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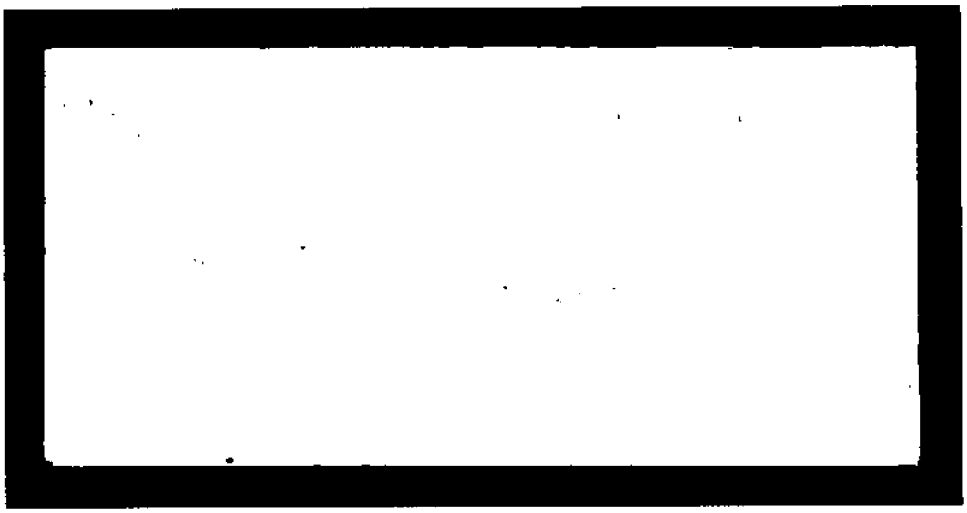
South Carolina



Institute for Public Affairs and Policy Studies

66 George Street
Charleston, SC 29424
(803) 953-5737
FAX (803) 953-8140

STATE-LEVEL CLIMATE CHANGE POLICY

A RESEARCH REPORT

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Authorized and Funded By:

SOUTH CAROLINA SEA GRANT CONSORTIUM

Prepared by:

Dorothy Mc Falls
Edgar L. Barnett

Institute for Public Affaris and Policy Studies
Dr. Arthur A. Felts, Director
University of Charleston
66 George Street
Charleston, S.C. 29424-0001

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I. EXECUTIVE SUMMARY

At the request of the Southeast Regional Climate Center and the South Carolina Sea Grant Consortium, the Institute for Public Affairs and Policy Studies of the University of Charleston conducted a study of state-level policy makers in relation to the issues of predicted long-term climate change. The research was accomplished through personal interviews of selected policy makers in the South Carolina and Georgia state governments during the Spring of 1994. The focus of the study was to gain insight into six basic questions: 1) **Who** is *deciding* natural resource policy; 2) **How** do they *view* the issue of climate change ; 3) **What** do they currently *know* about the subject and **where** are their sources; 4) **What** *more* would they like to know; 5) **What** *type* of information do they want; and 6) **How much** *change* would have to occur or be predicted to trigger policy action.

This research is a complementary part of the national research priority calling for an interdisciplinary approach in assessing the impact of climate change; including not only the perspective of the physical scientists, but also that of the social scientists (Schneider, 1990). This subject study is specifically focused toward the concern of information flow between the physical scientists and the policy/decision maker as addressed by the Joint Climate Project of 1991 (Bernabo).

This project also represents a continum of a planned three phase research effort focused at three levels of policy actors in a regional setting. The first phase was completed in 1993 with a study of natural resource managers in a four state area of the Southeastern United States (Moorer, 1993). This Phase II is devoted to the state government policy officials, and the final phase is planned to research the local-level policy makers.

There was a significant correlation on almost all of the key findings between each of the two separate states. Those summary findings are as follows:

- **Who is deciding?** Policy action by the two states concerning environmental issues is highly dependent on initial action by the national government. Both executive agency and legislative officials addressed "the fact" that state legislative action cannot be expected without demonstrated impact in terms of "people and dollars". Many of the policy makers volunteered that they believe it is best to wait for the federal government for a policy initiative. This was justified in many instances upon the basis that climate change was at best a regional issue (if not a national one), and best addressed at the national level. The recommended response to environmental issues is an educational approach or other *non-direct governmental* intervention.
  For additional detail see Section III A and Appendix C: Questions 26, 27

- **How is the issue viewed?** Less than half of the interviewees responded that climate change was a definite concern of their organization. A third believe it is definitely not, and the remainder gave more ambivalent answers. Environmental issues in general are not given a high priority in comparison with other policy issues. Most of the agencies do not feel that climate change is something that they need to act on now. It is their opinion that there are too many more pressing *immediate* problems that

over-shadow the uncertain *future* issue of climate change. Additionally, climate change is presently viewed as having too many uncertainties to qualify as a priority issue demanding policy action. Several of the interviewees volunteered the opinion that *water* issues were the major environmental problems facing the states in the future.
For additional detail see Section III B; Appendix C: Questions 13,13b, 27, 28, 29, 30; and Appendix D.

- **What is known, where learned?** Over three fourths of the policy officials contacted have been exposed in some manner to information on climate change. There was no predominate source of information reported by the interviewees. There was no evidence of a concerted or specifically planned effort by any group (ie. the federal government, scientific community, or environmental groups) to inform state policy makers. The news media was mentioned nearly as often as more official sources such as government reports. There are several national associations that serve state governments specifically that have had special reports on climate change policy issues that other states have implemented. These appeared to be unknown to the respondents in these two states.
For additional detail see Section III C and Appendix C: Questions 14, 17

- **What more is desired / what type?** Less than half of the policy makers responded with a definite "yes" as to whether the information they have received has been useful in a policy sense. Another 20% responded that it was "somewhat" useful. The agencies expressed the need for more "proof" before they could be expected to act. A commonly volunteered response was that facts and data specifying the "people and dollars" involved were needed in any proposal for policy change submitted to the state legislative body. As can be seen from the information provided in Appendix E there is little consensus on information needs.
For additional detail see Section III D; Appendix C: Questions 23, 24; and Appendix E.

- **How much change to trigger action?** The actual witnessing of several years of changed weather or increases in natural disasters were the most mentioned answers for things that would "definitely" result in policy initiatives. This is consistent with other findings of attitudes of a more general audience (Schneider, 1990, pgs 144-146). Many agencies are unable to see a connection of the impact of climate change in relation to their program responsibility, and believe other agencies are better placed to deal with the issue. Only two of the 34 agencies contacted have discussed the policy implications of climate change. In spite of this generally passive posture, nearly half do express that a "no regrets" policy position would be the recommended approach. For additional detail see Section III E and Appendix C: Questions 31, 32

SUMMARY CONCLUSIONS:

Long-term Climate Change is a policy area that receives at best, a modicum degree of focus by state government officials in the two states studied. Policies have been implemented that have a relationship to climate change in a synergistic sense, but were not implemented as a *direct* response to climate change concerns. Policy officials are minimally informed, but the information and its sources are not considered highly useful. State legislatures are viewed as key determinants of a state's policy posture in regard to climate change, but thus far are highly indifferent, if not reluctant, to undertake any proactive initiatives.

This overall finding and the more detailed findings listed above are highly consistent with the work of other researchers regarding state-level policymaking. A recent research effort encompassing all 50 states found that the southern states (also the mountain states) have generally been less "active" in environmental policymaking (Jones, 1991). That study also found that states in those two regions rely heavily on federal initiatives in this policy area.

The findings in regard to the general nature of the climate change information is consistent with the findings of research done in 1987 (Webber, 1987). In that work Webber found that state legislators consider constituent-oriented information sources the most useful (the "people and dollars" perspective identified by the respondents in South Carolina and Georgia). It is Webber's contention that a gap in the flow of information from the scientist to the legislators exists because of a difference in world views, values, and technical languages. More recent work supports this contention as well as reflected in Table 3, which compares and contrasts the legislator's and scientist's viewpoints (Kundall, 1994).

Table 3: Comparison of Views

Legislatures	University
• Compromise	• "Truth", no compromise
• Applied research	• Basic research
• Find solution to apparent problem	• Look for problems
• Quick answers	• Long term study

The heavy reliance on the federal government may be a shaky foundation and is highly inconsistent with the current political atmospher of the U.S. A continued path of a so-called "New Federalism" first introduced in the 1980's seems to have reached its zenith with the current movement of "Reinventing Government" and public opinion expressed in the 1994 elections. All of these point to more empowerment of state and local governments. In some recent research specifically addressing climate change policy it was noted that a splintering of environmental efforts has occured at the national level, and it is increasingly being left to the states to choose their own actions (Jones, 1991). In the two states researched that choice has been to do nothing.

II. PROJECT REPORT

Background:

There is an acknowledged "gap between science and policy" as concerns long-term climate change (Bernabo, 1992). The two groups have different agendas and perspectives that have not been well understood by each other. Achieving a rapprochement between the stakeholders in climate variation -- scientists, natural resource managers, and public policy makers -- poses some difficult questions. Scientists quite rightly wish to conduct responsible research according to the best canons of scientific method. Natural resource managers operate within a market system that requires that they factor costs associated with alternative actions and make choices that reflect such analyses. Government policy makers must arbitrate between a range of affected groups, some of whom reflect mutually contradictory goals. The only possible solution to the problem relies on a systematic effort from each of the three communities to understand the needs and concerns of the other two. In pursuit of mutual understanding, cooperation, and effectiveness, the Institute for Public Affairs and Policy Studies at the University of Charleston, South Carolina has approached the problem from the policy perspective in three phases: Phase I - Natural Resource Managers; Phase II - State Government Policy Makers; and Phase III - Local Government Policy Makers.

The Institute conducted Phase I of the study in 1992 for the South Carolina Water Resources Commission through a grant by the United States Environmental Protection Agency, and separate support from the South Carolina Sea Grant Consortium. The study involved the surveying of southeastern natural resource managers to identify their current knowledge of climate change, assess their perceptions of the impact climate change will have on their industry, and to identify the outside sources they use for gaining new information when they perceive a need.

In the summer of 1994, the Institute conducted Phase II of the study with funds provided by the South Carolina Sea Grant Consortium. State-level public administrators, legislative staffers, and selected legislators in two states were personally interviewed in this phase in order to determine six basic facts. These are: 1) **Who** is *deciding* natural resource policy; 2) **How** do they *view* the issue of climate change ; 3) **What** do they currently *know* about the subject and **where** are their sources; 4) **What** *more* would they like to know; 5) **What** *type* of information do they want; and 6) **How much** *change* would have to occur or be predicted to trigger policy action. The following report is the summary of these findings.

Methodology:

Personal interviews were conducted in order to gather the information presented here. Key state level policy makers were chosen from legislative, natural resources, energy, and other technological agencies whose programs may be affected by climate change. South Carolina and Georgia were chosen as the two states to be subject of the research due to the fact that both of these states were part of the Phase I study. The policy makers interviewed are listed in Table 1.

TABLE 1: Complete list of officials interviewed

	PROGRAM AREA	STATE	POSITION / ORGANIZATION
1	**LEGISLATIVE**	SC	Chairman, Joint Legislative Committee on Energy
2		SC	Research Director, Joint Leg Com on Energy
3		SC	Chairman, Agri. & Nat. Resources Committee
4		GA	Senior Policy Analyst, Senate Research Office
5		GA	Executive Director, House Research Office
6		GA	Science Advisor to the Legislature
7	**ENERGY**	SC	Governor's Office of Energy Programs
8		SC	Office of Energy
9		GA	Director, Environ. Facilities Authority, Energy
10	**NAT. RESOURCE**	SC	Asst. Commissioner, Department of Agriculture
11		SC	Exec. Director, Deportment of Land Resources
12		SC	State Forester, Forestry Commission
13		SC	Fire Chief, Forestry Commission
14		SC	Technical Assistant, Forestry Commission
15		SC	Governor's Office of Natural Resources
16		SC	Director, Water Resources Commission
17		SC	Asst. Dir., Wildlife & Marine Resources Dept.
18		SC	Coastal Council
19		SC	Director of Planning, Coastal Council
20		SC	Planner, Coastal Council
21		GA	Director, Forestry Commission
22		GA	Commissioner, Department of Agriculture
23		GA	Commissioner, Dept. of Natural Resources (DNR)
24		GA	Director, Division of Water Resources (DNR)
25		GA	Director, Division of Air Resources (DNR)
26		GA	Asst. Director, Division of Wildlife (DNR)
27	**OTHER TECHNO.**	SC	Director, Building Codes Council
28		SC	Director, Environ. Control , Dept. Transportation
29		SC	State Highway Engineer, Dept. of Transportation
30		SC	Dep. Commissioner, Quality,Dept Health&Envirn
31		SC	Director, Plan.& Research, Dept Health & Envirn.
32		SC	Director, Emergency Preparedness Division
33		SC	Coordinator, Emergency Preparedness Division
34		SC	Chief of Planning, Emergency Preparedness Div.
35		GA	Director, Building Authority
36		GA	Director, Planning, Dept Community Affairs
37		GA	Director, Envir Planning, Dept of Transportation
38		GA	Director, Emergency Management Division

The Survey Instrument:

A formal survey instrument was created in order to serve as a general interview guideline. During the interview the researchers had the freedom to diverge from the survey and followup on any points that the interviewee brought up. Because of the nature of these interviews, the interviewer may have skipped some survey questions while other additional information was retrieved.

