

FINAL REPORT

Human Dimensions Research Project: Assessing the Effects of Community-based Restoration on Stewardship in Communities

March 2007

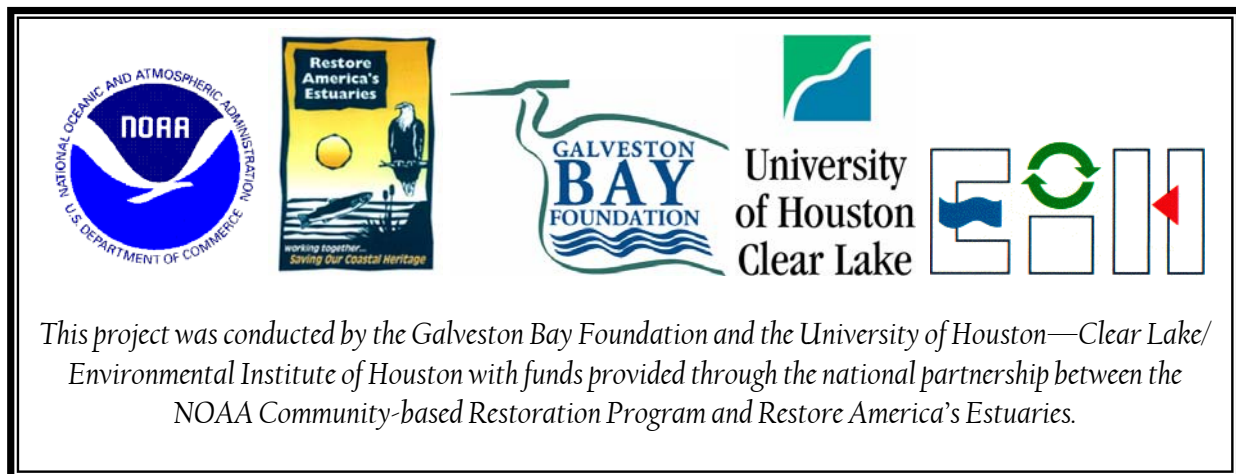


Table of Contents

Executive Summary	3
Acknowledgements	3
Introduction	4
Background	4
Methodology	5
Results	8
Discussion and Conclusions	9
Recommendations	10
Tables	11

Executive Summary

The Galveston Bay Foundation (GBF) hired a lead researcher from the University of Houston—Clear Lake/Environmental Institute of Houston to assess the effects of community-based restoration on stewardship in communities. GBF volunteers completed surveys both before and after their participation in GBF habitat restoration projects. The crux of the original question posed was whether volunteering for Galveston Bay habitat restoration work would generalize to other environmentally friendly (EF) behaviors. By analyzing responses to survey questions, the lead researcher was able to generalize EF attitudes and behaviors among GBF volunteers. The study revealed that GBF volunteers looked moderately EF when they arrived to participate, that age and type of volunteer were factors that influenced EF attitudes and behaviors, and that EF attitudes and behaviors did increase, though not significantly, following participation in a community-based habitat restoration event.

The results of this study were presented at RAE's 3rd National Conference on Coastal and Habitat Restoration in December 2006, and the Galveston Bay Estuary Program's State of the Bay Symposium in January 2007.

Acknowledgements

Contributors to this project included Bob Stokes, President of the Galveston Bay Foundation; Dr. Sharon Hall, University of Houston—Clear Lake; and Heather Biggs, Environmental Institute of Houston.



Dr. Sharon Hall, UHCL, visits with volunteers taking the Stewardship Ethic survey at Marsh Mania at Pierce Marsh on June 3, 2006.

Introduction

The Galveston Bay Foundation (GBF) was one of three member organizations of Restore America's Estuaries (RAE) given the opportunity to conduct a one-year study of the effects of volunteer participation in restoration efforts on community stewardship. The study was also conducted by RAE members, Save the Bay (San Francisco) and Tampa BayWatch. The three participating groups met with RAE in the fall of 2005 to define the scope of the research project and begin outlining the survey instrument that would ultimately be given to volunteers. GBF selected and hired Dr. Sharon Hall of the University of Houston—Clear Lake (UHCL) as the lead researcher for the project. Ms. Heather Biggs of the Environmental Institute of Houston (EIH) was engaged by Dr. Hall for research assistance.

Background

The Foundation

The Galveston Bay Foundation (GBF) is a 501(c)(3) non-profit, membership-based organization established in 1987 under the laws of the State of Texas. The Foundation's strength is that it involves a true cross-section of Bay interests to address issues and concerns



related to Galveston Bay. It is managed by a strong Board of Trustees whose members represent sport and commercial fishing groups, government agencies, recreational users, environmental groups, shipping, development, and business interests. The mission of the Foundation is to preserve, protect, and enhance the natural resources of the Galveston Bay estuarine system and its tributaries for present users and for posterity. Its programs in advocacy, conservation, education, and research strive to ensure that Galveston Bay remains a beautiful and productive place for generations to come.

