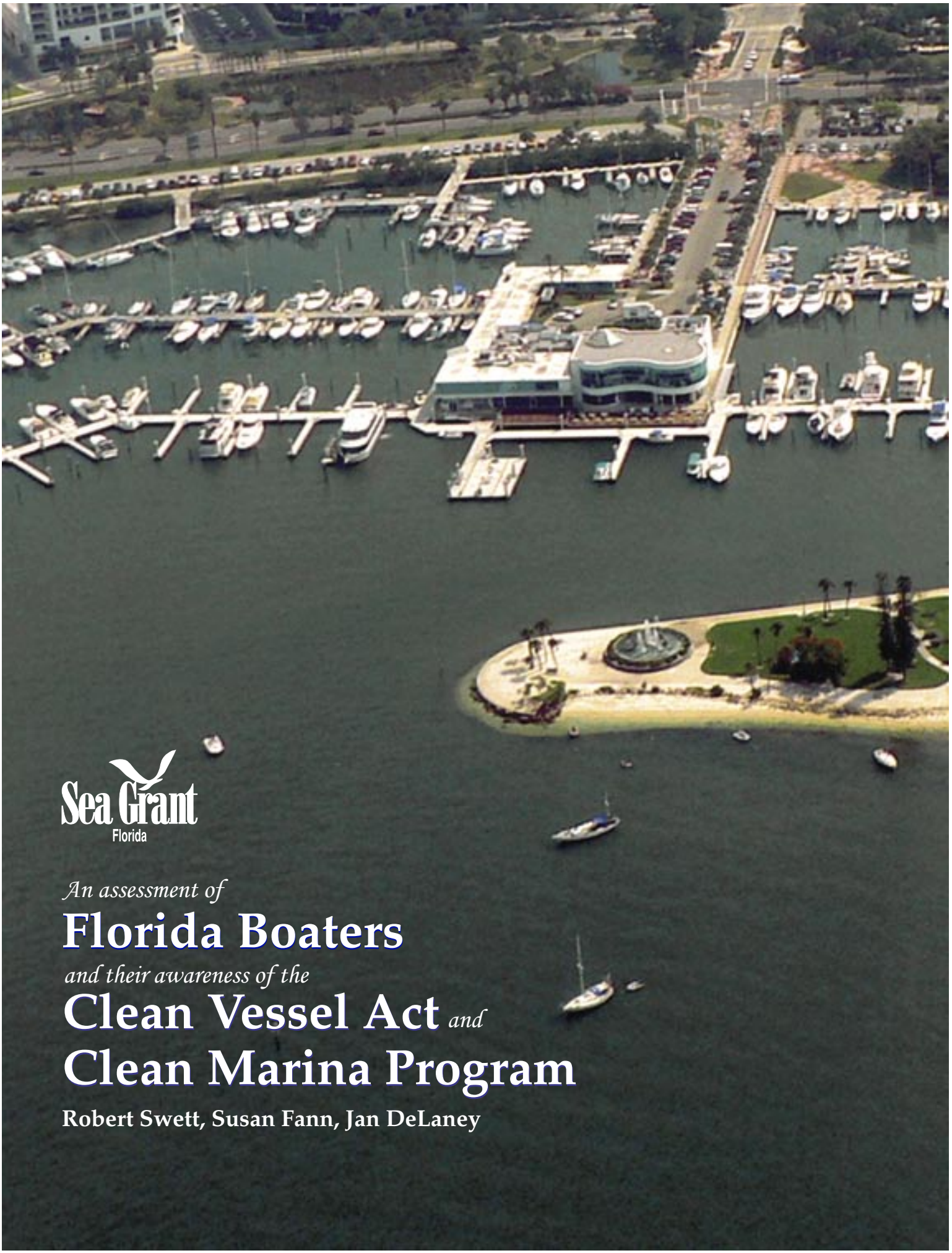


Sea Grant
Florida

An assessment of

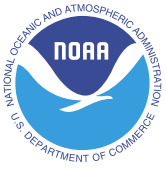
Florida Boaters

and their awareness of the

Clean Vessel Act *and* Clean Marina Program

Robert Swett, Susan Fann, Jan DeLaney

Cover photo: Marina Jack, Sarasota Bay. Florida Sea Grant photo by Charles Sidman.



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AN ASSESSMENT OF FLORIDA BOATERS AND THEIR AWARENESS OF THE CLEAN VESSEL ACT AND CLEAN MARINA PROGRAM

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Background

Congress passed the Clean Vessel Act (CVA) in 1992 to help reduce pollution from vessel sewage discharges. The Act established a five-year federal grant program administered by the U.S. Fish and Wildlife Service and authorized funds for use by the states. In 1998, Congress reauthorized and extended the pumpout grant program through 2003, providing $50 million to continue to provide alternatives to overboard disposal of recreational boater sewage.[1] In Florida, the Department of Environmental Protection's (FDEP) Division of Law Enforcement administers the CVA Grant Program.

The Clean Marina Program (CMP) was developed in 1996 by the Division of Law Enforcement to complement and enhance the CVA Grant Program through an expansion of the education and outreach components. The CMP is a voluntary pollution prevention program that encourages marinas and boatyards to meet environmental standards and become good environmental stewards. The goal of the CMP is a "Clean Marina Designation" for participating facilities. Designation lets boaters who use the marina or boatyard know that these businesses adhere to—or exceed—program criteria, including Marina Environmental Measures (MEMs). MEMs are simple, innovative solutions for day-to-day marina operations that protect the environment. MEMs have been developed by examination of best management practices applied around the country and through the partnership of Florida's marinas, boatyards, boaters, and government.

In April of 2000, the Division of Law Enforcement formed a public-private partnership with the marine industry to further extend the reach of the Clean Marina Program and enhance direction to and evaluation of the Program. The Clean Boating Partnership (CBP) comprises marina and boatyard owners and operators, representatives of the Marine Industries Association of Florida, Florida Sea Grant (FSG), U.S. Coast Guard and Coast Guard Auxiliary, and the FDEP. The Partnership's goal is to achieve compliance by using industry expertise and peer assistance to promote awareness and involvement with clean marina and clean boatyard practices.

Ultimately, the success of the CVA grant program, the CBP, and the CMP depends on the awareness of marina personnel and boaters of (1) the environmental laws (e.g., CVA), rules and regulations, and jurisdictions with which they must comply, and (2) the locations of pumpout facilities and "Clean Marinas."

Objectives

The primary goal of this study is a statistically valid (±5% at the 95% confidence level) assessment of boater awareness of the CVA and the CMP. The statistical analyses will address three basic issues: (1) boater awareness levels for the CVA and CMP, (2) changes in awareness of the CVA since the last assessment was completed in 1998, and (3) statistical differences between results obtained via mail and Internet-based surveys. The study objectives are:

1. To determine the level of awareness of the CVA and the CMP in 2004 by owners of boats that are 26 feet in length and greater.
2. To statistically compare boater awareness of the CVA in 2004 with the level of awareness determined from a 1998 survey conducted for the Florida Department of Environmental Protection Marine Patrol by the Florida State University Survey Lab.

[1] Continuation funding is expected through a bill signed by the President in August 2005. Specific state allocations will be finalized in the months to follow. (http://federalaid.fws.gov/cva/cva_info.html)

3. To assess the ability of an Internet-based survey to provide a statistically valid assessment of boater awareness of the CVA and the CMP. If proven valid, Internet-based surveys can serve as the primary mechanism for future assessments of boater awareness conducted by FDEP, resulting in cost reductions and standardization of methods.
4. To characterize the practices and attitudes of Florida boaters in order to better target future educational and outreach efforts.

Methods

Between November 2004 and April 2005, Florida Sea Grant (FSG) implemented one Internet-based survey and two mail surveys. Two thousand invitations to participate in the Internet survey and 2,000 invitations to participate in the first mail survey were sent to owners of vessels 16 feet in length and greater. Four thousand names and addresses were drawn randomly from Florida's Vessel Title Registration System (VTRS).[2] The Internet survey and first mail survey were designed to permit comparison with results that were obtained from a 1998 survey conducted for the Florida Department of Environmental Protection Marine Patrol by the Florida State University Survey Lab (1998). In particular, the goal was to determine the degree to which overall awareness of Florida's Clean Vessel Act had changed since the 1998 survey. The sample for the 1998 survey was drawn from Florida's population of 717,205 registered pleasure boats at the time—regardless of vessel length. Eighty-four percent of those who responded to the 1998 survey owned vessels less than 26 feet in length, with most between 16 and 20 feet. Based on the 1998 results, the authors (FSG and CMP staff) decided to draw a sample from the population of 946,072 registered recreational vessels contained in the VTRS (Florida Fish and Wildlife Conservation Commission 2004)[3] consisting of owners of vessels 16 feet and greater for the 2004 surveys (both Internet survey and the first mail survey).

A primary goal of CMP staff is to obtain information regarding owners of vessels that are most likely to use Florida's marinas and pumpout facilities. To accomplish this objective, an independent mail survey was sent to owners of vessels 26 feet in length and greater. All vessels 26 feet or more in length that have an enclosed cabin with sleeping facilities must be equipped with a toilet if they are on Florida state waters.[4] A random sample of 2,500 names and addresses was drawn from the VTRS.

The authors developed the survey questionnaire (Appendix 1), conducted a pretest, and modified the questionnaire based on feedback obtained from 26 pretest respondents. An invitation to participate in the Internet-based survey was sent to each invitee (Appendix 2), along with a "no-Internet" card (Appendix 3) to be returned if the respondent did not have Internet access. Each mail survey invitee received a copy of the questionnaire and an invitation letter (Appendix 4). Invitees to all three surveys received two reminder cards (Appendix 5 and 6), which were sent two and four weeks, respectively, after the initial invitation.

[2] The Florida Department of Highway Safety and Motor Vehicles maintains the VTRS.

[3] Florida Fish and Wildlife Conservation Commission, 2004 Boating Accident Statistical Report; available online at http://myfwc.com/law/boating/

[4] Florida Statute 327.53

Results

Number of completed surveys

Survey Type	Survey 1 (≥16 feet)	Survey 2 (≥26 feet)
Internet	269	n/a
Mail	377	494
Total	**646**	**494**

Letters were sent to a random sample of 2,000 owners of vessels ≥16 feet in length, drawn from the VTRS, inviting them to participate in the Internet-based survey. Eighty-three persons sent back a "no-Internet" card and were then mailed a questionnaire, of which 36 (43%) mailed back a completed questionnaire. The overall response rate for the Internet-based survey was 15.8% (316) and the survey completion rate was 13.5% (269).

Similarly, letters were sent to a random sample of 2,000 owners of vessels ≥16 feet in length, drawn from the VTRS, inviting them to participate in the first mail survey. Ten survey questionnaires were returned as undeliverable (7) or because the intended survey respondent was deceased (3). Completed surveys were received from 377 respondents. The overall response rate for the first mail survey was 19.4% (387) and the survey completion rate was 18.9% (377).

The target number of 400 responses for the Internet-based survey and 400 for the first mail survey (vessel length ≥16 feet) was not achieved and, therefore, the 269 Internet-based responses were combined with the 377 responses received from the first mail survey for 646 total responses. (The Internet-based survey and the first mail survey were sent to owners of vessels ≥16 feet in length.)

Letters were sent to a random sample of 2,500 owners of vessels ≥26 feet in length, drawn from the VTRS, inviting them to participate in the second mail survey. The number of initial invitees for the second mail survey was increased from 2,000 to 2,500 due to the lower than expected response rate achieved for the Internet-based survey and the first mail survey. Eleven survey questionnaires were returned because they were undeliverable or because the intended respondent did not have a boat. The overall response rate for the second mail survey was 20.2% (505) and the survey completion rate was 19.8% (494). [From this point forward, the two surveys will be referred to as "Survey 1" (sent to owners of vessels ≥16 feet in length) and "Survey 2" (sent to owners of vessels ≥26 feet length).]

Overall, there were 646 responses to Survey 1 (≥16 feet): 269 from the Internet-based survey and 377 from the first mail survey, along with 494 responses to Survey 2 (≥26 feet). There were 946,072 recreational vessels registered in Florida in 2004 (Florida Fish and Wildlife Conservation Commission 2004). The sampling error (confidence interval) associated with the sample size (646) for Survey 1 (sent to owners of vessels ≥16 feet in length) and the overall recreational boating population represented in the VTRS (946,072) yielded a confidence interval of ± 3.85 at the 95% confidence level. This is within the sample error originally proposed for this study (± 5 at the 95% confidence level). The 494 responses to Survey 2 (sent to owners of vessels ≥26 feet in length) represent a confidence interval of ± 4.41 at the 95% confidence level. Again, this is within the sample error originally proposed for the study.

The following results are presented in the order that the questions appeared on the survey instrument. The results are summarized for the two sampled populations: (1) Survey 1, to provide a basis for comparison with the 1998 survey, and (2) Survey 2, to provide a transition to future CVA surveys.

Question 1: *Please indicate how many boats of each type listed that you own.*

Survey respondents were presented with a list of boat types and were asked to indicate how many of each type they owned (Table 1 and Figure 1). Powerboat with cabin accommodations was the most frequently owned boat type among Survey 2 respondents (30.2%)—nearly double that of Survey 1 respondents (16.8%). Survey 2 respondents preferred cruising sailboats at a rate (11.8%) more than double that of Survey 1 respondents (5.0%). Open fishing boat was the most frequently owned boat type among Survey 1 respondents (22.5%)—a significantly higher rate than the 12.2% of Survey 2 respondents who owned this boat type. Survey 1 respondents also preferred pontoon or deck boats at a rate (5.0%) six times greater than that of Survey 2 respondents (0.8%). [Percentages contained in report tables may not sum to 100% due to rounding.]

Table 1. Relative quantities of boat types that are owned by survey respondents.

Vessel Type	Survey 1 (≥16 feet)		Survey 2 (≥26 feet)	
	Count	%	Count	%
Open Fishing	**304**	**22.5%**	**137**	**12.2%**
Powerboat (cabin accommodations)	**227**	**16.8%**	**340**	**30.2%**
Kayak/Row/Canoe	219	16.2%	136	12.1%
Jon/Utility	111	8.2%	77	6.8%
Speed or Jet Boat (no cabin)	98	7.3%	49	4.4%
Skiff or Flats Boat	93	6.9%	55	4.9%
Pontoon or Deck Boat	68	5.0%	9	0.8%
Sailboat (cruising sail)	67	5.0%	133	11.8%
Personal Watercraft	56	4.1%	59	5.2%
Other	56	4.1%	88	7.8%
Sailboat (day sail)	51	3.8%	43	3.8%
Total	**1350**	**100%**	**1126**	**100%**

Bold amounts in shaded cells represent the boat types that received the largest number of responses and bold amounts in non-shaded cells represent the boat types that received the second largest number of responses.

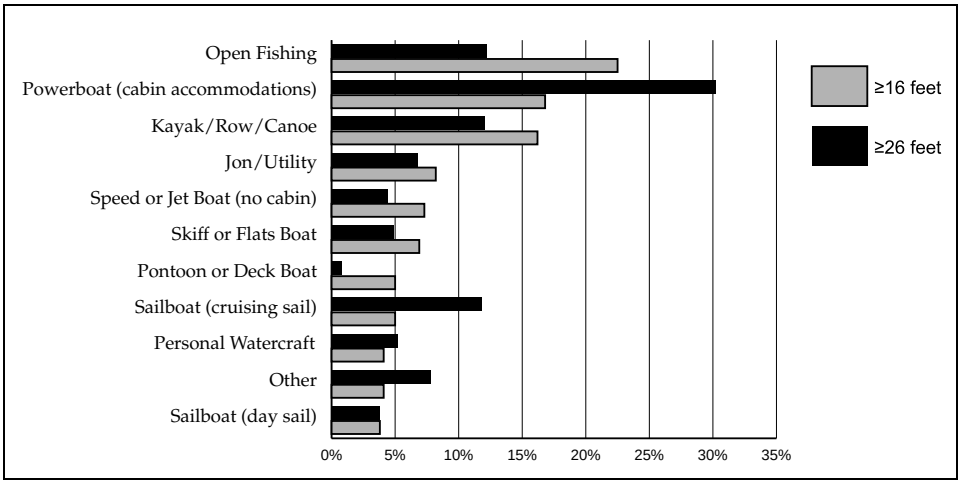

Figure 1. Relative quantities of boat types that are owned by survey respondents.

Question 2: *In what type of vessel do you spend most of your boating time?*

As a group, nearly 80% of Survey 2 respondents' boating time was spent in a powerboat with cabin accommodations (55.3%) or in a cruising sailboat (22.4%). Open fishing boats accounted for another 12.8% (Table 2 and Figure 2). Survey 1 respondents, as a group, tended to spend their boating time in a greater variety of boat types than those in Survey 2. Nonetheless, nearly 60% of Survey 1 respondents' boating time was spent in an open fishing boat (34.0%) or in a powerboat with cabin accommodations (22.7%).

Table 2. The vessel types in which survey respondents spend most of their boating time.