The survey was created using the Phase I survey as a template and adding to it additional bibliographic research about state-level climate change policies occurring throughout the nation. **Appendix A** provides a summary of the state-level policies found through this additional research.

The survey contains thirty-two questions in seven sections which focus on:

- The background of the interviewee;
- What is known about climate change and the sources of that information;
- What, if any, action is transpiring in the state;
- The quality of the information and what additional information is needed;
- The primary force regarding the climate change issue;
- The personal viewpoint of the interviewee regarding climate change;
- And the trigger points that would prompt action by the organization.

Appendix B is an example of the survey instrument.

Thirty-eight individuals were interviewed. Some of these interviews took place with more than one person from an agency in attendance. When this occurred, the combined views of the groups were treated as one respondent. Because of this the number of respondents is reduced to 34. Twelve interviewees are from Georgia and twenty-two from South Carolina. Of these individuals interviewed 3 were in the energy field, 13 in the natural resources field, 11 in other technological fields including transportation, emergency preparedness, etc., and 6 were working within the legislative branch including representatives and staffers (see Figure 1). Because of the small number of policy makers interviewed quantitative analysis of the data is limited. Instead much of the information in the findings will rely on qualitative analysis.

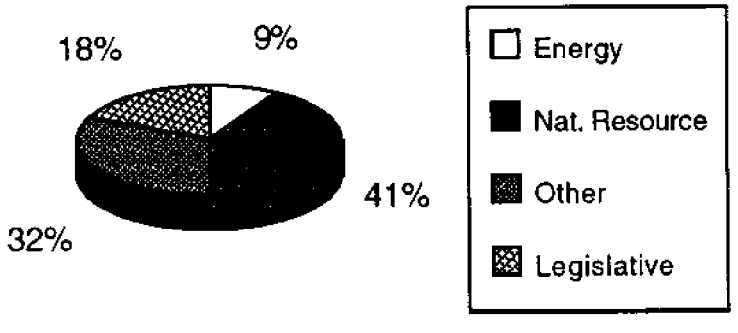


Figure 1: Percentage of the Different Fields Interviewed.

III. DETAILED FINDINGS

This section of the report analyzes the results of the study. The overall frequencies will be discussed, including the problems that arise when there is a small sample. Comparisons will also be made across the state and organizational liness in the survey as well as comparisons back to Phase I of the study. The actual counts and percentages of non-open ended questions are provided in ***Appendix C.***

SECTION A: WHO IS DECIDING?

Demographic Information:

The demographic information sought will allow further analysis and presentation of findings in appropriate forums. Specifically, two major areas of explanation may be useful when examining attitudes and opinions held by groups of individuals. Either the general background such as education, training, sex, etc., or more context-specific variables such as specific position, organizational area, and state may influence responses.

The respondents were male, mostly between the ages of 40-60. Fifty percent of the interviewees were directors of their departments. Most of the respondents hold a bachelor's degree as their highest degree. Figure 2 graphs the different levels of education.

Educational Level of Respondents

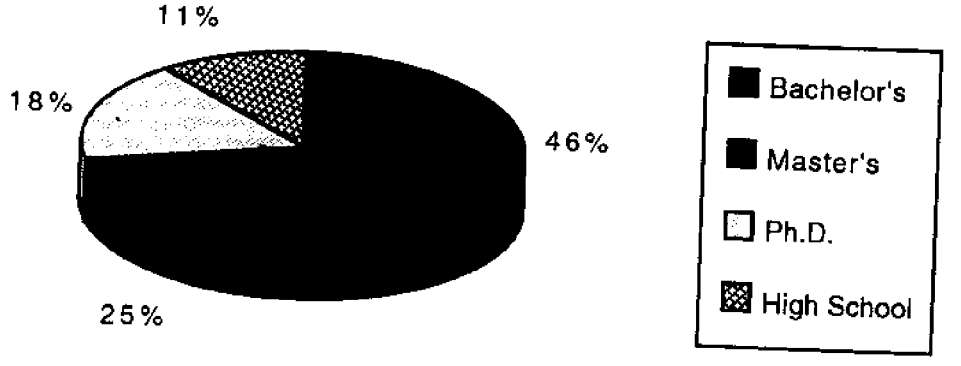


Figure 2: What was your formal education area of study?

The respondents' educational majors range from the technical (such as engineering and biology) to the more general such as (journalism, and political science). The resource managers' educational backgrounds in Phase I were similar to the state-level policy makers except that 4% of the resource managers held a Ph.D. as compared to 18% of state-level policy makers.

The individual respondents'experience in state government was relatively evenly distributed with approximately half falling in the 15 years and less category, and the remainder reflecting 15 years or more. In comparison, however, fully three fourths of the respondents had been working in their field of expertise 15 years or more. Only four of the respondents had less than ten years experience in their field.

South Carolina

A total of 22 policy makers in the South Carolina State Government were interviewed. Two were in the energy field, 10 in the natural resources field, 7 in other technological fields, and 3 were involved in the legislative function. The average age ranged from 40 to 60 years old. The average experience in the field of expertise was 20 years, 14 years in state government, and 7 years in their position. Forty-five percent of those interviewed were heads of department-level organizations.

Georgia

A total of 12 policy makers were interviewed. Of those 1 was in the energy field, 4 in natural resources, 3 in legislative positions, and 4 in other technological agencies. Their average age also ranged from 40 to 60 years old. The average experience in their field was 22 years, 23 years in state government, and 10 years in their position. Fifty-eight percent of those interviewed were heads of departments.

Mission of Agencies and the Policies That They Make:

A key point should be kept in mind in reviewing the findings of this study. Although there are many things that can be compared within this study, the amount or types of policies that come out of the individual agencies cannot be compared due to varying missions and varying degrees of authority. Some of the agencies have regulatory powers; some have review and comment authority; and others are in a position to offer suggestions only (if and when they happen to know of a policy action in process).

This is not to suggest that an agency with a strong position about an issue, but lacking substantive authority, is powerless. Some of the respondents reported other forms of influence that are used. For example work can be done to inform other agencies that do have regulatory powers or actively participate in the legislation drafting process. However, it was reported that it is often difficult to get even "pressing" issues into the forefront of the legislative agenda. Media hype was cited as a driving force for getting legislation introduced, oftentimes resulting in less substantive issues getting top priority.

It was reported that there is a difficult balance between pressing for legislation and maintaining a level of credibility within the political system. For example, if an agency continually called for bills that did not gain interest, no one would continue to listen to their ideas. An agency has to choose their battles carefully in order to "stay within the loop". One respondent who was particularly informed on the legislative process emphasized the importance of maintaining, credibility, and the ease of losing it over one item of bad advice. It was repeatedly reported that general, non-demonstrable environmental issues have generally fit into that category of issues that have failed to "gain interest" at the state level.

The following is a summary of the different governmental controls that different agencies possess and the types of policies that have been enacted. Overall, only two agencies (both in Georgia) mentioned policies that apply directly to climate change. As a comparison, 25% of the Phase I natural resource managers (a predominately non-govermental group) had implemented some type of policy or action to address the impacts of climate change.

Other policies were discussed in this second phase not directly associated with climate change. These policies can act as being a good step toward a "no regrets" posture. The "no regrets" policy is one, that once implemented, has a postive impact no matter what happens. That is to say there are policies that can be implemented ostensibly to address uncertain and high risk issues such as climate change, and yet serve positive purposes whether the risk materializes or not.

South Carolina

The legislative committees interviewed have helped to pass some important conservation measures. None of these measures were passed based on justification of the probability of climate change, however. Most of the measures were passed because of federal mandates or federal funding that called for such legislation. Also the bulk of these conservation measures in place call for *voluntary* measures or offer incentives for compliance.

South Carolina has two energy offices in the executive branch. The two energy offices were set up in response to oil overcharge refunding made available to the states through the federal government. These agencies' authority generally does not extend beyond the allocation of funding for programs and special projects. They cannot mandate that conservation methods be taken, but do provide incentives that promote the undertaking of conservation methods. All of the projects are funded through the use of federal monies. Participation by the private sector in these projects is strictly voluntary. There are some projects which require mandatory participation by state agencies.

Many of the natural resource agencies take cues or follow mandates of the federal government, but they are not as dependent on federal programs as the energy offices. The natural resource agencies have not made policies that are concerned directly with climate change, but have implemented conservation policies.

A few of the natural resource agencies appear to act as an "information broker"or provider of information to the Governor's Office. Information brokers, while lacking the control of direct policy making, do have the power to influence initiatives that the state will bring to the forefront of attention.

The weather is important to the other technological agencies, even though this may not be apparent at first. Only two of these agencies could not list one policy that even had a remote link with climate change. Other agencies listed policies that dealt with pollution control, conservation measures, short term weather concerns, and scientific studies that have been either implemented or discussed. None of these policies were created with climate change in mind, but they can be viewed as a step towards "no regrets" actions. It is noteworthy that most of these agencies feel that climate change is something that they need not act upon now. They believe that there will be no problem in adapting in the future if the proven need arises.

Georgia

Georgia's research offices for both the Senate and House support all committees and individual legislators that want information on a variety of subjects. This is unlike South Carolina where research staff are assigned to specific committees. The research offices interviewed provided helpful insight on across-the-board conservation initiatives in Georgia. Many of the policies that have been implemented deal with air quality issues. Solid waste and energy efficiency were also listed as policies implemented. None of these policies were directly linked to climate change, but can be a step towards a "no regrets" action.

Georgia's Office of Energy Resources is part of the Georgia Environmental Facilities Authority. The main mission is to conserve energy resources and administer Department of Energy's federal regulations. The energy office has a link to the University of Georgia's Agriculture Extension. All of the policies are geared toward energy efficiency such as energy audits, alternative fuel supplements, and weatherizing programs. None of these policies were identified as directly linked to climate change. Like South Carolina, the Georgia Office of Energy Resources appears to be closely tied to the federal government.

Georgia's Department of Natural Resources has many different divisions with different missions. The policies produced by natural resource agencies cover a wide range of fields. The policies all act to protect and regulate resources in order to conserve or preserve them for the future. Only one policy was reported as being directly linked to climate change. That is the payment by utility companies to private landowners to plant trees for use as a carbon sink. This policy has been developed by the federal government and has not yet been implemented in Georgia.

The policies made by non-natural resource agencies are varied because of the different responsibilities of each agency. Some of the other technological agencies have the power to make policies that would affect local governments. One of these agencies was in place only to carry out federal and state mandates. Many of the policies made by these organizations address building practices. For example, Emergency Management is discussing building code updates due to changes in climate. Georgia is implementing a state wide development plan through its Community Development Agency.

External Influences on the Agencies:

To determine where the pressures and influences for making environmental policies the interviewees were asked which group is the most influential to them. This influence can be either positive (making more environmental policies) or negative (making less environmental policies).

Many of the agencies rated the federal government as being very influential on environmental issues. In fact, some even noted that if it was not for the federal government, the environmental policies in existence today would never have been implemented. Environmental groups were also listed as an influential group. Figure 4 illustrates the most influential groups. It is noteworthy that only the natural resources agencies mentioned the scientific community as an influential source. This may point out that the gap between the scientists and the policy makers exists because of professional boundaries.

