FLORIDA INTERNATIONAL UNIVERSITY

Miami, Florida

CORRELATES OF BOATER KNOWLEDGE AND VIEWS REGARDING THE FLORIDA MANATEE AND MANATEE RELATED ISSUES

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Judith Futerfas

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To: Dean R. Bruce Dunlap
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This thesis, written by Judith Futerfas, and entitled Correlates of Boater Knowledge and Views Regarding the Florida Manatee and Manatee Related Issues, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this thesis and recommend that it be approved.

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Date of Defense: November 13, 2003

The thesis of Judith Futerfas is approved.

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Florida International University, 2003

DEDICATION

With thanks to my parents. To my wonderful nieces, who are loves and love nature and manatees.

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ABSTRACT OF THE THESIS

CORRELATES OF BOATER KNOWLEDGE AND VIEWS REGARDING THE FLORIDA MANATEE AND MANATEE RELATED ISSUES

by

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Florida International University, 2003

Miami, Florida

Professor Joel Heinen, Major Professor

Scientists are extremely concerned that the Florida manatee, *Trichechus manatus latirostris,* does not have a sufficient population number nor reproductive rate to ensure long-term species viability. This research was done to investigate aspects of boater behavior in an effort to determine measures that might decrease boat-manatee collisions and help researchers plan intervention strategies in related areas. Initially, boat data was collected over a period of several months at a Miami waterway. Next, a detailed phone survey of boat owners was conducted. Although most boaters were found noncompliant with the speed zone, several questions from the survey showed that most valued manatees and almost half wanted them to remain listed as endangered. This is very encouraging as boater support for the manatee is possibly one of the most important indicators of manatee chances for survival. Suggestions included requiring mandatory boating classes and informing boaters of faster routes to their destinations.

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INTRODUCTION

In these times of massive habitat destruction throughout the world, one might easily focus on rainforest habitats or forest lands of Asia or India as the locations of threatened and endangered species. However, the ever-increasing human population in Florida has been the cause of another type of species endangerment. Because of the large numbers of boats competing for space with the Florida manatee (*Trichechus manatus latirostris*), this species is in a fight for its life. O'Shea et al. (2001) state that "the incidence of wounding by boats in Florida manatees is probably unparalleled in any marine population in the world". The example they cite is that of 6,196 stranded seals and sea lions recovered from the California coast between 1986-1999. Only 0.1% of these showed boat propeller damage (Goldstein et al., 1999). A database from the Sirenia Project of (distinctly) scarred living manatees now contains 1,184 individuals. Of these, 97% have more than one scar pattern. These injuries not only cause much pain but also may impact the population by reducing calf production (and survival) in wounded females. O'Shea et al. state that in light of this documentation and the fact that little can be said with reasonable certainty about manatee population size and trend, sufficiently monitored boat speed zones and necessary sanctuary areas are critical to manatee long-term survival.

REVIEW OF THE LITERATURE

MANATEE SURVIVAL DATA AND RELATED INFORMATION

Regarding manatee deaths, watercraft is found to have been the cause of 39% of adult Florida manatee deaths between 1989-1999 and over 29% of all manatee deaths between 1996-1999 (FWS, 2000). Since records on the Florida manatee have been kept, from 1974, there has been increased mortality (as measured by the number of carcasses found) almost yearly. Between 1976 and 2000 watercraft related mortality rose an average of 7.2% each year. This roughly paralleled the number of registered boats in Florida (Ackerman and Powell, 2001). The 2003 mortality statistics showed the second-ever highest manatee mortality (all ages) of 327 (through September 30). The highest recorded mortality statistic was 416 in 1996. This latter figure is attributed to a red tide outbreak which is believed to have killed at least 149 manatees (Bossart et al., 1998 and Landsberg and Steidinger, 1998 as cited in FWS, 2000) and a colder than usual winter (FWS, unpublished data). Total watercraft related deaths for 2002 was 95, the

highest on record. Total known deaths equaled 305 for the same year. The number of watercraft related deaths in 2001 was 81. This was second to 1999 when there were 82 deaths due to watercraft out of a total mortality of 269 (all ages). The 2003 deaths due to watercraft (as of September 30) were 62 (FMRI (Florida Marine Research Institute), 2003) .

Although the 2001 manatee census showed the largest population (3,276) since aerial surveys began (over 25 years ago), the 2002 census was the lowest in a decade (1,796). The highest number for the three counts in 2003 was 3,113. Although not statistical estimates, these counts provide information about the minimum number of manatees (Ackerman, 1995) and most counts from the last ten years number in the 2,000s. Miller et al. (1998) write, "current aerial surveys may provide important information on the distribution and relative abundance of manatees, but they are inadequate for estimating population size or determining trends in abundance over time (Ackerman 1995, Lefebvre et al.,1995)." O'Shea et al. state that although over this period counts have increased, perhaps reflecting an actual population increase for certain time periods at locations being surveyed, the relationship between any of these numbers and the true population size remain unknown. This uncertainty regarding population size is due to several types of bias inherent in these surveys. For example, perception bias results when the observer does not see a visible manatee. Moreover, if the water is cloudy or weather conditions not perfect, many manatees may not be visible (availability bias). There is also the possibility of counting a manatee more than once at the same site or at another location if it traveled between count days. Also, there is uncertainty regarding the number of manatees that may be away from these refuges at any given time.

In further looking at manatee mortality statistics, the number of undetermined deaths is comparable to the number of watercraft deaths. These deaths are labeled as undetermined because the carcass is usually too decomposed to determine cause of death (Ackerman et al., 1995). However, because the causes of death have been studied for several years, there is no reason to believe that the true cause of death of these undetermined carcasses is a ratio other than what we would expect if the cause had been determined. Hence, the actual mortality due to watercraft may be much higher than records show.

Because of the large number of collisions with boats, several studies have researched manatee sensory capabilities. An audiogram (Gerstein et al., 1999 as cited in FWS, 2000) suggests that their ability

to hear boats is severely limited. Furthermore, Gerstein (2002) states that "just as speed limits for small boats in inland waters can reduce propeller noise and sound frequency, so reducing ship speeds could conceivably increase the risk of collision by increasing exposure time (and thus opportunities for collisions) while diminishing the ships' audibility." He is currently working on a sound emitting device for boats that he states would alert manatees to an oncoming boat. O'Shea (1995) states that it is uncertain whether the intense underwater noise pollution from boats causes impairment of the manatee auditory system. He states that this noise is in the range of manatee hearing and could result in greater susceptibility to boat strikes. Behavioral studies (Hartman, 1979 and Wells et al., 1999 as cited in FWS, 2000) and anatomical studies (Ketten et al., 1992 as cited in FWS, 2000) suggest that manatees are capable of hearing oncoming motorboats. Also, Wright et al. (1995) studied fatal or healed wounds on 628 manatee carcasses recovered from 1979-1991. They reported that nearly 90% of scar patterns were along the head to tail axis, indicating that manatees were moving in response to an oncoming boat when struck. Collisions with watercraft caused 406 of these 628 deaths. Of these, 158 (39%) were caused by propeller strikes and 223 (55%) resulted from impact injuries. Another 16 (4%) were attributed to both causes, either of which would have been fatal. (The remaining nine deaths could not be categorized). Because manatees generally cruise at about 2-6 mph when not feeding, they can only reach 15 mph for short bursts of time (Hartman 1979 as cited in Van Meter, 1987), and acoustical data is controversial, I feel it is prudent to err on the side of caution in terms of allowable boat speeds. A boat in a manatee slow zone is required to have at most minimal wake. In most instances this is no faster (or only slightly faster) than manatee cruising speed. Also, this is a realistic speed in terms of allowing for manatee escape and causing only minimal injury should a collision occur.

In another study that further underscores the peril this species is in, Marmontel et al. (1997) researched Florida manatee survival probabilities using stochastic modeling. The group examined data from a sample of 1,212 carcasses gathered from 1976-1991. They found that manatee survival in Florida differs from the normal pattern for large bodied mammals in lacking a plateau of high survival rates through the middle age. Instead, the numbers resemble those for survivorship curves in exploited populations. Data from this study predicted a slightly negative growth rate and an unacceptably low

probability of persistence over 1000 years. Specifically, it was found that half the carcasses belonged to year classes 0, 1, and 2 with a mean age of carcasses at 5.7 years. Forty-six percent of 460 female carcasses from this sample were reproductively mature. At any one time 33% of mature females were pregnant. Mortality from boat collisions was constant across adult age classes (from about 3 years of age).

As with other large mammals, manatees have a long interbirth period. Gestation is approximately one year (Marmontel, 1995). A mother and calf will be together from 1-2 years (Hartman, 1979 as cited in Marmontel, 1995). Rarely is more than one offspring born per pregnancy. This combination of traits, along with a potentially long life span (at least 59 years), result in low potential rates of increase. Such populations are particularly susceptible to decline or extinction if they are disrupted. Moreover, it is unlikely that most factors of manatee reproduction can be increased above present rates due to physiological limits (Marmontel et al., 1997). In particular, first conception can be as early as age three. Also, much energy is needed for extended lactation and maternal care, especially in winter. Hence, the potential rate of increase is most sensitive to changes in adult-survival probabilities (Langtimm et al., 1998). Most importantly, the proportion of reproductive females is crucial. Below is a summary of some of the conclusions from Marmontel's 1997 study:

-Manatee reproduction is unlikely to be increased (Marmontel,1995; O'Shea and Hartley, 1995; Rathbun et al., 1995) unless the proportion of reproductive females can be elevated;

-But it might possibly be decreased by changes such as loss of feeding habitat and increases in the numbers of females with injuries;

-If manatee reproduction is decreased by 10% the population should trend towards extinction;

-If adult mortality increases by 10% the population should trend towards extinction;

-Only reducing adult mortality by 10% led to an increase over current population size;

-Thus priorities for management policies should be to reduce manatee mortality and to protect manatee habitat.

DISCUSSION OF THE FLORIDA MANATEE RECOVERY PLAN

Unfortunately, there are inconsistencies between the scientific data I have thus far presented and some of the opinions presented in the Florida Manatee Recovery Plan (FWS, 2000). The Plan notes that

population targets are often used as a recovery or reclassification criterion for threatened and endangered species. However, the Plan acknowledges that given the uncertainties surrounding manatee population estimates, this approach was considered inappropriate in this case. That being said, the Plan goes on to state that, "the FWS (Fish and Wildlife Service) believes that a population of more than 2,000 individuals, with its current or similar distribution, although not optimal, should be sufficient for manatees to survive occasional stochastic events such as red tides, hurricanes, and cold events. It should also be sufficient to provide sufficient genetic variability and interchange." Of course, the manatee population may be over 2,000 now yet many scientists are extremely concerned for the future of this species. Moreover, it is not stochastic events that are of current concern regarding their survival, but rather (the increased number of) boaters. Marmontel (1997) writes that the high long-term risk of extinction she has documented shows that the interim goal of the Plan to downlist species by maintaining viable populations on both coasts is not likely to be attainable under current conditions. The Plan also states that full recovery is estimated to take up to fifteen years. Given its slow demographics, if a reliable means of estimating population size is developed, the minimum time scale appropriate for evaluating the population trend would be several decades (Lefebvre et al. 1995 as cited in Marmontel, 1997). Marmontel et al., 1997 state that a millennium is a more appropriate time scale to evaluate population trends and enable adaptive and evolutionary processes to operate.

Another area of disagreement is genetic variability. The Plan states that, "Low levels of genetic diversity in Florida manatees could be explained by recolonization following an extinction event during the Wisconsin glacial period (10,000 years ago) (Garcia-Rodriquez et al., 1998)". Alternatively, the Florida population may have been greatly reduced, and then gradually increased, in more recent times (FWS, 2000). If either of these scenarios is true, why should one believe that maintaining a population of at least 2,000 would provide sufficient genetic variability and interchange? Lande (1995) in his paper on mutation and the viability of threatened and endangered species writes that recent findings suggest that risk of extinction due to the fixation of mildly detrimental mutations may be comparable in importance to environmental stochasticity. Moreover, these effects could substantially decrease the long-term viability of populations with effective sizes of a few thousand. He states that current recovery goals for many species

are inadequate to ensure long-term population viability given frequencies of mutation, genetic drift, and natural selection. Lande suggests an effective population size should be about 5,000. He states that to maintain this size will usually require actual population sizes on the order of 10,000 or more. Presenting a differing opinion regarding the genetics, McClenaghan and O'Shea (1988 as cited in Langtimm et al., 1998) state that there is no evidence for genetic isolation of the Florida manatee, even between the two coasts. They further state (as cited in Marmontel, 1997) that the population has relatively high levels of genetic variability.

This third revision of the Plan addresses the planning requirements of both the Endangered Species Act (recovery planning) and Marine Mammal Protection Act (conservation planning) through 2006. Since the West Indian manatee (*Trichechus manatus*) (of which the Florida manatee is a subspecies) is currently listed as endangered under the ESA, they are thus considered depleted under the MMPA. The required MMPA conservation plans are to be modeled after recovery plans as required under section 4(f) of the ESA. The purpose of a conservation plan is to identify actions needed to restore species or stocks to optimum sustainable populations as defined under the MMPA. Optimum sustainable population (OSP) is defined as the number of animals which will result in the maximum birth rate of the population or species, keeping in mind the carrying capacity of the habitat and the health of the ecosystem of which they are a part. This definition does not mention the role of genetic variability. Moreover, just as the trend and size of Florida's manatee population is still uncertain, so is its optimum sustainable population (OSP) (FWS, 2000). This raises further questions regarding the rationale behind the FWS position that a population of 2,000 individuals should be sufficient for manatee survival. Under the MMPA, recovery is achieved when a listed species or stock stays within its OSP range (FWS, 2000). The Plan states that determining the carrying capacity of major manatee use areas within each range is probably more important than determining an OSP criterion. Lack of evidence for current limitations in food supply (as defined by Etheridge et al., 1985 as cited in Marmontel et al., 1997) indicates that manatees are below carrying capacity (Marmontel et al., 1997). However, there are currently no estimates of Florida manatee carrying capacity (Marmontel et al, 1997).

BOATING ISSUES

The primary ways in which the State has addressed manatee protection are through the development of boat speed regulatory zones and county manatee protection plans (Reynolds 1999 as cited in Lefebvre et al., 2001). Unfortunately, some of the counties with the highest incidences of boat-related mortality have not developed effective management plans (Lefebvre et al., 2001). Moreover, there has been concern that many boaters are not obeying manatee speed zones as evidenced by mortality due to collisions. Adoption of slow speed zones (minimal wake) in 1979 was based on (1) the fact that boats traveling at slow rates of speed will collide with manatees at lower impact forces, and (2) the premise that boat operators and manatees will have more time to avoid each other (O'Shea, 1995). Because of increasing numbers of boat-killed manatees, in 1989 the Florida governor and cabinet made several recommendations. These included instituting boater licenses, nighttime speed limits for all waters, daytime speed limits for channels, and mandatory boater education including manatee awareness components. Many of these recommendations on boater licensing and safety have not yet been passed into law (O'Shea, 1995).

Unfortunately, despite some progress in implementing certain regulations, there is still little (dis) incentive for boaters who are unconcerned with obeying speed limits in these zones. The boating industry is largely unregulated both in terms of owner accountability and numbers of boats allowed on our waterways. All that is required to operate a boat, if it has power and/or if it is over 16 ft., is a current registration. This is renewable each year. The license number is required to be on both sides of the front of the boat in three inch figures or a boat must have its name registered with the Coast Guard and written on the back. Also, the person in whose name the boat is registered does not have to be on the boat when it is operating. (Fla. Marine Patrol, personal comm.). Moreover, a boater safety class is only required for those born after September 30, 1980 (FFWCC, no date). Although Federal (FWS) ticket costs are higher for infractions in manatee zones, there is no system of points or insurance requirements that might make one wary of having too many violations. One FWS officer I talked with stated that there is so much boat traffic that chances for ticketing a boat a second time are extremely small (FWS, pers. comm., 2001). Unfortunately, police patrols on water are extremely sparse do to financial constraints. Furthermore, if

there is a shortage of officers on land the marine officers are transferred there (Fla. Marine Patrol, pers. comm., 2001).

Further compounding the problems this largely unregulated industry brings to the issue of manatee viability are technological advances in the construction of boats (Wright et al., 1995). These changes include variations in hull shape, vertical engine lifts, modifications of water intake ports to avoid grass intake, and increased carburetor efficiency. These changes allow boats to go faster and facilitate their travel in shallow water. The use of lighter alloy metals and electronic ignition systems has also contributed to increased horsepower. Also, the aero- and hydro-dynamic sleekness of personal watercraft allow for fast speeds and easy maneuverability. An object of this weight traveling quickly could severely or mortally injure a manatee upon impact. Because manatees prefer shallow grass beds for their feeding habitat and generally travel slowly, all of these trends increase the probability of watercraft collisions with manatees (Wright et al., 1995). Moreover, indirect impacts of travel in shallow water include aquatic plant control to allow freer movement of boats. This reduces available forage and introduces herbicides into the environment. Also, wake or propeller movements or the increased turbidity caused by these movements may decrease forage (O'Shea, 1995).

The number of boats registered in Florida had increased from 502,143 in 1980-1981 to 716,201 in 1990-1991. Ninety-six percent and ninety-seven percent (consecutively) of these boats were listed as recreational (Ackerman et al., 1995). The current number of registered boats in Florida has increased to about 800,000 (O'Shea et al., 2001). This industry pumps billions of dollars per year into the economy (Citizens for Florida Waterways (cfwbrevard) 2001, Marine Industry of South Fla.(miasf)2001). These monies include hundreds of millions paid to the state as sales tax and over one billion dollars in annual marine sales including boats, gear, and other accessories. Several boating organizations have been very vocal regarding their views against increased manatee protections that interfere with waterway regulations (cfwbrevard, 2001, miasf, 2001, cca-fla (Coastal Conservation Association of Fla, 2001). Among other arguments, some cite the high count for 2001 as proof that manatee populations are continuing to increase and that further restrictive boating designations are unwarranted. Furthermore, they take this count as a 42% increase over the previous year (2,222) and cite the totals and increased numbers as a rationale for

delisting the species. Also, some of these groups claim that it is the slower moving boats that kill manatees because manatees are unlikely to hear them as opposed to the higher sounds and frequencies of faster boats.

Under ideal conditions, manatees would have sufficient sanctuary area to ensure long-term viability and boaters would have their own waterways. However, this may never be achieved not only because of cost but also because of marine industry lobbying against increased sanctuary areas. It is also likely that lobbying by the marine industry and other stakeholders will prevent any limits from being put on the number of boats allowed in waterways or the number of vessels allowed to be registered per county or within the state (at least in the near future). Reynolds (1995) feels that manatee recovery and protection are in jeopardy for four fundamental reasons: (1) the poorly managed human population growth in Florida (about 90% of residents live within 16 km of the coast with the vast majority in S. Florida), (2) insufficient funds for acquisition of habitat and enforcement of regulations, (3) increasing strength and effectiveness of opposition, and (4) the size of the problem. Where true sanctuaries (no-entry zones) have been created and incorporate adequate resources for manatees, manatee use increased profoundly. However, although the State's Conservation and Recreational Lands Acquisition List includes properties valued at more than $900 million, the program's annual budget is $50 million (Reynolds and Gluckman, 1988).

REVIEW OF OTHER SURVEYS REGARDING MANATEES

Fortunately, surveys have shown that many Florida boaters and non-boaters feel that preservation of the Florida manatee is important. Parker (1989) randomly surveyed by phone 911 licensed boaters who were Florida residents. Ninety-five percent supported current regulations to protect the manatee. Forty-seven percent supported strengthening current regulations to protect the manatee. Ninety-one percent supported programs even if it meant reducing speed on some waterways. Fifty percent supported permanently closing some areas. Seventy-six percent supported restricting the right to use motorized vessels in specified areas. Seventy-two percent supported requiring a boater safety course in order to get a license.

Parker and Wang (1996) surveyed 879 Florida residents 18 or older by phone. Sixteen percent were registered boat owners. Again, very strong support for preserving the manatee was found. Ninety percent of those owning a boat registered in Florida supported reducing boat speeds to decrease the number

of manatees killed. Sixty-four percent felt the State needs better enforcement of existing laws to protect the manatee. The same number (84%) supported restricting jet skis to certain water bodies, requiring residential dock permits for residential shoreline property owners, and long-term planning by local governments regarding boating facility locations. Eighty-nine percent supported laws protecting certain aquatic plants and ninety percent favored creation of a boat license requiring a safety course. Respondents favored regulating boat speeds over education by more than 3 to 1 as the best way to save manatees.

Jacobson and Aipanjiguly (2000) surveyed by phone 504 primary boat owners who had been observed in Tampa Bay. Respondents supported manatee conservation efforts with a mean of 3.84 on a 5 point scale. Respondents preferred public education over stringent regulations such as speed and wake limits in sea grass areas, no-entry areas, or increased patrols. Their study also indicated a decrease in knowledge about manatees and their protection. Eighty-seven percent supported programs to protect the manatee if it meant reducing speed on waterways. Fifty-nine percent supported programs to protect the manatee if it meant designating no-entry areas. Ninety-one percent supported increased public education to protect the manatee. Sixty-three percent said that boats were the biggest threat to manatees. Thirty-eight percent agreed or strongly agreed that speed zones were not adequately signed.

Belden, Russonello & Stewart (2001) were asked by Environmental Media Services, a non-profit communications group to conduct a random phone survey of Florida registered voters. Twenty-one percent of the 600 interviewed owned their own boat. Forty-five percent felt that extinction of endangered species that make Florida their home was a very serious problem. Forty-two percent felt that we should be doing a lot more to protect the manatees in Florida. Seventy-six percent felt speeding boats were the biggest threat to the manatee. Regarding proposals to protect the manatee, the majority of respondents strongly favored all responses including reducing the speed limit for boats on more of Florida's waterways, limiting boat access to areas where manatees live and breed, increasing speeding fines and funding for law enforcement, reducing coastal development by preserving natural areas that would be off-limits to developers,and increasing the number of manatee sanctuaries and making them off-limits to boats and jet skis.

In their yearly statewide Florida Poll, Florida International University's Institute for Public Opinion Research found that 116 of 150 Florida residents (who owned a power boat) felt that rules

restricting boat speed and access to protect manatees were just about right or needed to be made stricter. Also, 96 out of the 150 felt that manatees should continue to be listed as endangered. About 61% (765) of all respondents (n=1,261) felt that manatees should continue to be listed as endangered and about 75% (948) of all respondents felt that manatee protection rules were just about right or should be stricter (Florida International University, 2002).

SURVEY QUESTIONS AS RELATED TO FACTORS AFFECTING COMPLIANCE AND RESPONSIBLE ENVIRONMENTAL BEHAVIOR

In this section I will discuss some of the factors believed to affect compliance and responsible environmental behavior in relation to the survey questions for this study. These factors include attitude, sense of responsibility, knowledge, beliefs, locus of control, direct experience, behavior, and significant influences.

It is not known which variable or variables are most influential in motivating individuals to take responsible environmental actions (Hines et al., 1987). This group also states that it is not known at what point a person will forego economic and other personal benefits to do what preserves the integrity and stability of the environment. They completed an analysis of 128 studies dating from 1971 that dealt with environmental behavior. The researchers found that knowledge of issues, knowledge of action strategies, locus of control, attitudes, intent, and an individual's sense of responsibility were found to be associated with responsible environmental behavior. Literature on one of the more frequently cited factors, attitude, is quite diverse and complex. The role attitude has in relation to one's behavior is also the subject of many theories. Newhouse (1990) states that attitude is one of the most important influences on behavior, however, it is not known what components make up attitudes. Some studies suggest that attitudes are not necessarily consistent with behavior, either because they are not strongly or sincerely held or because social and economic constraints outweigh them (Meyer, 1996).

Moreover, Borden and Schettino (1979) as cited in Newhouse, found that what a person says he or she would be willing to do in the future is based almost entirely on his or her emotional reaction to the issue. Regarding this latter statement, questions on complex and emotional issues in this debate such as marine industry concerns (29-31), speed zone issues/boats as cause of death (33, 36, 40-41, 43, 45, 47-56),

manatee survival/protection rules (28, 32, 32a, 34-35, 42) were included in the survey (question numbers inside parentheses). Cottrell and Graefe (1997) found that indictors of an attitude construct including the cognitive, affective, and conative components of an attitude were predictors of specific behavior. They state that various indicators of these three components provide a better understanding of behavior than single-component behavior examinations.

We asked several questions in the survey that we felt would give us a good idea of boater attitude toward the manatee. Most of these factors reflect the boater's state of mind or feelings about the manatee. Attitude is also closely related to opinion. However, the latter is based on facts and tangibleness more than feelings or state of mind. The most import questions were a series of six that assessed the value of the manatee to the boater (58-63). Another crucial question was the level of responsibility the boater felt s/he had to help save the manatee from extinction (57). Question 31 asked for boater opinion on whether building new water access facilities should be halted in areas where boat related deaths are highest.

To further assess possible factors influencing responsible environmental behavior, knowledge of issues was also covered in the survey. However, Newhouse (1990) and [Cottrell and Graefe] (1997) state that the assumption that knowledge influences attitude, which in turn influences behavior is controversial. Knowledge of a problem is crucial to taking action, but a person must also know what the appropriate action strategies are. Locus of control (discussed below) is also important regardless of the amount of knowledge a person has. Respondent knowledge questions included issues regarding speed zones (40-41, 84), manatee habits (37, 39), and general knowledge (82, 83).

In terms of specific questions, we began assessing knowledge by asking the respondent how much s/he knew about manatees (25) and to rate how his/her knowledge of speed zone and other regulatory signs was (21a). We then asked how many manatees s/he thought there were (34). Although the exact answer to this is not known, there is information about minimum numbers that have been associated with manatee counts for the past several years. (Question 34 is also referred to in the paragraph discussing beliefs.) Question 36 is also associated with years of data collection. This question asked the respondent to rate the role of boats in boat-manatee collisions. Question 37 asks whether there are more manatees in South Florida in the summer or winter. Knowledge of what idle and slow zones are was asked in 40-41. As far

as general knowledge, we asked about rules regarding discharge of plastics and the proper distress/SOS signal (82, 93). Obviously, some of these questions do not go directly to serious compliance issues. It is important, however, to assess scope of boater-manatee knowledge by including more general questions.

A person's beliefs regarding a subject are also important in assessing how likely s/he is to have responsible environmental behavior or what behavior s/he would have in relevant circumstances. Attitude, opinion, and belief are certainly interrelated factors. However, as used in this report, belief connotes a view susceptible to change more readily than an attitude or opinion. This is due to the fact that the belief is based on newer and/or more factual and/or less information than that which forms the other two. Like an opinion, a belief is discussed in relation to something more tangible as opposed to a feeling or state of mind. However, the belief is based on what one believes to be the 'correct' response whereas an opinion may not have a 'correct' response. In this sense belief is more akin to what one 'believes to be the facts' as opposed to one's belief (or philosophy) about religion, for example. Regarding the belief questions in this study, the answers are not known and even scientists debate them. For example, manatee ability to hear is the subject of question 43. Questions 34 and 35 ask about the number of manatees and their chances for long-term species viability. Definitive knowledge on some of these issues may influence boater behavior. Cottrell and Graefe (1997) found that among the strongest predictors of specific responsible environmental behavior were measures of the cognitive domain of an attitude construct (i.e., awareness of the consequences of water pollution positively correlated with use of sewerage pump-out stations by boaters).

Locus of control is a factor influencing one's ability to take action in a situation. If people feel that they are powerless regarding an issue, they may not take action due to a perceived lack of influence over the outcome. Newhouse (1990) states that those with an external locus of control do not try to bring about change because they attribute change to chance or other factor(s) outside of their control (e.g., God, government, those in authority, etc.). She further states that with an internal locus of control a person feels s/he can bring about change. Question 64 asks the boater how much difference s/he thinks s/he can make to help ensure long-term manatee survival. Smith-Sebasto (1995) found that students completing an environmental studies course had more internal locus of control for reinforcement for environmentally responsible behavior, a higher perception of their knowledge of and skill in using categories of

environmentally responsible behavior, and more frequent performance of environmentally responsible behaviors at the end of the course than at the beginning than did students enrolled in a history class. Ostman and Parker (1987) also found that education as a predictor of environmental knowledge and subsequent behavior is a worthwhile medium. Question 85 asks if a boating class was ever taken and 86, if the class taught any helpful or interesting information about manatees. Question 89 asks whether all boaters should be required to take a class. Obviously these questions relate to boater knowledge as well.

Direct experience allows an object to become (more) relevant. Sia, Hungerford, and Tomera (1985-86) said that students need to be exposed to those factors that promote environmental sensitivity, e.g., participation in outdoor experiences on a continuous basis, time spent in a pristine environment, and the influence of role models in order to foster responsible environmental behavior. Chawla (1999) reports that research has shown that respondents repeatedly attribute their environmental interests or action to a similar set of sources: extended time spent outdoors in natural areas, often in childhood; parents or other family members; teachers or classes; involvement in environmental organizations; books; and the loss or degradation of a valued place. In this sense, direct experience could also be categorized under significant influence or life experience.

Direct experiences, observation of others, and direct teachings are conduits through which learning occurs (Bandura 1977, 1986 as cited in Musser and Diamond, 1999) and are also consistent with research on the ways in which attitudes are formed in adults (Fishbein and Ajzen, 1975). Attitudes that are so accessible as to be activated or called to mind automatically upon encountering an object may guide perceptions of the object, and in so doing, exert their influence upon subsequent behavior toward the object (Manfredo, 1992; Kaiser et al., 1999). Attitudes formed through direct experience are more likely to be readily accessible than others (Manfredo, 1992; Fazio, 1987, and Fazio, Herr, and Olney, 1984 as cited in Manfredo et al., 1992; Fazio and Zanna, 1981 as cited in De Young, 1993).

A number of survey questions address boater direct experience. Question 20 asks how their knowledge of speed zone (and other boating) signs was gained and (26) how they initially learned about manatees. Questions 21-22 ask about the importance of outdoor activities as a child. Questions 23-24 ask about any ‘nature’ or out-door type organizations or publications the boater was affiliated with as an adult.

Question 27 asks for the number of manatees seen in the wild Also, as previously discussed, we asked whether a boater had ever taken a boating class.

As mentioned above, direct experience is related to behavior, a component that often involves an ongoing pattern of actions and/or interactions. When a behavior is performed often enough it is more likely to become habitual (Aarts et al., 1998). It has been suggested that more experienced recreational users, while more predictable in their behavior, are more difficult to influence (Petty and Cacioppo, 1981, 1986 as cited in Manfredo et al., 1992) than those who are inexperienced or unknowledgeable (Krumpe and Brown, 1982; Manfredo and Bright, 1991; Rogggenbuck and Berrier, 1982 as cited in Manfredo et al., 1992). Attitudes of the more experienced recreational user are more accessible and they may selectively process their information i.e., attend only to information that reinforces their current attitude (Vincent and Fazio, in press as cited Manfredo et al., 1992).

Regarding boater behavior, we began by asking for number of years the respondent has been a boater (5). Questions 17 and 18 ask how many times the respondent takes the boat out in summer and winter. We asked if s/he ever recalled speeding in the boat (71). Question 72 asks how often the boater complies with manatee zones. Question 74 asks if s/he ever received a ticket for speeding and (75) in a manatee zone. Question (76) asks how many hours s/he stays out for a day of boating and (77) how many law enforcement officers they usually see.

REGARDING THE NATURE-HUMAN RELATIONSHIP

Hines et al., (1987) state that ecological behavior in general appears to be susceptible to a wide range of influences beyond one's control. Some of these so-called 'situational' factors include cost, benefit, number of people involved, weather, peer/community pressure, political pressure, alternatives available, time required/available, positive/negative reinforcement, etc. By and large, most studies dealing with attitudes and behaviors towards environmentally related issues discuss land-based practices with relevance in our everyday lives. Examples of issues might include recycling and use of cleaner energy sources, using (more energy efficient) cars versus buses, bicycles, carpooling, etc., reusing products, conserving water/lights, using environmentally friendly products, etc. Other issues not as relevant in most of our everyday lives include dumping at sea, depleted fishing stocks, type/size of animals to be

hunted/fished, and preservation of certain land-based animal species, species of trees, and natural areas such as sand dunes, forests, scrub, etc. With most of these issues it is relatively easy to comply with environmentally sound practices. Moreover, in many cases, it is only a matter of buying a particular product, carrying recyclables to the curb or bringing them a local center, taking plastic bags to the local grocery for recycling, trying to consolidate several errands in one trip, or reusing such items as wrapping paper, cardboard/other boxes, food containers, clothes, etc. Also, membership in certain organizations and financial contributions to various causes are used as environmental attitude and behavior determinants.

As relatively simple as some of these tasks are to accomplish, it is a widely known fact that residents of the United States consume more energy per capita than any other country on Earth. Moreover, the US produces at least one-third of the world's pollution and trash yet we have about five percent of the world's population (Miller, 1992). Worldwide both the per-species rate of decline and absolute loss in number of species exceeds by a factor of 1,000-10,000 rates before human intervention (Wilson, 1988). Not surprisingly, the nature-human debate has been the subject of much discourse since antiquity. Three broad perspectives have continued to dominate modern thought. These are society in harmony with nature, society as determined by nature, and society as a modifier of nature (Kates et. al, 1990). Aspects of these perspectives (with a focus on society as a modifier of nature) and how they might influence our behavior regarding environmental issues, and in particular the manatee situation, will be integrated throughout the remainder of this introduction.

Regarding society as a modifier of nature, Heinen and Low (1992) state that humans have evolved to strive to acquire, use, and control resources. These characteristics along with technological advances have given humans the ability and proclivity to cause environmental catastrophe. Unfortunately, we have not evolved to be aware of ultimate costs and benefits but rather of proximate rewards and punishments state Heinen and Low. Saul (2000) states that environmental problems are caused by environmental practices, the latter being equated with cultural activities. He further states that to alter cultural practices we need to change, deepen, and complicate individual and cultural perceptions of the world (through environmental education). Bell et al. (1999) echo these thoughts by stating that one of the root causes of environmental degradation is anthropocentrism. Their long-term hope as educators is to dismantle what

Livingston (1994 as cited in Bell et al.) called zero-order humanism: the unchallenged ideology of the necessary primacy of the human enterprise. It is because we are (the only part of nature that may be) the object of moral behavior and not merely a natural being (Bayertz, 1997) that we must use our rational abilities to save nature when at all possible. "All other organisms are programmed by nature to maximize their own individual offspring, and not to preserve their species, let alone treat the environment with consideration" (Bayertz, 1997).