Vessel Type	Survey 1 (≥16 feet)		Survey 2 (≥26 feet)	
	Count	%	Count	%
Open Fishing	**217**	**34.0%**	62	12.8%
Powerboat (cabin accommodations)	**145**	**22.7%**	**269**	**55.3%**
Speed or Jet Boat (no cabin)	59	9.2%	15	3.1%
Skiff or Flats Boat	59	9.2%	8	1.6%
Sailboat (cruising sail)	55	8.6%	**109**	**22.4%**
Pontoon or Deck Boat	43	6.7%	5	1.0%
Other	23	3.6%	4	0.8%
Kayak/Row/Canoe	12	1.9%	5	1.0%
Jon/Utility	10	1.6%	3	0.6%
Sailboat (day sail)	10	1.6%	3	0.6%
Personal Watercraft	6	0.9%	3	0.6%
Total	**639**	**100%**	**486**	**100%**

Bold amounts in shaded cells represent the boat types that received the largest number of responses and bold amounts in non-shaded cells represent the boat types that received the second largest number of responses.

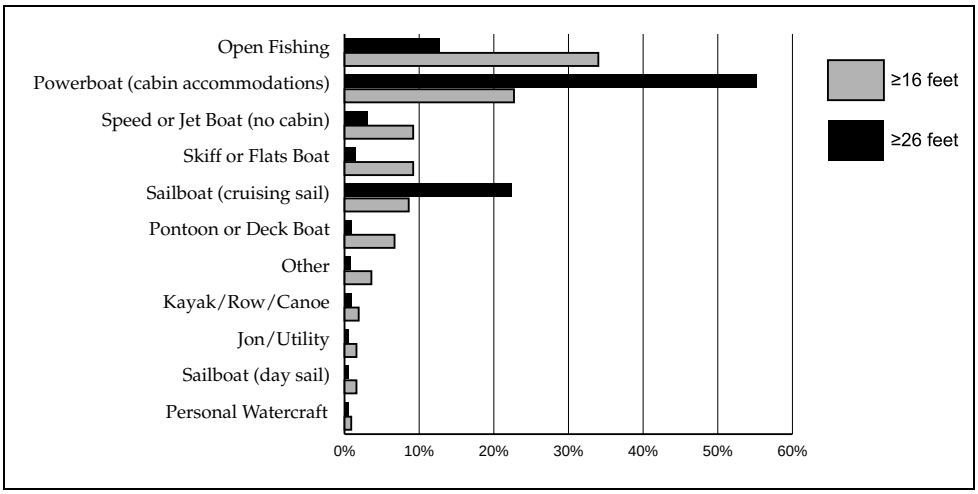

Figure 2. The vessel types in which survey respondents spend most of their boating time.

Question 3: *Please enter the make, model, and length of the boat that you identified in question 2 above.*

The make and model of the vessel in which each respondent indicated they spent most of their boating time are listed in Appendices 7 (Survey 1) and 8 (Survey 2). Table 3 and Figure 3 list the length characteristics of the vessels most frequently used by survey respondents. Lengths are listed according to the classes (A-1, A-2, 1, 2, 3, 4, and 5) that Florida uses when levying vessel registration fees. The majority of Survey 1 vessels (74.4%) were ≥ 16 feet and <26 feet; the next most frequent category (18.1%) encompasses vessels ≥ 26 feet and < 40 feet. The majority of Survey 2 vessels (71.3%) were ≥ 26 feet and < 40 feet, followed by vessels ≥ 40 feet and < 65 feet (17.7%). On average, the vessels that Survey 1 respondents spent most of their time in were 21.8 feet in length and those of Survey 2 respondents were 32.2 feet in length.

Table 3. Length characteristics of most frequently used vessels.

Length Statistics	Survey 1 (≥16 feet)	Survey 2 (≥26 feet)
< 12' (class A-1)	1.0%	0.8%
12' to 15' 11" (class A-2)	3.3%	0.8%
16' to 25' 11" (class 1)	**74.4%**	8.7%
26' to 39' 11" (class 2)	**18.1%**	**71.3%**
40' to 64' 11" (class 3)	2.9%	**17.7%**
65' to 109' 11" (class 4)	0.3%	0.6%
110' or more (class 5)	0.0%	0.0%
Average (feet)	21.8	32.2
Minimum (feet)	7.5	9
Maximum (feet)	74	106
Standard Deviation (feet)	8.0	10.0
Count (# of responses)	628	494

Bold percentages in the shaded cells represent the length categories receiving the largest number of responses and bold percentages in non-shaded cells represent the length categories receiving the second largest number of responses.

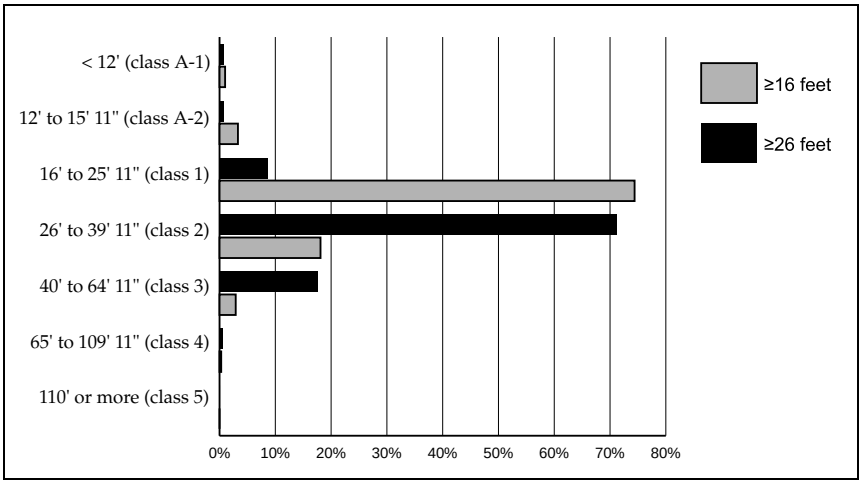

Figure 3. Length characteristics of most frequently used vessels.

Question 4: *Please identify your typical launch site.*

Survey 1 respondents used ramps to launch their boats at a rate nearly five times that of Survey 2 respondents: 43.3% versus 8.8% (Table 4 and Figure 4). In contrast, 33.9% of Survey 2 respondents reported using marina wet slips versus only 12.1% of Survey 1 respondents.[5] Over 50% of Survey 2 respondents launched from residential docks (44.3% from home docks; 5.9% from condominium docks) versus 37.2% of Survey 1 respondents (34.9% from home docks; 2.3% from condominium docks).

Table 4. Typical launch sites of survey respondents.

Launch Type	Survey 1 (≥16 feet)		Survey 2 (≥26 feet)	
	Count	%	Count	%
Boat ramp	**277**	**43.3%**	43	8.8%
Home dock	**223**	**34.9%**	**217**	**44.3%**
Marina wet slip	77	12.1%	**166**	**33.9%**
Marina dry storage	37	5.8%	24	4.9%
Condominium dock	15	2.3%	29	5.9%
Shoreline/causeway	9	1.4%	3	0.6%
Other	1	0.2%	8	1.6%
Total	**639**	**100%**	**490**	**100%**

Bold amounts in shaded cells represent the launch sites receiving the largest number of responses and bold amounts in non-shaded cells represent the launch sites receiving the second largest number of responses.

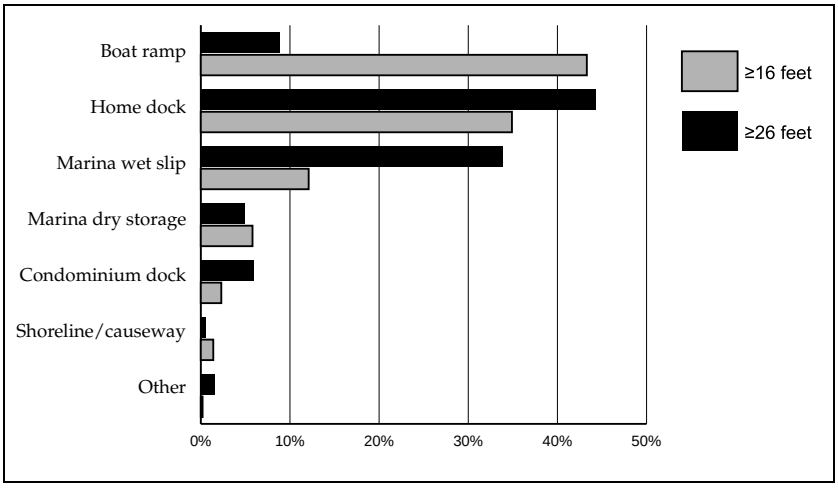

Figure 4. Typical launch sites of survey respondents.

[5] The authors feel that this particular question was poorly constructed, with the potential for differing interpretations, therefore rendering the analysis suspect, particularly for larger vessels that use marina wet slips. The term *launch* implies boat introduction to the water and does not properly apply to wet slip occupants departing from a marina slip. Since no other category was provided for the latter group, many marina users may not have been properly represented.

Question 5*: Please indicate the number of times per month that you go boating.*

Table 5-1 (Survey 1) and Table 5-2 (Survey 2) show the distribution of boating activity by month and by excursion category[6] over the course of one year as reported by respondents. The percentages in each cell were calculated as a proportion of the total number of boating excursions reported by all respondents. Survey 1 respondents reported 29,273 excursions over a 12-month period and Survey 2 respondents reported 23,406 excursions. The months of May, June, July, and August represent the peak of boating activity (in terms of number of excursions) for both Survey 1 and 2 respondents. Forty-one percent of Survey 1 boating excursions and 42% of Survey 2 boating excursions occurred during these 4 months. The last column presents the proportion of yearly boating activity by excursion category. For example, 41% of all Survey 1 excursions during the year were by boaters who boated 1 to 5 times per month, whereas 3.4% of all Survey 1 excursions were by boaters who boated more than 25 times per month.

Table 5-1. Monthly and yearly boating activity for Survey 1 (vessels ≥ 16 feet) respondents (expressed as percentages).

No. of excursions	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yr
1-5	3.2	3.3	3.8	3.9	3.9	3.7	3.4	3.1	3.3	3.5	3.3	3.1	41
6-10	1.6	1.6	2.3	3.1	3.3	3.7	3.8	3.9	3.1	2.8	2.1	1.7	33
11-15	0.4	0.6	0.9	0.9	1.0	1.4	1.1	1.3	1.2	0.8	0.8	0.5	11
16-20	0.4	0.3	0.4	0.7	0.7	0.7	1.3	1.0	0.9	0.4	0.3	0.3	7.4
21- 25	0.3	0.4	0.2	0.2	0.5	0.7	0.3	0.4	0.2	0.3	0.4	0.1	4.1
>25	0.2	0.3	0.3	0.2	0.5	0.3	0.7	0.4	0.1	0.2	0.1	0.1	3.4
Total	**6**	**7**	**8**	**9**	**10**	**10**	**11**	**10**	**9**	**8**	**7**	**6**	**100**

Shaded cells represent months of peak boating activity for each "Number of excursions" interval.

Table 5-2. Monthly and yearly boating activity for Survey 2 (vessels ≥ 26 feet) respondents (expressed as percentages).

No. of excursions	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yr
1-5	3.3	3.3	4.0	4.1	3.8	3.5	3.4	3.3	3.6	3.6	3.5	3.1	43
6-10	1.0	1.3	1.7	2.6	3.2	3.6	3.1	2.9	2.4	2.5	1.9	1.3	28
11-15	0.4	0.6	0.9	1.0	1.4	1.5	1.6	1.7	1.4	0.8	0.6	0.4	12
16-20	0.2	0.1	0.5	0.8	1.2	0.8	0.9	1.0	0.7	0.5	0.2	0.3	7.2
21-25	0.1	0.2	0.2	0.1	0.1	0.2	0.6	0.4	0.2	0.2	0.0	0.0	2.3
>25	0.5	0.5	0.6	0.6	0.6	1.0	1.3	1.0	0.6	0.4	0.4	0.4	8.1
Total	**6**	**6**	**8**	**9**	**10**	**11**	**11**	**10**	**9**	**8**	**7**	**5**	**100**

Shaded cells represent months of peak boating activity for each "Number of excursions" interval.

[6] Excursion categories group the number of boating excursions per month as reported by respondents. There are six groupings in tables 5-1 and 5-2 that range from 1 to 5 excursions per month to greater than 25 excursions per month.

Question 6*: How many hours do you spend on the water during a typical boating trip?*

Survey 2 respondents tended to spend more time on the water during a typical boating trip than did Survey 1 respondents (Table 6 and Figure 6). During a typical boating trip, 48.8% of Survey 1 respondents spent 1 to 5 hours on the water and 40.5% spent 5 to 10 hours. Forty-one percent of Survey 2 respondents spent 5 to 10 hours on a typical boating trip, followed by 30.4% who spent 1 to 5 hours. Longer times spent on the water by Survey 2 respondents also is reflected by the cumulative percentage of hours on the water. For example, 94% of Survey 1 respondents were on the water for less than 24 hours during a typical trip; in contrast, only 78% of Survey 2 respondents typically were on the water for less than 24 hours. Stated another way, 22% of Survey 2 respondents spent more than 24 hours on the water during a typical boating trip, compared to only 6% of Survey 1 respondents.

Table 6. Number of hours spent on the water during a typical boating trip.

Hours	Survey 1 (≥16 feet)			Survey 2 (≥26 feet)		
	Count	%	Cum. %	Count	%	Cum. %
0 hours	8	1.2%	1.2%	14	2.8%	2.8%
1 to 5 hours	**314**	**48.8%**	50%	**150**	**30.4%**	33%
5 to 10 hours	**261**	**40.5%**	91%	**203**	**41.2%**	74%
10 to 24 hours	24	3.7%	94%	20	4.1%	78%
24 to 72 hours	29	4.5%	99%	69	14.0%	92%
> 72 hours	8	1.2%	100%	37	7.5%	100%
Total	**644**	**100%**	**-**	**493**	**100%**	**-**

Bold amounts in shaded cells represent the category receiving the largest number of responses and bold amounts in non-shaded cells represent the category receiving the second largest number of responses.

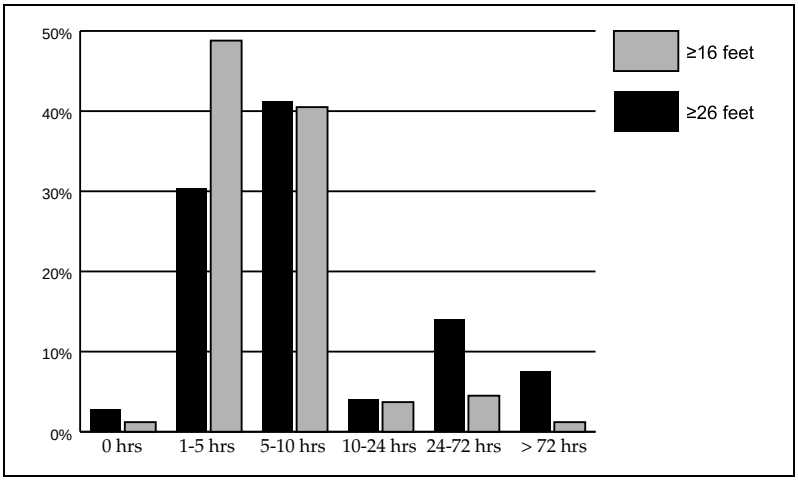

Figure 6. Number of hours spent on the water during a typical boating trip.

Question 7: *What is your favorite activity on a typical pleasure boating trip?*

The top three activities ranked by Survey 2 respondents accounted for approximately 70% of the total: cruising (29.0%), fishing (26.8%), and sailing (14.6%) (Table 7 and Figure 7). Nearly 50% of Survey 1 respondents listed fishing as their favorite activity—a rate nearly double that reported by Survey 2 respondents. Though cruising was the second most popular activity among Survey 1 respondents (15.2%), it was nearly twice as popular with Survey 2 respondents (29%) as was sailing.

Table 7. Favorite activities of survey respondents during a typical boating trip.

Activities	Survey 1 (≥16 feet)		Survey 2 (≥26 feet)	
	Count	%	Count	%
Fishing	**309**	**49.0%**	**127**	**26.8%**
Cruising	**96**	**15.2%**	**137**	**29.0%**
Sailing	42	6.7%	69	14.6%
Nature Viewing	35	5.6%	7	1.5%
Sightseeing	31	4.9%	9	1.9%
Other	24	3.8%	4	0.8%
Beach Picnicking	21	3.3%	6	1.3%
Diving	18	2.9%	16	3.4%
Socializing	20	3.2%	23	4.9%
Daytime Anchoring	13	2.1%	22	4.7%
Overnight Anchoring	13	2.1%	36	7.6%
Visiting Restaurant	5	0.8%	13	2.7%
Swimming	3	0.5%	4	0.8%
Totals	**630**	**100%**	**473**	**100%**

Bold amounts in shaded cells represent the activity receiving the largest number of responses and bold amounts in non-shaded cells represent the activity receiving the second largest number of responses.

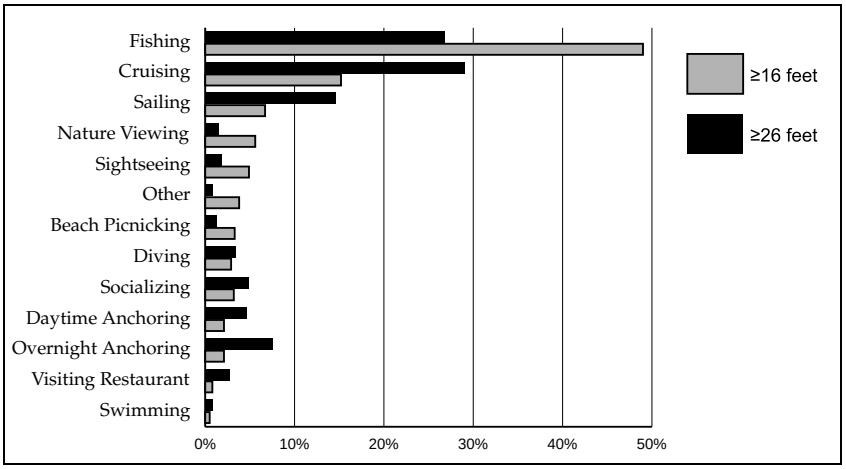

Figure 7. Favorite activities of survey respondents during a typical boating trip.