Groups with the Most Influence on Agencies

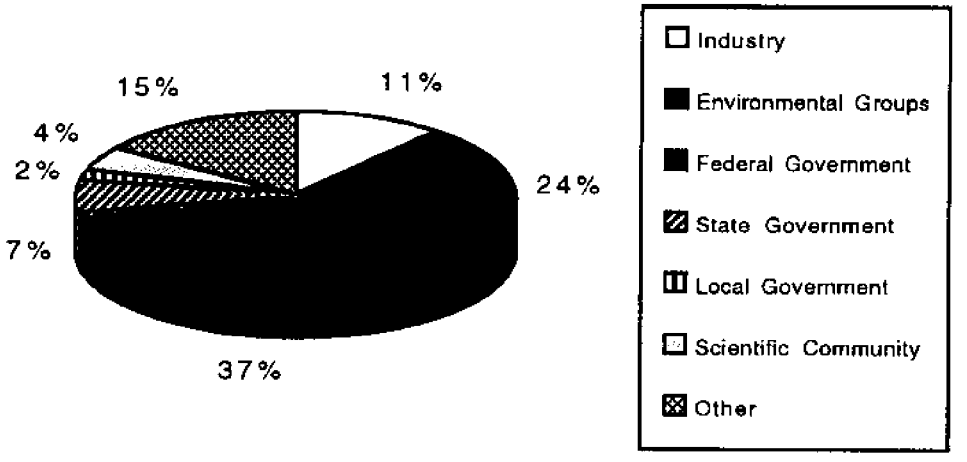


Figure 3: What group do you think has been the most influential in regard to environmental issues as related to your field? NOTE: Totals do not add up to 100% because respondents were alloed to answer more than once.

Only one person in the survey mentioned that the local governments were influential in the policy making process. This came from a legislative research staff. This response may be expected in the legislature, where local pressures from constituents would be felt more than in other areas.

SECTION B: HOW IS THE ISSUE VIEWED?

Thoughts about Climate Change Policy:

During the course of the interviews, many of the respondents provided some insight as to why climate change is not high on the policy agenda. They also gave insight into the state governmental processes as well. The following is a summary of views expressed by the interviewees. These responses were offered in addition to the information asked for on the survey instrument. A listing of the individual views is given in **Appendix D**.

All of the agencies in general believe that they need to wait for a mandate to come from a higher source (federal or state) before they are willing or able to make policies concerning climate change. However as pointed out by Jones (1991), the "New Federalism" brought about during the Reagan era, has caused a reduction in the federal role concerning environmental issues. While gaps were created, states have responded differently in filling these gaps. The "New Federalism" has in fact caused a splintering of environmental efforts. While the federal government (Clinton, 1993) has recently invested into researching climate change and its policy implications, it has mainly been left up to the states to choose their own actions.

Many agencies, however, feel that the uncertainty is too great to take the issue seriously. Others feel that the legislature would not pass any policy that they introduce. In fact, many of those interviewed expressed discouragement with the unresponsiveness of the legislature. One policy maker stated that the legislators were too busy dealing with trivial issues to act on issues such as conservation.

One point often echoed by Georgia's policy makers was that Georgia is a business oriented state. This point could offer some insight for someone trying to introduce climate change policy into the state. A policy designed to promote industry would obviously be accepted more readily.

Legislature

Mixed feelings were expressed by both elected representatives and staff from the legislative branch regarding environmental policies at the state level. Some believe that the states should be a leader in conservation, but at the same time single states acting independently are viewed as ineffective in meeting global isses. These officials believe that the initiative should come from the federal government, or, if not, from the constituents directly. It was expressed that micromanagement must not be imposed, nor taxes that would interfere with free enterprise process. It was reported that if there is an identifiable crisis, naturally the state legislature could be expected to respond.

One legislative respondent pointed out that the government is slow to respond to changes. Another stated that such long term plans needed to address climate change would never be passed in their state.

Energy

While believing that it is at the state level where "things get done", the energy officials feel that they need a statement or mandates from higher up (either the governor or federal government). Climate change information is too esoteric to use in making policies. There needs to be a market driven force in order for policies to be formed. It was a general consensus in these two states that following the lead of what other states are doing would be the better course of action. They could not forsee going out on a limb by trying something new. One energy office believes that any policy (climate change or not) that they introduce would not be passed through the legislature.

Natural Resources

The natural resource agencies' feelings about climate change policies are varied. Some agencies believe that they need to spend their time on more immediate issues. Others are not certain that a single state could have an effect on global warming.

Some of the agencies believe that they are doing all they can do now to help reduce the effects of climate change in the future. They do not believe that new evidence would change their conservation practices much at all. Other agencies feel that they cannot do anything positive until they get a regional policy containing unfragmented laws.

It was also reported by some of the natural resources departments that other governmental agencies are responsible for climate change policy. A few identified another agency whom they felt was responsible, others simply noted that climate change was not part of their mission. A belief was expressed by some that the state supported universities needed to be included to a larger degree in this policy arena.

Other Technological Agencies

The other technological agencies reported that initiatives need to be introduced at a higher level (from the legislature or the federal government). These agencies echo some thoughts of all of the agencies:

- Some other agency is responsible;
- The issue is too big for one state;

- Other program areas are causing the problems;
- They need to be concerned with more immediate problems.

One agency described climate change as being a "mega issue". State and local governments cannot deal with mega issues, so they just wait until some action is taken by the federal government.

Most of these agencies believe that the state legislature is not going to allow any needed policy to be passed because that body is not responsive to uncertainty. The agencies believe more scientific proof is needed before they can act or even introduce the topic to the legislature.

Importance of Climate Change to the Organization:

Several questions were asked about the importance of climate change to the organization, to the respondent themselves, and the trigger points that would cause their organization (or the state) to action. These questions were asked in order to find out how important climate change is to state-level policy makers or their organization, and to test whether these beliefs are connected with their exposure to the climate change information.

When asked whether climate change is a concern to the organization, 45% (14) stated that it is a concern. However, 67% (4) of the legislative field and 56% (5) of the other technological fields stated that it is not a concern to their organizations (see Figure 3). The respondents' belief that climate change is a concern to the organization seemed to be greater with those respondents who feel that the best policy for climate change is a "no regrets" response. Also, out of those respondents who believe that climate change will affect them within their lifetime, 71% feel that climate change is a concern to their organization. Only one of the respondents who feels that climate change will affect him within his lifetime answered that climate change is not a concern to his organization. These correlations suggest that when climate change is made a concern to the organization, it is followed by an overall belief in climate change. Albeit such a small sample is far from conclusive, and a small group (3) who did not believe climate change would be manifested in their lifetime did report that the issue was a concern to their organization.

Those who answered that it is not a concern to their organization were asked whether they believed that it *should be*. Fifty percent (6) said that they did not believe that it should be a concern to the organization. Not one in the legislative or other technological fields answered that they believed that it should be a concern.

How Climate Change Ranks When Compared to Other Environmental Issues:

The interviewees were asked to rank climate change in importance when compared to other environmental issues facing the state. Solid waste, hazardous waste, water quality, air quality, wetland preservation, and forest preservation were all given as examples of environmental issues. Overall, climate change ranked less important than the other environmental issues. The energy field is an exception in this group and ranked climate change more important than solid waste, hazardous waste, wetland preservation, and forest preservation. The energy field ranked only water and air quality as more important than the climate change issue.

How Environmental Issues Rank When Compared to Other Issues Facing the State:

Like the last question, the respondents were asked to rank environmental issues as more important, less important, or about the same as other policy issues facing the state. Education, crime, drug abuse, the economy, and health were given as examples of other issues.

When comparing the environmental issue to other issues in general about 70% ranked it as being about the same in importance. Education and crime were ranked as being generally more important than the environment. The economy ranked somewhere between being more important and about the same as the environment in importance. South Carolina and Georgia were in variance in regard to health issues as compared to the environment. South Carolina ranked health as being equal to environmental issues by 57%. Georgia ranked health issues as more important by 50%. Drug abuse was the only issue to clearly rank below the environment.

This clearly reflects that other environmental issues rank higher than climate change, and further, environment issues overall rank fairly low on the state level policy maker's agenda.

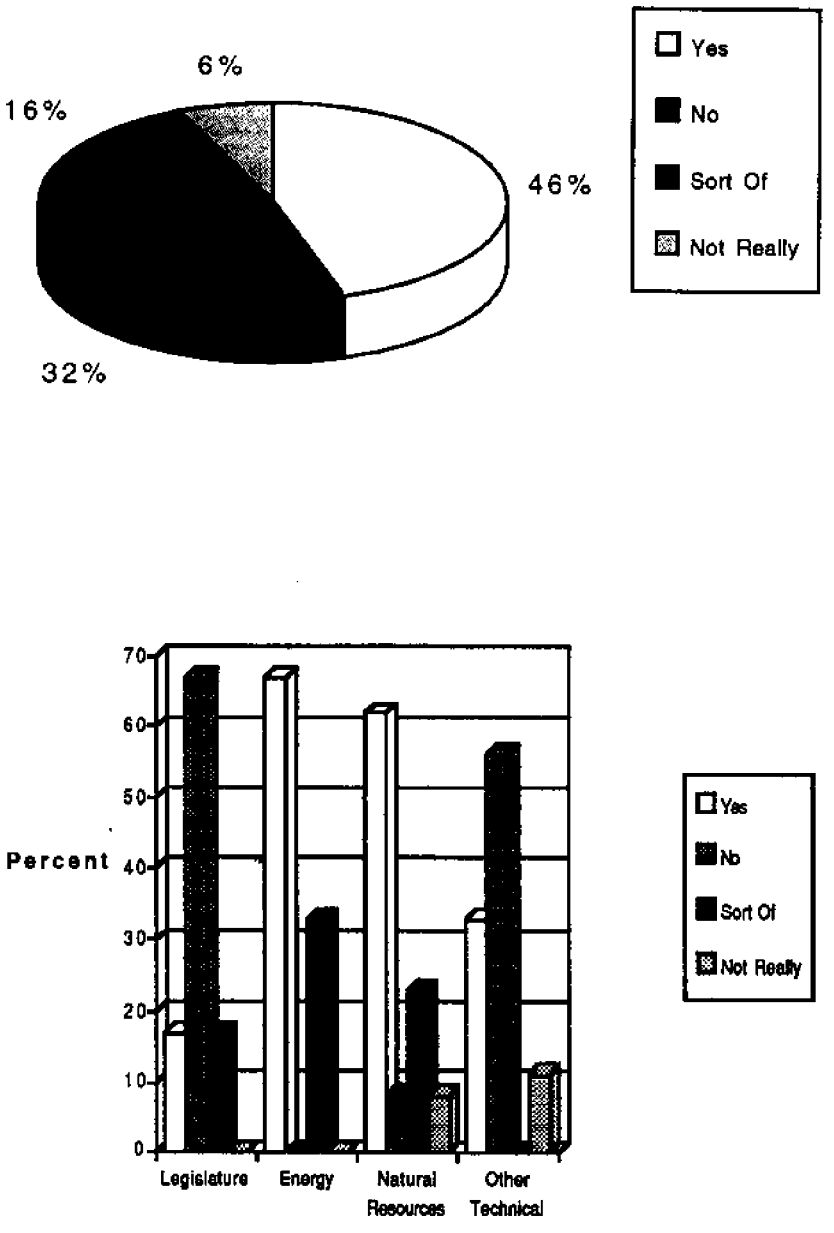


Figure 4: Is climate change and its implications a particular concern to your organization?

When asked what would cause the agency (or state) to act on climate change 36% answered several years of changed weather, and 36% answered an increase in natural disasters. South Carolina was consistent with these overall statistics, while Georgia gave various other answers 50% of the time. The legislative field (60%) felt that several years of a changed climate would prompt them to act. The energy field (50%) felt that an increase in natural disasters would cause them to act. The natural resources fields gave no consistent answer that could be considered the most

dominant. The other technological fields (67%) felt that an increase in natural disasters would cause them to act on climate change.

Another question asked for the respondent to suggest the best course of policy that should be taken on climate change right now. The answers ranged from the "no regrets approach" (43%) to "wait and see what happens" (9%). These results vary from the results of Jones' (1991) research. Jones surveyed state-level policy makers similar to this study, to find out their feelings about global warming. His findings found that most of the respondents felt that a "wait and see" approach would be the best policy. The fact that Jones' finding is not collaborated in this study is interesting since South Carolina and Georgia have not taken direct action at this point, but still express a preference for the no regrets policy. Perhaps there has been a change in overall feelings over the five year gap between the two studies. Including more states into this study will help to find out whether there has been an overall change in attitude about climate change.

