairs of regions show similar trends in growth rates. Furthermore, these trends do not appear to be size-dependent, as the paired regions are quite different in regards to geographic area. It can be further deduced from the data for Alaska and Hawaii that no clear relationship exists between the size of a region and the percentage change in the value of tourism. Hawaii has experienced the greatest amount of positive growth in tourism and recreation, while the growth in Alaska has been comparatively less significant for its size.

3.) Percent Change in National Employment Attributable to Coastal Counties

Region	% Employment
Gulf Coast	7.56
Southeast	5.74
Great Lakes	5.28
West Coast	3.78
Mid-Atlantic	1.83
Alaska	0.03
Hawaii	-0.03
Northeast	-0.37

The National Ocean Economics Project partners with the Bureau of Labor Statistics in order to compile the data used for the calculation of percent change, and this particular data is from 2004 and 2006, respectively. While a significant gain in this area indicates economic growth, high growth rates and the corresponding population increase equate to more pressure on coastal zones. Therefore, the most successful region in terms of this indicator is the one that has maintained a relatively stable employment rate (without a significant percentage increase or decrease). Given this definition of progress, Alaska is the region that has exhibited the greatest progress on this dimension. The NOAA considers any loss of employment such as that demonstrated by the data for Hawaii and the northeast to be indicative of a potentially mismanaged environment and infrastructure.

4.) Percent of Employment Dependent on Coastal and Ocean Resources

Region	% Employment
Hawaii	16.80
Alaska	14.90
Gulf Coast	6.30
Southeast	5.40
Northeast	4.10
West Coast	3.70
Mid-Atlantic	3.10
Great Lakes	2.80

Each year, the National Ocean Economics Program collects this data in order to calculate how coastal resources are being utilized across the country. If a given region has a disproportionately high percentage of employment that it is dependent upon coastal resources, the NOAA assumes that the amount of pressure on these resources rises accordingly. While Hawaii is an island with a coastline that is similar to that of other regions in actual length, a disproportionate amount of its employment sector is likely dependent upon coastal resources, and the industries in the state are relatively undiversified. Alternatively, the Great Lakes region also has a sizeable coastline, but appears to have a preponderance of employment opportunities that do not require regular access to coastal and ocean resources.

5.) Number of Businesses Dependent upon Coastal and Ocean Resources

Region	# of Businesses
Northeast	29,349
West Coast	27,401
Gulf Coast	20,281
Southeast	14,529
Mid-Atlantic	14,314
Great Lakes	12,626
Hawaii	3,840
Alaska	2,210

Due to the fact that the length of a region's coastline affects the number of businesses that are dependent upon coastal and ocean resources, the following table is presented to account for the regional discrepancies in coastal length.

Region	Businesses : Mile of Coastline
Northeast	4.8 : 1
Hawaii	3.7 : 1
West Coast	3.5 : 1
Great Lakes	1.7 : 1
Southeast	1.7 : 1
Mid-Atlantic	1.6 : 1
Gulf Coast	1.0 : 1
Alaska	.07 : 1

The National Economics Program periodically (and most recently in 2007) collects this data in order to complement the previous indicator, which is the percentage of employment in a given region that is dependent upon coastal and ocean resources. As evidenced by the discrepancies between the two charts that correspond to this indicator, accounting for the length of a region's coastline impacts the data. For example, while the northeast has both the greatest number of dependent businesses as well as the highest ratio of dependent businesses per mile of coastline, Hawaii has a relatively high ratio despite a small number of businesses. On the basis of this data, Alaska has experienced

the most “success” in the area of maintaining an employment sector with a comparatively low dependency on coastal and ocean resources.

6.) Percent Change in National Economy Attributable to Coastal Counties

Region	% Change
Gulf Coast	7.89
Southeast	5.61
Great Lakes	3.79
West Coast	2.26
Mid-Atlantic	1.81
Alaska	0.11
Hawaii	0.04
Northeast	-2.66

The National Ocean Economics Project, in partnership with the Bureau of Labor Statistics, compiled this data in 2004 and 2006 respectively in order to calculate the percent change. While a significant positive percent change such as the salient growth in gulf coast is indicative of job creation, the desired trend with regards to coastal management is a relatively stable growth (such as that exhibited by Alaska and Hawaii). Stable growth indicates an improving economy without posing a potential threat to coastal and ocean resources as would be the case with more rapid growth. With that said, the negative growth in the northeast is also a pronounced area of concern, as this trend

indicates a lack of economic growth, which can adversely affect coastal management.

7.) Number of Invasive Species

Region	# of Species
West Coast	283
Hawaii	269
Great Lakes	233
Mid-Atlantic	197
Northeast	175
Southeast	127
Gulf Coast	54
Alaska	10

Given that the length of a coastline is related to the number of invasive species that are found in the waters surrounding a particular region, the following table accounts for the regional discrepancies in coastal length.

Region	Invasive Species : 100 Miles of Coastline
Hawaii	25.6 : 100
West Coast	3.6 : 100
Great Lakes	3.1 : 100
Northeast	2.9 : 100

Mid-Atlantic	2.3 : 100
Southeast	1.5 : 100
Gulf Coast	0.3 : 100
Alaska	0.03 : 100

The U.S. Geological Survey is responsible for the collection of this data.[25] When invasive species are identified within a coastal watershed, this finding is often indicative of an ecological imbalance. With the exception of Hawaii, the rank-order of the regions is consistent across the tables. As evidenced in the second chart, the waters surrounding the Hawaiian Islands contain a disproportionate amount of invasive species given the length of its coastline. Conversely, Alaska has experienced a great amount of "success" with this indicator due to maintaining a low population of invasive species along a relatively long coastline.

8.) Water Usage

Region	Usage (Millions Cubic Gal/Day)
Great Lakes	23,807
West Coast	8,538
Gulf Coast	7,965
Northeast	6,555
Southeast	5,850
Mid-Atlantic	5,109
Alaska	1,329
Hawaii	33

The coastal population of a state is likely related to the amount of water that is used per day in a particular region. Hence, the following table accounts for the regional discrepancies in coastal population.

