

Linking the Economy and the Environment of Florida
Keys/Key West

Technical Appendix: Sampling Methodologies
and Estimation Methods Applied
to the Survey of Monroe County Residents 2008

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Preface

This document was prepared to provide detailed documentation of how various measurements were derived as reported for residents of Monroe County for the Florida Keys/Key West in “A Socioeconomic Analysis of the Recreation Activities of Monroe County Residents in the Florida Keys/Key West 2008” (Leeworthy and Morris 2010). As a technical appendix, this document is intended for researchers that want to do further analyses with the resident data and for researchers that may want to replicate the study in the future.

Chapter 1 provides details on the sampling methodologies and methods for estimating the total number of Monroe County residents that participate in recreation activities in the Florida Keys/Key West.. Chapter 2 provides details on the results of analyses to determine the existence of non response bias in the various versions/components of the surveys and sample weighting. Chapter 3 documents the methods used to estimate participation rates and the total number of participants in each activity by district. Chapter 3 also documents how intensity of use was estimated for a select list of 39 activities by district. Intensity of use was defined in terms of the number of separate person-days of activity.

All project data and documentation is available on CD-ROM in a variety of database and statistical package formats. To obtain copies contact:

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This document and all other project documents can be obtained on the World Wide Web at the following address:

<http://sanctuaries.noaa.gov/science/socioeconomic/floridakeys/recreation/welcome.html>

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Chapter 1.

Sampling Methodologies

Survey Sampling Methods

In 2008, the University of Massachusetts-Amherst Human Dimensions of Marine and Coastal Ecosystems Program conducted a survey of Monroe County residents. The survey used a mail survey of Monroe County households. Household addresses were provided for all households in Monroe County by Survey Sampling International (SSI). SSI had a list of 21,793 households in Monroe County. UMASS-Amherst sent out survey forms to 15,000 households, but only 11,661 were deliverable. Of those that were deliverable, 1,441 responded for a total response rate of 12.36% (Table A.1.1).

	Number of Households Sent Forms	Number of Household Forms Received	Response Rate (%)	
Expenditures Survey	3,887	701	18.03	
Satisfaction Survey	3,887	397	10.21	
Knowledge, Attitudes & Perceptions (KAP)	3,887	333	8.57	
All Samples	11,661	1,441	12.36	

Source: University of Massachusetts-Amherst, Survey of Residents of Monroe County 2008

To be eligible for the survey, a person in a household had to be a permanent resident of Monroe County and had to be at least 16 years of age. Only people living in households were eligible. According to the U.S. Bureau of the Census county estimates of population, in 2008, there were 32,306 households containing a total population of 72,043 in Monroe County. We determined from returned surveys that 4.54% of households were households of seasonal visitors and were thus not eligible for our survey, so we dropped these observations from our results. This left us with a total eligible population of 30,839 households containing 68,771 people of all ages (Table A.1.2). This would be the population from which we extrapolate survey sample estimates to population totals.

The mail survey took place from November 2008 through May 2009. The survey was divided into three samples since not all survey questions could be asked of any one household. The survey was divided into the “Expenditure Survey”, the “Satisfaction Survey” and the “Knowledge, Attitudes and Perceptions (KAP) Survey”. Figure A.1.1 shows the types of information obtained from each survey sample. Two follow-up efforts were conducted. One post card follow-up was done after two weeks and if a response had not been received one month later, another full survey questionnaire was sent.

	2000 Census	2008 Census	Eligible ¹ 2008
Total Population in Households	78,227	72,043	68,771
Number of Households	35,086	32,306	30,839
Average Household Size	2.23	2.23	2.23
1. Eligible means those that are permanent residents of Monroe County and eliminates seasonal residents. Seasonal residents in households are estimated to be 4.54% of all households.			
Sources: U.S. Department of Commerce, Bureau of the Census, Census 2000 and County estimates of Population 2008. Survey of Monroe County Residents, University of Massachusetts-Amherst 2008.			

CORE Survey Questions. A “core” set of questions were asked in all three survey samples. This included participation by households in any outdoor recreation in Monroe County/Florida Keys during the past 12 months, and participation by all household members in a detailed list of 74 activities by district (Key Largo, Islamorada, Marathon, Lower Keys, Key West—see Figure A.1.2) during the past 12 months¹. The number of days of activity was asked for a select list of 39 activities by district during the past 12 months. Detailed profiles of residents (age, race/ethnicity, education level, household income, household size, employment status, work outside Monroe County, years lived in Monroe County, access to water from residence, ownership of a boat, and zip code of residence) were obtained. Also ratings on the quality of life in Monroe County and the primary reason for locating in Monroe County were obtained. Questions were also asked of those that did outdoor recreation on how specialized they were in their main activity. In addition, use of artificial and natural reefs was obtained by district and activity and how many days of outdoor recreation were done outside Monroe County over the past 12 months. A total of 1,441 completed questionnaires were returned, but only 1,366 of those were permanent residents of Monroe County. Seasonal residents were deleted to avoid double-counting, since seasonal visitors were included in the separate visitor study (Leeworthy, Loomis and Paterson 2010).

Expenditure Survey Questions. The expenditure survey included all the “core questions” and added trip-related expenditures for the last trip in Monroe County/Florida Keys to do outdoor recreation. Number of days and number of people in the household the expenditures covered were asked to normalize expenditures on a per person per day basis. Distance from place of residence to the recreation site and for boat-related activities, the distance traveled on-water to the recreation site. The types of activities participated in were also obtained for the last trip. The expenditure survey also asked about annual vacation and equipment purchases in South Florida (Miami-Dade, Broward and Monroe County) and in Monroe County (estimates for these are not done in this report due to small sample sizes). Questions were also asked on the non market economic value for artificial and natural reefs located off Monroe County/Florida Keys. Estimates for this are not provided here, but may be the subject of future reports. A total of 3,887 questionnaires were mailed out to households that were deliverable and 701 were returned completed for a response rate of 18% (Table A.1.1). However, only 649 were from households containing permanent residents of Monroe County and thus eligible for our survey and fully completed.

Figure A.1.1 Monroe County Resident Mail Survey 2008

Target Population: All Monroe County Households with Permanent Residents, excluding seasonal visitors.

Sample: 1,366 Monroe County Households with Permanent Residents

Information Obtained in All Survey Samples: N=1,366

- Participation in any outdoor recreation in Monroe County/Florida Keys during the past 12 months.
- Participation by all household members in detailed list of 74 activities by District during the past 12 months.
- Number of days did each of 39 selected activities by district during the past 12 months.
- Profile of residents (age, race/ethnicity, education level, household income, household size, number in household age 16 and older, number of children under 16 years of age, employment status, work outside Monroe County, years lived in Monroe County, access to water from residence, own a boat, and zip code of residence).
- Ratings of Quality of Life in Monroe County
- Primary Reason for Locating in Monroe County
- Specialization Questions: Used to classify recreation users according to how specialized they are in their most important activity. This in turn is used to help predict how they would respond to management strategies and regulations.
- Use of artificial and natural reefs by activity and district of access.
- How many days did outdoor recreation outside Monroe County/Florida Keys over the past 12 months?

Expenditure Survey Sample: N=649

- Trip-related expenditures for last trip in Monroe County/Florida Keys to do outdoor recreation.
- Number of days of last trip for outdoor recreation in Monroe County/Florida Keys.
- Distance traveled from residence to recreation site/access point for last outdoor recreation trip in Monroe County/Florida Keys.
- For users who used their boats for last trip, distance traveled on-water to recreation site.
- Type of activities did on last trip to do outdoor recreation in Monroe County/Florida Keys.
- Expenditures on annual Vacation and Equipment in South Florida and Monroe County.
- Economic Non Market Valuation questions for artificial and natural reefs off Monroe County/Florida Keys.

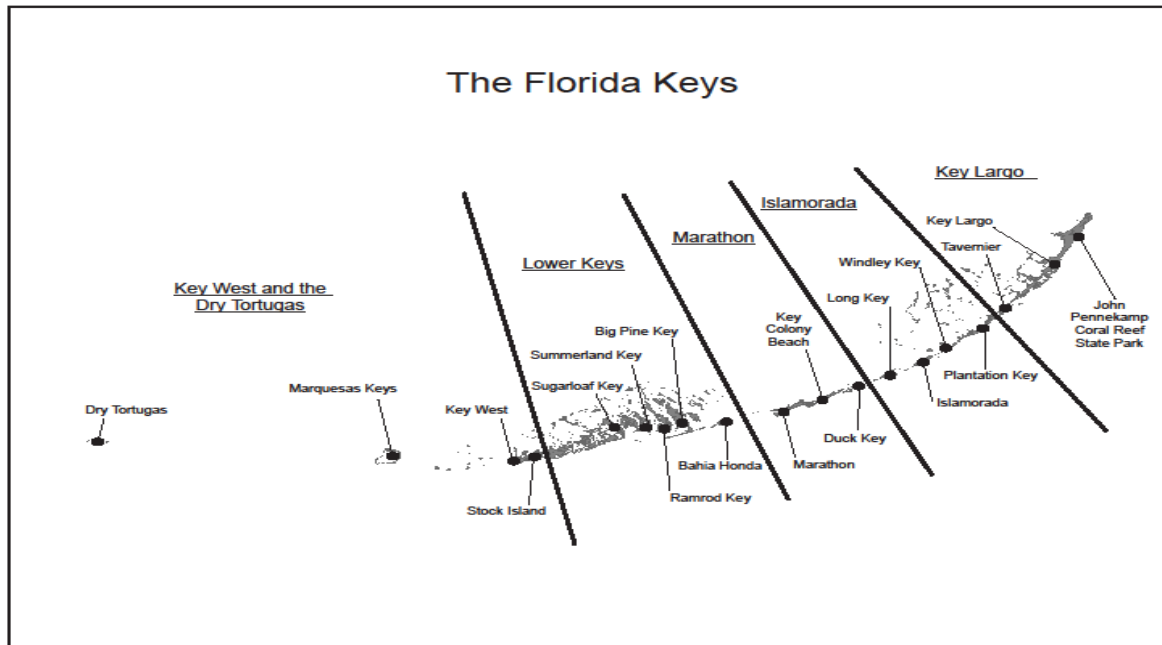
Satisfaction Survey Sample: N=388

- Importance and Satisfaction ratings for 25 natural resource attributes, facilities, and services in Monroe County/Florida Keys.
- If lived in Monroe County/Florida Keys at least five years.
- For those that have lived in Monroe County/Florida Keys for at least five years, how they rated satisfaction with 13 of the 25 items five years ago.

Knowledge, Attitudes and Perceptions of FKNMS Management Strategies and Regulations (KAP) Sample: N=329

- Sources of information used, and the ranking of sources used, about the Florida Keys National Marine Sanctuary (FKNMS).
- Attitudes about the processes FKNMS has used to develop and implement management strategies, rules and regulations, and general support for the FKNMS.
- Knowledge of the fact that all waters surrounding the Florida Keys/Key West are in the FKNMS.
- Perception of FKNMS as making the Florida Keys/Key West as a better place to live and/or doing outdoor recreation activities.
- Knowledge, Attitudes & Perceptions of the different kinds of zones in the FKNMS as to purpose, who benefits, effectiveness and support for.
- Change in uses of zones since establishment.
- Perceptions of changes in status/condition of selected natural resources since implementation of the FKNMS.
- Management strategies or regulations would like to see changed and how would like to see them changed.

Figure A.1.2 The Florida Keys/Key West



Satisfaction Survey Questions. The satisfaction survey included all the ‘core’ questions plus importance and satisfaction ratings for 25 natural resource attributes, facilities, and services in Monroe County/Florida Keys. Residents were also asked if they had lived in Monroe County/Florida Keys for at least five years, and if so, to provide their satisfaction ratings for 13 of the 25 items from five years ago. This allows us to do a retrospective analysis of how things are perceived to have changed over a five-year period. A total of 3,887 questionnaires were mailed out to households that were deliverable and 397 were returned for a response rate of 10.21% (Table A.1.1). However, only 388 of these were from permanent residents that fully completed the questionnaire.

KAP Survey Questions. The KAP survey included all the “core” questions plus questions about the knowledge, attitudes & perceptions of the management strategies and regulation of the Florida Keys National Marine Sanctuary (FKNMS). Sources of information and the ranking of those sources as to usefulness were obtained about the FKNMS. Attitudes about the processes FKNMS has used to develop and implement management strategies, rules and regulations, as well as the general support for the FKNMS were obtained. People were asked about whether they knew that all the waters surrounding the Florida Keys are in the FKNMS and whether they thought the Florida Keys/Key West was a better place to live and/or to do their outdoor recreation activities because of the FKNMS. Residents were also asked about their knowledge, attitudes and perceptions of the different kinds of zones in the FKNMS as to purpose, who benefits, effectiveness and support for the zones. Residents were also asked about their changes in the use of the zones since they were established and their perceptions of the changes in status/condition of selected natural resources since implementation of the FKNMS. Finally, residents were asked about what management strategies or regulations they would like to see changed and how they would like to see them changed. A total of 3,887 questionnaires were mailed out to households that were deliverable and 333 were returned for a response rate of 8.57% (Table A.1.1). However, only 329 of these were from permanent residents that fully completed the questionnaires.

End Notes

1. Some have questioned the reliability of using a 12-month recall period. However, there is no empirical evidence of the relative superiority of shorter time periods of recall for outdoor recreation participation. An often cited study, Westat, Inc. 1989, finds that shorter time periods of recall yielded lower participation rates. However, Westat did not test the differences in recall time periods against a known true number; they simply assume the shortest time period estimates are closest to the true. Sudman and Bradburn, 1974 reviewed a variety of studies where the true number was known and different time periods of recall were used to estimate the known number. They used a time memory model to explain their results which incorporates two offsetting factors; telescoping and memory decay. Telescoping results in people overestimating in shorter periods of time because for one reason or another they expand the time period beyond what is specified in the survey. For memory decay, the longer the time period of recall the more people tend to forget resulting in a downward bias. Sudman and Bradburn found for household expenditures that a 12-month recall period was better than shorter time periods.

Chapter 2.

Non-response Bias Analysis and Sample Weighting

Non-response Bias Analysis

Since we received relatively low response rates to each survey, the possibility exists that estimates from the samples could contain “non response bias”. We conducted an analysis of the potential for non response bias. The first step of the analysis was to look at the profiles of respondents to each of the three survey samples as compared to the U.S. Bureau of Census 2000 Census of Population and the Bureau’s 2008 estimates for Monroe County (Table A.2.1). A statistical test of the differences in the distributions of the 2008 population and our samples was conducted and significant differences were found for age, Hispanic or Latino Origin, and Race. Younger, Hispanic and non whites were under represented in our samples comparing 2008 Census data with our samples. For Educational Attainment, Household Income and Employment Status, 2008 Census data was not available. We tested our samples against the 2000 Census for these socioeconomic factors and found statistically significant differences for each of these factors. However, there have been significant changes in the resident population of Monroe County from the time of the 2000 Census and 2008. The population has declined and those who left were concentrated in the younger age groups (less than 25 years of age). This younger population was most likely working people in lower paying service jobs that could no longer afford to live in Monroe County. The increase in the amount of commuters who live outside Monroe County but work in Monroe County has increased significantly. Although population has continued to decline in Monroe County, the number of employees has continued to increase (see Chapter 4). The education level, household income, and employment status found in the 2000 Census was likely much different in 2008 and so the differences in our samples and the actual population in Monroe County are not quite as different as comparing our samples with the 2000 Census.

Table A.2.1. Comparative Demographic Profiles of Monroe County Residents

Characteristic	Percent Distributions					
	Census	Census	Sample	Sample	Sample	Sample
	2000	2008	EXP ¹	KAP ²	SAT ³	Total ⁴
SEX						
Male	52.25	53.15	-	-	-	-
Female	46.75	46.85	-	-	-	-
AGE (16 and over)						
16 - 24	9.67	8.85	0.63	0.62	0.53	0.60
25 - 44	36.66	26.56	9.75	9.66	12.11	10.40
45 - 64	36.41	46.23	53.93	54.52	55.79	54.60
65 and older	17.26	18.36	35.69	35.20	31.58	34.41
Hispanic or Latino Origin	15.90	19.06	6.41	4.39	6.81	6.04
Race						
White alone	92.80	91.62	96.54	97.49	97.36	97.00
Black or African American	4.99	5.38	1.42	0.63	1.06	1.13
American Indian or Alaskan Native	0.39	0.49	0.31	0.00	0.26	0.23
Asian alone	0.87	1.25	0.31	0.63	0.53	0.45
Native Hawaiian of Other Pacific Islander	0.04	0.05	0.16	0.00	0.00	0.08
Two or more races	0.91	1.21	1.26	1.25	0.79	1.13
Education Attainment						
8th grade or less	4.62	-	0.47	0.00	1.30	0.59
9th to 11th grade	10.47	-	1.72	1.24	1.30	1.49
12 grade/HS grad/GED	28.88	-	10.03	10.53	12.99	11.00
13 to 15 years	30.55	-	27.59	26.01	28.83	27.56
College Graduate	16.77	-	33.07	35.91	31.95	33.43
Graduate School Degree-Law-Medicine	8.71	-	27.12	26.32	23.64	25.93
Household Income (before taxes)						
Less than \$10,000	8.81	-	1.36	1.39	2.84	1.79
\$10,000 - \$14,999	5.74	-	3.05	2.78	1.99	2.68
\$15,000 - \$24,999	12.52	-	5.93	4.86	4.55	5.28
\$25,000 - \$34,999	13.20	-	7.12	6.60	6.25	6.75
\$35,000 - \$49,999	17.22	-	11.53	15.28	14.77	13.33
\$50,000 - \$74,999	19.86	-	21.53	25.35	23.01	22.85
\$75,000 - \$99,999	10.35	-	14.75	10.76	13.35	13.41
\$100,000 - \$149,999	6.87	-	18.47	17.36	15.34	17.32
\$150,000 and over	5.43	-	16.27	15.63	17.90	16.59

Table A.2.1. Comparative Demographic Profiles of Monroe County Residents (continued)							
			Percent Distributions				
Characteristic	Census	Census	Sample	Sample	Sample	Sample	
	2000	2008	EXP ¹	KAP ²	SAT ³	Total ⁴	2008
Employment Status							
Unemployed	2.02	-	1.57	1.86	2.33	1.86	
Employed	62.85	-	50.47	49.54	51.55	50.56	
Not in Labor force	35.13	-	47.96	48.61	46.11	47.59	
1. Expenditure/Valuation Version N=649. Distributions unweighted.							
2. Knowledge, Attitudes & Perceptions (KAP) Version N=329. Distributions unweighted.							
3. Satisfaction Version N=388. Distributions unweighted.							
4. Total sample for all versions N=1,366. Distributions unweighted.							
Sources: U.S. Department of Commerce, Bureau of the Census Years 2000 and 2008.							