Many of the state-level policy makers believe that the information is too uncertain to act on now, but coupled with waiting for more information is an obligation to keep informed which could be a form of "passive preventative actions" (26%). Other answers included increased education and specific policy actions to be taken.

Best Answer to Environmental Problems:

One section of the survey focused on the interviewee's personal feelings about environmental issues in general in order to gain better understanding of the views these state-level policy makers hold. For example is thiere is a positivie feeling toward environmental issues, the policy maker may be more open to information on climate change. However, if this proves to be an invalid assumption, one explanation may be the amount and quality of data reaching these policy makers.

First, the interviewees were asked what they believed was the best answer to the environmental problems. They were then given four choices to choose from: improved technology; increased awareness through education; increased governmental mandates; or a change in national life styles. Overall, 54% of the respondents chose increased awareness through education as their first choice. The second most popular answer was improved technology (38%). It is significant to note that ever though the datat cannot show it, many of the respondents indicated that all four choices are connected and that it is difficult to choose a single response. Some of the respondents could not choose one answer over the other three. Education ranked as the most popular answer for both the Energy fields (66%) and the natural resource fields (64%). The legislative group chose improved technology (80%) as the best answer. The other technological fields were split between education (43%) and technology (43%). It is interesting to note that increased governmental mandates always ranked low.

In South Carolina the most mentioned response was increased awareness through education (66%). Technology and a change in behaviors were close behind with 33% and 28% respectively. Only 11% felt that governmental mandates were the answer. In fact, increasing government mandates was the only answer that received negative attention.

Unlike South Carolina, Georgia chose technology most often (50%) as the best answer to environmental problems. A change in lifestyles (38%) and increased education (25%) followed as the second most popular answers. Please note that the percentages do not add up to 100% because the respondents were allowed to give first and second preferences.

SECTION C: WHAT IS KNOWN, WHERE LEARNED?

Information Sources:

Seventy-eight percent of the interviewees have been informed in some form about climate change. In Phase I only 47% of the resource managers had been informed about climate change. Obviously the information is getting to the state-level policy makers at a higher rate than to the resource managers. This may suggest that the state serves as a type of information filter to the resource managers. If this is true, it would suggest that the state-level policy makers need to be doing a better job at getting information out to these managers. Figure 5 illustrates the breakdown of whether the state-level policy makers have been informed about climate change. Note that in all of the agencies, except for the other technological agencies, 65% of the respondents have become informed about climate change. This lower level of informed policy makers may reflect a too narrow of perspective of the implications of climate change by those disseminating climate change information.

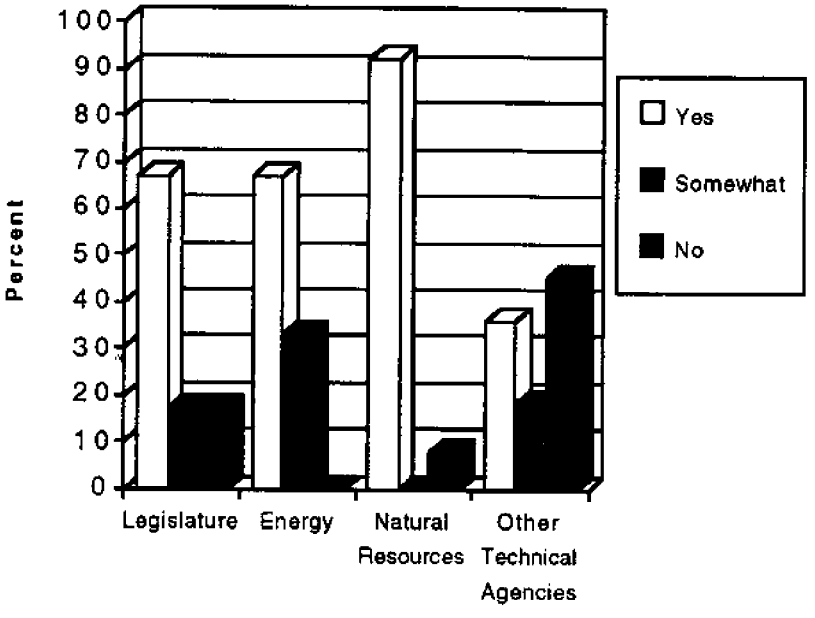


Figure 5: Have you had the opportunity to become informed of the areas of policy concern associated with your field and climate change?

The main source of information for the state-level policy makers has been conferences and federal publications. The news media is also a source of information for many of the respondents. These findings differ from Phase I, natural resource managers, who got most of their information (over 50%) from professional journals. The general news media (43%) was also mentioned by the natural resource managers as a source of information followed by colleges and universities (15%). It is important to point out another difference in sources of information between Phase I and Phase II. *Government reports and conferences were not popular sources of information for Phase I (less than 15%) but were mentioned often in Phase II (46%).* Because of the different sources of information used to get information on climate change, a difference in the amount and types of information being received may also

be occurring. This difference may also account for the difference between the number of respondents who have been informed of climate change in Phase I and Phase II.

Table 2: Where they get their information: Total (N=24)

Conferences	11	(46%)
Federal Publications	11	(46%)
News Media	9	(38%)
Government Publications	7	(29%)
State Publications	6	(25%)
Industry Journals	4	(17%)
State Climatologists	4	(17%)
Colleges / Universities	3	(13%)
Academic Journals	2	(8%)

NOTE: Total does not add up to 100% because respondents were allowed to answer more than once.

Of those who had been informed about climate change, 60% felt that the information was of some help to them. This is markedly higher than the 30% in Phase I who felt that the information was helpful. A possible reason of this may be the difference in preferred sources. An interesting distinction between the different fields showed up on this question (see Figure 6). Generally 60% or higher of the different fields felt that the information provided to them on climate change was helpful except for the other technological fields. Only 28% of the other technological agencies felt that the information was of some help to them.

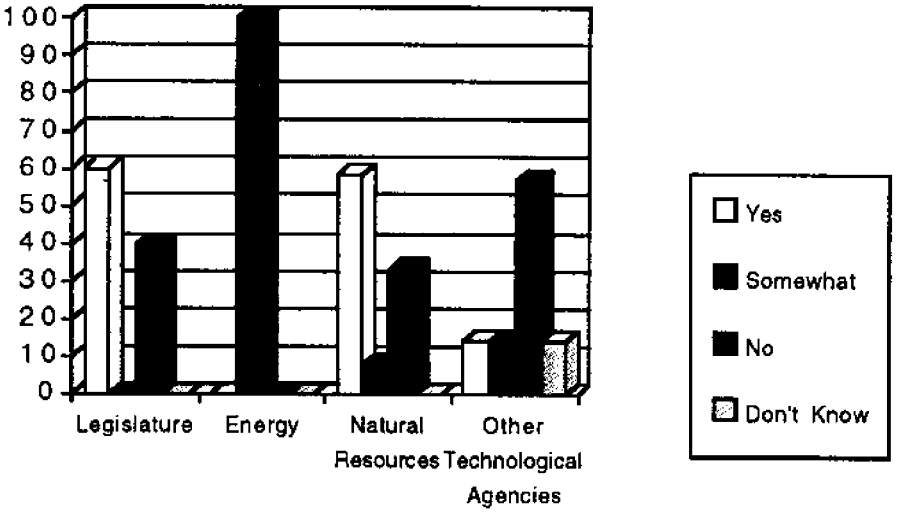


Figure 6: What is your opinion of the information made available to you? Is it useful in making policy decisions?

One possible reason for the distinction between the groups may be a lack of relevance in the literature to the other technological agency's particular field. Twenty-nine percent of the other technological agencies stated that the information was not helpful because it was not relevant to their organization as compared to the 16% of the total. Seventy-one percent of the other technological agencies also stated that climate change information was too full of uncertainty to be helpful. This number is consistent with the 63% of the total respondents who felt that the information was not helpful because it is too uncertain.

SECTION D: WHAT MORE IS DESIRED, WHAT TYPE?

Forms of Information Preferred:

The respondents have not been getting information that they believe is relevant to them. The sources that they read are sketchy at best, too technical at worst. They expressed the need for data that discusses the problem and suggests what actions can be taken. They want either an authoritative state source or the federal government to give guidance on whether they should act or not. As reported by the interviewees, this data needs to be easily found, and in sources that are regularly read and trusted.

The less technical fields want data that addresses the subject in a simplified fashion. The best data would be data that explains the situation, how it would affect that organization, discusses measures that can be taken, and how these measures would affect the situation in monetary terms.

The more technical fields, including the natural resource fields, want more technical information. They want to see all of the facts and be able to decide for themselves whether or not the data is true. They want information that gives evidence that climate change is a problem and also the conflicting evidence suggesting that climate change may not be a problem. They also want an explanation of how the information was gathered. This information needs to be presented in a source that they trust and regularly use. The information needs to also be field-specific that would include explanations on how climate change will affect their particular programmatic responsibilites.

For a complete list of the types of information that would be helpful to these agencies see **Appendix E.**

Legislature

The desired type of information would be short non-technical reports, that explain climate change and its impacts on the region. Information that associates dollar impact with the consequences would get the most attention. Also included in the information should be examples of how the effects of climate change can be offset. What is wanted are examples of what can and should be done. This information needs to come from a source that they regularly use and trust.

Georgia's Science Advisor suggests that information needs to be filtered through an intermediary in order for it to hold its meaning while being put into political terms. He also believes that the information should come in bits and pieces in order to help inform the legislators without overwhelming them. Following this approach will ensure that by the time the issue comes to the forefront, legislators will already have a working knowledge of climate change.

Energy

The energy fields would like to see information that addresses both regional and local concerns. They want technical assistance in understanding and interpreting the data. Examples of programs that have worked in other states would aid in this. The data needs to be simplified but not so much that the facts are glazed over. The data should still contain long term trends.

Natural Resources

Natural resource agencies want concise information that presents a consensus that climate change is an issue. The best type of information would come from a single source. It would then be easier to get the information and choose whether it is an issue to them. A consensus of the facts along with practical suggestions of possible actions should be presented in this way. The information should contain hard data, but not so technical that the lay person cannot understand it. This information should be presented on a regional level, containing projections that are focused with a single field in mind (forestry, wildlife, etc.) This information should be easily accessible and come from a trusted source that incorporates a coordinated effort of research.

Other Technological Agencies

The other technological agencies expressed the need for information that is specific to their field of concern. It should come from sources in which they have built a level of trust (i.e., professional organizations). A single source that compiles the spectrum of data would be helpful. The information should contain predictive data that has more certainty attached to it. These agencies also want to know how it will affect the people or public jurisdictions of the region. It would be best if this information associated dollars or lives with consequences. The information should also identify what can be done and what agencies are responsible for accomplishing it.

SECTION E: HOW MUCH CHANGE TO TRIGGER ACTION?

Will Climate Change Become an Issue?

One question asked whether climate change would become a major issue in the future. Over half, (56%) answered that they either believed that it would be an issue or that there is a possibility that it would become an issue in their lifetime. All of the respondents in the energy field felt that climate change would possibly become an issue. The other technological fields were split 50-50 between it becoming an issue or not.

Natural resources diverted from the average somewhat with over half (54%) stating that climate change would **not** be an issue within their lifetime. Natural resources answer is particularly interesting in that these are the agencies that are receiving the most information about climate change (see Information Sources).

When tested, there was no correlation between the belief that climate change would becaome an issue within one's lifetime and a person's education, or best policy response. But when we tested whether a person believed that they would see climate change become an issue within their lifetime with their educational major we did find a correlation. Only 15% (2) respondents with a liberal arts major, such as journalism or political science, answered that climate change would not become an issue within their lifetime. But, 54% (7) of the more scientific majors, such as engineering and forestry, answered that climate change would not become an issue within their lifetime. It is difficult to say what these findings may mean without futher research. We were unable to test for a correlation between the respondent's age and their feelings towards climate change because of a lack of age data.

APPENDICES

APPENDIX A: STATE-LEVEL CLIMATE CHANGE POLICY INITIATIVES *

OVERARCHING ENVIRONMENTAL POLICIES:

- Development and implementation of tax structures that are reflective of differences in environmental impact.

- Establishment of *formal* organizational elements; interagency study teams; and/or strategies directed at addressing environmental impacts and possible policy options. States taking positive action: CT, CA, MO, NJ, NY, TX.