There are, however, members of our global human population who have had and who continue to strive for a symbiotic relationship with nature. "The global adoption of Western knowledge and technologies has set disparate cultures on convergent paths" (Norgaard, 1988). Moreover, tropical forest and other indigenous peoples have historically based their lifestyles on a congruity between people and nature. Myers (1992) writes that so pervasive has been the forests' influence on certain of these societies that we still find, among the longer established cultures, a sense of numinous awe associated with their forest homelands. In referring to the philosophy of the Plains (and generally all North American) Indians, Little Bear (2000) states that, "In Aboriginal philosophy, existence consists of energy. All things are animate, imbued with spirit, and in constant motion. In this realm of energy and spirit, interrelationships between all entities are of paramount importance, and space is a more important referent than time".

REGARDING THE MANATEE-NATURE-HUMAN RELATIONSHIP

Fortunately, many boaters surveyed have expressed their support for the long-term existence of the Florida manatee. However, it is unknown how many are truly concerned with or realize the ultimate cost if this species is shown to be declining. In terms of manatee management, it seems that it is the issue of proximate rewards and punishments that influences the majority of boaters. The immediate positive consequences [boat-riding] offers can dominate delayed or long-term negative consequences in controlling behavior (Schwartz, 1986). As discussed previously, currently there are no effective negative consequences for speeding in manatee zones. Unfortunately but necessarily, most of these zones are 'slow' speed zones. Most boats do not have speedometers and speed is evaluated by wake from the boat. Slow speed has been defined as 'minimal wake' and estimated to be about 5-7 mph. (The zone for this study is 'idle' -a no wake zone and about 1-3 mph). (Wake definitions are from State regulations (State of Fla.,

2000) and speed definitions are from Gorzelany, 1996). Many inland waterways are slow or idle speed zones. In some areas these speeds vary between the summer and winter months due to fluctuating manatee populations. However, if a boater is planning to travel down the intracoastal from north Miami-Dade County, for example, one can see that it will take quite a bit longer to travel at an average speed of say 15 mph than if there were no regulations or 30 mph limits.

Unlike the other pro-environmental behaviors mentioned earlier, manatee speed zones, mandated in efforts to try to help slow or reverse any decline in the population, cause (in many cases) a substantial increase in the amount of travel time. In our fast-paced, instantly gratified, consumer oriented society, time is often more treasured than money. Another unique aspect to boating as an environmental issue is the fact that the boat is also a source of much fun and leisure-time activity. Obeying speed limits is only one aspect of boating. Most other environmentally conscious actions offer a sense of satisfaction for doing one's part but offer no other opportunities beyond the physical act (recycling, conserving water and lights, sending a donation, etc.). Most importantly, few environmental behaviors that an individual can control are as directly and immediately related to the problems they cause as boats are regarding manatees. This fact further underscores the urgency of the situation.

In further reference to the nature-human relationship, Ehrenfeld (1988) notes that for conservation to succeed the public must come to understand the inherent wrongness of the destruction of biological diversity. Leopold (1949 as cited in Lowenthal, 1990) had previously sent a similar message by stating that "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise." Schwartz (1986) states that to a large extent smooth functioning of the social system depends on a measure of good will and doing the right thing—adhering to the spirit rather than the letter of the law. Unfortunately, it is not easy to persuade people to act either against inherent wrongness or for the social good based purely on rational grounds (Wynne-Edwards, 1978). Over a vast area of behavior, conformity with the social code depends on self-discipline which is enforced rather weakly or not at all by the common desire to conform with public opinion and avoid incurring censure (Wynne-Edwards, 1978). "The innate conscience is stronger in some and weaker in others; some receive better social reinforcement than others, depending on their companions and their information media, and

the morality that prevails among them. Nor is it possible to compel moral behavior entirely by a system of codified laws, because they rely on enforcement by the police and other appointed agents, and the difficulties inherent in this preclude any significant extension of the influence of the law" (Wynne-Edwards, 1978). Coercion can only work if most people will obey the law even if it is not in their individual interest to do so. To the contrary, it is felt by many that most boaters do not obey manatee zones. Moreover, if constraints of our legal system are effective it is only because a critical mass of people affected by particular constraints have not yet decided to ignore the law (Schwartz, 1986). "In essence, human beings are economic beings. They are out to pursue self-interest, to satisfy wants, to maximize utility, or profit, or reproductive fitness. In the absence of any assurance that all individuals will exercise restraint for the common good, the rational individual will eschew restraint rather than be exploited by free-riding others" (Schwartz, 1986). Mainstream economic theory states that what the individual wants is presumed to be good for that individual (Randall, 1988; Sack, 1990). In terms of biodiversity, this framework is utilitarian in that things count to the extent that people want them to, anthropocentric in that humans are assigning the values, and instrumentalist in that biota is regarded as an instrument for human satisfaction (or not) (Randall, 1988).

Regarding the role of genetic determinism and environmental integrity, evolutionary biologists and in particular sociobiologists feel that individuals are most concerned with factors that influence direct costs and benefits to themselves and that affect reproductive success (Williams, 1966 as cited in Heinen, 1995). This is based on the Darwinian perspective that evolution by natural selection acts strongest at the level of the individual. Also, inclusive fitness, a post-Darwinian concept, states that an individual's genetic fitness is also measured by the enhancement of the fitness of other relatives who share his/her genes. Based on these principles and the belief that human evolution occurred in relatively small groups of reciprocating, genetically related individuals, some scientists conclude that we are most likely to respond favorably to environmental issues that are localized in terms of benefits, current or not long-term, and that affect us or our family and friends directly (through property rights, etc.). Moreover, since we do not consider the global population as our family, any long-term, (inter) national benefits are secondary and discounted as an issue of concern accordingly (Heinen and Low, 1992; Axelrod, 1984 as cited in Schwartz, 1986; Thiessen,

1996). Unfortunately, in the case of the Florida manatee, the benefits of saving this species could be considered national or international and diffuse. However, costs (time, no-entry areas) are localized and specific to boaters. Moreover, probably very few people would consider this an issue that affects them directly as say, polluted drinking water or high electric bills would. Also, the problem is not novel; the species has been under watch for decades.

One critic of sociobiology, Marshall Sahlins (1976) states that "No system of human kinship relations is organized in accord with the genetic coefficients of relationship as known to sociobiologists… Each kinship order has accordingly its own theory of heredity or shared substance, which is never the genetic theory of modern biology, and a corresponding pattern of sociability". A different belief system and philosophy of nature is encompassed in the value of wholeness or totality. This belief system arises out of the Aboriginal ideas of constant motion or flux. "The value of wholeness focuses on the totality of the constant flux rather than on the individual patterns. This value is reflected in the customs and organization of the Plains Indian tribes, where the locus of social organization is the extended family, not the immediate, biological family. Several extended families combine to form a band. Several bands combine to form a tribe or nation; several tribes or nations combine to form confederacies. The circle of kinship can be made up of one circle or a number of concentric circles. These kinship circles can be interconnected by other circles such as religious and social communities. The value of wholeness speaks to the totality of creation, the group as opposed to the individual, the forest as opposed to the individual trees. This approach to Aboriginal organization can be viewed as a "spider web" of relations" (Little Bear, 2000).

As I have discussed in this paper thus far, there is a vast amount of literature on theories of human behavior and implications of these theories for environmental integrity and in particular manatee survival. Some of the theoretical components discussed in this paper include the role of humans in the nature-human dichotomy, genetic versus cultural determinism, humans as economic and/or rational beings, and the role that positive vs. negative consequences play in influencing behaviors. It is probable that it is not any one theory but rather a combination of ideas that has formed and will continue to form humanity and determine the future of environmental resources.

METHODOLOGY

This study consisted of two parts: boat data collection to assess factors associated with compliance and a comprehensive phone survey of these boat owners to learn their knowledge and views regarding issues associated with the manatee-boater conflict.

PART I – BOAT DATA COLLECTION

For the first part, boat information was compiled at the intracoastal waterway (ICW) near downtown Miami in Biscayne Bay from May 12, 2001 to September 2, 2001. This site borders Claughton Island (also known as Brickell Key) to the east. This island is triangular in shape with its 'point' at the south end. The area of study is an idle boater safety zone overlapping a slow speed manatee zone. It is straight as it borders the island and measures approximately 2,100 ft. long, the approximate length of the west and east sides of the island. It is about 150 ft. wide. It is bordered by a seawall and submerged rocks next to the island and open water with seagrass to the east. At the north and south entrances to this portion of the ICW are "idle speed, no wake" signs. I collected boat data every Saturday and Sunday from 9-4 with an hour (12-1) for lunch. I was positioned about 525 ft. from the south end of the island on a walkway that ran parallel to this portion or the ICW and along the entire length of the island. I had a clear view of boats entering the area of study from both entrances. To better view boats and gather specific boat data I used a spotting scope.

The data I was collecting included date, time, FL/registration number or other identification, boat speed, level of compliance, make, model, type of vessel, use of vessel (rental, other commercial, enforcement etc.), stated and/or estimated length, name, port, direction, whether in channel or not, and the weather. Speed data was collected only when the boat was directly opposite me although other data could be collected as soon as the boat was in sight. Speed data were drifting, idle, slow, plow, fast-plow, cruising, and plane. These data follow Gorzelany (1996) except for the fast-plow category that I created in order to further characterize the speed of certain boats not quite cruising or on plane but faster than plow. Boat types were yacht, sailboat, fishing boat, personal watercraft, racing, open fisherman, cruiser, or other (FMRI, no date). Boat length categories were 15 ft. or less, 16-27 ft., 28-39 ft., and 40 ft. or larger.

The State had been using at least two people to collect this type of data in similar locations: at least one person would call out the information and another would write it down. Initially I was told to recruit other people to assist in data collection. Since there was a great deal to learn and data collection needed to begin soon, I felt it best to call out the data and have the assistant write. However, I found that my assistants could not necessarily hear clearly what I was saying at times, particularly on windy or high-traffic days. Also, by handling data in this way it was crucial that the workers show up when scheduled and this was something I felt I could not always count on.

Hence, I thought of and devised another method of data collection. I used my personal microcassette recorder to record the data and played it back as I entered the data into Excel. This system worked well and after presenting this methodology to Richard Flamm I got permission to purchase an improved microcassette recorder (one that automatically changed sides was a necessity) and a headset including a hands free microphone. A transcription machine was also purchased to help facilitate data entry. This method of data collection is now being used in similar research projects in other parts of the State.

PART II – THE SURVEY

The number of boat sitings I recorded was 10,813. Of these, 7,571 were registered in Florida (had an 'FL' number), 2,902 had no number, 160 had data but it was incomplete or otherwise could not be read, 143 were from other states, and 37 were DO (documentation) numbers. Boats that were rental, commercial, enforcement, out of the channel, out of state, or had no or unreadable FL number were not used as data for the phone survey. The number of unique FL numbers was 2,884. After sending this FL data out for phone numbers, 1,512 numbers were able to be used in the survey. Respondents were randomly surveyed by phone callers from Florida International University's Institute for Public Opinion Research using the CATI (Computer-Assisted Telephone Interviewing) system.

The survey was conducted between February 5 and March 12, 2003. It was quite comprehensive and over 90 questions. Several open-ended and multiple response questions were included. I used knowledge gained from readings (see sections Review of the Literature, Survey Questions as Related to Factors Affecting Compliance) to determine the scope of topics and specific questions. References for

general survey information, question formulation, and survey layout included Bernard (1995), Babbie (1999), and Salant and Dillman (1994). Of 444 respondents who were able to be reached and were available to do the survey, 138 did not complete it. Of the 306 who completed the survey, surveys from those who were no longer boat owners or never steered their boat were taken out leaving a total of 286. Of these, 280 were boat and 6 personal watercraft owners (or primary users), mainly from Miami-Dade County. (For the survey boats and personal watercraft were both referred to as boats.)

STATISTICS

I began the data analysis by recategorizing 'other' answers in the phone survey data set into more specific responses. Data were then analyzed using SPSS statistical software. Using box plots and observations on continuous single variables, two questions (17, 76) had one outlier each that was removed. Frequencies and crosstabulations (with questions 28 and 58) were run on all ordinal data. An ordinal measure of association, Gamma, was used at .05 level of significance (Agresti and Finlay, 1997). Categories in questions with uneven answer distributions were recoded to increase cell responses (Craft, 1990; Morgan and Griego, 1998; Mertler and Vannatta, 2002). Also, continuous data were recoded into categories for Gamma analysis. Next, Spearman's Rho correlations were run on 21 (5,17,21-24,27,29,34-36,43,47-49,72,74,75,86,91-93) of the variables I thought might have the most influence on question 28, future generations and that people should not cause their extinction (Morgan and Griego, 1998). This was done in order to decrease chances for multicollinearity in logistic regressions on those variables (Mertler and Vannatta, 2002). No correlated variables significant at .01 or higher were used in the same regression. For the regressions all variables except two continuous variables were recoded (into dichotomous categories). Prior to regression on question 59, a factor analysis was done on all six value questions (58-63) to reduce the data and determine factor weights of component items (Morgan and Griego, 1998; Mertler and Vannatta, 2002). Cronbach's alpha was then used on questions 58-60, component 1 of the factor analysis, to check the internal consistency reliability of these variables (Morgan and Griego, 1998; Mertler and Vannatta, 2002) and to further assess which question correlated most highly with the concept of boaters valuing the manatee. These results are discussed in the next section. Results of the first part of the study (boater compliance) will be presented first.

RESULTS

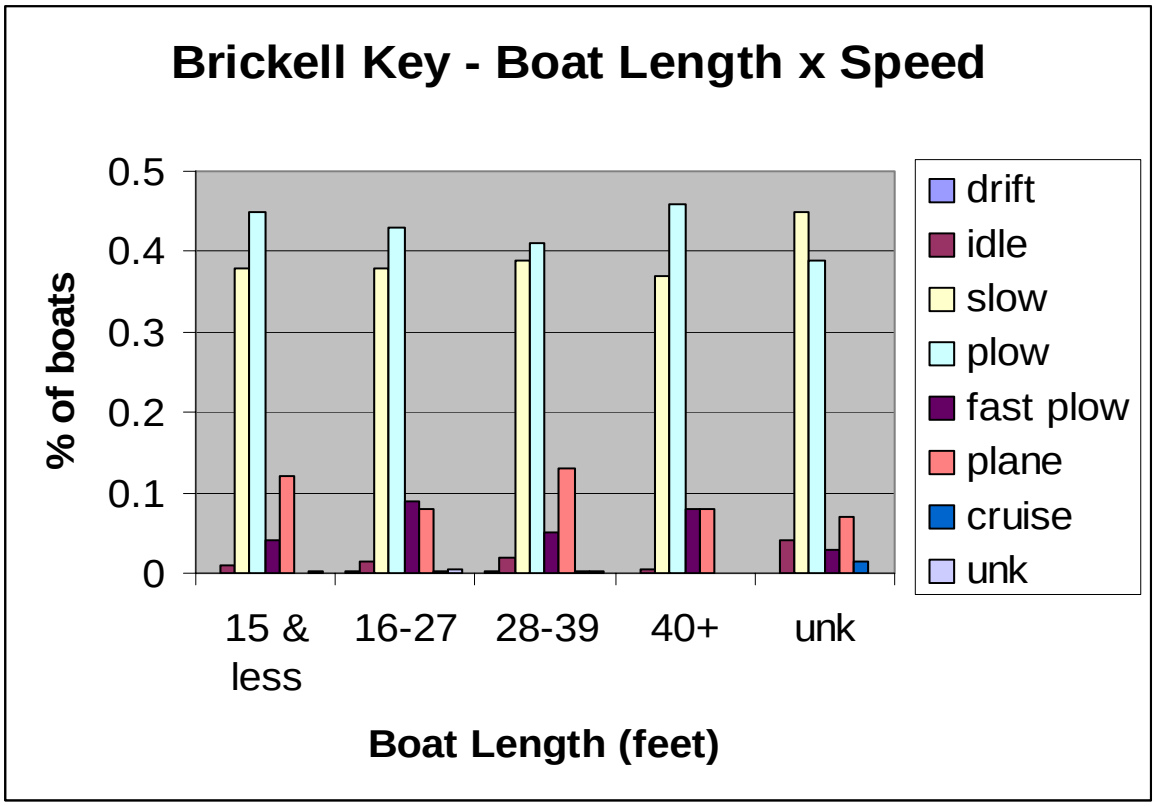
BOATER COMPLIANCE DATA

The chart below (Figure 1) compares speed within boat lengths for all boats with FL #'s (n=7571). The tables below it show column frequencies in numerical and percentage data. Many of these boats were recorded several times. The y axis represents the total percentage of boats. As evidenced from the color coding or table, boats going slow and plowing were the vast majority of observed speeds. Since this is an idle zone, there was much noncompliance. From the spreadsheet data, the percentage of each of these categories is close, 38% and 43% respectively. The third most observed category was plane (9%), followed by fast plow (8%), then idle (1.5%), cruising (.2%) and drifting (.18%). When comparing speeds between categories of boat lengths it can be seen that proportions of boats in all of the speed categories are similar. The greatest difference was 8% for boats going slow (n=2874).

It is interesting to contrast data from the chart, table 72, and table 45 (both from survey results) (pg. 28). In table 72 about 79% of boaters said they complied with speed zones all of the time. However, the chart shows that the number of boats exceeding the Brickell Key idle zone was much more than that. (Please note that the survey respondent may not have been steering the boat when observed and/or boat ownership may have changed.) Also, in question 45, about 50% of boaters said they mostly or strongly agreed that very few boaters obey manatee zones. About 47% mostly or strongly disagreed. Boater reasons for noncompliance from survey question 73 are also on page 28.

Discrepancy between actual and stated compliance is an issue in many disciplines including the environmental field. Some studies have been done comparing professed environmental behaviors with corresponding actions and it has been found that self-reports are inflated as compared with actual behaviors (Alexander, 1993 as cited in Heinen, 1995; Bickmman, 1972, Heberlein, 1981, Weigel, 1983, Stern and Oskamp, 1987, Derksen and Gartrell, 1993 as cited in Tarrant and Cordell, 1997). Moreover, in surveys, respondent stated vs. actual compliance (of his/her actions) can vary as much as 50-70% if the behavior in question is illegal. Reports about what other people do are generally more honest (Gladwin, personal communication).

Figure 1



	15/ less	16-27	28-39	40+	unk
drift	0	0.20%	0.30%	0	0
idle	1%	1.50%	2%	0.60%	4%
slow	38%	38%	39%	37%	45%
plow	45%	43%	41%	46%	39%
fast plow	4%	9%	5%	8%	3%
plane	12%	8%	13%	8%	7%
cruise	0	0.20%	0.20%	0	1.40%
unknown	0.30%	0.40%	0.30%	0	0

	15/ less	16-27	28-39	40+	unk	totals	%
drift	0	10	4	0	0	14	0.18%
idle	4	78	29	2	3	116	1.50%
slow	134	2026	564	119	31	2874	38%
plow	159	2314	595	150	27	3245	43%
fast plow	14	481	72	27	2	596	8%
plane	41	422	190	26	5	684	9%
cruise	0	12	3	0	1	16	0.20%
unknown	1	21	4	0	0	26	0.30%
totals	353	5364	1461	324	69	7571	
%	5%	71%	19%	4%	1%		

72. How often comply with zones

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	half the time or less	4	1.4	1.4	1.4
	more than half the time	56	19.6	19.6	21.1
	all the time	225	78.7	78.9	100.0
	Total	285	99.7	100.0	
Missing	System	1	.3		
Total		286	100.0		

73. What are the reasons you don't comply with manatee speed zones

Q73 responses:	Name	Count	Pct of Responses	Pct of Cases
Gets too hot when boat goes slow	Q73_1	1	1.4	1.7
Need to get somewhere	Q73_2	16	21.9	26.7
Other boats are going fast	Q73_3	4	5.5	6.7
When rains	Q73_7	1	1.4	1.7
Don't know about zone	Q73_9	11	15.1	18.3
Other	Q73_10	9	12.3	15.0
Don't know, no response	Q73_11	4	5.5	6.7
Don't agree with zone	Q73_13	12	16.4	20.0
Weather	Q73_14	3	4.1	5.0
Bad signs,not see the signs,no signs	Q73_15	9	12.3	15.0
Not paying attention	Q73_16	3	4.1	5.0
Total responses		73	100.0	121.7

226 missing cases; 60 valid cases

45. Very few boaters obey manatee speed zones

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	71	24.8	25.3	25.3
	mostly agree	75	26.2	26.7	52.0
	mostly disagree	77	26.9	27.4	79.4
	strongly disagree	58	20.3	20.6	100.0
	Total	281	98.3	100.0	
Missing	System	5	1.7		
Total		286	100.0		

SURVEY RESULTS

The survey asked a wide range of questions on boater knowledge and views, including attitudes, opinions, and beliefs, regarding manatee issues and related topics. Issues fundamental to the boater-manatee debate, but to my knowledge rarely if ever analyzed from the boater's point of view were also explored in the survey. These issues included boater assessment of manatee speed zones and related topics, annual manatee counts, number of manatees there are, and manatee long-term species viability. Four topics in this study that were most important in terms of trying to assess the possibility of resolving this conflict amicably were level of value the manatee had to the boater (58-63), responsibility the boater felt towards saving the manatee (57), whether the boater felt the manatee should continue to be listed as endangered or not (32), and whether manatee speed restrictions should be reduced or not (28).

All of the ordinal variables were crosstabulated using 58 (manatee right to exist) and 28 (speed zone/access rules). Questions 58-63 were also crosstabulated with 32 (endangered listing). Gamma was used to determine strength of association. Value questions (58-63), question 28, question 32, and 57 (responsibility), are discussed first. Next, the results of the rest of the significant crosstabulations are discussed. See Appendix III for the remainder of the significant crosstabulation tables. A few tables with an alpha just over .05 are also included. Frequency tables are in Appendix II. The survey is in Appendix I.

VALUE, ZONE/ACCESS, ENDANGERED STATUS, BOATER RESPONSIBILITY TABLES

FREQUENCIES Q58-63, 28, 32, 57, CROSSTABULATION TABLES Q58-63 WITH 28, 32

For the question of manatee value to the boater, a series of six statements was presented. These statements ranged, in order presented, from strongly favoring the manatee right to exist, to being neutral on the issue, and then finally, to stating that the rights of people are more important than rights of the manatee. The first three statements (58, 59, 60) were worded positively, in gradations, in favor of continued manatee existence. For all three statements, at least 88% (254) of respondents strongly or mostly agreed with each of the statements. The next three statements were more neutral to negatively worded regarding continued existence. For two of these statements (61, 62), an almost equal number of respondents mostly or strongly disagreed (about 64%). Answers to the final question were closely divided among all four responses.

Boater responses to these statements are strong indicators of the importance and value with which boaters view the manatee.

58.Manatee right to exist

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	176	61.5	62.2	62.2
	mostly agree	78	27.3	27.6	89.8
	mostly or strongly disagree	29	10.1	10.2	100.0
	Total	283	99.0	100.0	
Missing	System	3	1.0		
Total		286	100.0		

59.Manatee important for future generations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	201	70.3	71.8	71.8
	mostly agree	58	20.3	20.7	92.5
	mostly or strongly disagree	21	7.3	7.5	100.0
	Total	280	97.9	100.0	
Missing	System	6	2.1		
Total		286	100.0		

60.Comfort that manatees exist

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	193	67.5	69.7	69.7
	mostly agree	66	23.1	23.8	93.5
	mostly or strongly disagree	18	6.3	6.5	100.0
	Total	277	96.9	100.0	
Missing	System	9	3.1		
Total		286	100.0		

61.Accept manatee extinction

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	46	16.1	16.5	16.5
	mostly agree	49	17.1	17.6	34.1
	mostly disagree	58	20.3	20.8	54.8
	strongly disagree	126	44.1	45.2	100.0
	Total	279	97.6	100.0	
Missing	System	7	2.4		
Total		286	100.0		

62.Mixed opinions on value

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	32	11.2	11.8	11.8
	mostly agree	56	19.6	20.7	32.5
	mostly disagree	46	16.1	17.0	49.4
	strongly disagree	137	47.9	50.6	100.0
	Total	271	94.8	100.0	
Missing	System	15	5.2		
Total		286	100.0		

63.Rights people vs. manatee

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	73	25.5	27.2	27.2
	mostly agree	67	23.4	25.0	52.2
	mostly disagree	61	21.3	22.8	75.0
	strongly disagree	67	23.4	25.0	100.0
	Total	268	93.7	100.0	
Missing	System	18	6.3		
Total		286	100.0		

Q28. RULES RESTRICTING BOAT SPEED AND ACCESS

Another variable I was particularly interested in analyzing was factors related to whether the boater felt rules restricting boat speed and access to protect manatees were too strict or not. Over 70% of respondents felt these rules were just about right or should be made stricter. A much smaller number felt they were too strict. Respondent desire to keep manatee safeguards in place is also indicative of concern for and importance of the manatee to boaters.

28.rules restricting boat speed/access

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	too strict	69	24.1	25.6	25.6
	just about right	145	50.7	53.7	79.3
	make more strict	56	19.6	20.7	100.0
	Total	270	94.4	100.0	
Missing	System	16	5.6		
Total		286	100.0		

Q32. ENDANGERED SPECIES LISTING

Almost the same number of boaters who were in favor of continuing current speed and access rules felt that the manatee should continue to be listed as endangered. This result further underscores the importance of the species to boaters. A much smaller number felt the species should be taken off the list.

32.manatee endangered listing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	continue as endangered	141	49.3	70.9	70.9
	take off list	58	20.3	29.1	100.0
	Total	199	69.6	100.0	
Missing	System	87	30.4		
Total		286	100.0		

Q57. RESPONSIBILITY TO HELP SAVE THE MANATEE

This table helps to further define the importance of manatee existence to the boater. Almost 80% of respondents felt they had a major or fair responsibility to help save this species.

57. Amount of responsibility I have to help save the manatee

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	major responsibility	119	41.6	42.0	42.0
	fair amount of responsibility	107	37.4	37.8	79.9
	a little responsibility	40	14.0	14.1	94.0
	no responsibility	17	5.9	6.0	100.0
	Total	283	99.0	100.0	
Missing	System	3	1.0		
Total		286	100.0		

CROSSTABULATIONS: VALUE & ENDANGERED LISTING/SPEED ZONE, ACCESS RULES

In this section questions 58-63 are crosstabulated with 28 and 32. All of the statistics for these data are highly significant. The value (row) variables are considered independent. There is very strong evidence that boater rankings for both dependent variables are in large measure determined by the value a boater has for the manatee.

58. Manatee right to exist * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
58.Manatee right to exist	strongly agree	Count	28	93	47	168
		% within 58.Manatee right to exist	16.7%	55.4%	28.0%	100.0%
	mostly agree	Count	24	42	7	73
		% within 58.Manatee right to exist	32.9%	57.5%	9.6%	100.0%
	mostly or strongly disagree	Count	15	10	1	26
		% within 58.Manatee right to exist	57.7%	38.5%	3.8%	100.0%
Total		Count	67	145	55	267
		% within 58.Manatee right to exist	25.1%	54.3%	20.6%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.523	.080	-5.639	.000
N of Valid Cases		267			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

58. Manatee right to exist * 32. Manatee endangered listing

Crosstab

			32.manatee endangered listing		
			continue as endangered	take off list	Total
58.Manatee right to exist	strongly agree	Count	111	14	125
		% within 58.Manatee right to exist	88.8%	11.2%	100.0%
	mostly agree	Count	30	22	52
		% within 58.Manatee right to exist	57.7%	42.3%	100.0%
	mostly or strongly disagree	Count		19	19
		% within 58.Manatee right to exist		100.0%	100.0%
Total		Count	141	55	196
		% within 58.Manatee right to exist	71.9%	28.1%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.848	.050	7.454	.000
N of Valid Cases		196			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

59. Manatee important for future generations * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
59.Manatee important for future generations	strongly agree	Count	27	110	54	191
		% within 59.Manatee important for future generations	14.1%	57.6%	28.3%	100.0%
	mostly agree	Count	25	28	1	54
		% within 59.Manatee important for future generations	46.3%	51.9%	1.9%	100.0%
	mostly or strongly disagree	Count	14	6		20
		% within 59.Manatee important for future generations	70.0%	30.0%		100.0%
Total		Count	66	144	55	265
		% within 59.Manatee important for future generations	24.9%	54.3%	20.8%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.755	.055	-8.065	.000
N of Valid Cases		265			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

59. Manatee important for future generations * 32. Manatee endangered listing

Crosstab

			32.manatee endangered listing		
			continue as endangered	take off list	Total
59.Manatee important for future generations	strongly agree	Count	127	15	142
		% within 59.Manatee important for future generations	89.4%	10.6%	100.0%
	mostly agree	Count	14	22	36
		% within 59.Manatee important for future generations	38.9%	61.1%	100.0%
	mostly or strongly disagree	Count		17	17
		% within 59.Manatee important for future generations		100.0%	100.0%
Total		Count	141	54	195
		% within 59.Manatee important for future generations	72.3%	27.7%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.922	.030	8.080	.000
N of Valid Cases		195			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

60. Comfort that manatees exist * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
60.Comfort that manatees exist	strongly agree	Count	31	104	52	187
		% within 60.Comfort that manatees exist	16.6%	55.6%	27.8%	100.0%
	mostly agree	Count	23	33	3	59
		% within 60.Comfort that manatees exist	39.0%	55.9%	5.1%	100.0%
	mostly or strongly disagree	Count	12	4		16
		% within 60.Comfort that manatees exist	75.0%	25.0%		100.0%
Total		Count	66	141	55	262
		% within 60.Comfort that manatees exist	25.2%	53.8%	21.0%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.653	.072	-6.540	.000
N of Valid Cases		262			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

60. Comfort that manatees exist * 32. Manatee endangered listing

Crosstab

			32.manatee endangered listing		
			continue as endangered	take off list	Total
60.Comfort that manatees exist	strongly agree	Count	121	18	139
		% within 60.Comfort that manatees exist	87.1%	12.9%	100.0%
	mostly agree	Count	19	22	41
		% within 60.Comfort that manatees exist	46.3%	53.7%	100.0%
	mostly or strongly disagree	Count		13	13
		% within 60.Comfort that manatees exist		100.0%	100.0%
Total		Count	140	53	193
		% within 60.Comfort that manatees exist	72.5%	27.5%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.858	.049	6.744	.000
N of Valid Cases		193			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

61. Accept manatee extinction * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
61.Accept manatee extinction	strongly agree	Count	18	22	3	43
		% within 61.Accept manatee extinction	41.9%	51.2%	7.0%	100.0%
	mostly agree	Count	18	23	5	46
		% within 61.Accept manatee extinction	39.1%	50.0%	10.9%	100.0%
	mostly disagree	Count	16	27	11	54
		% within 61.Accept manatee extinction	29.6%	50.0%	20.4%	100.0%
	strongly disagree	Count	16	70	34	120
		% within 61.Accept manatee extinction	13.3%	58.3%	28.3%	100.0%
Total		Count	68	142	53	263
		% within 61.Accept manatee extinction	25.9%	54.0%	20.2%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.406	.070	5.443	.000
N of Valid Cases		263			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

61. Accept manatee extinction * 32. Manatee endangered listing

Crosstab

			32.manatee endangered listing		
			continue as endangered	take off list	Total
61.Accept manatee extinction	strongly agree	Count	17	12	29
		% within 61.Accept manatee extinction	58.6%	41.4%	100.0%
	mostly agree	Count	16	19	35
		% within 61.Accept manatee extinction	45.7%	54.3%	100.0%
	mostly disagree	Count	23	16	39
		% within 61.Accept manatee extinction	59.0%	41.0%	100.0%
	strongly disagree	Count	82	9	91
		% within 61.Accept manatee extinction	90.1%	9.9%	100.0%
Total		Count	138	56	194
		% within 61.Accept manatee extinction	71.1%	28.9%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.557	.081	-5.533	.000
N of Valid Cases		194			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

62. Mixed opinions on value * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
62.Mixed opinions on value	strongly agree	Count	12	15	3	30
		% within 62.Mixed opinions on value	40.0%	50.0%	10.0%	100.0%
	mostly agree	Count	24	20	9	53
		% within 62.Mixed opinions on value	45.3%	37.7%	17.0%	100.0%
	mostly disagree	Count	10	26	8	44
		% within 62.Mixed opinions on value	22.7%	59.1%	18.2%	100.0%
	strongly disagree	Count	20	73	35	128
		% within 62.Mixed opinions on value	15.6%	57.0%	27.3%	100.0%
Total		Count	66	134	55	255
		% within 62.Mixed opinions on value	25.9%	52.5%	21.6%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.352	.079	4.282	.000
N of Valid Cases		255			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

62. Mixed opinions on value * 32. Manatee endangered listing

Crosstab

			32.manatee endangered listing		
			continue as endangered	take off list	Total
62.Mixed opinions on value	strongly agree	Count	10	13	23
		% within 62.Mixed opinions on value	43.5%	56.5%	100.0%
	mostly agree	Count	20	20	40
		% within 62.Mixed opinions on value	50.0%	50.0%	100.0%
	mostly disagree	Count	19	10	29
		% within 62.Mixed opinions on value	65.5%	34.5%	100.0%
	strongly disagree	Count	87	11	98
		% within 62.Mixed opinions on value	88.8%	11.2%	100.0%
Total		Count	136	54	190
		% within 62.Mixed opinions on value	71.6%	28.4%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.633	.078	-5.928	.000
N of Valid Cases		190			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

63. Rights people vs. manatee * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
63.Rights people vs. manatee	strongly agree	Count	31	32	8	71
		% within 63.Rights people vs. manatee	43.7%	45.1%	11.3%	100.0%
	mostly agree	Count	16	35	13	64
		% within 63.Rights people vs. manatee	25.0%	54.7%	20.3%	100.0%
	mostly disagree	Count	12	34	12	58
		% within 63.Rights people vs. manatee	20.7%	58.6%	20.7%	100.0%
	strongly disagree	Count	5	36	21	62
		% within 63.Rights people vs. manatee	8.1%	58.1%	33.9%	100.0%
Total		Count	64	137	54	255
		% within 63.Rights people vs. manatee	25.1%	53.7%	21.2%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.390	.071	5.199	.000
N of Valid Cases		255			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

63. Rights people vs. manatee * 32. Manatee endangered listing

Crosstab

			32.manatee endangered listing		
			continue as endangered	take off list	Total
63.Rights people vs. manatee	strongly agree	Count	22	27	49
		% within 63.Rights people vs. manatee	44.9%	55.1%	100.0%
	mostly agree	Count	28	17	45
		% within 63.Rights people vs. manatee	62.2%	37.8%	100.0%
	mostly disagree	Count	34	12	46
		% within 63.Rights people vs. manatee	73.9%	26.1%	100.0%
	strongly disagree	Count	49	1	50
		% within 63.Rights people vs. manatee	98.0%	2.0%	100.0%
Total		Count	133	57	190
		% within 63.Rights people vs. manatee	70.0%	30.0%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.650	.073	-6.980	.000
N of Valid Cases		190			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

OTHER SIGNIFICANT CROSSTABULATION RESULTS

Results of all other significant survey crosstabulations are presented in this section. As I mentioned previously, these data include information that quite possibly has never been gathered before. Much of this research includes boater knowledge and beliefs regarding issues tangential, but crucial to, the overall goal of boater-manatee peaceful coexistence. In the interest of trying to shed light on factors that have a direct impact on the manatee conflict, crosstabulations were completed using variables 58 (the strongest statement in favor of valuing the manatee) and 28 (opinions on rules restricting boat speed and boater access). Recommendations and discussion regarding how some of these results may be used to

positively influence boater compliance and increase awareness are in the next section. Frequency and crosstabulation tables are in the appendices.

