

**Supporting Statement for Paperwork Reduction Act Submission:**

**Socioeconomic Research and Monitoring Program in Florida Keys National Marine  
Sanctuary: Recreation/Tourism in the Florida Keys: A 10-year Replication**

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## A. JUSTIFICATION

### 1. Explain the circumstances that make the collection of information necessary.

The National Marine Sanctuaries Act (16 USC 1431, et seq.) authorizes the use of monitoring within National Marine Sanctuaries (NMS) as does the Marine Protection, Research, and Sanctuaries Act of 1972 (16 USC 1432, et seq.). The Florida Keys National Marine Sanctuary and Protection Act (Public Law 101-605, Sec 7 (5)) also authorizes such monitoring. The Management Plan for the Florida Keys National Marine Sanctuary (FKNMS) established 18 Sanctuary Preservation Areas (SPAs) and one Ecological Reserve (ER) that are “no take” zones. In a separate two-year process (Tortugas 2000) a second ER was designed and approved Tortugas Ecological Reserve. All consumptive or take activities were displaced from these zones. These special zones were also created to resolve user conflicts. In creating these special zones, socioeconomic impact analyses were done as required under the National Environmental Policy Act (NEPA). In addition, a Regulatory Impact Review and an Initial and Final Regulatory Flexibility Analysis (if small businesses are potentially impacted by the no take regulations) were conducted. However, many of the benefits and costs identified in these analyses are speculative in nature and there is therefore a great deal of uncertainty about both the benefits and costs. In response to public concerns about the socioeconomic impacts of many of the elements of the FKNMS management plan and especially the “no take” zones (e.g., SPAs and ERs), a socioeconomic element was included in the ecological monitoring program. Dr. Vernon R. (Bob) Leeworthy, Leader of the Coastal and Ocean Resource Economics Program, NOAA, National Ocean Service, Management and Budget Office, Special Projects Division leads the Socioeconomic Research and Monitoring Program for the FKNMS.

In 1998, 50 stakeholders and social scientists met for a three-day workshop and established a set of recommendations for what should be measured in the Socioeconomic Research and Monitoring Program and how frequently the measures should be taken. A team of social scientists reviewed the literature and a gap analysis was performed. What was currently known and a preliminary assessment of the gaps in knowledge were presented to all the workshop participants two weeks before the workshop. A total of 108 recommendations were made, with workshop participants preferring that FKNMS management establish priorities. The workshop participants came to consensus in deciding that the work accomplished in the project “Linking the Economy and the Environment of the Florida Keys/Florida Bay would be accepted as “baseline” measurement for Recreation/Tourism. This project, conducted in 1995-96, was completed prior to the effective date (July 1, 1997) of all the FKNMS regulations, under OMB Control Number 0596-0110, by a Federal agency partnership among the USDA, Forest Service, NOAA and others. The basic survey under 0596-0110, called CUSTOMER, was modified for application in the Florida Keys and Everglades National Park.

In 2000-2001, NOAA formed a partnership with the State of Florida, four Florida counties and the private sector to conduct the “Socioeconomic Study of Reefs in Southeast Florida”. As part of this study, separate baseline estimates were made for use of artificial and natural reefs, the nonmarket economic value of reef use and the market economic use values (e.g. expenditures, sales/output, income and employment). A five-year replication was done on importance/satisfaction ratings for 25 natural resource attributes, facilities and services for both

resident and visitor boating users. This study was done under OMB Control Number 0648-0410. This study was also a modification of the CUSTOMER survey, with contingent valuation questions on reef use added.

The current application is based on a multiple agency, public-private partnership among NOAA, as represented by the FKNMS, the National Centers for Coastal Ocean Science (NCCOS) and the Coral Reef Conservation Program (CRCP); The Monroe County Tourist Development Council (TDC); The Nature Conservancy; The State of Florida; and various businesses and other private organizations in the Monroe County/Florida Keys. In addition to the socioeconomic assessment, this application also attempts to take an approximate decadal look at the recreation/tourism industry to support the Socioeconomic Research and Monitoring Program for the FKNMS with a five-year replication of reef use and valuation. Many think of the recreation/tourism study as equivalent to the Census of Outdoor Recreation in the Florida Keys. The TDC uses this study to weight their monthly surveys of visitors to the Florida Keys.

In the Socioeconomic Research and Monitoring Program for the FKNMS, not all measurements recommended could be done in either baseline 1995-96 or in 2000-2001 for recreation/tourism. Other priorities and availability of funding have required adopting more flexible baselines for tracking some issues (Knowledge, Attitudes and Perceptions of Sanctuary Management Strategies and Regulations--KAP). A baseline for KAP for commercial fishermen, Dive Shop Owners/Operators and members of local environmental groups was done in 1995-96 and is currently being replicated under OMB Control Number 0648-0534. In this application, we are providing baselines for the broader recreation/tourist users of the FKNMS.

New management strategies and new regulations have also come into being since July 1, 1997. In addition, new programs and new research priorities have been created in NOAA, which are directed at the FKNMS. The U.S. Coral Reef Task Force recommended to NOAA's CRCP that they fund adapting a study done on Global Climate Change and Coral Bleaching by the Australians on the Great Barrier Reef to the reefs of the FKNMS. NOAA's NCCOS funded a five-year study by University of Massachusetts-Amherst, Human Dimensions Program entitled "Coral Ecosystem Services: Societal Preferences and Policy/Management. The FKNMS has also joined the State of Florida and The Nature Conservancy in a project entitled "Florida Reef Resiliency Program". This application provides a platform for each of these efforts to achieve their objectives in addition to the basic requirements of the 10-year replication of the recreation/tourism study for the Socioeconomic Research and Monitoring Program for the FKNMS.

**2. Explain how, by whom, how frequently, and for what purpose the information will be used. If the information collected will be disseminated to the public or used to support information that will be disseminated to the public, then explain how the collection complies with all applicable Information Quality Guidelines.**

### **How and Purpose**

This project has multiple partners and multiple objectives. To accomplish multiple objectives, we take a modular approach to surveys. Individual survey modules are designed to achieve

different objectives. Modules are also mixed and matched to achieve objectives, especially when multivariate analyses are required.

Overall, there are two basic populations to be surveyed: 1) Permanent residents of Monroe County/Florida Keys and 2) Visitors to Monroe County/Florida Keys, including seasonal visitors (visitors who spend up to six months in the Florida Keys).

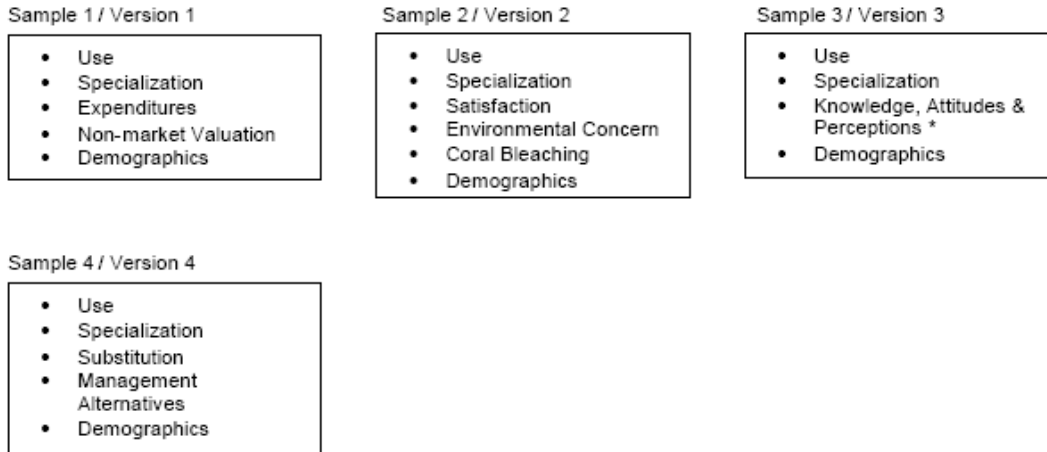
## **Resident Survey**

In 1995-96, the survey of residents was done by telephone/mail. This was a two-stage sampling with basic demographics collected by a random-digit dialing (RDD) survey. Households were recruited in a follow-up mail survey to get other details on recreation participation and use, expenditures, importance/satisfaction ratings and environmental concern. In 1995-96, telephone response rates were about 66% with over 82% agreeing to participate in the mail survey. The net response rate to the mail survey components was about 25% (see Leeworthy and Wiley, 1997b for details of the sample design, estimation methods, analysis of nonresponse bias and sample weighting) application. We expect to do a straight mail survey drawing samples from either Survey Sampling, Inc. or INFO USA for Monroe County residents.

We are proposing four different random samples to achieve all project objectives, while keeping burden to reasonable levels. Three of the samples will have a target sample size of 1,000 completes and one will have a target sample size of 2,000. There are a little over 37,000 households in Monroe County/Florida Keys containing about 80,000 people according to the 2000 Census. We plan to get completed surveys from 5,000 of those 37,000 households or about 13.5% of the population. Again, a modular approach is used to achieve multiple objectives, while minimizing burden. In this approach, Recreation Participation and Use, Demographics, and Specialization are considered “core” questions and are included in all versions of the resident questionnaires. Other components/modules include Expenditures, Environmental Concern, Satisfaction (Importance/Satisfaction), Knowledge, Attitudes & Perceptions of Management Strategies and Regulations, Substitution & Choice of Management Alternatives, Nonmarket Economic Use Values, and Climate Change/Coral Bleaching (Figure 1).

***Core Questions (included in all resident survey samples):*** As mentioned above, the “core” questions include questions on recreation participation and use, specialization, and demographics. In addition, there are two warm-up questions that address Monroe County as a place to live (questions 1 and 2). Question 3 is a screener question to identify if anyone in the household did any outdoor recreation activities in the Florida Keys during the past 12 months. A White Card is enclosed which lists activities we define as outdoor recreation. Those who answer Yes to question 3 are sent to complete Part A: Outdoor recreation activities during the past 12 months in the Florida Keys. Those who answer No (nonparticipants in outdoor recreation in the Florida Keys) to question 3 are sent to Part G: Demographic Profile. Obtaining demographic profiles of both participants and non participants in outdoor recreation allow us to analyze the importance of certain demographic factors in explaining participation in outdoor recreation in the Florida Keys, allow us to analyze non response bias, and allow for post weighting of sample data.





\* Figure 1. Resident Samples

**Part A: Outdoor recreation activities during the past 12 months in the Florida Keys.** Here we obtain complete recreation activity participation profiles for all members of the household. This, with Census data on number of household and number of residents in Monroe County/Florida Keys, will allow us to estimate the number of people participating in outdoor recreation in the Florida Keys. Information is obtained on activity participation by each respondent and number of others in the household (A2 and A4) and number of days of activity (A3) for each activity (A1) in each of five regions of the Florida Keys (Upper Keys, Islamorada, Marathon, Lower Keys and Key West). Respondents are provided an activity list (White Card) with each activity given a number code and a map of the five regions of the Florida Keys. In the 1995-96 study, only four regions were used (Upper Keys, Middle Keys, Lower Keys and Key West). However, The Monroe County Tourist Development Council asked us to split the Middle Keys into two regions so our information would correspond to their five districts, which also correspond to the areas covered by five Chambers of Commerce in the Florida Keys.

For number of days of activity by region, respondents are asked to answer this question only for those activities which have an “A” following their number. Activities with the suffix “A” are high priority activities for which intensity of use is required by project partners. Not collecting days of use for low priority activities lowers respondent burden.

Question A5 identifies respondents’ “most important activity”. This is used as a screener question for Part C. Specialization.

