



**REPORT ON**  
**1999-2000**  
**HAZNET SURVEY**  
**OF**  
**SEA GRANT**  
**PERSONNEL**

**To Identify Involvement**  
**in**  
**Natural Coastal Hazards Projects**

**Sea Grant HazNet Team**  
**Robert Bacon, South Carolina Sea Grant**  
**Spencer Rogers, North Carolina Sea Grant**  
**Virginia Lee, Rhode Island Sea Grant**  
**Marilyn Barrett-O'Leary, Louisiana Sea Grant**  
**Dewayne Hollin, Texas Sea Grant**  
**Sharon Walker, MS-AL Sea Grant**

## **HazNet Survey of Sea Grant Personnel**

### **INTRODUCTION**

During summer 1999, a survey questionnaire was sent to 380 Sea Grant personnel whose title or job description suggested a possible association with natural coastal hazard program matters. It sought to determine the types of research, outreach, and education work conducted by Sea Grant personnel and to identify individuals who might be heavily involved. HazNet coinvestigators were aware that many Sea Grant programs have funded basic academic research related to this topic, but they wanted to better understand the extent of applied research and outreach work done within the Sea Grant staffs themselves. Marilyn Barrett-O'Leary of Louisiana Sea Grant, Dewayne Hollin and Hui Xiong, both of Texas Sea Grant, designed and distributed the questionnaires and assembled the data.

Seventy-six persons from 28 Sea Grant programs responded, resulting in a response rate by individuals of 20% and, by program of 96.6%. The latter percentage might indicate that staff in almost all Sea Grant programs has had some program activity related to natural coastal hazards during the past five years if someone from each of these programs responded positively to at least one question. However, only 54 of the 76 responses or 71% included at least one positive response to the questions. Of these responses, nine were from administration, 33 from extension agents and specialists, eight from communicators, and four from educators. These positive responses from people in 25 Sea Grant programs therefore indicate that 86.2% of the Sea Grant programs have had some staff members working on activity related to natural coastal hazards during the past five years.

From the results, we identified specific aspects of natural coastal hazards and natural coastal hazard mitigation upon which Sea Grant personnel have devoted more time and energy during the past five years. A quick review of this report will show the following:

- More applied research was associated with coastal zone management than any other related topic. Other topics in descending order are summarized in Table 1.
- Sea Grant personnel from Delaware, Rhode Island, North Carolina, and New York were involved in applied research in the largest number of related topics. All researchers are listed in descending order in Table 2.
- More outreach was associated with coastal zone management than any other related topic. Although the degree of involvement is similar to that in applied research, it is not parallel. This information is summarized in descending order in Table 3.

- Sea Grant personnel from many programs were involved in applied research and outreach on the same related topic. This information is summarized in Table 4.
- There was substantial involvement in applied research and outreach on water, emergency management and environmental hazards as well as on specific hazards. This information is described in Table 5.

A more thorough review of this report will provide additional information. The following discussion describes these findings in detail.

## **SUMMARY OF FINDINGS**

The primary purpose of this questionnaire was to identify the extent of Sea Grant personnel's involvement in coastal hazard mitigation. It is important to remember that this survey was limited to Sea Grant involvement in natural coastal hazards while some Sea Grant personnel have been involved in coastal hazards research that is more basic than applied, sometimes funded outside of Sea Grant itself. These Sea Grant personnel have studied topics with a direct bearing on coastal hazards, such as study of wind and water. One person who identified himself during the survey period was Dr. Edward Monahan of Connecticut Sea Grant. There are probably others in the Sea Grant family whose academic work on these related topics may or may not be known. In addition, some Sea Grant extension personnel responding to the survey noted that sometimes state Sea Grant programs make a tradeoff between supporting extension/applied research and supporting non-extension research on aspects of this topic. These tradeoffs take advantage of a campus institute or laboratory such as Clemson's Wind Engineering Lab or Florida's Coastal Lab. Thus the programs and people responsible for research and outreach identified in this report may represent only a portion of the expertise or experience in specific Sea Grant programs on natural coastal hazards and the associated conclusions thus limited.