Throughout its twenty years of service to the Galveston Bay area, GBF has worked hard towards a number of accomplishments, including helping to include Galveston Bay as part of the National Estuary Program; establishing a Bay-wide volunteer water quality monitoring program; creating, restoring, and protecting over 3,000 acres of new marsh habitat with its community partners; developing the Bay Ambassador

docent program that annually reaches thousands of youth; producing numerous educational field trips for hundreds of students, teachers, and the public each year; organizing the annual Bay Day celebration, bringing Bay awareness to thousands; mobilizing thousands of volunteers to support these efforts; building consensus among dozens of Bay partners and stakeholders; and setting a national record for volunteer marsh restoration in a single day event.

Habitat Restoration and Marsh Mania

GBF's conservation programs focus on habitat restoration, the number one goal in The Galveston Bay Plan, the comprehensive management plan developed by the Galveston Bay Estuary Program. The Galveston Bay system has lost over 35,000 acres of wetlands during the last fifty years. Wetlands provide habitat for finfish and shellfish as well as rookery and foraging areas for birds. They also stabilize shorelines and provide flood control, benefits that



may be even more important in the current “big storm” era. Wetlands also naturally improve water quality by filtering water. Since 1992, GBF has worked closely with numerous partners to restore wetlands, seagrasses, and oyster reefs across the Bay. GBF's nationally recognized, community-based habitat restoration program, called “Marsh Mania,” has involved thousands of citizen volunteers and restored hundreds of acres of wetlands over the last nine years.

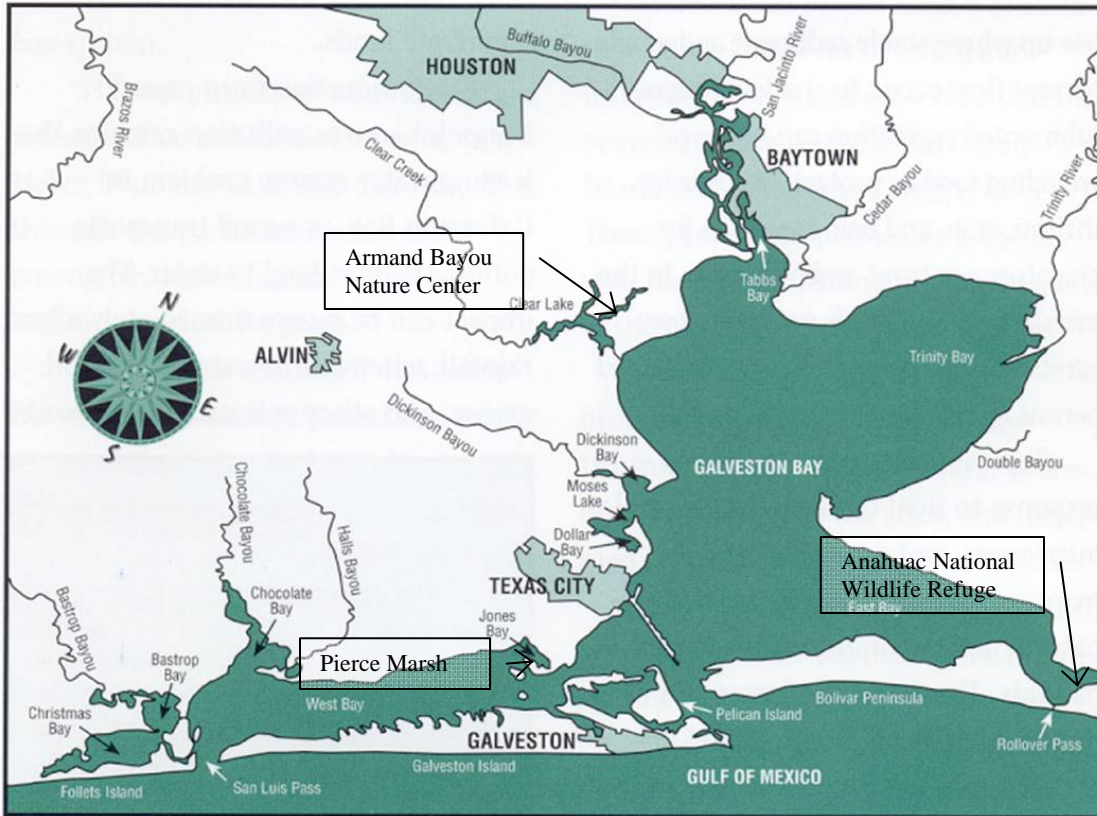
An annual event since 1999, GBF's Marsh Mania has become synonymous with large-scale, volunteer-based marsh restoration in the Galveston Bay area. Each year, GBF recruits hundreds of community volunteers to plant marsh vegetation at multiple restoration sites around the Bay. Many of these volunteers return year after year. GBF's “Marsh Maniacs” were the study group for this 2006 Stewardship Ethic survey, the focus of this report.

Methodology

Sites

GBF selected three geographically separated restoration sites at which to gather information for this study. The sites included Anahuac National Wildlife Refuge (ANWR) on East Galveston Bay, Armand Bayou Nature Center (ABNC) along a tributary of Galveston Bay-

proper, and Pierce Marsh near West Galveston Bay. All three sites were host to GBF's Marsh Mania volunteers in 2006. Additionally, both ANWR and Pierce Marsh have hosted Marsh Manias in 1999 and 2001, and ABNC has hosted Marsh Mania every year since the event's inception in 1999.