Question A6 asks about days of outdoor recreation spent outside the Florida Keys in the past 12 months, addresses the issue of substitution and is important for the assessment of Global Climate Change/Coral Bleaching with respect to the contingent behavior questions.

Part A questions will allow us to assess the trends in the type of activities, the extent of participation and use, and the regional distribution of activity in the Florida Keys since 1995-96.

**Part B: Reef use in the Florida Keys during the past 12 months: Both artificial and natural reefs.** In this section we obtain detailed information on activity participation and use of both the artificial and natural reefs of the Florida Keys to assess the trends in use since baseline 2000-2001. As in Part A, information is obtained from all members of the household on participation in activities on the reefs in all five regions of the Florida Keys (questions B1 thru B3). Again an activities list (Blue Card) is used to restrict the number of activities asked. Also, a check box is provided to indicate “No Reef Use” for each of the five regions. Both of these features are designed to reduce burden while obtaining the necessary information to assess the trends in use since 2000-2001.

Questions B4 thru B6 obtain the number of days by activity, region and type of reef (artificial versus natural). As in Part A, for activities which have an “A” suffix on the activity number (See Blue Card) is the respondent asked for days of activity.

Question B7 thru B9 focus on snorkeling and SCUBA diving activities and obtain number of dives on both the artificial and natural reefs. The Blue Card is used again to limit what activities are asked and a definition is provided on how we define a dive. Dives offers an alternative to days as a measure of activity, since it is common for a diver to undertake multiple dives per day. Some studies have used annual number of dives as a measure of reef carrying capacity.

**Part C: Specialization.** This module of questions was not in the 1995-96 or 2000-2001 studies. It was designed by researchers at the University of Massachusetts-Amherst, Human Dimensions Program, who have a five-year project sponsored by NOAA’s NCCOS entitled “Coral Reef Ecosystems: Societal Preferences and Policy/Management”. There has been a growing body of literature in outdoor recreation on the issue of recreational specialization over the past few decades (Bryan, 1977; Salz, Loomis and Finn, 2001; and Salz and Loomis, 2005). Recreation specialization or “specialization theory” has been used to predict how recreationists would respond to management strategies and regulations. This set of questions was adopted as “core” questions to enable researchers at the University of Massachusetts-Amherst, Human dimensions Program to test specialization theory in the FKNMS.

All the questions in Part C are used to develop a “specialization index” (Salz and Loomis, 2005). The specialization index values are then used as a predictor of behavior (support and/or compliance) with respect to management strategies and regulations.

**Your trip expenditures for your last trip in the Florida Keys to do outdoor recreation activities.** This module is a replication of the 1995-96 study and is included in only Version 1 of the Resident Survey as part D. Expenditure information is used in analyses to estimate the economic impact of outdoor recreation on the local Monroe County economy in terms of sales/output, income and employment. See Leeworthy and Wiley (1997a) for results from the 1995-96 study and Leeworthy and Wiley (1997b) for the technical appendix on the estimation procedures.

Questions D1 thru D6, ask for background data on the nature of the last trip taken. Last trip is used to reduce recall problems with remembering details of specific trips. Most of the literature suggests that two to three month recall is optimal for remembering trip details. Question D1

obtains information on the types of activities the respondent participated in on the last trip. This will be used to assess the representativeness of the types of trips for which expenditures are based. Questions D2 and D3 ask about location of trip distance traveled for the trip. Monroe County/Florida Keys is a linear county with mile markers on U.S. 1 (the only highway in and out of the Florida Keys). Questions D4 and D5 ask about the length of the trip measured in days and nights. With the Florida Keys being over 100 miles in distance from one end of the string of islands to the other, some people take overnight trips from their home in the Florida Keys to some other site in the Florida Keys. This provides a check on lodging costs. Question D6 provides the number of people the expenditures for the trip cover so we can normalize expenditures on a per person basis. The rest of the section focuses on the detailed amounts spent on each type of expenditure. Expenditures categories can then be mapped into industry categories as maintained by the U.S. Department of Commerce, Bureau of the Census in the Economic Censuses and the Bureau of Economic Analysis, regional Economic Information System Accounts for Monroe County to conduct economic impact analyses.

***Annual Vacation and Equipment Purchases.*** This section focuses on non trip related expenditures and looks at annual expenditures. Three columns are used as in the 1995-96 study to distinguish total expenditures (column A) from expenditures in South Florida (defined as Broward, Miami-Dade and Monroe counties—column B) and expenditures in Monroe County. This section is included only in Version 1 of the Resident Survey as Part E. This information will support economic impact analyses in both Monroe County and the wider South Florida regional economy.

***Value of the Reefs.*** This section is included as Part F in Version 1 of the Resident Survey only. This section is designed to estimate the nonmarket economic use value (consumer's surplus) of both artificial and natural reefs in the FKNMS and is a replication of what was done in 2000-2001 under OMB Control Number 0648-0410. Results of the analysis of 2000-2001 data can be found in Johns et al (2003a) and details on methods of analysis in Johns et al (2003b).

Question F1 uses as an example a program focused on maintaining the natural reefs of the FKNMS in their current condition. Respondents are asked to say yes or no to a randomly assigned dollar amount. The randomly assigned dollar amounts are the same as used in the 2000-2001 study. As in the 2000-2001 study, the payment vehicle is stated as an additional amount of costs for their last trip (the same trip used to obtain costs on in Part D). Question F1a is a follow-up for those who answer “no” to question F1 and asks for the reasons for saying “no”. This will allow for identification of protest bids or rejection of scenarios.

Question F2 uses as an example a program focused on maintaining the artificial reefs of the FKNMS in their current condition. Again, respondents are asked to say yes or no to a randomly assigned dollar amount. The same dollar amount is assigned to the artificial reef program as the natural reef program in question F1. Question F2a is a follow-up for those who answer “no” to question F2 and asks for the reasons for saying “no”. Again, this will allow for identification of protest bids or rejection of scenarios.

Question F3 combines the natural and artificial reef programs. Again, respondents are asked to say yes or no to a randomly assigned dollar amount. As in the 2000-2001 study, the randomly

assigned dollar amount is simply the addition of the randomly assigned dollar amounts used in question F1 and F2. Question F3a is the follow-up question for those who say “no” to question F3. Again, this will allow for identification of protest bids or rejection of scenarios.

By doing a five-year replication of the same questions, we hope to be able to test whether there is a change in the nonmarket economic value of the reefs in the FKNMS both on an average individual basis and in the aggregate across all residents.

***Environmental Issues.*** This module of questions is made up of 16 questions from the Weigel and Weigel (1978) study that are used to construct the Environmental Concern Index (ECI) or the Environmental Behavior Index (EBI). None of these questions can be interpreted independently nor are the responses to individual questions ever reported. Only the summary statistics are reported for the index (see Leeworthy and Wiley, 1997a). This module is the same set of questions used in the 1995-96 baseline study. It will be used in Version 2 of the Resident Survey, Part E only. The index will be used to test for relationships between the answers to the Climate Change/Coral Bleaching Choice questions.

***Satisfaction.*** This is the importance/satisfaction module, in which respondents are asked to provide their ratings, on a 1 to 5 scale, both on their importance and satisfaction for 25 natural resource attributes, facilities and services in the Florida Keys. This module of questions was asked in the baseline 1995-96 study of all residents and in 2000-2001 of all boating reef users. It will be asked only in Version 2 of the Resident Survey, Part D.

This module is divided into three parts. Part 1 asks the respondent how important each item was to him or her as contributing to an ideal recreation/tourism setting in the Florida Keys. Part 2 then asks how satisfied the respondent was with each item. Part 3 is a five-year retrospective rating and question D51 is used to screen out all those who were not residents of the Florida Keys or had not visited the Florida Keys in the past five years. Past research has shown that satisfaction scores are highly correlated with amount of experience with the area (Leeworthy and Wiley, 1997a). The number of items in Part 3 is reduced from 25 to 13 based on project partner priorities, this reduction helps to reduce respondent burden.

***Knowledge, Attitudes & Perceptions of Sanctuary Management Strategies and Regulations.*** This module of questions was not in the 1995-96 baseline study or the 2000-2001 reef study. The questions are almost exactly the same as those submitted under OMB Approval Number 0648-0534, Expiration Date: 7/31/2009, which is focused on a 10-year replication for three user groups; commercial fishermen, dive shop owners/operators, and members of local environmental groups. This application applies to the broader population of Monroe County that participates in outdoor recreation. However, we expect there will be some duplication with the other study. This module will be applied only in Version 3 of the Resident Survey, Part D.

This module contains 43 questions. Questions D1 thru D8 address sources where respondents get their information. This is extremely important to FKNMS education and outreach personnel for identifying effective means of communicating with the residents of Monroe County/Florida Keys.

Questions D10 thru D20 address people's perceptions of the FKNMS with respect to the processes and procedures followed in creating and enforcing management strategies and regulations and people's support for the FKNMS as a management/regulation institution. A 1 to 5 point scale is used, with 1 meaning Strongly Agree to 5 meaning Strongly Disagree.

Questions D21 thru D23 ask questions to gauge how important people think the FKNMS is in affecting the Florida Keys/Key West as a place to live and/or as a place to undertake their recreation activities.

Question D24 is a lead in question on the people's knowledge, attitudes and perceptions of FKNMS special zones. After answering question D24, respondents are provided information on three different kinds of zones that exist in the FKNMS.

Questions D25 thru D34 provide a set of statements about zones and ask the respondent to place an "X" under the column for each type of zone the statement applies. Questions D35 thru D37 ask about the use of the zones. Questions D38 thru D42 ask questions about how people perceive the effectiveness of the FKNMS management strategies and regulations. Question D43 provides an open-ended question format which allows respondents to list which regulations they would like to see changed and how they would like to see them changed.

***Coral Reefs.*** This module of questions was neither in the 1995-96 study nor the 2000-2001 reef study. These questions support NOAA's Coral Reef Conservation Program's attempt to implement the U.S. Coral Reef Task Force's recommendation to estimate the socioeconomic impacts of global climate change/coral bleaching in the FKNMS as was done for Australia's Great Barrier Reef (GBR). Australian economist, Hans Hoegh-Guldberg and Australian coral ecologist, Ove Hoegh-Guldberg, led the study on the GBR and have been asked to lead the study with a team of American researchers for the FKNMS. This module of questions is included in Version 2, Part F of the resident survey. There are four Versions: Version 2a, Version 2b, Version 2c and Version 2d. Each of these versions have different choice questions, so for the total sample of 1,000 that will receive Version 2, there will be a sample size of 250 completed for each version (a, b, c, and d).

The basic approach is based on scenario analysis over a range of potential impacts. Here a stated preference choice method is utilized where people are presented with alternative mixes of global and local management strategies. This is similar to the approach used by Layton and Brown (1998) on their analysis of the impacts of Global Climate Change and the forests on the Rocky Mountains. Each mix of strategies has an expected outcome stated in terms of the percent of live coral cover which is protected at various costs to the respondent's household. The costs for each mix of strategies is randomly assigned from a range of dollar amounts derived from the FKNMS Management Plan for local costs and from a range of dollar costs from several studies on the costs of eliminating greenhouse gas emissions and our Science Panels estimates for the different levels of greenhouse gas emissions. There are 81 possible combinations of global and local strategies. Twenty-four (24) of the 81 were randomly chosen for implementation. There will be four versions of this module of questions with each version containing six choice questions.

Respondents are given certain facts to help them make their decision. For each choice, a respondent faces three alternatives, which are mixes of global and local strategies each with an outcome in terms of the amount of live coral protected with a cost per household. Respondents choose their “most preferred alternative” and their “least preferred alternative” for each choice question. There will be four randomly assigned dollar amounts for each of the 24 alternatives. The baselines are based on the cost calculations and are shown in the attached questionnaires. The range of dollar amounts is simply 2 times the base, 3 times the base and four times the base.