Question 8: *Do you have a marine sanitation device on your boat (either portable or permanent)?*

Forty-one percent of Survey 1 respondents (266 of 646) and 92.3% of Survey 2 respondents (456 of 494) reported having some type of marine sanitation device on their boat (Figure 8). Seven Survey 1 respondents and two Survey 2 respondents did not answer this question.

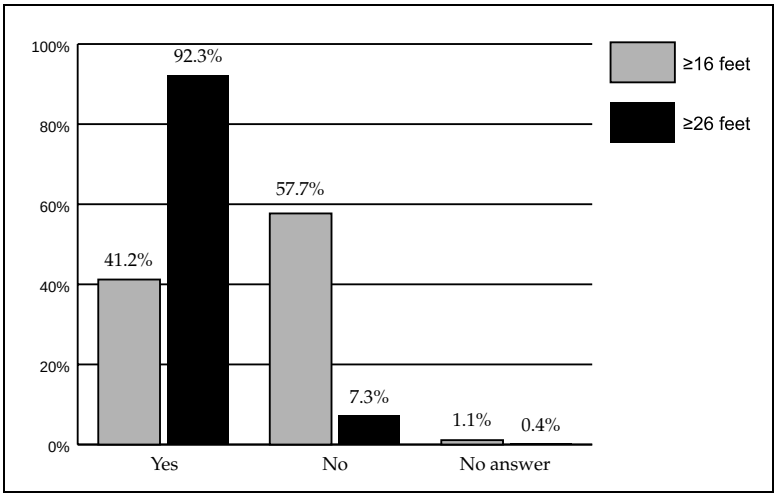

Figure 8. Percentage of survey respondents with a marine sanitation device on their boat.

Question 9: *What type of marine sanitation device do you have?*

The majority (51.9%) of Survey 1 respondents who reported having a Marine Sanitation Device[7] (MSD) on their vessel and who indicated the type of device they use (two respondents from both surveys did not list a MSD type) employed a portable MSD versus 11.7% of Survey 2 respondents (Table 9). An additional 43.6% of Survey 1 respondents and 80.8% of Survey 2 respondents used a U.S. Coast Guard (USCG) type III MSD.

Table 9. Types of Marine Sanitation Devices (MSD) found on survey respondents' boats.

MSD Type	Survey 1 (≥16 feet)		Survey 2 (≥26 feet)	
	Count	%	Count	%
Portable	**137**	**51.9%**	**53**	**11.7%**
Portable and USCG Type II	1	0.4%	1	0.2%
Portable and USCG Type III	1	0.4%	3	0.7%
USCG Type I or II	10	3.8%	25	5.5%
USCG Type I or II and III	0	0%	5	1.1%
USCG Type III	**115**	**43.6%**	**367**	**80.8%**
Total	**264**	**100%**	**454**	**100%**

Bold amounts in shaded cells represent the MSD type receiving the largest number of responses and bold amounts in non-shaded cells represent the MSD type receiving the second largest number of responses.

[7] A Marine Sanitation Device (MSD) refers to a marine toilet system and is also referred to as a "head." A USCG approved MSD TYPE I is a flow-through device that treats sewage by chemical or thermal means; an MSD TYPE II treats the sewage by biological means and uses bacteria; and an MSD TYPE III holds the sewage and prevents its direct overboard discharge.

Question 10: *For each of the four categories listed, please estimate the proportion (a percentage ranging from 0 to 100 percent) of the total sewage discharged from your boat(s) during the past year.*

Seventy-five percent of sewage discharged by Survey 1 respondents as a group (199 reporting) was into a pumpout facility, 11% into waters more than 9 miles offshore, and 9% into waters between 3 and 9 miles offshore (Table 10).[8] Four percent of discharge reported for Survey 1 was into waters less than 3 miles offshore.

Sixty-four percent of sewage discharged by Survey 2 respondents as a group (397 reporting) was into a pumpout facility. Approximately 30% of discharged sewage was into waters more than 3 miles offshore, and 5.4% was into waters less than 3 miles offshore.

The higher proportion of sewage discharged into a pumpout facility (75%) by Survey 1 respondents versus that discharged (64.4%) by Survey 2 respondents appears anomalous. However, a much higher proportion (51.9%) of Survey 1 respondents than Survey 2 respondents (11.7%) had a portable sanitation device (Table 9). Based on comments made by some survey respondents, the authors believe it likely that most (if not all) Survey 1 respondents (and Survey 2 respondents) with a portable sanitation device used a toilet rather than a pumpout facility when discharging sewage. Since Question 11 did not provide a category for reporting discharge into a toilet, survey respondents likely reported this occurrence under the pumpout category.

Table 10. Proportions and locations of sewage discharged by survey respondents.

Discharge Locations	**Survey 1 (≥16 feet)** (199 respondents)		**Survey 2 (≥26 feet)** (397 respondents)	
	Average	Standard Deviation	Average	Standard Deviation
Percent discharged into a pumpout facility.	**75.0%**	38.7%	**64.4%**	42.6%
Percent discharged into water LESS than 3 miles offshore.	4.0%	16.4%	5.4%	19.0%
Percent discharged into waters between 3 and 9 miles offshore.	9.0%	22.8%	14.6%	28.5%
Percent discharged into waters MORE than 9 miles offshore.	**11.0%**	25.6%	**15.5%**	30.2%
Total	**100%**	**-**	**100%**	**-**

Bold percentages in shaded cells represent the discharge facility/locations receiving the largest proportion of sewage discharge and bold percentages in non-shaded cells represent the discharge facility/locations receiving the second largest proportion of sewage discharge.

[8] Since October 1, 1994, boaters are prohibited from discharging raw sewage into fresh water or within coastal saltwater limits. Coastal limits are 9 nautical miles on the Gulf and 3 nautical miles on the Atlantic Ocean. See http://www.dep.state.fl.us/law/Grants/CVA/default.htm.

Question 11: *For each of the statements listed, please indicate the extent of your agreement or disagreement.*

Survey respondents were asked to select their level of agreement—strongly agree, agree, not sure, disagree, or strongly disagree—with several statements about pumpout facilities. The agreement levels were ranked 1 through 5, respectively (Strongly Agree=1; Strongly Disagree =5). The overall score (or ranking) for each statement is shown in the last column of each table. A score of 3 indicates that most respondents were not sure how to respond to the statement (they neither agree nor disagree); a score less than 3 denotes an overall tendency to agree with the statement; and a score greater than 3 denotes an overall tendency to disagree with the statement.

Anywhere from 210 and 227 of the Survey 1 respondents (Table 11-1) and 419 and 430 of the Survey 2 respondents (Table 11-2) answered each of the seven pumpout-related statements. Overall, both Survey 1 and Survey 2 respondents did not believe that an adequate number of pumpout facilities exist (Survey 1 score = 3.18; Survey 2 score = 3.02) or that pumpout facilities are conveniently located (Survey 1 score = 3.16; Survey 2 score = 3.03). In general, respondents to both surveys indicated that: (a) pumpout facilities are usually open when they want to use them (although 39.4% of Survey 1 respondents were unsure), (b) pumpout facilities are easy to use, and (c) they do not have to wait long to use the facilities. Survey 2 respondents, overall, appear to make more of an effort (score = 3.21) than do Survey 1 respondents (score = 2.92) to use pumpout facilities when they go boating. The majority of respondents to both surveys (Survey 1 = 55.2%; Survey 2 = 60.2%) indicated that they use a pumpout facility every time their holding tank is full.

Table 11-1. Survey 1 (≥ 16 feet) respondents' opinions regarding pumpout facilities (Strongly Agree=1; Strongly Disagree =5).

Statement	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	Score
There are an adequate number of pumpout facilities where I operate my boat.	11.5%	18.1%	**26.4%**	**29.1%**	15.0%	3.18
Pumpout facilities are conveniently located.	10.2%	20.4%	**27.1%**	**28.0%**	14.2%	3.16
Pumpout facilities are usually open when I want to use them.	9.5%	**25.8%**	**39.4%**	20.4%	5.0%	2.86
Pumpout facilities are easy to use.	10.7%	**37.3%**	**31.6%**	16.0%	4.4%	2.66
I usually have to wait only a short time to use the pumpout facilities.	9.1%	**36.8%**	**35.9%**	15.5%	2.7%	2.66
I don't make a special effort to use a pumpout facility when I go boating.	15.3%	**29.3%**	19.4%	**20.3%**	15.8%	2.92
I use a pumpout facility every time my holding tank is full.	25.2%	**30.0%**	14.3%	21.0%	9.5%	2.60

Bold percentages in shaded cells represent the opinion receiving the largest number of responses and bold percentages in non-shaded cells represent the opinion receiving the second largest number of responses.

Table 11-2. Survey 2 (≥ 26 feet) respondents' opinions regarding pumpout facilities (Strongly Agree=1; Strongly Disagree =5).

Questions	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	Score
There are an adequate number of pumpout facilities where I operate my boat.	15.3%	**26.5%**	15.6%	**26.0%**	16.5%	3.02
Pumpout facilities are conveniently located.	12.3%	**28.6%**	17.0%	**28.1%**	14.0%	3.03
Pumpout facilities are usually open when I want to use them.	11.1%	**38.0%**	**22.6%**	20.3%	8.0%	2.76
Pumpout facilities are easy to use.	12.3%	**49.3%**	15.3%	**17.5%**	5.7%	2.55
I usually have to wait only a short time to use the pumpout facilities.	8.1%	**51.3%**	**20.3%**	14.3%	6.0%	2.59
I don't make a special effort to use a pumpout facility when I go boating.	10.7%	**29.7%**	8.8%	**29.9%**	20.9%	3.21
I use a pumpout facility every time my holding tank is full.	**32.1%**	**28.1%**	8.3%	23.1%	8.3%	2.47

Bold percentages in shaded cells represent the opinion receiving the largest number of responses and bold percentages in non-shaded cells represent the opinion receiving the second largest number of responses.

Question 12: *What factors, if any, would lead you to use sanitation pumpout stations more often?*

Both Survey 1 and Survey 2 respondents cited greater availability of pumpout stations as the number one factor, followed by convenience (accessible, short wait, and easy to use), and lower cost (i.e., free) (Table 12). These three factors accounted for nearly 70% of Survey 1 responses and 75% of Survey 2 responses. More than twice as many Survey 2 respondents (6.7%) cited a need for pumpouts in better working condition than did Survey 1 respondents (3.2%).

Table 12. Factors that would lead to greater use of pumpout stations by survey respondents.

Factors that Promote Greater Use of Pumpout Facilities	**Survey 1 (≥16 feet)**		**Survey 2 (≥26 feet)**	
	Count	%	Count	%
Greater Availability	**40**	**32.3%**	**90**	**28.8%**
Convenience (accessible, short wait, easy)	**39**	**31.5%**	**86**	**27.5%**
Lower Cost (free)	13	10.5%	39	12.5%
Boater Doesn't Use MSD	7	5.6%	7	2.2%
Boats off-shore, Dumping is Not Restricted	6	4.8%	15	4.8%
Better Publicized	5	4.0%	9	2.9%
Pumpout Boats	5	4.0%	11	3.5%
Better Working Condition	4	3.2%	21	6.7%
None - OK now	3	2.4%	26	8.3%
Better Staffed	2	1.6%	4	1.3%
If Mandatory	0	0.0%	5	1.6%
Total	**124**	**100.0%**	**313**	**100.0%**

Bold percentages in shaded cells represent the factor receiving the most responses and bold percentages in non-shaded cells represent the factor receiving the second largest number.

Question 13: *Are you aware of Florida's Clean Vessel Act?*

Results of the 1998 survey (Florida State University Survey Lab) showed that 48.7% of respondents were aware of Florida's Clean Vessel Act and 43.9% were not (7.4% said maybe). The results for the current survey show that 49.8% of the Survey 1 respondents were aware of the Clean Vessel Act and 46.7% were not (Table 13 and Figure 13). Given the 1998 survey sample error (± 3.0% at the 95% confidence interval) and the Survey 1 sample error (± 3.85 at the 95% confidence level), the results obtained in 1998 are not statistically different than those obtained in 2004 (i.e., no significant difference). In other words, there is no evidence to indicate that awareness of Florida's Clean Vessel Act among the general boater population has changed since 1998.

In contrast to the 1998 and the Survey 1 results, 71.9% of Survey 2 respondents said that they were aware of the Clean Vessel Act (and 26.5% were not). The Survey 2 results indicate that owners of larger vessels (≥26 feet in length) were more much more aware (by a factor of approximately one-half) of the Clean Vessel Act than were boaters from the general boating population—in particular, owners of smaller vessels.

Table 13. Boater awareness of Florida's Clean Vessel Act.

Response	Survey 1 (≥16 feet)		Survey 2 (≥26 feet)	
	Count	%	Count	%
No	302	46.7%	131	26.5%
Yes	322	**49.8%**	355	**71.9%**
No Answer	22	3.4%	8	1.6%
Total	**646**	**100%**	**494**	**100%**

Bold shaded cells represent the category with the largest number of responses.

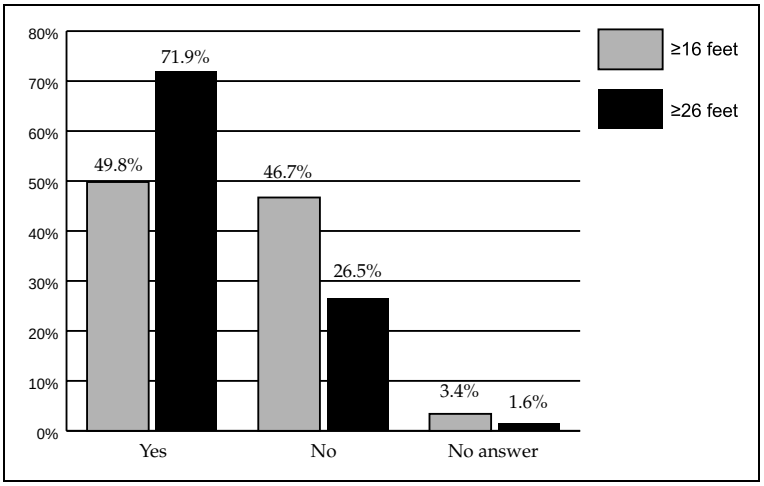

Figure 13. Boater awareness of Florida's Clean Vessel Act.

Question 14: *How did you learn about the Clean Vessel Act?*

Both Survey 1 (21.0%) and 2 (22.5%) respondents most frequently cited boating publications as their primary source of knowledge regarding the Clean Vessel Act (Table 14). Survey 1 (13.2%) respondents cited other boaters as the next most likely information source followed by media reports (newspaper, TV, radio). Survey 2 respondents cited USCG literature or a USCG class (10.7%) followed by other boaters (8.5%).

Table 14. How respondents learned about the Clean Vessel Act.

Source of Information	Survey 1 (≥16 feet)		Survey 2 (≥26 feet)	
	Count	%	Count	%
Boating Publications	**59**	**21.0%**	**82**	**22.5%**
Other Boaters/General Knowledge	**37**	**13.2%**	31	8.5%
Newspaper, TV, Radio	34	12.1%	9	2.5%
USCG Literature or Class	29	10.3%	**39**	**10.7%**
USCG Auxiliary	20	7.1%	14	3.8%
Boat Course/Licensure	16	5.7%	31	8.5%
Boat U.S.	16	5.7%	25	6.9%
State Publications	16	5.7%	9	2.5%
Marina	14	5.0%	30	8.2%
U.S. Power Squadron	10	3.6%	23	6.3%
Marine Store/Show	8	2.8%	16	4.4%
Vessel Registration	7	2.5%	6	1.6%
Internet	5	1.8%	25	6.9%
Boat Dealer	4	1.4%	10	2.7%
Boat Posting	3	1.1%	13	3.6%
Marine Industry Associations	1	0.4%	1	0.3%
Non-Governmental Organizations	1	0.4%	0	0.0%
Marine Patrol	1	0.4%	0	0.0%
Total	**281**	**100.0%**	**364**	**100.0%**

Bold amounts in shaded cells represent the information source receiving the largest number of responses and bold amounts in non-shaded cells represent the information source receiving the second largest number of responses.

Question 15: *Please indicate whether each of the statements below is true or false.*

Survey respondents were asked to respond (true, false, or don't know) to six statements regarding the Clean Vessel Act and Florida laws for discharging sewage from vessels (Table 15). In general, owners of larger vessels (Survey 2) were more knowledgeable about the Clean Vessel Act and laws dealing with sewage discharge from vessels into Florida waters. On average, 45% of Survey 2 respondents knew the right answers to the statements, versus 32% of Survey 1 respondents. The statement eliciting the most correct answers (false) was "On the east coast of Florida, untreated sewage can be discharged in waters closer than 3 miles offshore"; 71.5% of Survey 2 respondents and 55.6% of Survey 1 respondents answered correctly. Only 8.4% of Survey 1 respondents correctly identified as false the statement that "On the west coast of Florida, untreated sewage can be discharged in waters closer 9 miles offshore" versus 50% of Survey 2 respondents who answered correctly. On average, 56% of Survey 1 respondents and 46% of Survey 2 respondents reported that they did not know the answers to the statements.