Relationship between Socioeconomic Factors and Project Measurements. For non response bias to exist there must be a relationship with what you are trying to estimate and the variable for which you have over or under representation. The next step was to estimate the relationships between key project measurements and the socioeconomic factors for which we had under representation, while controlling for other factors. Table A.2.2 shows the definitions of socioeconomic variables used in testing for the relationships between socioeconomic factors and key selected variables in the Satisfaction, Knowledge, Attitudes & Perceptions and Expenditure versions of the mail surveys.

Expenditure Mailback. Four expenditure items were selected for estimating the relationship between socioeconomic factors and spending by residents for recreation: lodging, food & beverages, fishing, and total trip expenditures. Spending was estimated on a per person per day basis for all trip expenditures. For lodging, fishing and total expenditures there were no significant socioeconomic factors that explained spending on a per person per day basis. For food & beverage expenditures, age was a significant factor. Older residents spent less per person per day than younger residents (Table A.2.3). We should expect from these results that non-response bias is minimal to nonexistent. Below we will examine the differences in weighted and unweighted expenditures to see if weighting for non-response makes a difference in our estimates as an indicator of the possible extent of non-response bias.

Satisfaction Mailback. For the satisfaction mailback, five importance ratings were chosen to estimate the relationships between socioeconomic factors and importance ratings: Importance of Clear Water (C1), Importance of the Amount of Living Coral on the Reefs (C2), the Importance of Large Numbers of Fish (C7), Importance of Historic Preservation (C21), and Importance of Shoreline Access (C27). The results for the tests are summarized in Table A.2.4. For two of the items tested, there was no relationship between socioeconomic factors and resident’s importance ratings (Historic Preservation and Shoreline Access). For “Clear Water”, age education and years lived in Monroe County were important socioeconomic factors. Older residents had lower importance ratings as did residents with an educational attainment of 9th – 11th grade. As the years living in Monroe County increased so did the importance rating for clear water. For the “Amount of Living Coral on the Reefs”, only age was a significant factor in explaining the importance ratings. This item had lower scores for older residents. For “Large Numbers of Fish”, two socioeconomic factors were significant in explaining the importance ratings: age and whether they owned a boat. This was less important for older residents and more important for those who owned a boat. Given that the sample had differences in responses by age, there is some potential for non-response bias for a couple of

importance ratings. Below, the weighted and unweighted importance ratings will be compared to get an indication of the possible extent of the bias.

Knowledge, Attitudes & Perceptions (KAP) Mailback. For the KAP mailback, four measurements were chosen to test for relationships between socioeconomic factors and project measurements. The four items were attitudes about NOAA and the FKNMS scored on a five point Likert scale using an agreement scale with 1=Strongly Agree to 5=Strongly Disagree. The items were “NOAA has made a positive contribution to the marine environment (D17), “the Florida Keys has benefited environmentally from the FKNMS” (D18), “there has been a net economic benefit to the Florida Keys from the FKNMS” (D19), and “I generally support the FKNMS” (D20). The results of the tests are summarized in Table A.2.5. There was a relationship between some socioeconomic factors and these attitude scores for three of the four items (D18, D19, and D20). For D18, two factors were significant, whether they owned a boat and whether they had access to waterfront from their residence. Owning a boat was negatively related to the attitude score meaning that boat owners were in more agreement with this statement, while those who had access were less in agreement with this statement. For D19, only one factor was significant in explaining differences in the attitudes scores; whether they owned a boat. Boat owners were more in agreement with this statement. For D20, only one factor was significant in explaining the attitudes score: whether they had access to the waterfront from their residence. Those who had access to the waterfront from their residence were less in agreement with this statement. Non-response bias would be expected to be minimal to nonexistent for this survey, since none of the factors for which there was differences in response rates were there relationships between these factors and the project measurements. Below, the weighted and unweighted attitudes scores are compared to check on the possible differences.

Table A.2.2. Variable Definitions for Tests of Relationships Between Socioeconomic Factors and Project Measurements

Variable	Definition ^{1,2}
AGE	Age of Person Interviewed
HISPANIC	Dummy Variable 1=Race/Ethnicity is Hispanic
WHITE	Dummy Variable 1=Race/Ethnicity is White
ED8	Dummy Variable 1=Education 8th grade or less (in constant)
ED911	Dummy Variable 1=Education 9th - 11th Grade
ED12	Dummy Variable 1=Education High School Grad or equivalent
ED1315	Dummy Variable 1=College Grad
EDCOLL	Dummy Variable 1=College Grad
EDGRAD	Dummy Variable 1=Grad School, Law School, Medical School
INC2MISS	Dummy Variable 1=Household Income Missing
INC20K	Dummy Variable 1=Household Income less than \$20,000 (in constant)
INC40K	Dummy Variable 1=Household Income \$20,000 to \$39,999
INC60K	Dummy Variable 1=Household Income \$40,000 to \$59,999
INC100K	Dummy Variable 1=Household Income \$60,000 to \$100,000
INC150K	Dummy Variable 1=Household Income over \$100,000
UNEMPLOTED	Dummy Variable Employment Status 1=unemployed 0=employed or not in labor force (in constant)
EMPLOYED	Dummy Variable Employment Status 1=employed 0=not employed
LABFORP	Dummy Variable Employment Status 1=Not In labor force 0= in labor force
G6	Years Lived In Monroe county
G1	Number in Household Permanent Residents of Monroe County
CHILDREN	Number of Permanent Residents in Household under 16 years of age
OWNBOAT	Dummy Variable 1=Own boat 0=Do not own boat
ACCESS	Dummy Variable 1= Have access to waterfront from residence 0=do not
LODGPPD	Lodging expenditures per person per day
FOODPPD	Food & Beverage expenditures per person per day
FISHPPD	Fishing expenditures per person per day
TOTEXPPD	Total trip related expenditures per person per day
C1	Importance Rating - Clear Water (high visibility)
C2	Importance Rating - Amount of Living Coral on the Reefs
C7	Importance Rating - Large Numbers of Fish
C17	Importance Rating - Shoreline Access
C21	Importance Rating - Historic Preservation
D17	Attitude - NOAA has made a positive contribution to the marine environment
D18	Attitude - The Florida Keys has benefited environmentally from the FKNMS
D19	Attitude - There has been a net economic benefit to the Florida Keys from the FKNMS
D20	Attitude - I generally support the FKNMS

1. Importance ratings on 1 to 5 scale with 1 equal to Not Important to 5=Extremely Important.
2. Attitudes scored on a 1 to 5 agreement scale with 1 equal to Strongly Agree to 5=Strongly Disagree.

Table A.2.3. Tests of Relationships between Expenditures and Socioeconomic Factors: Expenditure Mail Survey

Independent Variables	LODGPPD	FOODPPD	FISHPPD	TOTEXPPD
Constant	8.8756 (0.23)	45.4438 (0.95)	-18.8174 (-0.17)	123.5114 (0.73)
AGE	-0.1725 (-0.93)	-0.4862 (-2.09)**	0.3182 (0.61)	-1.1905 (-1.45)
WHITE	4.1747 (0.37)	4.5007 (0.32)	-0.6922 (-0.02)	4.0294 (0.08)
HISPANIC	8.9015 (0.68)	17.9365 (1.09)	5.6401 (0.15)	32.0016 (0.55)
ED911	-2.364 (-0.05)	-7.5755 (-0.13)	-15.2663 (-0.12)	-32.4603 (-0.16)
ED12	0.8559 (0.03)	5.7524 (0.14)	15.5496 (0.16)	29.2381 (0.20)
ED1315	3.0502 (0.09)	18.436 (0.44)	22.0574 (0.23)	56.3678 (0.38)
EDCOLL	7.747 (0.23)	19.6442 (0.47)	28.7924 (0.30)	61.94 (0.42)
EDGRAD	2.1106 (0.06)	22.8735 (0.55)	13.4986 (0.14)	53.5255 (0.36)
EMPLOYED	4.6538 (0.27)	24.9591 (1.15)	1.8841 (0.04)	18.2767 (0.24)
LABFORP	-8.5854 (-0.49)	-29.2388 (-1.33)	-25.7142 (-0.52)	-59.1972 (-0.76)
INCMISS	-2.496 (-0.22)	-6.5879 (-0.45)	19.1259 (0.58)	5.5789 (0.11)
INC50K	-0.5376 (-0.05)	12.7184 (0.99)	3.5374 (0.12)	24.8382 (0.55)
INC100K	1.0161 (0.10)	-6.531 (-0.51)	3.8648 (0.13)	2.2504 (0.05)
INC150K	4.4886 (0.43)	1.61 (0.12)	31.2779 (1.06)	46.2687 (1.00)
G6	-0.05 (-0.39)	0.0447 (0.28)	-0.241 (-0.66)	0.3336 (0.59)
OWNBOAT	-0.0922 (-0.02)	-5.9494 (-1.26)	0.3392 (0.03)	-13.8623 (-0.83)
ACCESS	-3.6270 (-0.98)	-0.2730 (-0.06)	-3.7454 (-0.36)	-0.5180 (-0.03)
G1	0.4167 (0.21)	-3.8776 (-1.54)	1.2831 (0.23)	-9.5580 (-1.08)
CHILDREN	0.48745 (0.15)	4.6581 (1.10)	5.5028 (0.58)	21.9370 (1.47)
Adj. R-SQ	-0.0229	0.033	0.0004	-0.0023
F-signif	0.9614	0.0255	0.4497	0.5232
N	424	424	424	424

1. T-values in parentheses. * means statistically significant at .10, ** means statistically significant at .05, and *** means statistically significant at .001.

Table A.2.4. Tests of Relationships between Importance Ratings and Socioeconomic

Factors: Satisfaction Mail Survey						
Independent						
Variables	C1	C2	C7	C17	C21	
Constant	5.5627 (5.99)***	3.9462 (4.03)***	5.0468 (4.66)***	2.1229 (1.77)*	3.0695 (2.80)**	
AGE	-0.0126 (-2.09)**	-0.0147 (-2.29)**	-0.0149 (-2.05)**	0.0084 (1.16)	-0.0019 (-0.26)	
WHITE	-0.2552 (-0.56)	-0.0272 (-0.06)	-0.4617 (-0.902)	0.0653 (0.09)	0.3593 (-0.71)	
HISPANIC	-0.6439 (-1.31)	-0.2281 (-0.44)	-0.7767 (-1.41)	0.1187 (0.16)	0.3814 (0.68)	
ED911	-1.702 (-2.08)**	0.4512 (0.53)	-1.2585 (-1.29)	-0.2804 (-0.28)	-0.0347 (-0.04)	
ED12	-0.4756 (-0.74)	1.1002 (1.62)	0.4555 (0.59)	0.0848 (0.12)	0.9399 (1.20)	
ED1315	-0.4063 (-0.63)	1.1817 (1.75)*	0.5047 (0.66)	-0.0599 (-0.08)	0.879 (1.13)	
EDCOLL	-0.4658 (-0.72)	1.1416 (1.69)*	0.2882 (0.37)	-0.31 (-0.44)	0.7709 (0.98)	
EDGRAD	-0.3395 (-0.52)	1.2458 (1.82)*	0.1435 (0.18)	-0.356 (-0.49)	0.8346 (1.05)	
EMPLOYED	0.3351 (0.80)	-0.1903 (-0.43)	-0.0319 (-0.07)	0.7809 (1.50)	-0.752 (-1.57)	
LABFORP	-0.2221 (-0.53)	0.1141 (0.26)	0.1534 (0.33)	-0.8818 (-1.69)*	0.9284 (1.94)*	
INCMISS	0.2021 (0.60)	0.1176 (0.32)	-0.112 (-0.28)	0.7638 (1.73)*	-0.2544 (-0.62)	
INC50K	0.1161 (0.39)	-0.1453 (-0.46)	-0.3972 (-1.11)	0.534 (1.38)	-0.39 (-1.08)	
INC100K	0.0279 (0.09)	-0.1373 (-0.44)	-0.3433 (-0.96)	0.4487 (1.14)	-0.1781 (-0.49)	
INC150K	0.1796 (0.59)	-0.2674 (-0.82)	-0.3226 (-0.88)	0.6527 (1.64)	-0.2136 (-0.58)	
G6	0.011 (2.26)**	0.0072 (1.35)	0.0076 (1.29)	-0.0109 (-1.84)*	0.0072 (1.22)	
OWNBOAT	-0.0274 (-0.23)	0.1085 (0.82)	0.3799 (2.53)**	-0.2006 (-1.23)	-0.0816 (-0.56)	
ACCESS	-0.0554 (-0.46)	0.0064 (0.05)	-0.0065 (-0.04)	0.2414 (1.55)	-0.1815 (-1.23)	
G1	-0.059 (-0.79)	0.0816 (0.99)	-0.0667 (-0.71)	0.0931 (1.03)	-0.0235 (-0.26)	
CHILDREN	-0.1017 (-0.79)	-0.2196 (-1.57)	-0.0569 (-0.34)	0.0687 (0.42)	-0.0493 (-0.30)	
Adj. R-SQ	0.0375	-0.0108	0.0544	0.0272	0.007	
F-signif	0.0513	0.6628	0.0149	0.143	0.3374	
N	302	292	295	252	303	

1. T-values in parentheses. * means statistically significant at .10, ** means statistically significant at .05, and *** means statistically significant at .001.

Table A.2.5. Tests of Relationships between Attitudes and Socioeconomic
Factors: Knowledge, Attitudes & Perceptions Mail Survey

Independent Variables	D17	D18	D19	D20
Constant	5.8958 (3.64)***	4.8709 (3.03)***	5.1017 (3.21)***	4.3979 (2.88)**
AGE	-0.01 (-0.71)	0.0057 (0.41)	0.0072 (0.51)	0.0053 (0.39)
WHITE	-1.2854 (-1.45)	-1.63 (-1.85)*	-0.4697 (-0.53)	-1.6514 (-1.93)*
HISPANIC	-0.9701 (-0.90)	-0.5469 (-0.51)	0.3107 (0.29)	-0.5296 (-0.51)
ED1315	-0.1489 (-0.29)	0.2537 (0.50)	-0.463 (-0.91)	0.1827 (0.38)
EDCOLL	-0.5054 (-1.02)	0.025 (0.05)	-0.3722 (-0.75)	0.1142 (0.24)
EDGRAD	-0.0061 (-0.01)	0.341 (0.64)	-0.177 (-0.33)	0.4729 (0.94)
EMPLOYED	-0.9968 (-0.98)	-1.9093 (-1.90)*	0.1687 (0.18)	-0.1082 (-0.12)
LABFORP	0.9449 (0.91)	2.2349 (2.17)**	-0.0519 (-0.05)	0.485 (0.53)
INCMISS	1.3545 (1.43)	0.2741 (0.29)	0.4066 (0.45)	0.0083 (0.01)
INC50K	-0.1699 (-0.19)	-0.518 (-0.58)	0.2699 (0.32)	-0.5876 (-0.72)
INC100K	0.3526 (0.39)	-0.6387 (-0.71)	0.2734 (0.32)	-0.7081 (-0.87)
INC150K	0.3242 (0.36)	-0.601 (-0.67)	-0.0583 (-0.07)	-0.8361 (-1.01)
G6	-0.0116 (-0.96)	-0.0004 (-0.03)	-0.0052 (-0.43)	0.0025 (0.22)
OWNBOAT	-0.5459 (-1.87)*	-0.7885 (-2.71)**	-0.6787 (-2.32)**	-0.4723 (-1.68)*
ACCESS	0.4827 (1.59)	0.8358 (2.78)**	0.4469 (1.47)	0.9574 (3.28)***
G1	-0.2119 (-1.03)	-0.1866 (-0.92)	-0.2803 (-1.37)	-0.1082 (-0.55)
CHILDREN	0.2446 (0.80)	0.1525 (0.50)	0.3994 (1.31)	0.1954 (0.67)
Adj. R-SQ	0.0368	0.0506	-0.0034	0.027
F-signif	0.0852	0.0372	0.5132	0.1438
N	238	238	238	239

1. T-values in parentheses. * means statistically significant at .10, ** means statistically significant at .05, and *** means statistically significant at .001.