Questions F1 thru F4 are warm-up questions to assess respondent’s perceptions on the threats to coral reefs and their opinions on various recommended actions. In question F1, respondents are asked to rank 12 different threats to the coral reefs with 1=greatest threat and 12=lowest threat. Question F2 is a follow-up to question F1 and provides the respondent an opportunity to list other threats not mentioned in question F1.

Question F3 list seven recommendations for actions to reduce the threats to coral reefs and asks the respondents to rank them from 1 to 7 with 1 meaning the highest rank or most important recommendation to 7 or the least preferred action. Question F4 is a follow-up to question F3 and allows the respondent to provide other recommended actions.

Respondents are then provided some facts about coral bleaching and climate change. Then they are asked some questions that address their knowledge, attitudes and perceptions about climate change and coral bleaching (Questions F5 thru F8).

After answering questions F5 thru F8, respondents are given some additional facts about climate change and coral bleaching and the local and global management strategies that can address the problem of climate change and coral bleaching. Different levels of protection are explained and the expected outcomes. Information is given on how costs were derived for management strategies. Information is also provided on how local and global strategies work together and how global strategies are more effective (in terms of efficiency in protecting coral cover) when mixed with local strategies. Then an example is provided to show respondents how to record their answers to the choice questions (questions F9 thru F14).

In questions F9 thru F14, respondents are presented with three alternative mixes of global and local strategies. Alternative A is always the “No change” alternative and cost the household \$0 per year, but results in a 95% loss in coral cover by year 2027. Alternatives B and C always represent more protective strategies with higher costs per household per year. The respondent is always asked to select his/her “most preferred alternative” and “least preferred alternative” for each choice question. After answering each choice question, respondents are asked an open-ended question to briefly explain the reason for their choices.

Questions F15 thru F19 take a different approach. The contingent behavior approach is used here. The approach is similar to that used by Richardson and Loomis (2004) on how visitors to Rocky Mountain National Park responded to the impacts of global climate change. Preceding these questions, respondents are first reminded of their responses in Part A on their participation in outdoor recreation both inside and outside the Florida Keys over the past 12 months. Question

F15 asks the respondent to confirm any outdoor recreation activities in the Florida Keys during the past 12 months.

Questions F16 thru F19 explore how respondents would have changed their number of days of outdoor recreation both in and outside the Florida Keys if they had faced different coral cover conditions. The contingent behavior results will be used in combination with expenditure profiles to estimate the economic impacts on the local economy due to global climate change/coral bleaching for various scenarios.

***Substitution.*** This is a module of questions designed by researchers at the University of Massachusetts-Amherst, Human Dimensions Program and supports both the NOAA NCCOS project entitled “Coral Reef Ecosystems: Societal Preferences and Policy/Management” and the Florida Reef Resiliency Program. The idea of substitution is not an economic definition of substitution, but instead is based on work in the recreation literature which views substitution in a slightly different manner.

Substituting another site, time or activity is thought to be a common coping strategy employed by resource users who experience conflict, crowding, loss of resource access, or who observe environmental degradation at an often used location. More research, especially leading to improved theory, is needed on recreation substitution with regard to snorkelers, SCUBA divers and recreational fishermen.

The following description is taken from Ditton & Sutton, 2004:

“Recreation substitution was first described as the interchangeability of activities in satisfying participant needs, motives, and preferences (Hendee & Burdge, 1974). This definition was expanded further to refer to the interchangeability of recreation experiences “such that acceptably equivalent outcomes” can be achieved by varying the timing, means of access, setting, or activity (Brunson & Shelby, 1993, p. 69). Thus, only when an alternative activity is perceived as satisfying one’s needs and providing outcomes equivalent to the original can it be considered substitutable (Iso-Ahola, 1980). If a replacement does not provide the same benefits as the original, it is a complement or an alternative, but not a substitute (Shelby & Vaske, 1991).

Previous studies of substitution decision making have identified various independent variables important to individuals’ willingness to substitute: frequency of participation, skill level, and monetary investment (Snow, 1980; Vaske & Donnelly, 1982). Based on recreation specialization theory (Bryan, 1977; Ditton, Loomis & Choi, 1992; Fisher, 1997), it can be expected that those with well developed skills, large investments in equipment, and who are more committed to [diving] than the other outdoor activities in which they participate are less likely to identify another outdoor activity that would provide them with the same satisfaction or enjoyment they received from [diving]”.

The following substitution questions will be cross analyzed with recreation specialization and demographic questions to better predict for managers how Florida Keys resource users will react to variations in use levels, user norms, natural and anthropogenic resource impacts, and alternative management actions.

There are two sections for the substitution questions; one for those who participate in snorkeling or SCUBA diving in the Florida Keys and one for those who participate in recreational fishing in the Florida Keys. If the respondent did not participate in the activities in the Florida Keys, he/she is instructed to go to the next section.

Besides the screening criteria, there are 13 questions in each section, which are only slightly modified to the reference activity. The respondent is asked to answer the questions using either their favorite or most common reef for the reference activity or, if he/she does not have a favorite or most common reef for their reference activity, then the last reef used is used for the reference activity. For these questions, “reefs” mean natural reefs in the Florida Keys.

Question 1 thru 5 pose different conditions which make the favorite/most common/last used reef for the reference activity either unavailable for the reference activity or less desirable for the reference activity. The respondent is asked to provide a response on how he/she would change his/her behavior.

Question 6 attempts to identify how many other reefs in the Florida Keys the respondent thinks offer an experience just as good as their favorite/most common/last used reef for the reference activity. Question 7 follows by asking how many other reefs in the Florida Keys the respondent thinks offer a similar, but not as good an experience for the reference activity as the favorite/most common/last used reef. Question 8 then asks the respondent to rate how similar the best similar reef is to the favorite/most common/last used reef. Question 8 uses a seven point scale with 1=Not as good, 4=Equivalent and 7=Better.

Question 9 asks about factors respondents consider when choosing a substitute site. The respondent is asked to rate the importance of nine factors plus an other (specify). Importance is scored on a five point scale with 1=Not at all important to 5=Extremely important.

Question 10 is a yes/no question that asks the respondent if other activities would provide the same satisfaction or enjoyment as the reference activity, if the reference activity was not possible to undertake either in the Florida Keys or elsewhere. Question 11 follow-up on question 10 to ask the respondent to identify up to three activities he/she might consider as substitute activities for the reference activity.

Question 12 asks about factors that might explain why respondents are not able to participate in their reference activity. Respondents are asked to rate seven factors plus an “other” (specify) factor using the same five point importance scale as in Question 9.

Question 13 asks about factors that motivate respondents in participating in their reference activity. The respondent is asked to score 12 factors plus an “other” (specify) factor on a five point scale on expectations with 1=Did not expect to 5=Very large expectations.

***Alternative Management Options.*** This is a module of questions designed by researchers at the University of Massachusetts-Amherst, Human Dimensions Program and supports both the NOAA NCCOS project entitled “Coral Reef Ecosystems: Societal Preferences and



Policy/Management” and the Florida Reef Resiliency Program. The questions are designed to support a conjoint analysis using a stated preference discrete choice model. These questions will be included in Version 4 of the Resident Survey and implemented in Sample 4 (2,000 expected completes). There are six versions of the survey to accommodate 48 different choice questions for each activity (fishing and diving), with each respondent getting 8 choice questions for fishing and 8 choice questions for diving. Large sample sizes are required for this module since researchers at the University of Massachusetts-Amherst, Human Dimensions Program want to be able to estimate some parameters by region in the Florida Keys. For their purposes, they have aggregated our five regions to three regions (Upper Keys, Middle Keys and Lower Keys/Key West).

The stated preference discrete choice (SPDC) model has its roots in the assumption that decisions about resource use and activity-related expenditures are the result of several factors considered jointly (Sorice, Oh, & Ditton, 2005). The model seeks to identify the tradeoffs people (snorkelers, SCUBA divers, and recreational fishermen in this case) are willing to make. This information can assist managers by illustrating how users might change their behavior in response to management actions.

The project proposed does not seek to evaluate any specific management alternatives, current or pending, within the FKNMS. Nor does it explicitly attempt to compare current management actions to users’ preferences. Rather, the purpose is to study how people evaluate generic packages of management attributes in order for managers to be able to predict support for new policies.

There are two sections for the choice questions; one for those who participate in snorkeling or SCUBA diving in the Florida Keys and one for those who participate in recreational fishing in the Florida Keys. If the respondent did not participate in the activities in the Florida Keys, he/she is instructed to go to the next section.

For diving, there are eight attributes for each choice question. Each attribute has three to four levels. In total there are 15,552 possible combinations of attributes/levels. Using the paired comparison approach and a randomized design, 48 of the 15,552 possible combinations are covered across six versions of the survey, with each respondent getting 8 paired choice questions.

For fishing, there are seven attributes for each choice question. Each attribute has three to four levels. In total there are 5,184 possible combinations of attributes/levels. Using the paired comparison approach and a randomized design, 48 of the 5,184 possible combinations are covered across six versions of the survey, with each respondent getting 8 paired choice questions.

Besides the screening criteria, for each reference activity, respondents are asked 8 choice questions. In each of the choices, two different trips are presented (Trip A and Trip B). The respondent is asked their preferred choice of trip. The respondent is always given the opportunity to select neither trip in each choice question.

Table 1 shows the attributes and their levels for snorkelers and SCUBA divers and Table 2 shows the attributes and levels for recreational fishermen.

**Table 1. DIVING- attributes and levels for use in the FKNMS stated preference choice model.**

<b>Attribute</b>	<b>Description</b>	<b>Level</b>
Number of Snorkelers and Divers	The number of other snorkelers and divers in the water at the reef site	1. The usual number of other snorkelers/divers at the dive site 2. 15% fewer snorkelers/divers 3. 30% fewer snorkelers/divers
Site Settings	Coral cover and algae cover at the reef site	1. High live coral cover 2. Mix of coral and algae cover 3. High algae cover
Restrictions	Percent area of reef site open to use	1. No area closed 2. 25% of area closed 3. 50% of area closed 4. 75% of area closed
Number of fish	Overall amount of fish observed on a dive	1. No increase in numbers of fish 2. 20% more fish 3. 40% more fish 4. 60% more fish
Size of Fish	Percent increase in the number of larger fish seen at the dive site	1. No increase in larger fish 2. 20% more larger fish 3. 40% more larger fish 4. 60% more larger fish
Species	Number of species of fish observed on a dive	1. Fewer species 2. No change in species numbers 3. Many more species
Enforcement	Number of patrols a person we expect to encounter	1. No additional patrols 2. One additional patrol 3. Two additional patrols
Travel cost / day	Travel cost that an diver spends for a diving trip per day (including gas and other trip expenses)	1. 10% less than your current total cost per day 2. Your current total cost per day 3. 10% more than your current total cost per day

**Table 2. FISHING-attributes and levels for use in the FKNMS stated preference choice model.**

<b>Attribute</b>	<b>Description</b>	<b>Level</b>
Number of Recreational Fishing Boats	The number of other angler boats near fishing location	1. The usual number of other boats near the location 2. 15% fewer boats 3. 30% fewer boats
Number of Boats	The number of other non-angler boats near fishing location	1. The usual number of other boats near the location 2. 15% fewer boats 3. 30% fewer boats
Restrictions	Percent area of zone closed to use	1. No area closed 2. 25% of reefs in zone closed 3. 50% of reefs in zone closed 4. 75% of reefs in zone closed
Number of Species	Number of different species	1. No increase in numbers of species caught 2. Fewer species caught 3. More species fish caught
Number of fish	Overall amount of fish caught	1. No increase in numbers of fish caught 2. 10% more fish caught 3. 20% more fish caught 4. 30% more fish caught
Size of Fish	Percent of legal sized fish caught	1. No increase in the number of caught kept 2. 20% more keepers 3. 40% more keepers 4. 60% more keepers
Travel cost / day	Travel cost that an angler spends for a fishing trip per day (including gas and other trip expenses)	1. 10% less than your current total cost per day 2. Your current total cost per day 3. 10% more than your current total cost per day

**Demographic Profile.** The demographic questions are “core” questions and thus included in every version of the resident survey. This section is labeled as different Parts (e.g. Part G in Versions 1 and 2 and Part E in Version 3) of the questionnaire and is always the last section of a questionnaire version. Demographic profiles serve multiple purposes. First, many demographic factors are explanatory variables in various multivariate analysis (e.g. activity participation, spending and nonmarket economic valuation). Second, the demographic profiles allow us to compare our samples to the general population to assess whether we got representative samples and to analyze potential nonresponse bias. Third, demographic factors are used for post sample weighting.