Region	Millions Cubic Gal/Day : Person
Gulf Coast	2,700.7 : 1
Southeast	2,493.7 : 1
Alaska	2,468.7 : 1
Great Lakes	1,469.5 : 1
Mid-Atlantic	402.8 : 1
West Coast	301.3 : 1
Northeast	263.8 : 1
Hawaii	27.2 : 1

The U.S Geological Survey is responsible for collecting data on water usage once every five years.[26] Given the data from 2005, there is evidence of a correlation between the coastal population of a region and its average amount of water consumption. While regions appear to be utilizing water sources out of necessity in accordance with their size, some regions are still over-consuming. For instance, the West Coast has a significantly larger coastal population than that of the Gulf Coast region, yet the latter is using approximately nine times the amount of water per person as the former.

9.) Water Quality

Region	Scale
Alaska	Good
Southeast	Fair to Good
Great Lakes	Fair
Hawaii	Fair
West Coast	Fair
Gulf Coast	Poor to Fair
Mid-Atlantic	Poor to Fair
Northeast	Poor to Fair

10.) Sediment Quality

Region	Scale
Alaska	Good
Southeast	Fair to Good
Gulf Coast	Fair
West Coast	Poor to Fair
Great Lakes	Poor
Hawaii	Poor
Mid-Atlantic	Poor
Northeast	Poor

Periodically (and most recently in 2007), the Environmental Protection Agency provides measurements of both water and sediment quality.[27] From this data, it is clear that the Southeast is the only region that has effectively managed these indices. Another trend that emerges within the data is that the most and least "successful" regions remain the same for both indicators. This is, perhaps, due to the impact that sediment and water have on each other as a result of being close in proximity.

- Final Calculation of Progress

In order to determine which region has experienced the most progress across all ten of the contextual indicators, we rank the regions on a scale from 1-8 (1= most successful, 8= least successful) for each of the indicators. After tabulating the scores, the region with the lowest score is considered to be the one that has made the most progress in response to the CZMA within the past decade. The results are as follows:

Region	Total Score
Alaska	31
Southeast	37
Mid-Atlantic	43
West Coast	43
Great Lakes	44
Gulf Coast	44
Hawaii	49
Northeast	51

In assigning numerical values to rates of progress, regional delineations emerge. Alaska and the Northeast have been the overall most and least progressive regions, respectively, in their implementations of the Coastal Zone Management Act (CZMA) from 1998 to 2008. While Alaska appears to have experienced the most progress in its implementation of the CZMA, however, it is an outlier in regards to some of the indicators, given its disproportionate ratio of coastal length to population. These measurements of progress have been set forth by the NOAA, and only focus on certain indicators of success. Thus, it is essential to note that the results of this study may not be consistent with those of other studies that take different indicators of progress into account.

As a side note, it is important to recognize that the rates of progress that are utilized in this study are relative. All of these regions have achieved success in some aspects of their implementation of the CZMA, and the success of one does not necessarily exclude the success of another. Further, since progress is assigned a numerical value, it is clear that the disparity in progress from one region to the next is miniscule in many cases. For instance, there is no more than a one point difference between the middle four states.