ANWR is a 34,000-acre refuge and an important link in the chain of National Wildlife Refuges extending along the gulf coast of Texas and Louisiana. The meandering bayous of ANWR cut through ancient flood plains, creating expanses of coastal marsh and prairie bordering Galveston Bay. GBF is currently working with the ANWR and a host of project partners in an ambitious shoreline protection and marsh restoration project along the East Bay shoreline of the ANWR. In May 2006, GBF volunteers planted smooth cordgrass along a portion of the shoreline now protected by 17,002 linear feet of rock breakwater.



ABNC is a 2,500 acre preserve in the highly urbanized area between NASA/Johnson Space Center and the Bayport Industrial District. ABNC protects remnants of this area's original ecosystems, including wetlands, bottomland forest, and tall grass prairies. This environmentally significant area has been designated as one of only four Texas State Coastal Preserves and is one of the last bayous in the Houston area that has not been channeled. Each year, GBF volunteers plant stems of California bulrush in Armand and Horsepen Bayous as well as pot stems in the on-site nursery for use in the following year's Marsh Mania event.



Pierce Marsh, a 2,350 acre preserve owned by GBF, is in close proximity to the city of Hitchcock and the coastal communities of Bayou Vista, Tiki Island, and Omega Bay. The property includes low marsh, shallow open water, and salt prairie. Due to historic large levels of subsidence and subsequent erosion, large expanses of emergent marsh have become open water. To restore the functions of the former salt marsh, GBF has completed three separate marsh terracing projects within the complex: 53 acres in 1999, 45 acres in 2001, and 25 acres in 2003. Most recently, a 280-acre beneficial uses marsh restoration project was constructed in 2005, and GBF volunteers continue to plant smooth cordgrass at this impressive restoration site.



Surveys were given to Marsh Mania volunteers at ANWR and ABNC on May 6, 2006, and at Pierce Marsh on June 3, 2006. In addition, surveys were given to volunteers at two private plantings at Pierce Marsh—Shell Oil Company employees and their families on April 1, 2006, and Rice University pre-freshmen on July 30, 2006.

Participants

This study benefited from the distinct “types” of volunteers participating GBF restoration projects during the study period. Due to a variety of sources of volunteers, the study was able to categorize and compare the survey results from three distinct volunteer types:

1. “Corporate” volunteers included Shell Oil Company employees and their families;
2. “Student” volunteers included students aged 14 through 22, including the Rice University pre-freshmen; and
3. “Community” volunteers included local GBF volunteers participating in Marsh Mania 2006.

GBF, UHCL, and EIH staff was present at each event to explain the importance of the project to participating volunteers.

Study variables

The study examined volunteer participation in one marsh grass harvesting or planting event between April and July 2006 as the independent variable. Prior to volunteering or receiving any habitat restoration-specific information from GBF, volunteers completed a “pre-event survey.” Approximately four to six weeks following their participation in the GBF restoration event, those volunteers who supplied their contact information were electronically mailed a “post-event survey” with instructions for filling it out and returning. After all surveys were scored, the differences between pre-event and post-event scores were analyzed. The dependent variables were attitudes toward Bay volunteering (Section 5 of survey instrument), self-report of general EF behaviors (Section 8) and self-report of EF barriers (Section 9). All three of these sections of the survey were correlated at $p < .01$, so caution must be used as each section is independently examined.

Results

A total of 107 volunteers participated in the pre-event survey, and 33 volunteers completed the post-event survey. Whether or not a volunteer was a GBF member did not seem to be a relevant factor in completion of the post-survey. Among the participants in the pre-event survey who were already GBF members, 1/3 completed the post-survey; likewise, among the pre-event survey participants who were not GBF members, 1/3 completed the post-survey.

Age of Volunteer

One of the facets of this study examined whether age was a factor in the volunteers’ willingness to complete both the pre-event and post-event survey. Age was a significant factor, with the older volunteers more likely to complete both surveys, ($p < .001$). The study also examined whether age was a factor in volunteers’ pre-event survey responses to Section 5: Attitudes towards Bay Volunteerism. Again, age was found to be a significant factor. Those volunteers age 22 and older were more positive in their attitudes about bay restoration than younger volunteers ($p < .025$).

Type of Volunteer

Due to the different sources of volunteers available during the study period, the study was also able to make comparisons among different volunteer types, including corporate volunteers (N=13), student volunteers (N=23), and two community groups (N=32) and (N=28). For Section 5: EF Attitudes, the study found that the two community groups expressed more positive EF attitudes than either the corporate or student group ($p < .05$). Among these same comparison groups, the responses to Section 8: EF Behaviors indicated that the corporate and community groups have more EF behaviors than the student group ($p < .05$). Section 9, EF Barriers was an attempt to understand what deters people from acting in an EF manner. The study found that the two community groups thought they encountered fewer barriers than the student group ($p < .05$).

Examination of pre-event survey versus post-event survey results revealed no significant increases or decreases in EF attitudes or behaviors. EF attitudes toward volunteering (Section 5) did increase from pre-event to post-event, but not significantly so ($p < .08$). General EF behaviors were constant as were volunteers' beliefs about barriers to their EF behaviors.

Tables summarizing the data collected directly from the surveys are included at the end of this report.