Questions 1 and 2 ask about the number of permanent residents of Monroe County live in the household and how many of these people are 16 years of age or older. This information will allow us to compare household sizes with Census and provide important information for extrapolating estimates from sample to population.

Question 3 asks about the closest mile marker to the respondent's residence. This will allow us to calculate mileage from the respondent's residence to the site of the last trip for the expenditure profile.

Question 4 asks about access to the water from respondent's residence. This is a key feature of the Florida Keys as many residents live on canals, which provide a place to dock their boats and increase the probability of participating in boating activities. Question 5 asks if they own a boat.

Question 6 asks for how many years the respondent has lived in Monroe County. Various relationships have been found between experience and other project measurements. Satisfaction ratings and years of experience are highly correlated. In many studies in Florida, it has been found that there is negative relationship between participation in various recreation activities and years of experience living in Florida.

Questions 7 thru 14 are focused on the usual demographic factors for comparison with Census data and supporting other analyses. Question 7 is used to derive age. Questions 8 and 9 address race/ethnicity. Question 10 addresses level of educational attainment and question 11 addresses employment status.

Question 12 asks if the respondent works outside Monroe County. This is important information in our methods for estimating the amount of visitors that access the Florida Keys via the highway and supplements information obtained from the Census of Inter-county Commuters.

Question 13 obtains zip code of the residence. Originally, this was to be a telephone/mail survey. This may not be needed if it is a mail survey only.

Question 14 is total household income before taxes and is a critical demographic factor for many analyses.

## **Visitor Survey**

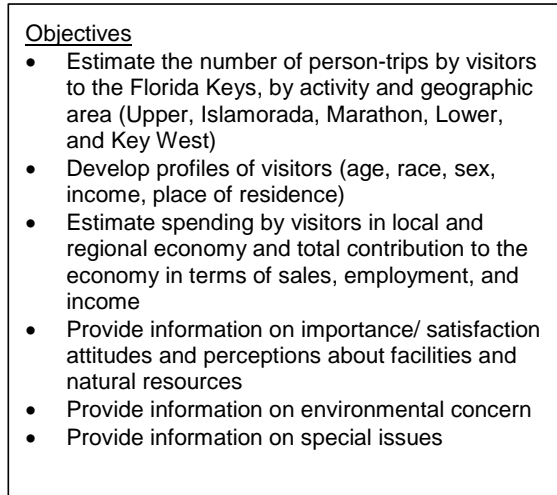
In 1995-96, the visitor survey was done using two separate sample designs. We propose to use the same sample designs, only modified with the current changes in institutional structures. For detailed sample designs, estimation methods, analyses of nonresponse bias and sample weighting used in 1995-96, see Leeworthy (1996). For an overview of objectives from each of the two visitor samples proposed and the components of each questionnaire see Figure 2. Figure 3 provides a graphic overview of the different questionnaire forms that will be discussed below.

**Sample 1. Survey of Air, Auto and Cruise Ship passengers.** There are essentially three ways that visitors access the Florida Keys: 1) by Air through either Key West International Airport or Marathon Airport. In 1995-96, Marathon provided commercial airline service; now Marathon only provides service to private airplanes; 2) by Auto, U.S. 1 is the only road which can be used to access the Florida Keys; and 3) by Cruise Ship. All cruise ships visit Key West only. A fourth way visitors can access the Florida Keys is by private boat. In 1995-96, we estimated that less than one percent of visitors access the Florida Keys by their own boat. Some additional

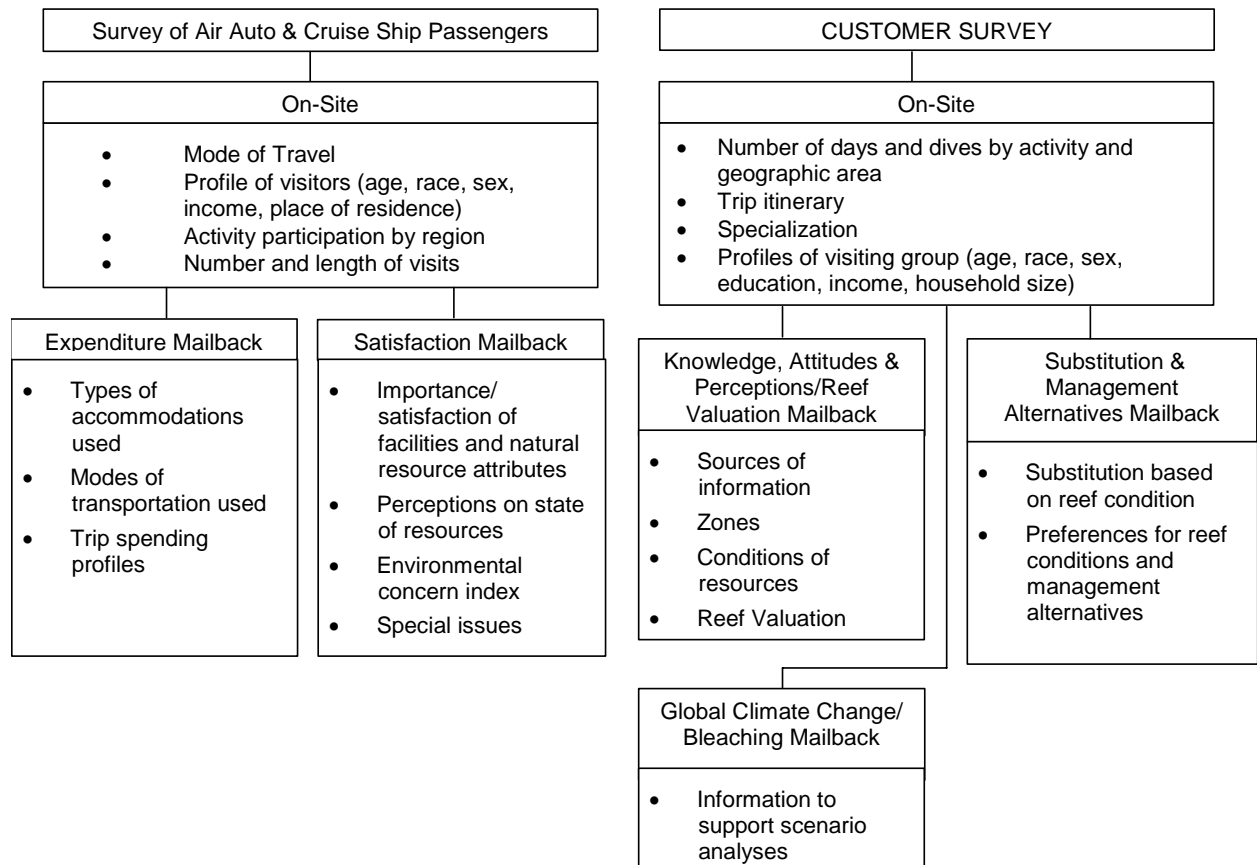
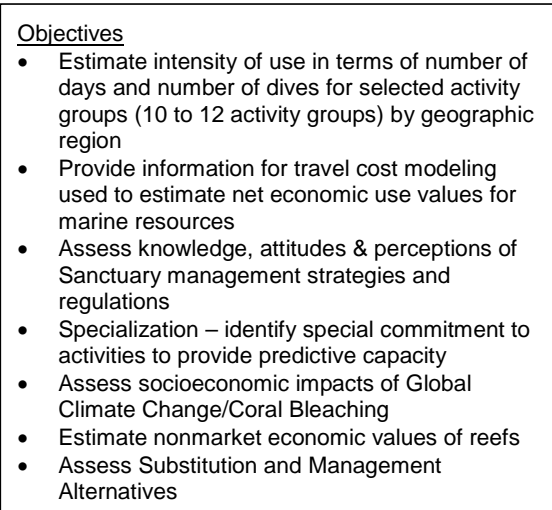
ways visitors can access the Florida Keys are by commercial bus service and a new ferry service from Naples Florida to Key West. Both of these services are relatively small, but they will be included in the survey.

**Figure 2. Visitor Survey Samples**

Sample 1



Sample 2

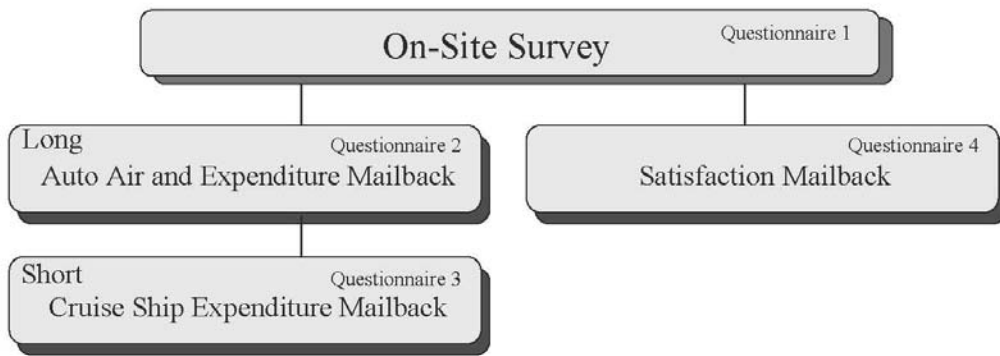


### Figure 3: Visitor Survey Forms

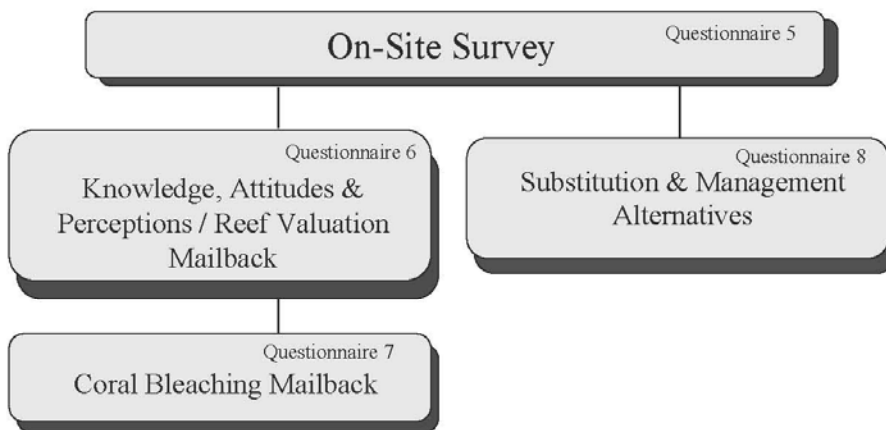
Attached are the eight questionnaires used in three different samples of visitors to the Florida Keys.

Each of these questionnaires is numbered in the upper right hand corner. A schematic of the study design and the eight questionnaires is shown below.