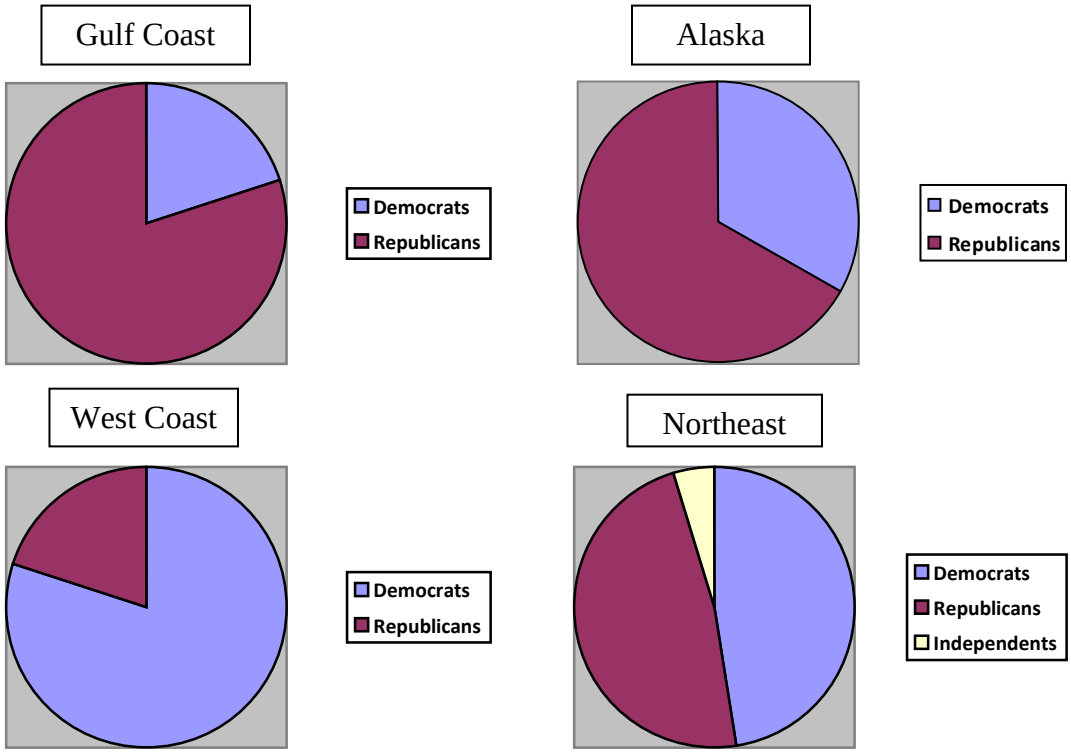
B. Governmental Structures

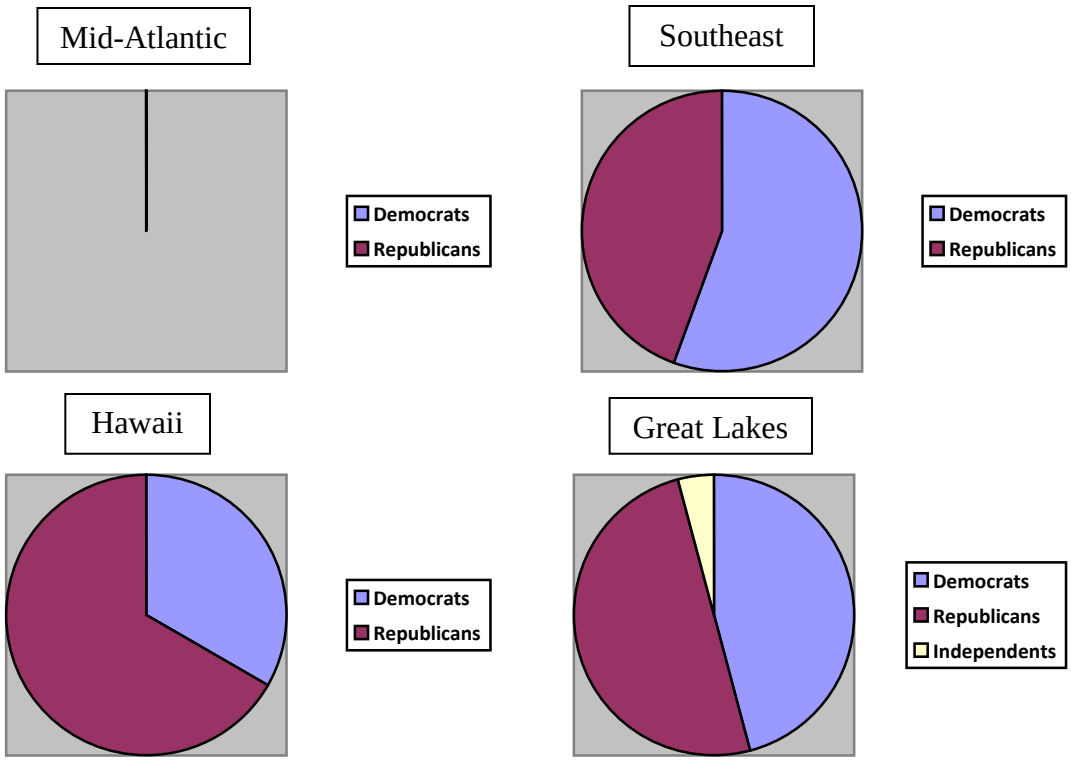
Having established the differing rates of progress among the regions, it is possible to analyze whether relationships exist between rates of progress and the two independent variables of interest: governmental structures and funding levels. Collectively, governmental structures compose the first of the two independent variables. Turning first to governmental structures, we seek to analyze the partisanship of each state's elected

governors, House members, and Senate members who have held these positions from 1998 to 2008. We also identify which level (i.e., jurisdiction) of state government primarily provides oversight for the state's implementation of the CZMA.

a.) The following eight figures, in addition to the corresponding table, present the partisanship of the governors of the respective regions over the course of the noted time period.[28]

Results of Gubernatorial Elections by Region from 1998-2008





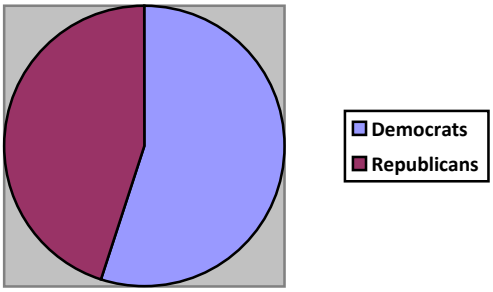
Region	Gubernatorial Election Results	Region	Gubernatorial Election Results
Gulf Coast	**20.0% (D), 80.0% (R)**	**Mid-Atlantic**	**100.0% (D), 00.0% (R)**
Alabama	1 (D), 2 (R)	Delaware	3 (D), 0 (R)
Florida	0 (D), 3 (R)	New Jersey	3 (D), 0 (R)
Louisiana	1 (D), 2 (R)	Virginia	3 (D), 0 (R)
Mississippi	1 (D), 2 (R)		
Texas	0 (D), 3 (R)	**Southeast**	**55.6% (D), 44.4% (R)**
		Georgia	1 (D), 2 (R)
Alaska	**33.3% (D), 66.7% (R)**	North Carolina	3 (D), 0 (R)
		South Carolina	1 (D), 2 (R)
West Coast	**80.0% (D), 20.0% (R)**		
California	2 (D), 2 (R)	**Hawaii**	**33.3% (D), 66.7% (R)**
Oregon	3 (D), 0 (R)		
Washington	3 (D), 0 (R)	**Great Lakes**	**45.8% (D), 50.0% (R), 4.2% (I)**
		Illinois	2 (D), 1 (R)
Northeast	**47.6% (D), 47.6% (R) 04.8% (I)**	Indiana	1 (D), 2 (R)
		Michigan	2 (D), 1 (R)
Connecticut	0 (D), 3 (R)	Minnesota	0 (D), 2 (R), 1 (I)
Maine	2 (D), 0 (R), 1 (I)	New York	1 (D), 2 (R)
Maryland	2 (D), 1 (R)	Ohio	1 (D), 2 (R)
Massachusetts	1 (D), 2 (R)	Pennsylvania	2 (D), 1 (R)
New Hampshire	5 (D), 1 (R)	Wisconsin	2 (D), 1 (R)
Rhode Island	0 (D), 3 (R)		

In order to construct the above charts and the corresponding table, we determined the party affiliation of each governor elected for each state in the given time period, and then averaged this data at the regional level. The numbers in the table represent how many governors from the respective political parties were elected in each state between 1998 and 2008. We found that the most Democratic region, with regards to elected gubernatorial candidates, is the Mid-Atlantic. Another region with a relatively strong presence of Democratic governors is the West Coast. Alternatively, the Gulf Coast region appears to have had the largest presence of Republican governors elected over the course of this time period. Alaska and Hawaii also display a recent trend of electing predominantly Republican governors. The pattern that emerges here—with the exception of Alaska—is that the regions that are considered to have achieved the most progress with the CZMA are also those with a strong presence of Democratic governors. These results are expected, as we hypothesized that Democratic regions would achieve relatively more progress in the implementation of the CZMA than their Republican counterparts. However, the partisanship of the state governors is only one component of the collective governmental structures variable.