5*28 - How long a person has been a boater is significant with both variables. The longer a person has been a boater, the more likely s/he is to feel zone/access rules are too strict.

5*58 - The longer a person has been a boater, the more likely s/he is to disagree with manatee right to exist.

7, 8*58 – The longer the boat length, the more likely the boater is to disagree with manatee right to exist. (Please note that boat lengths were determined through two questions that have been combined here.)

9*58 – Boaters with non-power boats are more likely to agree with manatee right to exist.

17*28 – The more times a boater goes out (in summer) the more likely s/he is to favor less strict zone/access rules.

18*28 - The more times a boater goes out (in winter) the more likely s/he is to favor less strict zone/access rules.

23*58 – Boaters who have not been members of boating or other nature related organizations as an adult are more likely to agree with manatee right to exist.

24*28 – Boaters who have not received boating or nature publications as an adult are more likely to favor stricter zone/access rules.

24*58 - Boaters who have not received boating or nature publications as an adult are more likely to agree with manatee right to exist.

29*28 – The more economic harm boaters feel speed zones cause the marine industry the more likely they are to favor less strict zone/access rules.

29*58 - The more economic harm boaters feels speed zones cause the marine industry the less likely they are to agree with manatee right to exist.

30*28 – Boaters who do not think speed restrictions should be made less strict in areas where this has caused a high economic impact are more likely to favor stricter zone/access rules.

30*58 - Boaters who do not think speed restrictions should be made less strict in areas where this has caused a high economic impact are more likely to agree with manatee right to exist.

31*28 – Boaters who feel restrictions for building water access facilities should be increased in areas where manatee death rates are highest are more likely to favor stricter zone/access rules.

31*58 - Boaters who feel restrictions for building water access facilities should be increased in areas where manatee death rates are highest are more likely to agree with manatee right to exist.

32a*28 – The higher the level of agreement with manatee advocacy organizations, the more likely boaters are to favor stricter zone/access rules.

32a*58 - The higher the level of agreement with manatee advocacy organizations, the more likely boaters are to agree with manatee right to exist.

35*28 – The stronger a boater feels about the current population of manatees being able to survive into the future, the more likely s/he is to favor less strict zone/access rules.

35*58 - The stronger a boater feels about the current population of manatees being able to survive into the future, the more likely s/he is to disagree with manatee right to exist.

36*28 – The stronger a boater feels about the role boat collisions play in causing known manatee deaths, the more likely s/he is to favor stricter zone/access rules.

36*58 - The stronger a boater feels about the role boat collisions play in causing known manatee deaths, the more likely s/he is to agree with manatee right to exist.

37*28 – Boaters who disagree with the statement there are more manatees in South Fla. in summer than winter are more likely to favor less strict zone/access rules.

37*58 - Boaters who disagree with the statement there are more manatees in South Fla. in summer than winter are more likely to disagree with manatee right to exist.

42*28 – The more boaters believe in the accuracy of manatee population counts, the more likely they are to favor stricter zone/access rules.

42*58 - The more boaters believe in the accuracy of manatee population counts, the more likely they are to agree with manatee right to exist.

45*28 – The more strongly boaters agree that very few boaters obey manatee speed zones, the more likely they are to favor stricter zone/access rules.

45*58 - The more strongly boaters agree that very few boaters obey manatee speed zones, the more likely they are to agree with manatee right to exist.

47*28 – The greater the agreement that a boater can usually find a faster route to his/her destination, the more likely s/he is to favor stricter zone/access rules.

47*58 - The greater the agreement that a boater can usually find a faster route to his/her destination, the more likely s/he is to agree with manatee right to exist.

48*28 - The greater the agreement that a boater can usually determine the speed zone s/he is in, the more likely s/he is to favor stricter zone/access rules.

49*28 - The greater the agreement that speed requirements are easy to understand from the signs posted, the more likely the boater is to favor stricter zone/access rules.

49*58 - The greater the agreement that speed requirements are easy to understand from the signs posted, the more likely boaters are to agree with manatee right to exist.

52*28 - The greater the agreement that maps of speed zones are very helpful, the more likely the boater is to favor stricter zone/access rules.

52*58 - The greater the agreement that maps of speed zones are very helpful, the more likely boaters are to agree with manatee right to exist.

53*58 - The greater the agreement that more speed zone signs are needed, the more likely boaters are to agree with manatee right to exist.

54*58 - The greater the agreement that there should be fewer types of zones even if the number of slower zones increases, the more likely boaters are to agree with manatee right to exist.

57*28 – The greater the level of responsibility boaters feel to help save the manatee from extinction, the more likely boaters are to favor stricter zone/access rules.

57*58 - The greater the level of responsibility boaters feel to help save the manatee from extinction, the more likely boaters are to agree with manatee right to exist.

64*28 - The greater the level of difference a boater feels s/he can make towards helping ensure long-term manatee survival, the more likely s/he is to favor stricter zone/access rules.

64*58 - The greater the level of difference a boater feels s/he can make towards helping ensure long-term manatee survival, the more likely s/he is to agree with manatee right to exist.

69*28 – Boaters who have never exceeded speed limits in Monument Island zone are more likely to favor stricter zone/access rules.

71*28 - Boaters who have never exceeded speed limits in Brickell Key zone are more likely to favor stricter zone/access rules.

71*58 - Boaters who have never exceeded speed limits in Brickell Key zone are more likely to agree with manatee right to exist.

72*28 - The greater the boater compliance with speed zones, the more likely s/he is to favor stricter zone/access rules.

72*58 - The greater the boater compliance with speed zones, the more likely s/he is to agree with manatee right to exist.

76*28 – The more hours a boater stays out for a day of boating, the more likely s/he is to favor stricter zone/access rules.

78*28 – The more law enforcement boats a boater feels is needed, the more likely s/he is to favor stricter zone/access rules.

78*58 - The more law enforcement boats a boater feels is needed, the more likely s/he is to agree with manatee right to exist.

79*28 – The more the boater disagrees with increasing taxes, the more s/he feels zone/access rules are too strict.

79*58 - The more the boater disagrees with increasing taxes, the more s/he he disagrees with manatee right to exist.

80*28 – The more the boater disagrees with decreasing the number of boats, the more s/he feels zone/access rules are too strict.

80*58 - The more the boater disagrees with decreasing the number of boats, the more s/he disagrees with manatee right to exist.

85*28 – Boaters who had ever taken a boater education class were more likely to favor less strict zone/access rules.

86*28 – Boaters who stated that the class taught something helpful or interesting about manatees were more likely to favor stricter zone/access rules.

90*28 – Boaters who felt boating licenses should be required were more likely to favor stricter zone/access rules.

91*28 – The older the boater the more likely s/he is to favor less strict zone/access rules.

93*28 – The higher the income, the more likely the boater is to favor less strict zone/access rules.

93*58 - The higher the income, the less likely the boater is to agree with manatee right to exist.

LOGISTIC REGRESSION RESULTS

Regressions were done on two of the most important questions of this study. Question 28, opinion on rules restricting boat speed and access to protect manatees was analyzed with independent variables years as a boater (5), opinion on economic harm manatee speed zones cause the marine industry (29), opinion on ability to determine speed zone traveling in (48), level of education (92), and income (93). Question 59, the statement that manatees are important for future generations and that people should not cause their extinction, was analyzed with variables years as a boater (5), number of times per month take boat out in summer (17), importance of outdoor activities as a child (21), boating organizations as adult (23), publications as adult (24), number of manatees seen in the wild (27), number of manatees think there are (34), level of education (92), and income (94).

Five variables Forward LR regressed on 28:

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	189.566	.188	.277
2	184.137	.209	.308
3	180.382	.223	.329

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1	Q29.2ECO	2.284	.366	38.903	1	.000	9.817
	Constant	-.361	.272	1.766	1	.184	.697
Step 2	Q29.2ECO	2.251	.373	36.369	1	.000	9.500
	R48.2ZON	1.121	.477	5.523	1	.019	3.067
	Constant	-1.269	.488	6.767	1	.009	.281
Step 3	Q5	-.025	.013	3.769	1	.052	.976
	Q29.2ECO	2.142	.379	32.009	1	.000	8.519
	R48.2ZON	1.186	.483	6.018	1	.014	3.273
	Constant	-.762	.548	1.933	1	.164	.467

Forward logistic regression (see tables above) was conducted to determine which independent variables (years as a boater (5), opinion on economic harm manatee speed zones cause the marine industry (29), opinion on ability to determine speed zone traveling in (48), level of education (92), and income (93)) were predictors of boater opinion on manatee protection rules (28). The coding for 'just about right or should be more strict' was 1 and 'too strict' was 0. Regression results indicate the overall model of three predictors (5, 29, 48) was fair (-2 Log likelihood=180.382) but was statistically reliable in distinguishing between boaters who felt the rules were just about right or should be stricter and those who thought they were too strict (chi squared (3) =51.809, $p<.001$). The Nagelkerke statistic shows that about 33% of the variation in the dependent variable is explained by the model. Wald statistics indicate that opinion on economic harm manatee speed zones cause the marine industry (1=little or no harm) and opinion on ability to determine the speed zone one is traveling in (1=can usually determine speed zone in) significantly predict opinion on speed zones. Odds ratios (8.519, 3.273) showed substantial increase in the likelihood of feeling the rules were just about right or should be stricter when predictors increase by 1.

When using the Enter method with the same three predictors from the previous model (see tables below), years as a boater becomes strongly significant. However, the coefficient is negative (and odds ratio less than 1) so that with increasing years as a boater, there is a decrease in the likelihood that the boater will feel manatee protection rules are just about right or should be made stricter. The overall model fit was higher (215.816), hence worse, than the previous regression. The Nagelkerke was about the same (.327). Regression results indicate the overall model was statistically reliable in distinguishing between boaters

who felt the rules were just about right or should be stricter and those who thought they were too strict (chi squared (3) =61.364, p<.001).

Three variables Enter regressed on 28:

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Q5	-.029	.011	6.359	1	.012	.972
	Q29.2ECO	2.176	.344	40.067	1	.000	8.808
	R48.2ZON	.913	.439	4.324	1	.038	2.492
	Constant	-.441	.492	.803	1	.370	.643

a. Variable(s) entered on step 1: Q5, Q29.2ECO, R48.2ZON.

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	215.816	.222	.327

Forward logistic regression was also conducted to determine which independent variables (years as a boater (5), number of times per month take boat out in summer (17), importance of outdoor activities as a child (21), boating organizations as adult (23), publications as adult (24), number of manatees seen in the wild (27), number of manatees think there are (34), level of education (92), and income (94)) are predictors of manatee value to the boater (59). Initially, a factor analysis and Cronbach's alpha was completed on questions that referred to manatee value in an effort to determine factor weights of component items and to further assess which question correlated most highly with the concept of boaters valuing the manatee. Both types of analysis are based on a correlation matrix of all the variables to be considered in a problem (Morgan and Griego, 1998).

Factor analysis was conducted to determine what, if any, underlying structure exists for measures on the six value variables 58-63. Principal components analysis, which takes into account all sources of variability (unique, shared, and error), was used to determine extent of measurement overlap among the variables. This analysis was conducted utilizing a varimax rotation. The analysis produced a two-component (uncorrelated) solution which was evaluated with eigenvalue (two values were over one) and variance (components account for at least 70% total variability) (Mertler and Vannatta, 2002; Morgan and

Griego, 1998). Criteria indicated a two-component solution was appropriate. After rotation, the first component accounted for 37.96% of the total variance in the original variables, while the second component accounted for 31.83%. (See tables below.)

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	3.157	52.619	52.619	3.157	52.619	52.619	2.277	37.956	37.956
2	1.030	17.171	69.791	1.030	17.171	69.791	1.910	31.834	69.791
3	.683	11.376	81.167						
4	.489	8.144	89.310						
5	.386	6.439	95.750						
6	.255	4.250	100.0						

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component	
	1	2
58. Value1 with missing	.836	-.137
59. Value2 with missing	.857	-.271
60. Value3 with missing	.844	-.276
61. Value4 with missing	-.261	.802
62. Value5 with missing	-.205	.749
63. Value6 with missing	-.143	.733

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Component number 1 (above) consisted of three of the six variables 58-60. These variables have strong, positive loadings and will be referred to as Manatee Value. The second component is made up of the remaining three variables and might be referred to as Mixed Opinion on Manatee Value. For the purposes of this logistic regression I am interested in only the component Manatee Value and most particularly which question correlated most highly with the concept of boaters valuing the manatee. In the bottom table question 59 has the strongest relationship between each observed variable and each component.

In a factor analysis of questions 58-60 (below), the variables make up one component that accounts for over 77% of the total variance in the original variables. Again, question 59 has the strongest relationship of the three variables with the component.

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.332	77.735	77.735	2.332	77.735	77.735
2	.417	13.913	91.647			
3	.251	8.353	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
58. Value1 with missing	.845
59. Value2 with missing	.909
60. Value3 with missing	.890

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

One other comparison done before running the regression was a Cronbach's alpha (below) on questions 58-60. Used to measure internal consistency reliability of a multiple item scale, it is based on the average correlation of each item in the scale with every other item (Morgan and Griego, 1998). Again question 59 had the highest correlation in the scale and will be used as the dependent variable in the logistic regression to determine predictors of Manatee Value.

	Corrected Item-Total Correlation	Alpha if Item Deleted
Q58.4	.6699	.8534
Q59.4	.7754	.7496
Q60.4	.7395	.7858

Reliability Coefficients 3 items

Alpha = .8545 Standardized item alpha = .8563

Forward logistic regression was conducted to determine which independent variables (years as a boater (5), number of times per month take boat out in summer (17), importance of outdoor activities as a child (21), boating organizations as adult (23), publications as adult (24), number of manatees seen in the wild (27), number of manatees think there are (34), level of education (92), and income (94)) are predictors of manatee value to the boater (59). The coding for mostly or strongly agree that manatee survival is important so that they exist for future generations and people should not cause their extinction is 1. The coding is 0 for those mostly or strongly disagreeing. Regression results indicate that the overall model of the two predictors (5, 23) was statistically reliable in distinguishing between boaters who agreed that they valued manatees and those who disagreed with this (-2 Log Likelihood=14.306; chi squared (2)=14.660, p<.001). The Nagelkerke statistic shows that about 57% of the variation in the dependent variable is explained by the model. Wald statistics indicate that years as a boater (a continuous variable) and ever belonging to any boating or other outdoor or nature related organizations as an adult (no=1) significantly predict manatee value to the boater. However, the coefficients are negative indicating that the longer a boater and ever belonging to any boating or other outdoor or nature related organizations as an adult decrease the likelihood of valuing the manatee. (See results of Forward LR below.) (None of the variables were significant when using the Enter method.)

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Q5	-.084	.039	4.661	1	.031	.920
	Constant	5.440	1.757	9.590	1	.002	230.431
Step 2[b]	Q5	-.166	.077	4.680	1	.031	.847
	R23.2	-4.411	2.013	4.802	1	.028	.012
	Constant	11.167	4.454	6.285	1	.012	70756.349

a. Variable(s) entered on step 1: Q5.

b. Variable(s) entered on step 2: R23.2.

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	22.275	.111	.278
2	14.306	.227	.569

DISCUSSION

OVERVIEW OF POSSIBLE ACTIONS, INCENTIVES, AND DISINCENTIVES TO ENCOURAGE BOATER COMPLIANCE

Information regarding the role that genetic and cultural factors play in our lives includes strong evidence for a heritable component of human ability and personality (Fuller and Thompson, 1978 as cited in Fuller, 1978). However, tradition and the availability of natural and technical resources must be responsible for most of the cultural aspects of groups, social classes, etc. (Fuller, 1978). These ideas along with information regarding the theoretical components of attitude formation and behavior previously discussed support requiring boater awareness classes for all new boaters (retroactive to all boaters who have not taken a class). This would be an important step towards disseminating correct knowledge about manatees and encouraging safe boater attitudes and actions. Moreover, studies show that attitudes can be influenced by opinions (and actions) of other group participants or classmates (Allman, 1994). Approximately 90% of all survey respondents felt boaters should be required to take a class on boating safety and the marine environment (question 89). Also, direct exposure to the subject helps to teach about that subject and encourage subject relevance. In teaching about manatees for the ultimate purpose of trying to help the species survive, I think it is important that the boater see a manatee injured or dead due to boat collision. Probably the most feasible (and ideal) possibility, in the Miami area for example, would be for a class to see an injured manatee at a Seaquarium visit. They should also be given an overview of manatee biology including discussions on long-term species viability. The subject of boater education is further discussed in the next section.

Another method of increasing compliance is increased law enforcement. However, due to financial constraints on law enforcement and factors regarding its overall effectiveness as was mentioned previously, this option should not be relied upon to help control the vast majority of boaters. Therefore, increasing fines may do little if any good towards changing mortality data but should nevertheless be implemented. Survey respondents felt that fines (averaged) for the first violation in a manatee zone should be about $165.00. Also, almost the same number of respondents felt that the number of law enforcement

boats they saw in a day was too few (39.5%) and just about right (46.9%). Respondents saw an average of 2.5 law enforcement boats during a day of boating (an average of 8.17 hours). (Questions 56, 76, 77, 78.)

While economic incentives are felt to be crucial for most people in encouraging compliance with most environmental policies, social incentives are thought to be more important in households with expendable income (Heinen, 1995). However, as discussed earlier in this paper, there are many unique aspects to the manatee situation. Included among these are the facts that there are a large number of stakeholders involved and none of them have property rights. Hence, there may be many people who feel that the individual cannot make a difference towards saving this species nor has a responsibility to do so (Yager, 1994; McKinney et al., 1994; Bean, 1994). Adequate and feasible incentives to engage most individuals in conservation activities in this situation probably cannot be created (Hanemann, 1988). (In this study more survey respondents felt they had a major responsibility to help save the manatee but more also felt they could make little difference in ensuring long-term survival (questions 57, 64)).

In light of Hanemann's work and factors including the time/travel factor as it relates to slow/idle speed zones, immediacy and severity of cause and effect (collisions), scope of the problem and ramifications, the number of boaters with expendable incomes (question 93-about 47% of all respondents in this survey made $90,000 or more), and the number of experienced boaters (question 5-mean number of years as a boater was about 18), it is most likely that a combination of social and economic disincentives will be necessary to encourage compliance. Moreover, it is likely that only the severest and most comprehensive system of economic disincentives would be of possible benefit. (Regarding the theory discussed earlier that more experienced recreational users, while more predictable in their behavior, are more difficult to influence, in this study the more years as a boater, the more likely manatee right to exist and stricter speed zone rules were disagreed with.) If these disincentives were based on mortality data and levied through the county, as a tax for example, increased law enforcement would not have to be a required component. Also, the use of (social) disincentives that restrict use of the boat may be necessary. For example, allowing odd or even numbered boats out on certain days in high mortality counties (perhaps with color coded FL numbers), and immediate suspension of boating privileges for boaters severely exceeding speed limits, etc. This survey asked about both this latter idea of reducing boat numbers in counties with

high manatee mortality and increasing taxes in these high mortality areas. At least 70% of respondents mostly or strongly disagreed with both ideas (questions 79, 80).

DISCUSSION OF SIGNIFICANT SURVEY RESULTS

In these closing two sections I will present an overview of significant results in approximate survey order. The final section examines particular results and their possible importance in increasing compliance and boater awareness.

First, the longer a boater used his/her boat, either length of time as a boater (5) or number of times the boat was taken out per month (17,18), the less agreement the boater had with speed rules or manatee right to exist. However, the more hours a boater stayed out for a day of boating, the more likely s/he was to favor stricter zone/access rules (76).

Boaters who were involved with 'nature' or boating type organizations were less likely to value manatee right to exist (23). At .051, 23*28 was just out of bounds of significance. (Boaters who were involved with 'nature' or boating type organizations were more likely to favor less strict speed rules.) Boaters who received 'nature' or boating type publications were more likely to favor less strict speed rules and less likely to value manatee right to exist (24). Childhood outdoor experiences were not significant with either variable.

All three economic impact questions (29-31) were significant with both variables. The more economic harm speed zones were felt to cause, the less likely the boater was to agree with zone rules/right to exist. Boaters who did not favor decreased restrictions in high economic impact areas or favored increased restrictions where death rates are highest both favored stricter zone rules/right to exist.

At .059, 34*28 was just out of bounds of significance. (The more manatees the boater felt there were the more likely s/he was to favor less strict speed rules.) The stronger a boater felt about the current population of manatees being able to survive into the future (35), the less s/he favored manatee speed rules and right to exist.

In question 25, not significant with either variable, 65% of all respondents stated they knew a lot or a fair amount about manatees. Also, questions 40 and 41 were not significant with either variable however it is important to mention that about 55% of all respondents knew a slow zone was minimum

wake and about 62% knew idle was no wake. In question 84 (not significant with either variable), about 42% of all respondents did not know how far to obey a speed zone when no distance limits were posted. Question 21a also was not significant with either variable however about 88% of all respondents said that their knowledge about speed zone and other regulatory signs was good or very good.

Question 45 was significant with both variables. Not only did most boaters (about 51%) in this survey agree that very few boaters obeyed manatee speed zones, but about 59% agreed that there should be fewer types of zones even if the number of slower zones increases (54). The more a boater agreed that few boaters obey the zones, the more s/he agreed with speed rules/right to exist. Question 54 was significant with 58: the greater the agreement with having fewer types of zones (even if slower zones increase), the more the boater agreed with right to exist. Question 53 was also significant with 58: the greater the agreement that more speed zone signs are needed, the more likely there is agreement with right to exist.

Regarding zone/signage questions 47 (can usually find a faster route to destination), 48 (can usually determine speed zone in), 49 (speed requirements easy to understand), and 52 (maps of speed zones are helpful), the greater the agreement with these statements the more likely the boater was to agree with speed rules/right to exist. (At .052, 48*58 was just out of bounds of significance.)

Questions 57 (level of responsibility) and 64 (difference can make) were significant with both variables. The higher the responsibility/difference a boater felt s/he had/could make, the more likely s/he was to agree with speed rules/right to exist.

Questions 69 and 71 (ever exceeded speed limits in “Monument Island” area and Brickell Key) were both significant with 28. Boaters never exceeding these speed limits were more likely to favor stricter zone/access rules. Boaters who had never exceeded speed limits in Brickell Key zone are also more likely to agree with manatee right to exist.

Questions 72 and 78 were significant with both variables. The greater the boater compliance with speed zones or the more law enforcement boats a boater felt was needed, the more the boater agreed with speed rules/right to exist.

In terms of two questions presented to boaters (increase taxes (79) and decrease boat numbers (80)) to gauge their level of agreement with possible solutions that could be imposed, the stronger the

boater disagreement (with either question), the more the boater disagreed with speed rules/right to exist. In another question regarding requirements for boaters, 68% of respondents felt that boaters should be required to get licenses, including an exam and points for violations (90). These boaters were also more likely to favor stricter zone/access rules.

On a more demographic level, the older a boater (91) or the higher the income (93), the more likely the boater was to favor less strict zone/access rules. Also, the higher the income, the less likely the boater was to agree with manatee right to exist. At .054, 92*28 was just out of bounds of significance. (Higher the level of education, the more likely the boater was to favor less strict zone/access rules.)

AREAS OF RECOMMENDATION FOR INCREASING BOATER COMPLIANCE , AWARENESS AND RESPONSIBLE ENVIRONMENTAL BEHAVIOR AS DETERMINED FROM SURVEY RESULTS

There are at least three topic areas from the survey that should be explored further for possible links to improved boater awareness and compliance. The first involves boater knowledge of faster routes to a particular destination. This topic area is probably most relevant to boaters who live near the coast (where more waterways might be available). A boater who could find a faster route to his or her destination was more likely to favor speed rules and manatee right to exist. Unfortunately, about 40% of respondents stated that they were not familiar with the speed zone near "Monument Island" in Biscayne Bay, just west of Miami Beach, ending at the MacArthur Causeway, near the Coast Guard station. This zone and north for about four miles allows a boater to go at least 30 mph most of the year (or all year in some parts). Because this survey was of boaters/FL numbers spotted at Brickell Key, an idle zone near this faster zone, more boater knowledge regarding where faster zones are may decrease the number of boaters exceeding manatee speed zone limits (questions 47, 68).

The second area involves boaters knowing the approximate number of manatee deaths due to boat collisions (36) and believing in the accuracy of mantee counts (42). Results of these questions were significant with both variables. The stronger a boater felt about the role of boats in manatee deaths or the more boaters believed in the accuracy of manatee counts, the more likely they were to favor speed rules and manatee right to exist. However, about 32% of all respondents felt that boat collisions were not a cause or

only occasionally a cause of manatee deaths. With all of the mortality data available, this is a high percentage of boaters to have this opinion. Also, about 46% of all respondents felt manatee population counts were mostly or very accurate. This figure speaks to a large uncertainty about the number of manatees and manatee counting technique. Fortunately, scientists are continually updating research methods to ensure the most accurate counts possible, although the exact number of manatees may never be known. However, the counts for the past decade do give us information about the minimum number of manatees. Sadly, these figures are also not being conveyed to boaters. Surprisingly low compared to the last statistic, is the result for question 34, number of manatees the boater thought there were (not significant with either variable). About 13% of all respondents answered a number between 2,000-4,000 (don't know/not enough information=213). As mentioned earlier, results of most yearly aerial manatee counts have been in the 2,000s. Despite the high number of don't know or not enough information responses for question 34, about 26% of all respondents felt that there were currently enough or more than enough manatees to enable the population to exist for a long time in the future (don't know/not enough information=149) (question 35).

The topics mentioned under this second area are some of the most contentious in this conflict. Because boating classes are not required, boaters may get their information from a number of sources. Some of these sources may have incorrect data and/or may have their own 'agenda'. These are extremely important issues and should be presented to and discussed by boaters in required classes.

Regarding education, boaters who had ever taken a boater education class (about 66%) were more likely to favor less strict zone/access rules while boaters who stated that the class taught something helpful or interesting about manatees (about 64% of those who had taken a class) were more likely to favor stricter zone/access rules. Approximately 90% of all respondents felt boaters should be required to take a class on boating safety and the marine environment. (About 68% of respondents felt that boaters should be required to get licenses, including an exam and points for violations.) Moreover, on general boater knowledge questions that were asked regarding manatee migration, idle and slow zone speed, the SOS/emergency signal, the federal law regarding discharge of plastics, and the length of speed zones, the highest percentage

of correct answers by all respondents for any question was about 62%. The latter three questions also had many other/don't know responses. (Questions 85, 86, 89, 90, 37, 40, 41, 82, 83, 84.)

Because of the importance of the boater-manatee issue, the lack of formal education for the boater, the lack of correct knowledge in several related subject areas by many boaters, importance to the boater of classes for all boaters, and boater value of and sense of responsibility for manatee survival, I suggest that money spent for formal (but fun and interesting) boater education classes (not internet) would prove to be worthwhile and beneficial for both sides in this issue.

Understandably, in order to change behavior or expect a behavior, the student must have knowledge about that behavior. However, referring back to references from the section on factors affecting compliance, how that knowledge is imparted and the quality of that knowledge can affect the attitude and behavior regarding the issue. Without sanctioned classes, there is no guarantee of how much, if any, information a boater will receive about boating and the boater-manatee conflict. There is also no way to guarantee that information that is being disseminated to boaters is up-to-date and correct data. The high number of boaters wanting boater education classes bodes well for support for and compliance with mandatory boater education. As an incentive, perhaps insurance rates could decrease as soon as the class is completed.

Although boaters were found noncompliant in the first part of the study, several questions showed that most valued manatees. This is very important, particularly when considering other factors involved in this conflict including the increasing numbers of boats, moratoriums on building water access facilities, etc. Also, boater support for the manatee is possibly one of the most important indicators of manatee chances for survival. Let's hope this is indeed the case.

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Appendix I – Survey Instrument

SURVEY INSTRUMENT

Q1-3 Introductory items

[Q4] 4. Time spent in Florida
First, in terms of time spent in Florida, would you say you live here year-round, are you here usually in the summer only, winter only, or does your schedule vary from year to year?
1 YEAR-ROUND
2 SUMMER ONLY
3 WINTER ONLY
4 SCHEDULE VARIES
5 OTHER, SPECIFY
6 DON'T KNOW/NO RESPONSE

[Q5] 5. How long a boater
Now I have some questions about the use of your boat. How long have you been a boater or personal watercraft user in Florida? [ENTER YEARS, ZERO IF UNDER ONE YEAR, 99=MISSING]
[numeric, range: 0-99]

[Q6] 6. Number of boats
How many boats and personal watercraft do you own?
1 ONE
2 TWO
3 THREE
4 FOUR OR MORE
5 NO LONGER BOAT OWNER
6 DON'T KNOW/NO RESPONSE

[Q7] 7. Length of boat (most used of more than one boat)
I will be asking you about the one boat or personal watercraft you use most often in Florida and referring to it as a "boat". If you use your boat in more than one state, I am asking just about its use in Florida. What is the approximate length of this boat in feet? [numeric, range: 0-999]

[Q8] 8. Length of boat (one boat)
If you use your boat or personal watercraft in more than one state, I am asking just about its use in Florida and referring to it as a "boat". What is the approximate length of this boat in feet?
[numeric, range: 0-999]

[Q9] 9. Power or sail
Is your boat a power boat or sailboat?
1 POWER
2 SAIL
3 OTHER
4 DON'T KNOW/NO RESPONSE

[Q10] 10. Model and brand of boat
What is the model and brand of this boat? [open-end]

[Q11] 11. Years owned boat
How many years have you owned this boat? [ENTER YEARS, ZERO IF UNDER ONE YEAR, 99=MISSING] [numeric, range: 0-99]

[Q12] 12. Where keep boat

As mentioned, this question and the rest of the survey refer to your boat use in Florida only. Where do you primarily keep your boat? [DO NOT READ RESPONSES. IF MORE THAN ONE GIVEN, ASK FOR PLACE KEPT MOST OFTEN]

1 DOCKSIDE AT MY RESIDENCE
2 ON LAND AT MY RESIDENCE
3 MARINA
4 DOCKSIDE AT FRIEND'S OR RELATIVE'S HOME
5 ON LAND AT FRIEND'S OR RELATIVE'S HOME
6 LAND STORAGE FACILITY (OUT OF WATER)
7 DON'T KEEP BOAT HERE
8 OTHER, SPECIFY
9 DON'T KNOW/NO RESPONSE

[Q13] 13. Commercial or noncommercial use of boat

Is your boat used mainly for non-commercial uses such as recreation, for both non-commercial and commercial, or only for commercial business use?

1 MAINLY NONCOMMERCIAL
2 BOTH
3 ONLY COMMERCIAL
4 OTHER
5 DON'T KNOW/NO RESPONSE

[Q14] 14. Use(s) of boat

What are the main activities you use your boat for? [INTERVIEWER, DO NOT READ RESPONSES. CHECK ALL THAT APPLY]

[multiple response] 1 LEISURE, JUST TAKING THE BOAT OUT FOR FUN
2 WATER SKIING
3 SWIMMING/DIVING/SCUBA/SNORKLING/SPEARFISHING
4 FISHING ROD/REEL FISHING
5 TOURNAMENT FISHING
6 CRUISING, TRAVEL TO OTHER LOCATIONS
7 REGATTAS, MEETING OTHER BOATS AT SEA
8 RACING
9 OTHER, SPECIFY
10 NO MORE

[Q15] 15. Most important use of boat

Which of these uses is the most important? [INTERVIEWER: READ RESPONSES, CHECK ALL THAT APPLY]

[multiple response] 1 LEISURE, JUST TAKING THE BOAT OUT FOR FUN
2 WATER SKIING
3 SWIMMING/DIVING/SCUBA/SNORKLING/SPEARFISHING
4 FISHING ROD/REEL FISHING
5 TOURNAMENT FISHING
6 CRUISING, TRAVEL TO OTHER LOCATIONS
7 REGATTAS, MEETING OTHER BOATS AT SEA
8 RACING
9 OTHER, SPECIFY
10 NO MORE

[Q16] 16. Time captain or steer boat

About how much of the time do you captain or steer your boat? Would you say all the time the boat is operating, most of the time, about half the time, less than half the time, rarely, or do you have someone else who usually operates your boat?