Discussion and Conclusion

The crux of the original question posed was whether volunteering for Galveston Bay habitat restoration work would generalize to other EF behaviors. This was somewhat supported in that volunteers who were quite positive about their volunteerism were also high in their efforts to engage in other EF behaviors, e.g. recycling, not littering, etc. However, upon examination of the scores for their attitudes and behavior reports, it was found that most of the volunteers *arrived to work with a positive outlook*. For example, in response to the survey item "I enjoy being on the bay," many people agreed moderately or strongly with this statement before they commenced their volunteer activity for the day. It is quite possible that even with, for example, some corporate reinforcements for volunteering, those who *do* volunteer to work on habitat restoration projects are comfortable out-of-doors, on the water etc., and enjoy it.



These data also show how age differences may be the most relevant factor in gaining general EF commitments. Older volunteers were more likely to complete both the pre-event and post-event surveys and were more positive in their attitudes toward volunteerism. The student group—the youngest of the four—was the one whose answers differed more often from the corporate and community groups. The younger volunteers reported more negative EF attitudes and behaviors than the older volunteers.

These findings suggest several important points relevant to cultivation and retaining of people for EF volunteering. First, the GBF volunteers looked moderately EF when they arrived to participate. Any increases in EF over a short period of time (4-6 weeks) is likely not enough to impact answers on a pre-event and post-event survey, nor people's attitudes and behaviors. Likewise, volunteering at one event may not be enough to facilitate differences between pre-event and post-event survey results. Perhaps incremental differences could be found if people were followed across several events over time.

Given that the student group appeared to have the least positive EF attitudes and behaviors and saw more barriers to their engaging in EF behaviors than the other groups, it is important that more information and actual participation be encouraged in this age group. Service learning as one form of teaching a content curriculum would be pertinent and useful, as suggested by the results from this study. Young people likely need more hands-on teaching strategies such as these to bring their attention to environmental needs, both local and global.

Recommendations

The first recommendation for future implementations of this study is in regards to the length of the adopted survey instrument. While recognizing the need to capture as much information from volunteers as possible, the lead researcher strongly felt that the survey instrument developed for use in this project was too lengthy, and that the length of the survey may have discouraged volunteer participation in either or both of the pre-event and post-event surveys. In an effort to keep the survey as short as possible and still comply with the contents adopted by RAE, this study did not capture the thoughts of volunteers beyond the direct ranking and demographic questions contained in the survey. Had the required contents of the survey been shorter, volunteers may have been more willing to provide written thoughts and opinions (in the form of short answers or sentences) related to the survey content.

A second recommendation is that future studies increase both the duration of the overall study as well as the time between administration of the pre-event and post-event surveys. Study results suggested that volunteering at one event may not be enough to facilitate differences in responses between pre-event and post-event surveys and that incremental differences might be found if repeat-volunteers were tracked and re-surveyed over a longer period of time.

Finally, those involved in this study recommend pursuing further avenues of study by which volunteer organizations and environmental and behavioral scientists might partner. Partnerships such as these yield not only useful data but also the hope for more hands to protect and repair our natural world.

Tables

1. Are you a member of the Galveston Bay Foundation?

Date	Yes	No	No Response	Total
04/01/06	0	14	0	14
05/06/06	6	25	1	32
06/03/06	6	32	0	38
07/30/06	0	23	0	23
Total	12	94	1	107
Percent	11.2%	87.9%	0.9%	100%

2. How you volunteered for other environmental activities in the past?

Date	30 days (1)	60 days (2)	90 days (3)	12 months (4)	Not at all (5)	No Response
04/01/06	0	0	2	4	8	0
05/06/06	12	1	2	9	8	0
06/03/06	8	6	5	1	16	2
07/30/06	8	2	0	5	8	0
Total	28	9	9	19	40	2
Percent	26.2%	8.4%	8.4%	17.8%	37.4%	1.9%

****Overall 60.8% of participants had volunteered for other environmental Activities in the past year.**

3. Have you volunteered for another community activity of project (non-environmental) during the past:

Date	30 days (1)	60 days (2)	90 days (3)	12 months (4)	Not at all (5)	No Response
04/01/06	2	2	1	4	3	2
05/06/06	11	3	2	8	7	1
06/03/06	10	2	2	6	17	1
07/30/06	14	3	0	5	0	1
Total	37	10	5	23	27	5
Percent	34.6%	9.3%	4.7%	21.5%	25.2%	4.7%

4. Have you participated in recreational activities in or near Galveston Bay at any time during the last 12 months?

Date	Yes	No	No Response
04/01/06	3	10	1
05/06/06	26	5	1
06/03/06	21	17	0
07/30/06	6	17	0
Total	56	49	2
Percent	52.3%	45.8%	1.9%

MOTIVATION

5. In the following questions, please indicate how important each item is to you as a reason to participate in local restoration.

a. To be outdoors.

Date	Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important	No Response
04/01/06	1	1	3	5	3	1
05/06/06	0	0	6	12	14	0
06/03/06	2	2	6	12	16	0
07/30/06	3	4	13	2	1	0
Total	6	7	28	31	34	1
Percent	5.6%	6.5%	26.2%	29.0%	31.8%	0.9%

b. To be with friends.

Date	Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important	No Response
04/01/06	0	1	6	3	3	1
05/06/06	1	3	12	10	6	0
06/03/06	4	3	9	9	12	1
07/30/06	2	5	12	3	1	0
Total	7	12	39	25	22	2
Percent	6.5%	11.2%	36.4%	23.4%	20.6%	1.8%

c. To return part of the coast to its proper condition.