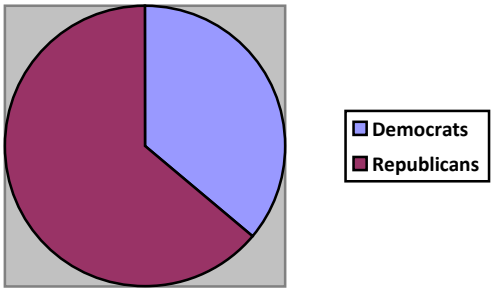
b.) The following eight figures, in addition to the corresponding table, represent the partisanship of the state House members of the respective regions between 1998 and 2008.[29]

Partisanship of State Houses of Representatives
by Region from 1998-2008

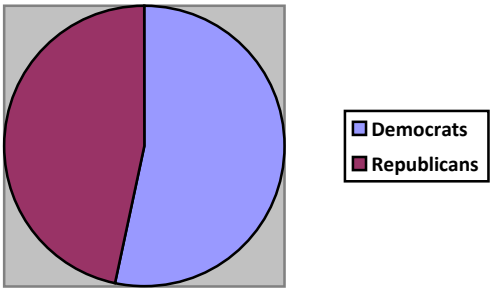
Gulf Coast



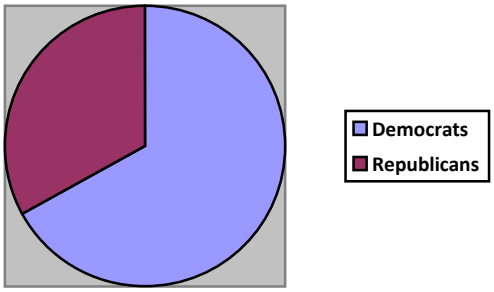
Alaska



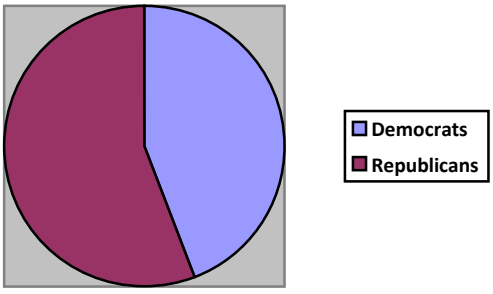
West Coast



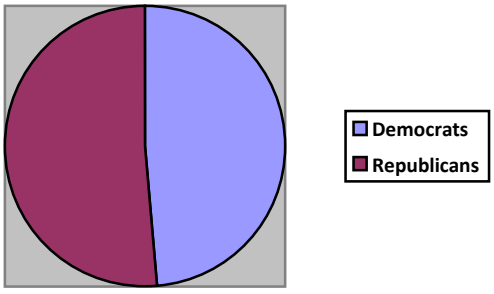
Northeast



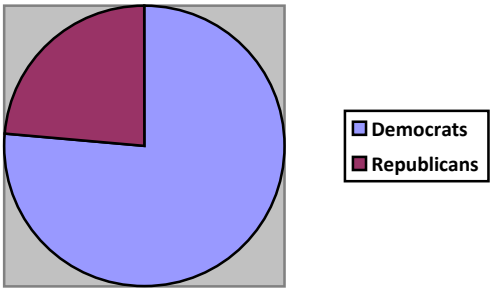
Mid-Atlantic



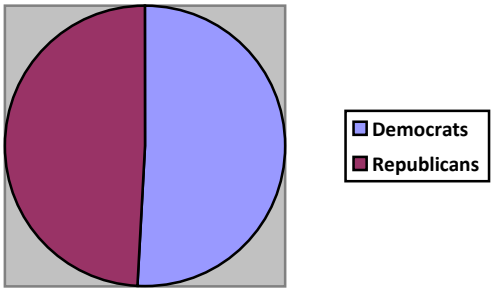
Southeast



Hawaii



Great Lakes



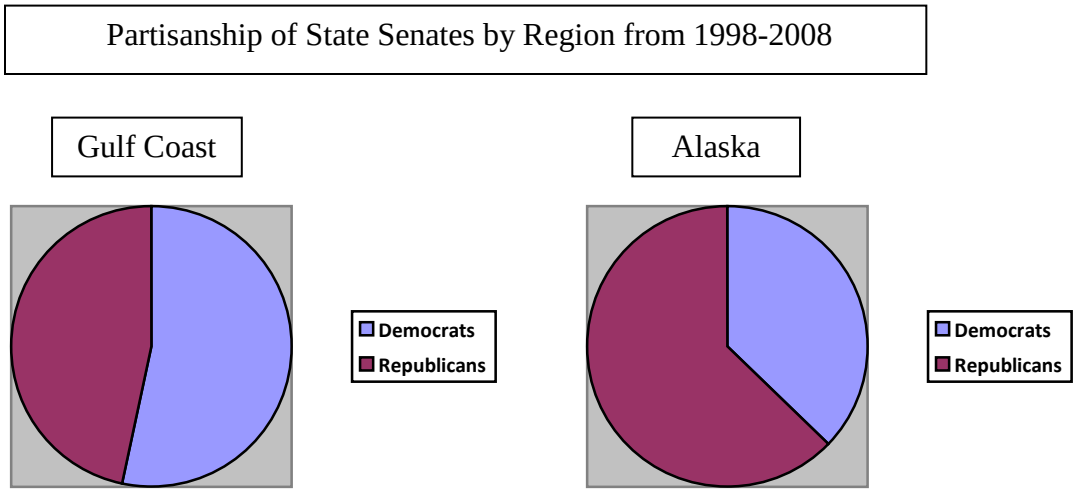
Region	House Composition	Region	House Composition
Gulf Coast	**54.6% (D), 44.8% (R)**	**Mid-Atlantic**	**43.7% (D), 55.4% (R)**
Alabama	61.7% (D), 38.0% (R)	Delaware	36.4% (D), 63.3% (R)
Florida	35.2% (D), 64.8% (R)	New Jersey	54.3% (D), 45.4% (R)
Louisiana	65.2% (D), 34.1% (R)	Virginia	40.4% (D), 57.3% (R)
Mississippi	65.1% (D), 33.7% (R)		
Texas	45.6% (D), 53.3% (R)	**Southeast**	**48.4% (D), 51.3% (R)**
		Georgia	51.2% (D), 48.5% (R)
Alaska	**36.1% (D), 63.9% (R)**	North Carolina	52.6% (D), 47.4% (R)
		South Carolina	41.6% (D), 58.2% (R)
West Coast	**53.1% (D), 46.7% (R)**		
California	59.2% (D), 40.4 (R)	**Hawaii**	**76.3% (D), 23.5% (R)**
Oregon	45.9% (D), 54.1% (R)		
Washington	54.3% (D), 45.7% (R)	**Great Lakes**	**50.8% (D), 49.0% (R)**
		Illinois	54.5% (D), 45.5% (R)
Northeast	**66.6% (D), 32.7% (R)**	Indiana	50.6% (D), 49.2% (R)
Connecticut	65.7% (D), 34.3% (R)	Michigan	51.0% (D), 48.5% (R)
Maine	54.0% (D), 44.6% (R)	Minnesota	50.2% (D), 49.6% (R)
Maryland	71.8% (D), 28.1% (R)	New York	68.1% (D), 31.7% (R)
Massachusetts	84.7% (D), 14.3% (R)	Ohio	40.6% (D), 59.1% (R)
New Hampshire	40.3% (D), 59.1% (R)	Pennsylvania	47.9% (D), 51.9% (R)
Rhode Island	83.1% (D), 16.1% (R)	Wisconsin	43.2% (D), 56.3% (R)