1 ALL TIME
2 MOST OF THE TIME
3 ABOUT HALF THE TIME
4 LESS THAN HALF THE TIME
5 NONE OF THE TIME/ALLOW FRIENDS/OTHERS TO STEER
6 NONE OF THE TIME/HAVE A CAPTAIN
7 DON'T KNOW/NO RESPONSE

[Q17] 17. How often take boat out in summertime

On average, about how many times per month do you take your boat out in Florida in summertime, approximately March to October? [numeric, range: 0-999]

[Q18] 18. How often take boat in wintertime

On average, about how many times per month do you take your boat out in Florida in wintertime, approximately November to February? [numeric, range: 0-999]

[Q19] 19. Where go boating

Where do you usually go boating? Is it in Biscayne Bay, and/or the Atlantic Ocean, inland waterways, the Florida Keys, the Gulf of Mexico, or somewhere else? [INTERVIEWER, CHECK ALL THAT APPLY] [multiple response] 1 BISCAYNE BAY
2 ATLANTIC OCEAN
3 INLAND WATERWAYS
4 FLORIDA KEYS
5 IN THE GULF OF MEXICO
6 OTHER, SPECIFY
7 NO MORE

[Q20] 20. How gained knowledge about boating signs

How did you gain your knowledge about speed zone signs and other boating signs? [IF RESPONDENT SAYS "I learned on my own," ASK] What sources of information were most important? [DO NOT READ RESPONSES. MARK ALL THAT APPLY]

[multiple response] 1 BOATING CLASS
2 MAP(S)
3 MAGAZINES
4 BOOK/BROCHURE AT DOCK/MARINA
5 BOOK/BROCHURE AT OTHER STORE
6 BOOK/BROCHURE SENT TO ME
7 INTERNET
8 TV
9 CLUB
10 OTHER PERSON (FRIEND/FAMILY)
11 SELF
12 I HAVE NOT LEARNED ABOUT THEM
13 OTHER, SPECIFY
14 NO MORE

[Q21A] 21A. Knowledge about signs

When boating in Florida's inland waterways or the intracoastal, do you feel your knowledge about speed zone and other regulatory signs is very good, good, fair, or poor?

1 VERY GOOD
2 GOOD
3 FAIR
4 POOR
5 DON'T KNOW/NO RESPONSE

[Q21] 21. Outdoor activities as child
When you were a child, how important were outdoor activities like camping, hiking, and boating compared to other things you did? Would you say they were very important, somewhat important, not very important or not important at all?
1 VERY IMPORTANT
2 SOMEWHAT IMPORTANT
3 NOT VERY IMPORTANT
4 NOT IMPORTANT AT ALL
5 DON'T KNOW/NO RESPONSE

[Q22] 22.Early experience re: boating
Was there any experience you had as a child that was particularly important in shaping how you feel about boating and the outdoors now?
1 YES, SPECIFY MOST IMPORTANT
2 NO
3 DON'T KNOW/NO RESPONSE

[Q23] 23.Boating etc orgs as adult
As an adult, have you ever belonged to any boating or other outdoor or nature-related organizations?
1 YES, SPECIFY MOST IMPORTANT
2 NO
3 DON'T KNOW/NO RESPONSE

[Q24] 24. Nature magazines
As an adult, have you ever subscribed to any boating or other outdoor or nature-related publications?
1 YES, SPECIFY MOST IMPORTANT
2 NO
3 DON'T KNOW/NO RESPONSE

[Q25] 25. How much know about manatees
Turning now to the topic of manatees, how much would you say you know about manatees. Would you say you know a lot, a fair amount, some, or very little about manatees?
1 A LOT
2 A FAIR AMOUNT
3 SOME
4 VERY LITTLE
5 DON'T KNOW/NO RESPONSE

[Q26] 26. How initially learned about manatees
How did you initially learn about manatees? [INTERVIEWER, DO NOT READ RESPONSES, CHECK ALL THAT APPLY] [multiple response] 1 SCHOOL
2 SIGN AT BOAT RAMP
3 SIGN AT MARINA
4 BOATER EDUCATION CLASS
5 FRIEND

6 FAMILY MEMBER
7 BROCHURE AT BOAT RAMP
8 BROCHURE AT MARINA
9 TELEVISION
10 LECTURE
11 NEWSPAPER
12 MAGAZINE
13 BOOK
14 INTERNET
15 EXHIBIT AT OCEAN THEME PARK
16 OTHER, SPECIFY
17 NO MORE

[Q27] 27. Total number of manatees seen in wild

Approximately what is the total number of manatees you have seen in the wild while walking on land, while on your boat, or while on someone else's boat? Would you say a hundred or more, 26 to 99, from 6 to 25, 5 or less, or none? [FOR THEIR LIFETIME]

1 100 OR MORE
2 26 TO 99
3 6 TO 25
4 1 TO 5
5 NONE
6 DON'T KNOW/NO RESPONSE

[Q28] 28. rules restricting boat speed and access

Now I want to ask your opinion about manatee protection rules. Overall, on rules restricting boat speed and access to protect manatees, do you think these rules are unnecessary and too strict, just about right, or do they need to be made more strict?

1 TOO STRICT
2 JUST ABOUT RIGHT
3 NEED TO BE MADE MORE STRICT
4 NOT ENOUGH INFORMATION TO DECIDE
5 DON'T KNOW/NO RESPONSE

[Q29] 29. Impact on marine industry

How much economic harm do you think manatee speed zones cause the marine industry in Florida, that is marinas, boat sales and rentals, etc? A major amount of economic harm, a fair amount, a little, or no harm at all?

1 A MAJOR AMOUNT
2 A FAIR AMOUNT
3 A LITTLE
4 NO HARM AT ALL
5 DON'T KNOW/NO RESPONSE

[Q30] 30. areas for restrictions

If the economic impact of manatee speed restrictions causes businesses in some areas to lose a substantial amount of income, should the restrictions be made less strict in those areas?

1 YES
2 NO
3 DON'T KNOW/NO RESPONSE

[Q31] 31. Access restriction

In areas where manatee deaths due to boats are highest, do you think there should be restrictions on

building new water access facilities like marinas, docks, and launch ramps?

1 YES
2 NO
3 DON'T KNOW/NO RESPONSE

[Q32] 32. Manatees continue as endangered

Manatees are currently on the endangered species list. Some people think that there are enough manatees now that they can be taken off the list. Do you think manatees should continue being listed as endangered or can they be taken off the list, or don't you have enough information to decide?

1 CONTINUE LISTING AS ENDANGERED
2 TAKE OFF LIST
3 NOT ENOUGH INFORMATION TO DECIDE
4 DON'T KNOW/NO RESPONSE

[Q32A] 32A. Manatee advocacy organizations

What do you think about positions taken by manatee advocacy organizations like the Save the Manatee Club? Do you completely agree, mostly agree, mostly disagree, completely disagree, or are you not that familiar with their positions?

1 COMPLETELY AGREE
2 MOSTLY AGREE
3 MOSTLY DISAGREE
4 COMPLETELY DISAGREE
5 NOT THAT FAMILIAR
6 DON'T KNOW/NO RESPONSE

[Q33] 33. compare zones

Comparing manatee slow speed zones, idle speed zones, and no entry areas, which, if any, do you think creates the most problem or inconvenience for boaters?

1 SLOW SPEED ZONES
2 IDLE SPEED ZONES
3 NO ENTRY AREAS
4 ALL EQUALLY A PROBLEM
5 NONE ARE A REAL PROBLEM
6 DON'T KNOW/NO RESPONSE

[Q34] 34. How many manatees think there are

Approximately how many Florida manatees do you think there are or do you think there is not enough information to decide? [INTERVIEWER, DO NOT READ RESPONSES]

1 UP TO 499
2 500-999
3 1000-under 1500
4 1500- under 2000
5 2000- under 2500
6 2500- under 3000
7 3000- under 3500
8 3500- under 4000
9 4000- under 5500
10 over 5500
11 NOT ENOUGH INFORMATION TO DECIDE
12 DON'T KNOW/NO RESPONSE

[Q35] 35. Ability of current manatee population to exist into future

In terms of the current Florida manatee population and its ability to exist for a long time in the

future, do you think there are: not enough manatees, enough manatees, more than enough manatees, or don't you have enough information to answer this question?

1 NOT ENOUGH MANATEES
2 ENOUGH MANATEES
3 MORE THAN ENOUGH MANATEES
4 DON'T HAVE ENOUGH INFORMATION
5 OTHER, SPECIFY
6 DON'T KNOW/NO RESPONSE

[Q36] 36. Role of boat-manatee collisions in manatee deaths

How would you rate the role of boat-manatee collisions as a cause of all KNOWN manatee deaths? Would you say boats are not a cause of manatee deaths, are only occasionally a cause, are fairly often a cause, or are boats the main cause of known manatee deaths, or don't you have enough information to answer this question?

1 NOT A CAUSE
2 ONLY OCCASIONALLY A CAUSE
3 FAIRLY OFTEN A CAUSE
4 THE MAIN CAUSE
5 DON'T HAVE ENOUGH INFORMATION
6 DON'T KNOW/NO RESPONSE

[Q37] 37. t/f-manatees most populous in summer

I have two brief statements about manatees and I would like to know if you agree with them or not. First, there are more manatees in South Florida in the summer than in the winter. Do you agree with this statement or not, or don't you have enough information about this?

1 AGREE
2 DISAGREE
3 NOT ENOUGH INFORMATION
4 DON'T KNOW/NO RESPONSE

[Q39] 39. t/f- manatees eat seagrasses/plants

Manatees eat only seagrasses and other plants. [Do you agree with this statement or not, or don't you have enough information about this?]

1 AGREE
2 DISAGREE
3 NOT ENOUGH INFORMATION
4 DON'T KNOW/NO RESPONSE

[Q40] 40. define slow speed

These next few questions ask about speed zones and manatee counts. Which of these describes what a boat should be doing in a "slow speed" zone? Travel at a speed 20 miles an hour or over, under 20 miles per hour, under 15 miles per hour, minimum wake, no wake, or are you not sure?

1 20 MPH OR OVER
2 UNDER 20 MPH
3 UNDER 15 MPH
4 MINIMUM WAKE
5 NO WAKE
6 NOT SURE
7 OTHER
8 DON'T KNOW/NO RESPONSE

[Q41] 41. define idle speed

Which of these describes what a boat should be doing in an "idle speed" zone? Travel at a speed

under 20 miles per hour, under 15 miles per hour, minimum wake, no wake, or are you not sure?
1 UNDER 20 MPH
2 UNDER 15 MPH
3 MINIMUM WAKE
4 NO WAKE
5 NOT SURE
6 OTHER
7 DON'T KNOW/NO RESPONSE

[Q42] 42. Accuracy of manatee pop counts
From what you have heard, how accurate do you think manatee population counts are made by scientists and government agencies? Are they very accurate, mostly accurate, mostly inaccurate, very inaccurate, or don't you have enough information to decide?
1 VERY ACCURATE
2 MOSTLY ACCURATE
3 MOSTLY INACCURATE
4 VERY INACCURATE
5 NOT ENOUGH INFORMATION
6 DON'T KNOW/NO RESPONSE

[Q43] 43. manatees hit because poor hearing
These next few questions ask for your level of agreement on certain issues. First, regarding the statement: Manatees are hit by boats mainly because they don't hear the boats or are otherwise unaware of them. Do you strongly agree, mostly agree, mostly disagree, or strongly disagree with this statement?
1 STRONGLY AGREE
2 MOSTLY AGREE
3 MOSTLY DISAGREE
4 STRONGLY DISAGREE
5 DON'T KNOW/NO RESPONSE

[Q44] 44. don't see manatees, forget to go slow
If I don't see manatees I sometimes forget to go slowly. Do you strongly agree, mostly agree, mostly disagree, or strongly disagree?
1 STRONGLY AGREE
2 MOSTLY AGREE
3 MOSTLY DISAGREE
4 STRONGLY DISAGREE
5 DON'T KNOW/NO RESPONSE

[Q45] 45. few boaters obey manatee zones
Very few boaters obey manatee speed zones. [... Do you strongly agree, mostly agree, mostly disagree, or strongly disagree?]
1 STRONGLY AGREE
2 MOSTLY AGREE
3 MOSTLY DISAGREE
4 STRONGLY DISAGREE
5 DON'T KNOW/NO RESPONSE

[Q46] 46. pressure to go faster
I sometimes feel pressure from others on board to go faster than the zone allows. [... Do you strongly agree, mostly agree, mostly disagree, or strongly disagree?]
1 STRONGLY AGREE

2 MOSTLY AGREE
3 MOSTLY DISAGREE
4 STRONGLY DISAGREE
5 DON'T KNOW/NO RESPONSE

[Q47] 47. faster route can be found
I can usually find a faster route to my destination if I do not want to travel in a slow or idle zone. [... Do you strongly agree, mostly agree, mostly disagree, or strongly disagree?]
1 STRONGLY AGREE
2 MOSTLY AGREE
3 MOSTLY DISAGREE
4 STRONGLY DISAGREE
5 DON'T KNOW/NO RESPONSE

[Q48] 48. determination of speed zone while boating
I can usually determine what speed zone I am in. Do you strongly agree, mostly agree, mostly disagree, or strongly disagree with this statement?
1 STRONGLY AGREE
2 MOSTLY AGREE
3 MOSTLY DISAGREE
4 STRONGLY DISAGREE
5 DON'T KNOW/NO RESPONSE

[Q49] 49. understanding of zone requirements from signs
Speed requirements are clear and easy to understand from the signs posted. [... Do you strongly agree, mostly agree, mostly disagree, or strongly disagree?]
1 STRONGLY AGREE
2 MOSTLY AGREE
3 MOSTLY DISAGREE
4 STRONGLY DISAGREE
5 DON'T KNOW/NO RESPONSE

[Q51] 51. use of binoculars to read signs
Do you use binoculars as an aid to read speed zone and other regulatory signs all of the time, most of the time, some of the time, very rarely or have you never used binoculars for this purpose?
1 ALL OF THE TIME
2 MOST OF THE TIME
3 SOME OF THE TIME
4 VERY RARELY
5 NEVER USED
6 DON'T KNOW/NO RESPONSE

[Q52] 52. use of maps
I find maps of speed zones very helpful. [... Do you strongly agree, mostly agree, mostly disagree, or strongly disagree?]
1 STRONGLY AGREE
2 MOSTLY AGREE
3 MOSTLY DISAGREE
4 STRONGLY DISAGREE
5 DON'T KNOW/NO RESPONSE

[Q53] 53. need for more signs
Speed zone information should be improved by using more signs. [... Do you strongly agree, mostly

agree, mostly disagree, or strongly disagree?]
1 STRONGLY AGREE
2 MOSTLY AGREE
3 MOSTLY DISAGREE
4 STRONGLY DISAGREE
5 DON'T KNOW/NO RESPONSE

[Q54] 54. need for fewer zones
Speed zones should be made less confusing by having fewer types of zones, even if the number of slower zones increases. [... Do you strongly agree, mostly agree, mostly disagree, or strongly disagree?]
1 STRONGLY AGREE
2 MOSTLY AGREE
3 MOSTLY DISAGREE
4 STRONGLY DISAGREE
5 DON'T KNOW/NO RESPONSE

[Q55] 55. responsibility of boaters to know zones
Boaters should be responsible for knowing speed zones by using the same maps that law enforcement uses and not depending on the signs. [... Do you strongly agree, mostly agree, mostly disagree, or strongly disagree?]
1 STRONGLY AGREE
2 MOSTLY AGREE
3 MOSTLY DISAGREE
4 STRONGLY DISAGREE
5 DON'T KNOW/NO RESPONSE

[Q56] 56. amount of federal fines
Federal speeding fines in manatee zones are $150 for the first violation. Is this what it should be, or if not, what would be a better amount? [150 IF IT IS WHAT IT SHOULD BE, ZERO IF THERE SHOULD BE NO FINE, NUMBER OTHERWISE] [9999=DK/NR] [numeric, range: 0-9999]

[Q57] 57. Responsibility to help save manatees
How much responsibility do you think you have to help save the manatee from extinction? Would you say major responsibility, a fair amount of responsibility, a little responsibility, or is this something that should not be your responsibility?
1 MAJOR RESPONSIBILTY
2 FAIR AMOUNT RESPONSIBILITY
3 A LITTLE RESPONSIBILITY
4 NO RESPONSIBILITY AT ALL
5 DON'T KNOW/NO RESPONSE

[Q58] 58. manatee right to exist
After I read this next list of statements I will ask you how you feel about each one. The statements are: 1. Manatees have a right to exist and people should not be allowed to cause their extinction. 2. Manatee survival is important so that they exist for future generations and people should not cause their extinction. 3. I have comfort knowing manatees exist and people should not cause their extinction. 4. Species have evolved and disappeared throughout history and I would accept manatee extinction as a part of this cycle. 5. I have mixed opinions on the value of manatees. 6. If the issue comes down to rights of manatees vs. people, the rights of people seem more important. Now, I'll ask you about each statement individually. On the first one, manatees have a right to exist and people should not be allowed to cause their extinction. Do you strongly agree, mostly agree, mostly disagree, or strongly disagree?

1 STRONGLY AGREE
2 MOSTLY AGREE
3 MOSTLY DISAGREE
4 STRONGLY DISAGREE
5 DON'T KNOW/NO RESPONSE

[Q59] 59. manatees important for future generations

Manatee survival is important so that they exist for future generations and people should not cause their extinction. [...Do you strongly agree, mostly agree, mostly disagree, or strongly disagree?]

1 STRONGLY AGREE
2 MOSTLY AGREE
3 MOSTLY DISAGREE
4 STRONGLY DISAGREE
5 DON'T KNOW/NO RESPONSE

[Q60] 60. comfort knowing manatees exist

I have comfort knowing manatees exist and people should not cause their extinction. [...Do you strongly agree, mostly agree, mostly disagree, or strongly disagree?]

1 STRONGLY AGREE
2 MOSTLY AGREE
3 MOSTLY DISAGREE
4 STRONGLY DISAGREE
5 DON'T KNOW/NO RESPONSE

[Q61] 61. manatee extinction part of natural cycle

Species have evolved and disappeared throughout history and I would accept manatee extinction as a part of this cycle. [...Do you strongly agree, mostly agree, mostly disagree, or strongly disagree?]

1 STRONGLY AGREE
2 MOSTLY AGREE
3 MOSTLY DISAGREE
4 STRONGLY DISAGREE
5 DON'T KNOW/NO RESPONSE

[Q62] 62. mixed opinions on manatee value

I have mixed opinions on the value of manatees. [...Do you strongly agree, mostly agree, mostly disagree, or strongly disagree?]

1 STRONGLY AGREE
2 MOSTLY AGREE
3 MOSTLY DISAGREE
4 STRONGLY DISAGREE
5 DON'T KNOW/NO RESPONSE

[Q63] 63. rights of people more important

If the issue comes down to the rights of manatees vs. people, the rights of people should be more important. [...Do you strongly agree, mostly agree, mostly disagree, or strongly disagree?]

1 STRONGLY AGREE
2 MOSTLY AGREE
3 MOSTLY DISAGREE
4 STRONGLY DISAGREE
5 DON'T KNOW/NO RESPONSE

[Q64] 64. difference I can make in manatee survival

How much difference do you think you can make to help ensure long-term manatee survival? Do you

think you can make a major difference, a fair amount of difference, a little difference, or no difference?

1 MAJOR DIFFERENCE
2 FAIR AMOUNT OF DIFFERENCE
3 A LITTLE DIFFERENCE
4 NO DIFFERENCE AT ALL
5 DON'T KNOW/NO RESPONSE

[Q65] 65. what boater can do to help manatee

What are some things boaters might do in efforts to try to help manatees survive? [INTERVIEWER DO NOT READ ANSWERS. CHECK ALL THAT APPLY]

[multiple response] 1 OBEY MANATEE SPEED ZONES
2 TEACH OTHERS ABOUT MANATEES
3 REPORT INJURED MANATEES TO AUTHORITIES
4 DISCARD TRASH PROPERLY
5 BECOME POLITICALLY ACTIVE FOR MANATEE PROTECTION.
6 VOLUNTEER OR JOIN MANATEE ADVOCACY ORGANIZATION
7 HONK AT/TELL SPEEDING BOATERS TO SLOW DOWN
8 DONATE MONEY FOR ENFORCEMENT/EDUCATION, ETC.
9 DISPLAY A SIGN/BUMPERSTICKER
10 JOIN A BOATING CLUB/ORGANIZATION
11 OTHER, SPECIFY
12 BOATERS ARE DOING ENOUGH
13 DID NOT SAY ANY
14 NO MORE

[Q66] 66. have you done any of these to help manatees

Have you ever done this/any of these things? If so, which one(s)? [INTERVIEWER DO NOT READ ANSWERS. CHECK ALL THAT APPLY]

[multiple response] 1 OBEY MANATEE SPEED ZONES
2 TEACH OTHERS ABOUT MANATEES
3 REPORT INJURED MANATEES TO AUTHORITIES
4 DISCARD TRASH PROPERLY
5 BECOME POLITICALLY ACTIVE FOR MANATEE PROTECTION.
6 VOLUNTEER OR JOIN MANATEE ADVOCACY ORGANIZATION
7 HONK AT/TELL SPEEDING BOATERS TO SLOW DOWN
8 DONATE MONEY FOR ENFORCEMENT/EDUCATION, ETC.
9 DISPLAY A SIGN/BUMPERSTICKER
10 JOIN A BOATING CLUB/ORGANIZATION
11 OTHER, SPECIFY
12 DID NOT DO ANY
13 DON'T KNOW/NO RESPONSE
14 NO MORE
15 NO MORE

[Q67] 67. what if saw injured manatee?

What would you do if you encountered an injured manatee? [DO NOT READ RESPONSES, CHECK ALL THAT APPLY]

[multiple response] 1 THERE IS NOTHING I COULD DO
2 TRY TO HELP IT MYSELF
3 CALL AUTHORITIES/FLORIDA MARINE PATROL
4 OTHER, SPECIFY
5 DON'T KNOW/NO RESPONSE

6 NO MORE
7 NO MORE

[Q68] 68. knowledge of Monument Island speed zone

These next two questions are to help us understand how familiar you are with speed zones in Miami-Dade County. I will also be asking if you ever exceeded speed limits that may have been posted in these areas. Remember, these answers are confidential and your truthful responses are greatly appreciated. Also, the only way you can get a speeding ticket is to be seen at the time you are speeding by a law enforcement officer. In Biscayne Bay just west of Miami Beach, from about the Julia Tuttle Causeway south to the MacArthur Causeway, near the Coast Guard station, there is a narrow speed zone. What is the speed of this zone, or are you not familiar with this area? [INTERVIEWER DO NOT READ ANSWERS]

1 NO SPEED LIMIT
2 30 MPH YEAR ROUND
3 30 MPH YEAR DURING PART OF THE YEAR
4 SLOW SPEED OR MINIMUM WAKE
5 IDLE SPEED OR NO WAKE
6 FAMILIAR WITH AREA BUT DON'T KNOW THE ANSWER
7 NOT FAMILIAR WITH AREA
8 OTHER SPEED, SPECIFY
9 DON'T KNOW/NO RESPONSE

[Q69] 69. Speeding in Monument Island zone

Do you ever recall speeding in that zone while operating your boat?

1 YES
2 NO
3 NEVER BEEN THERE
4 DON'T KNOW/NO RESPONSE

[Q70] 70. knowledge of Brickell Key zone

What is the speed zone the boater must obey in the intracoastal just east of downtown Miami, south of the Miami River entrance, running along Brickell Key? [Brickell Key is also called Claughton Island.] [INTERVIEWER DO NOT READ ANSWERS]

1 NO SPEED LIMIT
2 30 MPH YEAR ROUND
3 30 MPH YEAR DURING PART OF THE YEAR
4 SLOW SPEED OR MINIMUM WAKE
5 IDLE SPEED OR NO WAKE
6 FAMILIAR WITH AREA BUT DON'T KNOW THE ANSWER
7 NOT FAMILIAR WITH AREA
8 OTHER SPEED, SPECIFY
9 DON'T KNOW/NO RESPONSE

[Q71] 71. Speeding in Brickell Key zone

Do you ever recall speeding in that zone while operating your boat?

1 YES
2 NO
3 NEVER BEEN THERE
4 DON'T KNOW/NO RESPONSE

[Q72] 72. rate of compliance in manatee zone

Overall, how often do you comply with manatee speed zones? Would you say you never comply, comply less than half of the time, about half of the time, more than half of the time, or do you comply

with speed zones all of the time?
1 NEVER
2 LESS THAN HALF OF THE TIME
3 ABOUT HALF OF THE TIME
4 MORE THAN HALF OF THE TIME
5 ALL OF THE TIME
6 DON'T KNOW/NO RESPONSE

[Q73] 73. reason for noncompliance
What are the reasons you don't comply with manatee speed zones? [INTERVIEWER, DO NOT READ LIST; CHECK ALL THAT APPLY]
[multiple response] 1 GETS TOO HOT WHEN BOAT GOES SLOW
2 NEED TO GET SOMEWHERE
3 OTHER BOATS ARE GOING FAST
4 OTHER PEOPLE ON MY BOAT WANT TO GO FASTER
5 IT'S FUN TO GO FASTER
6 THOSE I LEARNED FROM NEVER COMPLIED
7 WHEN RAINS
8 DON'T CARE ABOUT ZONE
9 DON'T KNOW ABOUT ZONE
10 OTHER, SPECIFY
11 DON'T KNOW/NO RESPONSE
12 NO MORE
13 NO MORE

[Q74] 74. ever gotten a ticket
Have you ever gotten a ticket for speeding in your boat?
1 YES
2 NO
3 DON'T KNOW/NO RESPONSE

[Q75] 75. manatee speed ticket
Were any tickets for manatee speed or manatee access rules?
1 YES
2 NO
3 DON'T KNOW/NO RESPONSE

[Q76] 76. hours of boating per day
On average, how many hours do you stay out for a day of boating? [99: DON'T KNOW/NO RESPONSE]
[numeric, range: 0-99]

[Q77] 77. number law enforcement boats seen/day
On average, how many law enforcement boats do you usually see during a day of boating? [99: DON'T KNOW/NO RESPONSE]
[numeric, range: 0-99]

[Q78] 78. number of law enforcement boats needed
Do you think the number of law enforcement boats near manatee zones is too few, just about right, or too many?
1 TOO FEW
2 JUST ABOUT RIGHT

3 TOO MANY
4 DON'T KNOW/NO RESPONSE

[Q79] 79. opinion on increasing taxes

In counties where it is felt that the manatee death rate due to collisions with boats is high enough to influence chances for long-term survival of the species, two ideas have been suggested about how to decrease these deaths: I want to ask about both. First, it has been suggested that taxes associated with boats and boating items should be increased to help pay for specific measures that scientists feel will help decrease these deaths and allow boaters and manatees to better coexist. Do you strongly agree, mostly agree, mostly disagree, or strongly disagree with this idea?

1 STRONGLY AGREE
2 MOSTLY AGREE
3 MOSTLY DISAGREE
4 STRONGLY DISAGREE
5 DON'T THINK BOATS ARE CAUSING DEATHS
6 DON'T KNOW/NO RESPONSE

[Q80] 80. opinion on decreasing number of boaters

The second idea is to decrease the number of boats on certain days in these counties. Weekend boaters would be limited to one, but not both days in the wintertime, when the manatee population is highest. This would continue until the number of manatee deaths decreases to a specified level. [... Do you strongly agree, mostly agree, mostly disagree, or strongly disagree with this idea?]

1 STRONGLY AGREE
2 MOSTLY AGREE
3 MOSTLY DISAGREE
4 STRONGLY DISAGREE
5 DON'T KNOW/NO RESPONSE

[Q81] 81. opinion on Gerstein device

Here is a new proposal: there is new research that suggests manatees would learn to get out of the way of approaching boats if all boats, fast or slow, had a device to broadcast sound ahead of the boat in frequencies that manatees can hear. Suppose further research confirmed that this works. The proposal would then be to require all boaters to purchase and install this device costing 100 to 125 dollars. If, after a few years, manatees would learn to associate the sound with approaching boats, the number of deaths would decline, and speed restrictions could be relaxed in most areas. [... Do you strongly agree, mostly agree, mostly disagree, or strongly disagree with this idea?]

1 STRONGLY AGREE
2 MOSTLY AGREE
3 MOSTLY DISAGREE
4 STRONGLY DISAGREE
5 DON'T KNOW/NO RESPONSE

[Q82] 82. knowledge-SOS

There are three questions we would like to ask everyone so that we may better understand overall boater knowledge. If you don't have the information just say so. First, do you know what the pattern of long and short flashes or sounds is in a SOS or distress signal? [DO NOT READ RESPONSES]

1 THREE SHORT, THREE LONG, THREE SHORT
2 OTHER COMBINATION
3 DON'T KNOW/NO RESPONSE

[Q83] 83. knowledge-plastic discharge zone

The Act to Prevent Pollution from Ships places limitations on the discharge of garbage from vessels in US waters. Do you know the prohibited zone for the discharge of plastics, including plastic bags?

[DO NOT READ RESPONSES]
1 PROHIBITED IN ALL AREAS
2 SPECIFIED MILES
3 OTHER
4 DON'T KNOW/NO RESPONSE

[Q84] 84. length of speed zone when no distance limits
When entering an idle or slow speed zone marked by a sign with no distance limits for the zone, how far do you think a boater should obey this speed limit for? [DO NOT READ RESPONSES]
1 UNTIL NEXT SIGN INDICATING END OF ZONE (RESUME SAFE SPEED)
2 A DISTANCE (IN MILES OR FEET ETC)
3 OTHER (NOT A DISTANCE)
4 DON'T KNOW/NO RESPONSE

[Q85] 85. attended boater ed class
I have a few more questions to ask. Have you ever attended a boater education class?
1 YES
2 NO
3 DON'T KNOW/NO RESPONSE

[Q86] 86. boater class helpful
Did the class teach any information about manatees that you found to be helpful or interesting?
1 YES
2 NO
3 DON'T KNOW/NO RESPONSE

[Q87] 87. how was class helpful
What particularly did you find helpful or interesting in the class about manatees? [INTERVIEWER DO NOT READ RESPONSES -- CHECK ALL THAT APPLY]
[multiple response] 1 WHAT MANATEES LOOK LIKE
2 MANATEE HABITAT AND DAILY LIVING
3 HOW BOATS CAN HARM MANATEES
4 HOW BOATERS CAN PROTECT MANATEES
5 WHAT TO DO IF YOU INJURE OR SEE AN INJURED MANATEE
6 MANATEE BIOLOGY/EVOLUTIONARY HISTORY
7 CURRENT MANATEE SITUATION/SPECIES SURVIVAL RISKS
8 OTHER, SPECIFY
9 NOT HELPFUL OR INTERESTING
10 NO MORE

[Q88] 88. improving class
Regarding this class, do you have any recommendations for its improvement and/or recommendations for other topics that should have been included? [IF YES: what are your recommendations?] [INTERVIEWER, PLEASE CHECK ALL THAT APPLY]
[multiple response] 1 MORE ON WHAT TO DO FOR SAFETY
2 MORE ON DRINKING, RISKY BEHAVIOR
3 MORE ON BOATING MANNERS, POLITENESS
4 MORE ON REGULATIONS FOR BOATS
5 MORE ON REGULATORY/SPEED/NAVIGATION SIGNS/MARKERS
6 MORE ON MANATEES
7 MORE ON OTHER ENVIRONMENTAL ISSUES
8 MORE ON FISHING
9 LONGER OR MORE CLASS SESSIONS TO COVER MORE MATERIAL

10 FEWER, SHORTER CLASS SESSIONS
11 BETTER TEACHING
12 OTHER, SPECIFY
13 HAVE NO RECOMMENDATIONS
14 DON'T KNOW/NO RESPONSE
15 NO MORE
16 NO MORE

[Q89] 89. class required

Do you think all boaters should be required to take a class that teaches boating safety and protection of the marine environment?

1 YES
2 NO
3 DON'T KNOW/NO RESPONSE

[Q90] 90. require license

Do you think boaters should be required to get licenses as car drivers do, with an exam and points for violations?

1 YES
2 NO
3 LICENSE BUT NO POINTS OR/AND EXAM
4 DON'T KNOW/NO RESPONSE

[Q91] 91. age

Just four more questions: Could you please tell me your age? [999 = DON'T KNOW/NO RESPONSE]

[numeric, range: 0-999]

[Q92] 92. education

What is your highest level of education?

1 GRADE SCHOOL
2 SOME HIGH SCHOOL
3 HIGH SCHOOL GRAD
4 SOME COLLEGE
5 2 YEAR AA DEGREE
6 TECHNICAL SCHOOL (ANY NO. OF YEARS)
7 COLLEGE GRADUATE
8 GRADUATE DEGREE
9 DON'T KNOW/NO RESPONSE

[Q93] 93. income

Would you please tell me your approximate yearly household income? Is it...