Table 15. Gauging respondents' knowledge of provisions pertaining to Florida's Clean Vessel Act.

Statements (correct answer in parentheses)	Survey 1 (≥16 feet)				Survey 2 (≥26 feet)			
	True	False	Don't Know	Total	True	False	Don't Know	Total
On the west coast of Florida, untreated sewage can be discharged in waters closer than 9 miles offshore. (false)	**44.1%**	8.4%	**47.5%**	100%	15.3%	**50.0%**	**34.7%**	100%
The Clean Vessel Act provides funds to build vessel pumpout facilities. (true)	**25.8%**	7.4%	**66.8%**	100%	**35.0%**	6.4%	**58.6%**	100%
On the east coast of Florida, untreated sewage can be discharged in waters closer than 3 miles offshore. (false)	4.3%	**55.6%**	**40.1%**	100%	4.2%	**71.5%**	**24.3%**	100%
Florida requires that vessels 26 feet and longer be equipped with a toilet. If not portable, it must be connected to a Type I, II, or II marine sanitation device. (true)	**41.4%**	5.4%	**53.2%**	100%	**46.1%**	16.0%	**37.9%**	100%
In Florida, the Department of Environmental Protection administers the Clean Vessel Act. (true)	**30.0%**	5.6%	**64.4%**	100%	**32.5%**	6.4%	**61.1%**	100%
The Clean Vessel Act is the result of Federal legislation. (true)	**30.9%**	4.8%	**64.3%**	100%	**33.8%**	8.2%	**57.9%**	100%

Bold percentages in shaded cells represent answers receiving the largest number of responses and bold percentages in non-shaded cells represent answers receiving second largest number of responses.

Question 16: *Are you aware of Florida's Clean Marina Program?*

The majority of respondents were not aware of Florida's Clean Marina Program. Just 17.5% respondents of Survey 1 and 38.2% of Survey 2 respondents said yes when asked if they knew of the program.

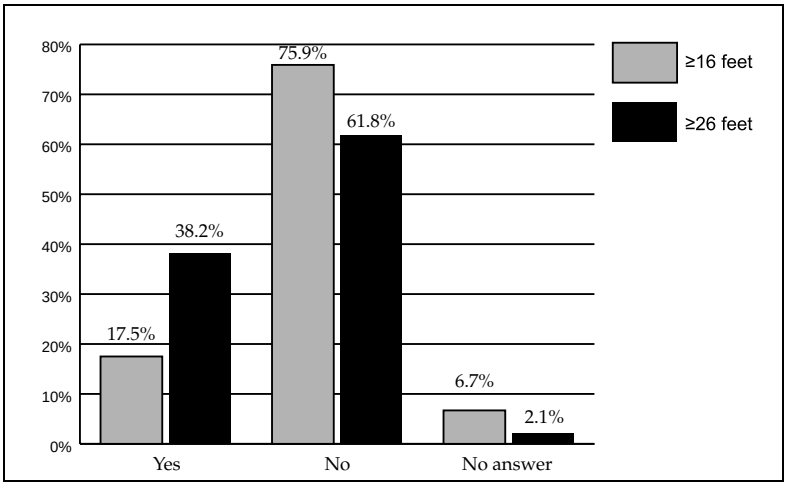

Figure 16. Boater awareness of Florida's Clean Marina Program.

Question 17: *How did you learn about the Clean Marina Program?*

Over 50% of Survey 2 respondents who knew of the Clean Marina Program obtained their knowledge from two sources: marinas (45.9%) and boating publications (10.3%) (Table 17). Survey 2 respondents' next three most oft-cited sources accounted for an additional 19 percent: "other" publications (6.5%), the Internet (6.5%), and Boat U.S. (5.9%). Marinas were the prime source of information for Survey 1 respondents (28%), though significantly less so than for Survey 2 respondents (45.9%). Survey 1 respondents were 7 times more likely to get information about the Program from a newspaper (15%) than were Survey 2 respondents (2.7%), and more than twice as likely (8.4%) to get it from other boaters than were Survey 2 respondents (3.2%).

Table 17. How respondents learned about the Clean Marina Program.

Sources of Information	Survey 1 (≥16 feet)		Survey 2 (≥26 feet)	
	Count	%	Count	%
Marina	**30**	**28.0%**	**85**	**45.9%**
Newspaper	**16**	**15.0%**	5	2.7%
Boating Publication	9	8.4%	**19**	**10.3%**
General Knowledge or Other Boaters	9	8.4%	6	3.2%
Boating Course	6	5.6%	2	1.1%
Club	5	4.7%	2	1.1%
Boat U.S.	4	3.7%	11	5.9%
Other Publication	3	2.8%	12	6.5%
Internet	3	2.8%	12	6.5%
U.S. Power Squadron	3	2.8%	4	2.2%
USCG Auxiliary	3	2.8%	3	1.6%
Other	3	2.8%	2	1.1%
TV or Radio	2	1.9%	2	1.1%
State Publication	2	1.9%	1	0.5%
Friend	2	1.9%	0	0.0%
Vessel Registration	2	1.9%	0	0.0%
Marina Ads	1	0.9%	4	2.2%
State Agency	1	0.9%	2	1.1%
Marine Industry Association	1	0.9%	1	0.5%
Sea Grant	1	0.9%	1	0.5%
Non-Governmental Organization	1	0.9%	0	0.0%
Boat Show	0	0.0%	8	4.3%
Other Agency	0	0.0%	2	1.1%
Marine Store	0	0.0%	1	0.5%
Total	**107**	**100.0%**	**185**	**100.0%**

Bold amounts in shaded cells represent the answer receiving the largest number of responses and bold amounts in non-shaded cells represent the answer receiving the second largest number of responses.

Question 18: *Please rank how likely you are to obtain information about boating and boating-related issues from each of the following information sources.*

Survey respondents were asked to rank the likelihood—not likely, somewhat likely, likely, very likely, and extremely likely—of their obtaining boating and boating-related information from a number of sources. The likelihood levels were ranked 1 through 5, respectively (Not Likely =1; Extremely Likely =5). The overall score (or ranking) for each information source is shown in the last column of each table. A score of 1 indicates that most respondents were not likely to use the information source and a score of 5 indicates that most respondents were extremely likely to use the information source. The top three information sources common to both surveys were "from friends" (Survey 1 score = 3.01, Survey 2 score = 3.10), general boating publications (Survey 1 score = 2.94, Survey 2 score = 3.40), and "mail delivered to me" (Survey 1 score = 2.94, Survey 2 score = 3.08). The next most likely sources of information for Survey 1 respondents were from the newspaper (2.68) and television (score = 2.49), whereas a marina or boatyard (score = 2.96) or the Internet (score = 2.91) were the next most likely sources for Survey 2 respondents.

Table 18-1. The likelihood of Survey 1 (≥16 feet) boaters to obtain boating-related information from various sources (Not Likely =1; Extremely Likely =5).

Information Sources	Not Likely	Somewhat Likely	Likely	Very Likely	Extremely Likely	Score
From friends	9%	19%	**40%**	**23%**	8%	3.01
General boating publications	12%	20%	**38%**	**22%**	8%	2.94
Mail delivered to me	13%	**19%**	**39%**	18%	11%	2.94
In the newspaper	17%	**26%**	**34%**	18%	5%	2.68
Television	24%	**26%**	**31%**	14%	5%	2.49
At a marina or boat yard	25%	**25%**	**32%**	12%	5%	2.48
On the Internet	**37%**	20%	**21%**	15%	8%	2.36
At boat shows	**30%**	**29%**	27%	11%	4%	2.30
Boating education courses	**40%**	**23%**	23%	8%	7%	2.19
Public service announcements	**36%**	**30%**	24%	7%	3%	2.11
Trade publications	**44%**	21%	**23%**	8%	4%	2.08
On the radio	**42%**	**25%**	24%	6%	2%	2.00
E-Mail	**52%**	16%	**17%**	11%	4%	1.99
Local public access TV	**52%**	**24%**	17%	5%	2%	1.80
From a boat dealer	**50%**	**30%**	14%	4%	1%	1.77
Technical documents, govt. reports, proceedings	**58%**	**21%**	14%	6%	1%	1.70
Extension fact sheets	**67%**	**18%**	10%	3%	1%	1.52
Conferences and seminars	**69%**	**18%**	10%	1%	1%	1.47
Watching video tapes or DVDs	**77%**	**14%**	6%	2%	1%	1.36
Movie theater announcements	**83%**	**10%**	4%	1%	1%	1.25
E-mail discussion groups (List servers)	**87%**	**7%**	4%	2%	1%	1.24
Listening to audio tapes	**89%**	**7%**	2%	0%	1%	1.16

Bold percentages in shaded cells represent the opinion receiving the largest number of responses and bold percentages in non-shaded cells represent the opinion receiving the second largest number.

Table 18-2. The likelihood of Survey 2 (≥26 feet) boaters to obtain boating-related information from various sources (Not Likely =1; Extremely Likely =5).

Information Sources	Not Likely	Somewhat Likely	Likely	Very Likely	Extremely Likely	Score
General boating publications	4%	11%	**38%**	**36%**	12%	3.40
From friends	8%	17%	**42%**	**23%**	10%	3.10
Mail delivered to me	6%	21%	**40%**	**23%**	9%	3.08
At a marina or boat yard	12%	20%	**36%**	**23%**	8%	2.96
On the Internet	**23%**	19%	**20%**	19%	18%	2.91
At boat shows	18%	**23%**	**33%**	22%	5%	2.72
In the newspaper	20%	**31%**	30%	16%	4%	2.52
Boating education courses	**29%**	**27%**	25%	12%	8%	2.44
E-Mail	**35%**	19%	**23%**	16%	7%	2.41
Trade publications	28%	25%	**29%**	13%	4%	2.39
Television	**29%**	27%	**28%**	13%	4%	2.36
From a boat dealer	**41%**	**27%**	22%	7%	3%	2.02
Public service announcements	**40%**	**30%**	21%	7%	1%	2.00
On the radio	**46%**	**28%**	17%	7%	2%	1.91
Technical documents, govt. reports, proceedings	**46%**	**31%**	14%	6%	3%	1.89
Local public access TV	**52%**	**26%**	14%	5%	2%	1.77
Conferences and seminars	**61%**	**23%**	11%	4%	1%	1.60
Extension fact sheets	**64%**	**21%**	11%	3%	1%	1.57
E-mail discussion groups (List servers)	**79%**	**11%**	5%	3%	2%	1.40
Watching video tapes or DVDs	**73%**	**18%**	7%	2%	1%	1.39
Movie theater announcements	**80%**	**13%**	4%	1%	1%	1.31
Listening to audio tapes	**87%**	**7%**	3%	1%	1%	1.22

Bold percentages in shaded cells represent the opinion receiving the largest number of responses and bold percentages in non-shaded cells represent the opinion receiving the second largest number of responses.

Question 19: *What do you consider to be the best way for you to obtain information about boating and boating-related issues?*

Survey 1 respondents indicated that mail was the best way (14.2%) to receive boating information, followed by boating publications (12.9%), and the Internet (8.8%) (Table 19). For Survey 2 respondents the highest ranked sources were boating publications (17.8%), followed by mail (11.5%), and the Internet (11.1%).

Table 19. Best sources of information on boating and related issues.

Best Sources of Information on Boating and Related Issues	>16 feet		>26 feet	
	Count	%	Count	%
Mail	**108**	**14.2%**	**79**	**11.5%**
Boating Publications	**98**	**12.9%**	**122**	**17.8%**
Internet	67	8.8%	76	11.1%
Newspapers	60	7.9%	31	4.5%
E-mail	55	7.2%	41	6.0%
TV/Radio	52	6.8%	34	5.0%
Marina	35	4.6%	59	8.6%
Fishing Publications	30	3.9%	10	1.5%
Vessel Registration	28	3.7%	23	3.4%
General knowledge, Other Boaters	27	3.6%	27	3.9%
Boat U.S.	23	3.0%	43	6.3%
Trade Publications	23	3.0%	16	2.3%
Marine Stores	19	2.5%	13	1.9%
Boating Course	17	2.2%	29	4.2%
Bait Shops	16	2.1%	3	0.4%
State Agencies	15	2.0%	5	0.7%
Boat Dealers	12	1.6%	6	0.9%
Ramps	12	1.6%	4	0.6%
Clubs	10	1.3%	14	2.0%
Other	10	1.3%	14	2.0%
USCG	10	1.3%	6	0.9%
Boat Shows	9	1.2%	12	1.8%
U.S. Power Squadron	9	1.2%	11	1.6%
USCG Auxiliary	9	1.2%	6	0.9%
Laws	2	0.3%	0	0.0%
Marine Industry Associations	2	0.3%	0	0.0%
Phone	1	0.1%	1	0.1%
Ski Tournaments	1	0.1%	0	0.0%
Total	**760**	**100.0%**	**685**	**100.0%**

Bold amounts in shaded cells represent the information sources receiving the largest number of responses and bold amounts in non-shaded cells represent the information sources receiving the second largest number of responses.

Question 20: *How many times during the course of a year do you visit a marina or use the services available at a marina?*

The majority of Survey 1 respondents (53%) did not launch at a marina, did not recreate (relax) at a marina (76%), nor did they use a marina as a boating destination (55%). In addition, 60% either fueled their boat at a marina only 1 to 2 times per year (19%) or never (41%) (Table 20-1).

Sixty percent of Survey 2 respondents said that they never launch their boat at a marina (Table 20-2). The authors of this report believe this question was poorly constructed with the potential for differing interpretations that render the analysis suspect—particularly for vessels likely to use marina wet slips. The term *launch* implies boat introduction to the water and does not properly apply to wet slip occupants departing from a marina slip. Since no other category was provided for the latter group, many marina users were not represented. Many noted this oversight in their responses. Fifty-four percent of Survey 2 respondents reported never relaxing (43%) at a marina or only doing so 1 to 2 times per year (11%).

Table 20-1. How often Survey 1 (≥16 feet) respondents visit marinas or use marina services over the course of a year (Never =1; Every Week = 9).

Question	Never	1-2 times	3-4 times	5-6 times	7-8 times	9-10 times	11-12 times	Every other week	Every week	Score
How many times a year do you launch your boat at a marina?	**53%**	**17%**	7%	4%	4%	2%	5%	5%	3%	2.60
How many times a year do you use a marina as a place to relax on the boat without going out?	**76%**	**7%**	3%	3%	1%	2%	2%	2%	3%	1.89
How many times a year do you fuel your boat at a marina?	**41%**	**19%**	8%	8%	4%	5%	9%	3%	2%	2.94
How many times a year do you use a marina as a boating destination?	**55%**	**20%**	8%	6%	2%	2%	3%	2%	2%	2.22

Bold percentages in shaded cells represent the answer receiving the largest number of responses and bold percentages in non-shaded cells represent the answer receiving the second largest number of responses.

Table 20-2. How often Survey 2 (≥26 feet) respondents visit marinas or use marina services over the course of a year (Never =1; Every Week = 9).

Question	Never	1-2 times	3-4 times	5-6 times	7-8 times	9-10 times	11-12 times	Every other week	Every week	Score
How many times a year do you launch your boat at a marina?	**60%**	**11%**	4%	2%	2%	1%	5%	6%	8%	2.78
How many times a year do you use a marina as a place to relax on the boat without going out?	**43%**	**11%**	8%	5%	3%	4%	7%	7%	12%	3.60
How many times a year do you fuel your boat at a marina?	11%	**16%**	14%	14%	9%	8%	**19%**	8%	2%	4.46
How many times a year do you use a marina as a boating destination?	**24%**	**22%**	14%	10%	7%	4%	11%	3%	5%	3.57

Bold percentages in shaded cells represent the answer receiving the largest number of responses and bold percentages in non-shaded cells represent the answer receiving the second largest number of responses.

Question 21: *How frequently do you use services available at a boatyard?*

On average, 76.5% of Survey 1 respondents "Never" (63%) or "Hardly Ever" (13.5%) use boatyard services (Table 21-1). Survey 2 respondents were much more likely to use boatyard services during the course of a year than were Survey 1 respondents (Table 21-2). The average score for Survey 1 respondents was 1.93, which falls between "Never" and "Hardly Ever," versus 3.00 ("Once every 3 years") for Survey 2 respondents.

Table 21-1. How often Survey 1 (≥16 feet) respondents use boatyard services (Never =1; More often than every 6 months =7).

Question	Never	Hardly Ever	Once every 3 years	Once every 2 years	Once a year	Once every 6 months	More often than every 6 months	Score
How often do you have your boat pressure washed at a boatyard?	**73%**	6%	4%	6%	**8%**	1%	1%	1.78
How often do you use a boatyard to prepare and paint your hull?	**69%**	7%	7%	**9%**	7%	0.5%	0.2%	1.79
How often do you use a boatyard for electrical/electronics repairs?	**62%**	**20%**	5%	4%	7%	2%	1%	1.83
How often do you use a boatyard for repairs?	**48%**	**21%**	7%	6%	13%	3%	2%	2.32

Bold percentages in shaded cells represent the answer receiving the largest number of responses and bold percentages in non-shaded cells represent the answer receiving the second largest number of responses.

Table 21-2. How often Survey 2 (≥26 feet) respondents use boatyard services (Never =1; More often than every 6 months =7).