The above figures were created utilizing the same methods that were used in the creation of the gubernatorial figures. A primary trend that emerges in this data is that the dominant partisanship among the House members in many of the regions is the opposite of that of the elected gubernatorial candidates in the respective regions. There is one salient exception to this observation—Alaska. With regards to Hawaii, Democratic House members have held a strong majority despite the election of predominantly Republican governors over the course of the past decade. The same is true in the case of the Gulf Coast. In fact, most of the regions display inconsistent preferences in partisanship across their respective executive and legislative branches.

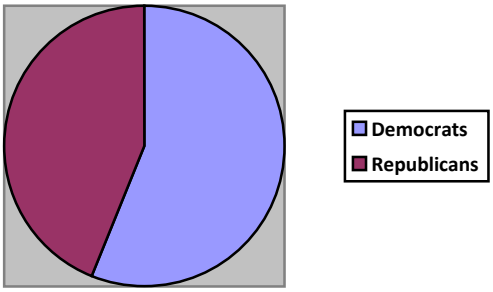
Again, while we hypothesized that the regions with predominantly Democratic leadership would experience the most progress in their implementation of the CZMA, the

opposite appears to be true. For instance, Hawaii has experienced the second lowest amount of progress among the regions despite a predominantly Democratic legislature. Also among the least successful regions are the Great Lakes and the Gulf Coast, both of which have a Democratic majority in their respective Houses. Alaska and the Southeast, alternatively, have achieved the most relative progress with a Republican majority. The Mid-Atlantic is also among the regions with Republican majorities that have experienced the most progress in response to the CZMA. These trends imply that a correlation does exist between regional progress and the partisanship of elected officials; however, the nature of the correlation is the opposite of what was anticipated.

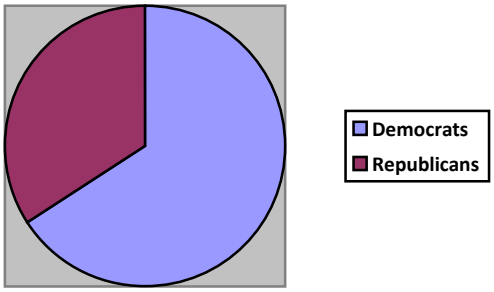
c.) Consistent with the figures for the state governors and House members, the following eight figures and corresponding table represent the partisanship of the state Senate members of the respective regions between 1998 and 2008.[30]



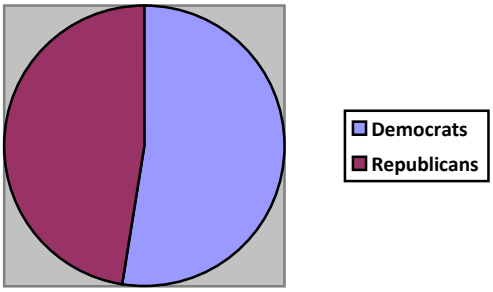
West Coast



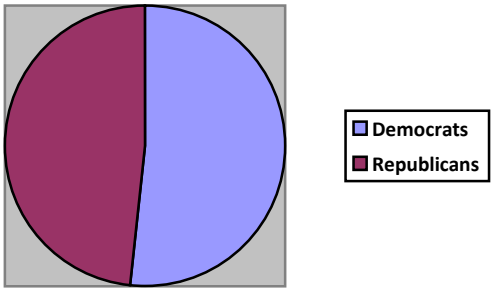
Northeast



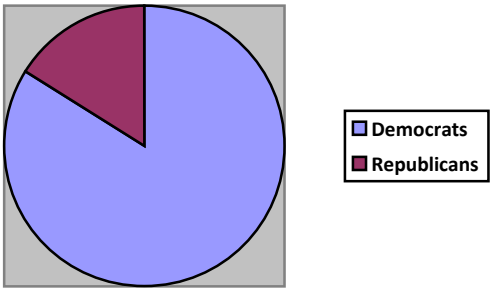
Mid-Atlantic



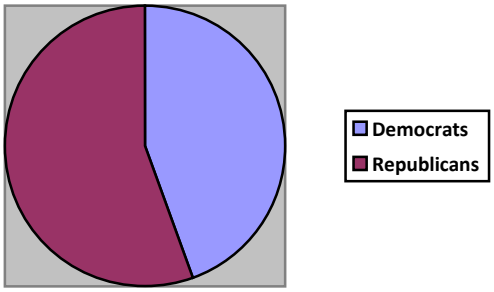
Southeast



Hawaii



Great Lakes



Region	Senate Composition	Region	Senate Composition
Gulf Coast	**53.3% (D), 46.4% (R)**	**Mid-Atlantic**	**52.4% (D), 47.5% (R)**
Alabama	68.3% (D), 31.7% (R)	Delaware	61.9% (D), 38.1% (R)
Florida	36.4% (D), 63.1% (R)	New Jersey	50.8% (D), 49.2% (R)
Louisiana	63.2% (D), 36.5% (R)	Virginia	44.4% (D), 55.3% (R)
Mississippi	57.9% (D), 42.1% (R)		
Texas	40.9% (D), 58.8% (R)	**Southeast**	**51.5% (D), 48.2% (R)**
		Georgia	47.4% (D), 52.4% (R)
Alaska	**37.2% (D), 62.8% (R)**	North Carolina	61.3% (D), 38.7% (R)
		South Carolina	45.9% (D), 53.6% (R)