### **Applied Research Topics Related to Natural Coastal Hazard Mitigation**

Part A of the survey sought to identify the related applied research topics that actually involved responding Sea Grant personnel. Table 1 shows the related topics, arranged from highest number of persons and programs involved to lowest. A higher number was assumed to indicate stronger Sea Grant involvement. Because Michigan Sea Grant's director responded for the entire program, our data on Michigan Sea Grant reflects only total program involvement. Thus, in the report, we were unable to identify Michigan staff who might have as much experience or expertise as those in other programs. It is important to consider the possibility of stronger involvement from Michigan than is reflected in this report.

As noted in Table 1, applied research on coastal zone management related to shoreline erosion involved the largest number of respondents. It is interesting that the same number of people were involved in this research topic when it was not related to shoreline erosion as well, and that 13 respondents conducted research on both topics.

Research on construction in hazard-prone areas involved nine respondents from eight programs and five of these respondents were also involved in research on building materials resistance to wind and water. Similarly, eight of the identified Sea Grant

personnel were involved in research on economic topics and on sociological topics associated with natural coastal hazards and of these, several were involved in both topics. Among the six persons involved in research on emergency preparedness or weather-related safety, three were also involved in research on flood response and cleanup. Similarly, some of the same people conducted research on various business-related topics associated with natural coastal hazards.

**Table 1: Involvement in applied research on topics related to natural coastal hazard mitigation**

Topics	Number Persons	State Programs
Coastal zone management related to shoreline erosion	17	DE, GA, LA, MI, MN, MS, NC, NY, PR, RI, SC, TX, WI, WHOI
Coastal zone management not related to shoreline erosion	17	USC, DE, GA, HI, LA, MI, MN, MS, NC, NY, PR, TX, WA, WHOI
Land management in flood or severe storm-prone areas	10	DE, MN, MS, NC, NY, PR, RI, TX, WHOI
Construction in hazard-prone areas	9	DE, MI, NC, NY, RI, SC, WI, WHOI
Sociological topics associated with natural hazards	8	DE, MI, MN, NC, NY, RI, TX
Economics associated with coastal hazards	8	DE, FL, GA, MI, NC, NY, OH, RI
Emergency preparedness or weather related safety	6	DE, GA, HI, NC, RI, TX
Business risk related to natural coastal hazards	6	DE, GA, HI, RI, SC
Agriculture and coastal hazards	6	HI, LA, MN, MS, NY, TX
Management assistance for businesses related to hazard events	5	DE, GA, MI, RI, TX
Building materials resistance to wind and water	5	DE, NC, NY, RI, SC
Flood response and cleanup	3	NC, RI, TX

**Sea Grant Personnel Involved in Applied Research on Natural Coastal Hazard Topics**

Below, Table 2 identifies the Sea Grant personnel in descending order according to the number of applied natural control hazard research topics in which they were involved during the past five years. Note the differences in the number of applied research topics associated with each person. It is logical to assume that involvement in several related topics would give a person a broader range of knowledge of a subject or more information about that subject. Those persons near the top of the list who have been involved in research on many of these topics as they relate to natural coastal hazards fall into this category. They might they be resources for future Sea Grant natural coastal hazard work in capacities such as collaborators, planners, and proposal reviewers.

**Table 2. Personnel involved in research topics**

<b>Name</b>	<b>Sea Grant Program</b>	<b>Number of Topics</b>
Wendy Carey	Delaware	10
Lori Watson	Rhode Island	10
Spencer Rogers	North Carolina	9
Jay Tanski	New York	8
Paul Christian	Georgia	6
John O'Connell	Texas	6
Cynthia Hagley	Minnesota	5
Walter Clark	North Carolina	5
Jim O'Connell	WHOI	5
Beth Judge	South Carolina	4
David Veal	Mississippi	4
Kert Grove	Puerto Rico	3
Rose Pfund	Hawaii	3
Mark Shirley	Louisiana	3
Rodney Adams	Louisiana	2
Philip Keillor	Wisconsin	2
Clyde Tamaru	Hawaii	2
Phyllis Grifman	USC	1
John Stevely	Florida	1
Elizabeth Coleman	Louisiana	1
Glenn Kreag	Minnesota	1
Leroy Hushak	Ohio	1
John Jacob	Texas	1
Dewayne Hollin	Texas	1
Robert Goodwin	Washington	1

### **Outreach Topics Related to Natural Coastal Hazards**

Outreach requires some applied research or collaboration with basic researchers. In all cases, some study and contact with experts is involved. Before production, outreach personnel seek review by experts. It is then presented in a manner best suited for the target audience.