1 under $15,000
2 $15,000-under $30,000
3 $30,000-under $45,000
4 $45,000-under $60,000
5 $60,000-under $75,000
6 $75,000-under $90,000
7 $90,000 or more
8 REFUSED
9 DON'T KNOW/NO RESPONSE

Appendix II – Survey Frequency Tables

SURVEY FREQUENCY TABLES

[Q4] 4. Time spent in Florida

First, in terms of time spent in Florida, would you say you live here year-round, are you here usually in the summer only, winter only, or does your schedule vary from year to year?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 YEAR-ROUND	281	98.3	98.3	98.3
	4 SCHEDULE VARIES	4	1.4	1.4	99.7
	5 OTHER, SPECIFY	1	.3	.3	100.0
	Total	286	100.0	100.0	

[Q5] 5. How long a boater

Now I have some questions about the use of your boat. How long have you been a boater or personal watercraft user in Florida? [ENTER YEARS, ZERO IF UNDER ONE YEAR, 99=MISSING] [numeric, range: 0-99] mean = 17.94 years, no missing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	1	.3	.3	.3
	2	24	8.4	8.4	8.7
	3	16	5.6	5.6	14.3
	4	19	6.6	6.6	21.0
	5	20	7.0	7.0	28.0
	6	10	3.5	3.5	31.5
	7	7	2.4	2.4	33.9
	8	9	3.1	3.1	37.1
	9	1	.3	.3	37.4
	10	19	6.6	6.6	44.1
	11	2	.7	.7	44.8
	12	4	1.4	1.4	46.2
	13	2	.7	.7	46.9
	14	6	2.1	2.1	49.0
	15	13	4.5	4.5	53.5
	16	4	1.4	1.4	54.9
	17	1	.3	.3	55.2
	18	4	1.4	1.4	56.6
	19	1	.3	.3	57.0
	20	27	9.4	9.4	66.4
	21	1	.3	.3	66.8
	22	1	.3	.3	67.1
	23	5	1.7	1.7	68.9
	24	1	.3	.3	69.2
	25	12	4.2	4.2	73.4
	28	1	.3	.3	73.8
	30	25	8.7	8.7	82.5
	31	3	1.0	1.0	83.6
	32	1	.3	.3	83.9
	33	2	.7	.7	84.6
	35	6	2.1	2.1	86.7
	36	2	.7	.7	87.4
	39	1	.3	.3	87.8
	40	11	3.8	3.8	91.6
	43	3	1.0	1.0	92.7
	45	6	2.1	2.1	94.8
	48	2	.7	.7	95.5
	49	1	.3	.3	95.8
	50	7	2.4	2.4	98.3
	51	1	.3	.3	98.6
	54	1	.3	.3	99.0
	59	1	.3	.3	99.3
	60	1	.3	.3	99.7
	62	1	.3	.3	100.0
	Total	286	100.0	100.0	

[Q6] 6. Number of boats

How many boats and personal watercraft do you own?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 ONE	195	68.2	68.2	68.2
	2 TWO	59	20.6	20.6	88.8
	3 THREE	19	6.6	6.6	95.5
	4 FOUR OR MORE	13	4.5	4.5	100.0
	Total	286	100.0	100.0	

*[Q7] 7. Length of boat (most used of **more than one boat**)*

I will be asking you about the one boat or personal watercraft you use most often in Florida. What is the length of this boat in feet? [numeric, range: 0-999] n= 91, mean= 28.29 feet, missing= 195

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	7	1	.3	1.1	1.1
	9	1	.3	1.1	2.2
	12	1	.3	1.1	3.3
	16	1	.3	1.1	4.4
	17	2	.7	2.2	6.6
	18	3	1.0	3.3	9.9
	19	2	.7	2.2	12.1
	20	5	1.7	5.5	17.6
	21	4	1.4	4.4	22.0
	22	5	1.7	5.5	27.5
	23	3	1.0	3.3	30.8
	24	2	.7	2.2	33.0
	25	9	3.1	9.9	42.9
	26	6	2.1	6.6	49.5
	27	6	2.1	6.6	56.0
	28	4	1.4	4.4	60.4
	29	3	1.0	3.3	63.7
	30	3	1.0	3.3	67.0
	31	4	1.4	4.4	71.4
	32	3	1.0	3.3	74.7
	33	3	1.0	3.3	78.0
	34	3	1.0	3.3	81.3
	35	1	.3	1.1	82.4
	36	1	.3	1.1	83.5
	37	1	.3	1.1	84.6
	38	2	.7	2.2	86.8
	39	1	.3	1.1	87.9
	40	1	.3	1.1	89.0
	42	3	1.0	3.3	92.3
	48	3	1.0	3.3	95.6
	50	2	.7	2.2	97.8
	53	1	.3	1.1	98.9
	54	1	.3	1.1	100.0
	Total	91	31.8	100.0	
Missing	System	195	68.2		
Total		286	100.0		

*[Q8] 8. Length of boat (**one boat**)*

If you use your boat or personal watercraft in more than one state, I am asking just about its use in Florida and referring to it as a "boat". What is the approximate length of this boat in feet?

[numeric, range: 0-999] n= 195, mean= 23.86 feet, missing= 91

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5	1	.3	.5	.5
	7	1	.3	.5	1.0
	9	2	.7	1.0	2.1
	14	1	.3	.5	2.6
	15	1	.3	.5	3.1
	16	2	.7	1.0	4.1
	17	5	1.7	2.6	6.7
	18	12	4.2	6.2	12.8
	19	7	2.4	3.6	16.4
	20	16	5.6	8.2	24.6
	21	21	7.3	10.8	35.4
	22	13	4.5	6.7	42.1
	23	21	7.3	10.8	52.8
	24	12	4.2	6.2	59.0
	25	18	6.3	9.2	68.2
	26	14	4.9	7.2	75.4
	27	10	3.5	5.1	80.5
	28	5	1.7	2.6	83.1
	29	2	.7	1.0	84.1
	30	11	3.8	5.6	89.7
	31	2	.7	1.0	90.8
	32	5	1.7	2.6	93.3
	33	3	1.0	1.5	94.9
	34	1	.3	.5	95.4
	35	3	1.0	1.5	96.9
	36	1	.3	.5	97.4
	38	3	1.0	1.5	99.0
	40	1	.3	.5	99.5
	47	1	.3	.5	100.0
	Total	195	68.2	100.0	
Missing	System	91	31.8		
Total		286	100.0		

[Q9] 9. Power or sail

Is your boat a power boat or sailboat?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 POWER	272	95.1	95.1	95.1
	2 SAIL	14	4.9	4.9	100.0
	Total	286	100.0	100.0	

[Q10] 10. Model and brand of boat

What is the model and brand of this boat?

[Q11] 11. Years owned boat

How many years have you owned this boat? [ENTER YEARS, ZERO IF UNDER ONE YEAR, 99=MISSING]

[numeric, range: 0-99] mean= 5.11 years, missing= 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	10	3.5	3.5	3.5
	1	16	5.6	5.6	9.2
	2	62	21.7	21.8	31.0
	3	51	17.8	18.0	48.9
	4	28	9.8	9.9	58.8
	5	33	11.5	11.6	70.4
	6	17	5.9	6.0	76.4
	7	6	2.1	2.1	78.5
	8	12	4.2	4.2	82.7
	9	3	1.0	1.1	83.8
	10	19	6.6	6.7	90.5
	11	2	.7	.7	91.2
	12	3	1.0	1.1	92.3
	13	6	2.1	2.1	94.4
	14	2	.7	.7	95.1
	15	4	1.4	1.4	96.5
	16	2	.7	.7	97.2
	17	2	.7	.7	97.9
	20	1	.3	.4	98.2
	24	1	.3	.4	98.6
	25	2	.7	.7	99.3
	29	1	.3	.4	99.6
	33	1	.3	.4	100.0
	Total	284	99.3	100.0	
Missing	99	2	.7		
Total		286	100.0		

[Q12] 12. Where keep boat

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 DOCKSIDE AT MY RESIDENCE	42	14.7	14.7	14.7
	2 ON LAND AT MY RESIDENCE	118	41.3	41.3	55.9
	3 MARINA	84	29.4	29.4	85.3
	4 DOCKSIDE AT FRIEND'S OR RELATIVE'S HOME	7	2.4	2.4	87.8
	5 ON LAND AT FRIEND'S OR RELATIVE'S HOME	8	2.8	2.8	90.6
	6 LAND STORAGE FACILITY (OUT OF WATER)	10	3.5	3.5	94.1
	7 DON'T KEEP BOAT HERE	1	.3	.3	94.4
	8 OTHER, SPECIFY	16	5.6	5.6	100.0
	Total	286	100.0	100.0	

[Q13] 13. Commercial or noncommercial use of boat

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 MAINLY NONCOMMERCIAL	276	96.5	96.5	96.5
	2 BOTH	7	2.4	2.4	99.0
	4 OTHER	3	1.0	1.0	100.0
	Total	286	100.0	100.0	

[Q14] 14. Use(s) of boat

What are the main activities you use your boat for? [INTERVIEWER, DO NOT READ RESPONSES. CHECK ALL THAT APPLY] [multiple response]

Q14 responses:	Name	Count	Pct of Responses	Pct of Cases
Leisure, taking the boat out for fun	Q14_1	166	31.4	58.0
Water skiing, wake/knee boarding	Q14_2	20	3.8	7.0
Swim,dive,scuba,snorkle,spearfish	Q14_3	89	16.9	31.1
Rod/reel fishing	Q14_4	166	31.4	58.0
Tournament fishing	Q14_5	4	.8	1.4
Cruising, travel to other locations	Q14_6	75	14.2	26.2
Regattas, meeting other boats at sea	Q14_7	4	.8	1.4
Racing	Q14_8	2	.4	.7
Other	Q14_9	2	.4	.7
Total responses		528	100.0	184.6

0 missing cases; 286 valid cases

[Q15] 15. Most important use of boat

Which of these uses is the most important? [READ RESPONSES, CHECK ALL THAT APPLY]

Q15 responses:	Name	Count	% Responses	% Cases
Leisure, taking the boat out for fun	Q15_1	187	56.5	65.4
Water skiing, wake/knee boarding	Q15_2	61	18.4	21.3
Swim,dive,scuba,snorkle,spearfish	Q15_3	19	5.7	6.6
Rod/reel fishing	Q15_4	50	15.1	17.5
Tournament fishing	Q15_5	13	3.9	4.5
Cruising, travel to other locations	Q15_6	1	.3	.3
Total responses		331	100.0	115.7

0 missing cases; 286 valid cases

[Q16] 16. Time captain or steer boat

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 ALL TIME	163	57.0	57.0	57.0
	2 MOST OF THE TIME	90	31.5	31.5	88.5
	3 ABOUT HALF THE TIME	25	8.7	8.7	97.2
	4 LESS THAN HALF THE TIME	8	2.8	2.8	100.0
	Total	286	100.0	100.0	

[Q17] 17. Times/month take boat out summertime- March toOct[range: 0-999] mean= 5.23, no missing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	27	9.4	9.4	9.4
	2	65	22.7	22.7	32.2
	3	53	18.5	18.5	50.7
	4	55	19.2	19.2	69.9
	5	14	4.9	4.9	74.8
	6	16	5.6	5.6	80.4
	7	4	1.4	1.4	81.8
	8	15	5.2	5.2	87.1
	9	3	1.0	1.0	88.1
	10	6	2.1	2.1	90.2
	11	1	.3	.3	90.6
	12	10	3.5	3.5	94.1
	15	6	2.1	2.1	96.2
	20	5	1.7	1.7	97.9
	24	2	.7	.7	98.6
	30	3	1.0	1.0	99.7
	100	1	.3	.3	100.0
	Total	286	100.0	100.0	

[Q18] 18. How often take boat in wintertime

Times/month do you take your boat out Nov to Feb? [range: 0-999] mean= 2.49 times, no missing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	35	12.2	12.2	12.2
	1	94	32.9	32.9	45.1
	2	65	22.7	22.7	67.8
	3	30	10.5	10.5	78.3
	4	31	10.8	10.8	89.2
	5	6	2.1	2.1	91.3
	6	8	2.8	2.8	94.1
	8	6	2.1	2.1	96.2
	9	1	.3	.3	96.5
	10	2	.7	.7	97.2
	12	2	.7	.7	97.9
	14	1	.3	.3	98.3
	15	3	1.0	1.0	99.3
	16	1	.3	.3	99.7
	20	1	.3	.3	100.0
	Total	286	100.0	100.0	

[Q19] 19. Where go boating

Where do you usually go boating? Is it in Biscayne Bay, and/or the Atlantic Ocean, inland waterways, the Florida Keys, the Gulf of Mexico, or somewhere else? [INTERVIEWER, CHECK ALL THAT APPLY] [multiple response]

Q19 responses:	Name	Count	%Responses	%Cases
Biscayne Bay	Q19_1	209	31.6	73.1
Atlantic Ocean	Q19_2	148	22.4	51.7
Inland waterways	Q19_3	95	14.4	33.2
Florida Keys	Q19_4	120	18.2	42.0
Gulf of Mexico	Q19_5	45	6.8	15.7
other	Q19_6	21	3.2	7.3
Bahamas	Q19_9	13	2.0	4.5
Elliot Key	Q19_10	6	.9	2.1
Intracoastal	Q19_11	4	.6	1.4
		661	100.0	231.1
Total responses				

0 missing cases; 286 valid cases

[Q20] 20. How gained knowledge about boating signs

How did you gain your knowledge about speed zone signs and other boating signs? [IF RESPONDENT SAYS "I learned on my own," ASK] What sources of information were most important? [DO NOT READ RESPONSES. MARK ALL THAT APPLY] [multiple response]

Q20 responses:	Name	Count	Pct of Responses	Pct of Cases
Boating class	Q20_1	139	34.4	48.8

Map(s)	Q20_2	6	1.5	2.1
Magazines, other reading	Q20_3	31	7.7	10.9
Book,brochure at dock/marina	Q20_4	12	3.0	4.2
Book,brochure at other store	Q20_5	16	4.0	5.6
Book,brochure sent to me	Q20_6	6	1.5	2.1
Internet	Q20_7	4	1.0	1.4
TV	Q20_8	2	.5	.7
Club	Q20_9	4	1.0	1.4
Other person (friend,family)	Q20_10	49	12.1	17.2
Self	Q20_11	59	14.6	20.7
Has not learned about them	Q20_12	1	.2	.4
other	Q20_13	24	5.9	8.4
From experience	Q20_16	35	8.7	12.3
From the signs	Q20_17	16	4.0	5.6
Total responses		404	100.0	141.8

1 missing cases; 285 valid cases

[Q21A] 21A. Knowledge about signs

When boating in Florida's inland waterways or the intracoastal, do you feel your knowledge about speed zone and other regulatory signs is very good, good, fair, or poor?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 VERY GOOD	174	60.8	60.8	60.8
	2 GOOD	78	27.3	27.3	88.1
	3 FAIR	25	8.7	8.7	96.9
	4 POOR	7	2.4	2.4	99.3
	5 DON'T KNOW/NO RESPONSE	2	.7	.7	100.0
	Total	286	100.0	100.0	

[Q21] 21. Outdoor activities as child

When you were a child, how important were outdoor activities like camping, hiking, and boating compared to other things you did? Would you say they were very important, somewhat important, not very important or not important at all?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 VERY IMPORTANT	199	69.6	69.6	69.6
	2 SOMEWHAT IMPORTANT	61	21.3	21.3	90.9
	3 NOT VERY IMPORTANT	12	4.2	4.2	95.1
	4 NOT IMPORTANT AT ALL	11	3.8	3.8	99.0
	5 DON'T KNOW/NO RESPONSE	3	1.0	1.0	100.0
	Total	286	100.0	100.0	

[Q22] 22.Early experience re: boating

Was there any experience you had as a child that was particularly important in shaping how you feel about boating and the outdoors now?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 YES, SPECIFY MOST IMPORTANT	181	63.3	63.3	63.3
	2 NO	102	35.7	35.7	99.0
	3 DON'T KNOW/NO RESPONSE	3	1.0	1.0	100.0
	Total	286	100.0	100.0	

Q22 ("22A") specific responses:	Name	Count	% Responses	% Cases
Boating/other water related activity	Q22A_1	141	67.8	79.2
Lived or vacationed near water	Q22A_2	30	14.4	16.9
Land based recreation/sports	Q22A_3	8	3.8	4.5
Parental/familial influences	Q22A_4	5	2.4	2.8
Other outdoor experiences (includes camping, summer camp, etc.)	Q22A_5	24	11.5	13.5
Total responses		208	100.0	116.9

108 missing cases; 178 valid cases

[Q23] 23.Boating etc orgs as adult

As an adult, have you ever belonged to any boating or other outdoor or nature-related organizations?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 YES, SPECIFY MOST IMPORTANT	118	41.3	41.3	41.3
	2 NO	166	58.0	58.0	99.3
	3 DON'T KNOW/NO RESPONSE	2	.7	.7	100.0
	Total	286	100.0	100.0	

Q23 ("23A") specific responses:	Name	Count	Pct of Responses	Pctof Cases
Boating/other water activity associated org.	Q23A_1	102	84.3	87.2
Water and land or land based activity org.	Q23A_2	19	15.7	16.2
Total responses		121	100.0	103.4

169 missing cases; 117 valid cases

[Q24] 24. Nature magazines

As an adult, have you ever subscribed to any boating or other outdoor or nature-related publications?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 YES, SPECIFY MOST IMPORTANT	184	64.3	64.3	64.3
	2 NO	100	35.0	35.0	99.3
	3 DON'T KNOW/NO RESPONSE	2	.7	.7	100.0
	Total	286	100.0	100.0	

Q24 ("24A") specific responses:	Name	Count	Pct of Responses	Pct of Cases
Boating/other water activity publication	Q24A_1	157	72.7	85.8
Florida Sportsman	Q24A_2	42	19.4	23.0
Other water & land/land based publication	Q24A_3	17	7.9	9.3
Total responses		216	100.0	118.0

103 missing cases; 183 valid cases

[Q25] 25. How much know about manatees

Would you say you know a lot, a fair amount, some, or very little about manatees?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 A LOT	85	29.7	29.7	29.7
	2 A FAIR AMOUNT	101	35.3	35.3	65.0
	3 SOME	68	23.8	23.8	88.8
	4 VERY LITTLE	31	10.8	10.8	99.7
	5 DON'T KNOW/NO RESPONSE	1	.3	.3	100.0
	Total	286	100.0	100.0	

[Q26] 26. How initially learned about manatees

How did you initially learn about manatees? [INTERVIEWER, DO NOT READ RESPONSES, CHECK ALL THAT APPLY] [multiple response]

Q26 responses:	Name	Count	Pct of Responses	Pct of Cases
School, other class	Q26_1	47	11.1	18.9
Sign at boat ramp	Q26_2	3	.7	1.2
Sign at marina	Q26_3	16	3.8	6.4
Boater education class	Q26_4	8	1.9	3.2
Friend	Q26_5	15	3.5	6.0
Family member	Q26_6	14	3.3	5.6

Brochure at boat ramp	Q26_7	7	1.6	2.8
Brochure at marina, other location	Q26_8	16	3.8	6.4
TV	Q26_9	35	8.2	14.1
Lecture	Q26_10	3	.7	1.2
Newspaper	Q26_11	24	5.6	9.6
Magazine, other publication	Q26_12	41	9.6	16.5
Book	Q26_13	20	4.7	8.0
Internet	Q26_14	3	.7	1.2
Exhibit at ocean theme/other park	Q26_15	21	4.9	8.4
other	Q26_16	26	6.1	10.4
Seeing them/swimming with them	Q26_19	84	19.8	33.7
Living in Florida/Cuba	Q26_20	34	8.0	13.7
From other signs	Q26_21	8	1.9	3.2
Total responses		425	100.0	170.7

37 missing cases; 249 valid cases

[Q27] 27. Total number of manatees seen in wild

Would you say a hundred or more, 26 to 99, from 6 to 25, 5 or less, or none? [FOR LIFETIME]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	100 OR MORE	68	23.8	23.8	23.8
	26 TO 99	70	24.5	24.5	48.3
	6 TO 25	75	26.2	26.2	74.5
	1 TO 5	61	21.3	21.3	95.8
	NONE	12	4.2	4.2	100.0
	Total	286	100.0	100.0	

[Q28] 28. rules restricting boat speed and access

Now I want to ask your opinion about manatee protection rules. Overall, on rules restricting boat speed and access to protect manatees, do you think these rules are unnecessary and too strict, just about right, or do they need to be made more strict?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 TOO STRICT	69	24.1	24.1	24.1
	2 JUST ABOUT RIGHT	145	50.7	50.7	74.8
	3 NEED TO BE MADE MORE STRICT	56	19.6	19.6	94.4
	4 NOT ENOUGH INFORMATION TO DECIDE	5	1.7	1.7	96.2
	5 DON'T KNOW/NO RESPONSE	11	3.8	3.8	100.0
	Total	286	100.0	100.0	

[Q29] 29. Impact on marine industry

How much economic harm do you think manatee speed zones cause the marine industry in Florida, that is marinas, boat sales and rentals, etc? A major amount of economic harm, a fair amount, a little, or no harm at all?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 A MAJOR AMOUNT	29	10.1	10.1	10.1
	2 A FAIR AMOUNT	45	15.7	15.7	25.9
	3 A LITTLE	56	19.6	19.6	45.5
	4 NO HARM AT ALL	133	46.5	46.5	92.0
	5 DON'T KNOW/NO RESPONSE	23	8.0	8.0	100.0
	Total	286	100.0	100.0	

[Q30] 30. areas for restrictions

If the economic impact of manatee speed restrictions causes businesses in some areas to lose a substantial amount of income, should the restrictions be made less strict in those areas?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 YES	60	21.0	46.2	46.2
	2 NO	55	19.2	42.3	88.5
	3 DON'T KNOW/NO RESPONSE	15	5.2	11.5	100.0
	Total	130	45.5	100.0	
Missing	System	156	54.5		
Total		286	100.0		

[Q31] 31. Access restriction

In areas where manatee deaths due to boats are highest, do you think there should be restrictions on building new water access facilities like marinas, docks, and launch ramps?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 YES	148	51.7	51.7	51.7
	2 NO	116	40.6	40.6	92.3
	3 DON'T KNOW/NO RESPONSE	22	7.7	7.7	100.0
	Total	286	100.0	100.0	

[Q32] 32. Manatees continue as endangered

Manatees are currently on the endangered species list. Some people think that there are enough manatees now that they can be taken off the list. Do you think manatees should continue being listed as endangered or can they be taken off the list, or don't you have enough information to decide?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 CONTINUE LISTING AS ENDANGERED	141	49.3	49.3	49.3
	2 TAKE OFF LIST	58	20.3	20.3	69.6
	3 NOT ENOUGH INFORMATION TO DECIDE	76	26.6	26.6	96.2
	4 DON'T KNOW/NO RESPONSE	11	3.8	3.8	100.0
	Total	286	100.0	100.0	

[Q32A] 32A. Manatee advocacy organizations

What do you think about positions taken by manatee advocacy organizations like the Save the Manatee Club? Do you completely agree, mostly agree, mostly disagree, completely disagree, or are you not that familiar with their positions?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 COMPLETELY AGREE	57	19.9	19.9	19.9
	2 MOSTLY AGREE	70	24.5	24.5	44.4
	3 MOSTLY DISAGREE	39	13.6	13.6	58.0
	4 COMPLETELY DISAGREE	18	6.3	6.3	64.3
	5 NOT THAT FAMILIAR	95	33.2	33.2	97.6
	6 DON'T KNOW/NO RESPONSE	7	2.4	2.4	100.0
	Total	286	100.0	100.0	

[Q33] 33. compare zones

Comparing manatee slow speed zones, idle speed zones, and no entry areas, which, if any, do you think creates the most problem or inconvenience for boaters?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 SLOW SPEED ZONES	45	15.7	15.7	15.7
	2 IDLE SPEED ZONES	69	24.1	24.1	39.9
	3 NO ENTRY AREAS	65	22.7	22.7	62.6
	4 ALL EQUALLY A PROBLEM	14	4.9	4.9	67.5
	5 NONE ARE A REAL PROBLEM	76	26.6	26.6	94.1
	6 DON'T KNOW/NO RESPONSE	17	5.9	5.9	100.0
	Total	286	100.0	100.0	

[Q34] 34. How many manatees think there are

Approximately how many Florida manatees do you think there are or do you think there is not enough information to decide? [INTERVIEWER, DO NOT READ RESPONSES]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	UP TO 499	4	1.4	1.4	1.4
	500-999	7	2.4	2.4	3.8
	1000-under 1500	5	1.7	1.7	5.6
	1500- under 2000	3	1.0	1.0	6.6
	2000- under 2500	7	2.4	2.4	9.1
	2500- under 3000	6	2.1	2.1	11.2
	3000- under 3500	19	6.6	6.6	17.8
	3500- under 4000	5	1.7	1.7	19.6
	4000- under 5500	6	2.1	2.1	21.7
	over 5500	11	3.8	3.8	25.5
	NOT ENOUGH INFORMATION TO DECIDE	162	56.6	56.6	82.2
	DON'T KNOW/NO RESPONSE	51	17.8	17.8	100.0
	Total	286	100.0	100.0	

[Q35] 35. Ability of current manatee population to exist into future

In terms of the current Florida manatee population and its ability to exist for a long time in the future, do you think there are: not enough manatees, enough manatees, more than enough manatees, or don't you have enough information to answer this question?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 NOT ENOUGH MANATEES	60	21.0	21.0	21.0
	2 ENOUGH MANATEES	58	20.3	20.3	41.3
	3 MORE THAN ENOUGH MANATEES	15	5.2	5.2	46.5
	4 DON'T HAVE ENOUGH INFORMATION	137	47.9	47.9	94.4
	5 OTHER, SPECIFY	4	1.4	1.4	95.8
	6 DON'T KNOW/NO RESPONSE	12	4.2	4.2	100.0
	Total	286	100.0	100.0	

[Q36] 36. Role of boat-manatee collisions in manatee deaths

How would you rate the role of boat-manatee collisions as a cause of all KNOWN manatee deaths? Would you say boats are not a cause of manatee deaths, are only occasionally a cause, are fairly often a cause, or are boats the main cause of known manatee deaths, or don't you have enough information to answer this question?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 NOT A CAUSE	6	2.1	2.1	2.1
	2 ONLY OCCASIONALLY A CAUSE	84	29.4	29.4	31.5
	3 FAIRLY OFTEN A CAUSE	79	27.6	27.6	59.1
	4 THE MAIN CAUSE	70	24.5	24.5	83.6
	5 DON'T HAVE ENOUGH INFORMATION	43	15.0	15.0	98.6
	6 DON'T KNOW/NO RESPONSE	4	1.4	1.4	100.0
	Total	286	100.0	100.0	

[Q37] 37. t/f-manatees most populous in summer

I have two brief statements about manatees and I would like to know if you agree with them or not. First, there are more manatees in South Florida in the summer than in the winter. Do you agree with this statement or not, or don't you have enough information about this?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 AGREE	65	22.7	22.7	22.7
	2 DISAGREE	131	45.8	45.8	68.5
	3 NOT ENOUGH INFORMATION	67	23.4	23.4	92.0
	4 DON'T KNOW/NO RESPONSE	23	8.0	8.0	100.0
	Total	286	100.0	100.0	

[Q39] 39. t/f- manatees eat seagrasses/plants

Manatees eat only seagrasses and other plants. [Do you agree with this statement or not, or don't you have enough information about this?]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 AGREE	247	86.4	86.4	86.4
	2 DISAGREE	8	2.8	2.8	89.2
	3 NOT ENOUGH INFORMATION	23	8.0	8.0	97.2
	4 DON'T KNOW/NO RESPONSE	8	2.8	2.8	100.0
	Total	286	100.0	100.0	

[Q40] 40. define slow speed

Travel at a speed 20 miles an hour or over, under 20 miles per hour, under 15 miles per hour, minimum wake, no wake, or are you not sure?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 20 MPH OR OVER	5	1.7	1.7	1.7
	2 UNDER 20 MPH	23	8.0	8.0	9.8
	3 UNDER 15 MPH	29	10.1	10.1	19.9
	4 MINIMUM WAKE	156	54.5	54.5	74.5
	5 NO WAKE	59	20.6	20.6	95.1
	6 NOT SURE	10	3.5	3.5	98.6
	7 OTHER	3	1.0	1.0	99.7
	8 DON'T KNOW/NO RESPONSE	1	.3	.3	100.0
	Total	286	100.0	100.0	

[Q41] 41. define idle speed

Which of these describes what a boat should be doing in an "idle speed" zone? Travel under 20 miles per hour, under 15 miles per hour, minimum wake, no wake, or are you not sure?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 UNDER 20 MPH	5	1.7	1.7	1.7
	2 UNDER 15 MPH	17	5.9	5.9	7.7
	3 MINIMUM WAKE	77	26.9	26.9	34.6
	4 NO WAKE	176	61.5	61.5	96.2
	5 NOT SURE	10	3.5	3.5	99.7
	7 DON'T KNOW/NO RESPONSE	1	.3	.3	100.0
	Total	286	100.0	100.0	

[Q42] 42. Accuracy of manatee pop counts

From what you have heard, how accurate do you think manatee population counts are made by scientists and government agencies? Are they very accurate, mostly accurate, mostly inaccurate, very inaccurate, or don't you have enough information to decide?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 VERY ACCURATE	24	8.4	8.4	8.4
	2 MOSTLY ACCURATE	107	37.4	37.4	45.8
	3 MOSTLY INACCURATE	23	8.0	8.0	53.8
	4 VERY INACCURATE	5	1.7	1.7	55.6
	5 NOT ENOUGH INFORMATION	120	42.0	42.0	97.6
	6 DON'T KNOW/NO RESPONSE	7	2.4	2.4	100.0
	Total	286	100.0	100.0	

[Q43] 43. manatees hit because poor hearing

These next few questions ask for your level of agreement on certain issues. First, regarding the statement: Manatees are hit by boats mainly because they don't hear the boats or are otherwise unaware of them. Do you strongly agree, mostly agree, mostly disagree, or strongly disagree with this statement?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 STRONGLY AGREE	53	18.5	18.5	18.5
	2 MOSTLY AGREE	78	27.3	27.3	45.8
	3 MOSTLY DISAGREE	56	19.6	19.6	65.4
	4 STRONGLY DISAGREE	61	21.3	21.3	86.7
	5 DON'T KNOW/NO RESPONSE	38	13.3	13.3	100.0
	Total	286	100.0	100.0	

[Q44] 44. don't see manatees, forget to go slow

If I don't see manatees I sometimes forget to go slowly. Do you strongly agree, mostly agree, mostly disagree, or strongly disagree?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 STRONGLY AGREE	20	7.0	7.0	7.0
	2 MOSTLY AGREE	38	13.3	13.3	20.3
	3 MOSTLY DISAGREE	49	17.1	17.1	37.4
	4 STRONGLY DISAGREE	165	57.7	57.7	95.1
	5 DON'T KNOW/NO RESPONSE	14	4.9	4.9	100.0
	Total	286	100.0	100.0	

[Q45] 45. few boaters obey manatee zones

Very few boaters obey manatee speed zones. [... Do you strongly agree, mostly agree, mostly disagree, or strongly disagree?]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 STRONGLY AGREE	71	24.8	24.8	24.8
	2 MOSTLY AGREE	75	26.2	26.2	51.0
	3 MOSTLY DISAGREE	77	26.9	26.9	78.0
	4 STRONGLY DISAGREE	58	20.3	20.3	98.3
	5 DON'T KNOW/NO RESPONSE	5	1.7	1.7	100.0
	Total	286	100.0	100.0	

[Q46] 46. pressure to go faster

I sometimes feel pressure from others on board to go faster than the zone allows. [... Do you strongly agree, mostly agree, mostly disagree, or strongly disagree?]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 STRONGLY AGREE	25	8.7	8.7	8.7
	2 MOSTLY AGREE	15	5.2	5.2	14.0
	3 MOSTLY DISAGREE	51	17.8	17.8	31.8
	4 STRONGLY DISAGREE	191	66.8	66.8	98.6
	5 DON'T KNOW/NO RESPONSE	4	1.4	1.4	100.0
	Total	286	100.0	100.0	

[Q47] 47. faster route can be found

I can usually find a faster route to my destination if I do not want to travel in a slow or idle zone. [... Do you strongly agree, mostly agree, mostly disagree, or strongly disagree?]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 STRONGLY AGREE	58	20.3	20.3	20.3
	2 MOSTLY AGREE	53	18.5	18.5	38.8
	3 MOSTLY DISAGREE	71	24.8	24.8	63.6
	4 STRONGLY DISAGREE	93	32.5	32.5	96.2
	5 DON'T KNOW/NO RESPONSE	11	3.8	3.8	100.0
	Total	286	100.0	100.0	

[Q48] 48. determination of speed zone while boating

I can usually determine what speed zone I am in. Do you strongly agree, mostly agree, mostly disagree, or strongly disagree with this statement?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 STRONGLY AGREE	155	54.2	54.2	54.2
	2 MOSTLY AGREE	86	30.1	30.1	84.3
	3 MOSTLY DISAGREE	25	8.7	8.7	93.0
	4 STRONGLY DISAGREE	17	5.9	5.9	99.0
	5 DON'T KNOW/NO RESPONSE	3	1.0	1.0	100.0
	Total	286	100.0	100.0	

[Q49] 49. understanding of zone requirements from signs

Speed requirements are clear and easy to understand from the signs posted. [... Do you strongly agree, mostly agree, mostly disagree, or strongly disagree?]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 STRONGLY AGREE	122	42.7	42.7	42.7
	2 MOSTLY AGREE	73	25.5	25.5	68.2
	3 MOSTLY DISAGREE	42	14.7	14.7	82.9
	4 STRONGLY DISAGREE	48	16.8	16.8	99.7
	5 DON'T KNOW/NO RESPONSE	1	.3	.3	100.0
	Total	286	100.0	100.0	

[Q51] 51. use of binoculars to read signs

Do you use binoculars as an aid to read speed zone and other regulatory signs all of the time, most of the time, some of the time, very rarely or have you never used binoculars for this purpose?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 ALL OF THE TIME	19	6.6	6.6	6.6
	2 MOST OF THE TIME	26	9.1	9.1	15.7
	3 SOME OF THE TIME	66	23.1	23.1	38.8
	4 VERY RARELY	76	26.6	26.6	65.4
	5 NEVER USED	99	34.6	34.6	100.0
	Total	286	100.0	100.0	

[Q52] 52. use of maps

I find maps of speed zones very helpful. [... Do you strongly agree, mostly agree, mostly disagree, or strongly disagree?]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 STRONGLY AGREE	86	30.1	30.1	30.1
	2 MOSTLY AGREE	77	26.9	26.9	57.0
	3 MOSTLY DISAGREE	39	13.6	13.6	70.6
	4 STRONGLY DISAGREE	66	23.1	23.1	93.7
	5 DON'T KNOW/NO RESPONSE	18	6.3	6.3	100.0
	Total	286	100.0	100.0	

[Q53] 53. need for more signs

Speed zone information should be improved by using more signs.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 STRONGLY AGREE	140	49.0	49.0	49.0
	2 MOSTLY AGREE	69	24.1	24.1	73.1
	3 MOSTLY DISAGREE	43	15.0	15.0	88.1
	4 STRONGLY DISAGREE	33	11.5	11.5	99.7
	5 DON'T KNOW/NO RESPONSE	1	.3	.3	100.0
	Total	286	100.0	100.0	

[Q54] 54. need for fewer zones

Speed zones should be made less confusing by having fewer types of zones, even if the number of slower zones increases.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 STRONGLY AGREE	88	30.8	30.8	30.8
	2 MOSTLY AGREE	69	24.1	24.1	54.9
	3 MOSTLY DISAGREE	54	18.9	18.9	73.8
	4 STRONGLY DISAGREE	65	22.7	22.7	96.5
	5 DON'T KNOW/NO RESPONSE	10	3.5	3.5	100.0
	Total	286	100.0	100.0	