- Implementation of state procurement policies that provide maximum incentives to conserve energy. NJ, MA.

- Comprehensive strategies for reducing emissions. OR, VT.

- Bans on the sale of CFC products. CT, HI, ME, OR, VT, WI.

- Modification of state income tax laws to permit deductions for purchase and installation of CFC recycle equipment. MD.

- Required recycling and recovery of CFC products from air conditioning units. CT, HI, OR, VT, WI.

- Recovery of methane gas for energy use (ie landfills, coal mines). AL.

- Development of more efficient land use patterns. SC

- Implementation of coastal policies that plan for sea-level rise. LA, ME, SC.

- Research priorities dedicated to a coordinated state/national/international approach to studying climate change. NC.

- Adopt at a *minimum*, a preventative "no regrets" strategy to address climate change (take positive steps now even if global warming results in less severe results than current models predict). Promote environmentally-benign technologies and more efficient use of resources. Develop and implement regulatory and pricing policies for short and medium term impact. Over the longer term, new technologies and changes in the mix of energy sources could have a larger impact. Even those longer term strategies can be. heavily influence by the near term regulatory and pricing policies. (Southern Growth Policies Board, 1990)

ENERGY POLICY INITIATIVES:

- Require utilities to give preference to conservation and demand-side management before considering new power plant construction, or otherwise monetize environmental impact in the planning process. IA, ME, NV, NY.

- Strengthen building codes to meet modern technical and economic standards. Develop a Model Energy Code. CT, FL, ID, MD, ME, NC, OH, PA, VA, WA.

- Require conservation investments when a home is sold. (3 unspecified states)

- Assign specific values to the various types of emissions. (17 unspecified states)

- Develop formal programs for the use of efficient lighting equipment, ie. EPA's Green Lights Program. MD

- Mandate energy performance standards for state buildings to reduce energy use CT, VT.

- Financing of studies, design, construction, installation of energy saving projects for governments in the state. NC

- Create energy fund which allows energy savings to be held in central fund for redistribution to new projects. NC

- Require identification of energy costs in state budgets. IA

- Require state vehicles to meet minimum fuel economy ratings. AZ, CT, IA.

- Mandate solar energy features on state buildings where cost effective. AL, AZ, FL.

- Mandate reduction in state facilities energy use. NY.

- Authorize differential utility rate structures for buildings failing to comply with energy standards (CT), or otherwise provide incentives for meeting conservation standards. WA.

- Reimburse utilities for more expensive alternative energy consumption (WA), or otherwise promote alternative fuels. CO, LA, VA.

- Provide financial incentives or rebates to improve efficiency of appliances, furnaces, boilers. IL.

- Implement energy audit programs for small and medium-sized commercial and industrial facilities. GA (irrigation), NY.

- Initiate research, implement demonstration projects related to weatherization technologies in the homes of low-income families. PA.

- Promote cogeneration of electricity and heat, or otherwise capture dual potential of certain production processes. GA (waste heat from fresh milk).

BUILDING POLICY INITIATIVES:

- Develop energy rating standards for new housing to provide consumers with objective energy information.

- Strengthen building codes to meet modern technical and economic standards. Develop a Model Energy Code. CT, FL, ID, MD, ME, NC, OH, PA, VA, WA.

- Require conservation investments when a home is sold. (3 unspecified states)

- Mandate energy performance standards for state buildings to reduce energy use. CT, VT.

- Develop formal programs for the use of efficient lighting equipment, ie. EPA's Green Lights Program. MD.

- Mandate solar energy features on state buildings to reduce energy use. CT, VT.

- Support differential utility rate structures for buildings failing to comply with energy standards. CT.

TRANSPORTATION POLICY INITIATIVES:

- Reduce vehicle licensing tax for alternatively fueled vehicles. AZ, MA.

- Reimburse corporate fleet owners for costs of converting to alternate fuels. CO.

- Require new state vehicle purchases to operate on clean fuels. CO, FL, IA, MO.

- Require state vehicles to meet minimum fuel economy ratings. AZ, CT, IA, NY.

- Set goals for increasing individual vehicle occupancy levels, and increasing levels of ridership on public transportation systems. CT.

- Develop multimodal transportation system plans. OR.

FORESTRY POLICY INITIATIVES:

- Conduct annual tree planting programs in quantities sufficient to offset the state's CO^2 emissions. CT, MA, MN, TX.

- Require one for one tree replacement due to state construction. MD. NJ.

AGRICULTURE POLICY INITIATIVES:

- Improve the efficiency of fertilizer application systems.

- Implement agricultural technical assistance programs, ie. energy-saving heat exchangers; irrigation scheduling; energy efficient barn retrofits; waste heat recovery systems; energy efficient pesticide application. GA.

WATER POLICY INITIATIVES:

- Analyze state water use, rights, and laws.

- Authorize water right holders to lease or sell conserved water. CA, OR.

SOURCES:

-Center for Global Change, U of Maryland, 1992
-Council of State Governments, 1990
-Environmental Protection Agency, 1991 & 1992
-National Conference of State Legislatures, 1990 & 1992
-National Governor's Association, 1990 & 1993
-Southern Growth Policies Board, 1990

APPENDIX B: Survey Instrument

UNIVERSITY OF CHARLESTON
S.C. SEA GRANT CONSORTIUM
CLIMATE CHANGE / STATE POLICY STUDY
INTERVIEW OUTLINE

GENERAL

SECTION I.
PRIMARY AREA OF INQUIRY: BACKGROUND OF INTERVIEWEE RELEVANT TO THEIR POLICY PERSPECTIVE.

1. STATE:____2. ORGANIZATION:_____

3. ORGAN. POSITION OF INTERVIEWEE:_____

4. NAME:_____ __M__F

5 PHONE NUMBER:_____FAX:_____

6. HOW MANY YRS. HAVE YOU BEEN INVOLVED IN THE (_____) FIELD?_____
*IN WHAT CAPACITIES?

7. HOW LONG HAVE YOU BEEN IN YOUR CURRENT POSITION?_____

8. HOW LONG IN STATE GOVERNMENT (TOTAL CAREER)? _____

9. WHAT WAS YOUR FORMAL EDUCATION AREA OF STUDY?
_____UNDERGRAD(YR___) _____GRAD

10. IN BRIEF, WHAT IS THE BASIC MISSION OF THIS ORGANIZATION?

11. WHAT ARE ITS BASIC AUTHORITIES?

12. WHAT TYPE OF POLICY EMANATES FROM THIS ORGANIZATION?
(DO NOT READ)
___POLICY INTERNAL TO ORGAN.
___POLICY DECISIONS
___POLICY HAVING GOV. WIDE FORCE
___POLICY RECOMMENDATIONS
___PROPOSED LEGISLATION

SECTION II.

PRIMARY AREA OF INQUIRY: WHAT IS KNOWN ABOUT CLIMATE CHANGE, WHAT IS THE SOURCE OF THAT KNOWLEDGE.

13. IS CLIMATE CHANGE AND ITS IMPLICATIONS A PARTICULAR CONCERN TO YOUR ORGANIZATION? **(DO NOT READ)**___Yes___No___Sort of___Not really___DK

*IF IT IS NOT, DO YOU THINK IT SHOULD BE A CONCERN?

14. HAVE YOU HAD THE OPPORTUNITY TO BECOME INFORMED OF THE AREAS OF POLICY CONCERN ASSOCIATED WITH (_____) AND CLIMATE CHANGE?
(DO NOT READ)
___Yes ___Somewhat **(go to 17 if y or sw)**___No ___Not sure / DK **(go to 15 if n or ns)**

15. IS THERE SOMEONE ELSE IN THE ORGANIZATION WHO HAS BEEN ASSIGNED THIS RESPONSIBILITY OR IS OTHERWISE WELL VERSED ON THE SUBJECT? __Y__N__DK
WHO IS THAT PERSON?_____

16. WHAT IS THEIR POSITION IN THE ORGANIZATION?_____

17. **(Ask only if #14 yes or sw)** HOW DID YOU BECOME AWARE OF THESE POLICY CONCERNS; WHAT WERE YOUR SOURCES OR MEANS OF BECOMING INFORMED?
(DO NOT READ)

___Industry professional journals
___Government publications
___Federal ___State
___College pubs / reports
___Special group pubs.:_____
___Conference presentations:
Conf. sponsors:_____
___General news media
___Other:_____

SECTION III.
PRIMARY AREA OF INQUIRY: WHAT ACTION IS TRANSPIRING IN THE STATE?

18. ARE YOU AWARE OF ANY (______________) POLICY INITIATIVES RELATED TO THE CLIMATE CHANGE ISSUE THAT HAVE BEEN DISCUSSED, STUDIED, PROPOSED OR IMPLEMENTED BY THE STATE?__Y__N__DK.
(If no /dk skip to 20)

19 BRIEFLY WHAT ARE THOSE?

____
(___tax___mandate___ban___rebate___organ___plan___educ/p.r.)

STATUS?:____: __D__S__P__I

____
(___tax___mandate___ban___rebate___organ___plan___educ/p.r.)

STATUS?:____: __D__S__P__I

____
(___tax___mandate___ban___rebate___organ___plan___educ/p.r.)

STATUS?:____: __D__S__P__I

____
(___tax___mandate___ban___rebate___organ___plan___educ/p.r.)

STATUS?:____: __D__S__P__I

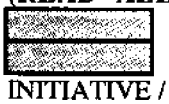
____
(___tax___mandate___ban___rebate___organ___plan___educ/p.r.)

STATUS?:____: __D__S__P__I

____
(___tax___mandate___ban___rebate___organ___plan___educ/p.r.)

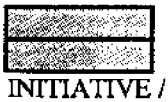
STATUS?:____: __D__S__P__I

20. IN DOING OUR RESEARCH WE FOUND CERTAIN POLICY INITIATIVES THAT HAVE BEEN SUGGESTED OR ARE IN PLACE TO ADDRESS CLIMATE CHANGE. SOME APPEAR TO BE RELATED TO YOUR PROGRAM AREA. DO THEY TRIGGER ANY THOUGHTS OF SIMILAR THINGS IN WHICH THIS STATE MAY BE INVOLVED PRESENTLY, OR IN THE PAST? **(READ ALL)**



INITIATIVE / STATUS?_____

INITIATIVE / STATUS?_____



INITIATIVE / STATUS?_____

INITIATIVE / STATUS?_____

INITIATIVE / STATUS?_____

INITIATIVE / STATUS?_____

INITIATIVE / STATUS?_____

21. DO YOU BELIEVE ANY OF THE ABOVE POLICY INITIATIVES WHERE THIS STATE IS NOT CURRENTLY INVOLVED MAY, HOWEVER, MAY HAVE APPLICABILITY AND BE BENEFICIAL TO THE STATE?___Yes___No___Possibly___DK

22. WHICH ONES? (MAKE NOTATIONS ON BACK OF PREVIOUS PAGE)

SECTION IV

PRIMARY AREA OF INQUIRY: WHAT IS THE QUALITY OF THE INFORMATION RECEIVED: WHAT ADDITIONAL INFO IS NEEDED TO BEST SUPPORT POLICY DECISIONS, AND IN WHAT FORM?

23. WHAT IS YOUR OPINION OF THE INFORMATION MADE AVAILABLE TO YOU? IS IT USEFUL IN MAKING POLICY DECISIONS?__Y(Go to 25)__N__Somewhat__DK(Go to 24)

24. WHY IS IT THAT YOU DON'T FEEL THE INFORMATION IS USEFUL OR MAXIM'LLY SO?
(DO NOT READ)

___Climate change information has been too full of uncertainties to be considered reliable.
___Information has generally focused on global change rather than at the regional level.
___Information has in terms of extremes and frequencies has been too general to be of use.
___Information has not been specific enough to identify exactly what is at risk, and what is not.
___Information has not addressed the consequences of existing practices sufficiently to justify modifications of those practices.
___Climate change really does not affect the mission of this organization or its programs.
___Other_____
___Other_____

25. WHAT KIND OF INFORMATION AND IN WHAT FORM WOULD BE THE MOST USEFUL TO YOUR ORGANIZATION?

SECTION V

PRIMARY AREA OF INQUIRY: WHO / WHAT ORGAN IS THE PRIMARY FORCE REGARDING CLIMATE CHANGE ISSUES.