Sample Weighting

In the non-response bias analysis, it was revealed that there were only three socioeconomic factors for which our sample had significantly distributions versus the 2008 Census for Monroe County; age, ethnicity and race. The analysis also revealed that for only age was there any relationship between age and project measurements. Sample weights were constructed for age, ethnicity (Hispanic) and race. Multivariate weights across all three factors were not possible due to sample sizes i.e., too many cells in a multivariate matrix. Instead, multiplicative weights were created. The weights attempt to equilibrate the sample distribution for each factor to the 2008 Census distribution. However, because they are not true multivariate weights, sample distributions after applying multiplicative weights will yield slightly different distributions than the 2008 Census. Table A.2.6 shows the sample weights and Table 2.7 shows the sample weighted distributions for each factor compared to the 2008 Census.

Characteristic	Census	Sample	EXP	Sample	KAP
	2008	EXP ¹	Weight	2008	Weight
AGE (16 and over)					
16 - 24	8.85	0.63	14.0476	0.62	14.2742
25 - 44	26.56	9.75	2.7241	9.66	2.7495
45 - 64	46.23	53.93	0.8572	54.52	0.8479
65 and older	18.36	35.69	0.5144	35.20	0.5216
Hispanic or Latino Origin					
Yes	17.48	6.41	2.7270	4.39	3.9818
No	82.52	93.59	0.8817	95.61	0.8631
Race					
White alone	91.62	96.54	0.9490	97.49	0.9398
Black or African American	5.38	1.42	3.7887	0.63	8.5397
American Indian or Alaskan Native	0.49	0.31	1.5806	0.00	
Asian alone	1.25	0.31	4.0323	0.63	1.9841
Native Hawaiian of Other Pacific Islander	0.05	0.16	0.3125	0.00	
Two or more races	1.21	1.26	0.9603	1.25	0.9680
Combined other than White or Black			1.4706		1.5957
1. Expenditure/Valuation Version N=649.					
2. Knowledge, Attitudes & Perceptions (KAP) Version N=329.					

Table A.2.6. Derivation of Sample Weights for each Mail Survey (continued)				
	Sample		Sample	
	SAT ³	SAT	Total ⁴	Total
Characteristic	2008	Weight	2008	Weight
AGE (16 and over)				
16 - 24	0.53	16.6981	0.6	14.7500
25 - 44	12.11	2.1932	10.4	2.5538
45 - 64	55.79	0.8286	54.6	0.8467
65 and older	31.58	0.5814	34.41	0.5336
Hispanic or Latino Origin				
Yes	6.81	2.5668	6.04	2.8940
No	93.19	0.8855	93.96	0.8782
Race				
White alone	97.36	0.9410	97	0.9445
Black or African American	1.06	5.0755	1.13	4.7611
American Indian or Alaskan Native	0.26	1.8846	0.23	2.1304
Asian alone	0.53	2.3585	0.45	2.7778
Native Hawaiian of Other Pacific Islander	0		0.08	0.6250
Two or more races	0.79	1.5316	1.13	1.0708
Combined other than White or Black		1.8987		1.5873
3. Satisfaction Version N=388.				
4. Total Sample for all versions N=1,366.				

Table A.2.7. Comparisons of Census 2008 and Weighted Sample Distributions for Age, Ethnicity and Race		
Socioeconomic Factor	Census 2008 (%)	Weighted Sample (%)
AGE		
16 - 24	8.85	6.55
25 - 44	26.56	18.65
45 - 64	46.23	49.73
65 and older	18.36	25.07
Hispanic or Latino Origin		
Yes	15.90	14.54
RACE		
White alone	91.62	91.25
Black or African American	5.38	4.86
American Indian or Alaskan Native	0.49	0.23
Asian alone	1.25	0.61
Native Hawaiian or Other Pacific Islander	0.05	0.14
Two or more races	1.21	2.91

Weighted versus Unweighted Estimates for Selected Project Measurements

As was noted above in the non-response bias analysis, comparing weighted and unweighted estimates of selected project measurements provides an indication of the potential magnitude of non-response bias. Here the weighted and unweighted estimates for the selected project measurements for each mail survey are compared.

Expenditure Mailback. There were no statistically significant differences between the unweighted and weighted expenditures (Table A.2.8). Thus, it is concluded that for the expenditure mail survey there was minimal to no non-response bias.

Satisfaction Mailback. There were no statistically significant differences between the unweighted and weighted means for the selected importance ratings (Table A.2.9). Thus, it is concluded that for the satisfaction mail survey there was minimal to no non-response bias.

Knowledge, Attitudes & Perceptions (KAP) Mailback. There were no statistically significant differences between the unweighted and weighted means for the selected attitude scores (Table A.2.10). Thus, it is concluded that for the KAP mail survey there was minimal to no non-response bias.

Table A.2.8. Comparisons of Weighted and Unweighted Means for Selected Expenditures Per Person Per Day

	Unweighted	Weighted	Statistically Significant
Expenditure Item	Mean	Mean	Difference ¹
Lodging	\$4.80	\$4.84	NO
Food & Beverage	\$26.89	\$26.33	NO
Transportation	\$4.66	\$5.93	NO
Boating	\$19.43	\$22.40	NO
Fishing	\$18.68	\$16.37	NO
Diving	\$4.00	\$3.37	NO
Total	\$91.53	\$92.67	NO

1. T-test using 0.05 level of significance.

Table A.2.9. Comparisons of Weighted and Unweighted Means for Selected Importance Ratings from the Satisfaction Mail Survey

	Unweighted	Weighted	Statistically Significant
Importance Item	Mean	Mean	Difference ¹
Clear Water	4.28	4.29	NO
Amount of Living Coral	4.35	4.35	NO
Large Numbers of Fish	4.02	4.06	NO
Historic Preservation	3.88	3.83	NO
Shoreline Access	3.76	3.80	NO

1. T-test using 0.05 level of significance.

Table A.2.10. Comparisons of Weighted and Unweighted Means for Selected Attitudes from the Knowledge, Attitudes & Perception Mail Survey

	Unweighted	Weighted	Statistically Significant
Importance Item	Mean	Mean	Difference ¹
D17	3.53	3.69	NO
D18	3.22	3.43	NO
D19	4.33	4.41	NO
D20	3.11	3.25	NO

1. T-test using 0.05 level of significance.

Chapter 3.

Methods of Estimating Participation in Recreation, Activity Participation and Intensity of Use

In this chapter the methods of estimating overall participation in recreation by Monroe county residents, the details of activity participation by activity and district, and the intensity of use measured in days of activity in each district.

Participation in Outdoor Recreation in the Florida Keys

The questionnaire used a screening question to first identify if the randomly chosen person in a household age 16 or older had participated in any outdoor recreation activity in the Florida Keys over the past 12 month. From the answer to this question, we derive estimates of overall participation rates and how the participation rate varied across socioeconomic factors (Table A.3.1) and district (Table A.3.2).

Extrapolation from Sample to Population

In Chapter 2 of Leeworthy and Morris (2010), estimates of outdoor recreation in 74 detailed activities are presented. The information was collected for all members of the household, that is, for residents of all ages. To estimate the total number of participants in any outdoor recreation activity requires an estimate of the total Monroe County population. Since our target population was limited to the permanent resident population, excluding seasonal visitors, we had to derive from the Census of population, the eligible population in Monroe County. The 2008 estimate of Monroe County's population living in households by the U.S. Census Bureau was 32,306 households containing 72,043 persons of all ages. Using the information from the UMASS-Amherst survey, we estimate that 4.54% of all residents of Monroe County living in households were seasonal visitors and subtracted them from the 2008 census population estimate yielding 68,771 permanent residents living in households. This is the estimate we use in extrapolating from sample to population (Table A.3.3).

Table A.3.1. Comparative Profiles of Participants and Non Participants in Recreation				
	Entire	Participated in Recreation in Keys		
	Sample	No	Yes	
Age				
16-24	6.55	19.29	5.21	
25-44	18.65	13.19	19.90	
45-64	49.73	28.51	53.21	
65+	25.07	39.01	21.68	
Mean	54.44	57.33	53.96	
Median	57.00	60.00	56.00	
Race/Ethnicity				
White Not Hispanic	80.56	65.09	84.02	
Black Not Hispanic	2.90	3.52	2.57	
Hispanic	14.54	27.39	11.91	
Amer. Indian or Alaskan Native Not Hispanic	1.10	1.45	1.04	
Asian Not Hispanic	0.76	1.72	0.46	
Native Hawaiian or Pacific Islander Not Hispanic	0.14	0.83	0.00	
Education				
8th grade or less	0.62	1.48	0.45	
9th to 11th grade	1.50	4.85	0.75	
12th grade-HS grad	13.90	30.93	10.00	
13-15 years	28.36	27.25	28.28	
College Grad	32.18	22.25	34.64	
Grad School-Law-Med	23.44	13.24	25.88	
Household Income				
Less than \$10,000	2.37	6.58	1.19	
\$10,000 - \$14,999	2.41	4.41	2.03	
\$15,000 - \$24,999	7.38	23.99	4.04	
\$25,000 - \$34,999	6.16	6.62	6.15	
\$35,000 - \$49,999	12.65	15.58	12.12	
\$50,000 - \$74,999	23.11	16.66	23.96	
\$75,000 - \$99,999	14.74	10.55	15.79	
\$100,000 - \$149,999	16.53	9.03	18.22	
\$150,000 and over	14.65	6.58	16.50	
Household Size (Mean)				
Number in Household Age 16 and Older (Mean)	2.05	1.97	2.07	
Number of Children in Household (Mean)	0.22	0.10	0.25	
Work Outside Monroe County	11.73	3.27	13.64	

	Participated in Recreation in Keys		
	Entire Sample	No	Yes
Employment Status			
Unemployed	2.05	3.84	1.38
Employed - full-time	49.58	30.42	53.32
Employed - part-time	6.63	5.44	6.97
Retired	35.46	42.27	34.41
Student	3.96	11.21	2.50
Homemaker	1.48	3.01	1.18
Medical Leave	0.06	0.00	0.08
Semi-retired	0.06	0.00	0.08
Disabled	0.72	3.81	0.08
Years Lived in Monroe			
Less than One Year	0.24	0.31	0.23
1 to 5 years	18.59	8.60	20.29
6 to 10 years	19.77	11.72	21.72
11 to 20 years	31.06	35.14	30.45
21 to 40 years	23.42	31.00	21.80
41+ years	6.92	13.23	5.51
Mean	17.53	24.07	16.15
Median	14.00	18.00	12.00
Access to Waterfront from Residence	60.63	57.50	61.03
Own a Boat	55.09	16.79	62.89

	Participation Rate (%) ¹
Any Outdoor Recreation in Monroe County/Florida Keys	
During the Past 12 months -- All Keys	82.54
Key Largo Residents	86.23
Islamorada Residents	91.43
Marathon Residents	85.91
Lower Keys Residents	87.22
Key West Residents	75.92

1. Percent of permanent residents of Monroe County, excludes seasonal visitors.

Activity Participation

The estimates provided in Leeworthy and Morris, 2010 are of activity participation by residents for the year 2008. Information was first obtained for a randomly chosen person, age 16 or older, in the household the “respondent”). The birthday rule was used to randomly select the respondents, i.e. the person in the household, age 16 or older that last celebrated their birthday. Information was gathered on the respondent’s activity participation and annual number of days of each activity in each district. Second, activity participation was also obtained on all other individuals in the household, i.e. individuals of all ages. So, although there were 1,366 randomly chosen individuals within 1,366 households that provided adequate survey responses to the activity section of the mailback, information on activity participation was obtained on 2,746 residents of all ages living in the 1,366 households.

Participation in 74 activities (see Exhibit 3) in five districts (Key Largo, Islamorada, Marathon, Lower Keys, and Key West), see Exhibit 2 for a map showing the district definitions). Two types of participation rates were calculated. The first was the percent of all residents of Monroe County who participated in an activity in a district. This was calculated by summing across all residents, living in the sampled households, who did the activity in the district divided by the sum of all residents living in the sampled households. When this participation rate is multiplied by the number of all residents of Monroe County, an estimate is obtained for the number of residents who did an activity in the district.

The second type of participation rate calculated was the “within region participate rates.” This participation rate is the percent of residents who participated in a particular district. These participation rates were calculated by summing the number of sampled residents who did any activity in the district by the sum of sampled residents who visited the district; for example, the answer to the question, Of all the residents that participated in outdoor recreation in the Key Largo District, what percent participate in snorkeling?

It is important to note that in deriving the estimates of activity participation rates that sample weights were used to ensure that the sample of residents of all ages were representative of the population of residents. Chapter 2 discussed the derivation of these sample weights.

Estimates for activity participation by district for the complete list of 74 activities can be found in the appendix of “A Socioeconomic Analysis of the Recreation Activities of Monroe County Residents in the Florida Keys/ Key West 2008” (Leeworthy and Morris, 2010). Also, presented in this report were participation rates for 42 Aggregated Activities formulated from the list of 74 activities. Estimates for the 42 aggregated activities were done to ensure against double-counting. One cannot add either participation rates or number of participants by activity because residents can and do engage in multiple activities. Participation rates and number of participants were estimated for the 42 aggregated activities without double-counting.

Intensity of Use (Number of Days)

Participation rates combined with estimates of the number of residents allowed for the estimation of the number of residents who did an activity, in a given district. For some purposes, measurements of the intensity of activities are also needed; for example, assessing the need for recreation facilities. The measure of intensity of use used in this analysis is the number of separate days the person did the activity.

The general approach used was to first estimate the average number of days of a given activity in each district. The average number of days was then multiplied by the number of residents who did the activity in the district. Days information was obtained from the activities section of version of the mail survey (see Exhibit 1). Information on the number of days of participation in each activity for each district was asked for only 39 of the 74 activities for which participation was estimated. These 39 activities are identified by an “A” suffix attached to the activity number (see Exhibit 3).

In order to consider an estimate reliable, a minimum sample size of 25 observations per activity, per district was needed. Generally, we were not able to achieve the minimum sample size for activities that had low participation rates. Estimates have been made for the 39 activities, in each district. Sample averages were used irrespective of sample size and when there was no information available a value of zero (1.00) day was used for the average days, since if a person did the activity they did at least one day of the activity. In addition, an outlier analysis was

performed and if outliers significantly (more than 10 percent) affected the estimated mean number of days, the outliers were eliminated. Also, for some low participation activities, the information from past studies was used to make judgments about the estimate of the means (Leeworthy and Wiley, 1997 and Johns et al, 2003). Generally, low participation activities were those water-based activities where residents used charter/party/guide or rental boats. The sample averages (both with and without outliers), and documentation of outliers dropped for each of the 39 activities, for each district are summarized in Tables A.3.3 to A.3.7. Estimates of total annual number of days by activity and district are obtained by multiplying the estimated averages of the annual number of days by activity and district found in Tables A.3.3 to A.3.7 by the number of participants found in Tables A.2.3 to A.2.5 on pages 42-47 in Leeworthy and Morris, 2010. Days are then added across districts to get the “All Keys” totals for each activity. Days in sub-activity categories are added up to get aggregate activity totals (e.g. All Snorkeling Days in the Key Largo District is equal to Charter/Party + Rental Boat + Private Boat + Shore days in the Key Largo District). Table A.3.8 summarizes the total annual number of days by district. Table A.3.8 here corresponds to Table A.2.8, page 52 of Leeworthy and Morris, 2010.

Aggregation Issues. In adding days across activities, especially within districts, there may be a certain amount of double-counting. This may be a significant problem for the number of days, since in a given day, one is more likely to have engaged in multiple activities. The problem of double-counting would also be expected to be less when adding within a given activity (e.g. snorkeling) across type of boat (e.g. charter/ party, rental, and private). The problem would be even less when adding across districts for a given activity.

Where the problem of double-counting is greatest is when one attempts to add across entirely different activities. For example, attempting to add snorkeling and scuba diving days for a given district may include a relatively high amount of double-counting. A good indication of this is activity participation numbers where comparisons can be made between the number of participants who did snorkeling and the number who did SCUBA diving for a given district with the number of participants who did either snorkeling or SCUBA diving but for which double-counting has been eliminated. This should provide a guide to the extent of possible double-counting.