Date	Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important	No Response
04/01/06	0	0	2	8	3	1
05/06/06	0	0	4	9	19	0
06/03/06	1	0	3	15	19	0
07/30/06	0	0	8	11	4	0
Total	1	0	17	43	45	1
Percent	0.9%	0.0%	15.9%	40.2%	42.1%	0.9%

d. To improve the area for wildlife/other species.

Date	Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important	No Response
------	----------------------	--------------------	----------------------	----------------	---------------------	-------------

04/01/06	0	0	2	8	3	1
05/06/06	0	0	1	8	24	0
06/03/06	1	0	1	14	22	0
07/30/06	0	1	3	10	9	0
Total	1	1	7	40	57	1
Percent	0.9%	0.9%	6.5%	37.4%	53.3%	0.9%

e. To do something positive for the future generations.

Date	Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important	No Response
04/01/06	0	0	1	8	4	1
05/06/06	0	2	2	10	18	0
06/03/06	1	2	3	7	25	0
07/30/06	0	2	3	11	7	0
Total	1	6	9	36	54	1
Percent	0.9%	5.6%	8.4%	33.6%	50.5%	0.9%

f. To learn about the natural environment.

Date	Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important	No Response
04/01/06	0	0	4	4	5	1
05/06/06	0	4	5	13	10	0
06/03/06	2	2	5	9	20	0
07/30/06	1	5	6	8	3	0
Total	3	11	20	34	38	1
Percent	2.8%	10.3%	18.7%	31.8%	35.5%	0.9%

g. To experience something new.

Date	Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important	No Response
04/01/06	0	0	5	6	2	1
05/06/06	1	3	10	11	5	2
06/03/06	1	2	12	9	14	0
07/30/06	0	3	9	7	4	0
Total	2	8	36	33	25	2
Percent	1.9%	7.5%	33.6%	30.8%	23.4%	1.8%

h. To prevent a larger ecological crisis.

Date	Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important	No Response
04/01/06	0	0	2	9	2	1
05/06/06	1	2	4	11	14	0
06/03/06	1	3	4	9	21	0
07/30/06	0	1	5	7	10	0
Total	2	6	15	36	47	1
Percent	1.9%	5.6%	14.0%	33.6%	43.9%	0.9%

i. To feel empowered to make a difference.

Date	Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important	No Response
04/01/06	0	1	4	6	2	1
05/06/06	2	5	5	11	9	0
06/03/06	1	4	7	10	16	0
07/30/06	0	2	11	6	4	0
Total	3	12	27	33	31	1
Percent	2.8%	11.2%	25.2%	30.8%	29.0%	0.9%

j. To make the area more useful for other human uses.

Date	Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important	No Response
04/01/06	1	0	4	6	2	1
05/06/06	1	4	6	12	9	0
06/03/06	6	1	4	14	13	0
07/30/06	0	0	13	8	2	0
Total	8	5	27	40	26	1
Percent	7.5%	4.7%	25.2%	37.4%	24.3%	0.0%

k. It's the right thing to do.

Date	Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important	No Response
04/01/06	0	0	2	7	4	1
05/06/06	1	0	4	8	19	0
06/03/06	1	3	3	10	21	0
07/30/06	0	2	7	12	2	0
Total	2	5	16	37	46	1
Percent	1.9%	4.7%	15.0%	34.6%	43.0%	0.9%

BELIEFS

6. In the following questions, please indicate the extent to which you agree or disagree about the coastal environment.

a. Humans have the right to modify the coastal environment to suit their needs.

Date	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Don't know	No Response
04/01/06	0	4	5	2	1	0	2
05/06/06	6	13	8	5	0	0	0
06/03/06	7	10	12	4	2	3	0
07/30/06	1	12	6	4	0	0	0
Total	14	39	31	15	3	3	2
Percent	13.1%	36.4%	29.0%	14.0%	2.8%	2.8%	1.8%

b. When humans interfere with coastal environments, it often produces disastrous consequences.

Date	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Don't know	No Response
04/01/06	0	2	2	6	4	0	0
05/06/06	1	4	4	12	11	0	0
06/03/06	2	2	6	16	12	0	0
07/30/06	1	1	2	11	8	0	0
Total	4	9	14	45	35	0	0
Percent	3.7%	8.4%	13.1%	42.1%	32.7%	0.0%	0.0%

c. The coastal environment is strong enough to cope with the impacts of the modern society.

Date	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Don't know	No Response
04/01/06	1	7	5	1	0	0	0
05/06/06	8	17	3	3	0	1	0
06/03/06	11	16	3	4	2	2	0
07/30/06	5015	2	0	0	1	1	0
Total	25	55	13	8	2	4	0
Percent	23.4%	51.4%	12.1%	7.5%	1.9%	3.7%	0.0%

d. Some negative impacts to the Bay are acceptable in exchange for some benefits to society.

Date	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Don't know	No Response
04/01/06	0	5	4	4	1	0	0
05/06/06	2	7	11	11	1	0	0
06/03/06	4	6	11	14	1	2	0
07/30/06	1	4	11	7	0	0	0
Total	7	22	37	36	2	3	0
Percent	6.5%	20.6%	34.6%	33.6%	1.9%	2.8%	0.0%

e. Isolated restoration projects will significantly improve the overall quality of the Bay.