[Q55] 55. responsibility of boaters to know zones

Boaters should be responsible for knowing speed zones by using the same maps that law enforcement uses and not depending on the signs.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 STRONGLY AGREE	67	23.4	23.4	23.4
	2 MOSTLY AGREE	37	12.9	12.9	36.4
	3 MOSTLY DISAGREE	55	19.2	19.2	55.6
	4 STRONGLY DISAGREE	119	41.6	41.6	97.2
	5 DON'T KNOW/NO RESPONSE	8	2.8	2.8	100.0
	Total	286	100.0	100.0	

[Q56] 56. amount of federal fines

Federal speeding fines in manatee zones are $150 for the first violation. Is this what it should be, or if not, what would be a better amount?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	19	6.6	7.3	7.3
	3	1	.3	.4	7.7
	10	3	1.0	1.2	8.9
	15	1	.3	.4	9.3
	20	2	.7	.8	10.0
	25	6	2.1	2.3	12.4
	40	1	.3	.4	12.7
	50	39	13.6	15.1	27.8
	75	6	2.1	2.3	30.1
	80	1	.3	.4	30.5
	100	12	4.2	4.6	35.1
	150	143	50.0	55.2	90.3
	200	2	.7	.8	91.1
	250	5	1.7	1.9	93.1
	300	4	1.4	1.5	94.6
	400	1	.3	.4	95.0
	500	8	2.8	3.1	98.1
	1000	4	1.4	1.5	99.6
	5000	1	.3	.4	100.0
	Total	259	90.6	100.0	
Missing	9999	27	9.4		
Total		286	100.0		

[Q57] 57. Responsibility to help save manatees from extinction

How much responsibility do you think you have to help save the manatee from

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 MAJOR RESPONSIBILTY	119	41.6	41.6	41.6
	2 FAIR AMOUNT RESPONSIBILITY	107	37.4	37.4	79.0
	3 A LITTLE RESPONSIBILITY	40	14.0	14.0	93.0
	4 NO RESPONSIBILITY AT ALL	17	5.9	5.9	99.0
	5 DON'T KNOW/NO RESPONSE	3	1.0	1.0	100.0
	Total	286	100.0	100.0	

[Q58] 58. manatee right to exist

Manatees have a right to exist and people should not be allowed to cause their extinction. Do you strongly agree, mostly agree, mostly disagree, or strongly disagree?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 STRONGLY AGREE	176	61.5	61.5	61.5
	2 MOSTLY AGREE	78	27.3	27.3	88.8
	3 MOSTLY DISAGREE	22	7.7	7.7	96.5
	4 STRONGLY DISAGREE	7	2.4	2.4	99.0
	5 DON'T KNOW/NO RESPONSE	3	1.0	1.0	100.0
	Total	286	100.0	100.0	

[Q59] 59. manatees important for future generations

Manatee survival is important so that they exist for future generations and people should not cause their extinction. [...Do you strongly agree, mostly agree, mostly disagree, or strongly disagree?]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 STRONGLY AGREE	201	70.3	70.3	70.3
	2 MOSTLY AGREE	58	20.3	20.3	90.6
	3 MOSTLY DISAGREE	13	4.5	4.5	95.1
	4 STRONGLY DISAGREE	8	2.8	2.8	97.9
	5 DON'T KNOW/NO RESPONSE	6	2.1	2.1	100.0
	Total	286	100.0	100.0	

[Q60] 60. comfort knowing manatees exist

I have comfort knowing manatees exist and people should not cause their extinction.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 STRONGLY AGREE	193	67.5	67.5	67.5
	2 MOSTLY AGREE	66	23.1	23.1	90.6
	3 MOSTLY DISAGREE	12	4.2	4.2	94.8
	4 STRONGLY DISAGREE	6	2.1	2.1	96.9
	5 DON'T KNOW/NO RESPONSE	9	3.1	3.1	100.0
	Total	286	100.0	100.0	

[Q61] 61. manatee extinction part of natural cycle

Species have evolved and disappeared throughout history and I would accept manatee extinction as a part of this cycle. [...Do you strongly agree, mostly agree, mostly disagree, or strongly disagree?]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 STRONGLY AGREE	46	16.1	16.1	16.1
	2 MOSTLY AGREE	49	17.1	17.1	33.2
	3 MOSTLY DISAGREE	58	20.3	20.3	53.5
	4 STRONGLY DISAGREE	126	44.1	44.1	97.6
	5 DON'T KNOW/NO RESPONSE	7	2.4	2.4	100.0
	Total	286	100.0	100.0	

[Q62] 62. mixed opinions on manatee value

I have mixed opinions on the value of manatees. [...Do you strongly agree, mostly agree, mostly disagree, or strongly disagree?]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 STRONGLY AGREE	32	11.2	11.2	11.2
	2 MOSTLY AGREE	56	19.6	19.6	30.8
	3 MOSTLY DISAGREE	46	16.1	16.1	46.9
	4 STRONGLY DISAGREE	137	47.9	47.9	94.8
	5 DON'T KNOW/NO RESPONSE	15	5.2	5.2	100.0
	Total	286	100.0	100.0	

[Q63] 63. rights of people more important

If the issue comes down to the rights of manatees vs. people, the rights of people should be more important. [...Do you strongly agree, mostly agree, mostly disagree, or strongly disagree?]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 STRONGLY AGREE	73	25.5	25.5	25.5
	2 MOSTLY AGREE	67	23.4	23.4	49.0
	3 MOSTLY DISAGREE	61	21.3	21.3	70.3
	4 STRONGLY DISAGREE	67	23.4	23.4	93.7
	5 DON'T KNOW/NO RESPONSE	18	6.3	6.3	100.0
	Total	286	100.0	100.0	

[Q64] 64. difference I can make in manatee survival

How much difference do you think you can make to help ensure long-term manatee survival? Do you think you can make a major difference, a fair amount of difference, a little difference, or no difference?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 MAJOR DIFFERENCE	45	15.7	15.7	15.7
	2 FAIR AMOUNT OF DIFFERENCE	96	33.6	33.6	49.3
	3 A LITTLE DIFFERENCE	112	39.2	39.2	88.5
	4 NO DIFFERENCE AT ALL	32	11.2	11.2	99.7
	5 DON'T KNOW/NO RESPONSE	1	.3	.3	100.0
	Total	286	100.0	100.0	

[Q65] 65. what boater can do to help manatee

What are some things boaters might do in efforts to try to help manatees survive? [INTERVIEWER DO NOT READ ANSWERS. CHECK ALL THAT APPLY]

[multiple response]

Q65 responses:	Name	Count	Pct of Responses	Pct of Cases
Obey manatee speed zones	Q65_1	212	52.7	77.1
Teach others about manatees	Q65_2	18	4.5	6.5
Report injured manatees to authorities, report sightings via markers/radio	Q65_3	8	2.0	2.9
Discard trash properly	Q65_4	9	2.2	3.3
Become politically active	Q65_5	3	.7	1.1
Volunteer for/join manatee advocacy org.	Q65_6	5	1.2	1.8
Honk at/tell speeding boaters to go slow	Q65_7	6	1.5	2.2
Donate money -enforcement,education,etc.	Q65_8	4	1.0	1.5
Join a boating club, organization	Q65_10	2	.5	.7
Other	Q65_11	41	10.2	14.9
Boaters are doing enough	Q65_12	1	.2	.4
Did not say any	Q65_13	5	1.2	1.8
Other manatee safe boating practices	Q65_16	25	6.2	9.1
Be aware of surroundings/manatees/habitat	Q65_17	48	11.9	17.5
Prop guard/Jet engine	Q65_18	7	1.7	2.5
Become more educated	Q65_19	8	2.0	2.9
Total responses		402	100.0	146.2

11 missing cases; 275 valid cases

[Q66] 66. have you done any of these to help manatees

Have you ever done this/any of these things? If so, which one(s)? [INTERVIEWER DO NOT READ ANSWERS. CHECK ALL THAT APPLY]

[multiple response]

Q66 responses:	Name	Count	%Responses	%Cases
Obey manatee speed zones	Q66_1	200	54.2	79.4
Teach others about manatees	Q66_2	25	6.8	9.9
Report injured manatees (see 3 above)	Q66_3	8	2.2	3.2
Discard trash properly	Q66_4	19	5.1	7.5
Become politically active	Q66_5	3	.8	1.2
Volunteer for/join manatee advocacy org.	Q66_6	2	.5	.8
Honk at/tell speeding boaters slow down	Q66_7	14	3.8	5.6
Donate money for enforcement, education	Q66_8	4	1.1	1.6
Display a sign, bumper sticker	Q66_9	7	1.9	2.8
Join a boating club, organization	Q66_10	7	1.9	2.8
Other	Q66_11	11	3.0	4.4
Did not do any	Q66_12	12	3.3	4.8
Don't know, no response	Q66_13	5	1.4	2.0
Same as last answer	Q66_15	30	8.1	11.9
Aware of surroundings/manatees/habitat	Q66_16	14	3.8	5.6
Has prop guard/jet engine	Q66_17	2	.5	.8
Education	Q66_18	6	1.6	2.4
Total responses		369	100.0	146.4

34 missing cases; 252 valid cases

[Q67] 67. what if saw injured manatee?

What would you do if you encountered an injured manatee? [DO NOT READ RESPONSES, CHECK ALL THAT APPLY]

[multiple response]

Q67 responses:	Name	Count	Pct of Responses	Pct of Cases
Try to help it myself	Q67_2	11	3.7	3.8
Call authorities	Q67_3	278	92.7	97.2
Other	Q67_4	6	2.0	2.1
Don't know, no response	Q67_5	5	1.7	1.7
Total responses		300	100.0	104.9

0 missing cases; 286 valid cases

[Q68] 68. knowledge of Monument Island speed zone

These next two questions are to help us understand how familiar you are with speed zones in Miami-Dade County. I will also be asking if you ever exceeded speed limits that may have been posted in these areas. Remember, these answers are confidential and your truthful responses are greatly appreciated. Also, the only way you can get a speeding ticket is to be seen at the time you are speeding by a law enforcement officer. In Biscayne Bay just west of Miami Beach, from about the Julia Tuttle Causeway south to the MacArthur Causeway, near the Coast Guard station, there is a

narrow speed zone. What is the speed of this zone, or are you not familiar with this area? [INTERVIEWER DO NOT READ ANSWERS]

These next two questions are to help us understand how familiar you are with speed zones in Miami-Dade County. I will al

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 NO SPEED LIMIT	9	3.1	3.1	3.1
	2 30 MPH YEAR ROUND	22	7.7	7.7	10.8
	3 30 MPH YEAR DURING PART OF THE YEAR	5	1.7	1.7	12.6
	4 SLOW SPEED OR MINIMUM WAKE	32	11.2	11.2	23.8
	5 IDLE SPEED OR NO WAKE	40	14.0	14.0	37.8
	6 FAMILIAR WITH AREA BUT DON'T KNOW THE ANSWER	19	6.6	6.6	44.4
	7 NOT FAMILIAR WITH AREA	116	40.6	40.6	85.0
	8 OTHER SPEED, SPECIFY	19	6.6	6.6	91.6
	9 DON'T KNOW/NO RESPONSE	24	8.4	8.4	100.0
	Total	286	100.0	100.0	

[Q69] 69. Speeding in Monument Island zone

Do you ever recall speeding in that zone while operating your boat?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 YES	33	11.5	24.1	24.1
	2 NO	102	35.7	74.5	98.5
	3 NEVER BEEN THERE	1	.3	.7	99.3
	4 DON'T KNOW/NO RESPONSE	1	.3	.7	100.0
	Total	137	47.9	100.0	
Missing	System	149	52.1		
Total		286	100.0		

[Q70] 70. knowledge of Brickell Key zone

What is the speed zone the boater must obey in the intracoastal just east of downtown Miami, south of the Miami River entrance, running along Brickell Key? [Brickell Key is also called Claughton Island.]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 NO SPEED LIMIT	3	1.0	1.0	1.0
	2 30 MPH YEAR ROUND	4	1.4	1.4	2.4
	3 30 MPH YEAR DURING PART OF THE YEAR	2	.7	.7	3.1
	4 SLOW SPEED OR MINIMUM WAKE	43	15.0	15.0	18.2
	5 IDLE SPEED OR NO WAKE	139	48.6	48.6	66.8
	6 FAMILIAR WITH AREA BUT DON'T KNOW THE ANSWER	14	4.9	4.9	71.7
	7 NOT FAMILIAR WITH AREA	46	16.1	16.1	87.8
	8 OTHER SPEED, SPECIFY	18	6.3	6.3	94.1
	9 DON'T KNOW/NO RESPONSE	17	5.9	5.9	100.0
	Total	286	100.0	100.0	

[Q71] 71. Speeding in Brickell Key zone
Do you ever recall speeding in that zone while operating your boat?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 YES	44	15.4	20.0	20.0
	2 NO	173	60.5	78.6	98.6
	3 NEVER BEEN THERE	2	.7	.9	99.5
	4 DON'T KNOW/NO RESPONSE	1	.3	.5	100.0
	Total	220	76.9	100.0	
Missing	System	66	23.1		
Total		286	100.0		

[Q72] 72. rate of compliance in manatee zone
Overall, how often do you comply with manatee speed zones? Would you say you never comply, comply less than half of the time, about half of the time, more than half of the time, or do you comply with speed zones all of the time? (Answer "5" skip to Q74.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 NEVER	1	.3	.3	.3
	2 LESS THAN HALF OF THE TIME	1	.3	.3	.7
	3 ABOUT HALF OF THE TIME	2	.7	.7	1.4
	4 MORE THAN HALF OF THE TIME	56	19.6	19.6	21.0
	5 ALL OF THE TIME	225	78.7	78.7	99.7
	6 DON'T KNOW/NO RESPONSE	1	.3	.3	100.0
	Total	286	100.0	100.0	

[Q73] 73. reason for noncompliance

What are the reasons you don't comply with manatee speed zones? [INTERVIEWER, DO NOT READ LIST; CHECK ALL THAT APPLY]

[multiple response]

Q73 responses:	Name	Count	Pct of Responses	Pct of Cases
Gets too hot when boat goes slow	Q73_1	1	1.4	1.7
Need to get somewhere	Q73_2	16	21.9	26.7
Other boats are going fast	Q73_3	4	5.5	6.7
When rains	Q73_7	1	1.4	1.7
Don't know about zone	Q73_9	11	15.1	18.3
Other	Q73_10	9	12.3	15.0
Don't know, no response	Q73_11	4	5.5	6.7
Don't agree with zone	Q73_13	12	16.4	20.0
Weather	Q73_14	3	4.1	5.0
Bad signs,not see the signs,no signs	Q73_15	9	12.3	15.0
Not paying attention	Q73_16	3	4.1	5.0
Total responses		73	100.0	121.7

226 missing cases; 60 valid cases

[Q74] 74. ever gotten a ticket

Have you ever gotten a ticket for speeding in your boat?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 YES	33	11.5	11.5	11.5
	2 NO	253	88.5	88.5	100.0
	Total	286	100.0	100.0	

[Q75] 75. manatee speed ticket

Were any tickets for manatee speed or manatee access rules?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 YES	15	5.2	45.5	45.5
	2 NO	18	6.3	54.5	100.0
	Total	33	11.5	100.0	
Missing	System	253	88.5		
Total		286	100.0		

[Q76] 76. hours of boating per day

On average, how many hours do you stay out for a day of boating? [99: DON'T KNOW/NO RESPONSE]

[numeric, range: 0-99] mean= 8.17 hours, no missing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	5	1.7	1.7	1.7
	3	11	3.8	3.8	5.6
	4	31	10.8	10.8	16.4
	5	45	15.7	15.7	32.2
	6	61	21.3	21.3	53.5
	7	21	7.3	7.3	60.8
	8	54	18.9	18.9	79.7
	9	8	2.8	2.8	82.5
	10	18	6.3	6.3	88.8
	11	1	.3	.3	89.2
	12	14	4.9	4.9	94.1
	13	2	.7	.7	94.8
	14	1	.3	.3	95.1
	24	7	2.4	2.4	97.6
	48	6	2.1	2.1	99.7
	72	1	.3	.3	100.0
	Total	286	100.0	100.0	

[Q77] 77. number law enforcement boats seen/day

On average, how many law enforcement boats do you usually see during a day of boating? [99: DON'T KNOW/NO RESPONSE] [numeric, range: 0-99] mean= 2.50 boats, missing= 4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	18	6.3	6.4	6.4
	1	91	31.8	32.3	38.7
	2	72	25.2	25.5	64.2
	3	47	16.4	16.7	80.9
	4	17	5.9	6.0	86.9
	5	14	4.9	5.0	91.8
	6	6	2.1	2.1	94.0
	7	3	1.0	1.1	95.0
	8	6	2.1	2.1	97.2
	10	5	1.7	1.8	98.9
	12	3	1.0	1.1	100.0
	Total	282	98.6	100.0	
Missing	99	4	1.4		
Total		286	100.0		

[Q78] 78. number of law enforcement boats needed

Do you think the number of law enforcement boats near manatee zones is too few, just about right, or too many?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 TOO FEW	113	39.5	39.5	39.5
	2 JUST ABOUT RIGHT	134	46.9	46.9	86.4
	3 TOO MANY	27	9.4	9.4	95.8
	4 DON'T KNOW/NO RESPONSE	12	4.2	4.2	100.0
	Total	286	100.0	100.0	

[Q79] 79. opinion on increasing taxes

In counties where it is felt that the manatee death rate due to collisions with boats is high enough to influence chances for long-term survival of the species, two ideas have been suggested about how to decrease these deaths: I want to ask about both. First, it has been suggested that taxes associated with boats and boating items should be increased to help pay for specific measures that scientists feel will help decrease these deaths and allow boaters and manatees to better coexist. Do you strongly agree, mostly agree, mostly disagree, or strongly disagree with this idea?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 STRONGLY AGREE	28	9.8	9.8	9.8
	2 MOSTLY AGREE	51	17.8	17.8	27.6
	3 MOSTLY DISAGREE	58	20.3	20.3	47.9
	4 STRONGLY DISAGREE	143	50.0	50.0	97.9
	6 DON'T KNOW/NO RESPONSE	6	2.1	2.1	100.0
	Total	286	100.0	100.0	

[Q80] 80. opinion on decreasing number of boaters

The second idea is to decrease the number of boats on certain days in these counties. Weekend boaters would be limited to one, but not both days in the wintertime, when the manatee population is highest. This would continue until the number of manatee deaths decreases to a specified level. [... Do you strongly agree, mostly agree, mostly disagree, or strongly disagree with this idea?]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 STRONGLY AGREE	22	7.7	7.7	7.7
	2 MOSTLY AGREE	16	5.6	5.6	13.3
	3 MOSTLY DISAGREE	53	18.5	18.5	31.8
	4 STRONGLY DISAGREE	193	67.5	67.5	99.3
	5 DON'T KNOW/NO RESPONSE	2	.7	.7	100.0
	Total	286	100.0	100.0	

[Q81] 81. opinion on Gerstein device **Here is a new proposal: there is new research that suggests manatees would learn to get out of the way of approaching boats if all boats, fast or slow, had a device to broadcast sound ahead of the boat in frequencies that manatees can hear. Suppose further research confirmed that this works. The proposal would then be to require all boaters to purchase and install this device costing 100 to 125 dollars. If, after a few years, manatees would learn to associate the sound with approaching boats, the number of deaths would decline, and speed restrictions could be relaxed in most areas. [... Do you strongly agree, mostly agree, mostly disagree, or strongly disagree with this idea?]**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 STRONGLY AGREE	128	44.8	44.8	44.8
	2 MOSTLY AGREE	62	21.7	21.7	66.4
	3 MOSTLY DISAGREE	28	9.8	9.8	76.2
	4 STRONGLY DISAGREE	58	20.3	20.3	96.5
	5 DON'T KNOW/NO RESPONSE	10	3.5	3.5	100.0
	Total	286	100.0	100.0	

[Q82] 82. knowledge-SOS

There are three questions we would like to ask everyone so that we may better understand overall boater knowledge. If you don't have the information just say so. First, do you know what the pattern of long and short flashes or sounds is in a SOS or distress signal? [DO NOT READ RESPONSES]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 THREE SHORT, THREE LONG, THREE SHORT	79	27.6	27.6	27.6
	2 OTHER COMBINATION	44	15.4	15.4	43.0
	3 DON'T KNOW/NO RESPONSE	163	57.0	57.0	100.0
	Total	286	100.0	100.0	

[Q83] 83. knowledge-plastic discharge zone

The Act to Prevent Pollution from Ships places limitations on the discharge of garbage from vessels in US waters. Do you know the prohibited zone for the discharge of plastics, including plastic bags? [DO NOT READ RESPONSES]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 PROHIBITED IN ALL AREAS	145	50.7	50.7	50.7
	2 SPECIFIED MILES	58	20.3	20.3	71.0
	3 OTHER	8	2.8	2.8	73.8
	4 DON'T KNOW/NO RESPONSE	75	26.2	26.2	100.0
	Total	286	100.0	100.0	

[Q84] 84. length of speed zone when no distance limits

When entering an idle or slow speed zone marked by a sign with no distance limits for the zone, how far do you think a boater should obey this speed limit for? [DO NOT READ RESPONSES]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 UNTIL NEXT SIGN INDICATING END OF ZONE (RESUME SAFE SPEED)	165	57.7	57.7	57.7
	2 A DISTANCE (IN MILES OR FEET ETC)	62	21.7	21.7	79.4
	3 OTHER (NOT A DISTANCE)	12	4.2	4.2	83.6
	4 DON'T KNOW/NO RESPONSE	47	16.4	16.4	100.0
	Total	286	100.0	100.0	

[Q85] 85. attended boater ed class

Have you ever attended a boater education class? ("NO" skip to Q89.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 YES	190	66.4	66.4	66.4
	2 NO	96	33.6	33.6	100.0
	Total	286	100.0	100.0	

[Q86] 86. boater class helpful

Did the class teach any information about manatees that you found to be helpful or interesting? ("NO" skip to Q88.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 YES	56	19.6	29.5	29.5
	2 NO	122	42.7	64.2	93.7
	3 DON'T KNOW/NO RESPONSE	12	4.2	6.3	100.0
	Total	190	66.4	100.0	
Missing	System	96	33.6		
Total		286	100.0		

[Q87] 87. how was class helpful

What particularly did you find helpful or interesting in the class about manatees? [INTERVIEWER DO NOT READ RESPONSES -- CHECK ALL THAT APPLY] [multiple response]

Q87 responses:	Name	Count	Pct of Responses	Pct of Cases
What manatees look like	Q87_1	4	5.6	7.8
Manatee habitat and daily living	Q87_2	16	22.5	31.4
How boats can harm manatees	Q87_3	7	9.9	13.7
How boaters can protect manatees	Q87_4	16	22.5	31.4
What to do if injure/see injured man.	Q87_5	1	1.4	2.0
Manatee biology, migration, evolutionary history	Q87_6	13	18.3	25.5
Current man.situation,species surviv	Q87_7	6	8.5	11.8
Other	Q87_8	5	7.0	9.8
Not helpful or interesting	Q87_9	3	4.2	5.9
Total responses		71	100.0	139.2

235 missing cases; 51 valid cases

[Q88] 88. improving class

Regarding this class, do you have any recommendations for its improvement and/or recommendations for other topics that should have been included? [IF YES: what are your recommendations?] [INTERVIEWER, PLEASE CHECK ALL THAT APPLY] [multiple response]

Q88 responses:	Name	Count	Pct of Responses	Pct of Cases
More on what to do for safety	Q88_1	8	3.3	4.2
More on drinking, risky behavior	Q88_2	2	.8	1.1
More on boating manners, politeness	Q88_3	6	2.5	3.2
More on regulations for boats	Q88_4	7	2.9	3.7
More on regulatory,speed,navigation signs	Q88_5	11	4.6	5.8
More on manatees/speed zones	Q88_6	42	17.5	22.1
More on other environmental issues	Q88_7	14	5.8	7.4
Longer/more classes to cover more	Q88_9	1	.4	.5
Better teaching	Q88_11	3	1.3	1.6
Other	Q88_12	21	8.8	11.1
Have no recommendations	Q88_13	90	37.5	47.4
Don't know, no response	Q88_14	24	10.0	12.6
Boaters should take class	Q88_16	7	2.9	3.7
More on other species	Q88_17	4	1.7	2.1
Total responses		240	100.0	126.3

96 missing cases; 190 valid cases

[Q89] 89. class required

Do you think all boaters should be required to take a class that teaches boating safety and protection of the marine environment?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 YES	258	90.2	90.2	90.2
	2 NO	24	8.4	8.4	98.6
	3 DON'T KNOW/NO RESPONSE	4	1.4	1.4	100.0
	Total	286	100.0	100.0	

[Q90] 90. require license

Do you think boaters should be required to get licenses as car drivers do, with an exam and points for violations?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 YES	195	68.2	68.2	68.2
	2 NO	74	25.9	25.9	94.1
	3 LICENSE BUT NO POINTS OR/AND EXAM	10	3.5	3.5	97.6
	4 DON'T KNOW/NO RESPONSE	7	2.4	2.4	100.0
	Total	286	100.0	100.0	

[Q91] 91. age

Could you please tell me your age? [999 = DON'T KNOW/NO RESPONSE]

[numeric, range: 0-999] mean= 47.75 years, missing= 1

91. Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	16-41	88	30.8	30.9	30.9
	42-52	101	35.3	35.4	66.3
	53-89	96	33.6	33.7	100.0
	Total	285	99.7	100.0	
Missing	System	1	.3		
Total		286	100.0		

(Condensed from continuous data.)

[Q92] 92. education

What is your highest level of education?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 GRADE SCHOOL	1	.3	.3	.3
	2 SOME HIGH SCHOOL	6	2.1	2.1	2.4
	3 HIGH SCHOOL GRAD	45	15.7	15.7	18.2
	4 SOME COLLEGE	35	12.2	12.2	30.4
	5 2 YEAR AA DEGREE	28	9.8	9.8	40.2
	6 TECHNICAL SCHOOL (ANY NO. OF YEARS)	7	2.4	2.4	42.7
	7 COLLEGE GRADUATE	91	31.8	31.8	74.5
	8 GRADUATE DEGREE	70	24.5	24.5	99.0
	9 DON'T KNOW/NO RESPONSE	3	1.0	1.0	100.0
	Total	286	100.0	100.0	

[Q93] 93. income

Would you please tell me your approximate yearly household income? Is it...

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	under $15,000	6	2.1	2.1	2.1
	$15,000-under $30,000	10	3.5	3.5	5.6
	$30,000-under $45,000	14	4.9	4.9	10.5
	$45,000-under $60,000	29	10.1	10.1	20.6
	$60,000-under $75,000	27	9.4	9.4	30.1
	$75,000-under $90,000	20	7.0	7.0	37.1
	$90,000 or more	135	47.2	47.2	84.3
	REFUSED	42	14.7	14.7	99.0
	DON'T KNOW/NO RESPONSE	3	1.0	1.0	100.0
	Total	286	100.0	100.0	

Appendix III – Significant Crosstabulation and Frequency Tables

SIGNIFICANT CROSSTABULATION AND FREQUENCY TABLES

4. Time spent in Florida

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	year-round	281	98.3	98.3	98.3
	other	5	1.7	1.7	100.0
	Total	286	100.0	100.0	

5. How long a boater

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.<1-12 yrs	132	46.2	46.2	46.2
	2.13-24 yrs	66	23.1	23.1	69.2
	3.25-36 yrs	52	18.2	18.2	87.4
	4.37-62 yrs	36	12.6	12.6	100.0
	Total	286	100.0	100.0	

mean= 17.94, median= 15

5. How long a boater * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
q5. How long a boater	<1-12 yrs	Count	21	69	30	120
		% within q5. How long a boater	17.5%	57.5%	25.0%	100.0%
	13-24 yrs	Count	16	37	12	65
		% within q5. How long a boater	24.6%	56.9%	18.5%	100.0%
	25-36 yrs	Count	15	24	10	49
		% within q5. How long a boater	30.6%	49.0%	20.4%	100.0%
	37-48 yrs	Count	10	12	1	23
		% within q5. How long a boater	43.5%	52.2%	4.3%	100.0%
	49-62 yrs	Count	7	3	3	13
		% within q5. How long a boater	53.8%	23.1%	23.1%	100.0%
Total		Count	69	145	56	270
		% within q5. How long a boater	25.6%	53.7%	20.7%	100.0%

Symmetric Measures

	Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordir Gamma	-.262	.080	-3.211	.001
N of Valid Cases	270			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

5. How long a boater * 58. Manatee right to exist

Crosstab

			58.Manatee right to exist			
			strongly agree	mostly agree	mostly or strongly disagree	Total
q5. How long a boater	<1-12 yrs	Count	88	36	7	131
		% within q5. How long a boater	67.2%	27.5%	5.3%	100.0%
	13-24 yrs	Count	41	15	9	65
		% within q5. How long a boater	63.1%	23.1%	13.8%	100.0%
	25-36 yrs	Count	30	15	6	51
		% within q5. How long a boater	58.8%	29.4%	11.8%	100.0%
	37-48 yrs	Count	11	8	4	23
		% within q5. How long a boater	47.8%	34.8%	17.4%	100.0%
	49-62 yrs	Count	6	4	3	13
		% within q5. How long a boater	46.2%	30.8%	23.1%	100.0%
Total		Count	176	78	29	283
		% within q5. How long a boater	62.2%	27.6%	10.2%	100.0%

Symmetric Measures

	Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordina Gamma	.205	.082	2.392	.017
N of Valid Cases	283			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

6.# boats/pwcs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.one	195	68.2	68.2	68.2
	2.two	59	20.6	20.6	88.8
	3.three or more	32	11.2	11.2	100.0
	Total	286	100.0	100.0	

7and8. Boat lengths

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5-21 ft	89	31.1	31.1	31.1
	22-24 ft	56	19.6	19.6	50.7
	25-27 ft	63	22.0	22.0	72.7
	28-54 ft	78	27.3	27.3	100.0
	Total	286	100.0	100.0	

mean= 25.27, median= 24

7and8. Boat lengths * 58.Manatee right to exist

Crosstab

			58.Manatee right to exist			
			strongly agree	mostly agree	mostly or strongly disagree	Total
7and8. Boat lengths	5-21 ft	Count	61	21	7	89
		% within 7and8. Boat lengths	68.5%	23.6%	7.9%	100.0%
	22-24 ft	Count	35	16	5	56
		% within 7and8. Boat lengths	62.5%	28.6%	8.9%	100.0%
	25-27 ft	Count	38	18	4	60
		% within 7and8. Boat lengths	63.3%	30.0%	6.7%	100.0%
	28-54 ft	Count	42	23	13	78
		% within 7and8. Boat lengths	53.8%	29.5%	16.7%	100.0%
Total		Count	176	78	29	283
		% within 7and8. Boat lengths	62.2%	27.6%	10.2%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.170	.084	1.995	.046
N of Valid Cases		283			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

9. Power or sail boat

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	power	271	94.8	94.8	94.8
	sail/other	15	5.2	5.2	100.0
	Total	286	100.0	100.0	

9. Power or sail * 28.rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
9. Power or sail	power	Count	67	139	49	255
		% within 9. Power or sail	26.3%	54.5%	19.2%	100.0%
	sail/other	Count	2	6	7	15
		% within 9. Power or sail	13.3%	40.0%	46.7%	100.0%
Total		Count	69	145	56	270
		% within 9. Power or sail	25.6%	53.7%	20.7%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.467	.201	1.937	.053
N of Valid Cases		270			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

9. Power or sail * 58. Manatee right to exist

Crosstab

			58.Manatee right to exist			
			strongly agree	mostly agree	mostly or strongly disagree	Total
9. Power or sail	power	Count	162	78	28	268
		% within 9. Power or sail	60.4%	29.1%	10.4%	100.0%
	sail/other	Count	14		1	15
		% within 9. Power or sail	93.3%		6.7%	100.0%
Total		Count	176	78	29	283
		% within 9. Power or sail	62.2%	27.6%	10.2%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.722	.249	-2.703	.007
N of Valid Cases		283			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

11. Years owned boat

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<1-2 yrs	88	30.8	31.0	31.0
	3-4 yrs	79	27.6	27.8	58.8
	5-7 yrs	56	19.6	19.7	78.5
	8-33 yrs	61	21.3	21.5	100.0
	Total	284	99.3	100.0	
Missing	System	2	.7		
Total		286	100.0		

mean= 5.19, median= 4.00

13. Boat use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	mostly noncommercial	276	96.5	96.5	96.5
	commercial&noncommercial/other	10	3.5	3.5	100.0
	Total	286	100.0	100.0	

16.Time steer boat

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	all the time	163	57.0	57.0	57.0
	most of the time	90	31.5	31.5	88.5
	half the time or somewhat less	33	11.5	11.5	100.0
	Total	286	100.0	100.0	

17. Times/month take boat out in summer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-2 times	92	32.2	32.3	32.3
	3-4 times	108	37.8	37.9	70.2
	5-30 times	85	29.7	29.8	100.0
	Total	285	99.7	100.0	
Missing	System	1	.3		
Total		286	100.0		

mean= 4.89, median= 3.00 (note: answer of 100=missing)

17. Times/month take boat out in summer * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
17. Times/month take boat out in summer	1-2 times	Count	14	50	24	88
		% within 17. Times/month take boat out in summer	15.9%	56.8%	27.3%	100.0%
		% of Total	5.2%	18.6%	8.9%	32.7%
	3-4 times	Count	26	55	20	101
		% within 17. Times/month take boat out in summer	25.7%	54.5%	19.8%	100.0%
		% of Total	9.7%	20.4%	7.4%	37.5%
	5-30 times	Count	29	39	12	80
		% within 17. Times/month take boat out in summer	36.3%	48.8%	15.0%	100.0%
		% of Total	10.8%	14.5%	4.5%	29.7%
Total		Count	69	144	56	269
		% within 17. Times/month take boat out in summer	25.7%	53.5%	20.8%	100.0%
		% of Total	25.7%	53.5%	20.8%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.269	.082	-3.207	.001
N of Valid Cases		269			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