Table A.3.3. Mean (Average) Number of Days of Activity Per Year With and Without Outliers: Key Largo District

Activity	With Outliers	Without Outliers	Outliers Eliminated ¹	N
Snorkeling				
Charter/Party boat*	20.62	6.92	38 or greater (3)	16
Rental boat*	32.50	5.00	60 or greater (1)	2
Private boat	11.35	10.08	53 or greater (3)	147
Shore*	7.17	5.95	30 or greater (2)	39
SCUBA Diving				
Charter/Party boat*	22.05	3.93	50 or greater (6)	21
Rental boat*	11.00	2.00	20 or greater (1)	2
Private boat	13.59	10.52	50 or greater (4)	58
Shore*	6.29	2.40	12 or greater (2)	7
Offshore Fishing				
Charter boat*	19.88	2.53	150 or greater (2)	17
Party boat*	1.57	1.57	none	7
Rental boat*	7.50	5.00	10 or greater (1)	2
Private boat	18.89	16.00	52 or greater (10)	109
Flats/Backcountry Fishing				
Guided*	7.40	4.25	20 or greater (1)	5
Rental boat*	0.00	0.00	none	0
Private boat	11.90	9.59	81 or greater (2)	70
Other Fishing				
Charter boat*	4.00	4.00	none	3
Party boat*	10.00	1.00	10 or greater (1)	1
Rental boat*	50.00	1.00	50 or greater (1)	1
Private boat	15.57	11.75	60 or greater (3)	51
Fishing from Shore				
	20.95	11.86	60 or greater (2)	37
Personal Watercraft				
Rental boat*	5.50	1.00	10 or greater (1)	2
Private boat	16.90	14.25	70 or greater (1)	21
Sailing				
Charter/Party boat*	7.80	7.80	none	5
Rental boat*	18.17	4.75	30 or greater (2)	6
Private boat	12.57	9.77	45 or greater (2)	33
Other Boating				
Charter/Party boat*	10.57	1.80	10 or greater (2)	7
Rental boat*	19.00	3.00	10 or greater (2)	4
Private boat	14.86	13.70	50 or greater (3)	59
Viewing Nature and Wildlife-Boat				
Glass-bottom boats*	4.83	1.56	10 or greater (2)	18
Guided Backcountry boat excursions*	11.80	2.25	10 or greater (2)	5
Private/Rental boat	13.03	11.79	50 or greater (5)	102

* Low participation rate activity.

1. Number in parentheses is the number of outliers eliminated.

Table A.3.3. Mean (Average) Number of Days of Activity Per Year With and Without Outliers: Key Largo District (continued)

Activity	With Outliers	Without Outliers	Outliers Eliminated ¹	N
Viewing Nature and Wildlife-Land				
Wildlife Observation or Wildlife Photography	38.87	12.02	100 or greater (9)	71
Other Nature Study and Observation	38.09	11.79	100 or greater (4)	33
All Beach Activities				
Swimming at Beaches (not in pool)	17.98	10.60	60 or greater (3)	58
Beach Activities other than Swimming	12.50	8.96	50 or greater (2)	26
Windsurfing, Sailboarding, Kite Boarding*	2.00	2.00	none	1
Swimming in an Outdoor Pool	39.17	25.00	100 or greater (10)	66
Museums & Historic Sites				
Museums, Education Facility or Information Center	5.10	3.89	50 or greater (1)	38
Historic sites	4.71	3.93	50 or greater (1)	59

* Low participation rate activity.

1. Number in parentheses is the number of outliers eliminated.

Table A.3.4. Mean (Average) Number of Days of Activity Per Year With and Without Outliers: Islamorada District

Activity	With Outliers	Without Outliers	Outliers Eliminated ¹	N
Snorkeling				
Charter/Party boat*	5.00	5.00	none	2
Rental boat*	7.67	1.50	20 or greater (1)	3
Private boat	11.73	10.78	51 or greater (2)	94
Shore*	8.43	6.52	60 or greater (1)	28
SCUBA Diving				
Charter/Party boat*	18.83	2.60	100 or greater (1)	6
Rental boat*	20.00	1.00	20 or greater (1)	1
Private boat	14.72	10.77	48 or greater (2)	32
Shore*	7.00	3.00	15 or greater (1)	3
Offshore Fishing				
Charter boat*	11.05	3.60	160 or greater (1)	21
Party boat*	4.25	2.33	10 or greater (1)	4
Rental boat*	0.00	0.00	none	0
Private boat	27.32	22.37	100 or greater (6)	93
Flats/Backcountry Fishing				
Guided*	3.18	3.18	none	11
Rental boat*	0.00	0.00	none	0
Private boat	20.80	15.79	70 or greater (6)	79
Other Fishing				
Charter boat*	21.40	1.75	100 or greater (1)	5
Party boat*	1.00	1.00	none	2
Rental boat*	0.00	0.00	none	0
Private boat	22.69	14.19	70 or greater (3)	35
Fishing from Shore				
	11.21	8.70	30 or greater (2)	29
Personal Watercraft				
Rental boat*	1.50	1.50	none	2
Private boat	32.64	5.44	100 or greater (2)	11
Sailing				
Charter/Party boat*	30.00	5.00	30 or greater (1)	1
Rental boat*	22.71	3.40	30 or greater (2)	7
Private boat	7.40	7.40	none	20
Other Boating				
Charter/Party boat*	5.00	5.00	none	1
Rental boat*	1.00	1.00	none	1
Private boat	14.90	12.34	50 or greater (2)	49
Viewing Nature and Wildlife-Boat				
Glass-bottom boats*	1.50	1.50	none	2
Guided Backcountry boat excursions*	50.00	1.00	50 or greater (1)	1
Private/Rental boat	18.28	12.55	70 or greater (5)	85

* Low participation rate activity.

1. Number in parentheses is the number of outliers eliminated.

Table A.3.4. Mean (Average) Number of Days of Activity Per Year With and Without Outliers: Marathon District (continued)

Activity	With Outliers	Without Outliers	Outliers Eliminated ¹	N
Viewing Nature and Wildlife-Land				
Wildlife Observation or Wildlife Photography	35.64	14.47	60 or greater (9)	56
Other Nature Study and Observation	62.35	11.61	100 or greater (5)	23
All Beach Activities				
Swimming at Beaches (not in pool)	15.88	10.00	50 or greater (4)	51
Beach Activities other than Swimming	18.29	9.69	60 or greater (2)	28
Windsurfing, Sailboarding, Kite Boarding*	7.67	1.50	20 or greater (1)	3
Swimming in an Outdoor Pool	33.33	14.32	50 or greater (11)	48
Museums & Historic Sites				
Museums, Education Facility or Information Center	2.42	2.28	14 or greater (1)	24
Historic sites	2.92	1.91	10 or greater (4)	64

* Low participation rate activity.

1. Number in parentheses is the number of outliers eliminated.

Table A.3.5. Mean (Average) Number of Days of Activity Per Year With and Without Outliers: Marathon District				
Activity	With Outliers	Without Outliers	Outliers Eliminated ¹	N
Snorkeling				
Charter/Party boat*	6.75	2.00	40 or greater (1)	8
Rental boat*	8.50	2.00	15 or greater (1)	2
Private boat	13.69	8.48	52 or greater (5)	69
Shore*	8.43	4.27	100 or greater (1)	23
SCUBA Diving				
Charter/Party boat*	12.14	2.50	70 or greater (1)	7
Rental boat*	2.00	2.00	none	1
Private boat	16.29	8.64	50 or greater (3)	28
Shore*	8.00	4.00	12 or greater (1)	2
Offshore Fishing				
Charter boat*	24.23	2.08	290 or greater (1)	13
Party boat*	3.80	3.80	none	5
Rental boat*	1.80	1.80	none	5
Private boat	25.67	14.89	60 or greater (7)	77
Flats/Backcountry Fishing				
Guided*	78.25	1.50	20 or greater (2)	4
Rental boat*	1.00	1.00	none	1
Private boat	26.30	12.55	50 or greater (4)	40
Other Fishing				
Charter boat*	62.00	3.33	10 or greater (2)	5
Party boat*	15.00	1.00	15 or greater (1)	1
Rental boat*	0.00	0.00	none	0
Private boat	25.81	8.43	52 or greater (5)	42
Fishing from Shore				
	19.83	8.65	50 or greater (3)	29
Personal Watercraft				
Rental boat*	5.00	3.00	7 or greater (1)	2
Private boat	25.75	9.00	65 or greater (3)	12
Sailing				
Charter/Party boat*	0.00	0.00	none	0
Rental boat*	21.50	3.00	40 or greater (1)	2
Private boat	15.76	11.20	40 or greater (2)	17
Other Boating				
Charter/Party boat*	1.00	1.00	none	4
Rental boat*	0.00	0.00	none	0
Private boat	16.60	10.00	52 or greater (2)	20
Viewing Nature and Wildlife-Boat				
Glass-bottom boats*	0.00	0.00	none	0
Guided Backcountry boat excursions*	1.50	1.50	none	2
Private/Rental boat	32.53	11.24	52 or greater (7)	49
* Low participation rate activity.				
1. Number in parentheses is the number of outliers eliminated.				

Table A.3.5. Mean (Average) Number of Days of Activity Per Year With and Without Outliers: Marathon District (continued)				
Activity	With Outliers	Without Outliers	Outliers Eliminated ¹	N
Viewing Nature and Wildlife-Land				
Wildlife Observation or Wildlife Photography	42.16	9.49	52 or greater (9)	51
Other Nature Study and Observation	32.23	8.89	75 or greater (3)	22
All Beach Activities				
Swimming at Beaches (not in pool)	16.59	7.75	50 or greater (7)	64
Beach Activities other than Swimming	10.78	7.08	30 or greater (4)	41
Windsurfing, Sailboarding, Kite Boarding*	7.50	5.00	10 or greater (1)	2
Swimming in an Outdoor Pool	31.75	18.82	60 or greater (6)	40
Museums & Historic Sites				
Museums, Education Facility or Information Center	5.11	2.32	100 or greater (1)	35
Historic sites	5.42	3.49	100 or greater (1)	50
* Low participation rate activity.				
1. Number in parentheses is the number of outliers eliminated.				

Table A.3.6. Mean (Average) Number of Days of Activity Per Year With and Without Outliers: Lower Keys District

Activity	With Outliers	Without Outliers	Outliers Eliminated ¹	N
Snorkeling				
Charter/Party boat*	3.73	1.85	12 or greater (2)	15
Rental boat*	12.80	4.67	20 or greater (2)	5
Private boat	18.38	12.82	60 or greater (10)	162
Shore	11.15	8.47	50 or greater (3)	54
SCUBA Diving				
Charter/Party boat*	8.51	1.67	20 or greater (21)	8
Rental boat*	2.00	2.00	none	1
Private boat	20.65	11.61	70 or greater (5)	66
Shore*	1.50	1.50	none	2
Offshore Fishing				
Charter boat*	1.67	1.67	none	9
Party boat*	7.00	1.25	30 or greater (1)	5
Rental boat*	0.00	0.00	none	0
Private boat	22.38	13.45	52 or greater (15)	148
Flats/Backcountry Fishing				
Guided*	11.00	3.00	75 or greater (1)	9
Rental boat*	1.00	1.00	none	1
Private boat	19.65	13.14	52 or greater (7)	116
Other Fishing				
Charter boat*	0.00	0.00	none	0
Party boat*	1.67	1.67	none	3
Rental boat*	0.00	0.00	none	0
Private boat	20.65	11.97	60 or greater (6)	74
Fishing from Shore				
	13.23	9.67	90 or greater (2)	48
Personal Watercraft				
Rental boat*	1.00	1.00	none	1
Private boat	31.21	14.29	50 or greater (2)	19
Sailing				
Charter/Party boat*	1.00	1.00	none	1
Rental boat*	25.00	16.67	30 or greater (2)	5
Private boat	21.29	10.34	60 or greater (2)	31
Other Boating				
Charter/Party boat*	7.50	1.67	25 or greater (1)	4
Rental boat*	2.00	2.00	none	1
Private boat	17.00	10.11	60 or greater (4)	58
Viewing Nature and Wildlife-Boat				
Glass-bottom boats*	1.00	1.00	none	3
Guided Backcountry boat excursions*	2.33	2.33	none	3
Private/Rental boat	18.54	10.56	52 or greater (10)	134

* Low participation rate activity.

1. Number in parentheses is the number of outliers eliminated.

Table A.3.6. Mean (Average) Number of Days of Activity Per Year With and Without Outliers: Lower Keys District (continued)				
Activity	With Outliers	Without Outliers	Outliers Eliminated ¹	N
Viewing Nature and Wildlife-Land				
Wildlife Observation or Wildlife Photography	62.81	20.41	60 or greater (26)	119
Other Nature Study and Observation	71.62	10.44	60 or greater (14)	55
All Beach Activities				
Swimming at Beaches (not in pool)	14.38	8.58	65 or greater (3)	87
Beach Activities other than Swimming	13.06	9.63	84 or greater (2)	48
Windsurfing, Sailboarding, Kite Boarding*	13.75	2.50	10 or greater (2)	4
Swimming in an Outdoor Pool	44.17	16.05	60 or greater (12)	52
Museums & Historic Sites				
Museums, Education Facility or Information Center	3.28	2.42	30 or greater (1)	32
Historic sites	3.56	2.81	10 or greater (6)	71
* Low participation rate activity.				
1. Number in parentheses is the number of outliers eliminated.				

Table A.3.7. Mean (Average) Number of Days of Activity Per Year With and Without Outliers: Key West District

Activity	With Outliers	Without Outliers	Outliers Eliminated ¹	N
Snorkeling				
Charter/Party boat	4.18	3.02	30 or greater (2)	55
Rental boat*	2.78	1.87	10 or greater (1)	9
Private boat	15.17	9.21	100 or greater (4)	128
Shore	10.18	8.33	50 or greater (2)	56
SCUBA Diving				
Charter/Party boat*	27.00	8.75	75 or greater (3)	15
Rental boat*	3.00	3.00	none	3
Private boat	25.59	11.70	100 or greater (4)	47
Shore*	5.60	2.00	12 or greater (1)	5
Offshore Fishing				
Charter boat*	3.28	2.77	10 or greater (2)	32
Party boat*	3.38	2.00	20 or greater (1)	13
Rental boat*	2.00	2.00	none	1
Private boat	17.15	11.94	52 or greater (5)	103
Flats/Backcountry Fishing				
Guided*	9.58	1.50	25 or greater (2)	12
Rental boat*	0.00	0.00	none	0
Private boat	16.24	10.30	65 or greater (2)	58
Other Fishing				
Charter boat*	4.00	4.00	none	1
Party boat*	2.00	1.60	4 or greater (1)	6
Rental boat*	0.00	0.00	none	0
Private boat	14.63	8.27	60 or greater (2)	54
Fishing from Shore				
	12.92	7.78	60 or greater (3)	39
Personal Watercraft				
Rental boat*	1.87	1.33	10 or greater (1)	16
Private boat	31.94	10.78	60 or greater (2)	16
Sailing				
Charter/Party boat*	3.37	2.35	10 or greater (4)	35
Rental boat*	7.09	2.55	15 or greater (2)	11
Private boat	9.38	9.38	none	34
Other Boating				
Charter/Party boat	2.48	2.17	15 or greater (1)	42
Rental boat*	2.40	2.40	none	5
Private boat	16.12	8.78	100 or greater (1)	41
Viewing Nature and Wildlife-Boat				
Glass-bottom boats*	1.53	1.53	none	15
Guided Backcountry boat excursions*	2.67	1.20	10 or greater (1)	6
Private/Rental boat	12.59	8.32	60 or greater (4)	103

* Low participation rate activity.

1. Number in parentheses is the number of outliers eliminated.

Table A.3.7. Mean (Average) Number of Days of Activity Per Year With and Without Outliers: Key West District (continued)

Activity	With Outliers	Without Outliers	Outliers Eliminated ¹	N
Viewing Nature and Wildlife-Land				
Wildlife Observation or Wildlife Photography	43.67	11.39	52 or greater (14)	89
Other Nature Study and Observation	47.53	11.88	100 or greater (7)	49
All Beach Activities				
Swimming at Beaches (not in pool)	16.31	10.14	60 or greater (7)	121
Beach Activities other than Swimming	17.99	11.30	60 or greater (5)	89
Windsurfing, Sailboarding, Kite Boarding*	56.60	14.33	40 or greater (2)	5
Swimming in an Outdoor Pool	45.75	17.68	52 or greater (31)	135
Museums & Historic Sites				
Museums, Education Facility or Information Center	4.13	4.13	none	196
Historic sites	6.92	5.56	100 or greater (2)	285

* Low participation rate activity.