#### Sample 1. Air, Auto, and Cruise Ship Survey



#### Sample 2. Customer Survey, Florida Keys



Sample 1 is a stratified random sample of visitors and is used to derive estimates of total visitation and provides the information necessary for deriving sample weights for Sample 2 called the CUSTOMER Survey Sample. CUSTOMER is not a truly stratified random sample, as will be explained below.

Sample 1 is stratified by the different types of access. We will have air enplanement counts for all flights leaving the Florida Keys from the Airport Authority, traffic counts from the Florida Department of Transportation at the 106.5 mile marker for all traffic by the hour every day of the year, and number of cruise ships and number of people onboard each cruise ship from the Key West Port Authority. A highway survey will be conducted 80 days per year stratified by season, type of day (weekday and weekend/holiday) and time of day (morning and afternoon). The airport surveys will also be stratified by season, type of day and time of day. The cruise ship survey will also be stratified by season but will be based on when port calls are scheduled. Each ship scheduled has a known passenger capacity and arrival and departure time. The ferry and bus services are highly variable due to low demand. We use the same design procedures as used for cruise ships. See Leeworthy (1996) for how estimates of total person-trips and total person-days were estimated.

*Auto Survey-Selection Method.* Off-duty police officers are used for traffic control. A permit will be obtained from the Florida Department of Transportation to conduct the survey. Signs are set up notifying drivers that a survey is being conducted. Two police cars are placed on both sides of the northbound lanes of the highway with their emergency lights on to calm the traffic. An officer selects randomly (every 5<sup>th</sup> car on light traffic days, every 10<sup>th</sup> car on medium traffic days and every 20<sup>th</sup> car on heavy traffic days) eligible vehicles (eligible vehicles exclude commercial vehicles and buses) and points to the driver and directs them into a parking lot. The police officer never comes into contact with people in selected vehicles; he simply points at them and directs them into the parking lot. Cones are placed in the middle of the highway to help direct drivers into a parking lot. Once in the parking lot, drivers are greeted by a member of the Bicentennial Volunteers, Inc. and asked if they are permanent residents of Monroe County. If so, they are thanked, tallied on the Tally Sheet (see Tally Sheet, Auto Survey, U.S. 1) and sent back into the traffic stream. If not permanent residents of Monroe County, they are asked if they are ending their stay in the Florida Keys: if not, they are thanked and sent back into the traffic stream. If they are ending their trip to the Florida Keys, they are then screened for having participated in any recreation/tourist activities (the volunteer hands them the Blue Card which lists recreation/tourists activities). Those not qualifying for the survey are thanked and sent back into the traffic stream, if they qualify they are asked if they would participate in a 5-10 minute interview about their visit to the Florida Keys. If they refuse or there is a language barrier, they are sent back into the traffic stream, and if they agree to the interview they are sent to a parking spot where another volunteer interviews them. The tally sheet is used to record the disposition of each contact. Also, traffic is tallied every 15 minutes of a sampling period for 10 minutes at a time to determine the proportion of eligible vehicles in the car traffic counts (see Tally sheet, left and right lanes of U.S. 1). The complete method of estimation is explained in Leeworthy (1996).

*Air Survey-Selection Method.* A schedule of flights leaving the Florida Keys is first obtained from the airport manager. Sampling days and times are then selected. Sampling is also stratified by season (summer and winter). People are screened after they pass through security.

Volunteers use the Tally Sheet, Air Survey to screen for eligible respondents. Again, respondents are chosen randomly using a similar rule as in the Auto survey by choosing every 5<sup>th</sup>, 10<sup>th</sup> or 20<sup>th</sup> person based on the number of people coming through security to the terminal departure lounge. People are first asked if they are a permanent resident of Monroe County, if so they are thanked and told we are only interviewing nonresidents of Monroe County and then tallied. If they answered no, they are asked if they did any recreation/tourist activity. The volunteer hands them the Blue Card, which lists what we mean by recreation/tourist activities. If no they are thanked and tallied; if yes, they are asked if they will participate in a 5-10 minute interview. If no, they are tallied and if yes, they are interviewed.

For private planes in Key West and Marathon, we will select random days and times stratifying by season, type of day and time of day as with the auto and air surveys and use the same tally sheet as the commercial airplane passenger survey. We will label the tally sheet as the private plane tally sheet with one for Key West and one for Marathon. The airport managers will provide the numbers of private planes departing each day.

*Cruise Ship Passenger-Selection Method.* All cruise ship passengers that disembark the ships in Key West are considered visitors that participated in recreation/tourist activities, so the selection method and tallying is shortened versus the auto and air surveys. However, in 1995-96, we learned that not all passengers disembark the ships in Key West. Some passengers on ships that anchor in the channel and then transport passengers from the cruise ship to the docks choose not to visit Key West and stay onboard. We send a team to count the number of passengers that get off the ships that anchor in the channel. We do this for a sample of ships each season to derive an average percent of passengers that disembark the ships. We then apply the estimated percent of passengers that disembark the ships to the total number of passengers on the ship manifests, maintained by the Port Authority, to arrive at estimates of passengers that are recreating visitors.

For the cruise ships, ship port calls are first obtained from the Port Authority. Ships are randomly selected for passenger interviews. Ships are stratified for selection by passenger carrying capacity and by whether they are anchored at the docks or ferry their passengers from ships anchored in the channel. Separate samples are done by season (summer and winter).

For each ship selected, volunteers randomly select passengers as they are approaching the ship to get back aboard thus ending their visit to Key West. Again random selection is done by selecting every 5<sup>th</sup>, 10<sup>th</sup> or 20<sup>th</sup> passenger depending on volume of traffic. Passengers are simply asked if they are a permanent resident of Monroe County. If yes, they are thanked and told we are only interviewing nonresidents of Monroe County. If no, they are asked if they would participate in a 5-10 minute interview. Again, disposition of each contact is tallied on the Tally Sheet, Cruise Ship.

*Auto, Air and Cruise Ship Survey Questionnaire.* The survey is limited to four pages (three pages of questions) to stay within the 5-10 minute survey time period. Surveys conducted off the highway, in the airports and on the cruise ships cannot exceed 10 minutes since people are ending their trips and are in the process of traveling. We have not changed our survey questionnaire from that used in 1995-96, so we are certain in will be successful in staying within the 5-10 minute constraint.



The Auto, Air and Cruise ship survey on-site questionnaire has several cards that are printed on color paper and assist respondents in answering questions. The Green Card is the “Respondent Card” and contains the “Confidentiality Statement”; Section 1, responses to question 11a; Section 2, responses to question 12; section 3, responses to question 15b; and Section 4, responses to question 16. The “White Card” is the Activities List and the Map of the Florida Keys, which specifies the five regions of the Keys is the third card used. The “Yellow Card” is the Special Events Card” that lists special events promoted by the TDC. The “Yellow Card” cannot be produced at this time since events are time dependent and we don’t have the schedules of events for the time periods of sampling.

To begin the interview, the interviewer is handed the Green Card and asked to read the Confidentiality Statement. The interviewer assigns an interview number to each onsite questionnaire. This is important because there are two mailback questionnaires that are handed to each respondent, if they agree to participate in the mailback portion of the survey. These interview numbers must be written also on the mailbacks so data on the mailbacks can be linked to the on-site questionnaire data.

The interviewer records the location of the interview, the day, month and time of the interview and the number of people in the vehicle (auto survey) or number of people in the party (air and cruise ship survey).

Question 1 asks for the number in the vehicle (party) that is age 16 or older. Question 2 obtains information on primary residence. Information is obtained on City or Nearest City; County (if USA); State (if USA); zip code (If USA); country; and then country/region of world.

Question 3 asks for time of arrival in the Florida Keys (month, day and time). This information is combined with time of interview to construct an alternative measure of length of stay.

Question 4 asks about the number of times the respondent visited the Florida Keys and participated in recreation/tourist activities over the past 12 months. Similarly, question 5 asks the number of days the respondent spent in the Florida Keys over the past 12 months where the respondent did some recreation/tourist activities.

Question 6 asks the number of nights spent in each of the five regions of the Florida Keys on the current trip. The interviewer first determines if there was an overnight trip from information obtained in question 3 and the interview date. If overnight trip, they hand the respondent the map of the Florida Keys with the five regions of the Florida Keys.

The next section of the survey (page 2) asks about activity participation in each of the five regions. The interviewer first hands the respondent the “White Card”, which is the activity list. The interviewer first asks question 7 which asks the respondent to read of the activity numbers for each activity they the respondent or anyone else in their vehicle (party) did during this trip to the Florida Keys. Question 8 then asks for each activity in which regions the respondent participated in the activity. Question 9 then asks for how many others participated in each activity in each region.

The next section (top of page 3) asks about special events and the primary purpose of the trip. All of these questions support objectives of the Monroe County Tourist Development Council (TDC). Questions 10 thru 11c address special events. A “Yellow Card” will be produced closer to the time of the beginning of the summer season survey (June 15 – August 31, 2007). The “Yellow Card” will list all the special events sponsored by the TDC with names and dates of the events. The interviewer first hands the “Yellow Card” to the respondent, then asks Question 10, which simply asks if the respondent attended any of the events. The respondent is then handed the “Green Card” and referred to Section 1 of the “Green Card” for answers to question 11a, which asks about the importance of the special events in planning the trip to the Florida Keys. Question 11b follows with asking if attending any special events resulted in extending the length of stay on the trip. If yes, question 11c. asks for how many days longer the trip was extended. Appropriate skip patterns are built into each question to direct the interviewer to the next appropriate question.

Question 12 asks for which reason best describes the primary purpose of the trip to the Florida Keys. The respondent is referred to Section 2 of the “Green Card” for the responses to this question.

The next to last section of the survey (bottom of page 3) is the demographics section. Questions 13 thru 17, obtain information on the respondent only for age, sex, race/ethnicity, household income, and ownership of a second home in the Florida Keys.

Question 18 is important for the expenditure mailback survey and asks who is paying the expenses and information necessary for putting expenditures on a per person per trip basis.

The last section of the survey (page 4) asks respondents if they would agree to participate in the mailback surveys. The respondent is informed of a sweepstakes/lottery that will be conducted for all people that respond to the mailback survey. Respondents are told there are two surveys; the expenditure survey and the satisfaction survey. Agreeing to take both surveys and responding to both surveys will double their chance of winning the sweepstakes/lottery. See answer to Question 9 on gifts to respondents.

Names, addresses and telephone numbers are obtained that will allow for follow-up efforts; one post card reminder is sent after two weeks and a full survey after one month if they have not returned their completed mailback questionnaires. The information is also used to notify winners and award the prizes. This information is destroyed after the prizes are awarded.

Separate surveys are conducted of summer and winter season visitors. Almost every statistical test we have ever performed has found statistically significant differences between summer and winter season visitors. For the Florida Keys, as with the rest of South Florida, the summer season is defined as from June through November and the winter season from December through May. Our survey year will consist of the summer season being June through November 2007 and the winter season being December 2007 through May 2008. Our samples will be taken for the summer season from June 15, 2007 through August 31, 2007 and the winter season samples will be taken between January 15, 2008 and April 31, 2008. These are approximately the same

times used in the 1995-96 and 2000-2001 studies. See Leeworthy (1996) for the 1995-96 study and Johns et al (2003b) for the 2000-2001 study.

***Expenditure Mailback.*** This questionnaire is almost identical to the one used in 1995-96. The only difference is a couple of new expenditure items. As described above, this questionnaire is handed to all Auto, Air and Cruise Ship passengers that agree to participate in the mailback survey. The questionnaire is designed as a self-mailer, which can be folded and sealed and dropped in the mail for delivery. At this time, we don't yet know who will implement the survey (contracts or agreements have not yet been completed), so the introductory letter's letterhead and the return address are not correct, they are just used as holding places.