Date	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Don't know	No Response
April 1 st	0	2	4	4	4	0	0
May 6 th	0	6	7	14	1	4	0
June 3 rd	2	3	5	20	5	3	0
July 30 th	0	5	6	7	2	2	0
Total	2	16	22	45	12	9	1
Percent	1.9%	15.0%	20.6%	42.1%	11.2%	8.4%	0.9%

f. The ecological nature of the coastal environment is very delicate or easily upset.

Date	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Don't know	No Response
04/01/06	0	0	2	5	5	1	1
05/06/06	0	1	6	18	7	0	0
06/03/06	0	2	5	17	14	0	0
07/30/06	0	1	4	10	6	1	0
Total	0	4	17	50	32	2	2
Percent	0.0%	3.7%	15.9%	46.7%	29.9%	1.9%	1.9%

g. Humans are severely abusing the coastal environment.

Date	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Don't know	No Response
04/01/06	0	1	2	4	6	1	0
05/06/06	1	3	4	14	10	0	0
06/03/06	0	3	5	11	19	0	0
07/30/06	0	1	5	10	6	1	0

Total	1	8	16	39	41	2	0
Percent	0.9%	7.5%	15.0%	36.4%	38.3%	1.9%	0.0%

h. Nature will restore our coastal environment; there is no need to do restoration work.

Date	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Don't know	No Response
04/01/06	2	7	3	1	0	1	0
05/06/06	12	19	1	0	0	0	0
06/03/06	18	17	2	1	0	1	0
07/30/06	14	8	1	0	0	0	0
Total	46	51	7	1	0	2	0
Percent	43.0%	47.7%	6.5%	0.9%	0.0%	1.9%	0.0%

i. Restoration activities are only a short-term, temporary solution.

Date	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Don't know	No Response
04/01/06	1	5	2	4	2	0	0
05/06/06	3	19	3	4	3	0	0
06/03/06	5	13	11	5	2	2	0
07/30/06	4	7	3	7	1	1	0
Total	13	44	19	20	8	3	0
Percent	12.1%	41.1%	17.8%	18.7%	7.5%	2.8%	0.0%

j. Protecting Bay habitats is as important as restoring them.

Date	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Don't know	No Response
04/01/06	0	0	1	2	10	1	0
05/06/06	0	0	1	10	20	1	0
06/03/06	0	0	3	14	21	0	0
07/30/06	0	0	2	9	11	1	0
Total	0	0	7	35	65	3	0
Percent	0.0%	0.0%	6.5%	32.7%	57.9%	2.8%	0.0%

k. Humans have an obligation to leave coastal environments in a better condition for future generations.

Date	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Don't know	No Response
-------------	--------------------------	-----------------	----------------	--------------	-----------------------	-------------------	--------------------

	Disagree				Agree	know	Response
04/01/06	0	0	2	5	1	0	1
05/06/06	0	1	2	11	17	1	0
06/03/06	0	0	5	11	20	1	1
07/30/06	0	0	3	4	6	0	1
Total	0	1	12	40	48	3	3
Percent	0.0%	0.9%	11.2%	37.4%	44.9%	2.8%	2.8%

l. People can appreciate the bay without spending time on or near it.

Date	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Don't know	No Response
04/01/06	0	2	2	5	3	1	1
05/06/06	0	8	2	16	5	0	1
06/03/06	6	11	6	10	5	0	0
07/30/06	0	8	10	5	0	0	0
Total	6	29	20	36	13	1	2
Percent	5.6%	27.1%	18.7%	33.6%	12.1%	0.9%	1.9%

m. Working together, we can improve the quality of the Bay.

Date	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Don't know	No Response
04/01/06	1	0	1	7	4	1	0
05/06/06	0	0	0	10	20	2	0
06/03/06	0	0	2	12	23	1	0
07/30/06	0	0	4	13	6	0	0
Total	1	0	7	42	53	4	0
Percent	0.9%	0.0%	6.5%	39.3%	49.5%	3.7%	0.0%

n. I make a positive impact on the health of the Bay.

Date	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Don't know	No Response
04/01/06	1	0	3	7	2	1	0
05/06/06	0	1	5	20	5	1	0
06/03/06	0	1	7	18	11	1	0
07/30/06	0	3	3	13	3	1	0
Total	1	5	18	58	21	4	0
Percent	0.9%	4.7%	16.8%	54.2%	19.6%	3.7%	0.0%

o. I can make more personal responsibility for protecting the Bay Habitat.

Date	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Don't know	No Response
04/01/06	0	1	2	9	2	0	0
05/06/06	0	0	1	26	4	1	0
06/03/06	0	0	4	16	16	2	0
07/30/06	0	0	4	15	3	1	0
Total	0	1	11	66	25	4	0
Percent	0.0%	0.9%	10.3%	61.7%	23.4%	3.7%	0.0%

7. How close do you live from the Bay?

Average Distance = 50.8 miles

Date	Average Miles
04/01/06	54.23
05/06/06	16.62
06/03/06	39.79
07/30/06	114.25

BEHAVIOR

8. In the following items, please indicate how often you do each of the following.

a. Recycle newspapers, cans, or bottles.