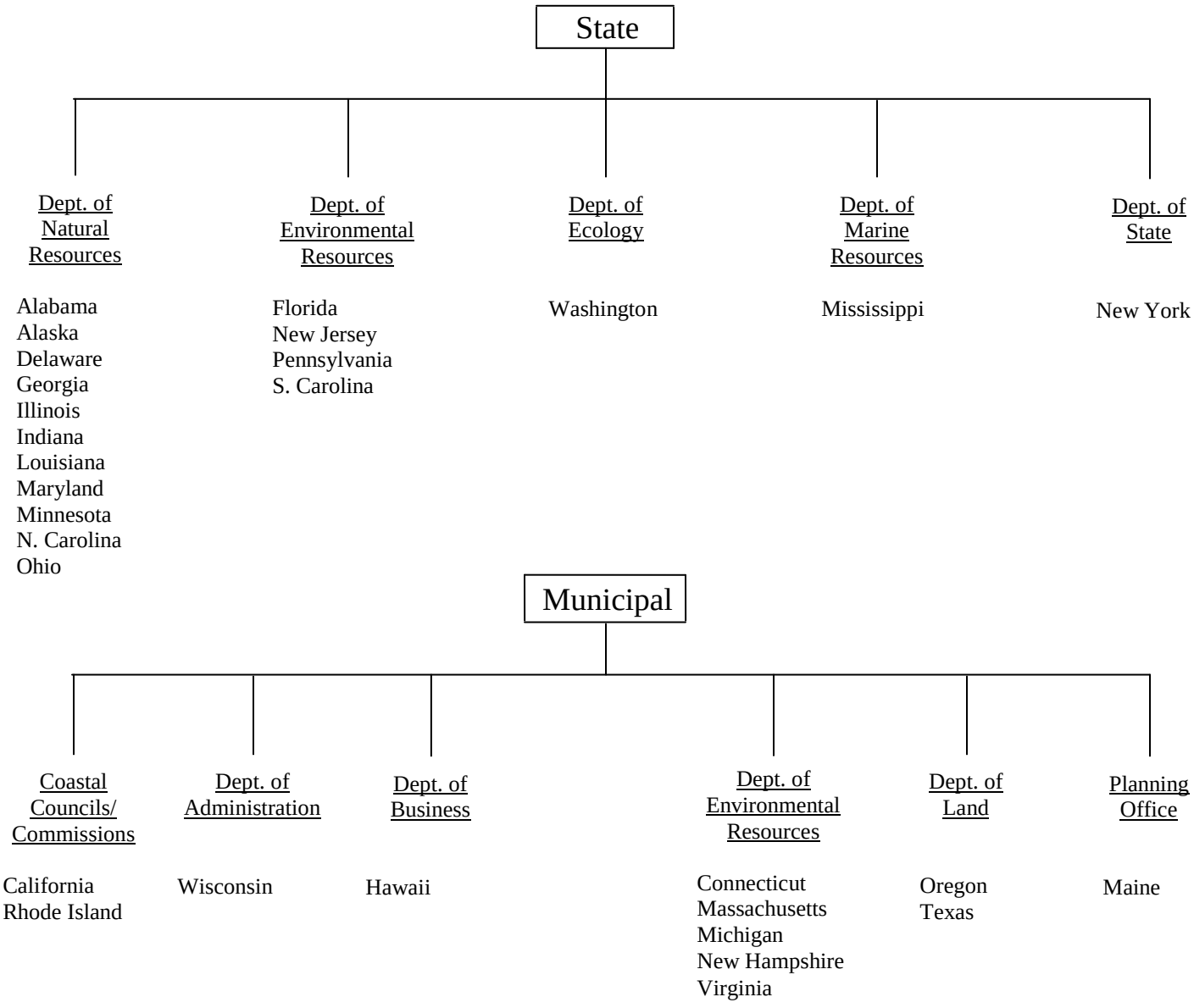
West Coast	**55.6% (D), 43.6% (R)**		
California	61.9% (D), 37.5% (R)	**Hawaii**	**84.0% (D), 16.0% (R)**
Oregon	50.7% (D), 47.4% (R)		
Washington	54.2% (D), 45.8% (R)	**Great Lakes**	**44.1% (D), 55.3% (R)**
		Illinois	50.8% (D), 48.4% (R)
Northeast	**65.5% (D), 34.2% (R)**	Indiana	35.6% (D), 64.4% (R)
Connecticut	60.8% (D), 39.2% (R)	Michigan	42.1% (D), 57.9% (R)
Maine	52.4% (D), 46.3% (R)	Minnesota	57.7% (D), 40.8% (R)
Maryland	69.7% (D), 30.3% (R)	New York	42.7% (D), 56.9% (R)
Massachusetts	83.6% (D), 15.6% (R)	Ohio	34.7% (D), 64.6% (R)
New Hampshire	40.7% (D), 59.3% (R)	Pennsylvania	40.7% (D), 58.4% (R)
Rhode Island	85.5% (D), 14.5% (R)	Wisconsin	48.5% (D), 50.8% (R)

Consistent with the data collection method used for state governors and House members, the above tables and figures reflect the partisanship of the various state senates across the eight regions. In the case of five of these regions, the dominant partisanship is the same for both chambers of the legislature. The Mid-Atlantic, Southeast, and Great Lakes regions are the exceptions to this trend, with the Mid-Atlantic and the Southeast favoring Democrats in the senate, whereas the senates of the Great Lakes favor Republicans. The Southeast is considered to be among the top two most successful regions with regards to its implementation of the CZMA, yet neither party is consistently predominant over the other. In fact, among the top four most successful regions, only Alaska is consistently Republican with regards to state governors and legislators. Still, these four regions all display a Republican majority for at least one branch of their respective state governments. These observations suggest that the correlation between progress achieved in response to the CZMA and the partisanship of government leaders exists, and that perhaps the relationship that enables the most progress to occur is one of bipartisanship.

C. Structure of Oversight

The second independent variable in this study involves determining whether the primary source of oversight in each state's implementation of the CZMA occurs at the state or municipal level. Featured below is a chart that displays these delineations in addition to the specific agencies that provide the oversight.[31]

Structure of Oversight



Reflected in the chart is a preponderance of oversight at the state level with regards to the management of this legislation. The primary pattern that emerges here does not comport with our expectations—namely, that regions with oversight primarily at the municipal level will achieve the most progress. Alaska, the Southeast, and the Mid-Atlantic are the regions that have most effectively responded to the CZMA, yet, with the exception of one state in the Mid-Atlantic region (Virginia), the oversight for the states in these regions is primarily situated at the state level. The least successful regions, Hawaii and the Northeast, are also the regions with oversight almost exclusively at the municipal level. Consistent with the findings of the governmental structures variable, a correlation exists between the structure of oversight and progress achieved; however, we did not anticipate the nature of this correlation.