There are two versions of the expenditure mailback. One version is for those who accessed the Florida Keys by Auto and Air, and were on trips of more than one day. This version can generally be referred to as the "long version". The second version is the "short version" and is designed to reduce the burden and increase response rates for those who accessed the Florida Keys by Cruise Ship and those who were on day-trips. In our analysis of nonresponse bias in the 1995-96 study, we found that day-trippers had a lower response rate and had lower expenditures both on a per person-trip and on a per person-day basis. This resulted in a slight upward bias in estimates of expenditures, which was adjusted for by sample weighting (see Leeworthy, 1996).

*Long Version.*

Part A focuses on the expenditures made on the recent trip (the interview trip). First respondents are asked who was paying expenses. There are two choices. If they paid their own expenses or if they shared expenses with someone else, they are asked to check the first box and then are instructed to report only expenses they personally paid for. If they were paying all the expenses for themselves and for one or more others, they are asked to check the second box. If they checked the second box, they are asked for the number of people they were paying expenses for, including themselves. Again, this will allow for normalizing estimates of expenditures per person-trip. Estimates of expenditures per person-trip will be multiplied by aggregate estimates of person-trips to derive total aggregate expenditures.

Trip expenditures are obtained for each expenditure item in three ways and for reporting purposes are organized into three columns. Column A: Total amount spent for this trip; Column B: Of the amount in column A, how much did you spend in South Florida; and Column C: Of the amount in column B, how much did you spend in the Florida Keys.

Respondents are first provided an explanation of the three columns and the definition of South Florida, then are provided an example using expenditure item "LODGING, PRIVATELY OWNED."

Part B. Annual Vacation and Equipment Purchases. The expenditure items in this section are non trip related expenditures. We ask for expenditures during the past 12 months. First, questions 1 and 2 ask for total boating trips away from home and the number of those trips to the Florida Keys over the past 12 months. Respondents are then provided an example and how the answers in the example should be recorded in the three columns. The expenditure items are

broken down into three sections: 1) Major Recreational Equipment, 2) Boating Equipment and 3) Annual Lodging-related Fees.

The last page of the survey provides for people supplying their names, addresses and telephone numbers so they can be entered into a sweepstakes/lottery to win various prizes. The prizes are listed. We don't know the exact prizes that will be offered at this time, so the current prize list is just a holding place. The prizes are provided by private businesses as part of their contribution to the project. A local bank will conduct the sweepstakes lottery. We (whoever is the contractor implementing the surveys) will provide the bank a list of database identification numbers. The bank will select the winning numbers and we will then send the bank names, addresses and telephone numbers of the winners. We will then destroy all names, addresses and telephone numbers in project databases. See details in answer to Question 9 which addresses gifts to respondents.

*Short Version.* This version of the expenditure survey was designed for Cruise ship passengers, who in 1995-96 did not stay in Key West for more than a few hours. Based on the results of the 1995-96 study, we will give this version to not only Cruise Ship passengers, but all those who are day-trippers. As discussed above, we think this will reduce nonresponse bias associated with day-trippers with low expenditures that don't want to fill out a large mailback on expenditures since so many of the expenditure items were not relevant (see Leeworthy, 1996 which found that there wasn't nonresponse bias in the Satisfaction mailback—people were willing to answer a more significant set of questions, if the questions seemed more relevant). In 1995-96, both the expenditure and satisfaction mailback were given to the same people, but the satisfaction mailback had significantly higher response rates.

The short version of the expenditure mailback questionnaire differs from the long version by a shorter list of expenditure items for trip expenditures and total elimination of the non-trip related expenditures.

*Satisfaction Mailback.* As in the 1995-96 and 2000-2001 studies, visitors interviewed on-site are asked to participate in two mailback surveys (expenditure and satisfaction). They are handed both the expenditure and satisfaction mailback surveys, which are both designed as self-mailer questionnaires, if they agree to participate. As with the expenditure mailback, the introductory letter on the first page, the return address/self-mailer page, and the sweepstakes/lottery cannot be completed at this time and the current versions just serve as holding places.

Question 1a, asks respondents to rate the importance of 25 natural resource attributes, facilities and services as they contribute to an ideal recreation/tourism setting for the activities they did in the Florida Keys on a five point scale, where 1=Not important and 5=Extremely important. Not Applicable (NA) and Don't Know (DK) responses are also provided. The respondent is asked to simply circle the appropriate response for each item.

Question 1b, asks the respondents to rate their satisfaction with the same list of items for which they rated importance in Section 1a. Again a five point scale is used with 1=Terrible to 5=Delighted. Again, respondents can answer Not Applicable (NA) or Don't Know (DK).

In analysis, the information from questions Ia and Ib are combined in what is called importance-satisfaction or importance-performance analysis (see Leeworthy and Wiley, 1997 for the importance-performance analysis using the 1995-96 study data and Leeworthy et al, 2004 for a comparative analysis of 1995-96 and 2000-2001 data). Importance-performance analysis provides a simple but more powerful method of analysis and interpretation than simple satisfaction scores. It allows for assessment of relative priorities.

The next section uses a five-year retrospective to look at trends in satisfaction scores for 11 of the 25 items included in questions Ia and Ib. The 11 items were selected by project partners based on their priorities and by reducing the list, reduces respondent burden. In the baseline 1995-96 study, the questions were designed for analysis of trends because no trend data existed. In this application, we have the 1995-96 data and we can compare changes in scores with the new data from questions 1a and 1b. We have decided to maintain this section since it provides an alternative method of assessing trends.

Question Ic asks if the visitor had visited the Florida Keys more than five years ago. This is important because in analyzing the 1995-96 and 2000-2001 data we found that those who had more experience with use of the Florida Keys had significantly different satisfaction scores (lower) than those who had less experience—a frame of reference effect. Those who visit the Florida Keys for the first time think everything is great and provide relatively higher satisfaction scores.

Question Id asks the respondent to rate their satisfaction, as of five or more years ago, with 11 items. The same five-point satisfaction scale used for questions Ib is used.

In the next section, a few special issue questions are asked. These questions address various issues for project partner objectives. Questions IIa and IIb address issues on boating for the FKNMS. Marina capacity and boat access to FKNMS waters is thought to be limited relative to growing demand. The FKNMS wants to know how many boats are trailered versus stored in marinas in the Florida Keys. This will provide aggregate estimates of capacity that will support future micro studies of capacity and the relationship to particular reefs.

The remaining questions in this section address issues of the Monroe County Tourist Development Council (TDC). Questions IIIa through IVc address the issue of return visitation and if cruise ship passengers return to the Florida Keys as non-cruise ship visitors on subsequent trips.

The last section of questions is the 16 questions for the Environmental Concern Index (ECI) or the Environmental Behavior Index (EBI) discussed in the Resident Survey above. The index will allow us to test if there are changes in the ECI or EBI of the visitor population.

**Sample 2. CUSTOMER Survey.** The CUSTOMER survey has its origins in the 1972 and 1977 Federal Estate Surveys, which later became the Public Area Recreation Visitor Survey (PARVS). PARVS was implemented on hundreds of recreation sites between 1985 and 1992. PARVS became CUSTOMER in the early 1990's. So CUSTOMER is the product of many years of research and learning about surveys on outdoor recreation. CUSTOMER was used in both the

1995-96 and 2000-2001 surveys. Actually, the Auto, Air, Cruise Ship Survey questionnaires are the CUSTOMER Survey questionnaires shortened. OMB approval for CUSTOMER expired 4/31/2006 and the survey was conducted under the burden hours of the USDA, Forest Service, hence the approval number 0596-0110, even though CUSTOMER was a multiple Federal agency effort including NOAA. As in the 1995-96 and 2000-2001 applications of CUSTOMER in the Florida Keys, it has been modified to meet the needs in the Florida Keys. There is an on-site questionnaire that takes on average 15 minutes to complete. There are also three follow-up self-mailer mailback questionnaires designed to achieve other project objectives (see Figures 2 and 3). These objectives were already discussed in the resident survey (e.g. Global Climate Change/Coral Bleaching and Coral Ecosystem Services: Societal Preferences and Policy/Management), so they will not be repeated here.

What is important to note here is that as in the 1995-96 and 2000-2001 studies, CUSTOMER is not a strictly stratified random sample. Because the on-site component of CUSTOMER takes on average 15 minutes to complete, it cannot be implemented in the Auto, Air and Cruise Ship Survey, which is a strict stratified random sample. Sample stratification in CUSTOMER is achieved by the use of “local knowledge”.

The Monroe County/Florida Keys is unique in that it has five different local Chambers of Commerce. In addition, the TDC has five districts (our regions) that correspond to the jurisdictions of the Chambers of Commerce. Within each TDC district there are sub-groups called umbrellas that promote different aspects of the tourist industry. There is a dive umbrella, a fishing umbrella, and a historic site and museum umbrella in each region. In addition to the Chambers of Commerce and TDC, there are several other organizations representing hotels/motels, dive shop owners/operators, and fishing guides. This local infrastructure contains a wealth of knowledge about local recreation/tourism.

In the 1995-96 and 2000-2001 studies, we used “local knowledge” to help us stratify our CUSTOMER samples across and within regions of the Florida Keys to get “representative” samples of visitors. In both previous studies, locals provided us with 200 interview sites and helped us stratify the samples across the 200 sites. We randomly select visitors at each of the 200 sites, but it is “local knowledge” that determines how we stratify the samples. That is why we describe CUSTOMER as not being a strict stratified random sample.

In analyzing the 1995-96 study data, which used the same two-sample approach being proposed here, we tested for differences between the two-samples. We found few statistically significant differences for demographic factors and activity participation. Sample weights were constructed using sample 1 to weight for sample 2. See Leeworthy (1996) for a discussion of these tests and the sample weighting. In the 1995-96 study, we concluded that “local knowledge” was very successful in providing us with a “representative” sample. Of course there is no guarantee that we will have the same success with “local knowledge” as we did in 1995-96, but all the same local infrastructure exists today and we believe they are even more informed today than they were more than a decade ago. So we propose to follow the same protocols as in the 1995-96 study relying on sample 1 to weight sample 2 for any discrepancies.

*CUSTOMER Selection Rules.* Although visitors are selected at random, there are rules for

qualification. As with the Auto, air and Cruise ship survey, they must not be permanent residents of Monroe County/Florida Keys, they must have participated in some form of outdoor recreation on their current visit, and they must be ending their visit. This last criterion is critical because we use CUSTOMER to estimate the intensity of use for each recreation activity in each region of the Florida Keys. We don't want people extrapolating about what they will or might do; we want to know what they did. We do relax the "exit condition" in a couple of circumstances. In the 1995-96 study, we learned that people in campgrounds are hard to interview in the morning they are leaving, since they are busy breaking camp. Interviewers try to interview at campsites in the evenings and if visitors are planning to leave before noon the next day, they are then qualified for the interview. Also, at other interview sites, when interviews are conducted at the end of the day, if the person will be leaving the Florida Keys before noon time the next day, they are qualified for the interview.

***CUSTOMER, On-site Survey Questionnaire.*** The CUSTOMER Survey On-site questionnaire is an 11-page form not including the cover page. On the bottom right corner of the cover page is where the interviewer records a unique interview identification number (Survey #). The Survey # allows connecting the on-site data to follow-up mailback questionnaire data.