18. Times/month take boat out in winter

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-1 time	129	45.1	45.1	45.1
	2-3 times	95	33.2	33.2	78.3
	4-20 times	62	21.7	21.7	100.0
	Total	286	100.0	100.0	

mean= 2.49, median= 2.00

18. Times/month take boat out in winter * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
18. Times/month take boat out in winter	0-1 time	Count	19	70	31	120
		% within 18. Times/month take boat out in winter	15.8%	58.3%	25.8%	100.0%
		% of Total	7.0%	25.9%	11.5%	44.4%
	2-3 times	Count	28	47	19	94
		% within 18. Times/month take boat out in winter	29.8%	50.0%	20.2%	100.0%
		% of Total	10.4%	17.4%	7.0%	34.8%
	4-20 times	Count	22	28	6	56
		% within 18. Times/month take boat out in winter	39.3%	50.0%	10.7%	100.0%
		% of Total	8.1%	10.4%	2.2%	20.7%
Total		Count	69	145	56	270
		% within 18. Times/month take boat out in winter	25.6%	53.7%	20.7%	100.0%
		% of Total	25.6%	53.7%	20.7%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.314	.080	-3.798	.000
N of Valid Cases		270			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

21a. Knowledge of signs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very good	174	60.8	61.3	61.3
	good	78	27.3	27.5	88.7
	fair or poor	32	11.2	11.3	100.0
	Total	284	99.3	100.0	
Missing	System	2	.7		
Total		286	100.0		

21. Importance of childhood activities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very important	199	69.6	70.3	70.3
	somewhat important	61	21.3	21.6	91.9
	not very imortant, not important at all	23	8.0	8.1	100.0
	Total	283	99.0	100.0	
Missing	System	3	1.0		
Total		286	100.0		

22. Any particularly important childhood experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	181	63.3	64.0	64.0
	no	102	35.7	36.0	100.0
	Total	283	99.0	100.0	
Missing	System	3	1.0		
Total		286	100.0		

23. Member boat, nature organizatioms as adult

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	118	41.3	41.5	41.5
	no	166	58.0	58.5	100.0
	Total	284	99.3	100.0	
Missing	System	2	.7		
Total		286	100.0		

23. Boat, nature orgs as adult * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
23.Boat,nature orgs as adult	yes	Count	40	46	24	110
		% within 23.Boat,nature orgs as adult	36.4%	41.8%	21.8%	100.0%
		% of Total	14.9%	17.2%	9.0%	41.0%
	no	Count	28	99	31	158
		% within 23.Boat,nature orgs as adult	17.7%	62.7%	19.6%	100.0%
		% of Total	10.4%	36.9%	11.6%	59.0%
Total		Count	68	145	55	268
		% within 23.Boat,nature orgs as adult	25.4%	54.1%	20.5%	100.0%
		% of Total	25.4%	54.1%	20.5%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.209	.105	1.951	.051
N of Valid Cases		268			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

23.Boat,nature orgs as adult * 58.Manatee right to exist Crosstabulation

			58.Manatee right to exist				
			strongly agree	mostly agree	mostly disagree	strongly disagree	Total
23.Boat,nature orgs as adult	yes	Count	64	38	11	4	117
		% within 23	54.7%	32.5%	9.4%	3.4%	100.0%
		% of Total	22.8%	13.5%	3.9%	1.4%	41.6%
	no	Count	110	40	11	3	164
		% within 23	67.1%	24.4%	6.7%	1.8%	100.0%
		% of Total	39.1%	14.2%	3.9%	1.1%	58.4%
Total		Count	174	78	22	7	281
		% within 23	61.9%	27.8%	7.8%	2.5%	100.0%
		% of Total	61.9%	27.8%	7.8%	2.5%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.234	.106	-2.118	.034
N of Valid Cases		281			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

24. Ever subscribed to boating, nature publications as adult

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	184	64.3	64.8	64.8
	no	100	35.0	35.2	100.0
	Total	284	99.3	100.0	
Missing	System	2	.7		
Total		286	100.0		

24. Boat, nature publications as adult * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
24.Boat,nature publications as adult	yes	Count	58	83	33	174
		% within 24.Boat,nature publications as adult	33.3%	47.7%	19.0%	100.0%
		% of Total	21.6%	31.0%	12.3%	64.9%
	no	Count	11	62	21	94
		% within 24.Boat,nature publications as adult	11.7%	66.0%	22.3%	100.0%
		% of Total	4.1%	23.1%	7.8%	35.1%
Total		Count	69	145	54	268
		% within 24.Boat,nature publications as adult	25.7%	54.1%	20.1%	100.0%
		% of Total	25.7%	54.1%	20.1%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.327	.098	3.185	.001
N of Valid Cases		268			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

24. Boat, nature publications as adult * 58. Manatee right to exist

Crosstab

			58.Manatee right to exist			
			strongly agree	mostly agree	mostly or strongly disagree	Total
24.Boat,nature publications as adult	yes	Count	105	54	23	182
		% within 24.Boat,nature publications as adult	57.7%	29.7%	12.6%	100.0%
		% of Total	37.4%	19.2%	8.2%	64.8%
	no	Count	69	24	6	99
		% within 24.Boat,nature publications as adult	69.7%	24.2%	6.1%	100.0%
		% of Total	24.6%	8.5%	2.1%	35.2%
Total		Count	174	78	29	281
		% within 24.Boat,nature publications as adult	61.9%	27.8%	10.3%	100.0%
		% of Total	61.9%	27.8%	10.3%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.256	.115	-2.231	.026
N of Valid Cases		281			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

25. How much know about manatees

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	a lot	85	29.7	29.8	29.8
	a fair amount	101	35.3	35.4	65.3
	some	68	23.8	23.9	89.1
	very little	31	10.8	10.9	100.0
	Total	285	99.7	100.0	
Missing	System	1	.3		
Total		286	100.0		

27. Total number of manatees you have seen in the wild

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	100 OR MORE	68	23.8	23.8	23.8
	26 TO 99	70	24.5	24.5	48.3
	6 TO 25	75	26.2	26.2	74.5
	1 TO 5	61	21.3	21.3	95.8
	NONE	12	4.2	4.2	100.0
	Total	286	100.0	100.0	

29. How much economic harm do speed zones cause marine industry

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	a major amount	29	10.1	11.0	11.0
	a fair amount	45	15.7	17.1	28.1
	a little	56	19.6	21.3	49.4
	no harm at all	133	46.5	50.6	100.0
	Total	263	92.0	100.0	
Missing	System	23	8.0		
Total		286	100.0		

29. How much economic harm * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
29.How much economic harm	a major amount	Count	22	3	2	27
		% within 29.How much economic harm	81.5%	11.1%	7.4%	100%
		% of Total	8.9%	1.2%	.8%	10.9%
	a fair amount	Count	18	19	6	43
		% within 29.How much economic harm	41.9%	44.2%	14.0%	100%
		% of Total	7.3%	7.7%	2.4%	17.3%
	a little	Count	14	36	4	54
		% within 29.How much economic harm	25.9%	66.7%	7.4%	100%
		% of Total	5.6%	14.5%	1.6%	21.8%
	no harm at all	Count	8	78	38	124
		% within 29.How much economic harm	6.5%	62.9%	30.6%	100%
		% of Total	3.2%	31.5%	15.3%	50.0%
Total		Count	62	136	50	248
		% within 29.How much economic harm	25.0%	54.8%	20.2%	100%
		% of Total	25.0%	54.8%	20.2%	100%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.643	.069	8.161	.000
N of Valid Cases		248			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

29. How much economic harm * 58. Manatee right to exist

Crosstab

			58.Manatee right to exist			
			strongly agree	mostly agree	mostly or strongly disagree	Total
29.How much economic harm	a major amount	Count	10	7	10	27
		% within 29.How much economic harm	37.0%	25.9%	37.0%	100.0%
		% of Total	3.8%	2.7%	3.8%	10.4%
	a fair amount	Count	19	15	10	44
		% within 29.How much economic harm	43.2%	34.1%	22.7%	100.0%
		% of Total	7.3%	5.8%	3.8%	16.9%
	a little	Count	34	18	4	56
		% within 29.How much economic harm	60.7%	32.1%	7.1%	100.0%
		% of Total	13.1%	6.9%	1.5%	21.5%
	no harm at all	Count	97	31	5	133
		% within 29.How much economic harm	72.9%	23.3%	3.8%	100.0%
		% of Total	37.3%	11.9%	1.9%	51.2%
Total		Count	160	71	29	260
		% within 29.How much economic harm	61.5%	27.3%	11.2%	100.0%
		% of Total	61.5%	27.3%	11.2%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.448	.077	-4.970	.000
N of Valid Cases		260			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

30. If restrictions cause high economic impact, decrease restrictions?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	60	21.0	52.2	52.2
	no	55	19.2	47.8	100.0
	Total	115	40.2	100.0	
Missing	System	171	59.8		
Total		286	100.0		

30. High econ impact, decrease restrictions? * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
30,High econ impact, decrease restrictions?	yes	Count	42	14	3	59
		% within 30,High econ impact, decrease restrictions?	71.2%	23.7%	5.1%	100.0%
		% of Total	37.5%	12.5%	2.7%	52.7%
	no	Count	7	39	7	53
		% within 30,High econ impact, decrease restrictions?	13.2%	73.6%	13.2%	100.0%
		% of Total	6.3%	34.8%	6.3%	47.3%
Total		Count	49	53	10	112
		% within 30,High econ impact, decrease restrictions?	43.8%	47.3%	8.9%	100.0%
		% of Total	43.8%	47.3%	8.9%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.792	.081	7.115	.000
N of Valid Cases		112			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

30. High econ impact, decrease restrictions? * 58. Manatee right to exist

Crosstab

			58.Manatee right to exist			
			strongly agree	mostly agree	mostly or strongly disagree	Total
30,High econ impact, decrease restrictions?	yes	Count	22	20	15	57
		% within 30,High econ impact, decrease restrictions?	38.6%	35.1%	26.3%	100.0%
		% of Total	19.6%	17.9%	13.4%	50.9%
	no	Count	37	13	5	55
		% within 30,High econ impact, decrease restrictions?	67.3%	23.6%	9.1%	100.0%
		% of Total	33.0%	11.6%	4.5%	49.1%
Total		Count	59	33	20	112
		% within 30,High econ impact, decrease restrictions?	52.7%	29.5%	17.9%	100.0%
		% of Total	52.7%	29.5%	17.9%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.501	.131	-3.417	.001
N of Valid Cases		112			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

31. If area has high manatee death rate, increase restrictions?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	148	51.7	56.1	56.1
	no	116	40.6	43.9	100.0
	Total	264	92.3	100.0	
Missing	System	22	7.7		
Total		286	100.0		

31. High manatee deaths, increase restrictions? * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
31.High manatee deaths, increase restrictions?	yes	Count	22	76	43	141
		% within 31.High manatee deaths, increase restrictions?	15.6%	53.9%	30.5%	100.0%
		% of Total	8.8%	30.4%	17.2%	56.4%
	no	Count	43	55	11	109
		% within 31.High manatee deaths, increase restrictions?	39.4%	50.5%	10.1%	100.0%
		% of Total	17.2%	22.0%	4.4%	43.6%
Total		Count	65	131	54	250
		% within 31.High manatee deaths, increase restrictions?	26.0%	52.4%	21.6%	100.0%
		% of Total	26.0%	52.4%	21.6%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.532	.086	-5.494	.000
N of Valid Cases		250			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

31. High manatee deaths, increase restrictions? * 58. Manatee right to exist

Crosstab

			58.Manatee right to exist			
			strongly agree	mostly agree	mostly or strongly disagree	Total
31.High manatee deaths, increase restrictions?	yes	Count	116	26	5	147
		% within 31.High manatee deaths, increase restrictions?	78.9%	17.7%	3.4%	100.0%
		% of Total	44.4%	10.0%	1.9%	56.3%
	no	Count	49	42	23	114
		% within 31.High manatee deaths, increase restrictions?	43.0%	36.8%	20.2%	100.0%
		% of Total	18.8%	16.1%	8.8%	43.7%
Total		Count	165	68	28	261
		% within 31.High manatee deaths, increase restrictions?	63.2%	26.1%	10.7%	100.0%
		% of Total	63.2%	26.1%	10.7%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.650	.074	6.583	.000
N of Valid Cases		261			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

32a. Level of agreement with manatee advocacy organizations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	completely agree	57	19.9	31.0	31.0
	mostly agree	70	24.5	38.0	69.0
	mostly disagree	39	13.6	21.2	90.2
	completely disagree	18	6.3	9.8	100.0
	Total	184	64.3	100.0	
Missing	System	102	35.7		
Total		286	100.0		

32a. Level of agreement with manatee advocacy organizations * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
32a. Level of agreement with manatee advocacy organizations	completely agree	Count	3	32	20	55
		% within 32a.	5.5%	58.2%	36.4%	100%
		% of Total	1.7%	18.5%	11.6%	31.8%
	mostly agree	Count	14	35	16	65
		% within 32a.	21.5%	53.8%	24.6%	100%
		% of Total	8.1%	20.2%	9.2%	37.6%
	mostly disagree	Count	24	10	3	37
		% within 32a.	64.9%	27.0%	8.1%	100%
		% of Total	13.9%	5.8%	1.7%	21.4%
	completely disagree	Count	13	3		16
		% within 32a.	81.3%	18.8%		100%
		% of Total	7.5%	1.7%		9.2%
Total		Count	54	80	39	173
		% within 32a.	31.2%	46.2%	22.5%	100%
		% of Total	31.2%	46.2%	22.5%	100%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.659	.064	-8.700	.000
N of Valid Cases		173			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

32a. Level of agreement with manatee advocacy organizations * 58. Manatee right to exist

Crosstab

			58.Manatee right to exist			
			strongly agree	mostly agree	mostly or strongly disagree	Total
32a. Level of agreement with manatee advocacy organizations	completely agree	Count	49	7	1	57
		% within 32a. y	86.0%	12.3%	1.8%	100.0%
		% of Total	27.1%	3.9%	.6%	31.5%
	mostly agree	Count	51	15	4	70
		% within 32a. y	72.9%	21.4%	5.7%	100.0%
		% of Total	28.2%	8.3%	2.2%	38.7%
	mostly disagree	Count	10	12	15	37
		% within 32a. y	27.0%	32.4%	40.5%	100.0%
		% of Total	5.5%	6.6%	8.3%	20.4%
	completely disagree	Count	5	7	5	17
		% within 32a. y	29.4%	41.2%	29.4%	100.0%
		% of Total	2.8%	3.9%	2.8%	9.4%
Total		Count	115	41	25	181
		% within 32a. y	63.5%	22.7%	13.8%	100.0%
		% of Total	63.5%	22.7%	13.8%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.650	.068	7.450	.000
N of Valid Cases		181			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

33. Which zone causes most problems

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	slow speed zones	45	15.7	16.7	16.7
	idle speed zones	69	24.1	25.7	42.4
	no entry areas	65	22.7	24.2	66.5
	all equally a problem	14	4.9	5.2	71.7
	none are a problem	76	26.6	28.3	100.0
	Total	269	94.1	100.0	
Missing	System	17	5.9		
Total		286	100.0		

34. Number of Florida manatees there are

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	under 2000	19	6.6	26.0	26.0
	2000-under 4000	37	12.9	50.7	76.7
	4000 or more	17	5.9	23.3	100.0
	Total	73	25.5	100.0	
Missing	System	213	74.5		
Total		286	100.0		

34. Number of manatees * 28. rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
34.Number of manatees	under 2000	Count	2	9	7	18
		% within 34.Number of manatees	11.1%	50.0%	38.9%	100.0%
		% of Total	3.0%	13.6%	10.6%	27.3%
	2000-under 4000	Count	11	13	8	32
		% within 34.Number of manatees	34.4%	40.6%	25.0%	100.0%
		% of Total	16.7%	19.7%	12.1%	48.5%
	4000 or more	Count	7	5	4	16
		% within 34.Number of manatees	43.8%	31.3%	25.0%	100.0%
		% of Total	10.6%	7.6%	6.1%	24.2%
Total		Count	20	27	19	66
		% within 34.Number of manatees	30.3%	40.9%	28.8%	100.0%
		% of Total	30.3%	40.9%	28.8%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.307	.158	-1.890	.059
N of Valid Cases		66			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

35. Are there enough Florida manatees or not?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not enough manatees	60	21.0	45.1	45.1
	enough manatees	58	20.3	43.6	88.7
	more than enough manatees	15	5.2	11.3	100.0
	Total	133	46.5	100.0	
Missing	System	153	53.5		
Total		286	100.0		

35. Enough manatees or not * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
35.Enough manatees or not	not enough manatees	Count	3	30	22	55
		% within 35.Enough manatees or not	5.5%	54.5%	40.0%	100%
		% of Total	2.4%	24.0%	17.6%	44.0%
	enough manatees	Count	26	27	2	55
		% within 35.Enough manatees or not	47.3%	49.1%	3.6%	100%
		% of Total	20.8%	21.6%	1.6%	44.0%
	more than enough manatees	Count	11	2	2	15
		% within 35.Enough manatees or not	73.3%	13.3%	13.3%	100%
		% of Total	8.8%	1.6%	1.6%	12.0%
Total		Count	40	59	26	125
		% within 35.Enough manatees or not	32.0%	47.2%	20.8%	100%
		% of Total	32.0%	47.2%	20.8%	100%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.769	.085	-7.956	.000
N of Valid Cases		125			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

35. Enough manatees or not * 58. Manatee right to exist

Crosstab

			58.Manatee right to exist			
			strongly agree	mostly agree	mostly or strongly disagree	Total
35.Enough manatees or not	not enough manatees	Count	45	15		60
		% within 35.Enough manatees or not	75.0%	25.0%		100.0%
		% of Total	34.6%	11.5%		46.2%
	enough manatees	Count	21	23	13	57
		% within 35.Enough manatees or not	36.8%	40.4%	22.8%	100.0%
		% of Total	16.2%	17.7%	10.0%	43.8%
	more than enough manatees	Count	5	2	6	13
		% within 35.Enough manatees or not	38.5%	15.4%	46.2%	100.0%
		% of Total	3.8%	1.5%	4.6%	10.0%
Total		Count	71	40	19	130
		% within 35.Enough manatees or not	54.6%	30.8%	14.6%	100.0%
		% of Total	54.6%	30.8%	14.6%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.624	.094	5.325	.000
N of Valid Cases		130			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

36. Role of boat collisions as a cause of all known manatee deaths

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not a cause or occasionally a cause	90	31.5	37.7	37.7
	fairly often a cause	79	27.6	33.1	70.7
	the main cause	70	24.5	29.3	100.0
	Total	239	83.6	100.0	
Missing	System	47	16.4		
Total		286	100.0		

36. Role of boat collisions as a cause of all known manatee deaths * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
36. Role of boat collisions as a cause of all known manatee deaths	not a cause or occasionally a cause	Count	37	36	10	83
		% within 36.	44.6%	43.4%	12.0%	100.0%
		% of Total	16.5%	16.1%	4.5%	37.1%
	fairly often a cause	Count	13	42	19	74
		% within 36.	17.6%	56.8%	25.7%	100.0%
		% of Total	5.8%	18.8%	8.5%	33.0%
	the main cause	Count	8	38	21	67
		% within 36.	11.9%	56.7%	31.3%	100.0%
		% of Total	3.6%	17.0%	9.4%	29.9%
Total		Count	58	116	50	224
		% within 36.	25.9%	51.8%	22.3%	100.0%
		% of Total	25.9%	51.8%	22.3%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.433	.081	5.049	.000
N of Valid Cases		224			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

36. Role of boat collisions as a cause of all known manatee deaths * 58. Manatee right to exist

Crosstab

			58.Manatee right to exist			
			strongly agree	mostly agree	mostly or strongly disagree	Total
36. Role of boat collisions as a cause of all known manatee deaths	not a cause or occasionally a cause	Count	48	29	11	88
		% within 36.	54.5%	33.0%	12.5%	100.0%
		% of Total	20.3%	12.3%	4.7%	37.3%
	fairly often a cause	Count	43	21	14	78
		% within 36.	55.1%	26.9%	17.9%	100.0%
		% of Total	18.2%	8.9%	5.9%	33.1%
	the main cause	Count	56	13	1	70
		% within 36.	80.0%	18.6%	1.4%	100.0%
		% of Total	23.7%	5.5%	.4%	29.7%
Total		Count	147	63	26	236
		% within 36.	62.3%	26.7%	11.0%	100.0%
		% of Total	62.3%	26.7%	11.0%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.310	.086	-3.464	.001
N of Valid Cases		236			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

37. More manatees in S. Fla. summer than winter

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	agree	65	22.7	33.2	33.2
	disagree	131	45.8	66.8	100.0
	Total	196	68.5	100.0	
Missing	System	90	31.5		
Total		286	100.0		

37. More manatees summer or winter * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
37.More manatees summer or winter	agree	Count	10	40	14	64
		% within 37.	15.6%	62.5%	21.9%	100.0%
		% of Total	5.4%	21.7%	7.6%	34.8%
	disagree	Count	43	57	20	120
		% within 37.	35.8%	47.5%	16.7%	100.0%
		% of Total	23.4%	31.0%	10.9%	65.2%
Total		Count	53	97	34	184
		% within 37.	28.8%	52.7%	18.5%	100.0%
		% of Total	28.8%	52.7%	18.5%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.330	.119	-2.641	.008
N of Valid Cases		184			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

37. More manatees summer or winter * 58. Manatee right to exist

Crosstab

			58.Manatee right to exist			
			strongly agree	mostly agree	mostly or strongly disagree	Total
37.More manatees summer or winter	agree	Count	48	12	4	64
		% within 37.	75.0%	18.8%	6.3%	100.0%
		% of Total	24.7%	6.2%	2.1%	33.0%
	disagree	Count	69	43	18	130
		% within 37.	53.1%	33.1%	13.8%	100.0%
		% of Total	35.6%	22.2%	9.3%	67.0%
Total		Count	117	55	22	194
		% within 37.	60.3%	28.4%	11.3%	100.0%
		% of Total	60.3%	28.4%	11.3%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.423	.130	3.141	.002
N of Valid Cases		194			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

39. Manatees eat only plants

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	agree	247	86.4	96.9	96.9
	disagree	8	2.8	3.1	100.0
	Total	255	89.2	100.0	
Missing	System	31	10.8		
Total		286	100.0		

40. Define slow speed

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no wake	59	20.6	21.5	21.5
	minimum wake	156	54.5	56.7	78.2
	other speed	60	21.0	21.8	100.0
	Total	275	96.2	100.0	
Missing	System	11	3.8		
Total		286	100.0		

41. Define idle speed

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no wake	176	61.5	64.0	64.0
	minimum wake	77	26.9	28.0	92.0
	other speed	22	7.7	8.0	100.0
	Total	275	96.2	100.0	
Missing	System	11	3.8		
Total		286	100.0		

42. Accuracy of manatee population counts

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very accurate	24	8.4	15.1	15.1
	mostly accurate	107	37.4	67.3	82.4
	mostly or very inaccurate	28	9.8	17.6	100.0
	Total	159	55.6	100.0	
Missing	System	127	44.4		
Total		286	100.0		

42. Accuracy of manatee population counts * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
42. Accuracy of manatee population counts	very accurate	Count	4	8	10	22
		% within 42.	18.2%	36.4%	45.5%	100.0%
		% of Total	2.7%	5.5%	6.8%	15.1%
	mostly accurate	Count	28	50	21	99
		% within 42.	28.3%	50.5%	21.2%	100.0%
		% of Total	19.2%	34.2%	14.4%	67.8%
	mostly or very inaccurate	Count	11	11	3	25
		% within 42.	44.0%	44.0%	12.0%	100.0%
		% of Total	7.5%	7.5%	2.1%	17.1%
Total		Count	43	69	34	146
		% within 42.	29.5%	47.3%	23.3%	100.0%
		% of Total	29.5%	47.3%	23.3%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.368	.126	-2.717	.007
N of Valid Cases		146			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

42. Accuracy of manatee population counts * 58. Manatee right to exist

Crosstab

			58.Manatee right to exist			
			strongly agree	mostly agree	mostly or strongly disagree	Total
42. Accuracy of manatee population counts	very accurate	Count	18	3	2	23
		% within 42.	78.3%	13.0%	8.7%	100.0%
		% of Total	11.5%	1.9%	1.3%	14.6%
	mostly accurate	Count	62	32	12	106
		% within 42.	58.5%	30.2%	11.3%	100.0%
		% of Total	39.5%	20.4%	7.6%	67.5%
	mostly or very inaccurate	Count	11	10	7	28
		% within 42.	39.3%	35.7%	25.0%	100.0%
		% of Total	7.0%	6.4%	4.5%	17.8%
Total		Count	91	45	21	157
		% within 42.	58.0%	28.7%	13.4%	100.0%
		% of Total	58.0%	28.7%	13.4%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.396	.128	2.879	.004
N of Valid Cases		157			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

43. Manatees don't hear/are unaware of boats

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	53	18.5	21.4	21.4
	mostly agree	78	27.3	31.5	52.8
	mostly disagree	56	19.6	22.6	75.4
	strongly disagree	61	21.3	24.6	100.0
	Total	248	86.7	100.0	
Missing	System	38	13.3		
Total		286	100.0		

45. Very few boaters obey manatee speed zones

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	71	24.8	25.3	25.3
	mostly agree	75	26.2	26.7	52.0
	mostly disagree	77	26.9	27.4	79.4
	strongly disagree	58	20.3	20.6	100.0
	Total	281	98.3	100.0	
Missing	System	5	1.7		
Total		286	100.0		

45. Very few boaters obey manatee speed zones * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
45.Very few boaters obey manatee speed zones	strongly agree	Count	12	32	25	69
		% within 45.	17.4%	46.4%	36.2%	100%
		% of Total	4.5%	12.1%	9.4%	26.0%
	mostly agree	Count	14	42	11	67
		% within 45.	20.9%	62.7%	16.4%	100%
		% of Total	5.3%	15.8%	4.2%	25.3%
	mostly disagree	Count	24	36	13	73
		% within 45.	32.9%	49.3%	17.8%	100%
		% of Total	9.1%	13.6%	4.9%	27.5%
	strongly disagree	Count	18	32	6	56
		% within 45.	32.1%	57.1%	10.7%	100%
		% of Total	6.8%	12.1%	2.3%	21.1%
Total		Count	68	142	55	265
		% within 45.	25.7%	53.6%	20.8%	100%
		% of Total	25.7%	53.6%	20.8%	100%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.277	.076	-3.561	.000
N of Valid Cases		265			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

45. Very few boaters obey manatee speed zones * 58. Manatee right to exist

Crosstab

			58.Manatee right to exist			
			strongly agree	mostly agree	mostly or strongly disagree	Total
45.Very few boaters obey manatee speed zones	strongly agree	Count	54	12	4	70
		% within 45.	77.1%	17.1%	5.7%	100.0%
		% of Total	19.4%	4.3%	1.4%	25.2%
	mostly agree	Count	48	21	6	75
		% within 45.	64.0%	28.0%	8.0%	100.0%
		% of Total	17.3%	7.6%	2.2%	27.0%
	mostly disagree	Count	41	22	13	76
		% within 45.	53.9%	28.9%	17.1%	100.0%
		% of Total	14.7%	7.9%	4.7%	27.3%
	strongly disagree	Count	31	21	5	57
		% within 45.	54.4%	36.8%	8.8%	100.0%
		% of Total	11.2%	7.6%	1.8%	20.5%
Total		Count	174	76	28	278
		% within 45.	62.6%	27.3%	10.1%	100.0%
		% of Total	62.6%	27.3%	10.1%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.248	.077	3.140	.002
N of Valid Cases		278			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

47. Can usually find a faster route

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	58	20.3	21.1	21.1
	mostly agree	53	18.5	19.3	40.4
	mostly disagree	71	24.8	25.8	66.2
	strongly disagree	93	32.5	33.8	100.0
	Total	275	96.2	100.0	
Missing	System	11	3.8		
Total		286	100.0		

47. Can usually find a faster route * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
47. Can usually find a faster route	strongly agree	Count	10	32	14	56
		% within 47.	17.9%	57.1%	25.0%	100.0%
		% of Total	3.8%	12.3%	5.4%	21.5%
	mostly agree	Count	13	24	14	51
		% within 47.	25.5%	47.1%	27.5%	100.0%
		% of Total	5.0%	9.2%	5.4%	19.5%
	mostly disagree	Count	17	36	14	67
		% within 47.	25.4%	53.7%	20.9%	100.0%
		% of Total	6.5%	13.8%	5.4%	25.7%
	strongly disagree	Count	29	47	11	87
		% within 47.	33.3%	54.0%	12.6%	100.0%
		% of Total	11.1%	18.0%	4.2%	33.3%
Total		Count	69	139	53	261
		% within 47.	26.4%	53.3%	20.3%	100.0%
		% of Total	26.4%	53.3%	20.3%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.205	.076	-2.674	.007
N of Valid Cases		261			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

47. Can usually find a faster route * 58. Manatee right to exist

Crosstab

			58.Manatee right to exist			
			strongly agree	mostly agree	mostly or strongly disagree	Total
47. Can usually find a faster route	strongly agree	Count	44	11	3	58
		% within 47.	75.9%	19.0%	5.2%	100.0%
		% of Total	16.2%	4.0%	1.1%	21.3%
	mostly agree	Count	32	16	5	53
		% within 47.	60.4%	30.2%	9.4%	100.0%
		% of Total	11.8%	5.9%	1.8%	19.5%
	mostly disagree	Count	39	23	7	69
		% within 47.	56.5%	33.3%	10.1%	100.0%
		% of Total	14.3%	8.5%	2.6%	25.4%
	strongly disagree	Count	51	27	14	92
		% within 47.	55.4%	29.3%	15.2%	100.0%
		% of Total	18.8%	9.9%	5.1%	33.8%
Total		Count	166	77	29	272
		% within 47.	61.0%	28.3%	10.7%	100.0%
		% of Total	61.0%	28.3%	10.7%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.212	.082	2.542	.011
N of Valid Cases		272			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

48. Can usually determine speed zone I'm in

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	155	54.2	54.8	54.8
	mostly agree	86	30.1	30.4	85.2
	mostly disagree	25	8.7	8.8	94.0
	strongly disagree	17	5.9	6.0	100.0
	Total	283	99.0	100.0	
Missing	System	3	1.0		
Total		286	100.0		

48. Can usually determine speed zone I'm in * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
48. Can usually determine speed zone I'm in	strongly agree	Count	26	85	33	144
		% within 48.	18.1%	59.0%	22.9%	100.0%
		% of Total	9.7%	31.8%	12.4%	53.9%
	mostly agree	Count	23	44	15	82
		% within 48.	28.0%	53.7%	18.3%	100.0%
		% of Total	8.6%	16.5%	5.6%	30.7%
	mostly disagree	Count	10	8	6	24
		% within 48.	41.7%	33.3%	25.0%	100.0%
		% of Total	3.7%	3.0%	2.2%	9.0%
	strongly disagree	Count	10	5	2	17
		% within 48.	58.8%	29.4%	11.8%	100.0%
		% of Total	3.7%	1.9%	.7%	6.4%
Total		Count	69	142	56	267
		% within 48.	25.8%	53.2%	21.0%	100.0%
		% of Total	25.8%	53.2%	21.0%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.263	.091	-2.841	.005
N of Valid Cases		267			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

48. Can usually determine speed zone I'm in * 58. Manatee right to exist

Crosstab

			58.Manatee right to exist			
			strongly agree	mostly agree	mostly or strongly disagree	Total
48. Can usually determine speed zone I'm in	strongly agree	Count	103	40	11	154
		% within 48.	66.9%	26.0%	7.1%	100.0%
		% of Total	36.8%	14.3%	3.9%	55.0%
	mostly agree	Count	46	28	11	85
		% within 48.	54.1%	32.9%	12.9%	100.0%
		% of Total	16.4%	10.0%	3.9%	30.4%
	mostly disagree	Count	13	6	5	24
		% within 48.	54.2%	25.0%	20.8%	100.0%
		% of Total	4.6%	2.1%	1.8%	8.6%
	strongly disagree	Count	11	4	2	17
		% within 48.	64.7%	23.5%	11.8%	100.0%
		% of Total	3.9%	1.4%	.7%	6.1%
Total		Count	173	78	29	280
		% within 48.	61.8%	27.9%	10.4%	100.0%
		% of Total	61.8%	27.9%	10.4%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.187	.092	1.947	.052
N of Valid Cases		280			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

49. Speed requirements clear from signs posted

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	122	42.7	42.8	42.8
	mostly agree	73	25.5	25.6	68.4
	mostly disagree	42	14.7	14.7	83.2
	strongly disagree	48	16.8	16.8	100.0
	Total	285	99.7	100.0	
Missing	System	1	.3		
Total		286	100.0		

49. Speed requirements clear from signs posted * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
49. Speed requirements clear from signs posted	strongly agree	Count	16	70	33	119
		% within 49.	13.4%	58.8%	27.7%	100.0%
		% of Total	5.9%	26.0%	12.3%	44.2%
	mostly agree	Count	18	37	12	67
		% within 49.	26.9%	55.2%	17.9%	100.0%
		% of Total	6.7%	13.8%	4.5%	24.9%
	mostly disagree	Count	13	18	6	37
		% within 49.	35.1%	48.6%	16.2%	100.0%
		% of Total	4.8%	6.7%	2.2%	13.8%
	strongly disagree	Count	22	19	5	46
		% within 49.	47.8%	41.3%	10.9%	100.0%
		% of Total	8.2%	7.1%	1.9%	17.1%
Total		Count	69	144	56	269
		% within 49.	25.7%	53.5%	20.8%	100.0%
		% of Total	25.7%	53.5%	20.8%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.378	.075	-4.839	.000
N of Valid Cases		269			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

49. Speed requirements clear from signs posted * 58. Manatee right to exist

Crosstab

			58.Manatee right to exist			
			strongly agree	mostly agree	mostly or strongly disagree	Total
49. Speed requirements clear from signs posted	strongly agree	Count	87	24	10	121
		% within 49.	71.9%	19.8%	8.3%	100.0%
		% of Total	30.9%	8.5%	3.5%	42.9%
	mostly agree	Count	39	28	5	72
		% within 49.	54.2%	38.9%	6.9%	100.0%
		% of Total	13.8%	9.9%	1.8%	25.5%
	mostly disagree	Count	22	13	7	42
		% within 49.	52.4%	31.0%	16.7%	100.0%
		% of Total	7.8%	4.6%	2.5%	14.9%
	strongly disagree	Count	27	13	7	47
		% within 49.	57.4%	27.7%	14.9%	100.0%
		% of Total	9.6%	4.6%	2.5%	16.7%
Total		Count	175	78	29	282
		% within 49.	62.1%	27.7%	10.3%	100.0%
		% of Total	62.1%	27.7%	10.3%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.222	.083	2.598	.009
N of Valid Cases		282			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