While we are primarily concerned with the analysis of whether oversight occurs at the state or municipal level, we also take into account the different types of agencies that provide this oversight. Any success achieved by the states due to oversight must be partially attributed to the individual agencies. Here, the agencies that provide oversight at the state level differ from those at the municipal level in that almost all of the state agencies have a specific focus on coastal resources. This disparity, then, perhaps accounts for part of the achievement gap.

D. Funding

The final variable that we seek to analyze is funding, which is provided to the states through three different types of grants. A summary of funding levels is listed in the following table.[32]

Average Grant Allocation by Region (in U.S. dollars)

Region	Coastal Management	Coastal Zone	Coastal Nonpoint
Alaska	**1,998,800**	**537,600**	**112,200**
Southeast	**1,998,800**	**338,333.30**	**116,533.30**
Georgia	1,998,800	271,200	71,000
N. Carolina	1,998,800	393,600	188,400
S. Carolina	1,998,800	350,200	90,200
West Coast	**1,998,800**	**429,866.70**	**126,800**
California	1,998,800	537,600	206,400
Oregon	1,998,800	217,200	61,800
Washington	1,998,800	534,800	112,200
Hawaii	**1,915,600**	**174, 400**	**54,800**
Mid-Atlantic	**1,767,933**	**392,066.70**	**140,133.30**
Delaware	1,306,200	101,000	101,800
New Jersey	1,998,800	537,600	112,200
Virginia	1,998,800	537,600	206,400
Northeast	**1,717,767**	**285,966.70**	**150,433.30**
Connecticut	1,940,000	177,800	110,200
Maine	1,998,800	410,600	191,800
Maryland	1,998,800	523,000	206,400
Massachusetts	1,998,800	415,000	193,000
New Hampshire	957,200	83,000	98,400
Rhode Island	1,413,000	106,400	102,800
Gulf Coast	**1,699,920**	**361,720**	**87,600**
Alabama	1,381,600	104,400	49,200
Florida	1,998,800	537,600	117,400
Louisiana	1,998,800	537,600	112,200
Mississippi	1,121,600	91,400	47,000
Texas	1,998,800	537,600	112,200
Great Lakes	**1,457,240**	**219,275**	**73,575**
Illinois	0	0	0
Indiana	858,120	51,600	28,000
Michigan	1,998,800	537,600	112,200
Minnesota	941,200	82,000	53,000
New York	1,998,800	537,600	117,400
Ohio	1,957,200	180,800	55,800
Pennsylvania	1,910,400	172,800	109,200
Wisconsin	1,993,400	191,800	113,000

The dollar amounts listed above are averages taken from 1998 to 2008. Although funding is awarded from three main sources on an annual basis, most funding is provided in the form of the coastal management grants. Thus, we focus primarily on this type of grant when determining the relationship between progress and funding. We hypothesized that the regions that receive the greatest amount of funding would also achieve the most progress in their implementation of the CZMA. This hypothesis is largely accurate, as the two most successful regions (Alaska and the Southeast) are also the regions that have received the greatest amount of funding through coastal management grants. Further, the Great Lakes and Northeast regions have received relatively low amounts of funding while also being among the least successful regions.

As stated in the literature review, some experts contend that states with relatively small populations and fewer coastal miles may have a comparative advantage in the grant appropriations process. This advantage is due to congressionally-imposed caps that larger states reach more quickly. Given the above data, this argument does not find support in the data during this time period, as relatively large states (Alaska, California, and Texas) have received the greatest share of the grant funding.

VII. Conclusion

The primary purpose of this thesis is to determine what accounts for variation in progress with regards to the implementation of the Coastal Zone Management Act (CZMA) of 1972. While we do not seek to identify every determinant of progress, we do seek to gain a comprehensive understanding of how governmental structures and funding relate to success in policy implementation. The findings of this study and its resulting implications are discussed below.

In this study, the ten contextual indicators that are analyzed in order to determine the regional disparities in progress are the same indicators used by the National Oceanic and Atmospheric Administration (NOAA) in this organization's annual measurement of progress. While different governmental organizations or bureaucracies may define progress differently, we find that the NOAA's indicators are the most relevant for our analysis given that this organization acts as the primary source of federal oversight with regards to coastal legislation. Hence, according to the NOAA's measurement of progress, Alaska and the Southeast region have achieved the most progress in their implementations of the CZMA over the past decade. While all eight of the regions have made progress in some respect, the others did not experience the same consistency in their improvements as Alaska and the Southeast.

With a more detailed analysis of which indicators culminated into success for Alaska and the Southeast, a particular trend emerges. With the exception that these two regions share a relatively high water and sediment quality rating, they have experienced progress for very different reasons. In the case of Alaska, the majority of its success can be attributed to its low population density and, in turn, the lack of pressure placed on natural resources. However, the Southeast has achieved success primarily due to economic reasons. This region has contributed

significantly to the national economy through its tourism industry, but it has also diversified its employment sector to the extent that coastal and ocean resources are not used in excess. These disparities between the two most successful regions indicate that there are several different ways of achieving progress in the implementation of legislation.

Having identified which regions obtained the most progress, we analyzed the relationship between progress and governmental structures in three ways. More specifically, we considered the impact of the partisanship of the state governors in addition to both chambers of the various state legislatures. To account for partisanship over the course of a decade, we averaged the election results for both parties within this time period. The primary question that we address is whether the partisanship of the executive and legislative branches of state government affects the implementation of the CZMA. Given that environmentalism is, historically, a main feature of the Democratic platform, we hypothesized that the regions with a consistent Democratic majority would also achieve the most progress in their implementation of this legislation.[33] However, the data surprisingly reflects a strong Republican presence among the most "successful" regions.