Date	Never	Almost Never	Sometimes	Almost Always	Always	N/A
04/01/06	0	0	4	4	6	0
05/06/06	0	3	1	8	20	0
06/03/06	2	3	11	10	10	2
07/30/06	1	4	7	7	4	0
Total	3	10	23	29	40	2
Percent	2.8%	9.3%	21.5%	27.1%	37.4%	1.9%

b. Refrain from littering.

Date	Never	Almost Never	Sometimes	Almost Always	Always	N/A
04/01/06	0	0	1	2	11	0
05/06/06	0	0	1	3	28	0
06/03/06	0	0	0	8	30	0
07/30/06	0	1	3	7	11	0
Total	0	1	5	20	81	0
Percent	0.0%	0.9%	4.7%	18.7%	75.7%	0.0%

c. Pick up litter that is not your own.

Date	Never	Almost Never	Sometimes	Almost Always	Always	N/A
04/01/06	0	0	7	6	1	0
05/06/06	0	0	12	14	6	0
06/03/06	0	1	17	9	11	0
07/30/06	1	41	12	4	2	0
Total	1	5	48	33	20	0
Percent	0.9%	4.7%	44.9%	30.8%	18.7%	0.0%

d. Encourage others to do environmentally-friendly activities.

Date	Never	Almost Never	Sometimes	Almost Always	Always	N/A
------	-------	--------------	-----------	---------------	--------	-----

04/01/06	0	2	4	8	0	0
05/06/06	0	0	13	7	12	0
06/03/06	0	1	13	13	11	0
07/30/06	0	2	4	8	0	0
Total	2	10	39	31	25	0
Percent	1.9%	9.3%	36.4%	29.0%	23.4%	0.0%

e. Walk, bike, carpool, or take public transportation to work or to run errands.

Date	Never	Almost Never	Sometimes	Almost Always	Always	N/A
04/01/06	0	2	8	1	3	0
05/06/06	4	8	14	4	2	0
06/03/06	2	13	16	1	5	1
07/30/06	3	7	10	221	1	0
Total	9	30	48	8	11	1
Percent	8.4%	28.0%	44.9%	7.5%	10.3%	0.9%

f. Drive a hybrid/energy efficient car.

Date	Never	Almost Never	Sometimes	Almost Always	Always	N/A	No Response
04/01/06	7	2	2	0	2	1	0
05/06/06	17	4	1	3	2	5	0
06/03/06	21	4	1	2	4	5	0
07/30/06	16	3	0	0	0	4	0
Total	61	13	4	5	8	15	1
Percent	57.0%	12.1%	3.7%	4.7%	7.5%	14.0%	0.9%

g. Dispose of motor oil at approved sites.

Date	Never	Almost Never	Sometimes	Almost Always	Always	N/A
04/01/06	1	0	1	2	9	1
05/06/06	1	2	1	2	24	2
06/03/06	1	1	2	4	24	6
07/30/06	8	2	0	1	1	11
Total	11	5	4	9	58	20
Percent	10.3%	4.7%	3.7%	8.4%	54.2%	18.7%

h. Turn off water instead of letting it run while brushing teeth.

Date	Never	Almost Never	Sometimes	Almost Always	Always	N/A
04/01/06	0	2	3	2	7	0
05/06/06	0	1	5	11	14	1
06/03/06	1	2	7	13	15	0
07/30/06	1	1	2	9	10	0
Total	2	6	17	35	46	1
Percent	1.9%	5.6%	15.9%	32.7%	43.0%	0.0%

i. Buy products that are environmentally friendly.

Date	Never	Almost Never	Sometimes	Almost Always	Always	N/A
04/01/06	0	1	6	4	2	1
05/06/06	0	1	14	11	6	0
06/03/06	0	2	18	13	4	1
07/30/06	0	6	10	6	1	0
Total	0	10	48	34	13	2
Percent	0.0%	9.3%	44.9%	31.8%	12.1%	1.9%

j. Buy recycled products.

Date	Never	Almost Never	Sometimes	Almost Always	Always	N/A
04/01/06	0	0	10	2	2	0
05/06/06	0	0	22	5	5	0
06/03/06	0	3	22	9	4	0
07/30/06	0	3	6	8	0	0
Total	0	6	66	24	11	0
Percent	0.0%	5.6%	61.7%	22.4%	10.3%	0.0%

k. Use low-wattage, energy-efficient light bulbs.

Date	Never	Almost Never	Sometimes	Almost Always	Always	N/A
04/01/06	0	0	6	4	4	0
05/06/06	2	2	10	14	3	1
06/03/06	1	3	13	12	8	1
07/30/06	1	3	15	3	0	1
Total	4	8	44	33	15	3

Percent	3.7%	7.5%	41.1%	30.8%	14.0%	2.8%
----------------	-------------	-------------	--------------	--------------	--------------	-------------

l. Adhere to fishing, boating, and hunting laws.

Date	Never	Almost Never	Sometimes	Almost Always	Always	N/A	No Response
04/01/06	0	0	3	0	6	4	1
05/06/06	0	1	0	2	24	5	0
06/03/06	1	0	2	3	24	8	0
07/30/06	0	0	0	4	8	11	0
Total	1	1	5	9	62	28	1
Percent	0.9%	0.9%	4.7%	8.4%	57.9%	26.2%	0.9%

m. Contribute money to an environmental group.