On the top of page 1 there is information the interviewer fills out before the interview begins. The interviewer writes down their name, fills in the Location Code (each of the 200 survey sites is given a three-digit code), the type of interview site is recorded, the agency for which the study is being done (all will be recorded as NOAA here, but this field is maintained so if data is shared with the U.S. Forest Service to support their assessments of the supply and demand for recreation under the Resource Planning Act), the date of the interview (month, day and time), the type of day of the interview (weekday, weekend or holiday) and number of vehicles or intervening groups between interviews. This last item is used to look at cooperation rates.

Introduction and Qualifying Questions. These are the selection rules described above. Also once a visitor qualifies and agrees to be interviewed he/she is handed the "Yellow Card" called the Respondent Card and asked to read the Confidentiality Statement.

Trip Profile. The first section of the survey obtains information on the trip profile and contains 15 questions that address place of residence (Question 1); purpose of trip (Question 2); time of arrival in the Florida Keys (Question 3); time of departure or when ending the trip (Question 4); hours and/or miles of travel from residence to Florida Keys (Question 5); time spent visiting other sites on the trip (Question 6); was Florida Keys primary destination of trip (Question 7); distance Florida Keys is from primary destination of trip (Question 8); did travel to Florida Keys from a temporary location outside the Florida Keys (Question 9); will return to temporary residence after visit to Florida Keys (Question 10); distance from temporary residence to the Florida Keys (Question 11); have been to Florida Keys before (Question 12); year first visited Florida Keys (Question 13); number of visits to Florida Keys for outdoor recreation in the past 12 months (question 14); and number of days spent in Florida Keys during the past 12 months (question 15).

The trip profile information supports the travel cost model. The travel cost model relates the number of trips a respondent has taken to the Florida Keys over a 12-month period to the

estimated travel cost per trip and other factors (e.g. income, age, race/ethnicity, length of trip, substitute sites, etc.). The travel cost model is used to derive nonmarket economic use values for natural resource use in the Florida Keys (see Leeworthy and Bowker, 1997 for estimation of the travel cost model from the 1995-96 data). Answers to Question 1, 2, 3 (combined with question 4 to estimate length of trip), 13 and 14 can be used to test for differences between the CUSTOMER sample and the Auto and Air samples (Cruise Ship passengers are not included in the CUSTOMER sample because of their short stay and the length of the CUSTOMER survey). Questions 5 thru 11 provide the necessary information to adjust the travel cost model for multiple-destination bias. Question 2 makes use of the “Yellow Card” Section 1 to assist respondents in answering Question 2.

Activity Participation and Use. Questions 16 thru 19 obtain detailed information on activity participation and use by region for all members of the recreation party. The “White Card” or “Activities List” is handed to the respondent to assist them with answering the questions in this section. The map of the Florida Keys showing the five regions is also handed to the respondent. Number of days is only asked for those activities which have an “A” suffix on the activity number. This is done to reduce burden on respondents for activities where such information is not a high priority. Estimates of recreation participation by region can be used to test if “representative” samples were achieved in CUSTOMER versus the Auto and Air components of the Auto, Air and Cruise Ship Survey. The main objective in CUSTOMER is to get estimates of the intensity of use by activity and region as measured by number of days of use. The time available for the Auto, Air and Cruise Ship survey is too short to obtain this kind of detailed information.

Questions 20 thru 28 are focused on reef use both artificial and natural, separately. The focus here is limited to the activities that were undertaken during the current trip. The “Blue Card” or “Activities List for Reef Use” is used to help visitors with what activities are generally done on the reefs. Again the number of days and dives are only asked for those activities which have an “A” suffix on the activity number. Again this is done to lower burden on respondents for activities for which this information is not a high priority.

A check box is provided for each region on the top left corner of the area for recording answers. This box is checked when there was no reef use in the region. The questionnaire has also been designed for efficient coding by the interviewer. Questions 22 thru 28 are repeated over the recording matrixes for each region, so the interviewer doesn’t have to flip pages back and forth in the middle of the interview.

Questions 29 thru 31 focus on the respondents “main activity”. Question 29 asks which, if any, activity was the main reason for making the trip to the Florida Keys. This question is used as a screening question for answering questions 31 thru 38. Question 30 asks the respondent how many visits to the Florida Keys over the past 12 months were to do the main activity. And, Question 31 asks the respondent how many visits they made to any site (not just Florida Keys) for the main activity over the past 12 months.

The next set of questions (32 thru 38) are the “specialization” questions discussed in the Resident Survey above designed by researchers at the University of Massachusetts-Amherst, Human



Dimensions Program. The questions are only asked of those whose main activity was snorkeling, SCUBA diving or fishing. If one of these activities was not identified as the main activity in Question 29, then the interviewer skips to Question 39. For those who said that their main activity was snorkeling, SCUBA diving or fishing, the “Orange Card” was designed to help respondents answer the questions in this section. For questions 32 thru 35, the respondent simply reads a number corresponding to their answer to each question from the “Orange Card”. The same is true for each of the items in Questions 37 and 38.

Question 39 is used to obtain information on the number of people covered by the expenses the respondent made on the trip. This is used in the travel cost model to adjust for the number of people covered in the travel cost (See Leeworthy and Bowker, 1997 for an application to the 1995-96 data). Question 40 is also related to the travel cost model in addressing the value of time. Question 41 obtains information on all the modes of travel used on the trip to the Florida Keys. This question serves several purposes. First, it is used to segment the visitors into main type of access so comparisons can be made with the Auto and Air components of the Auto, air and Cruise Ship Survey for testing sample representativeness and for sample weighting. Second, the information is used in conjunction with the expenditure survey in the Auto, Air and Cruise Ship Survey to derive travel costs by different modes of travel (see Leeworthy and Bowker, 1997). Third, the TDC would like to know the various modes of travel people use on their trips to the Florida Keys.

Demographic Information. In this section information is obtained on demographic information with details on many items for up to eight people in the recreation party. Question 42 obtains information on the party size. Question 43 asks about the type of recreation party. Section 2 of the “Yellow Card” is used to assist the respondent. Question 44 asks about the respondent’s household. Again, the “Yellow Card”, Section 3 is used to assist respondents in answering this question. Question 45 asks about Household income before taxes. Again, the “Yellow Card”, Section 4 is used to help respondents answer the question. After Question 45, the respondent is asked to help the interviewer fill out the matrix on demographic characteristics for up to eight people in the recreation party. Demographic factors include age, sex, ethnicity, race, educational attainment, disability and employment status. Again, all these demographic factors can be used in various analyses, but also in checking sample representativeness.

On the final page of CUSTOMER On-site, there is a section for the interviewer to ask if the respondent will participate in a mailback survey. There are three mailback survey questionnaires. The first one includes the Knowledge, Attitudes & Perceptions of Sanctuary Management Strategies and Regulations and Nonmarket Economic Valuation of Reefs, the second is for the Global Climate Change/Coral Bleaching issue, the third is for Substitution and Management Alternatives using choice questions. These are the same questions as used in the Resident Survey. Each respondent will be asked to participate in two of the three mailback surveys. The respondent is told by completing and returning both questionnaires it will double their chance in the sweepstakes/lottery. Which pair of mailbacks a particular respondent will receive will alternate on different days. The objective will be to obtain sufficient sample sizes in each season for each questionnaire.

***Knowledge, Attitudes & Perceptions of Sanctuary Management Strategies and Regulations and Non-market Economic Valuation of Reefs Mailback Questionnaire.*** The questions used in each of the two modules of questions are the same as are included in the Resident Survey discussed above. The difference for the visitor survey is the combination of modules of questions. In the Resident Survey, nonmarket economic valuation of reefs was combined with the expenditure module. There is a direct connection with trip expenditures and the additional amount of expenditures people are asked to make in the choice questions. In the visitor application, we don't ask visitors to go through the details of providing their expenditures; we just ask them to think about what it cost them on their current trip. We are not sure if this will make any difference, since people should have a general idea of what their trip costs were and should be able to judge the amount in addition we are asking them to pay for the different reef protection programs.

An important difference between the resident and visitor surveys for the nonmarket economic valuation of reefs is the randomly assigned dollar amounts. The amounts are greater than those used for residents because of the much higher expenditures per person-trip by visitors. We use the same values used in the 2000-2001 study of reefs.

***Global Climate Change/Coral Bleaching.*** The same questions are used in both the stated preference choice questions and contingent behavior questions sections as in the Resident Survey. There are also four different versions as in the Resident Survey with each visitor asked six choice questions so that 24 different combinations of management strategies out of the total of 81 possible combinations of strategies are implemented. Randomly assigned dollar amounts in each choice question are done in the same manner as described in the Resident Survey.

The difference between the Visitor and Resident Surveys is that, in the Visitor Survey, the Importance-Satisfaction module of questions is used at the beginning of the mailback questionnaire. This is done for two reasons. First, importance and/or satisfaction ratings may be related to how people answer the choice questions. Second, the importance-satisfaction ratings provide another dimension to check if the CUSTOMER sample is yielding "representative" samples. This will be done by comparing importance and satisfaction scores from the CUSTOMER survey with the Auto and Air components of the Auto, Air and Cruise Ship Survey.

***Substitution and Management Alternatives (Choice Questions).*** Again, the same questions are used as in the Resident Survey for both the "Substitution" module of questions and the Management Alternatives (choice questions).

## **By Whom**

At this time we have not selected a contractor to implement the survey. Dr. Vernon R. (Bob) Leeworthy is the project leader and Leader of the Socioeconomic Research & Monitoring Program for the FKNMS. Bob will be the Contracting Officer's Technical Representative (COTR) on any contract to implement the survey. It hasn't been decided yet whether Bob will be involved in analysis and report writing or if all this will be done by contract. Hans Hoegh-Guldberg will be analyzing the data and developing reports for the Global Climate Change/Coral

Bleaching. Professor David Loomis leads the University of Massachusetts-Amherst, Human Dimensions Program and will be responsible for analysis and reports dealing with information designed by his group.

### **How Frequently**

This is a one-time application. The recreation/tourism study was recommended to be done approximately every ten years. Some sub-components, importance-satisfaction ratings, are recommended to be replicated every five years.

### **How Collection Complies with NOAA Information Quality Guidelines**

*Utility:* Completing the approximate 10-year replication of the study on recreation/tourism will demonstrate to the public that the FKNMS is living up to its commitments to implementing the recommendations for the Socioeconomic Research & Monitoring Program for the FKNMS. Completing of the study will also allow for the analysis of what some are calling “shifting baselines”. What is meant by “shifting baselines” has to do with what people want from the natural resources of the FKNMS. The study attempts to address this issue by tracking who comprises the local resident and visitor populations, what activities they are undertaking, the intensities of the activities (measured in person-days of activity), their importance/satisfaction ratings on key natural resource attributes, their knowledge, attitudes and perceptions of Sanctuary management strategies and regulations and how they value the natural resources in the FKNMS. By taking a decadal look at trends in these measurements, we will be able to investigate if there are fundamental changes in what people want from the natural resources in the FKNMS. Ultimately this information will feed the adaptive management process.

Education and outreach is an important management tool in the FKNMS. The information provided in this project will be an overwhelming boon to the Education and Outreach Program of the FKNMS. Knowledge of who are the users of the FKNMS, their knowledge, attitudes and perceptions of Sanctuary management strategies and regulations and, how users get their information are all important in designing effective education and outreach efforts.

Economic valuation information is important for supporting both public and private investments in the protection of the natural resources of the FKNMS and supporting damage assessments and restoration efforts. While benefit-cost analyses of public investments, damage assessments, and restoration efforts require net economic valuation measures, many local decision-makers are more concerned with the economic impact in terms of local sales/output, income and employment. So we provide this capability as well.