1. Number in parentheses is the number of outliers eliminated.

Table A.3.8. Total Annual Number of Days by Activity and District (Thousnads of Days)

Activity	Key Largo	Islamorada	Marathon	Lower Keys	Key West	All Keys
Snorkeling	87.71	57.62	29.45	95.81	87.41	358.00
Charter/Party boat*	4.16	0.92	0.49	1.05	6.73	13.33
Rental boat*	0.38	0.08	0.11	0.34	0.49	1.38
Private boat	73.53	47.41	23.07	74.69	59.94	278.65
Shore*	9.64	9.22	5.78	19.74	20.26	64.63
SCUBA Diving	28.81	13.98	11.24	24.34	27.08	105.46
Charter/Party boat*	2.62	0.66	0.62	0.34	3.55	7.79
Rental boat*	0.12	0.00	0.04	0.00	0.41	0.56
Private boat	25.55	13.15	10.00	23.94	22.91	95.55
Shore*	0.52	0.18	0.58	0.06	0.22	1.56
All Snorkeling and SCUBA Diving	116.52	71.61	40.69	120.15	114.49	463.46
Offshore Fishing	86.09	95.00	46.25	70.78	65.52	363.64
Charter boat*	1.36	3.61	1.51	0.52	4.45	11.45
Party boat*	0.32	0.54	1.27	0.21	0.61	2.96
Rental boat*	0.30	0.00	0.27	0.04	0.19	0.79
Private boat	84.11	90.84	43.20	70.01	60.27	348.43
Flats/Backcountry Fishing	32.81	53.13	18.29	54.02	30.80	189.06
Guided*	0.57	1.01	0.38	0.56	0.67	3.18
Rental boat*	0.00	0.00	0.02	0.02	0.00	0.04
Private boat	32.24	52.12	17.90	53.44	30.14	185.84
Other Fishing	24.90	19.90	14.96	32.29	23.38	115.43
Charter boat*	0.24	0.16	1.05	0.00	0.08	1.53
Party boat*	0.02	0.03	0.04	0.06	0.14	0.30
Rental boat*	0.02	0.00	0.00	0.02	0.00	0.04
Private boat	24.63	19.71	13.87	32.21	23.16	113.57
Fishing from Shore	20.32	12.30	12.58	25.28	17.95	88.42
All Fishing	164.12	180.34	92.08	182.36	137.66	756.55
Personal Watercraft	16.61	3.10	8.47	8.19	17.19	53.57
Rental boat*	0.10	0.09	0.53	0.02	1.50	2.24
Private boat	16.52	3.02	7.94	8.17	15.68	51.33
Sailing	12.52	6.26	5.47	14.45	16.18	54.88
Charter/Party boat*	1.01	0.08	0.00	0.03	3.96	5.08
Rental boat*	0.75	0.54	0.43	2.08	0.91	4.72
Private boat	10.77	5.63	5.04	12.34	11.31	45.09
Other Boating	45.30	29.18	12.39	21.83	28.75	137.44
Charter/Party boat*	0.50	0.46	0.13	0.13	4.95	6.16
Rental boat*	0.34	0.06	0.00	0.07	0.36	0.82
Private boat	44.46	28.67	12.26	21.64	23.44	130.46
Viewing Nature and Wildlife-Boat	53.83	41.86	18.99	49.27	39.90	203.84
Glass-bottom boats*	1.58	0.18	0.04	0.12	1.34	3.25
Guided Backcountry boat excursions*	0.25	0.04	0.05	0.17	0.21	0.73
Private/Rental boat	51.99	41.64	18.89	48.98	38.36	199.86
Viewing Nature and Wildlife-Land	47.98	37.68	24.42	111.82	62.53	284.42
Wildlife Observation or Wildlife Photography	34.92	29.26	17.37	93.05	43.87	218.47
Other Nature Study and Observation	13.06	8.42	7.05	18.77	18.65	65.95
All Viewing Nature and Wildlife	101.81	79.53	43.40	161.09	102.42	488.26
All Beach Activities	48.52	37.96	41.88	52.65	124.09	305.09
Swimming in Beaches (not in pool)	32.76	27.32	28.16	34.89	71.71	194.84
Beach Activities other than Swimming	15.75	10.64	13.72	17.77	52.38	110.26
Windsurfing, Sailboarding, Kite Boarding	0.11	0.11	0.18	0.50	3.04	3.93
Swimming in an Outdoor Pool	77.05	42.85	32.35	37.30	119.78	309.33
Museums & Historic Sites	18.26	7.87	11.02	10.85	113.93	161.93
Museums, Education Facility or Information Center	6.06	3.07	2.91	3.41	40.58	56.03
Historic sites	12.21	4.80	8.11	7.44	73.35	105.90

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- Leeworthy, Vernon R. and F. Charles Morris. 2010. "A Socioeconomic Analysis of the Recreation Activities of Monroe County Residents in the Florida Keys/Key West 2008". Silver Spring, Maryland: National Oceanic and Atmospheric Administration.
http://sanctuaries.noaa.gov/science/socioeconomic/floridakeys/pdfs/floridakeysres_report.pdf
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- Johns, G. M., Leeworthy, V.R., Bell, F.W. and Bonn, M.A. 2003. "Socioeconomic Study of Reefs in Southeast Florida." Final Report October 19,2001 as revised April 18, 2003 from Hazen and Sawyer to Broward County, Palm Beach County, Miami-Dade County, Monroe County, Florida Fish and Wildlife Commission and National Oceanic and Atmospheric Administration.
<http://sanctuaries.noaa.gov/science/socioeconomic/floridakeys/pdfs/sereef2000.pdf>

EXHIBITS

Monroe County Resident Survey

Your answers are voluntary and confidential.

Your name will never be released to anyone unless otherwise required by law. After the completion of the project all material identifying you as an individual will be destroyed.

For Questions 1 and 2 please circle the number(s) corresponding to your answer.

1. Overall, how would you rate Monroe County as a place to live? (Select only one)

- 1 Excellent
- 2 Good
- 3 Fair
- 4 Poor

2. There are many reasons people choose to live where they do in Florida. What are the two most important reasons you chose to live in Monroe County? (Select only two)

- 1 No special reason
- 2 Born here
- 3 Job or business
- 4 Climate
- 5 Environment

- 6 Access to natural resources, such as natural settings and wildlife
- 7 Opportunities for water activities, such as fishing or diving
- 8 Low crime rate
- 9 Cultural activities
- 10 Retirement
- 11 Some other reason (specify) _____

For Question 3 please use the enclosed White Card - Activities List to see what we mean by outdoor recreation.

3. In the past 12 months, have you engaged in any outdoor recreation activities in the Florida Keys?

- 1 Yes (Go to Part A, page 3)
- 2 No (Go to Part G, page 19)

A5. What would you say is the most important activity you engaged in the Florida Keys in the past 12 months?

Most Important Activity _____ (Activity List Number)

No Most Important Activity (fill in box)

A6. On how many different days did you participate in outdoor recreation activities outside the Florida Keys in the past 12 months?

_____ (number of days)

Part B: Reef use in the Florida Keys during the past 12 months (both artificial and natural reefs).

Please use the Blue Card with Activities List for reef use and map of the Florida Keys in answering Part B.

Please refer to Questions B1-B9 when filling in the tables on the following two pages.

*There is one table for each of the five regions of the Florida Keys.
(Key Largo, Islamorada, Marathon, Lower Keys and Key West)*

B1. Which activities did you or someone in your household do on either artificial or natural reefs during the past 12 months in Key Largo, Islamorada, Marathon, Lower Keys and Key West?

If you did not do anything in a region, check the box indicating “no reef use in the region”.

B2. Please fill in the circle for each activity you, yourself, did during the past 12 months in Key Largo, Islamorada, Marathon, Lower Keys and Key West.

B3. How many others in your household did each activity on the reefs in Key Largo, Islamorada, Marathon, Lower Keys and Key West?

B4. On how many different days did you, yourself, participate in each activity on the reefs in Key Largo, Islamorada, Marathon, Lower Keys and Key West?

B5. On how many different days did you, yourself, participate in each activity on the artificial reefs in Key Largo, Islamorada, Marathon, Lower Keys and Key West?

B6. On how many different days did you, yourself, participate in each activity on the natural reefs in Key Largo, Islamorada, Marathon, Lower Keys and Key West?

NOTE: *If you did part of a day on an artificial reef and part of a day on a natural reef, count one whole day on each type of reef.*

B7. How many different dives did you, yourself, make for each type of diving activity you did on the reefs in Key Largo, Islamorada, Marathon, Lower Keys and Key West? Diving activities include all snorkeling and SCUBA diving activities on the Blue Card - Activities List (Reef). A dive is defined as an entry and exit from the water to snorkel or SCUBA dive.

B8. How many different dives did you, yourself, make for each type of diving activity you did on the artificial reefs in Key Largo, Islamorada, Marathon, Lower Keys and Key West during the past 12 months?

B9. How many different dives did you, yourself, make for each type of diving activity you did on the natural reefs in Key Largo, Islamorada, Marathon, Lower Keys and Key West during the past 12 months?

No Reef Use

Key Largo

B1	B2	B3	B4	B5	B6	B7	B8	B9
Activity	Resp.	# Others	Respondent # of days	# days artificial	# days natural	Respondent # dives	# dives artificial	# dives natural
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____

No Reef Use

Islamorada

B1	B2	B3	B4	B5	B6	B7	B8	B9
Activity	Resp.	# Others	Respondent # of days	# days artificial	# days natural	Respondent # dives	# dives artificial	# dives natural
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____

No Reef Use

Marathon

B1	B2	B3	B4	B5	B6	B7	B8	B9
Activity	Resp.	# Others	Respondent # of days	# days artificial	# days natural	Respondent # dives	# dives artificial	# dives natural
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____

No Reef Use

Lower Keys

B1	B2	B3	B4	B5	B6	B7	B8	B9
Activity	Resp.	# Others	Respondent # of days	# days artificial	# days natural	Respondent # dives	# dives artificial	# dives natural
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____

No Reef Use

Key West

B1	B2	B3	B4	B5	B6	B7	B8	B9
Activity	Resp.	# Others	Respondent # of days	# days artificial	# days natural	Respondent # dives	# dives artificial	# dives natural
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____

Part C: Specialization

When answering the following questions, please use your most important outdoor recreational activity (Question A5, page 4) as a frame of reference.

C1. When I participate in my primary activity, I feel like:

- 1 a beginner. I don't really feel like I am part of the activity scene.
- 2 an occasional or irregular participant in the activity. Sometimes it is fun, entertaining or rewarding to do my activity.
- 3 a habitual and regular participant in the activity.
- 4 an insider to the sport. The activity is an important part of who I am.

C2. During my activity, I can best be described as:

- 1 having little understanding of the activity. I am often unsure about how to do certain things when I go.
- 2 having some understanding of the activity, but still in the process of learning more about the sport. I am becoming more familiar and comfortable with the activity.
- 3 being comfortable with the sport. I have a good understanding of what I can do, and how to do it.
- 4 a knowledgeable expert in the sport. I encourage, teach and enhance opportunities for others who are interested in the activity.

C3. My relationships with others who do the activity are:

- 1 not established. I really don't know any other people who do the activity.
- 2 very limited. I know some others in the activity by sight and sometimes talk with them, but I don't know their names.
- 3 one of familiarity. I know the names of others who do the activity, and often speak with them.
- 4 close. I have personal and close relationships with others in the activity. These friendships often revolve around the activity.

C4. My commitment to the activity is:

- 1 very slight. I have very little connection to the activity. I may or may not continue to participate in the sport in the future.
- 2 moderate. I will continue to do it as long as it is entertaining and provides the benefits I want.
- 3 fairly strong. I have a sense of being a member of the activity, and it is likely that I will continue to do it for a long time.
- 4 very strong. I am totally committed to the activity. I encourage others to participate in the sport and seek to ensure the activity continues into the future.

C5. If you had to replace all of the equipment that you currently own for your primary activity with similar equipment, how much would it cost you to replace?

\$_____ (amount to replace primary activity equipment)

C6. To what extent do you make use of the following for current information about your primary activity? Please circle the number that indicates your extent of use for each source of information.

	<i>No use</i>	<i>Almost no use</i>	<i>A little use</i>	<i>Some use</i>	<i>A lot of use</i>
a. Talking with others who participate in the activity.....	1	2	3	4	5
b. Magazines.....	1	2	3	4	5
c. Government agency publications.....	1	2	3	4	5
d. Conservation organization publications.....	1	2	3	4	5
e. Newspapers.....	1	2	3	4	5
f. Diving shops/companies.....	1	2	3	4	5
g. Club meetings.....	1	2	3	4	5
h. Television.....	1	2	3	4	5
i. Radio.....	1	2	3	4	5
j. Internet.....	1	2	3	4	5

C7. Below is a list of reasons why people engage in recreation activities. Please circle the number that indicates how important each item is to you as a reason for participating in your primary activity.

	<i>Not at all important</i>	<i>Slightly important</i>	<i>Moderately important</i>	<i>Very important</i>	<i>Extremely important</i>
a. To be outdoors.....	1	2	3	4	5
b. For family recreation.....	1	2	3	4	5
c. To experience new and different things.....	1	2	3	4	5
d. For relaxation.....	1	2	3	4	5
e. To be close to the water.....	1	2	3	4	5
f. To get away from the demands of other people.....	1	2	3	4	5
g. To be with friends.....	1	2	3	4	5
h. To develop my skills.....	1	2	3	4	5
i. To get away from the regular routine.....	1	2	3	4	5
j. To experience adventure and excitement.....	1	2	3	4	5
k. To experience natural surroundings.....	1	2	3	4	5

Part D: Your trip expenditures for your last trip in the Florida Keys to do outdoor recreation activities

D1. What activities did you do on your last trip or outing to do outdoor recreation in the Florida Keys?

Please use the enclosed White Card - Activities List.

_____	_____	_____
_____	_____	_____

D2. Where did you go on your last trip or outing to do outdoor recreation in the Florida Keys?

_____	_____
closest city	closest Mile Marker

D3. a. How far was the place you went from your place of residence?

_____ MILES

b. If your last trip or outing involved use of a boat, how many miles from either your place of residence or from where you launched or store your boat to the place where you did the activity?

_____ MILES NO BOAT

D4. How many days was your last trip or outing to do outdoor recreation activities in the Florida Keys?

_____ DAYS

D5. How many nights did you spend in a location away from home in the Florida Keys on your last trip or outing to do outdoor recreation in the Florida Keys?

_____ NIGHTS

D6. How many people, including yourself, were you or someone in your household paying expenses for, on your last trip or outing in the Florida Keys?

_____ PEOPLE

Please report your expenditures for each item listed to the nearest whole dollar. Put the total amount of money you spent on your last trip or outing in the Florida Keys in Column A.

EXAMPLE: Joe and Jane Smith, who live in Key Largo, drove to Key West and spent 2 nights in a Key West hotel at \$125 per night, or a total of \$250. The Smiths also spent \$200 on food and drink at restaurants and bars, \$30 on gas for their vehicle and \$400 for a charter boat for diving.

Expenditure	Column A: Amount spent in Florida Keys
<i>LODGING, PRIVATELY OWNED (non-government)</i> Hotel/motel/bed & breakfast/cabin/etc. Camping site (RV/tent/camper)	\$250 \$0
<i>FOOD & BEVERAGES</i> Food and drinks consumed at restaurants and bars Beverages purchased at a store for carry-out Food purchased at a store for carry-out	\$200 \$0 \$0
<i>TRANSPORTATION</i> Gas & oil for auto/RV	\$30
<i>SCUBA DIVING/SNORKELING</i> Rental fee for equipment Charter/party boat, guide service	\$0 \$400

Expenditure	Column A: Amount spent in Florida Keys
<p><i>LODGING, PUBLICLY OWNED (government)</i> Hotel/motel/bed & breakfast/cabin/etc. Camping site (RV/tent/camper)</p>	<p>_____</p> <p>_____</p>
<p><i>LODGING, PRIVATELY OWNED (non-government)</i> Hotel/motel/bed & breakfast/cabin/etc. Rental home, cottage, cabin, condo Camping site (RV/tent/camper)</p>	<p>_____</p> <p>_____</p> <p>_____</p>
<p><i>FOOD & BEVERAGES</i> Food and drinks consumed at restaurants and bars Food and drinks purchased at stores for carry-out</p>	<p>_____</p> <p>_____</p>
<p><i>TRANSPORTATION</i> Rental automobile, motor home, trailer, motorcycle or other recreation vehicle Gas & oil for auto/RV Repair & service for auto/RV Parking fees & tolls Taxi fare Bus fare a) Package tour b) Any other bus fare Airline fare a) Package tour b) Any other airline fare</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>

Expenditure	Column A: Amount spent in Florida Keys
<p><i>BOATING</i></p> <p>Boat, jet ski, and wave runner rental</p> <p>Boat fuel and oil</p> <p>Boat repairs</p> <p>Boat launch fees</p> <p>Boat slip fees or marina fees (this trip only)</p> <p>Sailing charters or sunset cruises</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
<p><i>FISHING</i></p> <p>Cut bait</p> <p>Live bait</p> <p>Daily or special fishing permits</p> <p>Fishing lines, fly lines, fish nets and minnow traps</p> <p>Charter/party boat/guide service</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
<p><i>SCUBA DIVING/SNORKELING</i></p> <p>Rental fee for equipment</p> <p>Charter/party boat/guide service</p>	<p>_____</p> <p>_____</p>
<p><i>SIGHTSEEING</i></p> <p>Sightseeing tours</p> <p>Glass bottom boat rides</p> <p>Backcountry excursions, kayak tours</p> <p>Park entrance fees</p> <p>Admission to tourist, amusement, festivals and other commercial attractions</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>

Expenditure	Column A: Amount spent in Florida Keys
<p><i>OTHER ACTIVITY EXPENDITURES</i></p> <p>Rental fee for recreation equipment (bicycles, golf carts or others not listed above)</p> <p>Guide service, tour or outfitters (not listed above, like parasailing)</p> <p>Admission to motion pictures, theaters, museums, etc.</p>	<p>_____</p> <p>_____</p> <p>_____</p>
<p><i>MISCELLANEOUS EXPENDITURES</i></p> <p>Film purchases</p> <p>Film developing</p> <p>Footwear</p> <p>Clothing</p> <p>Souvenirs and gifts (not clothing)</p> <p>Barber, laundry and other personal services</p> <p>Telephone, xerox, fax and other business services</p> <p>Physician, dentists and other medical services</p> <p>Other, specify _____</p> <p>_____</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>

Part E: Annual Vacation and Equipment Purchases

This section asks about how much money people spent on recreation equipment and boat storage or marina service not already included in Part D.

Column A should include the total amount of money spent by your household for each of the items in the last 12 months.

Column B should include the total amount of money spent in your household for each of the items in Broward, Miami-Dade or Monroe Counties (South Florida) in the past 12 months

Column C should include the total amount of money spent by your household for each of the items in Monroe County (Florida Keys) in the past 12 months.