Question	Never	Hardly Ever	Once every 3 years	Once every 2 years	Once a year	Once every 6 months	More often than every 6 months	Score
How often do you have your boat pressure washed at a boatyard?	**32%**	11%	11%	18%	**21%**	4%	3%	3.07
How often do you use a boatyard to prepare and paint your hull?	**24%**	8%	20%	**26%**	21%	1%	0%	3.16
How often do you use a boatyard for electrical/electronics repairs?	**37%**	32%	5%	8%	13%	4%	2%	2.48
How often do you use a boatyard for repairs?	14%	**32%**	11%	11%	**23%**	6%	3%	3.28

Bold percentages in shaded cells represent the answer receiving the largest number of responses and bold percentages in non-shaded cells represent the answer receiving the second largest number of responses.

Question 22: *During a typical year, how many months do you store a boat at each of the facilities listed below?*

Table 22-1 (Survey 1) and Table 22-2 (Survey 2) convey the number of months in a typical year that respondents store a boat in a marina wet-slip, marina dry stack, boatyard, or at home. The last column in both tables indicates the average number of months. As a group, Survey 1 respondents store their vessels an average of 9.9 months at home, 1.5 months in a marina wet-slip, and less than one month in a marina dry stack or boatyard. As a group, Survey 2 respondents store their vessels an average of 8.7 months at home, 5.1 months in a marina wet-slip, approximately one month in a marina dry stack, and less than one-half a month at a boatyard. Survey 2 respondents, on average, store their vessels in marina slips 3.6 months longer per year than do Survey 1 respondents. Survey 1 respondents, on average, store their vessels at home 1.2 months longer per year than do Survey 2 respondents.

Table 22-1. How many months a year Survey 1 (≥16 feet) respondents store vessels at different facility types.

Facility Type	Number of months													Avg.
	0	1	2	3	4	5	6	7	8	9	10	11	12	
Marina wet-slip	**85%**	1.6%	0.4%	0.2%	0.7%	0.0%	0.4%	0.0%	0.4%	0.2%	0.2%	0.7%	**11%**	1.5
Marina dry stack	**93%**	0.4%	0.2%	0.4%	0.5%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.2%	**5%**	0.7
Boatyard	**94%**	**2.7%**	0.0%	0.2%	0.2%	0.0%	0.4%	0.4%	0.4%	0.0%	0.4%	0.2%	1.5%	0.4
At home	**13%**	1.0%	1.4%	0.3%	0.5%	0.7%	1.5%	0.2%	1.0%	0.5%	0.3%	1.9%	**78%**	9.9

Bold percentages in shaded cells represent the answer receiving the largest number of responses and bold percentages in non-shaded cells represent the answer receiving the second largest number of responses.

Table 22-2. How many months a year Survey 2 (≥26 feet) respondents store vessels at different facility types.

Facility Type	Number of months													Avg.
	0	1	2	3	4	5	6	7	8	9	10	11	12	
Marina wet-slip	**52%**	1.9%	1.7%	0.2%	0.5%	0.7%	1.9%	0.2%	0.2%	0.5%	0.2%	0.7%	**39%**	5.1
Marina dry stack	**90%**	0.3%	0.3%	0.0%	0.6%	0.0%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	**8%**	1.1
Boatyard	**87%**	**7%**	0.9%	0.9%	0.3%	0.9%	1.2%	0.3%	0.3%	0.6%	0.0%	0.0%	0.9%	0.5
At home	**25%**	0.3%	0.5%	0.3%	0.8%	0.3%	0.8%	0.8%	1.3%	0.5%	1.8%	2.3%	**66%**	8.7

Bold percentages in shaded cells represent the answer receiving the largest number of responses and bold percentages in non-shaded cells represent the answer receiving the second largest number of responses.

Question 23: *For each of the statements below, please indicate the extent of your agreement or disagreement.*

Question 23 gauges the willingness of respondents to patronize "Clean" marinas even though doing so might carry greater cost or inconvenience. Survey respondents were asked to render their level of agreement—strongly agree, agree, not sure, disagree, or strongly disagree—with three hypothetical statements about using "Clean" marinas. The agreement levels were ranked 1 through 5, respectively (Strongly Agree =1; Strongly Disagree =5). The overall score (or ranking) for each statement is shown in the last column of each table. A score of 3 indicates that most respondents were not sure how to respond to the statement (they neither agreed nor disagreed); a score less than 3 denotes an overall tendency to agree with the statement; and a score greater than 3 denotes an overall tendency to disagree with the statement.

The average score for Survey 1 respondents was 2.31 versus 2.41 for Survey 2 respondents, indicating a greater willingness to patronize "Clean" marinas among Survey 1 respondents. As a group, 74% of Survey 1 respondents and 72% of Survey 2 respondents agreed that they would use a "Clean" marina over one not designated as "Clean." Fifty-four percent of Survey 1 respondents and 51% of Survey 2 respondents said they would travel farther, bypassing other marinas, to visit a "Clean" marina. Forty-nine percent of Survey 1 and Survey 2 respondents said they would pay more for services if the marina were designated as "Clean." Previous questionnaire responses indicated that Survey 2 respondents were more likely than Survey 1 respondents to visit and use marina services (e.g., Questions 4, 20, and 26).

Table 23-1. Willingness of Survey 1 (≥16 feet) respondents to use "Clean" marinas (Strongly Agree =1; Strongly Disagree =5).

Question	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	Score
I would use a marina designated as "Clean" before using a marina not designated as "Clean."	**40%**	**34%**	21%	2%	3%	1.94
I would travel farther to visit a "Clean" marina, bypassing other marinas that are not designated as "Clean."	25%	**29%**	**31%**	11%	4%	2.41
I would willingly pay more for services provided by a "Clean" marina than for lower-cost services provided by marinas not designated as "Clean."	20%	**29%**	32%	13%	7%	2.57

Bold percentages in shaded cells represent the answer receiving the largest number of responses and bold percentages in non-shaded cells represent the answer receiving the second largest number of responses.

Table 23-2. Willingness of Survey 2 (≥26 feet) respondents to use "Clean" marinas (Strongly Agree =1; Strongly Disagree =5).

Question	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	Score
I would use a marina designated as "Clean" before using a marina not designated as "Clean."	**35%**	**37%**	17%	7%	4%	2.07
I would travel farther to visit a "Clean" marina, bypassing other marinas that are not designated as "Clean."	20%	**31%**	**28%**	14%	6%	2.54
I would willingly pay more for services provided by a "Clean" marina than for lower-cost services provided by marinas not designated as "Clean."	17%	**32%**	**27%**	16%	8%	2.65

Bold percentages in shaded cells represent the answer receiving the largest number of responses and bold percentages in non-shaded cells represent the answer receiving the second largest number of responses.

Question 24: *Please rate each of the statements below in terms of its importance when you choose a marina to stay at.*

Survey respondents were asked to rank the importance—very important, important, neutral, unimportant, or very unimportant—of various services or amenities found at or near marinas. The levels of importance were ranked 1 through 5, respectively (Very Important =1; Very Unimportant =5). The overall score (or ranking) for each of the ten statements is shown in the last column of each table. A score of 3 indicates that most respondents were neutral; a score less than 3 indicates that, in general, the amenity or service was important; and a score greater than 3 indicates that the amenity or service was unimportant.

All ten statements received a score less than 3 among Survey 2 respondents and nine statements received a score less than 3 among Survey 1 respondents. The last statement about cultural amenities ranked unimportant (3.10) among Survey 1 respondents. The average score for all ten statements was 2.23 among Survey 1 respondents and 1.93 among Survey 2 respondents, indicating that the services and amenities listed were, on average, more important to Survey 2 respondents.

Both Survey 1 and Survey 2 respondents ranked a safe and secure marina as the most important factor (Survey 1 score = 1.64; Survey 2 score = 1.38); followed by clean docks and grounds (Survey 1 score = 1.84; Survey 2 score = 1.56); and friendly, service-oriented staff (Survey 1 score = 1.78; Survey 2 score = 1.60). The availability of nearby cultural amenities was ranked least important (score = 2.73) by Survey 2 respondents. The only statement that Survey 1 respondents scored more important (2.69) than did Survey 2 respondents (2.70) was that "the marina must have a ship's store with a wide range of products."

Table 24-1. The importance of various marina amenities to Survey 1 (≥16 feet) respondents (Very Important =1; Very Unimportant =5).

Statement	Very Important	Important	Neutral	Unimportant	Very Unimportant	Score
The marina must have fueling.	**48%**	26%	15%	7%	3%	1.90
The marina must have a pumpout facility available.	20%	**20%**	**29%**	16%	15%	2.87
The marina must implement practices that are meant to protect the environment.	**38%**	**42%**	16%	2%	3%	1.90
The marina must have clean shower and restroom facilities.	**34%**	**31%**	19%	7%	8%	2.24
The marina must have water and power hookups.	**32%**	**29%**	20%	10%	10%	2.37
The marina must have friendly, service-oriented staff.	**44%**	**41%**	11%	1%	3%	1.78
The marina must be secure and safe.	**54%**	**34%**	8%	2%	2%	1.64
The marina must have clean docks and grounds.	38%	**45%**	13%	2%	2%	1.84
The marina must have a ship's store with a wide range of products.	12%	**32%**	**39%**	12%	6%	2.69
The marina must be located in an interesting area to visit (for example, nearby museums, parks, and other cultural amenities).	7%	18%	**43%**	**21%**	11%	3.10

Bold percentages in shaded cells represent the answer receiving the largest number of responses and bold percentages in non-shaded cells represent the answer receiving the second largest number of responses.

Table 24-2. The importance of various marina amenities to Survey 2 (≥26 feet) respondents (Very Important =1; Very Unimportant =5).

Statement	Very Important	Important	Neutral	Unimportant	Very Unimportant	Score
The marina must have fueling.	**54%**	**26%**	15%	4%	1%	1.72
The marina must have a pumpout facility available.	**32%**	**36%**	21%	8%	4%	2.16
The marina must implement practices that are meant to protect the environment.	**32%**	**49%**	15%	3%	0%	1.90
The marina must have clean shower and restroom facilities.	**46%**	**29%**	18%	7%	1%	1.89
The marina must have water and power hookups.	**56%**	**29%**	9%	4%	2%	1.68
The marina must have friendly, service-oriented staff.	**48%**	**45%**	6%	0%	0%	1.60
The marina must be secure and safe.	**65%**	**32%**	2%	0%	0%	1.38
The marina must have clean docks and grounds.	**50%**	**45%**	4%	1%	0%	1.56
The marina must have a ship's store with a wide range of products.	9%	**29%**	**44%**	15%	3%	2.72
The marina must be located in an interesting area to visit (for example, nearby museums, parks, and other cultural amenities).	10%	**35%**	**32%**	17%	6%	2.73

Bold percentages in shaded cells represent the answer receiving the largest number of responses and bold percentages in non-shaded cells represent the answer receiving the second largest number.

Question 25: *Please rate each of the statements below in terms of its importance when you choose a boatyard for repairs or maintenance.*

Survey respondents were asked to rank the importance—very important, important, neutral, unimportant, or very unimportant—of various amenities or services that might be found at boatyards. The levels of importance were ranked 1 through 5, respectively (Very Important =1; Very Unimportant =5). The overall score (or ranking) for each of the six statements is shown in the last column of each table. A score of 3 indicates that most respondents were neutral; a score less than 3 indicates that the amenity or service was important; and a score greater than 3 indicates that the amenity or services was unimportant.

All six statements garnered scores less than three, which means they were important to a majority of Survey 1 and 2 respondents. The average score was 1.79 among Survey 1 respondents and 1.68 among Survey 2 respondents, indicating that the boatyard services and amenities were, on average, more important to Survey 2 respondents. The most important characteristics were a reputation for service, on-time performance, and quality work (Survey 1 score = 1.61; Survey 2 score = 1.48); a safe and secure boatyard (Survey 1 score = 1.67; Survey 2 score = 1.47); and a well-trained staff (Survey 1 score = 1.67; Survey 2 score = 1.53). Least important was a boatyard with a clean appearance of docks and yard areas.

Table 25-1. The importance of various boatyard amenities to Survey 1 (≥16 feet) respondents (Very Important =1; Very Unimportant =5).

Statement	Very Important	Important	Neutral	Unimportant	Very Unimportant	Score
The boatyard must have a clean appearance on the docks and yard areas.	20%	**52%**	**23%**	3%	2%	2.14
The boatyard must have well trained staff.	**49%**	**38%**	10%	1%	1%	1.67
The boatyard must have friendly, service-oriented staff.	**38%**	**49%**	11%	1%	2%	1.80
The boatyard must be secure and safe.	**48%**	**39%**	10%	1%	1%	1.67
The boatyard must implement practices that are meant to protect the environment.	**37%**	**43%**	16%	2%	2%	1.87
The boatyard must have a reputation for service, on-time performance, and quality of work.	**55%**	**33%**	9%	1%	2%	1.61

Bold percentages in shaded cells represent the answer receiving the largest number of responses and bold percentages in non-shaded cells represent the answer receiving the second largest number.

Table 25-2. The importance of various boatyard amenities to Survey 2 (≥26 feet) respondents (Very Important =1; Very Unimportant =5).

Statement	Very Important	Important	Neutral	Unimportant	Very Unimportant	Score
The boatyard must have a clean appearance on the docks and yard areas.	**24%**	**57%**	14%	4%	1%	2.01
The boatyard must have well trained staff.	**55%**	**39%**	5%	1%	0%	1.53
The boatyard must have friendly, service-oriented staff.	**38%**	**55%**	6%	1%	0%	1.70
The boatyard must be secure and safe.	**57%**	**39%**	4%	0%	0%	1.47
The boatyard must implement practices that are meant to protect the environment.	**33%**	**50%**	15%	2%	0%	1.87
The boatyard must have a reputation for service, on-time performance, and quality of work.	**59%**	**35%**	5%	0%	1%	1.48

Bold percentages in shaded cells represent the answer receiving the largest number of responses and bold percentages in non-shaded cells represent the answer receiving the second largest number.

Question 26: *Please list any other reasons, not listed in the previous two questions, that are very important to you when choosing a marina to stay at or when selecting a boatyard for repairs or maintenance.*

The most frequently cited factor by Survey 1 respondents when choosing a marina was the location of the facility (23.2%), followed by costs (11.9%), and the availability of entertainment amenities (11.3%) (Table 26-1). Survey 2 respondents most frequently cited costs associated with the marina (17.7%), followed by location (17.3%), and the availability of entertainment amenities (14.7%).

Table 26-1. Additional factors that respondents consider when choosing a marina.

Important Factors for Selecting a Marina	**Survey 1 (≥16 feet)**		**Survey 2 (≥26 feet)**	
	Count	%	Count	%
Location	**39**	**23.2%**	**46**	**17.3%**
Costs	**20**	**11.9%**	**47**	**17.7%**
Entertainment Amenities	19	11.3%	39	14.7%
Ease of Access, Deep Entry	13	7.7%	32	12.0%
Good Ramp	12	7.1%	1	0.4%
Fuel	9	5.4%	6	2.3%
Work Quality	8	4.8%	9	3.4%
Safe and Well-Lit	5	3.0%	6	2.3%
Friendly Staff and Dock Attendants	5	3.0%	4	1.5%
Parking	5	3.0%	2	0.8%
Facilities; Pumpout Station	4	2.4%	7	2.6%
Floating Dock	4	2.4%	5	1.9%
Hours of Operation	4	2.4%	3	1.1%
Fish Cleaning Provisions and Bait	4	2.4%	3	1.1%
Reputation	3	1.8%	7	2.6%
Hoists, Large Slips, and Good Docks	2	1.2%	17	6.4%
Plenty of Slips	2	1.2%	6	2.3%
Noise Level	2	1.2%	3	1.1%
In/Out Service	2	1.2%	2	0.8%
Ground Transportation	2	1.2%	2	0.8%
Sheltered	1	0.6%	11	4.1%
Self-Service Availability	1	0.6%	5	1.9%
Power	1	0.6%	3	1.1%
Mechanical Service	1	0.6%	0	0.0%
Total	**168**	**100%**	**266**	**100%**

Bold amounts in shaded cells represent the answer receiving the largest number of responses and bold amounts in non-shaded cells represent the answer receiving the second largest number of responses.

The most frequently cited factor of Survey 1 respondents for choosing a boatyard was location (17.2%), followed by costs (16.4%), and work quality (10.9%) (Table 26-2). Survey 2 respondents most frequently cited costs (24.3%), followed by self-service availability (14.2%), and facility location (13.3%).

Table 26-2. Additional factors that respondents consider when choosing a boatyard.

Important Factors for Selecting a Boatyard	**Survey 1 (≥16 feet)**		**Survey 2 (≥26 feet)**	
	Count	%	Count	%
Location	**22**	**17.2%**	30	13.3%
Costs	**21**	**16.4%**	**55**	**24.3%**
Work Quality	14	10.9%	21	9.3%
Necessary Parts, Tools, and Lifts	12	9.4%	13	5.8%
Honest Dealings	9	7.0%	6	2.7%
Reputation	7	5.5%	12	5.3%
Access	6	4.7%	12	5.3%
Self-Service Availability	6	4.7%	**32**	**14.2%**
Environmentally Conscious Practices	4	3.1%	3	1.3%
Neatness	4	3.1%	5	2.2%
Work Finished on Schedule	4	3.1%	6	2.7%
Full Service Deck Hands	4	3.1%	6	2.7%
Safety	3	2.3%	5	2.2%
Authorized Service	3	2.3%	6	2.7%
Fuel	2	1.6%	0	0.0%
Parking	1	0.8%	0	0.0%
Ramp Facility	1	0.8%	0	0.0%
Hours of Operation	1	0.8%	1	0.4%
Ground Transport	1	0.8%	1	0.4%
Availability	1	0.8%	1	0.4%
Noise Level	1	0.8%	2	0.9%
Sailboat Knowledge	1	0.8%	2	0.9%
Sheltered	0	0.0%	1	0.4%
Dry Storage	0	0.0%	1	0.4%
Allows Outside Contractors	0	0.0%	5	2.2%
Total	**128**	**100%**	**226**	**100%**

Bold amounts in shaded cells represent the answer receiving the largest number of responses and bold amounts in non-shaded cells represent the answer receiving the second largest number of responses.