This method for conveying specific information takes two forms: (1) Single-direction outreach — giving information through oral presentations, publications, video-audio productions, and (2) Interactive outreach — sharing and using information in a participatory venue such as a workshop, committee or task force. In general, single direction outreach is didactic and interactive outreach, participatory.

Parts B and E of the questionnaire sought to identify topics and Sea Grant personnel who have been involved in form (1), single-direction outreach, while Parts C and D, those involved in form (2), interactive outreach. Part F was included to identify involvement in any/all Sea Grant outreach that might have been related to natural coastal hazard mitigation but not covered in the other parts of the questionnaire. Interestingly, the results identify many people who were involved in applied research and outreach on the same topic(s).

The following discussion of results is arranged generally from highest number of persons and programs involved to lowest. A higher number was assumed to indicate broader Sea Grant involvement.

Table 3 below shows the involvement in these related topics by program. Note that the data also showed that the two programs with a consistent pattern of several persons involved in a specific topic were North Carolina and Texas. Florida and South Carolina often had two persons involved in some of these specific topics. Delaware and North Carolina personnel were involved in the greatest number of topics out of 12, suggesting broad involvement. Florida, Texas and Louisiana have personnel involved in almost as many, suggesting a lesser but still broad involvement.

In Table 3, one can see that a greater number of people and programs were involved in interactive research on land management in flood- or severe storm-prone areas than in single direction outreach. This is not surprising when one considers that this information involves give and take. Similarly, the fact that very little interactive outreach on management assistance for businesses was reflected in the data should be expected because this topic is better presented in the single-direction outreach format. Similar to the small number of Sea Grant personnel involved in research on flood response and cleanup, few Sea Grant personnel participated in outreach on this topic. According to the findings, personnel from Maryland Sea Grant and New Jersey Sea Grant were involved only in interactive outreach. In addition, many of those involved in applied research were also involved in outreach on the same topic.

**Table 3. Involvement in both types of outreach in topics related to natural coastal hazards**

<b>Related Topics</b>	<b>Persons/ Single Direction</b>	<b>Programs / Single Direction Outreach</b>	<b>Persons/ Interactive</b>	<b>Programs / Interactive Outreach</b>
<b>Coastal zone management related to shoreline erosion</b>	30	CA, USC, DE, FL, GA, LA, MIT, MI, MN, MS, NY, NC, OH, OR, PR, SC, TX, WA, WI, WHOI	33	CA, USC, DE, FL, GA, HI, LA, MD, MIT, MI, MN, MS, NY, NC, OH, OR, PR, RI, SC, TX, WA, WI, WHOI
<b>Coastal zone management not related to shoreline erosion</b>	28	CA, USC, DE, FL, GA, LA, MI, MIT, MN, MS, NC, NY, OR, PR, TX, WA, WI, WHOI	32	CA, USC, DE, FL, GA, HI, LA, MD, MIT, MI, MN, MS, NC, NY, OH, OR, PR, RI, SC, TX, WA, WI, WHOI
<b>Emergency preparedness or weather related safety</b>	19	CA, DE, FL, GA, LA, MI, NJ, NY, NC, OR, TX	26	CA, CT, DE, FL, GA, HI, LA, NJ, NY, NC, OH, OR, PR, RI, SC, TX, WA
<b>Economics associated with natural coastal hazards</b>	17	USC, DE, FL, GA, HI, LA, MI, MS, NC, NY, OH, OR, TX, WI	17	USC, DE, FL, GA, LA, MD, MI, MN, MS, NC, NY, SC, TX, WA
<b>Construction in hazard-prone areas</b>	15	CA, FL, LA, MIT, MI, MS, NC, NY, WA, WI, WHOI	13	CA, DE, MIT MI, NC, NY, SC WA, WI, WHOI
<b>Sociological topics associated with natural coastal hazards</b>	12	USC, FL, LA, MI, MS, NY, NC, OR, WI	11	USC, DE, FL, LA, MI, MS, NC, NY, SC
<b>Agricultural and coastal hazards</b>	10	FL, LA, MS, NC, NY, TX	9	LA, MD, MS, NC, SC, TX
<b>Land management in flood or severe storm prone areas</b>	8	DE, MS, NC, NY, WI, WHOI	14	CA, USC, DE, LA, NC, NY, RI, TX, WA, WI, WHOI
<b>Management assistance for businesses related to hazard events</b>	8	FL, LA, NC, NY, RI, TX	5	DE, FL, GA, NJ, TX
<b>Building materials resistance to wind and water</b>	8	DE, LA, MI, NC	10	DE, MD, MN, NC SC, WA
<b>Business risk related to natural coastal hazards</b>	7	GA, LA, NC, NY, TX, WI	8	DE, FL, GA, LA, NC, NY, RI, TX
<b>Flood response and cleanup</b>	6	USC, FL, GA, HI, LA, NC	11	DE, GA, MS, NC, NY, OH, RI, TX, WA