EXAMPLE: Joe and Jane Smith bought a boat for \$20,000 in Orlando 4 months ago. They also purchased a jet ski for \$12,000 from a dealer in Key Largo. Here is how they should report these expenditures.

Expenditure	Column A: Total Purchases in Past 12 Months	Column B: Total Purchases in South Florida	Column C: Purchases in Monroe County
<i>BOATING EQUIPMENT</i> New motorized boats or jet skis	\$32,000	\$12,000	\$12,000

Expenditure	Column A: Total Purchases in Past 12 Months	Column B: Total Purchases in South Florida	Column C: Purchases in Monroe County
<p><i>MAJOR RECREATIONAL EQUIPMENT</i></p> <p>E1. Diving or snorkeling equipment</p> <p>E2. Fishing rods and reels</p> <p>E3. Cameras and other photo gear</p> <p>E4. Binocular and other viewing equipment</p> <p>E5. Miscellaneous (boats, guns, skis, vehicles, etc.)</p> <p>Specify: _____</p> <p>_____</p> <p>_____</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
<p><i>BOATING EQUIPMENT</i></p> <p>E6. New motorized boats or jet skis</p> <p>E7. New non-motorized boats (sail boats, row boats, canoes, etc)</p> <p>E8. New boat engines</p> <p>E9. New boat accessories</p> <p>E10. New sails or rigging</p> <p>E11. New boat trailer</p> <p>E12. Boat storage and marina fees</p> <p>E13. Other boating expenses</p> <p>Specify: _____</p> <p>_____</p> <p>_____</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>

Part F: Value of Reefs

Local, state and federal government agencies are considering different approaches to maintaining the health and condition of natural and artificial reefs in Monroe County (the Florida Keys). One plan focuses on providing greater protection for *natural reefs* by maintaining water quality, limiting damage to natural reefs from anchoring and preventing overuse of the natural reefs. A second plan focuses on protecting the *artificial reefs* by maintaining water quality, limiting damage to artificial reefs from anchoring and preventing overuse of artificial reefs.

Both of these plans will involve increased costs to local businesses that will ultimately be passed on to both residents and visitors in Monroe County. We are doing this survey because the government agencies want to know whether you support one, both or none of these plans and if you would be willing to incur higher costs to pay for these plans.

Please keep in mind that whether you support these plans or not would not have any effect on your ability to participate in any boating activity or other recreation in Monroe County.

F1. Suppose there was a plan to maintain the health and condition of *natural reefs* in Monroe County (the Florida Keys). First, consider the total costs for your last boating trip in Monroe County including travel expenses, lodging and all boating expenses. If your total costs for this trip would have been \$10 higher, would you have been willing to pay this amount to maintain the *natural reefs* in their existing condition?

YES (Go to Question F2, below)

NO (Go to Question F1a, below)

F1a. If you answered NO to Question F1 or you don't know or refuse to answer the question, please circle the *one* number that best explains your reason for saying no or don't know or refusing to answer?

- 1 A contribution of that amount is more than reefs are worth to me
- 2 I really don't know how much natural reefs are worth to me
- 3 There are no problems with water quality or the natural reefs
- 4 There is not enough information to form a decision
- 5 I don't understand or like the question
- 6 I already pay too much to the government
- 7 Government waste should be reduced to pay for water quality protection and management of the natural reefs
- 8 Other (please explain): _____

F2. Now suppose there was a plan to maintain the health and condition of *artificial reefs* in Monroe County (the Florida Keys) and that this was the only plan you were asked to consider. First, consider your total costs for your last boating trip in Monroe County including travel expenses, lodging and all boating expenses. If your total costs for this trip would have been \$10 higher, would you have been willing to pay this amount to maintain the *artificial reefs* in their existing condition?

YES (Go to Question F3, page 18)

NO (Go to Question F2a, page 18)

F2a. If you answered NO to Question F2 or you don't know or refuse to answer the question, please circle the one number that best explains your reason for saying no or don't know or refusing to answer?

- 1 A contribution of that amount is more than reefs are worth to me
- 2 I really don't know how much natural reefs are worth to me
- 3 There are no problems with water quality or the natural reefs
- 4 There is not enough information to form a decision
- 5 I don't understand or like the question
- 6 I already pay too much to the government
- 7 Government waste should be reduced to pay for water quality protection and management of the natural reefs
- 8 Other (please explain): _____

F3. Finally, suppose that both of these plans to maintain the existing condition of *natural and artificial reefs* in Monroe County (the Florida Keys) were put together into a combined program. Consider once again your total costs for your last boating trip in Monroe County including travel expenses, lodging and all boating expenses. If your total costs for this trip would have been \$20 higher, would you have been willing to pay this amount to maintain the *natural and artificial reefs* in their existing condition?

YES (Go to Part G, page 19)

NO (Go to Question F3a, below)

F3a. If you answered NO to Question F3 or you don't know or refuse to answer the question, please circle the one number that best explains your reason for saying no or don't know or refusing to answer?

- 1 A contribution of that amount is more than reefs are worth to me
- 2 I really don't know how much natural reefs are worth to me
- 3 There are no problems with water quality or the natural reefs
- 4 There is not enough information to form a decision
- 5 I don't understand or like the question
- 6 I already pay too much to the government
- 7 Government waste should be reduced to pay for water quality protection and management of the natural reefs
- 8 Other (please explain): _____

Part G: Demographic Profile

In this final section, we need to know information about you and your household to make sure we have a representative sample of Monroe County residents.

Again, your privacy will be protected and any information identifying you or your household will not be revealed to anyone.

G1. How many people in your household are permanent residents of Monroe County, Florida?

_____ PEOPLE

G2. How many of these people are at least 16 years of age?

_____ PEOPLE

G3. What is the closest mile marker to your residence?

_____ MILE MARKER NUMBER

G4. Do you have access to the water from your residence?

- 1 YES
- 2 NO

G5. Do you own a boat?

- 1 YES
- 2 NO

G6. How many years have you lived in Monroe County?

_____ NUMBER OF YEARS

G7. In what year were you born?

_____ YEAR

G8. Are you of Hispanic, Latino or Spanish origin?

- 1 YES
- 2 NO

G9. What race do you consider yourself? (Please select all that apply)

- 1 White
- 2 Black or African-American
- 3 American Indian or Alaska Native
- 4 Asian
- 5 Native Hawaiian or Other Pacific Islander

G10. What is the highest level of education that you have completed? (Please select only one)

- 1 8th grade or less
- 2 9th to 11th grade
- 3 12th grade, High School Graduate, GED
- 4 13 to 15 years (some college or vocational training)
- 5 College graduate
- 6 Graduate School, Law School, Medical School

G11. What is your employment status? (Please select all that apply)

- | | | | |
|---|--------------------|---|-------------------|
| 1 | Unemployed | 5 | Student |
| 2 | Employed full-time | 6 | Homemaker |
| 3 | Employed part-time | 7 | None of the above |
| 4 | Retired | | (specify): _____ |

G12. Do you work outside Monroe County?

- 1 YES
- 2 NO

G13. What is your ZIP Code?

G14. What is your household income, before taxes?

- | | | | |
|---|----------------------|----|------------------------|
| 1 | Under \$5,000 | 9 | \$40,000 to \$44,999 |
| 2 | \$5,000 to \$9,999 | 10 | \$45,000 to \$49,999 |
| 3 | \$10,000 to \$14,999 | 11 | \$50,000 to \$59,999 |
| 4 | \$15,000 to \$19,999 | 12 | \$60,000 to \$74,999 |
| 5 | \$20,000 to \$24,999 | 13 | \$75,000 to \$99,999 |
| 6 | \$25,000 to \$29,999 | 14 | \$100,000 to \$149,999 |
| 7 | \$30,000 to \$34,999 | 15 | \$150,000 or more |
| 8 | \$35,000 to \$39,999 | | |

Monroe County Resident Survey

Your answers are voluntary and confidential.

Your name will never be released to anyone unless otherwise required by law. After the completion of the project all material identifying you as an individual will be destroyed.

For Questions 1 and 2 please circle the number(s) corresponding to your answer.

1. Overall, how would you rate Monroe County as a place to live? (Select only one)

- 1 Excellent
- 2 Good
- 3 Fair
- 4 Poor

2. There are many reasons people choose to live where they do in Florida. What are the two most important reasons you chose to live in Monroe County? (Select only two)

- 1 No special reason
- 2 Born here
- 3 Job or business
- 4 Climate
- 5 Environment

- 6 Access to natural resources, such as natural settings and wildlife
- 7 Opportunities for water activities, such as fishing or diving
- 8 Low crime rate
- 9 Cultural activities
- 10 Retirement
- 11 Some other reason (specify) _____

For Question 3 please use the enclosed White Card - Activities List to see what we mean by outdoor recreation.

3. In the past 12 months, have you engaged in any outdoor recreation activities in the Florida Keys?

- 1 Yes (Go to Part A, page 3)
- 2 No (Go to Part D, page 11)

A5. What would you say is the most important activity you engaged in the Florida Keys in the past 12 months?

Most Important Activity _____ (Activity List Number)

No Most Important Activity (fill in box)

A6. On how many different days did you participate in outdoor recreation activities outside the Florida Keys in the past 12 months?

_____ (number of days)

Part B: Reef use in the Florida Keys during the past 12 months (both artificial and natural reefs).

Please use the Blue Card with Activities List for reef use and map of the Florida Keys in answering Part B.

Please refer to Questions B1-B9 when filling in the tables on the following two pages.

*There is one table for each of the five regions of the Florida Keys.
(Key Largo, Islamorada, Marathon, Lower Keys and Key West)*

B1. Which activities did you or someone in your household do on either artificial or natural reefs during the past 12 months in Key Largo, Islamorada, Marathon, Lower Keys and Key West?

If you did not do anything in a region, check the box indicating “no reef use in the region”.

B2. Please fill in the circle for each activity you, yourself, did during the past 12 months in Key Largo, Islamorada, Marathon, Lower Keys and Key West.

B3. How many others in your household did each activity on the reefs in Key Largo, Islamorada, Marathon, Lower Keys and Key West?

B4. On how many different days did you, yourself, participate in each activity on the reefs in Key Largo, Islamorada, Marathon, Lower Keys and Key West?

B5. On how many different days did you, yourself, participate in each activity on the artificial reefs in Key Largo, Islamorada, Marathon, Lower Keys and Key West?

B6. On how many different days did you, yourself, participate in each activity on the natural reefs in Key Largo, Islamorada, Marathon, Lower Keys and Key West?

NOTE: *If you did part of a day on an artificial reef and part of a day on a natural reef, count one whole day on each type of reef.*

B7. How many different dives did you, yourself, make for each type of diving activity you did on the reefs in Key Largo, Islamorada, Marathon, Lower Keys and Key West? Diving activities include all snorkeling and SCUBA diving activities on the Blue Card - Activities List (Reef). A dive is defined as an entry and exit from the water to snorkel or SCUBA dive.

B8. How many different dives did you, yourself, make for each type of diving activity you did on the artificial reefs in Key Largo, Islamorada, Marathon, Lower Keys and Key West during the past 12 months?

B9. How many different dives did you, yourself, make for each type of diving activity you did on the natural reefs in Key Largo, Islamorada, Marathon, Lower Keys and Key West during the past 12 months?

No Reef Use

Key Largo

B1	B2	B3	B4	B5	B6	B7	B8	B9
Activity	Resp.	# Others	Respondent # of days	# days artificial	# days natural	Respondent # dives	# dives artificial	# dives natural
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____

No Reef Use

Islamorada

B1	B2	B3	B4	B5	B6	B7	B8	B9
Activity	Resp.	# Others	Respondent # of days	# days artificial	# days natural	Respondent # dives	# dives artificial	# dives natural
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____

No Reef Use

Marathon

B1	B2	B3	B4	B5	B6	B7	B8	B9
Activity	Resp.	# Others	Respondent # of days	# days artificial	# days natural	Respondent # dives	# dives artificial	# dives natural
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____

No Reef Use

Lower Keys

B1	B2	B3	B4	B5	B6	B7	B8	B9
Activity	Resp.	# Others	Respondent # of days	# days artificial	# days natural	Respondent # dives	# dives artificial	# dives natural
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____

No Reef Use

Key West

B1	B2	B3	B4	B5	B6	B7	B8	B9
Activity	Resp.	# Others	Respondent # of days	# days artificial	# days natural	Respondent # dives	# dives artificial	# dives natural
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____

Part C: Importance and satisfaction with facilities, services and natural resources in the Florida Keys

In this section we are interested in identifying the recreation site information which is important to you.

Please read each statement and rate the importance of each item as it contributes to an ideal recreation/tourism setting for the activities you did in the Florida Keys. If an item does not apply, indicate by circling 9 (N/A), if you are unsure circle 8 (Don't Know).

	Not important	Somewhat important	Important	Very important	Extremely important	Don't know	N/A
C1. Clear water (high visibility).....	1	2	3	4	5	8	9
C2. Amount of living coral on reefs.....	1	2	3	4	5	8	9
C3. Public transportation.....	1	2	3	4	5	8	9
C4. Parking.....	1	2	3	4	5	8	9
C5. Many different kinds of fish and sea life to view.....	1	2	3	4	5	8	9
C6. Many different kinds of fish and sea life to catch.....	1	2	3	4	5	8	9
C7. Large numbers of fish.....	1	2	3	4	5	8	9
C8. Opportunity to view large wildlife (manatees, whales, dolphins, sea turtles).....	1	2	3	4	5	8	9
C9. Uncrowded conditions.....	1	2	3	4	5	8	9
C10. Maps, brochures and other tourist information.....	1	2	3	4	5	8	9
C11. Boat ramps/launching facilities.....	1	2	3	4	5	8	9
C12. Marina facilities.....	1	2	3	4	5	8	9
C13. Directional signs, street signs, mile markers.....	1	2	3	4	5	8	9
C14. Condition of roads and streets.....	1	2	3	4	5	8	9
C15. Cleanliness of streets and sidewalks.....	1	2	3	4	5	8	9
C16. Condition of bike paths and sidewalks/walking paths.....	1	2	3	4	5	8	9
C17. Shoreline access.....	1	2	3	4	5	8	9
C18. Designated swimming/beach areas.....	1	2	3	4	5	8	9
C19. Quality of beaches.....	1	2	3	4	5	8	9
C20. Customer service and friendliness of people.....	1	2	3	4	5	8	9
C21. Historic preservation (historic landmarks, houses, etc.)...	1	2	3	4	5	8	9
C22. Availability of public restrooms.....	1	2	3	4	5	8	9
C23. Value for the price.....	1	2	3	4	5	8	9
C24. Parks and specially protected areas.....	1	2	3	4	5	8	9
C25. Mooring buoys near coral reefs.....	1	2	3	4	5	8	9

On the previous page you indicated the importance of a list of items to your recreational/tourist experiences. Now read each of the items on this list and rate how satisfied you were at the places you did your activities in the Florida Keys. If an item does not apply, indicate by circling 9 (N/A), if you are unsure circle 8 (Don't Know).

		Terrible	Unhappy/ dissatisfied	Mixed	Happy/ satisfied	Delighted	Don't know	N/A
C26.	Clear water (high visibility).....	1	2	3	4	5	8	9
C27.	Amount of living coral on reefs.....	1	2	3	4	5	8	9
C28.	Public transportation.....	1	2	3	4	5	8	9
C29.	Parking.....	1	2	3	4	5	8	9
C30.	Many different kinds of fish and sea life to view.....	1	2	3	4	5	8	9
C31.	Many different kinds of fish and sea life to catch.....	1	2	3	4	5	8	9
C32.	Large numbers of fish.....	1	2	3	4	5	8	9
C33.	Opportunity to view large wildlife (manatees, whales, dolphins, sea turtles).....	1	2	3	4	5	8	9
C34.	Uncrowded conditions.....	1	2	3	4	5	8	9
C35.	Maps, brochures and other tourist information.....	1	2	3	4	5	8	9
C36.	Boat ramps/launching facilities.....	1	2	3	4	5	8	9
C37.	Marina facilities.....	1	2	3	4	5	8	9
C38.	Directional signs, street signs, mile markers.....	1	2	3	4	5	8	9
C39.	Condition of roads and streets.....	1	2	3	4	5	8	9
C40.	Cleanliness of streets and sidewalks.....	1	2	3	4	5	8	9
C41.	Condition of bike paths and sidewalks/walking paths.....	1	2	3	4	5	8	9
C42.	Shoreline access.....	1	2	3	4	5	8	9
C43.	Designated swimming/beach areas.....	1	2	3	4	5	8	9
C44.	Quality of beaches.....	1	2	3	4	5	8	9
C45.	Customer service and friendliness of people.....	1	2	3	4	5	8	9
C46.	Historic preservation (historic landmarks, houses, etc.)... 1	2	3	4	5	8	9	
C47.	Availability of public restrooms.....	1	2	3	4	5	8	9
C48.	Value for the price.....	1	2	3	4	5	8	9
C49.	Parks and specially protected areas.....	1	2	3	4	5	8	9
C50.	Mooring buoys near coral reefs.....	1	2	3	4	5	8	9

C51. Did you live in or visit the Florida Keys more than five years ago?

____ Yes (Go to Question C52, below)

____ No (Go to Part D, page 11)

Now read each of the items on this list and rate how satisfied you were with each when you were in the Florida Keys more than five years ago. If an item does not apply, indicate by circling 9 (N/A), if you are unsure circle 8 (Don't Know).