*Integrity:* Procedures have been established to protect the proprietary information provided by all respondents to all surveys. All personal identification information is removed from all databases to be sent to NOAA or distributed to the public. Each individual is assigned a database identification number in the database so the data from different portions of the survey can be linked for analysis. Personal identification information obtained to support awarding prizes in the sweepstakes/lottery is destroyed after the prizes have been awarded. Release of proprietary

information is further protected by the Freedom of Information Act (5 USC 522 (b) (4)) concerning trade secrets or proprietary information, such as commercial business and financial records.

All project reports are converted to Read-Only in portable document format (pdf) before being placed on the NOAA Web site for public dissemination.

*Objectivity:* All analyses and reports developed in this project will be peer reviewed before release to the public. This is the NOAA standard for socioeconomic information under the Information Quality Act. All survey modules of questions included in this project have all been through peer review as well. Most of the survey questions have been tested and analyzed in previous applications. New modules of questions have been peer reviewed.

**3. Describe whether, and to what extent, the collection of information involves the use of automated, electronic, mechanical, or other technological techniques or other forms of information technology.**

No automated, electronic, mechanical, or other technological or other forms of information technology are being used. All surveys are either conducted face-to-face and recorded on paper forms or mail survey forms are used.

**4. Describe efforts to identify duplication.**

There are three major efforts either being planned or underway in Southeast Florida which address the socioeconomics of reef use; the study proposed here, the Florida Reef Resiliency Program, and the Southeast Florida Coral Reef Initiative. We have formed a steering committee with representatives from each of these studies. We have all agreed to harmonize our studies to avoid duplication, but most importantly to take consistent measurements when possible so as to support larger area assessments and to make comparisons across areas. Sample designs and questionnaires for all surveys are shared among projects. Dr. Vernon R. (Bob) Leeworthy is the Leader of the Socioeconomic Research & Monitoring Program for the FKNMS. One of his duties is to keep informed about what research is going on in the FKNMS. This project is a multiple group partnership for the purpose of integrating efforts and avoiding duplication.

**5. If the collection of information involves small businesses or other small entities, describe the methods used to minimize burden.**

The supply-side portions of this project require collection of information from Dive Shop Owners/Operators and from cruise ship lines. Cruise ship lines may not technically be small businesses but we treat them as such for purposes of this project. For both supply-side surveys, we have designed simple post-card surveys with postage paid self addressed post cards with a maximum of four questions.

**6. Describe the consequences to the Federal program or policy activities if the collection is not conducted or is conducted less frequently.**

NOAA and the managers of the FKNMS have agreed to include socioeconomic monitoring in the ecological monitoring program for the FKNMS. The information collection proposed here delivers on items identified by the user groups as necessary elements of a socioeconomic monitoring program. Many federal agencies that manage natural resources have been tasked by the National Academy of Sciences to adopt adaptive management practices. Adaptive management requires monitoring, both ecological and socioeconomic, to be able to assess what is happening to both the natural resources and the humans that depend upon those resources. The FKNMS has taken important steps along these lines and is living up to their compact with the stakeholders that have participated in developing the management plan for the FKNMS and have helped design the Socioeconomic Research and Monitoring Program. Not completing these data collections would leave NOAA and the FKNMS in violation of these agreements.

NOAA, the Monroe County Tourist Development Council and The Nature Conservancy are in the process of getting approved an interagency agreement which involves pooling resources across the three entities to conduct this project. Not being able to live up to this agreement would seriously jeopardize NOAA's ability to build public-private partnerships to accomplish NOAA missions.

**7. Explain any special circumstances that require the collection to be conducted in a manner inconsistent with OMB guidelines.**

Data collection will be consistent with OMB guidelines.

**8. Provide a copy of the PRA Federal Register notice that solicited public comments on the information collection prior to this submission. Summarize the public comments received in response to that notice and describe the actions taken by the agency in response to those comments. Describe the efforts to consult with persons outside the agency to obtain their views on the availability of data, frequency of collection, the clarity of instructions and recordkeeping, disclosure, or reporting format (if any), and on the data elements to be recorded, disclosed, or reported.**

A Federal Register Notice (copy attached) solicited public comment on this collection. None was received.

**9. Explain any decisions to provide payments or gifts to respondents, other than remuneration of contractors or grantees.**

The Monroe County Tourist Development Council (TDC) sales force arranges for the prizes for the sweepstakes/lottery. The sweepstakes/lottery prizes are provided by private businesses as part of their contribution to the project. This is done for the resident mail survey and the mailback portions of the visitor surveys. A local bank will operate the sweepstakes/lottery and will award all prizes. The actual gifts listed in the sweepstakes/lottery are from the 1995-96 study. The list on the last page of each mail-back questionnaire is a placeholder. Since private

businesses are providing and awarding the prizes, the actual prizes have not yet been determined, since the surveys aren't scheduled to begin until June 15, 2007. Neither NOAA nor the TDC is responsible for the prizes or the awarding of the prizes.

**10. Describe any assurance of confidentiality provided to respondents and the basis for assurance in statute, regulation, or agency policy.**

In the visitor surveys, we provide a "Confidentiality Statement" that we ask survey participants to read (On Green Card or Respondent Card of the Auto, Air and Cruise Ship Survey and the Yellow Card or Respondent Card of the CUSTOMER Survey. In the mailback surveys for the visitors and in the letters accompanying the mail surveys for residents, we inform survey participants of how we protect the confidentiality of their information.

All survey respondents are assigned unique database identification codes so data can be linked to follow-up mailback surveys and for quality analysis/quality control of the data. Any names, addresses or telephone numbers obtained for purposes of survey follow-up efforts to increase response rates or awarding prizes in the sweepstakes/lottery are eliminated from the databases after all survey follow-up efforts have ended and sweepstakes/lottery prizes have been awarded. This will be specified in the contract for implementation of the survey and development of project databases.

We protect the privacy of survey respondents and the extent of confidentiality is assured by exemption under the Freedom of Information Act (5 USC 522(b)(4) concerning trade secrets or proprietary information, such as commercial business and financial records.

**11. Provide additional justification for any questions of a sensitive nature, such as sexual behavior and attitudes, religious beliefs, and other matters that are commonly considered private.**

No questions included in any of the data collections proposed here would be classified as sensitive. Most are standard questions used elsewhere. All identifying information for an individual or business are considered sensitive to protect confidentiality and will not be included in any of the data bases for release to the public.

**12. Provide an estimate in hours of the burden of the collection of information.**

We currently estimate the number of respondents will be 15,686, responses will be between 23,537 and 25,498 and burden hours will be between 9,242 and 10,540 depending on mailback response rates (Table 3).

**Table 3. Burden Hour Calculations**

Survey	Completes	Respondent	Hours
<b>Visitor: Auto, Air &amp; Cruise Ship</b>			
On-site	4,250	4 minutes	283.33
Mailbacks	4,038 - 4,463	15 minutes	1,009.5 - 1,115.75
Expenditure (45% Response rate)	1,913	15 minutes	478.25
Satisfaction (50% Response rate)	2,125	15 minutes	531.25
Expenditure (50% Response rate)	2,125	15 minutes	531.25
Satisfaction (55% Response rate)	2,338	15 minutes	584.5
<b>Subtotal</b>	<b>8,288 – 8,713</b>		<b>1,293 - 1,399</b>
<b>Visitor: CUSTOMER</b>			
On-site	5,348	15 minutes	1,337 1,604.34 - 1,796.34
Mailbacks			
KAP/Reef Valuation (45% Response rate)	1,203	20 minutes	401
Coral Bleaching (45% Response rate)	1,805	20 minutes	601.67
Substitution/Management Alternatives (45% Response rate)	1,805	20 minutes	601.67
KAP/Reef Valuation (50% Response rate)	1,337	20 minutes	459
Coral Bleaching (50% Response rate)	2,006	20 minutes	668.67
Substitution/Management Alternatives (50% Response rate)	2,006	20 minutes	668.67
<b>Subtotal</b>	<b>10,161 - 10,697</b>		<b>2,941 - 3,133</b>
<b>Resident Mail Survey</b>			
All four samples/versions (50% response rate)	5,000	1 hour	5,000
(60% Response Rate)	6,000	1 hour	6,000
<b>Subtotal</b>	<b>5,000 – 6,000</b>		
<b>Supply-side Surveys</b>			
Dive Shop Owners/Operators	68	5 minutes	5.7
Cruise Ships	20	5 minutes	1.7
<b>Subtotal</b>	<b>88</b>		<b>7.0</b>
<b>Total - All Project Surveys</b>	<b>23,537 – 25,498</b>		<b>9,243 - 10,539</b>

**13. Provide an estimate of the total annual cost burden to the respondents or record-keepers resulting from the collection (excluding the value of the burden hours in #12 above).**

There will be no cost to respondents beyond burden hours.

**14. Provide estimates of annualized cost to the Federal government.**

Data collection, analysis and basic reports will take 2 to 3 years. Our “best” estimate of what we think it will cost to get these tasks completed is about \$541k. These costs are only the expected extramural costs for the data collection, analysis and basic reports. Not all the extramural costs

are borne by the Federal government. The Monroe County Tourist Development Council will provide \$65k and The Nature Conservancy will provide \$40k for a total non Federal contribution of \$105k of the \$541k. Thus, the total Federal share of the extramural costs is equal to \$436k.

Additional costs to the Federal government include the staff time of NOAA employees in developing and overseeing the interagency agreement with project partners; developing survey questionnaire, sample designs and support items; developing and overseeing contracts to conduct surveys, do analyses and develop reports; develop data documentation on CD-ROM; post project reports on NOAA web site in pdf; and travel to support setting up project with the community and project partners. The total other costs to the Federal government are estimated at \$26,700. So the total project costs to the Federal government are estimated at \$462,700 over a three year period. When annualized, the costs are estimated to be \$154, 233.

Total Project Cost to the Federal Government (Costs over three years):

Socioeconomic Monitoring Program – Florida Keys National Marine Sanctuary:  
recreation/Tourist Study

Contracts for Data Collectors.....\$436,000

NOAA Staff time in developing questionnaires, maps, interagency agreements and contracts:

- a. Development and oversight.....\$23,700
  - 1. GS-14 Economist 300 hours \* \$71/hour..... \$21,300
  - 2. GS-12 Economist 25 hours \* \$50/hour.....\$1,200
  - 3. Intern 80 hours \* \$15/hour.....\$1,200
- b. Travel.....\$3,000

Total Cost to Federal Government.....\$462,700

Annualized Cost to Federal Government (Total Project Costs to the Federal government divided by three years): \$154, 233.

**15. Explain the reasons for any program changes or adjustments reported in Items 13 or 14 of the OMB 83-I.**

This is a new program.

**16. For collections whose results will be published, outline the plans for tabulation and publication.**

Similar reports to those developed in 1995-96 and 2000-2001 will be developed summarizing the results of the study. This includes separate reports and summaries for resident and visitor populations. Executive summaries, full reports and technical appendices (how it was done) will all be produced and posted on our web site in pdf. See our website for examples of 1995-96 work at <http://marineeconomics.noaa.gov/SocmonFK/Linking.html#reports>.



All reports will be peer reviewed per the NOAA standard under the Information Quality Act.

In addition to the above, some project results may be published in journals, since we have academic partners. Also, other project partners, such as the Monroe County Tourist Development Council (TDC) may have other special tabulations they want to produce over time beyond the summaries mentioned above. The TDC will be provided with all data and documentation on CD-ROM. This CD-ROM will also be made available to the general public, subject to any masking of the data required to protect privacy. We (NOAA) are not in control of what the TDC or others will publish.

**17. If seeking approval to not display the expiration date for OMB approval of the information collection, explain the reasons why display would be inappropriate.**

OMB approval number and expiration date will be put on all questionnaires.

**18. Explain each exception to the certification statement identified in Item 19 of the OMB 83-I.**

No exceptions.