Question 27: *For each of the following statements about the environment, please indicate the extent of your agreement or disagreement.*

Survey respondents were asked to select their level of agreement—strongly agree, agree, not sure, disagree, or strongly disagree—with sixteen statements about the environment. The statements were drawn from the revised New Ecological Paradigm (NEP) scale (Dunlap, Van Liere, Mertig, and Jones, 2000) and adapted from Cottrell (1993). The New Ecological Paradigm scale evolved from the New Environmental Paradigm scale, which originated in work by Dunlap and Van Liere (1978). The scale, as originally designed, was meant to capture shifts in environmental concern: for example, from a view of the environment as unlimited and bountiful to one of a limited and fragile environment (Cordano, Welcomer, and Scherer, 2003). The revised New Ecological Paradigm scale incorporates refinements and modified language that reflects a more modern vernacular.

The agreement levels were ranked 1 through 5, respectively (Strongly Agree =1; Strongly Disagree =5). The overall score (or ranking) for each statement is shown in the last column of each table. A score of 3 indicates that most respondents were not sure how to respond to the statement (they neither agree nor disagree); a score less than 3 denotes an overall tendency to agree with the statement; and a score greater than 3 denotes an overall tendency to disagree with the statement. Table 27-3 compares the environmental attitudes expressed by Survey 1 respondents with those of Survey 2 respondents. The scores reported in Table 27-3 were transformed such that, for every statement, the lower the score the greater the degree of environmental concern.

The scores in Table 27-3 are sorted in ascending order based first on the scores of the Survey 1 respondents followed by the scores of Survey 2 respondents. In general, the degree of environmental concern demonstrated by respondents decreased with each succeeding statement presented in Table 27-3 (column 1). The numbers in the last column of the table are the differences between the Survey 1 score and the Survey 2 score achieved for each statement. A negative value in the last column signifies that Survey 1 respondents exhibited a greater degree of agreement with the statement and, thus, a greater degree of environmental concern. A positive value would signify that Survey 2 respondents demonstrated a greater degree of environmental concern.

The transformed scores for Survey 1 respondents were less than 3 for every statement and the scores for Survey 2 respondents were less than 3 for twelve of the sixteen statements (Table 27-3). Thus, Survey 1 respondents, on average, expressed a level of environmental concern for all statements. Survey 2 respondents, on average, did not agree (score > 3) "if things continue on their present course, we will soon experience an ecological catastrophe," nor that "we are approaching the limit of the number of people the earth can support." Survey 2 respondents also were more apt to believe that "the earth has plenty of natural resources if we just learn how to develop them" and that "the so-called 'ecological crisis' facing people has been greatly exaggerated." Overall, the average score was 2.20 for Survey 1 respondents and 2.44 for Survey 2 respondents.

Table 27-1. Measuring environmental attitudes among Survey 1 (≥ 16 feet) respondents (Strongly Agree =1; Strongly Disagree =5).

Statements	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	Score
Despite our abilities, people are subject to the laws of nature.	**37%**	**51%**	8%	4%	0%	1.79
The balance of nature is very delicate and can be easily disrupted.	**40%**	**46%**	5%	8%	1%	1.83
The earth is like a spaceship with very limited room and resources.	**32%**	**44%**	9%	13%	3%	2.09
If things continue on their present course, we will soon experience a major ecological catastrophe.	19%	**28%**	**30%**	18%	6%	2.63
The so-called "ecological crisis" facing people has been greatly exaggerated.	7%	20%	**32%**	**25%**	15%	3.21
Shellfish are easily susceptible to contamination from sewage.	**48%**	**42%**	9%	0%	0%	1.63
Plants and animals have as much right as people to exist.	**30%**	**40%**	11%	13%	5%	2.22
Boaters disposing human waste at a proper sanitation facility on shore will significantly reduce the amount of water pollution.	**39%**	**40%**	10%	8%	3%	1.95
Human ingenuity will ensure that we do not make the earth unlivable.	13%	**33%**	**31%**	18%	5%	2.69
Raw sewage discharged into the water from recreational boats does not contribute to water pollution.	3%	7%	7%	**41%**	**41%**	4.10
People will eventually learn enough about how nature works to be able to control it.	3%	12%	**30%**	**37%**	18%	3.56
We are approaching the limit of the number of people the earth can support.	13%	21%	**33%**	**24%**	9%	2.94
The phosphorous and nitrogen from sewage in the water triggers algal blooms that decrease the available oxygen for plants and animals.	**33%**	**40%**	24%	2%	1%	1.96
The earth has plenty of natural resources if we just learn how to develop them.	12%	**39%**	**24%**	18%	7%	2.68
Sewage discharged from recreational boats is not significant enough to cause any disease among people.	4%	10%	21%	**36%**	**29%**	3.76
People have the right to modify the natural environment to suit their needs.	3%	12%	15%	**38%**	**32%**	3.84
High concentrations of sewage in an area result in a serious depletion of dissolved oxygen in the water.	**36%**	**39%**	22%	1%	2%	1.94

Bold percentages in shaded cells represent the answer receiving the largest number of responses and bold percentages in non-shaded cells represent the answer receiving the second largest number of responses.

Table 27-2. Measuring environmental attitudes among Survey 2 (≥ 26 feet) respondents (Strongly Agree =1; Strongly Disagree =5).

Statements	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	Score
Despite our abilities, people are subject to the laws of nature.	**33%**	**51%**	12%	3%	1%	1.88
The balance of nature is very delicate and can be easily disrupted.	**33%**	**46%**	10%	10%	2%	2.03
The earth is like a spaceship with very limited room and resources.	**25%**	**41%**	12%	17%	5%	2.35
If things continue on their present course, we will soon experience a major ecological catastrophe.	13%	19%	**30%**	**29%**	8%	3.00
The so-called "ecological crisis" facing people has been greatly exaggerated.	11%	30%	**31%**	20%	8%	2.84
Shellfish are easily susceptible to contamination from sewage.	**45%**	**45%**	9%	1%	0%	1.65
Plants and animals have as much right as people to exist.	**23%**	**39%**	11%	21%	6%	2.47
Boaters disposing human waste at a proper sanitation facility on shore will significantly reduce the amount of water pollution.	**38%**	**33%**	13%	12%	4%	2.12
Human ingenuity will ensure that we do not make the earth unlivable.	18%	**41%**	**25%**	10%	5%	2.45
Raw sewage discharged into the water from recreational boats does not contribute to water pollution.	2%	9%	13%	**42%**	**34%**	3.95
People will eventually learn enough about how nature works to be able to control it.	1%	16%	**31%**	**36%**	15%	3.47
We are approaching the limit of the number of people the earth can support.	9%	15%	**32%**	**33%**	11%	3.24
The phosphorous and nitrogen from sewage in the water triggers algal blooms that decrease the available oxygen for plants and animals.	24%	**46%**	**28%**	3%	0%	2.10
The earth has plenty of natural resources if we just learn how to develop them.	11%	**47%**	**24%**	13%	5%	2.53
Sewage discharged from recreational boats is not significant enough to cause any disease among people.	4%	17%	**25%**	**35%**	19%	3.48
People have the right to modify the natural environment to suit their needs.	3%	16%	19%	**40%**	**21%**	3.59
High concentrations of sewage in an area result in a serious depletion of dissolved oxygen in the water.	26%	**45%**	**26%**	1%	1%	2.07

Bold percentages in shaded cells represent the answer receiving the largest number of responses and bold percentages in non-shaded cells represent the answer receiving the second largest number of responses.

Table 27-3. Comparing the environmental attitudes of Survey 1 and Survey 2 respondents.

Statements	Survey 1 (≥16 feet)	Survey 2 (≥26 feet)	Difference
	Score	Score	
Shellfish are easily susceptible to contamination from sewage.	1.63	1.65	**-0.03**
Despite our abilities, people are subject to the laws of nature.	1.79	1.88	**-0.09**
The balance of nature is very delicate and can be easily disrupted.	1.83	2.03	**-0.20**
Raw sewage discharged into the water from recreational boats does not contribute to water pollution.	1.90	2.05	**-0.15**
High concentrations of sewage in an area result in a serious depletion of dissolved oxygen in the water.	1.94	2.07	**-0.13**
Boaters disposing human waste at a proper sanitation facility on shore will significantly reduce the amount of water pollution.	1.95	2.12	**-0.17**
The phosphorous and nitrogen from sewage in the water triggers algal blooms that decrease the available oxygen for plants and animals.	1.96	2.10	**-0.14**
The earth is like a spaceship with very limited room and resources.	2.09	2.35	**-0.26**
People have the right to modify the natural environment to suit their needs.	2.16	2.41	**-0.24**
Plants and animals have as much right as people to exist.	2.22	2.47	**-0.24**
Sewage discharged from recreational boats is not significant enough to cause any disease among people.	2.24	2.52	**-0.28**
People will eventually learn enough about how nature works to be able to control it.	2.44	2.53	**-0.09**
If things continue on their present course, we will soon experience a major ecological catastrophe.	2.63	3.00	**-0.37**
The earth has plenty of natural resources if we just learn how to develop them.	2.68	3.47	**-0.78**
The so-called “ecological crisis” facing people has been greatly exaggerated.	2.79	3.16	**-0.37**
We are approaching the limit of the number of people the earth can support.	2.94	3.24	**-0.30**
Averages	**2.20**	**2.44**	**-0.24**

Shaded cells contain the score that reflects relatively greater environmental concern.

Questions 28 through 34 are self-explanatory and the results for each are reported in an accompanying table or figure.

Question 28: *How many years have you been boating?*

Table 28. Number of years that respondents have boated.

Statistics	Survey 1 (≥16 feet)	Survey 2 (≥26 feet)
Average number of years	35.3 years	32.9 years
Minimum number of years	0 years	2 years
Maximum number of years	80 years	70 years
Standard deviation	15.8 years	14.5 years
Number of respondents	599	458

Question 29: *How many years have you been boating in Florida?*

Table 29. Number of years that respondents have boated in Florida.

Statistics	Survey 1 (≥16 feet)	Survey 2 (≥26 feet)
Average number of years	24.6 years	20.0 years
Minimum number of years	0 years	1 years
Maximum number of years	80 years	60 years
Standard deviation	15.5 years	13.2 years
Number of respondents	601	459

Question 30: *How many months per year do you live in Florida?*

Table 30. Number of months per year that respondents live in Florida.

Statistics	Survey 1 (≥16 feet)	Survey 2 (≥26 feet)
Average number of months	11.4 months	11.1 months
Minimum number of months	0 months	0 months
Maximum number of months	12 months	12 months
Standard deviation	2.0 months	2.4 months
Number of respondents	600	463

Question 31: *In what year were you born (how old are you)?*

Table 31. Age characteristics of survey respondents.

Statistics	Survey 1 (≥16 feet)	Survey 2 (≥26 feet)
Average age	57 years old	56 years old
Minimum age	22 years old	23 years old
Maximum age	87 years old	94 years old
Standard deviation	12.1 years	11.5 years
Number of respondents	593	458

Question 32: *What gender are you?*

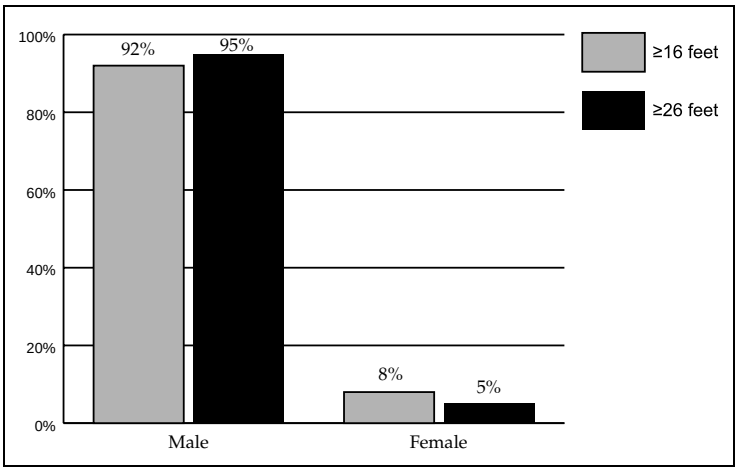

Figure 32. Gender characteristics of survey respondents.

Question 33: *How much formal education have you had?*

Table 33. Education levels of survey respondents.

Education Level	Survey 1 (≥16 feet)		Survey 2 (≥26 feet)	
	%	Cum. %	%	Cum. %
Grade School	0.3%	0.3%	0.2%	0.2%
Some High School	2.3%	3%	0.9%	1.1%
High School Graduate	13%	16%	7%	8%
Vocational or Technical School	11%	27%	5%	13%
Some College	**22%**	50%	23%	36%
College Graduate	**29%**	79%	**40%**	76%
Postgraduate	22%	100%	**24%**	100%

Bold percentages in shaded cells represent the answer receiving the largest number of responses and bold percentages in non-shaded cells represent the answer receiving the second largest number of responses.

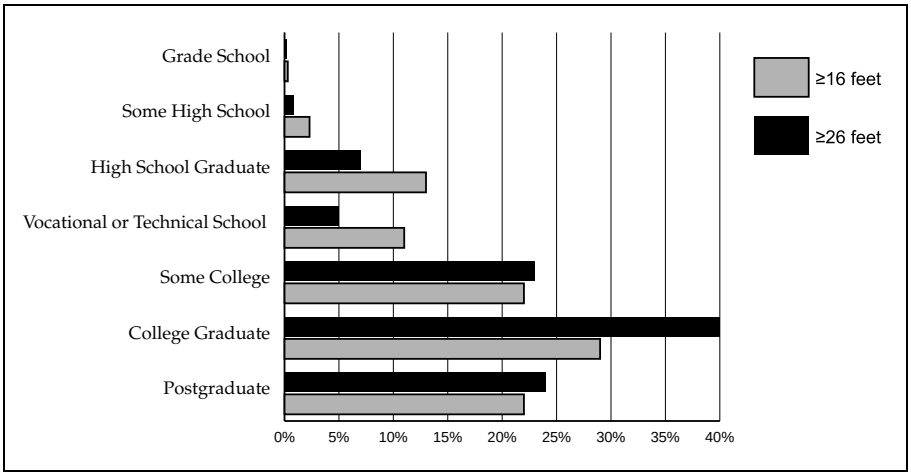

Figure 33. Education levels of survey respondents.

Question 34: *Which best describes your total annual family income, before taxes?*

Table 34. Annual family income levels of survey respondents.

Income Level	Survey 1 (≥16 feet)		Survey 2 (≥26 feet)	
	%	Cum. %	%	Cum. %
Less than $10,000	1%	1%	0%	0%
$10,000 to $14,999	1%	2%	1%	1%
$15,000 to $24,999	4%	6%	1%	2%
$25,000 to $34,999	7%	13%	2%	4%
$35,000 to $49,999	13%	26%	7%	11%
$50,000 to $74,999	**25%**	51%	16%	27%
$75,000 to $99,999	16%	67%	11%	39%
$100,000 to $149,999	**16%**	84%	**25%**	63%
$150,000 to $199,999	8%	91%	11%	75%
$200,000 or more	9%	100%	**25%**	100%
Total	**100%**	**-**	**100%**	**-**

Bold percentages in shaded cells represent the answer receiving the largest number of responses and bold percentages in non-shaded cells represent the answer receiving the second largest number of responses.

Question 35: *What detracts most from your boating experience?*

Table 35 lists factors that respondents indicated most detract from their boating experience. To facilitate reporting the results, the factors were grouped into eight categories according to their similarities: those that pertain to (1) other boaters, (2) environmental concerns, (3) insufficient management, (4) too much management, (5) limited access, (6) infrastructure, (7) limited boating destinations, and (8) expense or service. Table 35 lists the eight categories in descending order, according to the total number of responses for factors tallied under each category. Survey 1 respondents (45.9%) and Survey 2 respondents (47.9%) cited factors under "Other Boaters" as those that most detract from their boating experience. In particular, they pointed to irresponsible boaters (Survey 1: 18.8%; Survey 2: 18.2%), unskilled boaters (Survey 1: 10.7%; Survey 2: 17.4%), and (operators of) personal watercraft (Survey 1: 9.5%; Survey 2: 5.1%). Together, these three factors accounted for about 40% of complaints across all categories. The next most frequently cited category was "Environmental Concerns" (Survey 1: 20.8%; Survey 2: 21.2%): in particular weather, trash, and pollution. "Insufficient Management" was the third most frequently cited category by Survey 1 respondents (12.0%) versus "Too Much Management" by 12.9% of Survey 2 respondents.

Table 35. Factors that detract from respondents' boating experience.