By comparing Tables 1 and 3, one can see a similar emphasis on the related topics. In both tables, the highest number of Sea Grant personnel focused on the topic of coastal zone management when related to shoreline erosion and second highest, when not related to shoreline erosion. The exception was that few Sea Grant personnel were involved in applied research activities on emergency preparedness and weather related safety, but a large number were involved in outreach on this topic over the past five

years. This is probably due to one function of outreach — timeliness and meeting specific needs of an audience. There have been some natural coastal hazard events during that period and thus, a higher interest or demand from the general public.

### Sea Grant Personnel Involved in Outreach on Natural Coastal Hazard Topics

From all of the responses, we compiled a list of those Sea Grant personnel with outreach experience on the broadest range of these topics. By virtue of broad involvement, they might be a resource for identifying researchers or experts on these topics. We then narrowed the list to determine whether these were also involved in research on some of the same topics. In Table 4, these persons are listed in generally descending order, according to the number of related topics with which they were involved. These are persons who probably spent a substantial amount of time with some aspects of natural coastal hazards in their respective programs. They may be resources for strategic planning because they most likely can identify experts and are familiar with pertinent topics.

**Table 4. Personnel involvement in natural coastal hazards outreach and research**

Name	Sea Grant Program	Talk/products	Workshop/committee
Spencer Rogers	North Carolina	11(9*)/12(12*)	11(9*)/11(9*)
Wendy Carey	Delaware	5(5*)/ 0	10(9*)/ 9(9*)
Jay Tanski	New York	7(6*)/ 6(6*)	6(5*)/ 6(5*)
Walter Clark	North Carolina	3(3*)/ 5(5*)	6(5*)/ 8(5*)
Robert Goodwin	Washington	3(1*)/ 1(1*)	8(1*)/ 2(1*)
Paul Christian	Georgia	6(5*)/ 3(3*)	6(6*)/ 6(5*)
Jim O'Connell	WHOI	4(4*)/ 4(3*)	4(4*)/ 3(3*)
Phil Keillor	Wisconsin	7 / 3(1*)	4(2*)/ 3(2*)
Dewayne Hollin	Texas	2 / 5(1*)	6(1*)/ 5(1*)
Phyllis Grifman	USC	0 / 5	5(1*)/ 1(1*)
John O'Connell	Texas	3(3*)/ 0	5(5*)/ 2(2*)
Lori Watson	Rhode Island	1(1*)/ 0	5(5*)/ 2(1*)
Mark Shirley	Louisiana	2(2*)/ 2(2*)	3(1*)/ 2(2*)
Cynthia Hagley	Minnesota	2(2*)/ 2(2*)	4(2*)/ 0
Rodney Adams	Louisiana	2(1*)/ 1(1*)	2(2*)/ 3(2*)
Kert Grove	Puerto Rico	1(1*)/ 2(2*)	3 / 0
Glen Kreag	Minnesota	1(1*)/ 1(1*)	1(1*)/ 0
Beth Judge	South Carolina	1(1*)/ 0	3(3*)/ 0
David Veal	Mississippi	3(2*)/ 0	0 / 4(3*)
John Jacob	Texas	0 / 0	5(1*)/ 0
Rose Pfund	Hawaii	0 / 0	3(2*)/ 0
Clyde Tamaru	Hawaii	0 / 2(2*)	0 / 0
Leroy Hushak	Ohio	0 / 1(1*)	0 / 0

(0\*) Out of participation in the given number of outreach topics the numeral in parentheses represents those associated with this individual's research. For example, Spencer Rogers was involved in talks on 11 of the related topics and, of those, he was also involved in research corresponding to 9 of the topics.