52. Maps of speed zones are very helpful

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	86	30.1	32.1	32.1
	mostly agree	77	26.9	28.7	60.8
	mostly disagree	39	13.6	14.6	75.4
	strongly disagree	66	23.1	24.6	100.0
	Total	268	93.7	100.0	
Missing	System	18	6.3		
Total		286	100.0		

52. Maps of speed zones are very helpful * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			Total
			too strict	just about right	make more strict	
52. Maps of speed zones are very helpful	strongly agree	Count	17	43	22	82
		% within 52.	20.7%	52.4%	26.8%	100.0%
		% of Total	6.7%	17.1%	8.7%	32.5%
	mostly agree	Count	11	41	20	72
		% within 52.	15.3%	56.9%	27.8%	100.0%
		% of Total	4.4%	16.3%	7.9%	28.6%
	mostly disagree	Count	11	18	6	35
		% within 52.	31.4%	51.4%	17.1%	100.0%
		% of Total	4.4%	7.1%	2.4%	13.9%
	strongly disagree	Count	27	32	4	63
		% within 52.	42.9%	50.8%	6.3%	100.0%
		% of Total	10.7%	12.7%	1.6%	25.0%
Total		Count	66	134	52	252
		% within 52.	26.2%	53.2%	20.6%	100.0%
		% of Total	26.2%	53.2%	20.6%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.313	.076	-3.972	.000
N of Valid Cases		252			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

52. Maps of speed zones are very helpful * 58. Manatee right to exist

Crosstab

			58.Manatee right to exist			
			strongly agree	mostly agree	mostly or strongly disagree	Total
52. Maps of speed zones are very helpful	strongly agree	Count	63	17	6	86
		% within 52.	73.3%	19.8%	7.0%	100.0%
		% of Total	23.8%	6.4%	2.3%	32.5%
	mostly agree	Count	47	24	4	75
		% within 52.	62.7%	32.0%	5.3%	100.0%
		% of Total	17.7%	9.1%	1.5%	28.3%
	mostly disagree	Count	22	11	6	39
		% within 52.	56.4%	28.2%	15.4%	100.0%
		% of Total	8.3%	4.2%	2.3%	14.7%
	strongly disagree	Count	32	21	12	65
		% within 52.	49.2%	32.3%	18.5%	100.0%
		% of Total	12.1%	7.9%	4.5%	24.5%
Total		Count	164	73	28	265
		% within 52.	61.9%	27.5%	10.6%	100.0%
		% of Total	61.9%	27.5%	10.6%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.285	.082	3.325	.001
N of Valid Cases		265			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

53. Need more speed zone signs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	140	49.0	49.1	49.1
	mostly agree	69	24.1	24.2	73.3
	mostly disagree	43	15.0	15.1	88.4
	strongly disagree	33	11.5	11.6	100.0
	Total	285	99.7	100.0	
Missing	System	1	.3		
Total		286	100.0		

53. Need more speed zone signs * 58. Manatee right to exist

Crosstab

			58.Manatee right to exist			
			strongly agree	mostly agree	mostly or strongly disagree	Total
53. Need more speed zone signs	strongly agree	Count	93	34	12	139
		% within 53.	66.9%	24.5%	8.6%	100.0%
		% of Total	33.0%	12.1%	4.3%	49.3%
	mostly agree	Count	48	19	2	69
		% within 53.	69.6%	27.5%	2.9%	100.0%
		% of Total	17.0%	6.7%	.7%	24.5%
	mostly disagree	Count	18	14	9	41
		% within 53.	43.9%	34.1%	22.0%	100.0%
		% of Total	6.4%	5.0%	3.2%	14.5%
	strongly disagree	Count	16	11	6	33
		% within 53.	48.5%	33.3%	18.2%	100.0%
		% of Total	5.7%	3.9%	2.1%	11.7%
Total		Count	175	78	29	282
		% within 53.	62.1%	27.7%	10.3%	100.0%
		% of Total	62.1%	27.7%	10.3%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.231	.087	2.516	.012
N of Valid Cases		282			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

54. Should have fewer types of zones even if # slow zones increase

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	88	30.8	31.9	31.9
	mostly agree	69	24.1	25.0	56.9
	mostly disagree	54	18.9	19.6	76.4
	strongly disagree	65	22.7	23.6	100.0
	Total	276	96.5	100.0	
Missing	System	10	3.5		
Total		286	100.0		

54. Should have fewer types of zones even if # slow zones increase * 58. Manatee right to exist

Crosstab

			58.Manatee right to exist			
			strongly agree	mostly agree	mostly or strongly disagree	Total
54. Should have fewer types of zones even if # slow zones increase	strongly agree	Count	66	14	7	87
		% within 54.	75.9%	16.1%	8.0%	100.0%
		% of Total	24.1%	5.1%	2.6%	31.8%
	mostly agree	Count	39	24	5	68
		% within 54.	57.4%	35.3%	7.4%	100.0%
		% of Total	14.2%	8.8%	1.8%	24.8%
	mostly disagree	Count	26	19	9	54
		% within 54.	48.1%	35.2%	16.7%	100.0%
		% of Total	9.5%	6.9%	3.3%	19.7%
	strongly disagree	Count	40	19	6	65
		% within 54.	61.5%	29.2%	9.2%	100.0%
		% of Total	14.6%	6.9%	2.2%	23.7%
Total		Count	171	76	27	274
		% within 54.	62.4%	27.7%	9.9%	100.0%
		% of Total	62.4%	27.7%	9.9%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.191	.081	2.328	.020
N of Valid Cases		274			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

57. Amount of responsibility I have to help save the manatee

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	major responsibility	119	41.6	42.0	42.0
	fair amount of responsibility	107	37.4	37.8	79.9
	a little responsibility	40	14.0	14.1	94.0
	no responsibility	17	5.9	6.0	100.0
	Total	283	99.0	100.0	
Missing	System	3	1.0		
Total		286	100.0		

57. Amount of responsibility * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
57.Amount of responsibility	major responsibility	Count	12	65	35	112
		% within 57.	10.7%	58.0%	31.3%	100.0%
		% of Total	4.5%	24.3%	13.1%	41.9%
	fair amount of responsibility	Count	28	56	17	101
		% within 57.	27.7%	55.4%	16.8%	100.0%
		% of Total	10.5%	21.0%	6.4%	37.8%
	a little responsibility	Count	17	18	3	38
		% within 57.	44.7%	47.4%	7.9%	100.0%
		% of Total	6.4%	6.7%	1.1%	14.2%
	no responsibility	Count	9	6	1	16
		% within 57.	56.3%	37.5%	6.3%	100.0%
		% of Total	3.4%	2.2%	.4%	6.0%
Total		Count	66	145	56	267
		% within 57.	24.7%	54.3%	21.0%	100.0%
		% of Total	24.7%	54.3%	21.0%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.484	.071	-6.186	.000
N of Valid Cases		267			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

57. Amount of responsibility * 58. Manatee right to exist

Crosstab

			58.Manatee right to exist			
			strongly agree	mostly agree	mostly or strongly disagree	Total
57.Amount of responsibility	major responsibility	Count	96	21	2	119
		% within 57	80.7%	17.6%	1.7%	100.0%
		% of Total	34.2%	7.5%	.7%	42.3%
	fair amount of responsibility	Count	58	35	12	105
		% within 57	55.2%	33.3%	11.4%	100.0%
		% of Total	20.6%	12.5%	4.3%	37.4%
	a little responsibility	Count	16	13	11	40
		% within 57	40.0%	32.5%	27.5%	100.0%
		% of Total	5.7%	4.6%	3.9%	14.2%
	no responsibility	Count	6	8	3	17
		% within 57	35.3%	47.1%	17.6%	100.0%
		% of Total	2.1%	2.8%	1.1%	6.0%
Total		Count	176	77	28	281
		% within 57	62.6%	27.4%	10.0%	100.0%
		% of Total	62.6%	27.4%	10.0%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.525	.067	6.609	.000
N of Valid Cases		281			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

64. Difference I can make to help long-term manatee survival

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	major difference	45	15.7	15.8	15.8
	fair amount of difference	96	33.6	33.7	49.5
	a little difference	112	39.2	39.3	88.8
	no difference at all	32	11.2	11.2	100.0
	Total	285	99.7	100.0	
Missing	System	1	.3		
Total		286	100.0		

64. Difference can make * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
64.Difference can make	major difference	Count	2	28	11	41
		% within 64.	4.9%	68.3%	26.8%	100.0%
		% of Total	.7%	10.4%	4.1%	15.2%
	fair amount of difference	Count	13	55	26	94
		% within 64.	13.8%	58.5%	27.7%	100.0%
		% of Total	4.8%	20.4%	9.7%	34.9%
	a little difference	Count	39	49	18	106
		% within 64.	36.8%	46.2%	17.0%	100.0%
		% of Total	14.5%	18.2%	6.7%	39.4%
	no difference at all	Count	15	12	1	28
		% within 64.	53.6%	42.9%	3.6%	100.0%
		% of Total	5.6%	4.5%	.4%	10.4%
Total		Count	69	144	56	269
		% within 64.	25.7%	53.5%	20.8%	100.0%
		% of Total	25.7%	53.5%	20.8%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.448	.066	-6.218	.000
N of Valid Cases		269			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

64. Difference can make * 58. Manatee right to exist

Crosstab

			58.Manatee right to exist			
			strongly agree	mostly agree	mostly or strongly disagree	Total
64.Difference can make	major difference	Count	40	5		45
		% within 64.	88.9%	11.1%		100.0%
		% of Total	14.2%	1.8%		16.0%
	fair amount of difference	Count	59	32	4	95
		% within 64.	62.1%	33.7%	4.2%	100.0%
		% of Total	20.9%	11.3%	1.4%	33.7%
	a little difference	Count	62	30	18	110
		% within 64.	56.4%	27.3%	16.4%	100.0%
		% of Total	22.0%	10.6%	6.4%	39.0%
	no difference at all	Count	15	10	7	32
		% within 64.	46.9%	31.3%	21.9%	100.0%
		% of Total	5.3%	3.5%	2.5%	11.3%
Total		Count	176	77	29	282
		% within 64.	62.4%	27.3%	10.3%	100.0%
		% of Total	62.4%	27.3%	10.3%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.382	.075	4.671	.000
N of Valid Cases		282			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

68. Knowledge of Monument Island speed zone

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 NO SPEED LIMIT	9	3.1	3.1	3.1
	2 30 MPH YEAR ROUND	22	7.7	7.7	10.8
	3 30 MPH YEAR DURING PART OF THE YEAR	5	1.7	1.7	12.6
	4 SLOW SPEED OR MINIMUM WAKE	32	11.2	11.2	23.8
	5 IDLE SPEED OR NO WAKE	40	14.0	14.0	37.8
	6 FAMILIAR WITH AREA BUT DON'T KNOW THE ANSWER	19	6.6	6.6	44.4
	7 NOT FAMILIAR WITH AREA	116	40.6	40.6	85.0
	8 OTHER SPEED, SPECIFY	19	6.6	6.6	91.6
	9 DON'T KNOW/NO RESPONSE	24	8.4	8.4	100.0
	Total	286	100.0	100.0	

69. Ever speed in Monument Island?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	33	11.5	24.4	24.4
	no	102	35.7	75.6	100.0
	Total	135	47.2	100.0	
Missing	System	151	52.8		
Total		286	100.0		

69. Ever speed * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
69. Ever speed in Monument Island?	yes	Count	12	17	3	32
		% within 69.	37.5%	53.1%	9.4%	100.0%
		% of Total	9.3%	13.2%	2.3%	24.8%
	no	Count	22	55	20	97
		% within 69.	22.7%	56.7%	20.6%	100.0%
		% of Total	17.1%	42.6%	15.5%	75.2%
Total		Count	34	72	23	129
		% within 69.	26.4%	55.8%	17.8%	100.0%
		% of Total	26.4%	55.8%	17.8%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.344	.162	1.979	.048
N of Valid Cases		129			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

70. Knowledge of Brickell Key speed zone

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 NO SPEED LIMIT	3	1.0	1.0	1.0
	2 30 MPH YEAR ROUND	4	1.4	1.4	2.4
	3 30 MPH YEAR DURING PART OF THE YEAR	2	.7	.7	3.1
	4 SLOW SPEED OR MINIMUM WAKE	43	15.0	15.0	18.2
	5 IDLE SPEED OR NO WAKE	139	48.6	48.6	66.8
	6 FAMILIAR WITH AREA BUT DON'T KNOW THE ANSWER	14	4.9	4.9	71.7
	7 NOT FAMILIAR WITH AREA	46	16.1	16.1	87.8
	8 OTHER SPEED, SPECIFY	18	6.3	6.3	94.1
	9 DON'T KNOW/NO RESPONSE	17	5.9	5.9	100.0
	Total	286	100.0	100.0	

71. Ever speed in Brickell Key zone?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	44	15.4	20.3	20.3
	no	173	60.5	79.7	100.0
	Total	217	75.9	100.0	
Missing	System	69	24.1		
Total		286	100.0		

71. Ever speed * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
71. Ever speed in Brickell Key zone?	yes	Count	17	20	5	42
		% within 71.	40.5%	47.6%	11.9%	100.0%
		% of Total	8.4%	9.9%	2.5%	20.8%
	no	Count	41	83	36	160
		% within 71.	25.6%	51.9%	22.5%	100.0%
		% of Total	20.3%	41.1%	17.8%	79.2%
Total		Count	58	103	41	202
		% within 71.	28.7%	51.0%	20.3%	100.0%
		% of Total	28.7%	51.0%	20.3%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.311	.138	2.138	.033
N of Valid Cases		202			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

71. Ever speed * 58. Manatee right to exist

Crosstab

			58.Manatee right to exist			
			strongly agree	mostly agree	mostly or strongly disagree	Total
71. Ever speed in Brickell Key zone?	yes	Count	21	15	8	44
		% within 71	47.7%	34.1%	18.2%	100.0%
		% of Total	9.8%	7.0%	3.7%	20.5%
	no	Count	113	42	16	171
		% within 71	66.1%	24.6%	9.4%	100.0%
		% of Total	52.6%	19.5%	7.4%	79.5%
Total		Count	134	57	24	215
		% within 71	62.3%	26.5%	11.2%	100.0%
		% of Total	62.3%	26.5%	11.2%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.336	.133	-2.199	.028
N of Valid Cases		215			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

72. How often comply with zones

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	half the time or less	4	1.4	1.4	1.4
	more than half the time	56	19.6	19.6	21.1
	all the time	225	78.7	78.9	100.0
	Total	285	99.7	100.0	
Missing	System	1	.3		
Total		286	100.0		

72. How often comply with zones * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			Total
			too strict	just about right	make more strict	
72. How often comply with zones	half the time or less	Count	3	1		4
		% within 72.	75.0%	25.0%		100.0%
		% of Total	1.1%	.4%		1.5%
	more than half the time	Count	18	29	6	53
		% within 72.	34.0%	54.7%	11.3%	100.0%
		% of Total	6.7%	10.8%	2.2%	19.7%
	all the time	Count	47	115	50	212
		% within 72.	22.2%	54.2%	23.6%	100.0%
		% of Total	17.5%	42.8%	18.6%	78.8%
Total		Count	68	145	56	269
		% within 72.	25.3%	53.9%	20.8%	100.0%
		% of Total	25.3%	53.9%	20.8%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.358	.114	2.877	.004
N of Valid Cases		269			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

72. How often comply with zones * 58. Manatee right to exist

Crosstab

			58.Manatee right to exist			
			strongly agree	mostly agree	mostly or strongly disagree	Total
72. How often comply with zones	half the time or less	Count	1	1	2	4
		% within 72.	25.0%	25.0%	50.0%	100.0%
		% of Total	.4%	.4%	.7%	1.4%
	more than half the time	Count	29	19	8	56
		% within 72.	51.8%	33.9%	14.3%	100.0%
		% of Total	10.3%	6.7%	2.8%	19.9%
	all the time	Count	146	57	19	222
		% within 72.	65.8%	25.7%	8.6%	100.0%
		% of Total	51.8%	20.2%	6.7%	78.7%
Total		Count	176	77	29	282
		% within 72.	62.4%	27.3%	10.3%	100.0%
		% of Total	62.4%	27.3%	10.3%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.306	.117	-2.302	.021
N of Valid Cases		282			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

74. Have you ever gotten a ticket for speeding in your boat?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 YES	33	11.5	11.5	11.5
	2 NO	253	88.5	88.5	100.0
	Total	286	100.0	100.0	

75. Were any tickets for manatee speed or manatee access rules?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 YES	15	5.2	45.5	45.5
	2 NO	18	6.3	54.5	100.0
	Total	33	11.5	100.0	
Missing	System	253	88.5		
Total		286	100.0		

76. How many hours do you stay out for a day of boating

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2-4 hrs	47	16.4	16.5	16.5
	5-6 hrs	106	37.1	37.2	53.7
	7-8 hrs	75	26.2	26.3	80.0
	9-48	57	19.9	20.0	100.0
	Total	285	99.7	100.0	
Missing	System	1	.3		
Total		286	100.0		

mean= 7.94, median= 6.00 (note: answer of 72= missing)

76. How many hours do you stay out for a day of boating * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
76. How many hours do you stay out for a day of boating	2-4 hrs	Count	15	25	6	46
		% within 76.	32.6%	54.3%	13.0%	100.0%
		% of Total	5.6%	9.3%	2.2%	17.1%
	5-6 hrs	Count	23	61	17	101
		% within 76.	22.8%	60.4%	16.8%	100.0%
		% of Total	8.6%	22.7%	6.3%	37.5%
	7-8 hrs	Count	20	31	18	69
		% within 76.	29.0%	44.9%	26.1%	100.0%
		% of Total	7.4%	11.5%	6.7%	25.7%
	9-48	Count	10	28	15	53
		% within 76.	18.9%	52.8%	28.3%	100.0%
		% of Total	3.7%	10.4%	5.6%	19.7%
Total		Count	68	145	56	269
		% within 76.	25.3%	53.9%	20.8%	100.0%
		% of Total	25.3%	53.9%	20.8%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.160	.078	2.018	.044
N of Valid Cases		269			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

77. # law enforcement boats see/day

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-1	109	38.1	38.7	38.7
	2-3	119	41.6	42.2	80.9
	4-12	54	18.9	19.1	100.0
	Total	282	98.6	100.0	
Missing	System	4	1.4		
Total		286	100.0		

mean= 2.50, median= 2.00

78. What do you think about # of law enforcement boats near manatee zones?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	too few	113	39.5	41.2	41.2
	jusr about right	134	46.9	48.9	90.1
	too many	27	9.4	9.9	100.0
	Total	274	95.8	100.0	
Missing	System	12	4.2		
Total		286	100.0		

78. What do you think about # of law enforcement boats? * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
78. What do you think about # of law enforcement boats?	too few	Count	15	55	38	108
		% within 78.	13.9%	50.9%	35.2%	100.0%
		% of Total	5.8%	21.2%	14.6%	41.5%
	jusr about right	Count	31	77	18	126
		% within 78.	24.6%	61.1%	14.3%	100.0%
		% of Total	11.9%	29.6%	6.9%	48.5%
	too many	Count	20	6		26
		% within 78.	76.9%	23.1%		100.0%
		% of Total	7.7%	2.3%		10.0%
Total		Count	66	138	56	260
		% within 78.	25.4%	53.1%	21.5%	100.0%
		% of Total	25.4%	53.1%	21.5%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.573	.073	-6.548	.000
N of Valid Cases		260			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

78. What do you think about # of law enforcement boats? * 58. Manatee right to exist

Crosstab

			58.Manatee right to exist			
			strongly agree	mostly agree	mostly or strongly disagree	Total
78. What do you think about # of law enforcement boats?	too few	Count	87	18	8	113
		% within 78.	77.0%	15.9%	7.1%	100.0%
		% of Total	32.1%	6.6%	3.0%	41.7%
	jusr about right	Count	75	43	14	132
		% within 78.	56.8%	32.6%	10.6%	100.0%
		% of Total	27.7%	15.9%	5.2%	48.7%
	too many	Count	11	11	4	26
		% within 78.	42.3%	42.3%	15.4%	100.0%
		% of Total	4.1%	4.1%	1.5%	9.6%
Total		Count	173	72	26	271
		% within 78.	63.8%	26.6%	9.6%	100.0%
		% of Total	63.8%	26.6%	9.6%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.391	.091	4.017	.000
N of Valid Cases		271			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

79. Raise taxes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	28	9.8	10.0	10.0
	mostly agree	51	17.8	18.2	28.2
	mostly disagree	58	20.3	20.7	48.9
	strongly disagree	143	50.0	51.1	100.0
	Total	280	97.9	100.0	
Missing	System	6	2.1		
Total		286	100.0		

79. Raise taxes * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
79. Raise taxes	strongly agree	Count	2	14	11	27
		% within 79	7.4%	51.9%	40.7%	100.0%
		% of Total	.8%	5.3%	4.2%	10.2%
	mostly agree	Count	12	25	13	50
		% within 79	24.0%	50.0%	26.0%	100.0%
		% of Total	4.5%	9.4%	4.9%	18.9%
	mostly disagree	Count	8	34	14	56
		% within 79	14.3%	60.7%	25.0%	100.0%
		% of Total	3.0%	12.8%	5.3%	21.1%
	strongly disagree	Count	47	69	16	132
		% within 79	35.6%	52.3%	12.1%	100.0%
		% of Total	17.7%	26.0%	6.0%	49.8%
Total		Count	69	142	54	265
		% within 79	26.0%	53.6%	20.4%	100.0%
		% of Total	26.0%	53.6%	20.4%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.366	.078	-4.472	.000
N of Valid Cases		265			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

79. Raise taxes * 58.Manatee right to exist

Crosstab

			58.Manatee right to exist			
			strongly agree	mostly agree	mostly or strongly disagree	Total
79. Raise taxes	strongly agree	Count	24	3	1	28
		% within 79	85.7%	10.7%	3.6%	100.0%
		% of Total	8.7%	1.1%	.4%	10.1%
	mostly agree	Count	38	9	4	51
		% within 79	74.5%	17.6%	7.8%	100.0%
		% of Total	13.7%	3.2%	1.4%	18.4%
	mostly disagree	Count	34	21	3	58
		% within 79	58.6%	36.2%	5.2%	100.0%
		% of Total	12.3%	7.6%	1.1%	20.9%
	strongly disagree	Count	77	43	20	140
		% within 79	55.0%	30.7%	14.3%	100.0%
		% of Total	27.8%	15.5%	7.2%	50.5%
Total		Count	173	76	28	277
		% within 79	62.5%	27.4%	10.1%	100.0%
		% of Total	62.5%	27.4%	10.1%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.326	.089	3.639	.000
N of Valid Cases		277			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

80. Decrease # boats

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	22	7.7	7.7	7.7
	mostly agree	16	5.6	5.6	13.4
	mostly disagree	53	18.5	18.7	32.0
	strongly disagree	193	67.5	68.0	100.0
	Total	284	99.3	100.0	
Missing	System	2	.7		
Total		286	100.0		

80. Decrease number of boats * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
80. Decrease # boats	strongly agree	Count	3	12	6	21
		% within 80	14.3%	57.1%	28.6%	100.0%
		% of Total	1.1%	4.5%	2.2%	7.8%
	mostly agree	Count	1	10	4	15
		% within 80	6.7%	66.7%	26.7%	100.0%
		% of Total	.4%	3.7%	1.5%	5.6%
	mostly disagree	Count	6	31	13	50
		% within 80	12.0%	62.0%	26.0%	100.0%
		% of Total	2.2%	11.6%	4.9%	18.7%
	strongly disagree	Count	59	90	33	182
		% within 80	32.4%	49.5%	18.1%	100.0%
		% of Total	22.0%	33.6%	12.3%	67.9%
Total		Count	69	143	56	268
		% within 80	25.7%	53.4%	20.9%	100.0%
		% of Total	25.7%	53.4%	20.9%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.338	.091	-3.517	.000
N of Valid Cases		268			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

80. Decrease number of boats * 58. Manatee right to exist

Crosstab

			58.Manatee right to exist			
			strongly agree	mostly agree	mostly or strongly disagree	Total
80. Decrease # boats	strongly agree	Count	16	3	3	22
		% within 80	72.7%	13.6%	13.6%	100.0%
		% of Total	5.7%	1.1%	1.1%	7.8%
	mostly agree	Count	13	3		16
		% within 80	81.3%	18.8%		100.0%
		% of Total	4.6%	1.1%		5.7%
	mostly disagree	Count	37	14	2	53
		% within 80	69.8%	26.4%	3.8%	100.0%
		% of Total	13.2%	5.0%	.7%	18.9%
	strongly disagree	Count	108	58	24	190
		% within 80	56.8%	30.5%	12.6%	100.0%
		% of Total	38.4%	20.6%	8.5%	67.6%
Total		Count	174	78	29	281
		% within 80	61.9%	27.8%	10.3%	100.0%
		% of Total	61.9%	27.8%	10.3%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.300	.111	2.780	.005
N of Valid Cases		281			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

82. Knowledge SOS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3 short, 3 long, 3 short	79	27.6	64.2	64.2
	other combination	44	15.4	35.8	100.0
	Total	123	43.0	100.0	
Missing	System	163	57.0		
Total		286	100.0		

83. Knowledge plastic discharge zone

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	prohibited in all areas	145	50.7	68.7	68.7
	other area/distance	66	23.1	31.3	100.0
	Total	211	73.8	100.0	
Missing	System	75	26.2		
Total		286	100.0		

84. Knowledge of distance limits when not noted on sign

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	until next speed sign	165	57.7	69.0	69.0
	a distance or other answer	74	25.9	31.0	100.0
	Total	239	83.6	100.0	
Missing	System	47	16.4		
Total		286	100.0		

85. Have you attended a boater education class

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 YES	190	66.4	66.4	66.4
	2 NO	96	33.6	33.6	100.0
	Total	286	100.0	100.0	

85. Ever taken class * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
85.Ever taken class	yes	Count	56	87	37	180
		% within 85.Ever taken class	31.1%	48.3%	20.6%	100.0%
		% of Total	20.7%	32.2%	13.7%	66.7%
	no	Count	13	58	19	90
		% within 85.Ever taken class	14.4%	64.4%	21.1%	100.0%
		% of Total	4.8%	21.5%	7.0%	33.3%
Total		Count	69	145	56	270
		% within 85.Ever taken class	25.6%	53.7%	20.7%	100.0%
		% of Total	25.6%	53.7%	20.7%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.227	.103	2.145	.032
N of Valid Cases		270			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

86. Class helpful or interesting regarding manatees?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	56	19.6	31.5	31.5
	no	122	42.7	68.5	100.0
	Total	178	62.2	100.0	
Missing	System	108	37.8		
Total		286	100.0		

86. Class helpful or interesting * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
86.Class helpful or interesting	yes	Count	12	25	15	52
		% within 86.Class helpful or interesting	23.1%	48.1%	28.8%	100.0%
		% of Total	7.1%	14.8%	8.9%	30.8%
	no	Count	42	54	21	117
		% within 86.Class helpful or interesting	35.9%	46.2%	17.9%	100.0%
		% of Total	24.9%	32.0%	12.4%	69.2%
Total		Count	54	79	36	169
		% within 86.Class helpful or interesting	32.0%	46.7%	21.3%	100.0%
		% of Total	32.0%	46.7%	21.3%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.272	.132	-1.990	.047
N of Valid Cases		169			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

89. Should boating class be required?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	258	90.2	91.5	91.5
	no	24	8.4	8.5	100.0
	Total	282	98.6	100.0	
Missing	System	4	1.4		
Total		286	100.0		

89. Should boating class be required? * 58. Manatee right to exist

Crosstab

			58.Manatee right to exist			
			strongly agree	mostly agree	mostly or strongly disagree	Total
89. Should boating class be required?	yes	Count	163	67	25	255
		% within 89.	63.9%	26.3%	9.8%	100.0%
		% of Total	58.4%	24.0%	9.0%	91.4%
	no	Count	10	10	4	24
		% within 89.	41.7%	41.7%	16.7%	100.0%
		% of Total	3.6%	3.6%	1.4%	8.6%
Total		Count	173	77	29	279
		% within 89.	62.0%	27.6%	10.4%	100.0%
		% of Total	62.0%	27.6%	10.4%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.371	.154	1.944	.052
N of Valid Cases		279			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

90. Boating license required?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	195	68.2	72.5	72.5
	no	74	25.9	27.5	100.0
	Total	269	94.1	100.0	
Missing	System	17	5.9		
Total		286	100.0		

90. Boating license required? * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
90. Boating license required?	yes	Count	43	91	49	183
		% within 90. Boating license required?	23.5%	49.7%	26.8%	100.0%
		% of Total	17.0%	36.0%	19.4%	72.3%
	no	Count	23	40	7	70
		% within 90. Boating license required?	32.9%	57.1%	10.0%	100.0%
		% of Total	9.1%	15.8%	2.8%	27.7%
Total		Count	66	131	56	253
		% within 90. Boating license required?	26.1%	51.8%	22.1%	100.0%
		% of Total	26.1%	51.8%	22.1%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.322	.107	-2.837	.005
N of Valid Cases		253			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

91. Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	16-41	88	30.8	30.9	30.9
	42-52	101	35.3	35.4	66.3
	53-89	96	33.6	33.7	100.0
	Total	285	99.7	100.0	
Missing	System	1	.3		
Total		286	100.0		

mean= 47.75, median= 47.00

91. Age * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
91. Age	16-41	Count	16	47	19	82
		% within 91. Age	19.5%	57.3%	23.2%	100.0%
		% of Total	5.9%	17.5%	7.1%	30.5%
	42-52	Count	25	47	27	99
		% within 91. Age	25.3%	47.5%	27.3%	100.0%
		% of Total	9.3%	17.5%	10.0%	36.8%
	53-89	Count	28	50	10	88
		% within 91. Age	31.8%	56.8%	11.4%	100.0%
		% of Total	10.4%	18.6%	3.7%	32.7%
Total		Count	69	144	56	269
		% within 91. Age	25.7%	53.5%	20.8%	100.0%
		% of Total	25.7%	53.5%	20.8%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.199	.079	-2.494	.013
N of Valid Cases		269			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

92. Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	up to high school grad	52	18.2	18.4	18.4
	up to AA/technical school	70	24.5	24.7	43.1
	4 yr graduate BA/BS	91	31.8	32.2	75.3
	graduate degree	70	24.5	24.7	100.0
	Total	283	99.0	100.0	
Missing	System	3	1.0		
Total		286	100.0		

92. Education * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
92. Education	up to high school grad	Count	7	30	14	51
		% within 92. Education	13.7%	58.8%	27.5%	100.0%
		% of Total	2.6%	11.2%	5.2%	19.0%
	up to AA/technical school	Count	19	33	12	64
		% within 92. Education	29.7%	51.6%	18.8%	100.0%
		% of Total	7.1%	12.3%	4.5%	23.9%
	4 yr graduate BA/BS	Count	21	47	19	87
		% within 92. Education	24.1%	54.0%	21.8%	100.0%
		% of Total	7.8%	17.5%	7.1%	32.5%
	graduate degree	Count	22	33	11	66
		% within 92. Education	33.3%	50.0%	16.7%	100.0%
		% of Total	8.2%	12.3%	4.1%	24.6%
Total		Count	69	143	56	268
		% within 92. Education	25.7%	53.4%	20.9%	100.0%
		% of Total	25.7%	53.4%	20.9%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.150	.077	-1.926	.054
N of Valid Cases		268			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

93. Income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	under $45,000	30	10.5	12.4	12.4
	$45,000-under $60,000	29	10.1	12.0	24.5
	$60,000-under$90,000	47	16.4	19.5	44.0
	$90,000 or more	135	47.2	56.0	100.0
	Total	241	84.3	100.0	
Missing	System	45	15.7		
Total		286	100.0		

93. Income * 28. Rules restricting boat speed/access

Crosstab

			28.rules restricting boat speed/access			
			too strict	just about right	make more strict	Total
93. Income	under $45,000	Count	3	18	8	29
		% within 93. Income	10.3%	62.1%	27.6%	100.0%
		% of Total	1.3%	7.9%	3.5%	12.8%
	$45,000-under $60,000	Count	5	19	4	28
		% within 93. Income	17.9%	67.9%	14.3%	100.0%
		% of Total	2.2%	8.4%	1.8%	12.3%
	$60,000-under $90,000	Count	11	23	10	44
		% within 93. Income	25.0%	52.3%	22.7%	100.0%
		% of Total	4.8%	10.1%	4.4%	19.4%
	$90,000 or more	Count	39	63	24	126
		% within 93. Income	31.0%	50.0%	19.0%	100.0%
		% of Total	17.2%	27.8%	10.6%	55.5%
Total		Count	58	123	46	227
		% within 93. Income	25.6%	54.2%	20.3%	100.0%
		% of Total	25.6%	54.2%	20.3%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	-.190	.092	-2.042	.041
N of Valid Cases		227			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

93. Income * 58. Manatee right to exist

Crosstab

			58.Manatee right to exist			
			strongly agree	mostly agree	mostly or strongly disagree	Total
93. Income	under $45,000	Count	23	6	1	30
		% within 93. Income	76.7%	20.0%	3.3%	100.0%
		% of Total	9.7%	2.5%	.4%	12.6%
	$45,000-under $60,000	Count	19	7	3	29
		% within 93. Income	65.5%	24.1%	10.3%	100.0%
		% of Total	8.0%	2.9%	1.3%	12.2%
	$60,000-under$90,000	Count	33	9	4	46
		% within 93. Income	71.7%	19.6%	8.7%	100.0%
		% of Total	13.9%	3.8%	1.7%	19.3%
	$90,000 or more	Count	74	43	16	133
		% within 93. Income	55.6%	32.3%	12.0%	100.0%
		% of Total	31.1%	18.1%	6.7%	55.9%
Total		Count	149	65	24	238
		% within 93. Income	62.6%	27.3%	10.1%	100.0%
		% of Total	62.6%	27.3%	10.1%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Gamma	.260	.102	2.580	.010
N of Valid Cases		238			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.