Detracting Factors (grouped by category)	Survey 1 (≥16 feet)		Survey 2 (≥26 feet)	
	Count	%	Count	%
Other Boaters	**295**	**45.9%**	**226**	**47.9%**
Irresponsible Boaters	121	18.8%	86	18.2%
Unskilled Boaters	69	10.7%	82	17.4%
Personal Watercraft	61	9.5%	24	5.1%
Speed Boats	18	2.8%	22	4.7%
Wakes	14	2.2%	6	1.3%
Airboats	6	0.9%	0	0.0%
Noise	5	0.8%	5	1.1%
Rental Boats	1	0.2%	1	0.2%
Environmental Concerns	**134**	**20.8%**	**100**	**21.2%**
Weather	58	9.0%	63	13.3%
Trash	28	4.4%	16	3.4%
Pollution	16	2.5%	7	1.5%
Dirty Water	13	2.0%	7	1.5%
Not Enough Fish	9	1.4%	0	0.0%
Coastal Development	4	0.6%	2	0.4%
Crab Pots	2	0.3%	3	0.6%
Prop Scars	2	0.3%	0	0.0%
Habitat Destruction	1	0.2%	2	0.4%
Loss of Natural Reefs	1	0.2%	0	0.0%
Insufficient Management	**77**	**12.0%**	**28**	**5.9%**
Excessive Boat Traffic	69	10.7%	25	5.3%
Not Enough Marine Patrol	3	0.5%	1	0.2%
Speed Zones	3	0.5%	0	0.0%
Fish Catch Limits	2	0.3%	2	0.4%

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Detracting Factors (grouped by category)	Survey 1 (≥16 feet)		Survey 2 (≥26 feet)	
	Count	%	Count	%
Too Much Management	**55**	**8.6%**	**61**	**12.9%**
Manatee Protection	19	3.0%	18	3.8%
No Wake Zones	10	1.6%	10	2.1%
Speed Zones	9	1.4%	15	3.2%
Too Many Boating Restrictions	8	1.2%	10	2.1%
Excessive Marine Patrols	8	1.2%	5	1.1%
Environmentalism versus Boating	1	0.2%	1	0.2%
MSD Inspection	0	0.0%	2	0.4%
Limited Access	**40**	**6.2%**	**27**	**5.7%**
Inadequate Ramp Space	33	5.1%	4	0.8%
Public Marinas	4	0.6%	13	2.8%
Anchorages	1	0.2%	6	1.3%
Dinghy Docks	1	0.2%	2	0.4%
Islands	1	0.2%	0	0.0%
Waterfront Eateries	0	0.0%	2	0.4%
Infrastructure	**36**	**5.6%**	**27**	**5.7%**
Lack of Parking	13	2.0%	1	0.2%
Lack of Dredging	8	1.2%	14	3.0%
Ramp Quality	4	0.6%	3	0.6%
Crowded Facilities	3	0.5%	1	0.2%
Marina Quality	2	0.3%	3	0.6%
Low Bridges	2	0.3%	2	0.4%
Lack of Markers	2	0.3%	1	0.2%
Small Channels	1	0.2%	1	0.2%
Nonworking Pumpouts	1	0.2%	1	0.2%
Limited Boating Destinations	**4**	**0.6%**	**2**	**0.4%**
Restaurants	3	0.5%	1	0.2%
Recreational Destinations	1	0.2%	1	0.2%
Expense/Service	**2**	**0.3%**	**1**	**0.2%**
Fuel	1	0.2%	0	0.0%
Dishonest Mechanics	1	0.2%	0	0.0%
Bad Boat Dealers	0	0.0%	1	0.2%
Total	**643**	**100.0%**	**472**	**100.0%**

Question 36: *What is needed most to improve your boating experience?*

Table 36 lists factors that respondents indicated would most improve their boating experience. To facilitate reporting the results, the factors were grouped into nine categories according to their similarities. The categories, which are listed in Table 36 in descending order according to those that received more responses, include: (1) management needs: more restrictions, (2) boater education, (3) environmental needs, (4) increased access, (5) facility improvements, (6) management needs: fewer restrictions, (7) infrastructure improvements, (8) more destinations, and (9) fuel efficient motors.

"Management Needs: More Restrictions" was the highest ranked category (25.7%) by Survey 1 respondents; in particular the need for better law enforcement (6.1%) and (management of) personal watercraft (3.3%). This category was the second most often cited by Survey 2 respondents (19.4%). Survey 2 respondents most often identified "Boater Education" (21.6%); in particular, they identified regulations and etiquette (20.4%) as the factor most needed to improve their boating experience. "Boater Education" was the second most often cited category of Survey 1 respondents (21.3%).

More than three times the proportion of Survey 1 respondents (8.6%) as compared to Survey 2 respondents (2.7%) identified the need for increased access through ramps. In contrast, more than three times the proportion of Survey 2 respondents (6.0%) as compared to Survey 1 respondents (1.9%) identified the need for increased access to marina slips. "Environmental Needs" were relatively more important to Survey 1 respondents (14.6%) than to Survey 2 respondents (10.0%). This result conforms to those observed for Question 27. Nearly double the proportion of Survey 2 respondents (12.4%) called for fewer restrictions as compared to 6.3% of Survey 1 respondents.

Table 36. Factors needed to improve the boating experience.

Factors (grouped by category)	Survey 1 (≥16 feet)		Survey 2 (≥26 feet)	
	Count	%	Count	%
Management Needs: More Restrictions	**134**	**25.7%**	**78**	**19.4%**
Better Law Enforcement	32	6.1%	18	4.5%
Personal Watercraft	17	3.3%	8	2.0%
Power Boats	2	0.4%	2	0.5%
Speed Zones	6	1.1%	2	0.5%
No Wake Zones	8	1.5%	2	0.5%
More Patrols	8	1.5%	5	1.2%
Sewage Dumping	8	1.5%	4	1.0%
Environmental Protection	7	1.3%	0	0.0%
Drinking	3	0.6%	3	0.7%
Licensing in Genera	36	6.9%	29	7.2%
Licensing of PWC	1	0.2%	2	0.5%
Fishing Regulations	6	1.1%	3	0.7%
Boater Education	**111**	**21.3%**	**87**	**21.6%**
Regulations and Etiquette	100	19.2%	82	20.4%
Environmental	11	2.1%	5	1.2%
Environmental Needs	**76**	**14.6%**	**40**	**10.0%**
Improve Water Quality	17	3.3%	8	2.0%
Less Development	2	0.4%	4	1.0%

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Factors (grouped by category)	Survey 1 (≥16 feet)		Survey 2 (≥26 feet)	
	Count	%	Count	%
Environmental Needs (cont.)	**76**	**14.6%**	**40**	**10.0%**
Less Pollution	11	2.1%	1	0.2%
Fewer Boaters	15	2.9%	5	1.2%
Better Weather	18	3.4%	18	4.5%
More Fish	13	2.5%	4	1.0%
Increased Access	**56**	**10.7%**	**48**	**11.9%**
Ramps	45	8.6%	11	2.7%
Marinas/Slips	10	1.9%	24	6.0%
Transient Docks	1	0.2%	13	3.2%
Facility Improvements	**53**	**10.2%**	**33**	**8.2%**
Full Service Marinas/Pumpout	10	1.9%	11	2.7%
Lower Fuel Costs	8	1.5%	11	2.7%
Ramps, Parking, Showers	32	6.1%	8	2.0%
More Service Boatyards	3	0.6%	3	0.7%
Management Needs: Fewer Restrictions	**33**	**6.3%**	**50**	**12.4%**
Less Government Presence	5	1.0%	15	3.7%
Marine Sanitation Devices	1	0.2%	2	0.5%
Beach Access	0	0.0%	2	0.5%
Marine Patrol	1	0.2%	2	0.5%
Speed Zones	3	0.6%	7	1.7%
No Wake Zones	4	0.8%	6	1.5%
Manatee Zones	14	2.7%	14	3.5%
Fishing Regulations	3	0.6%	1	0.2%
Access	2	0.4%	1	0.2%
Infrastructure Improvements	**28**	**5.4%**	**39**	**9.7%**
Channel/Zone Marking	12	2.3%	14	3.5%
Signs	4	0.8%	4	1.0%
Dredging	11	2.1%	20	5.0%
Shoaling Alerts	1	0.2%	1	0.2%
More Destinations	**26**	**5.0%**	**25**	**6.2%**
Boat Accessible Destinations	9	1.7%	13	3.2%
Public Moorings	3	0.6%	9	2.2%
Artificial/Natural Reefs	5	1.0%	1	0.2%
Natural Areas	4	0.8%	0	0.0%
Designated Watersport Areas	4	0.8%	1	0.2%
Canoe Trails	1	0.2%	1	0.2%
Fuel Efficient Motors	**5**	**1.0%**	**2**	**0.5%**
Total	**522**	**100.0%**	**402**	**100.0%**

Question 37: *What kinds of information would improve your boating experience?*

Table 37 lists information types that respondents indicated would most improve their boating experience. Survey 1 respondents ranked boating etiquette as the most important (19.9%) information source (we suspect that they mean it is important information for other boaters to possess). Survey 1 respondents were more keen than were Survey 2 respondents to have information on fishing reports (10% versus 5.1%), fishing limits and regulations (6% versus 1.3%), and ramp sites (4.5% versus 1.3%). Survey 2 respondents were more interested (22.4%) in information on weather, tides, and winds than were Survey 1 respondents (14.9%).

Table 37. Information needs of boaters.

Information Needs	Survey 1 (≥16 feet)		Survey 2 (≥26 feet)	
	Count	%	Count	%
Boating Etiquette	**40**	**19.9%**	**19**	**12.2%**
Weather/Tides/Wind	**30**	**14.9%**	**35**	**22.4%**
Fishing Reports	20	10.0%	8	5.1%
Aerial Maps/Charts	16	8.0%	14	9.0%
Environment/Wildlife	12	6.0%	11	7.1%
Fishing Limits/Regulations	12	6.0%	2	1.3%
Ramp Sites	9	4.5%	2	1.3%
Technical Navigation Aids (GPS)	8	4.0%	8	5.1%
Clean Marina/Pumpout	7	3.5%	4	2.6%
Boating Pollution/MSD	6	3.0%	8	5.1%
Destinations	6	3.0%	7	4.5%
Boating Guides	5	2.5%	7	4.5%
Anchorages/Marinas	5	2.5%	5	3.2%
Restaurants/Shore Facilities	5	2.5%	5	3.2%
Clean Vessel Act Survey	5	2.5%	2	1.3%
Boating Effects on Environment	4	2.0%	7	4.5%
Channel Depths/Shoals	4	2.0%	6	3.8%
Speed Zones	3	1.5%	2	1.3%
Artificial Reefs	2	1.0%	0	0.0%
Signage	1	0.5%	3	1.9%
Manatee Zones	1	0.5%	1	0.6%
Total	**201**	**100.0%**	**156**	**100.0%**

Bold percentages in shaded cells represent the answer receiving the largest number of responses and bold percentages in non-shaded cells represent the answer receiving the second largest number of responses.

Conclusions and Recommendations

The primary goal of this study, as expressed by FDEP Clean Marina Program staff, was to determine boaters' level of awareness of the Clean Vessel Act (CVA). Survey results indicate that 49.8% of Survey 1 respondents were aware of the CVA and 46.7% were not (Question 13, Table 13, and Figure 13). Results of the 1998 survey (Florida State University Survey Lab) indicated that 48.7% of respondents were aware of Florida's Clean Vessel Act and 43.9% were not. Given the 1998 survey sample error (± 3.0% at the 95% confidence interval) and the Survey 1 sample error (± 3.85 at the 95% confidence level), the results obtained in 1998 are not statistically different than those obtained in 2004 (i.e., no significant difference). In other words, there is no evidence to suggest that awareness of Florida's Clean Vessel Act among the general boater population has changed since 1998.

In contrast to 1998 and Survey 1 results, 71.9% of Survey 2 respondents said that they were aware of the CVA (and 26.5% were not). Survey 2 results indicate that owners of larger vessels (≥26 feet in length) were much more aware (by a factor of approximately 50 percent) of the CVA than were boaters from the general boating population—in particular, owners of smaller vessels. The 1998 survey did not report results for larger vessels (≥26 feet in length) separately and, therefore, no comparison can be made with Survey 2 results. Thus, we do not know if awareness of the CVA among owners of larger vessels (≥26 feet in length) has changed since 1998. The Survey 2 results, however, do provide a baseline to measure future change in CVA awareness among owners of larger vessels (≥26 feet in length).

Given the fact that boater awareness of the CVA and its provisions has held steady among Survey 1 respondents (and if we assume the same for Survey 2 respondents), enhanced education efforts and more incentives are warranted if awareness and compliance levels are to be increased. The results of this survey (and future, more targeted surveys) should be used to determine what communication methods are most likely to reach (and positively influence) target audiences.

New approaches should be tried. For example, the potential of social marketing[9] to target and disseminate messages should be investigated. Florida's Vessel Title Registration System (VTRS) could be used to identify "market segments" that are most likely to respond to specific types of messages (Swett, Sidman, Fik, and Sargent, 2004). Such efforts will require a good understanding of how best to communicate with target audiences.

Respondents to the 1998 survey said that they learned about the CVA from publications (32%), education materials (28%), friends (14%), and marinas (13%); other sources listed included TV/Radio (6%), mail (4%), and the Internet (1%). These information sources remained the same among Survey 1 respondents, although their relative rankings changed. More instructive for purposes of planning future education or marketing efforts are those sources that Survey 1 respondents considered the best way for them to obtain information about boating and boating-related issues (Question 19).

Survey 1 respondents listed publications as the primary source of information, accounting for 31% of all responses. Particular types of publications listed by respondents included boating and fishing publications, newspapers, Boat U.S., and trade publications. Twenty-five percent of Survey 1 respondents cited mail (17.9%) and email (7.2%) as the best way for them to obtain boating-related information. An analysis of Florida's Vessel Title Registration System (VTRS) by Swett et al. (2004) determined that boat owner mailing addresses contained within the VTRS are a reliable and valuable source of information for mapping boat locations and characteristics.

[9] Social marketing is the planning and implementation of programs designed to bring about social change using concepts from commercial marketing. http://www.social-marketing.org/sm.html.

This knowledge could be used to target mailings to specific segments of Florida's boating population based on boat characteristics (such as length) and/or boat locations. For example, owners of vessels of specific lengths or types could be notified when a new Clean Marina has opened in their vicinity. Such notifications could be sent in the same envelope in which they receive their vessel registration renewal forms.

Fifteen percent of Survey 1 respondents cited boating-related facilities as their best source of boating information. In particular, they listed marinas, marine stores, bait shops, boat dealers, and ramps. Nine percent of respondents listed the Internet as the best source of information. However, use of the Internet to distribute information is problematic, since it requires that people actively seek out Web sites. The remaining information sources cited by Survey 1 respondents were TV/Radio (7%), boating education courses (6%) provided by such entities as U.S. Power Squadrons and U.S. Coast Guard Auxiliaries, and friends (4%).

In addition to educational and marketing efforts, boaters need access to an adequate infrastructure. The results from this study show that most boaters are inclined to "do the right thing," but they may not act upon those inclinations due to a "lack" of facilities. Respondents cited the need for more pumpouts that are conveniently located and that are low cost (especially, free) (Questions 11 and 12). Furthermore, respondents indicated a willingness to incur added expense and inconvenience in order to use "Clean" marinas (Question 23). This response is encouraging and should lead to Florida's redoubling its efforts to increase the number of Clean Marinas. Furthermore, since nearly two-thirds of respondents were unaware of Florida's Clean Marina Program (before learning of it from this survey), increased education and/or marketing efforts are needed. The expressed willingness of respondents to patronize "Clean" marinas over non-Clean marinas should be used in campaigns to convince marina owners to adopt "Clean" marina standards.

Another encouraging study result is that the percentage of boaters with marine sanitation devices (MSD) appears to have increased since the 1998 survey, when 73.9% said that they did not have an MSD versus 23.5% that did. In 2004, 41.2% of Survey 1 respondents said that they have an MSD on their boat—more than 1.75 times the proportion reported in 1998.

Finally, the response rates achieved for the Internet survey (13.5%) and the first mail survey (18.9%) were lower than the rates stipulated as necessary to conduct a comparative analysis and, thus, determine the efficacy of Internet surveys. Similar types of mail surveys conducted by Florida Sea Grant have garnered response rates of approximately 30 percent. We can only speculate as to why the response rates were lower than expected:

1. Florida experienced four hurricanes in 2004 that affected wide areas of the state. The distractions caused by such traumatic events may have contributed to the lower response rates.
2. The survey instrument was long, which may have dampened the enthusiasm of many respondents to complete it.
3. Some respondents may have reacted adversely to question 27, which asked them to rate their extent of agreement or disagreement with several statements about the environment.

We recommend that, for future implementations of the Clean Vessel Act boater awareness survey, the survey instrument be streamlined.

When response rates are low, as they were for this study, it is recommended that the possibility of non-response bias be examined. The level of resources earmarked for this study precluded an analysis of non-response and, therefore, it was not included in the scope of services. That said, the principal author will attempt to investigate non-response bias employing several techniques, such as comparing Internet-based responses with those obtained by mail, and by comparing early and late responders. The results from the non-response analysis will be reported separately.

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Appendix 1. Survey questionnaire used to assess boater awareness of the Clean Vessel Act.

Questionnaire Control Number

Recreational Boating in Florida

A STUDY CONDUCTED BY THE UNIVERSITY OF FLORIDA

SEA GRANT PROGRAM

November 2004

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1. Please indicate how many boats of each type listed below that you own. Enter the number in the box next to each type.