	<i>Terrible</i>	<i>Unhappy/ dissatisfied</i>	<i>Mixed</i>	<i>Happy/ satisfied</i>	<i>Delighted</i>	<i>Don't know</i>	<i>N/A</i>
C52. Clear water (high visibility).....	1	2	3	4	5	8	9
C53. Amount of living coral on reefs.....	1	2	3	4	5	8	9
C54. Many different kinds of fish and sea life to view.....	1	2	3	4	5	8	9
C55. Large numbers of fish	1	2	3	4	5	8	9
C56. Opportunity to view large wildlife (manatees, whales, dolphins, sea turtles).....	1	2	3	4	5	8	9
C57. Uncrowded conditions	1	2	3	4	5	8	9
C58. Condition of roads and streets	1	2	3	4	5	8	9
C59. Shoreline access.....	1	2	3	4	5	8	9
C60. Quality of beaches	1	2	3	4	5	8	9
C61. Customer service and friendliness of people	1	2	3	4	5	8	9
C62. Historic preservation (historic landmarks, houses, etc.)...	1	2	3	4	5	8	9
C63. Parks and specially protected areas	1	2	3	4	5	8	9
C64. Mooring buoys near coral reefs	1	2	3	4	5	8	9

Part D: Demographic Profile

In this final section, we need to know information about you and your household to make sure we have a representative sample of Monroe County residents.

Again, your privacy will be protected and any information identifying you or your household will not be revealed to anyone.

D1. How many people in your household are permanent residents of Monroe County, Florida?

_____ PEOPLE

D2. How many of these people are at least 16 years of age?

_____ PEOPLE

D3. What is the closest mile marker to your residence?

_____ MILE MARKER NUMBER

D4. Do you have access to the water from your residence?

- 1 YES
- 2 NO

D5. Do you own a boat?

- 1 YES
- 2 NO

D6. How many years have you lived in Monroe County?

_____ NUMBER OF YEARS

D7. In what year were you born?

_____ YEAR

D8. Are you of Hispanic, Latino or Spanish origin?

- 1 YES
- 2 NO

D9. What race do you consider yourself? (Please select all that apply)

- 1 White
- 2 Black or African-American
- 3 American Indian or Alaska Native
- 4 Asian
- 5 Native Hawaiian or Other Pacific Islander

D10. What is the highest level of education that you have completed? (Please select only one)

- 1 8th grade or less
- 2 9th to 11th grade
- 3 12th grade, High School Graduate, GED
- 4 13 to 15 years (some college or vocational training)
- 5 College graduate
- 6 Graduate School, Law School, Medical School

D11. What is your employment status? (Please select all that apply)

- | | | | |
|---|--------------------|---|-------------------|
| 1 | Unemployed | 5 | Student |
| 2 | Employed full-time | 6 | Homemaker |
| 3 | Employed part-time | 7 | None of the above |
| 4 | Retired | | (specify): _____ |

D12. Do you work outside Monroe County?

- 1 YES
- 2 NO

D13. What is your ZIP Code?

— — — — —

D14. What is your household income, before taxes?

- | | | | |
|---|----------------------|----|------------------------|
| 1 | Under \$5,000 | 9 | \$40,000 to \$44,999 |
| 2 | \$5,000 to \$9,999 | 10 | \$45,000 to \$49,999 |
| 3 | \$10,000 to \$14,999 | 11 | \$50,000 to \$59,999 |
| 4 | \$15,000 to \$19,999 | 12 | \$60,000 to \$74,999 |
| 5 | \$20,000 to \$24,999 | 13 | \$75,000 to \$99,999 |
| 6 | \$25,000 to \$29,999 | 14 | \$100,000 to \$149,999 |
| 7 | \$30,000 to \$34,999 | 15 | \$150,000 or more |
| 8 | \$35,000 to \$39,999 | | |

Monroe County Resident Survey

Your answers are voluntary and confidential.

Your name will never be released to anyone unless otherwise required by law. After the completion of the project all material identifying you as an individual will be destroyed.

For Questions 1 and 2 please circle the number(s) corresponding to your answer.

1. Overall, how would you rate Monroe County as a place to live? (Select only one)

- 1 Excellent
- 2 Good
- 3 Fair
- 4 Poor

2. There are many reasons people choose to live where they do in Florida. What are the two most important reasons you chose to live in Monroe County? (Select only two)

- 1 No special reason
- 2 Born here
- 3 Job or business
- 4 Climate
- 5 Environment

- 6 Access to natural resources, such as natural settings and wildlife
- 7 Opportunities for water activities, such as fishing or diving
- 8 Low crime rate
- 9 Cultural activities
- 10 Retirement
- 11 Some other reason (specify) _____

For Question 3 please use the enclosed White Card - Activities List to see what we mean by outdoor recreation.

3. In the past 12 months, have you engaged in any outdoor recreation activities in the Florida Keys?

- 1 Yes (Go to Part A, page 3)
- 2 No (Go to Part E, page 15)

A5. What would you say is the most important activity you did in the Florida Keys in the past 12 months?

Most Important Activity _____ (Activity List Number)

No Most Important Activity (fill in box)

A6. On how many different days did you participate in outdoor recreation activities outside the Florida Keys in the past 12 months?

_____ (number of days)

Part B: Reef use in the Florida Keys during the past 12 months (both artificial and natural reefs).

Please use the Blue Card with Activities List for reef use and map of the Florida Keys in answering Part B.

Please refer to Questions B1-B9 when filling in the tables on the following two pages.

*There is one table for each of the five regions of the Florida Keys.
(Key Largo, Islamorada, Marathon, Lower Keys and Key West)*

B1. Which activities did you or someone in your household do on either artificial or natural reefs during the past 12 months in Key Largo, Islamorada, Marathon, Lower Keys and Key West?

If you did not do anything in a region, check the box indicating “no reef use in the region”.

B2. Please fill in the circle for each activity you, yourself, did during the past 12 months in Key Largo, Islamorada, Marathon, Lower Keys and Key West.

B3. How many others in your household did each activity on the reefs in Key Largo, Islamorada, Marathon, Lower Keys and Key West?

B4. On how many different days did you, yourself, participate in each activity on the reefs in Key Largo, Islamorada, Marathon, Lower Keys and Key West?

B5. On how many different days did you, yourself, participate in each activity on the artificial reefs in Key Largo, Islamorada, Marathon, Lower Keys and Key West?

B6. On how many different days did you, yourself, participate in each activity on the natural reefs in Key Largo, Islamorada, Marathon, Lower Keys and Key West?

NOTE: *If you did part of a day on an artificial reef and part of a day on a natural reef, count one whole day on each type of reef.*

B7. How many different dives did you, yourself, make for each type of diving activity you did on the reefs in Key Largo, Islamorada, Marathon, Lower Keys and Key West? Diving activities include all snorkeling and SCUBA diving activities on the Blue Card - Activities List (Reef). A dive is defined as an entry and exit from the water to snorkel or SCUBA dive.

B8. How many different dives did you, yourself, make for each type of diving activity you did on the artificial reefs in Key Largo, Islamorada, Marathon, Lower Keys and Key West during the past 12 months?

B9. How many different dives did you, yourself, make for each type of diving activity you did on the natural reefs in Key Largo, Islamorada, Marathon, Lower Keys and Key West during the past 12 months?

No Reef Use

Key Largo

B1	B2	B3	B4	B5	B6	B7	B8	B9
Activity	Resp.	# Others	Respondent # of days	# days artificial	# days natural	Respondent # dives	# dives artificial	# dives natural
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____

No Reef Use

Islamorada

B1	B2	B3	B4	B5	B6	B7	B8	B9
Activity	Resp.	# Others	Respondent # of days	# days artificial	# days natural	Respondent # dives	# dives artificial	# dives natural
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____

No Reef Use

Marathon

B1	B2	B3	B4	B5	B6	B7	B8	B9
Activity	Resp.	# Others	Respondent # of days	# days artificial	# days natural	Respondent # dives	# dives artificial	# dives natural
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____

No Reef Use

Lower Keys

B1	B2	B3	B4	B5	B6	B7	B8	B9
Activity	Resp.	# Others	Respondent # of days	# days artificial	# days natural	Respondent # dives	# dives artificial	# dives natural
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____

No Reef Use

Key West

B1	B2	B3	B4	B5	B6	B7	B8	B9
Activity	Resp.	# Others	Respondent # of days	# days artificial	# days natural	Respondent # dives	# dives artificial	# dives natural
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____
_____	○	_____	_____	_____	_____	_____	_____	_____

Part C: Specialization

When answering the following questions, please use your most important outdoor recreational activity (Question A5, page 4) as a frame of reference.

C1. When I participate in my primary activity, I feel like:

- 1 a beginner. I don't really feel like I am part of the activity scene.
- 2 an occasional or irregular participant in the activity. Sometimes it is fun, entertaining or rewarding to do my activity.
- 3 a habitual and regular participant in the activity.
- 4 an insider to the sport. The activity is an important part of who I am.

C2. During my activity, I can best be described as:

- 1 having little understanding of the activity. I am often unsure about how to do certain things when I go.
- 2 having some understanding of the activity, but still in the process of learning more about the sport. I am becoming more familiar and comfortable with the activity.
- 3 being comfortable with the sport. I have a good understanding of what I can do, and how to do it.
- 4 a knowledgeable expert in the sport. I encourage, teach and enhance opportunities for others who are interested in the activity.

C3. My relationships with others who do the activity are:

- 1 not established. I really don't know any other people who do the activity.
- 2 very limited. I know some others in the activity by sight and sometimes talk with them, but I don't know their names.
- 3 one of familiarity. I know the names of others who do the activity, and often speak with them.
- 4 close. I have personal and close relationships with others in the activity. These friendships often revolve around the activity.

C4. My commitment to the activity is:

- 1 very slight. I have very little connection to the activity. I may or may not continue to participate in the sport in the future.
- 2 moderate. I will continue to do it as long as it is entertaining and provides the benefits I want.
- 3 fairly strong. I have a sense of being a member of the activity, and it is likely that I will continue to do it for a long time.
- 4 very strong. I am totally committed to the activity. I encourage others to participate in the sport and seek to ensure the activity continues into the future.

C5. If you had to replace all of the equipment that you currently own for your primary activity with similar equipment, how much would it cost you to replace?

\$_____ (amount to replace primary activity equipment)

C6. To what extent do you make use of the following for current information about your primary activity? Please circle the number that indicates your extent of use for each source of information.

	<i>No use</i>	<i>Almost no use</i>	<i>A little use</i>	<i>Some use</i>	<i>A lot of use</i>
a. Talking with others who participate in the activity.....	1	2	3	4	5
b. Magazines.....	1	2	3	4	5
c. Government agency publications.....	1	2	3	4	5
d. Conservation organization publications.....	1	2	3	4	5
e. Newspapers.....	1	2	3	4	5
f. Diving shops/companies.....	1	2	3	4	5
g. Club meetings.....	1	2	3	4	5
h. Television.....	1	2	3	4	5
i. Radio.....	1	2	3	4	5
j. Internet.....	1	2	3	4	5

C7. Below is a list of reasons why people engage in recreation activities. Please circle the number that indicates how important each item is to you as a reason for participating in your primary activity.

	<i>Not at all important</i>	<i>Slightly important</i>	<i>Moderately important</i>	<i>Very important</i>	<i>Extremely important</i>
a. To be outdoors.....	1	2	3	4	5
b. For family recreation.....	1	2	3	4	5
c. To experience new and different things.....	1	2	3	4	5
d. For relaxation.....	1	2	3	4	5
e. To be close to the water.....	1	2	3	4	5
f. To get away from the demands of other people.....	1	2	3	4	5
g. To be with friends.....	1	2	3	4	5
h. To develop my skills.....	1	2	3	4	5
i. To get away from the regular routine.....	1	2	3	4	5
j. To experience adventure and excitement.....	1	2	3	4	5
k. To experience natural surroundings.....	1	2	3	4	5

Part D: Knowledge, Attitudes & Perceptions of Sanctuary Management Strategies and Regulations

In 1990, Congress and the President established the Florida Keys National Marine Sanctuary (FKNMS). The FKNMS is just one of 13 National Marine Sanctuaries in the U.S., which are managed by the National Oceanic and Atmospheric Administration (NOAA). After a long public process and approval by the Governor and Cabinet of Florida, regulations were established and implemented in July 1997. The FKNMS is cooperatively managed with the State of Florida. This survey asks about your knowledge, attitudes and perceptions of FKNMS management strategies and regulations and conditions of the resources in the FKNMS. There are no right or wrong answers; we simply want your honest opinions. Again, your privacy will be protected. No one will be given information that will allow them to identify you from survey data.

Information and Perceptions

In this section of the survey, we want to know about how you get information about the FKNMS, which covers all the waters surrounding the Florida Keys/Key West. A map is included with this booklet showing the boundaries of the FKNMS. We also ask questions about the public process in creating the management strategies and regulations and ask about your opinions about the existence of the FKNMS and an appraisal of how well the area is being managed.

- D1. Please list the sources of information that you have received in the past about the FKNMS and rank the sources in terms of their usefulness. Place an “ × ” for each source used. Please rank each source 1=highest (most important) to 9=lowest (least important).**

<u>Source</u>	<u>Used</u>	<u>Rank</u>	
a. FKNMS website	_____	_____	
b. FKNMS staff	_____	_____	
c. Sanctuary Advisory Council	_____	_____	
d. FKNMS brochures/literature	_____	_____	
e. FKNMS signage	_____	_____	Was signage easy to see? ___ Yes ___ No ___ N/A
f. Information in newspapers	_____	_____	
g. Radio	_____	_____	
h. TV	_____	_____	
i. Word of mouth	_____	_____	

- D2. Did you do any activities through a Dive Shop in the Florida Keys/Key West?**

_____ Yes (Go to Question D3, below) _____ No (Go to Question D6, page 10)

- D3. Did the Dive Shop staff, either in the Dive Shop or onboard the boat, give you a briefing and or/education materials on how you should behave on the reefs to avoid damaging the reefs?**

_____ Yes (Go to Question D4, below) _____ No (Go to Question D6, page 10)

- D4. Did you find this information useful?**

_____ Yes (Go to Question D6, page 10) _____ No (Go to Question D5, page 10)

D5. Please tell us why you didn't find the information useful and what kinds of information you would have liked to receive.

D6. Have you ever rented a boat or personal watercraft (Jet Ski, wave runner, etc.) in the Florida Keys/Key West?

___ Yes (Go to Question D7, below) ___ No (Go to Question D10, below)

D7. Did the boat rental operation provide you with a briefing and/or other education materials on how to navigate or how to behave while on the reefs or information on special zones where you are not allowed to motor the boat?

___ Yes (Go to Question D8, below) ___ No (Go to Question D10, below)

D8. Did you find this information useful?

___ Yes (Go to Question D10, below) ___ No (Go to Question D9, below)

D9. Please tell us why you didn't find the information useful and what kinds of information you would have liked to receive.

For the next set of questions, please provide an answer on a 1 to 5 scale, where 1 means Strongly Agree, 2 means Moderately Agree, 3 means Neutral or Neither Agree or Disagree, 4 means Moderately Disagree and 5 means Strongly Disagree. Please circle the appropriate number or I Don't Know, if you simply have no knowledge on the issue.

D10. The process that NOAA has used to develop rules and regulations for the FKNMS was open and fair to all groups.

1 2 3 4 5 I Don't Know

D11. The process used by NOAA to develop boundaries and regulations for the FKNMS zones was open and fair to all groups.

1 2 3 4 5 I Don't Know

D12. It has not mattered whether the average person participated in the workshops and meetings on the FKNMS because the average person could not influence the final decisions.

1 2 3 4 5 I Don't Know

D13. NOAA has not addressed the concerns of local and state governments in developing rules and regulations for the FKNMS.

1 2 3 4 5 I Don't Know

D14. NOAA has not addressed the concerns of individual citizens in developing rules and regulations for the FKNMS.

1 2 3 4 5 I Don't Know

D15. Once the regulations have been in effect, there has been no way that the average person could voice his/her opinion on the usefulness of the regulations.

1 2 3 4 5 I Don't Know

D16. The procedures that NOAA has established to deal with violations of FKNMS regulations have been fair and just.

1 2 3 4 5 I Don't Know

D17. NOAA has made a positive contribution to the marine environment via the National Marine Sanctuary Program.

1 2 3 4 5 I Don't Know

D18. The Florida Keys have benefited environmentally from the FKNMS.

1 2 3 4 5 I Don't Know

D19. There has been a net economic benefit to the Florida Keys from the establishment of the FKNMS.

1 2 3 4 5 I Don't Know

D20. I generally support the establishment of the FKNMS.

1 2 3 4 5 I Don't Know

For the next set of questions, we want to find out how important you think the FKNMS is in affecting the Florida Keys/Key West as your place of residence and/or as a place to undertake your outdoor recreation activities.

D21. Did you know before this survey that all the waters surrounding the Florida Keys/Key West are in a National Marine Sanctuary?

_____ Yes _____ No

D22. Do you think having all the waters surrounding the Florida Keys/Key West in a National Marine Sanctuary makes the area a more attractive place to live and/or undertake your outdoor recreation activities?

_____ Yes _____ No

For Question D23, please circle one number to indicate your response on the following five-point scale. 1=Not Important, 2=Somewhat Important, 3=Important, 4=Very Important, 5=Extremely important or I Don't Know, if you simply have no knowledge on the issue.