26. WHAT GROUP DO YOU THINK HAS BEEN THE MOST INFLUENTIAL IN REGARD TO ENVIRONMENTAL ISSUES AS RELATED TO (_____)?
(DO NOT READ).

___The industry itself
___Environmental groups
___Federal government
___State government
___Other_____
___Local government
___Scientific community
___Media

27. WHAT DO YOU THINK WILL PROVIDE THE ULTIMATE ANSWER TO THE OVERALL ENVIRONMENTAL ISSUE?
(READ ALL)

___Improved technology
___Increased awareness thru education
___Increased governmental regulation
___Major change in nat'/ policy & personal lifestyle

SECTION VI:
PRIMARY AREA OF INQUIRY: WHAT IS THE PERSONAL VIEWPOINT OF THE INTERVIEWEE REGARDING CLIMATE CHANGE.

28. HOW DO YOU RATE CLIMATE CHANGE IN IMPORTANCE WHEN COMPARED TO OTHER ENVIRONMENTAL PROBLEMS FACING THIS STATE? THESE OTHER PROBLEMS INCLUDE SOLID WASTE MANAGEMENT; PROPER DISPOSAL OF HAZARDOUS WASTES; WATER QUALITY; AIR QUALITY; WETLAND PRESERVATION; NATURAL FOREST PRESERVATION. WOULD YOU THINK CLIMATE CHANGE ISSUES IN COMPARISON TO THESE OTHERS IS ___MORE IMPORTANT___LESS SO ___OR ABOUT THE SAME IN TERMS OF IMPORTANCE TO THIS STATE?

(The following are optional details that can be asked or learned from the interviewee's response.)

Solid Waste	Climate:___More___Less___Same
Haz. Waste	Climate:___More___Less___Same
Water Qual	Climate:___More___Less___Same
Air Qual.	Climate:___More___Less___Same
Wetland	Climate:___More___Less___Same
Forest Preser.	Climate:___More___Less___Same
_____	Climate:___More___Less___Same
_____	Climate:___More___Less___Same

29. DO YOU THINK CLIMATE CHANGE WILL BE A MAJOR ISSUE IN YOUR LIFETIME?
___YES___POSSIBLY___NO___DK

30. HOW DO YOU THINK ENVIRONMENTAL ISSUES IN GENERAL COMPARE WITH THE BIGGER ARENA OF POLICY ISSUES FACING THE STATE SUCH AS EDUCATION, CRIME, DRUG ABUSE, ECONOMIC GROWTH, HEALTH CARE? ___MORE IMPORTANT ___LESS SO___ABOUT THE SAME?

(The following are optional details that can be asked or learned form the interviewee's response.)

Education	Environ:___More___Less___Same
Crime	Environ:___More___Less___Same
Drug Abuse	Environ:___More___Less___Same
Economy	Environ:___More___Less___Same
Health	Environ:___More___Less___Same
_____	Environ:___More___Less___Same
_____	Environ:___More___Less___Same

31. WHAT DO YOU THINK IS THE BEST APPROACH FOR THE STATE LEVEL POLICY MAKER IN DEALING WITH RISKS SUCH AS CLIMATE CHANGE THAT ARE FRAUGHT WITH A HIGH DEGREE OF UNCERTAINTY?
(DO NOT READ)
___A no regrets approach. ___Wait until demonstrable events occur.
___Implement passive prevention actions.
___Other_____
___Other_____
___Other_____

SECTION VII

PRIMARY AREA OF INTEREST: WHAT WOULD BE THE TRIGGER POINTS THAT WOULD BE ASSURED TO PROMPT POLICY INITIATIVES BY THIS PARTICULAR ORGANIZATION?

32. WHAT WOULD HAVE TO OCCUR IN TERMS OF A CHANGED CLIMATE THAT WOULD DEFINITELY RESULT IN REVISED AND ADDED (_____) POLICY INITIATIVES?

(DO NOT READ)

___Don't Know

___Several consecutive years of changed weather.

___A demonstrable rise in the sea level.

___An increased frequency in natural disasters.

___Demonstrable decreases in air quality.

APPENDIX C: Questionnaire Results

The results in this appendix are only the quantitative results. For qualitative results see Appendices D, E, and F.

Question 1: State?

	Total		SC		GA	
Answer	#	%	#	%	#	%
GA	12	35%				
SC	22	65%				
Total	34	100%				

	Legislature		Energy		Natural Resources		Other Agencies	
Answer	#	%	#	%	#	%	#	%
GA	3	50	1	33	4	29	4	36
SC	3	50	2	67	10	71	7	64
Total	6	100	3	100	14	100	11	100

Question 6: How many years have you been involved in your field?

	Total		SC		GA	
# of Years	#	%	#	%	#	%
0-5	2	10	2	13	0	0
5-10	2	10	1	6	1	25
10-15	1	5	1	6	0	0
15-20	1	5	1	6	0	0
20-25	7	35	7	44	0	0
25-30	4	20	2	13	2	50
30-35	3	15	2	13	1	25
Total	20	100	16	100	4	100

	Legislature		Energy		Natural Resources		Other Agencies	
# of Years	#	%	#	%	#	%	#	%
0-5	1	33	1	50	0	0	0	0
5-10	1	33	0	0	0	0	1	25
10-15	1	33	0	0	0	0	0	0
15-20	0	0	0	0	1	9	0	0
20-25	0	0	0	0	6	55	1	25
25-30	0	0	0	0	2	18	2	50
30-35	0	0	1	0	2	18	0	0
Total	3	100	2	100	11	100	4	100

Question 7: How long have you been in your current position?

	Total		SC		GA	
# of Years	#	%	#	%	#	%
0-5	11	44	9	50	2	29
5-10	5	20	3	17	2	29
10-15	4	16	3	17	1	14
15-20	2	8	1	6	1	14
20-25	2	8	2	11	0	0
25-30	1	4	0	0	1	14
Total	25	100	18	100	7	100

	Legislature		Energy		Natural Resources		Other Agencies	
# of Years	#	%	#	%	#	%	#	%
0-5	2	50	2	100	5	42	2	29
5-10	1	25	0	0	2	17	2	29
10-15	0	0	0	0	2	17	2	29
15-20	1	25	0	0	1	8	0	0
20-25	0	0	0	0	1	8	1	14
25-30	0	0	0	0	1	8	0	0
Total	4	100	2	100	12	100	7	100

Question 8: How long in state government (total career)?

	Total		SC		GA	
# of Years	#	%	#	%	#	%
0-5	4	18	4	22	0	0
5-10	5	23	4	22	1	25
10-15	3	14	3	17	0	0
15-20	1	5	0	0	1	25
20-25	4	18	4	22	0	0
25-30	2	9	2	11	0	0
30-35	2	9	1	6	1	25
35-40	1	5	0	0	1	25
Total	22	100	18	100	4	100

	Legislature		Energy		Natural Resources		Other Agencies	
# of Years	#	%	#	%	#	%	#	%
0-5	1	25	2	100	0	0	1	17
5-10	2	50	0	0	2	20	1	17
10-15	1	25	0	0	1	10	1	17
15-20	0	0	0	0	0	0	1	17
20-25	0	0	0	0	3	30	1	17
25-30	0	0	0	0	1	10	1	17
30-35	0	0	0	0	2	20	0	0
35-40	0	0	0	0	1	10	0	0
Total	4	100	2	100	10	100	6	100

Question 9: What was your formal education area of study?

	Total		SC		GA	
Answer	#	%	#	%	#	%
High School	3	11	2	10	1	25
Bachelor's	13	46	11	55	2	25
Master's	7	25	5	25	2	38
Ph.D.	5	18	2	10	3	13
Total	28	100	20	100	8	100

	Legislature		Energy		Natural Resources		Other Agencies	
Answer	#	%	#	%	#	%	#	%
High School	0	0	0	0	2	17	1	13
Bachelor's	2	33	2	100	6	50	3	38
Master's	0	0	0	0	3	25	4	50
Ph.D.	4	67	0	0	1	8	0	0
Total	6	100	2	100	12	100	8	100

Question 9: Major?

	Total		SC		GA	
Answer	#	%	#	%	#	%
Accounting	1	4	0	0	1	14
Business	1	4	1	5	0	0
Criminal Justice	1	4	1	5	0	0
Education	1	4	0	0	1	14
Engineering	5	19	5	25	0	0
Environmental Science	2	7	1	5	1	14
Forestry	4	15	3	15	1	14
Geography	2	7	2	10	0	0
History	1	4	1	5	0	0
Journalism	1	4	1	5	0	0
Planning	2	7	1	5	1	14
Political Science	3	11	2	10	1	14
Technical	2	7	2	10	0	0
Wildlife Biology	1	4	0	0	1	14
Total	27	100	20	100	7	100

	Legislature		Energy		Natural Resources		Other Agencies	
Answer	#	%	#	%	#	%	#	%
Accounting	0	0	0	0	0	0	1	13
Business	0	0	0	0	1	9	0	0
Criminal Justice	0	0	0	0	0	0	1	13
Education	1	17	0	0	0	0	0	0
Engineering	1	17	2	100	1	9	1	13
Environmental Science	1	17	0	0	1	9	0	0
Forestry	0	0	0	0	4	36	0	0
Geography	0	0	0	0	1	9	1	13
History	1	17	0	0	0	0	0	0
Journalism	0	0	0	0	0	0	1	13
Planning	0	0	0	0	0	0	1	13
Political Science	2	33	0	0	0	0	1	13
Technical	0	0	0	0	1	9	1	13
Wildlife Biology	0	0	0	0	1	9	0	0
Total	6	100	2	100	11	100	8	100

Question 9: Age Range?

	Total		SC		GA	
Answer	#	%	#	%	#	%
Age 30-40	2	12	2	17	0	0
Age 40-50	7	41	5	42	2	40
Age 50-60	8	47	5	42	3	60
Total	17	100	12	100	5	100

	Legislature		Energy		Natural Resources		Other Agencies	
Answer	#	%	#	%	#	%	#	%
Age 30-40	0	0	1	50	0	0	1	33
Age 40-50	2	40	0	0	4	57	1	33
Age 50-60	3	60	1	50	3	43	1	33
Total	5	100	2	100	7	100	3	100

Question 12: What types of policy emanates from this organization? (Allowed to answer more than once)

	Total		SC		GA	
Answer	#	%	#	%	#	%
Internal	5	19	4	21	1	14
Recommend Policy	14	54	10	53	4	57
Policy Decisions	15	58	11	58	4	57
Proposed Legislation	4	15	4	21	0	0
Government Wide Force	4	15	4	21	0	0
Total	26	N/A	19	N/A	7	N/A

	Legislature		Energy		Natural Resources		Other Agencies	
Answer	#	%	#	%	#	%	#	%
Internal	0	0	1	50	1	13	3	27
Recommend Policy	2	40	2	100	5	63	5	45
Policy Decisions	1	20	0	0	5	63	9	82
Proposed Legislation	3	60	0	0	1	13	0	0
Government Wide Force	1	20	0	0	2	25	1	9
Total	5	N/A	2	N/A	8	N/A	11	N/A

Question 13: Is climate change and its implications a particular concern to your organization?

	Total		SC		GA	
Answer	#	%	#	%	#	%
Yes	14	45	9	47	5	42
No	10	32	5	26	5	42
Sort of	5	16	5	26	0	0
Not Really	2	6	0	0	2	17
Total	31	100	19	100	12	100

	Legislature		Energy		Natural Resources		Other Agencies	
Answer	#	%	#	%	#	%	#	%
Yes	1	17	2	67	8	62	3	33
No	4	67	0	0	1	8	5	56
Sort of	1	17	1	33	3	23	0	0
Not Really	0	0	0	0	1	8	1	11
Total	6	100	3	100	13	100	9	100

Question 13b: If no / not really, should climate change be of concern?

	Total		SC		GA	
Answer	#	%	#	%	#	%
Yes	2	16	2	33	0	0
No	6	50	2	33	4	67
Sort of	2	17	1	17	1	17
Don't Know	2	17	1	17	1	17
Total	12	100	6	100	6	100

	Legislature		Energy		Natural Resources		Other Agencies	
Answer	#	%	#	%	#	%	#	%
Yes	0	0	1	100	1	33	0	0
No	1	33	0	0	1	33	4	80
Sort of	1	33	0	0	1	33	0	0
Don't Know	1	33	0	0	0	0	1	20
Total	3	100	1	100	3	100	5	100

Question 14: Have you had the opportunity to become informed of the areas of policy concern associated with your field and climate change?