Alaska, the region that appears to have achieved the most progress with the CZMA, has a recent history of a strictly Republican majority in the state legislature in addition to a strong preference for Republican governors. Conversely, the least successful region, the Northeast, has recently exhibited a strictly Democratic majority. In many of the other regions, though, the two parties have shared the majority over the course of the past decade. This suggests, aside from the case of Alaska, that bipartisanship that is fostered through a shared majority among the legislative chambers and the offices of the state governors may be among the best determinants of regional progress.

The second component of the governmental structures variable, the structure of oversight,

is primarily situated at either the state or municipal level in each region. While we hypothesized that regions with oversight primarily at the municipal level would achieve a greater amount of progress due to a closer proximity to the implementation, we found the opposite to be true. The source of oversight is structured primarily at the state level in both of the most successful regions (Alaska and the Southeast). Alternatively, oversight is primarily structured at the municipal level for the two least successful regions (Hawaii and the Northeast), with the exception of one state within the Northeast region, Maryland. Although the rationale underlying this finding is unclear, one noticeable trait among the agencies that provide oversight at the state level is that each of them (aside from the Department of State) works almost exclusively with environmental matters. At the municipal level, however, the spectrum of agency interests is significantly more varied. This finding suggests that the type of agency that provides oversight may be a more significant determinant of probable success than whether that agency operates at the state or municipal level.

Three types of grant funding are analyzed in this study. As we hypothesized, a sufficient amount of funding appears to be necessary in order to sustain progress with the implementation of this legislation. The average funding received by the two most successful regions illustrates this, as these regions have received the greatest amount of funding in the form of coastal management grants over the course of the past decade. As demonstrated in the empirical analysis section, the small-state funding bias that is suggested by the Government Accountability Office (GAO) does not appear to be a salient feature of this data set. Even if an inconspicuous bias is present, it does not appear to enable smaller states to gain any significant amount of leverage over larger states in the grant appropriations process.

Taken collectively, the above findings suggest the following potential implications of this

study. As evidenced by the factors of progress that emerge in the empirical analysis, the following traits are necessary in order for states to maintain success in public policy implementation: an ability to cultivate bipartisanship in state government, an investment of oversight in agencies with interests specific to the legislation, and an ability to sustain a population that elicits adequate grant funding.

In order to cultivate bipartisanship at the state level, the responsibility falls among the electorate to look beyond partisan preferences and elect leaders who have an invested interest in the current policy matters. Once elected, these members of the executive and legislative branches must seek to release themselves from the constraints of partisan politics through such actions as bi-partisan support and even co-sponsorship of legislation. Regarding the responsible investment of oversight in issue-specific agencies, this is largely out of the control of the general public. What this implies is that, once assigned to provide oversight, the leadership within these agencies has an obligation to hold themselves accountable to the public. They may achieve this accountability through exhibiting the commitment and "managerial skill" that Sabatier (1979) alludes to in his aforementioned article.[34] Finally, since states receive funding partially on the basis of population, each state has a responsibility to create the incentives necessary to maintaining the growth of its population.[35] These incentives may include career advancement opportunities or the establishment of an infrastructure that increases the overall quality of life for state residents. Of course, a balanced state budget is among the pre-requisites for such incentives to occur, and this may require more time for many states to achieve due to the present economy. As the enactment of the CZMA nears its forty-year anniversary, the proper implementation of these findings should enable this historical legislation to maintain its relevance in the future.

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[1] See United States Government Accountability Office (GAO), 2008, pp. 38-41.

[2] See <http://coastalmanagement.noaa.gov/funding/welcome.html>; accessed on 4/12/09.

[3] See <http://coastalmanagement.noaa.gov/programs/czm.html>; accessed on 4/12/09.

[4] These indicators are drawn from <http://coastalmanagement.noaa.gov/success/media/contextualindicatorlist.pdf>; accessed on 4/5/09.

[5] See Mandelker and Sherry, 1974, p.121.

[6] See Kuhse, 2001, p.77.

[7] See <http://www.epa.gov/agriculture/lzma.html>; accessed on 6/26/09.

[8] See <http://coastalmanagement.noaa.gov/nonpoint/welcome.html>; accessed on 6/26/09.

[9] See United States Government Accountability Office (GAO), 2008, p.1.

[10] See Kuhse, 2001, pp. 77-81.

[11] See Mandelker and Sherry, 1974, pp.136-137.

[12] See <http://coastalmanagement.noaa.gov/success/media/NERRaccomplishments2006-1.pdf>; accessed on 7/21/09.

[13] See Sabatier, 1979, p.482.

[14] See also Van Meter and Van Horn, 1975; Bardach, 1977; Hargrove, 1975; Williams, 1976.

[15] See McLaughlin, 1987, p.171.

[16] See Lifset, 2008, pp.117-125.

[17] See United States Government Accountability Office (GAO), 2008, p.1.

[18] The explanations for these variables (otherwise known as indicators) are drawn from <http://coastalmanagement.noaa.gov/success/media/contextualindicatormanual.pdf>; accessed on 4/5/09.

[19] See < http://coastalmanagement.noaa.gov/success/media/NERRaccomplishments2006-1.pdf >; accessed on 7/21/09.

[20] See Lifset, 2008, p.117.

[21] See McLaughlin, 1987, p.171.

[22] See United States Government Accountability Office (GAO), 2008, p.1.

[23] This data is drawn from < http://www.census.gov/popest/estimates.html >; accessed on 6/26/09.

[24] The data for contextual indicators 2-10 is drawn from < http://coastalmanagement. noaa.gov/ success/ media/ contextualindicatormanual.pdf>; accessed on 6/26/09.

[25] This data is drawn from < http://nas.er.usgs.gov/ >; accessed on 6/26/09.

[26] This data is drawn from < http://water.usgs.gov/watuse/ >; accessed on 6/26/09.

[27] This data is drawn from < http://www.epa.gov/owow/oceans/nccr3/downloads.html >; accessed on 6/26/09.

[28] This data is drawn from < http://www.realclearpolitics.com/>; accessed on 9/29/09.

[29] See Council of State Governments, 1998-2008.

[30] See Council of State Governments, 1998-2008.

[31] This data is drawn from < http://coastalmanagement.noaa.gov/mystate/welcome.html >; accessed on 9/29/09.

[32] This data is drawn from the United States Government Accountability Office (GAO), 2008, pp.38-41.

[33] See Lifset, 2008, pp.117-125.

[34] See Sabatier, 1979, p.485.

[35] See United States Government Accountability Office (GAO), 2008, p.1-2.