The results also identified a few people who were involved in many outreach projects and/or a broad range of related topics. These names, as well as all data from the



survey, are available to programs or individuals wishing to identify as many Sea Grant personnel as possible for natural coastal hazard research and outreach purposes.

### Other Involvement

Part F was included to identify involvement in any/all Sea Grant research or outreach that might have been related to natural coastal hazards but not covered in the other parts of the survey. As noted in Table 5 below, water was the hazard-related topic involving the most Sea Grant programs and personnel. This is not surprising since water is related to many of the types of natural coastal hazards, many of the mitigation topics, and it is at the core of Sea Grant’s mission. Much Sea Grant research and outreach is water related. In addition, 23 persons from 15 programs were involved in outreach on environmental hazards, 19 persons from 11 programs in outreach on wind, and 18 from 13 programs on flood -- all with possible relationships to natural coastal hazard mitigation. These are also topics that figure prominently in Sea Grant program activities.

**Table 5. Other related topics of involvement.**

<b>Topic</b>	<b>Total People</b>	<b>Total Programs</b>
Drought	3	3
Earthquakes	7	5
Emergency Management	22	16
Environmental Hazards	23	15
Flood	18	13
Health Risks Associated with Natural Hazard Events	8	6
Hurricane	17	9
Tsunamis	5	5
Volcano	1	1
Water	26	17
Wind	19	11

In addition, these data from Part F give some information that HazNet as presently structured has not addressed. The comparatively strong involvement in outreach on emergency management (22 persons from 16 programs) suggests that Sea Grant programs may also be heavily involved in aspects of preparedness and response, which were not covered by this survey. This should be explored in the future.

### CONCLUSIONS

The primary purpose of this survey was to identify the extent of Sea Grant involvement in coastal hazard mitigation. We sought to identify people and programs. The survey shows that people especially extension agents in Sea Grant programs are involved in natural coastal hazard mitigation through both research and outreach. A few specific persons in Sea Grant appear to have a broad range of involvement and a fair number of people have smaller or simply limited involvement. Those with deep

involvement are valuable to Sea Grant as resources on this topic. They should be included in strategic planning on coastal hazards, and as resources and reviewers.

A secondary benefit from this survey was to identify the different hazard-related topics with which Sea Grant research and outreach has been involved. Sea Grant programs focus unequally on several topics related to natural coastal hazard mitigation. More programs and people have been involved in research and outreach on coastal zone management than on other related topics. Involvement in research or outreach has been much smaller when focusing on other types of management. The results also show more research and outreach by Sea Grant personnel on construction in flood- or hazard-prone areas than on business or land management as they relate to natural coastal hazards or on building materials resistance to wind and water. This information might help programs debate directions during strategic planning.

Similarly, involvement in business related topics has been comparatively small although programs have been fairly strongly involved in the broader topic of economics as associated with natural coastal hazards. Perhaps the research and outreach over the past five years has laid a base. It might be that some Sea Grant programs are now better equipped to address natural coastal hazards as they relate to these more specific topics.

A small segment of these data suggest that programs have done more outreach than research on emergency preparedness or weather-related safety. These conclusions are not reliable because the goal of this survey was to identify people and programs involved in mitigation topics. The preparedness item was placed in the questionnaire to give an opportunity for response. These data raise questions. Did the identified outreach use available research conducted by other entities and organizations? If so, partnering with other entities might be important to future Sea Grant efforts on natural coastal hazards. If this outreach resulted from some hazard event to which a program sought to respond in a timely manner, these data might be indicating low actual program interest although Sea Grant work has been done on the subject. Individual programs might address these points during strategic planning.

Natural coastal hazards are not going to disappear. They can affect the sustainability of the marine and coastal environment. For that reason, every Sea Grant program needs to be aware of all resources within the Sea Grant family that might be available. These hazards can also affect civilization in the US and throughout the world. For that reason, all other groups associated with natural coastal hazards should have some access to the identity of persons in Sea Grant who might have something to contribute to research or action on this subject and especially on specific topics related to it. As a result of this survey, some additions will be made to the Sea Grant resources listed on the HazNet web site.