	Total		SC		GA	
Answer	#	%	#	%	#	%
Yes	22	67	15	71	7	58
Somewhat	4	12	2	10	2	17
No	7	21	4	19	3	25
Total	33	100	21	100	12	100

	Legislature		Energy		Natural Resources		Other Agencies	
Answer	#	%	#	%	#	%	#	%
Yes	4	67	2	67	12	92	4	36
Somewhat	1	17	1	33	0	0	2	18
No	1	17	0	0	1	8	5	45
Total	6	100	3	100	13	100	11	100

Question 17: How did you become aware of these policy concerns; what were your sources of becoming informed? (Allowed to answer more than once)

	Total		SC		GA	
Answer	#	%	#	%	#	%
Industry Journals	4	17	2	14	2	20
Government Publications	7	29	6	43	1	10
Federal Publications	11	46	7	50	4	40
State Publications	6	25	5	36	1	10
Colleges / Universities	3	13	3	21	0	0
Conferences	11	46	5	36	6	60
News Media	9	38	6	43	3	30
Academic Journals	2	8	2	14	0	0
State Climatologist	4	17	4	29	0	0
Total	24	N/A	14	N/A	10	N/A

	Legislature		Energy		Natural Resources		Other Agencies	
Answer	#	%	#	%	#	%	#	%
Industry Journals	1	20	0	0	2	22	2	29
Government Publications	0	0	1	33	3	33	3	43
Federal Publications	1	20	2	67	5	56	2	29
State Publications	1	20	0	0	2	22	3	43
Colleges / Universities	0	0	1	33	2	22	0	0
Conferences	1	20	2	67	4	44	3	43
News Media	3	60	0	0	4	44	2	29
Academic Journals	0	0	0	0	3	33	0	0
State Climatologist	0	0	0	0	2	22	2	29
Total	5	N/A	3	N/A	9	N/A	7	N/A

Question 23: What is your opinion of the information made available to you? Is it useful in making policy decisions?

	Total		SC		GA	
Answer	#	%	#	%	#	%
Yes	11	41	8	44	3	33
Somewhat	5	19	3	17	2	22
No	10	37	7	39	3	33
Don't Know	1	4	0	0	1	11
Total	27	100	18	100	9	100

	Legislature		Energy		Natural Resources		Other Agencies	
Answer	#	%	#	%	#	%	#	%
Yes	3	60	0	0	7	58	1	14
Somewhat	0	0	3	100	1	8	1	14
No	2	40	0	0	4	38	4	57
Don't Know	0	0	0	0	0	0	1	14
Total	5	100	3	100	12	100	7	100

Question 24: Why is it that you don't feel the information is useful or maximally so? (Allowed to answer more than once)

	Total		SC		GA	
Answer	#	%	#	%	#	%
Too Uncertain	12	63	9	69	3	50
Global Not Local	3	16	2	15	1	17
Does Not ID What Is At Risk	3	16	2	15	1	17
Climate Change Does Not Affect Organization	3	16	1	8	2	33
Other	5	31	3	23	2	33
Total	19	N/A	13	N/A	6	N/A

* Other answers included: information too fragmented, too many points of view, information is not direct

	Legislature		Energy		Natural Resources		Other Agencies	
Answer	#	%	#	%	#	%	#	%
Too Uncertain	1	100	0	0	6	75	5	71
Global Not Local	0	0	1	33	0	0	2	29
Does Not ID What Is At Risk	0	0	3	100	0	0	0	0
Climate Change Does Not Affect Organization	0	0	0	0	1	13	2	29
Other	0	0	0	0	3	38	2	29
Total	1	N/A	3	N/A	8	N/A	7	N/A

* Other answers included: information too fragmented, too many points of view, information is not direct

Question 26: What group do you think has been the most influential in regard to environmental issues as related to your field? (Allowed to answer more than once)

	Total		SC		GA	
Answer	#	%	#	%	#	%
Industry	5	17	3	16	2	20
Environmental Groups	11	38	2	11	5	50
Federal Government	17	59	10	53	7	70
State Government	3	10	1	5	2	20
Scientific Community	2	7	1	5	1	10
Local Government	1	3	0	0	1	10
Other	7	24	7	37	0	0
Total	29	N/A	19	N/A	10	N/A

* Other answers included: better informed constituents, interest groups, market forces, local users, land owners, legislators, and public interest

	Legislature		Energy		Natural Resources		Other Agencies	
Answer	#	%	#	%	#	%	#	%
Industry	2	40	0	0	1	7	2	29
Environmental Groups	4	80	1	33	4	29	2	29
Federal Government	3	60	2	67	7	50	5	71
State Government	1	20	0	0	3	21	0	0
Local Government	1	20	0	0	0	0	0	0
Scientific Community	0	0	0	0	2	14	0	0
Other	1	20	1	33	3	21	2	29
Total	5	N/A	3	N/A	14	N/A	7	N/A

* Other answers included: better informed constituents, interest groups, market forces, local users, land owners, legislators, and public interest

Question 27: What do you think will provide the ultimate answer to the overall environmental issue?
(Allowed to answer more than once)

	Total		SC		GA	
Answer	#	%	#	%	#	%
Technology	10	38	6	33	4	50
Education	14	54	12	67	2	25
Governmental Mandates	2	8	2	11	0	0
Change in Behaviors	8	31	5	28	3	38
All Four	2	8	0	0	2	25
Total	26	N/A	18	N/A	8	N/A

	Legislature		Energy		Natural Resources		Other Agencies	
Answer	#	%	#	%	#	%	#	%
Technology	4	80	0	0	2	18	3	43
Education	2	40	2	66	7	64	3	43
Governmental Mandates	0	0	0	0	2	18	0	0
Change in Behaviors	1	20	1	33	4	36	2	29
All Four	0	0	1	33	0	0	1	14
Total	5	N/A	3	N/A	11	N/A	7	N/A

Question 28: How do you rate climate change in importance when compared to other environmental problems facing this state? These other problems include solid waste management; proper disposal of hazardous wastes; water quality; air quality; wetland preservation; natural forest preservation. Would you think climate change issues in comparison to these other issues is __more important, __less so, __or about the same in terms of importance to this state?

- Climate Change Versus Other Environmental Issues

	Total		SC		GA	
Answer	#	%	#	%	#	%
More	1	8	1	11	0	0
Less	8	62	6	67	2	50
About the Same As	4	31	2	22	2	50
Total	13	100	9	100	4	100

	Legislature		Energy		Natural Resources		Other Agencies	
Answer	#	%	#	%	#	%	#	%
More	0	0	1	50	0	0	0	0
Less	0	0	0	0	6	100	2	50
About the Same As	1	100	1	50	0	0	2	50
Total	1	100	2	100	6	100	4	100

- Climate Change Versus Solid Waste

	Total		SC		GA	
Answer	#	%	#	%	#	%
More	6	27	6	38	0	0
Less	14	64	9	56	5	83
About the Same As	2	9	1	6	1	17
Total	22	100	16	100	6	100

	Legislature		Energy		Natural Resources		Other Agencies	
Answer	#	%	#	%	#	%	#	%
More	0	0	2	67	4	44	0	0
Less	3	100	1	33	5	56	5	71
About the Same As	0	0	0	0	0	0	2	29
Total	3	100	3	100	9	100	7	100

- Climate Change Versus Hazardous Waste

	Total		SC		GA	
Answer	#	%	#	%	#	%
More	6	29	5	33	1	17
Less	11	52	8	53	3	50
About the Same As	4	19	2	13	2	33
Total	21	100	15	100	6	100

	Legislature		Energy		Natural Resources		Other Agencies	
Answer	#	%	#	%	#	%	#	%
More	2	67	1	100	3	30	0	0
Less	1	33	0	0	5	50	5	71
About the Same As	0	0	0	0	2	20	2	29
Total	3	100	1	100	10	100	7	100

- Climate Change Versus Water Quality

	Total		SC		GA	
Answer	#	%	#	%	#	%
More	3	14	3	21	0	0
Less	13	62	8	57	5	71
About the Same As	5	24	3	21	2	29
Total	21	100	14	100	7	100

	Legislature		Energy		Natural Resources		Other Agencies	
Answer	#	%	#	%	#	%	#	%
More	0	0	1	50	2	22	0	0
Less	2	67	1	50	6	67	4	57
About the Same As	1	33	0	0	1	11	3	43
Total	3	100	2	100	9	100	7	100

- Climate Change Versus Air Quality

	Total		SC		GA	
Answer	#	%	#	%	#	%
More	2	11	2	14	0	
Less	10	53	8	57	2	40
About the Same As	7	37	4	29	3	60
Total	19	100	14	100	5	100

	Legislature		Energy		Natural Resources		Other Agencies	
Answer	#	%	#	%	#	%	#	%
More	0	0	1	100	1	13	0	0
Less	2	67	0	0	4	50	4	57
About the Same As	1	33	0	0	3	38	3	43
Total	3	100	1	100	8	100	7	100

- Climate Change Versus Wetland Preservation

	Total		SC		GA	
Answer	#	%	#	%	#	%
More	9	47	8	53	1	25
Less	6	32	4	27	2	50
About the Same As	4	21	3	20	1	25
Total	19	100	15	100	4	100

	Legislature		Energy		Natural Resources		Other Agencies	
Answer	#	%	#	%	#	%	#	%
More	1	33	1	50	5	63	2	33
Less	2	67	0	0	2	25	2	33
About the Same As	0	0	1	50	1	13	2	33
Total	3	100	2	100	8	100	6	100

- Climate Change Versus Forest Preservation

	Total		SC		GA	
Answer	#	%	#	%	#	%
More	5	29	4	33	1	20
Less	7	41	5	42	2	40
About the Same As	5	29	3	25	2	40
Total	17	100	12	100	5	100

	Legislature		Energy		Natural Resources		Other Agencies	
Answer	#	%	#	%	#	%	#	%
More	1	33	1	50	2	33	1	17
Less	2	67	0	0	3	50	2	33
About the Same As	0	0	1	50	1	17	3	50
Total	3	100	2	100	6	100	6	100

Question 29: Do you think that climate change will be a major issue in your lifetime?

	Total		SC		GA	
Answer	#	%	#	%	#	%
Yes	7	22	5	23	2	20
Possibly	11	34	7	32	4	40
No	9	28	8	36	1	10
Don't Know	5	16	2	9	3	30
Total	32	100	22	100	10	100

	Legislature		Energy		Natural Resources		Other Agencies	
Answer	#	%	#	%	#	%	#	%
Yes	1	17	0	0	4	31	2	20
Possibly	3	50	3	100	2	15	3	30
No	0	0	0	0	7	54	2	20
Don't Know	2	33	0	0	0	0	3	30
Total	6	100	3	100	13	100	10	100

Question 30: How do you think environmental issues in general compare with the bigger arena of policy issues facing the state such as education, crime, drug abuse, economic growth, health care? __more important, __less so, __or about the same?