Date	Never	Almost Never	Sometimes	Almost Always	Always	N/A	No Response
04/01/06	1	4	4	2	2	1	0
05/06/06	2	4	14	5	6	1	0
06/03/06	4	9	7	5	10	2	1
07/30/06	7	5	8	0	0	3	0
Total	14	22	33	12	18	7	1
Percent	13.1%	20.6%	30.8%	11.2%	16.8%	6.5%	0.9%

n. Participate (as a volunteer) in public meetings on environmental issues.

Date	Never	Almost Never	Sometimes	Almost Always	Always	N/A
04/01/06	1	4	6	0	2	1
05/06/06	1	10	14	3	3	1
06/03/06	2	8	19	2	5	2
07/30/06	10	7	3	0	0	3
Total	14	29	42	5	10	7
Percent	13.1%	27.1%	39.3%	4.7%	9.3%	6.5%

o. Follow local environmental issues.

Date	Never	Almost Never	Sometimes	Almost Always	Always	N/A
04/01/06	0	1	3	5	4	1
05/06/06	0	3	8	11	8	2

06/03/06	2	1	10	10	15	0
07/30/06						0
Total	4	10	31	30	29	3
Percent	3.7%	9.3%	28.9%	28.0%	27.1%	2.8%

BARRIERS TO INVOLVEMENT

9. Thinking about the activities listed above, to what extent do you agree or disagree with each of the following as reasons for preventing you from acting pro-environmentally?

a. I think acting pro-environmentally costs too much.

Date	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	No Response
04/01/06	2	7	4	1	0	0
05/06/06	4	18	10	0	0	0
06/03/06	9	21	5	2	0	0
07/30/06	4	11	6	1	1	0
Total	19	57	25	4	1	0
Percent	17.8%	53.3%	23.4%	3.7%	0.9%	0.0%

b. I don't always know how to behave pro-environmentally.

Date	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	No Response
04/01/06	0	2	11	1	0	0
05/06/06	4	8	5	15	0	0
06/03/06	3	14	12	8	0	0
07/30/06	1	4	9	7	2	0
Total	8	28	37	31	2	0
Percent	7.5%	26.2%	34.6%	29.0%	1.9%	0.0%

c. I am not really concerned about trying to act pro-environmentally.

Date	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	No Response
04/01/06	2	8	2	1	0	1
05/06/06	9	18	4	0	0	1
06/03/06	13	17	5	2	0	1
07/30/06	7	7	6	3	0	0
Total	31	50	17	6	0	3
Percent	29.0%	46.7%	15.9%	5.6%	0.0%	2.8%

d. Acting pro-environmentally is inconvenient.

Date	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	No Response
------	-------------------	----------	---------	-------	----------------	-------------

	Disagree				Agree	Response
04/01/06	0	6	5	3	0	0
05/06/06	4	16	7	3	0	2
06/03/06	9	16	10	2	0	1
07/30/06	3	8	7	5	0	0
Total	16	46	29	13	0	3
Percent	15.0%	43.0%	27.1%	12.1%	0.0%	2.8%

e. I don't have time to volunteer for environmental projects.

Date	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	No Response
04/01/06	0	8	5	1	0	0
05/06/06	6	16	7	2	1	0
06/03/06	9	16	8	4	1	0
07/30/06	1	8	8	6	0	0
Total	16	48	28	13	2	0
Percent	15.0%	44.9%	26.2%	12.1%	1.9%	0.0%

f. I'm not sure who to contact to volunteer for environmental causes.

Date	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	No Response
04/01/06	0	1	8	3	1	1
05/06/06	5	12	5	9	1	0
06/03/06	8	13	8	7	1	0
07/30/06	3	6	5	9	0	0
Total	16	32	26	28	3	2
Percent	15.0%	29.9%	24.3%	26.2%	2.8%	1.9%

g. I don't know where to find information about how to behave pro-environmentally.

Date	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	No Response
04/01/06	0	5	6	2	1	0
05/06/06	8	10	10	3	1	0
06/03/06	8	19	7	4	0	0
07/30/06	3	6	7	7	0	0
Total	19	40	30	16	2	0
Percent	17.8%	37.4%	28.0%	15.0%	1.9%	0.0%

**10. The average age of participants:
37.4 years**

11. Gender of Respondents

Date	Males	Females
04/01/06	8	6
05/06/06	18	14
06/03/06	15	23
07/30/06	5	18
Total	46	61
Percent	43%	57%

12. What is the highest level of education?

Date	12th Grade or less	High School/GED	Some College	College Degree	Post-Graduate Degree
04/01/06	2	1	3	5	3
05/06/06	6	0	1	15	10
06/03/06	4	1	11	12	10
07/30/06	5	9	8	1	0
Total	17	11	23	33	23
Percent	15.9%	10.3%	21.5%	30.8%	21.5%

PRE-EVENT and POST-EVENT SURVEY STATISTICS

Date	# Pre-Event Survey Participants	# Post-Event Surveys Sent*	# Post-Event Survey Responses	Percent of Post-Event Respondents for all Volunteers
04/01/06	14	10	3	21%
05/06/06	32	23	10	31%
06/03/06	38	32	18	47%
07/30/06	23	10	2	9%
Total	107	65	33	31%

*Represents those pre-event survey participants who opted to provide their contact information for potential participation in the post-event survey.