D23. Again, regarding the Florida Keys/Key West as a place to live and/or undertake outdoor recreation activities, how important was the fact that all the waters surrounding the Florida Keys/Key West was in a National Marine Sanctuary?

1 2 3 4 5 I Don't Know

D24. When planning your ocean-based outdoor recreation activities in the Florida Keys/Key West, did you know that there were special zones where certain activities are restricted or not allowed?

_____ Yes _____ No

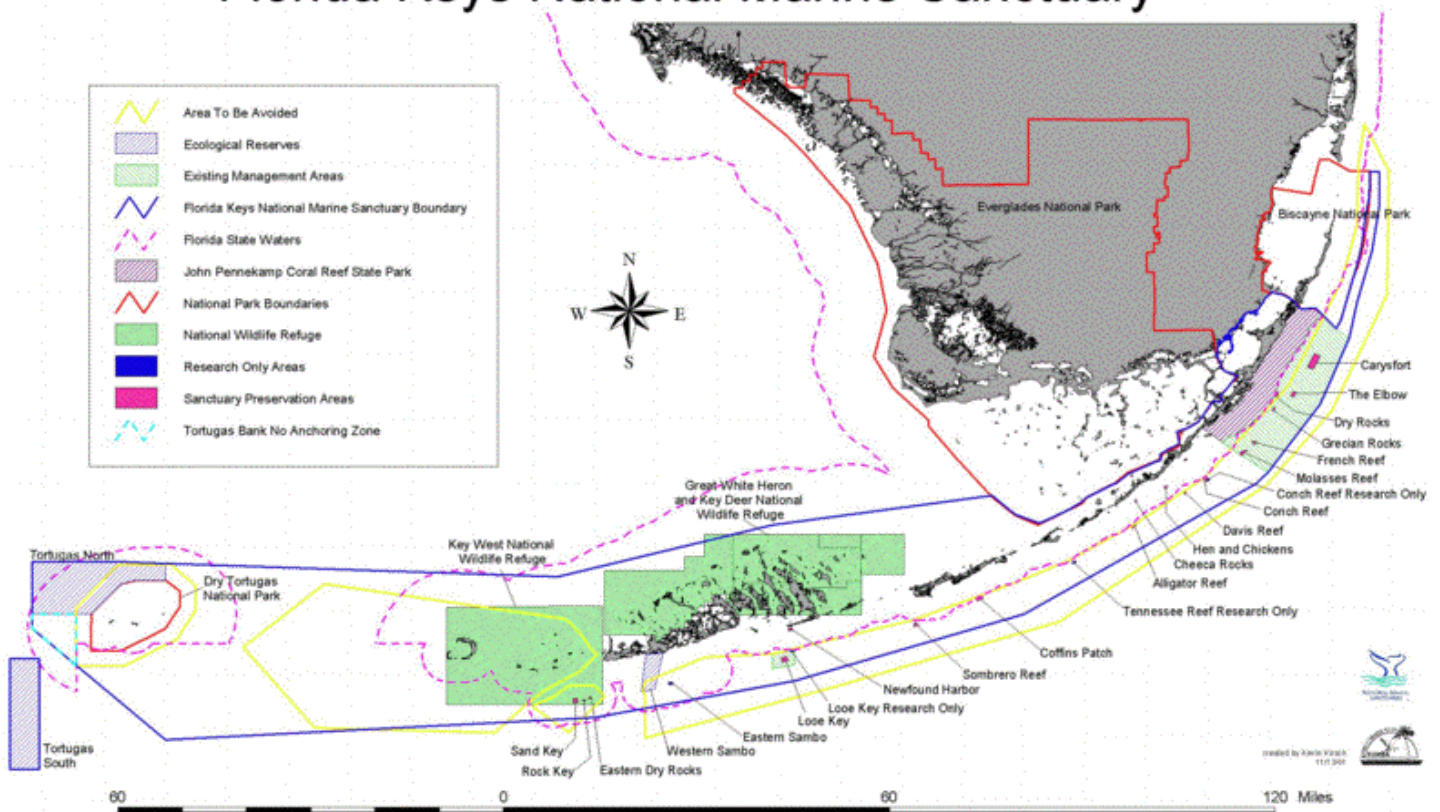
There are five kinds of zones established within the FKNMS, and three of these zone types analyzed for this study are collectively referred to as “FKNMS zones” in the survey. Zones allow different uses and are generally established for different purposes. Below, a short description for each of the three zone types is provided.

Sanctuary Preservation Areas, or SPAs, encompass discrete, biologically important areas and are designed to reduce user conflicts and sustain critical marine species and habitats. Regulations for SPAs are designed to limit consumptive activities while continuing to allow activities that do not threaten resource protection. There are 18 SPAs in the FKNMS, which limit consumptive activities (activities where you take something) and 4 that are set aside for research only.

Ecological Reserves, or ERs, encompass large, contiguous, diverse habitats, in order to protect and enhance natural spawning, nursery and permanent-residence areas for the replenishment and genetic protection of fish and other marine life. Regulations for Ecological Reserves are designed to meet the objectives of these zones by limiting consumptive activities while continuing to allow activities that do not threaten resource protection. Ecological Reserves therefore restrict all consumptive activities and allow non-consumptive activities only where such activities are compatible with resource protection. There are currently two Ecological Reserves in the Sanctuary, the Western Sambo Ecological Reserve and the Tortugas Ecological Reserve.

Wildlife Management Areas, or WMAs, include bird nesting, resting or feeding areas, turtle-nesting beaches and other sensitive habitats. Regulations are designed to protect these species or the habitat while providing for public use. Access restrictions will include no-access buffers, no-motor zones, idle-speed only/no-wake zones and closed zones. Some restrictions will apply to time periods, others to areas. There are currently 27 WMAs, of which 7 are managed exclusively by the FKNMS (The FKNMS co-manages the others with the US Fish and Wildlife Service).

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The next set of questions asks about your opinions on the three types of zones. Please answer each question for each type of zone. Answer by placing an “ × ” in the space for each type of zone. Leaving a space blank means you don’t think the statement applies to that type of zone.

- | | <u>SPA</u> | <u>ER</u> | <u>WMA</u> |
|---|------------|-----------|------------|
| D25. Which of the following represents the main purpose of the FKNMS? | | | |
| a. Increasing overall fish stocks and biomass within the zones | _____ | _____ | _____ |
| b. Increasing overall fish stocks and biomass outside the zones | _____ | _____ | _____ |
| c. Conserving and protecting corals, fish and other marine life inside the zones | _____ | _____ | _____ |
| d. Resolving user conflicts | _____ | _____ | _____ |
| e. Supporting scientific research | _____ | _____ | _____ |
| D26. Which groups have most benefited from FKNMS zones? | | | |
| a. Commercial fishermen | _____ | _____ | _____ |
| b. Recreational/sport fishermen | _____ | _____ | _____ |
| c. Commercial dive operators | _____ | _____ | _____ |
| e. Recreational (local and tourist) divers | _____ | _____ | _____ |
| D27. FKNMS zones have reduced conflicts between different user groups | _____ | _____ | _____ |
| D28. FKNMS zones have been effective in restoring coral reefs in the Florida Keys to what they used to be | _____ | _____ | _____ |
| D29. I support the establishment of FKNMS zones as they are currently established | _____ | _____ | _____ |

For Questions 30 - 33 please refer to the map of the FKNMS (page 12).

- | | | | |
|--|-------|-------|-------|
| D30. I support the establishment of FKNMS in the <u>Upper Keys</u> | _____ | _____ | _____ |
| D31. I support the establishment of FKNMS in the <u>Middle Keys</u> | _____ | _____ | _____ |
| D32. I support the establishment of FKNMS in the <u>Lower Keys</u> | _____ | _____ | _____ |
| D33. I support the establishment of FKNMS in the <u>Dry Tortugas</u> | _____ | _____ | _____ |
| D34. There should be more FKNMS zones in the Florida Keys | _____ | _____ | _____ |
| D35. Do you use any of the FKNMS zones? | | | |

_____ Yes (Go to Question D36, below)

_____ No (Go to Question D39, page 15)

- D36. Which ones do you use?

- D37. Since the FKNMS zones were established, has your use of the FKNMS:

Please circle your response and estimate the percent increase or decrease in your use.

Increased (_____%)

Stayed the Same

Decreased (_____%)

D38. For each of the different types of FKNMS zones that you use, could you rate how the zones have changed for each of the following items. Please rate them on a scale of 1 to 5 with 1 being Better to 5 being Worse. Leaving a space blank means you didn't use that type of zone.

	<u>SPA</u>	<u>ER</u>	<u>WMA</u>
a. Water quality	_____	_____	_____
b. Number of fish	_____	_____	_____
c. Types of fish	_____	_____	_____
d. Amount of living coral	_____	_____	_____
e. Other marine life	_____	_____	_____
f. Crowding	_____	_____	_____

The final set of questions asks about how effective you think the FKNMS has been in managing the natural resources in the surrounding waters of the Florida Keys/Key West.

D39. Please rate the status/condition of the following resources by their status/condition since implementation of the FKNMS.

	<i>Much worse</i>	<i>Slightly worse</i>	<i>Remained the same</i>	<i>Slightly better</i>	<i>Much better</i>	<i>Don't know</i>
a. Water quality	1	2	3	4	5	dk
b. Land-based pollution/sewage.....	1	2	3	4	5	dk
c. Sea-based pollution/sewage	1	2	3	4	5	dk
d. Coral reefs	1	2	3	4	5	dk
e. Sea grasses	1	2	3	4	5	dk
f. Fisheries	1	2	3	4	5	dk
g. Mooring buoys	1	2	3	4	5	dk

D40. The FKNMS is mostly responsible for the status/condition of the resources that you rated in the previous question (Question D39).

- 1 Strongly agree
- 2 Moderately agree
- 3 Neutral (neither agree or disagree)
- 4 Moderately disagree
- 5 Strongly disagree

dk Don't know/Not sure

D41. In which area(s) has the FKNMS been a success?

D42. In which area(s) has the FKNMS been least successful?

D43. Are there any management strategies or regulations which you would like to see changed in the FKNMS?

Please briefly describe the top three management strategies or regulations you would like to see changed and how you would like to see them changed.

	<u>Management Strategy or Regulation</u>	<u>How I would like to see it changed</u>
a.	_____ _____	_____ _____
b.	_____ _____	_____ _____
c.	_____ _____	_____ _____

Part E: Demographic Profile

In this final section, we need to know information about you and your household to make sure we have a representative sample of Monroe County residents.

Again, your privacy will be protected and any information identifying you or your household will not be revealed to anyone.

E1. How many people in your household are permanent residents of Monroe County, Florida?

_____ PEOPLE

E2. How many of these people are at least 16 years of age?

_____ PEOPLE

E3. What is the closest mile marker to your residence?

_____ MILE MARKER NUMBER

E4. Do you have access to the water from your residence?

- 1 YES
- 2 NO

E5. Do you own a boat?

- 1 YES
- 2 NO

E6. How many years have you lived in Monroe County?

_____ NUMBER OF YEARS

E7. In what year were you born?

_____ YEAR

E8. Are you of Hispanic, Latino or Spanish origin?

- 1 YES
- 2 NO

E9. What race do you consider yourself? (Please select all that apply)

- 1 White
- 2 Black or African-American
- 3 American Indian or Alaska Native
- 4 Asian
- 5 Native Hawaiian or Other Pacific Islander

E10. What is the highest level of education that you have completed? (Please select only one)

- 1 8th grade or less
- 2 9th to 11th grade
- 3 12th grade, High School Graduate, GED
- 4 13 to 15 years (some college or vocational training)
- 5 College graduate
- 6 Graduate School, Law School, Medical School

E11. What is your employment status? (Please select all that apply)

- | | |
|----------------------|---------------------|
| 1 Unemployed | 5 Student |
| 2 Employed full-time | 6 Homemaker |
| 3 Employed part-time | 7 None of the above |
| 4 Retired | (specify): _____ |

E12. Do you work outside Monroe County?

- 1 YES
- 2 NO

E13. What is your ZIP Code?

E14. What is your household income, before taxes?

- | | |
|------------------------|---------------------------|
| 1 Under \$5,000 | 9 \$40,000 to \$44,999 |
| 2 \$5,000 to \$9,999 | 10 \$45,000 to \$49,999 |
| 3 \$10,000 to \$14,999 | 11 \$50,000 to \$59,999 |
| 4 \$15,000 to \$19,999 | 12 \$60,000 to \$74,999 |
| 5 \$20,000 to \$24,999 | 13 \$75,000 to \$99,999 |
| 6 \$25,000 to \$29,999 | 14 \$100,000 to \$149,999 |
| 7 \$30,000 to \$34,999 | 15 \$150,000 or more |
| 8 \$35,000 to \$39,999 | |

ACTIVITIES LIST

(White Card)

Number	Activities Using Boats and Personal Watercraft
	Snorkeling
100A	Snorkeling from charter/party boat (pay operation)
101A	Snorkeling from a rental boat
102A	Snorkeling from private boat (your boat or friend or relatives boat)
	Scuba Diving
200A	Scuba diving from charter/party boat (pay operation)
201A	Scuba diving from a rental boat
202A	Scuba diving from a private boat (your boat or friend or relatives boat)
	Special Activities while Snorkeling or Scuba Diving
300	Diving for lobsters
301	Underwater photography
302	Wreck diving
303	Spear fishing
	Fishing – Offshore
400A	Fishing from charter boat (pay operation, usually six persons or less) - offshore
401A	Fishing from party or head boat (pay operation, charge per person) - offshore
402A	Fishing from a rental boat – off shore
403A	Fishing from a private boat (your boat or friend or relatives boat) - offshore
	Fishing – Flats or Back Country
404A	Fishing from charter/party boat or guide (pay operation) – flats or back country
405A	Fishing from rental boat – flats or back country
406A	Fishing from a private boat (your boat or friend or relatives boat) – flats or back country

Number	Activities Using Boats and Personal Watercraft (continued)
	Other Fishing
407A	Other fishing from charter boat (pay operation, usually six persons or less)
408A	Other fishing from party or head boat (pay operation, charge per person)
409A	Other fishing from a rental boat
410A	Other fishing from a private boat (your boat or friends or relatives boat)
	Viewing Nature and Wildlife
500A	Glass bottom boat rides (pay operation)
501A	Back country boat excursions (pay operation/guided service/NOT FISHING)
502A	Viewing nature and wildlife from private or rental boat
	Personal Watercraft (jet skis, wave runners, etc.)
600A	Personal watercraft – rental
601A	Personal watercraft – Private (your boat or friend or relatives boat)
	Sailing
700A	Sailing charter/party boat (pay operation)
701A	Sailing rental boat
702A	Sailing private boat (your boat or friend or relatives boat)
	Other Activities NOT MENTIONED ABOVE (parasailing, hang gliding, water-skiing, sunset cruises)
800A	Other activities from a charter/party boat (pay operation)
801A	Other activities from a rental boat
802A	Other activities from a private boat (your boat or friend or relatives boat)

-----OVER-----

ACTIVITIES LIST

(White Card)

Number **Other Water-Based Activities – NO BOATS**

- Snorkeling and Scuba Diving**
- 10A Snorkeling from shore
 11A Scuba diving from shore
- Special Activities while Diving from Shore**
- 12 Diving for lobsters
 13 Underwater photography
- 14A Fishing from shore (beach, bank, pier, bridge, jetty, dock)
- 15A Swimming at Beaches (not in pool)
 16A Swimming in Outdoor Pool
 17 Swimming with Dolphins
 18A Windsurfing, sail boarding or kite surfing

Number **Land-Based Activities**

- Nature Study – Wildlife Observation – Photography**
- 19A Wildlife observation or wildlife photography
 20A Other nature study and observation
 21 Photography – Natural landscapes/scenery (not including wildlife)
- Camping – Backpacking – Hiking – Picnicking**
- 22 Backpacking
 23 Camping in developed campgrounds
 24 Camping in primitive campgrounds
 25 Day Hiking
 26 Attending ranger guided walk
 27 Self-guided nature or historic trail
 28 Picnicking

- Cultural, Historic and Tourist Attractions**
- 29A Visiting historic areas, sites, buildings or memorials
 30 Attending special events (fairs, festivals, ceremonies, etc.)
 31 Attending outdoor concerts, plays, or other outdoor performances
 32 Attending indoor concerts, plays, performances, or events
 33 Sight-seeing tours and tourist attractions (paid)
 34 Sight-seeing (not paid tours)
 35 Reading roadside exhibits or markers
 36A Visiting a museum, education facility, or information center
 37 Attending outdoor sports events (sailing or boat races; spectator at fishing tournament)
 38 Attending weddings
 39 Shopping
 40 Visit art gallery

- Outdoor Sports**
- 41 Golf
 42 Tennis
 43 Participation in other outdoor sports and games

- Bicycling – Horseback Riding – Driving for Pleasure**
- 44 Bicycling
 45 Horseback riding
 46 Driving for Pleasure (mopeds, motorcycles)

- Beach Activities – Sunbathing**
- 47A All Beach Activities (other than swimming)
 48 Sunbathing (not at beach)

- Spa, Health & Wellness**
- 49 Spa Treatments (massage, esthetician services, body treatment)
 50 Fitness activities (fitness classes, visited gym/health center, personal trainer)
 51 Healthy cuisine (specialty dining for health or diet)

The Florida Keys