- Environment Versus Other General Issues

	Total		SC		GA	
Answer	#	%	#	%	#	%
More	0	0	0	0	0	0
Less	3	30	1	17	2	50
About the Same As	7	70	5	83	2	50
Total	10	100	6	100	4	100

	Legislature		Energy		Natural Resources		Other Agencies	
Answer	#	%	#	%	#	%	#	%
More	0	0	0	0	0	0	0	0
Less	0	0	2	67	1	20	0	0
About the Same As	1	100	1	33	4	80	1	100
Total	1	100	3	100	5	100	1	100

- Environment Versus Education

	Total		SC		GA	
Answer	#	%	#	%	#	%
More	0	0	0	0	0	0
Less	12	60	8	57	4	67
About the Same As	8	40	6	43	2	33
Total	20	100	14	100	6	100

	Legislature		Energy		Natural Resources		Other Agencies	
Answer	#	%	#	%	#	%	#	%
More	0	0	0	0	0	0	0	0
Less	2	67	1	100	6	67	3	43
About the Same As	1	33	0	0	3	33	4	57
Total	3	100	1	100	9	100	7	100

- Environment Versus Crime

	Total		SC		GA	
Answer	#	%	#	%	#	%
More	7	35	6	43	1	17
Less	10	50	6	43	4	67
About the Same As	3	15	2	14	1	17
Total	20	100	14	100	6	100

	Legislature		Energy		Natural Resources		Other Agencies	
Answer	#	%	#	%	#	%	#	%
More	2	67	1	100	3	33	1	14
Less	1	33	0	0	5	56	4	57
About the Same As	0	0	0	0	1	11	2	29
Total	3	100	1	100	9	100	7	100

- Environment Versus Drug Abuse

	Total		SC		GA	
Answer	#	%	#	%	#	%
More	9	47	7	50	2	40
Less	7	37	5	36	2	40
About the Same As	3	16	2	14	1	20
Total	19	100	14	100	5	100

	Legislature		Energy		Natural Resources		Other Agencies	
Answer	#	%	#	%	#	%	#	%
More	2	67	0	0	4	50	3	43
Less	0	0	1	100	3	38	3	43
About the Same As	1	33	0	0	1	13	1	14
Total	3	100	1	100	8	100	7	100

- Environment Versus Economy

	Total		SC		GA	
Answer	#	%	#	%	#	%
More	5	25	3	20	2	40
Less	8	40	6	40	2	40
About the Same As	7	35	6	40	1	20
Total	20	100	15	100	5	100

	Legislature		Energy		Natural Resources		Other Agencies	
Answer	#	%	#	%	#	%	#	%
More	0	0	0	0	3	33	2	29
Less	1	33	0	0	3	33	4	57
About the Same As	2	67	1	100	3	33	1	14
Total	3	100	1	100	9	100	7	100

- Environment Versus Health

	Total		SC		GA	
Answer	#	%	#	%	#	%
More	5	25	3	21	2	33
Less	6	30	3	21	3	50
About the Same As	9	45	8	57	1	17
Total	20	100	14	100	6	100

	Legislature		Energy		Natural Resources		Other Agencies	
Answer	#	%	#	%	#	%	#	%
More	0	0	1	100	2	25	2	29
Less	2	50	0	0	1	13	3	43
About the Same As	2	50	0	0	5	63	2	29
Total	4	100	1	100	8	100	7	100

Question 31: What do you think is the best approach for the state level policy maker in dealing with risks such as climate change that are fraught with a high degree of uncertainty?

	Total		SC		GA	
Answer	#	%	#	%	#	%
No Regrets	10	43	5	36	5	56
Wait and See	2	9	1	7	1	11
Passive Preventative	6	26	5	36	1	11
Other	5	22	3	21	2	22
Total	23	100	14	100	9	100

* Other answers included: be proactive but cautious, stay in touch with research, promote wise use, take a conservative approach, informed awareness, create sub committees, act on documented problem

	Legislature		Energy		Natural Resources		Other Agencies	
Answer	#	%	#	%	#	%	#	%
No Regrets	2	40	1	50	5	50	2	33
Wait and See	1	20	0	0	1	10	0	0
Passive Preventative	1	20	1	50	1	10	3	50
Other	1	20	0	0	3	30	1	17
Total	5	100	2	100	10	100	6	100

* Other answers included: be proactive but cautious, stay in touch with research, promote wise use, take a conservative approach, informed awareness, create sub committees, act on documented problem

Question 32: What would have to occur in terms of a changed climate that would definitely result in revised and added policy initiatives? (Allowed to answer more than once)

	Total		SC		GA	
Answer	#	%	#	%	#	%
Several Years of Changed Weather	10	37	8	47	2	20
Sea Level Rise	3	11	1	6	2	20
Increase in Natural Disasters	10	37	8	47	2	20
Decrease in Air Quality	1	4	1	6	0	0
Other	7	26	2	12	5	50
Total	27	N/A	17	N/A	10	N/A

* Other answers included: drought, grassroots movements, drop in production, a personal experience with change, more money, federal regulations, more practical research

	Legislature		Energy		Natural Resources		Other Agencies	
Answer	#	%	#	%	#	%	#	%
Several Years of Changed Weather	3	60	0	0	4	33	3	33
Sea Level Rise	1	20	0	0	2	17	0	0
Increase in Natural Disasters	1	20	0	0	3	25	6	67
Decrease in Air Quality	0	0	1	50	0	0	0	0
Other	1	20	1	50	4	33	2	22
Total	5	N/A	2	N/A	12	N/A	9	N/A

* Other answers included: drought, grassroots movements, drop in production, a personal experience with change, more money, federal regulations, more practical research

APPENDIX D: Opinions About Climate Change Policies In General

This information is provided in order to give the reader an idea of how the individual interviewees responded in regard to climate change as a policy issue at the State level.

Legislative Posture on Climate Change / Environmental Issues:

- Other committees (Agriculture, Land Resources) are better equipped to deal with issue.
- The Legislature would give "zero" attention to any long range predictions.
- Modification of taxes structures for conservation incentive purposes would require national directives; the state legislature will not pass independently.
- Taxing requirements interfere with the process.
- State legislation will not be passed without viable results or irrefutable science.
- The legislature is not very responsive and generally skeptical of risky issues such as "worst case scenarios"
- Uncertainty, or long range projections, will not get passed the Speaker of the House. Percent of chance has to be high, and would first consider what other states have done.
- The legislature would rate climate change last and economic development first. There are no specific energy groups at the legislative level.
- This Legislature is more receptive to environmental issues than most other states.

Overall Posture of State Government:

- This State has too many problems and as a small state cannot realistically be expected to make a difference
- Only demonstrated crises demand responsive action.
- Uncertainty is very high in this issue area and state government will not respond to such intangibles.
- The State is generally in the position of combating EPA. Federal government tells what to do, but the State usually lessens the guidelines.
- Burning issues have to be addressed first.
- This State must deal with immediate concerns first.
- There are more important concerns than climate change.
- No "regulations" will be implemented if it can be helped.
- The State should be a leader in conservation measures.
- This State needs to absorb the ideas of other states.
- Would need a statement from the Governor in order to initiate action.
- Climate Change is too esoteric of a subject to expect policy action.
- Many incentive policies will be market driven.
- This State not open to even a no regrets policy.
- There is no overall plan, relevant laws are fragmented.
- The State should involve the universities.
- Policies must have cost payoffs
- Incentives are good - money talks. Regulations are difficult accomplish.
- No "regulations" will be implemented if it can be helped.
- Incentives are better than mandates.
- Some initiatives are not associated with specific policy, but are being done voluntarily.
- This State needs to be more proactive versus reactive.
- This State is reactive to environmental issues.
- It is easier to import and correct an existing program.
- Need to link climate change to bigger issues (health,economy).

- A lot of overblown concern can force governments to take action. (i.e., water runoff), but which may be insignificant in relation to the overall problem.
- Environmental concerns are not a big issue to this State.
- The general public not interested in the environment.
- Environmental laws are more stringent in this State than federal requirements.

State vs Federal Role:

- The Federal government is better prepared to act. This is a global issue that should be addressed on an international scale.
- The Federal government comes up with mandates and the State implements; states are where things get done.
- The Federal government needs to provide more means of voluntary "regional planning".
- Climate change is a "mega issue". State governments cannot deal with issues such as sea-level rise.
- Not sure that a single state can have a real impact. There must be a coordinated effort at least regionally; nationally would be better; and worldwide would be best.
- Auto-industry are the real polluters, but little pressure is on them to do something. As a result, DOT creates "sound barrier" programs. at great costs to the state governments.
- Environmental laws are more stringent in this State than federal requirements.

Program-specific perspectives:

- People afraid of land use planning because of the fear of loss of property rights
- Water is the key environmental issue
- Forestry policy must consider two different climate time frames. A long term climate consideration must be utilized in dealing with the growth of the trees; the short term is relevant in fire protection policy. At the present neither short or long term weather predictions are reliable for policy purposes.
- The marshland will not have any place to retreat if there is a sea level rise. It is doubtful that implementation of marshfront setbacks provisions will be successful based on the failure to implement beachfront setback provisions.
- Highways have a life-span of 30-40 years. Therefore, any long-term climate change can be accomodated after if becomes proven fact.
- Agriculturists are natural conservationists, it is a matter of self-preservation.

General Opinion:

- It is easy to put off climate change as a policy problem as it happens a little at a time.
- Conservation and climate change are related. As the climate changes the conservation efforts naturally adapt.
- Sea level rise is not a problem unless it rises more than several feet. A few inches would be of no consequence.
- Environmental issues seem too trendy, i.e. radon, asbestos, red dye. Some are real and some are not
- Good lesson to be learned from acid rain story: scientists didn't get information to policy makers (after a ten year research study). Policy makers had to make policy without getting all of the information.

APPENDIX E: INDIVIDUAL RESPONSES IN RE "INFORMATION"

Legislative Officials:

1. The best form of information comes from national association staffs.
2. Information needs to be oversimplified and framed in terms of economic consequences.
3. Information that would be helpful would be monographs and examples of what other states are doing. This information should not be too technical, but still have enough information in order to understand the facts.
4. The most helpful information would give facts; provide clear indications if there was going to be a continuing problem; explain how climate change will effect the state specifically; define the actual impacts; and outline what will have to be done to offset those impacts.
5. It is preferable that the information come in bits and pieces. It is an education issue.
    * Need to translate information from the scientist.
    * An intermediary must synthesize information (what it means to the state, identify what the state can do, connect it with another policy). If this step is not taken the legislature will not know how to act
    * Communicate in a language that the educated citizen can understand as they help to influence legislative action.

Energy Officials:

1. The current information is too uncertain, is too global in scale, and does not address the local level
2. Good information would include example programs and technical assistance, and would not be too academic.
3. Long term trend data is the most helpful.

Natural Resources Officials:

1. Information needs to include both short and long term projections of future conditions
2. Would like to see "hard data", conclusive data, and projections for the next 20 years or less. Currently cannot get long or short term weather predictions that are reliable. Would like information that can tell what the weather is going to be like tomorrow, then worry about the future
3. Current information is too dispersed (it is difficult to get information because it is couched in the terms of many different disciplines). Current information changes from year to year
4. Need to see technical information and summaries of studies that are focused on specific programmatic areas of concern (ie. marine life, beach erosion).
5. There are no state initiatives identifying this is an issue. There are no state guidelines outlining how this issue should be dealt with.
6. Information that could give a 3 to 6 month forecast would be helpful if it were reliable
7. Information that would be helpful would contain regional information. The scientists need to present information that seems to be based on better models. There is a feeling that the models have serious flaws and that they do not represent what will happen. NASA puts out conflicting information from that of other scientists. Need to have models that are sophisticated enough to factor in all side-effects.

8. What is most needed is information that presents a consensus of agreement on the issue and defines the impacts affecting wildlife. It should be concise, there is already too much information available..
9. Information should be practical explaining what actions would make a difference. The information cannot be presented in such a way that makes the problem seem too big. (Black Hole - it is there and no one can do anything about it). Regional and technical information is helpful too.
10. Information is needed that the public (ie. farmers) can understand. Need implementable "data" and ideas.
11. More regional data is needed. Current data from scientific sources is not all that good, it lacks consensus and is non regional. Current research doesn't use a synergetic perspective, it is a splintered effort. There doesn't seem to be a concerted effort to get the information to the states. Need information translated into bodies or dollars, and reliable information in a understandable form. Federal government would be the best source for dissemination of information since it represents a more comprehensive data source. Individual scientists have different theories on most of the global climate issues and as a result policy makers don't know which ones to rely on. There is now an effort out of the White House to coordinate the overall environmental issue to ensure a coordinated, comprehensive, systems approach to environmental research.

Other Technological Agency Officials:

1. Information that would be useful would show relationships to building codes. This should come from professional organizations. The field is filed with technical minded people who look for technical data. Need to show in the predictive data that the trends have occurred and will continue to occur. Information needs to be compiled into a single compatible form that can be compared and evaluated.
2. Real, supportable data, definitive, and with scientific peer support is needed. The current source is the federal government.
3. Information in more "lay" terms is needed to bridge between scientific knowledge and application. Information must be of the sort that can be translated into "lives and/or money".
4. Information that is more creative and results from brainstorming, would be helpful since there is no hard data available.
5. The most helpful information would that which gives trends in the short-term perspective to aid in planning (ie predictions of more cold weather, more freezes, trends in air movement across the state during winter months).
6. Information most helpful would contain more of a definitive answer; provide implications of what would happen; what it would mean to government; and who is responsible for dealing with it.
7. More information needed - any kind. More certainty would prompt federal mandates.
8. Information should be specific to organizations and their program responsibility. It should also be directed to the organization and not have to be sought out.

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