Personal Watercraft (e.g., Jet Ski)	☐
Kayak/Row/Canoe	☐
John/Utility	☐
Sailboat (day sail)	☐
Sailboat (auxiliary engine cruising sail)	☐
Speed, Jet Boat, or Deck Boat (no cabin)	☐
Pontoon	☐
Open Fishing	☐
Skiff or Flats Boat	☐
Power Boat (cabin accommodations)	☐
Other (please specify type) _____	☐

2. In what type of vessel do you spend most of your boating time? Please check the box next to ONLY ONE of the boat types listed below.

Personal Watercraft (e.g., Jet Ski)	☐
Kayak/Row/Canoe	☐
John/Utility	☐
Sailboat (day sail)	☐
Sailboat (auxiliary engine cruising sail)	☐
Speed, Jet Boat, or Deck Boat (no cabin)	☐
Pontoon	☐
Open Fishing	☐
Skiff or Flats Boat	☐
Power Boat (cabin accommodations)	☐
Other (please specify type) _____	☐

3. Please enter the make, model, length, and draft of THE boat that you identified in question 2 above. (Draft is how far below the water surface your prop or hull extends.)

Boat Make / Model	
Length (Feet)	
Draft (feet / inches)	

4. Please check the box next to your typical launch site.

Marina wet slip	☐
Home dock	☐
Condominium dock	☐
Shoreline / causeway	☐
Marina dry storage	☐
Public boat ramp	☐
Other (please specify)	☐

5. Please indicate, in the boxes below, the number of times per month that you go boating.

January	☐	July	☐
February	☐	August	☐
March	☐	September	☐
April	☐	October	☐
May	☐	November	☐
June	☐	December	☐

6. How much time do you spend on the water during a typical boating trip? Please enter the number of hours or days in the appropriate box below.

Hours ☐ Days ☐

7**.** What is your favorite activity on a typical pleasure boating trip? Please select **ONLY ONE** of the activities listed below.

☐ Beach Picnicking	☐ Nature Viewing	☐ Sightseeing
☐ Beach Camping	☐ Daytime Anchoring	☐ Socializing
☐ Cruising	☐ Overnight Anchoring	☐ Visiting Restaurant
☐ Diving	☐ Sailing	☐ Swimming
☐ Fishing	☐ Other (*specify*) _____	

8. Do you have a marine sanitation device on your boat (either portable or permanent)? *Note: Marine sanitation devices refer to marine toilet systems and are also referred to as "heads."*

Yes ☐ No ☐ Don't Know ☐

If you answered No or Don't Know to Question 8, please skip to Question 13.

9. If you answered YES to question 8, what type of Marine Sanitation Device (MSD) do you have?

☐ A portable head that is not permanently attached to the boat

☐ A permanent toilet system that releases treated waste directly into the water *(a U.S. Coast Guard Type I or II Marine Sanitation Device)*

☐ A permanent toilet system with a holding tank that is emptied by pumpout means or discharged directly into the water (*a U.S. Coast Guard Type III Marine Sanitation Device)*

10. For each of the four categories below, please estimate the proportion (a percentage ranging from 0 to 100 percent) of the total sewage discharged from your boat(s) during the past year.

(Note: the sum of the four percentages entered below should total to 100 percent)

	Percent discharged into a pumpout facility
	Percent discharged into waters LESS than 3 miles offshore
	Percent discharged into waters between 3 and 9 miles offshore
	Percent discharged into waters MORE than 9 miles offshore
100%	**TOTAL**

11. The statements below are about boat pumpout facilities. For each of the statements, please indicate the extent of your agreement or disagreement by checking the appropriate box located to the right of the statement.

	Strongly Agree	**Agree**	**Not Sure**	**Disagree**	**Strongly Disagree**
There are an adequate number of pumpout facilities where I operate my boat.	☐	☐	☐	☐	☐
Pumpout facilities are conveniently located.	☐	☐	☐	☐	☐
Pumpout facilities are usually open when I want to use them.	☐	☐	☐	☐	☐
Pumpout facilities are easy to use.	☐	☐	☐	☐	☐
I usually have to wait only a short time to use the pumpout facilities.	☐	☐	☐	☐	☐
I don't make a special effort to use a pumpout facility when I go boating.	☐	☐	☐	☐	☐
I use a pumpout facility every time my holding tank is full.	☐	☐	☐	☐	☐

12. What factors, if any, would lead you to use sewage pumpout stations more often? Please enter your response below.

13. Are you aware of Florida's Clean Vessel Act? Yes ☐ No ☐.

14. If you answered Yes to Question 13, how did you learn of Florida's Clean Vessel Act? Please enter your response in the box below.

15. Please indicate whether each of the statements below is true or false.

	True	False	Don't Know
On the west coast of Florida, untreated sewage can be discharged in waters closer than 9 miles offshore.	☐	☐	☐
The Clean Vessel Act provides funds to build vessel pumpout facilities.	☐	☐	☐
On the east coast of Florida, untreated sewage can be discharged in waters closer than 3 miles offshore.	☐	☐	☐
Florida requires that vessels 26 feet and longer be equipped with a toilet. If not portable, it must be connected to a Type I, II, or III marine sanitation device.	☐	☐	☐
In Florida the Department of Environmental Protection administers the Clean Vessel Act.	☐	☐	☐
The Clean Vessel Act is the result of Federal legislation.	☐	☐	☐

16. Are you aware of Florida's Clean Marina program? Yes ☐ No ☐

17. If you answered Yes to Question 16, how did you learn of Florida's Clean Marina program? Please enter your response below.

18. Please rank how likely you are to obtain information about boating and boating-related issues from each of the following information sources.

	Not Likely	Somewhat Likely	Likely	Very Likely	Extremely Likely
On the Internet	☐	☐	☐	☐	☐
Listening to audio tapes	☐	☐	☐	☐	☐
Mail delivered to me	☐	☐	☐	☐	☐
From friends	☐	☐	☐	☐	☐
General boating publications	☐	☐	☐	☐	☐
E-Mail	☐	☐	☐	☐	☐
At boat shows	☐	☐	☐	☐	☐
Television	☐	☐	☐	☐	☐
In the newspaper	☐	☐	☐	☐	☐
Technical documents, government reports, proceedings	☐	☐	☐	☐	☐
Movie theater announcements	☐	☐	☐	☐	☐
Watching video tapes or DVDs	☐	☐	☐	☐	☐
Trade publications	☐	☐	☐	☐	☐
E-mail discussion groups (List servers)	☐	☐	☐	☐	☐
On the radio	☐	☐	☐	☐	☐
Conferences and seminars	☐	☐	☐	☐	☐
Extension fact sheets	☐	☐	☐	☐	☐
From a boat dealer	☐	☐	☐	☐	☐
Local public access TV	☐	☐	☐	☐	☐
Public service announcements	☐	☐	☐	☐	☐
Boating education courses	☐	☐	☐	☐	☐
At a marina or boat yard	☐	☐	☐	☐	☐

19. In the box below, please write what you consider to be the BEST way to obtain information about boating and boating-related issues.

20. How many times during the course of a year do you visit a marina or use the services available at a marina? To the right of each statement below please indicate the appropriate frequency *(Note: Frequency of use increases from left to right*).

	Never	**1-2**	**3-4**	**5-6**	**7-8**	**9-10**	**11-12**	**Every other week**	**Every Week**
How many times a year do you launch your boat at a marina?	☐	☐	☐	☐	☐	☐	☐	☐	☐
How many times a year do you use a marina as a place to relax on the boat without going out?	☐	☐	☐	☐	☐	☐	☐	☐	☐
How many times a year do you fuel your boat at a marina?	☐	☐	☐	☐	☐	☐	☐	☐	☐
How many times a year do you use a marina as a boating destination?	☐	☐	☐	☐	☐	☐	☐	☐	☐

21. We would like to know how frequently you use services available at a boatyard. To the right of each statement below please indicate the appropriate frequency *(Note: Frequency of use increases from left to right*).

	Never	Hardly ever	Once every 3 years	Once every 2 years	Once a year	Once every 6 months	More often than every 6 months
How often do you have your boat pressure washed at a boatyard?	☐	☐	☐	☐	☐	☐	☐
How often do you use a boatyard to prepare and paint your hull?	☐	☐	☐	☐	☐	☐	☐
How often do you use a boatyard for electrical / electronics repairs?	☐	☐	☐	☐	☐	☐	☐
How often do you use a boatyard for repairs?	☐	☐	☐	☐	☐	☐	☐

22. During a typical year, how many months do you store a boat at each of the facilities listed below? Please check the appropriate box next to each facility type (the choices range from 0 months to 12 months).

	0	1	2	3	4	5	6	7	8	9	10	11	12
Marina wet-slip	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Marina dry stack	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Boatyard	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
At Home	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

23. For each of the statements below, please indicate the extent of your agreement or disagreement by checking the appropriate box to the right of the statement.

Please note that a marina is designated "Clean" by the State of Florida when the marina voluntarily employs stringent, standardized measures that are designed to protect the environment.

	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
I would use a marina designated as "Clean" before using a marina not designated as "Clean."	☐	☐	☐	☐	☐
I would travel farther to visit a "Clean" marina, bypassing other marinas that are not designated as "Clean."	☐	☐	☐	☐	☐
I would willingly pay more for services provided by a "Clean" marina than for lower-cost services provided by marinas not designated as "Clean."	☐	☐	☐	☐	☐

24. For each of the statements below, please check the box that best matches your opinion on what is important in choosing a marina.

	Very Important	Important	Neutral	Unimportant	Very Unimportant
The marina must have fueling.	☐	☐	☐	☐	☐
The marina must have a pumpout facility available.	☐	☐	☐	☐	☐
The marina must implement practices that are meant to protect the environment.	☐	☐	☐	☐	☐
The marina must have clean shower and restroom facilities.	☐	☐	☐	☐	☐
The marina must have water and power hookups.	☐	☐	☐	☐	☐
The marina must have friendly, service-oriented staff.	☐	☐	☐	☐	☐
The marina must be secure and safe.	☐	☐	☐	☐	☐
The marina must have clean docks and grounds.	☐	☐	☐	☐	☐
The marina must have a ship's store with a wide range of products.	☐	☐	☐	☐	☐
The marina must be located in an interesting area to visit (for example, nearby museums, parks, and other cultural amenities).	☐	☐	☐	☐	☐

25. For each of the statements below, please check the appropriate box that best matches your opinion on what is important when choosing a boatyard for repairs or maintenance.

	Very Important	Important	Neutral	Unimportant	Very Unimportant
The boatyard must have a clean appearance on the docks and repair yard areas.	☐	☐	☐	☐	☐
The boatyard must have well trained staff.	☐	☐	☐	☐	☐
The boatyard must have friendly, service-oriented staff.	☐	☐	☐	☐	☐
The boatyard must be secure and safe.	☐	☐	☐	☐	☐
The boatyard must implement practices that are meant to protect the environment.	☐	☐	☐	☐	☐
The boatyard must have a reputation for service, on-time performance, and quality of work.	☐	☐	☐	☐	☐

26. In the boxes below, please enter any other reasons, not listed in the previous two questions, that are very important to you when choosing a marina at which to stay or when selecting a boatyard for repairs and maintenance.

Marina

Boatyard

27. The following statements are about the environment. For each of the statements below, please indicate the extent of your agreement or disagreement by checking the appropriate box located to the right of the statement.

	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
Despite our abilities, people are subject to the laws of nature.	☐	☐	☐	☐	☐
The balance of nature is very delicate and can be easily disrupted.	☐	☐	☐	☐	☐
The earth is like a spaceship with very limited room and resources.	☐	☐	☐	☐	☐
If things continue on their present course, we will soon experience a major ecological catastrophe.	☐	☐	☐	☐	☐
The so-called “ecological crisis” facing people has been greatly exaggerated.	☐	☐	☐	☐	☐
Shellfish are easily susceptible to contamination from sewage.	☐	☐	☐	☐	☐
Plants and animals have as much right as people to exist.	☐	☐	☐	☐	☐
Boaters disposing human waste at a proper sanitation facility on shore will significantly reduce the amount of water pollution.	☐	☐	☐	☐	☐
Human ingenuity will ensure that we do not make the earth unlivable.	☐	☐	☐	☐	☐
Raw sewage discharged into the water from recreational boats does not contribute to water pollution.	☐	☐	☐	☐	☐
People will eventually learn enough about how nature works to be able to control it.	☐	☐	☐	☐	☐
We are approaching the limit of the number of people the earth can support.	☐	☐	☐	☐	☐
The phosphorus and nitrogen from sewage in the water triggers algal blooms that decrease available oxygen for plants and animals.	☐	☐	☐	☐	☐
The earth has plenty of natural resources if we just learn how to develop them.	☐	☐	☐	☐	☐
Sewage discharged from recreational boats is not significant enough to cause any disease among people.	☐	☐	☐	☐	☐
People have the right to modify the natural environment to suit their needs.	☐	☐	☐	☐	☐
High concentrations of sewage in an area result in a serious depletion of dissolved oxygen in water.	☐	☐	☐	☐	☐

Finally, please describe yourself.

We stress that all of your answers are strictly confidential!

28. How many years have you been boating? ☐

29. How many years have you been boating in Florida? ☐

30. How many months per year do you live in Florida? (Please check the appropriate box below.)

Months	0	1	2	3	4	5	6	7	8	9	10	11	12
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

31. In what year were you born? ☐

32. Are you: Male ☐ Female ☐

33. How much formal education have you had? (Please check the appropriate box below.)

Grade School	☐
Some High School	☐
High School Graduate	☐
Vocational or Technical School	☐
Some College	☐
College Graduate	☐
Postgraduate	☐

34. Which best describes your total annual family income, before taxes? (Please check the appropriate box below.)

Less than $10,000	☐
$10,000 to $14,999	☐
$15,000 to $24,999	☐
$25,000 to $34,999	☐
$35,000 to $49,999	☐
$50,000 to $74,999	☐
$75,000 to $99,999	☐
$100,000 to $149,999	☐
$150,000 to $199,999	☐
$200,000 or more	☐

35. What detracts most from your boating experience?

36. What is needed most to improve your boating experiences?

37. What kinds of information would improve your boating experiences?

YOU HAVE COMPLETED THE SURVEY

Florida Sea Grant thanks you for your assistance.

Appendix 2. Invitation letter sent to the sample of vessel owners invited to participate in the Internet-based survey.

RECREATIONAL BOATING IN FLORIDA

UNIVERSITY OF FLORIDA SEA GRANT COLLEGE PROGRAM

Dear Boat Owner / Operator,

Florida Sea Grant—a research, education, and outreach program based at the University of Florida—is seeking to characterize boating activities and behaviors. Your participation in this study will be very important to our continuing efforts to develop boater products that enhance the overall recreational boating experience. You are one of a few Florida boaters invited to participate, so your input is very important.

Please be assured that the information you provide will be held in the strictest confidence. Your responses will remain anonymous and your name and address will NOT be made available to anyone. All results will be presented in summary form to ensure that no individual responses can be linked to a specific respondent. Your participation is completely voluntary and you may withdraw at any time. The questionnaire should take about 15 minutes to complete.

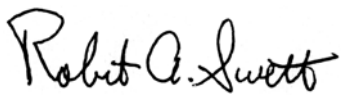
Please type the following address in your Internet browser to access the Florida Sea Grant boater survey:

http://boating.ifas.ufl.edu/survey

Once you have reached the survey Website, enter the following code <????> in the box provided on the Web page and then click Continue. The survey code is used only to insure the scientific integrity of the study and to avoid inconveniencing you with reminder cards. If you do not have Internet access, then please return the enclosed green card.

There are no direct risks or benefits to you for participating in this study. There is no compensation to you for participating in this study. For questions about your rights as a research participant, you may contact the University of Florida Institutional Review Board at P.O. Box 112250, Gainesville, FL 32611 or 352-392-0433. If you have any questions about this survey or about Florida Sea Grant, you may contact me by telephone at (352) 392-6233 or by E-mail at boatsurvey@ifas.ufl.edu

We are most grateful for your assistance in this important project.



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Appendix 3. “No-Internet” card to be returned if a respondent did not have Internet access.

Dear Boat Owner / Operator

If you do not have access to an Internet connection and, therefore, can not complete the Internet survey, then please mail this card back to us. Note: the postage is pre-paid.

Sincerely
Robert Swett, Ph.D.
University of Florida

Appendix 4. Invitation letter sent to the sample of vessel owners invited to participate in the mail surveys.

RECREATIONAL BOATING IN FLORIDA

UNIVERSITY OF FLORIDA SEA GRANT PROGRAM

Dear Boat Owner / Operator,

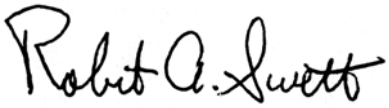
Florida Sea Grant—a research, education, and outreach program based at the University of Florida—is seeking to characterize boating activities and behaviors. Your participation in this study will be very important to our continuing efforts to develop boater products that enhance the overall recreational boating experience. You are one of a few Florida Boaters invited to participate, so your input is very important.

Please be assured that the information you provide will be held in the strictest confidence. Your responses will remain anonymous and your name and address will NOT be made available to anyone. All results will be presented in summary form to ensure that no individual responses can be linked to a specific respondent. The questionnaire control number is used only to insure the scientific integrity of the study and to avoid inconveniencing you with reminder cards.

Your participation is completely voluntary and you may withdraw at any time. The questionnaire should take about 15 minutes to complete. We would appreciate your completing and returning the survey as soon as possible. We have provided a self-addressed, postage-paid return envelope.

There are no direct risks or benefits to you for participating in this study. There is no compensation to you for participating in this study. For questions about your rights as a research participant, you may contact the University of Florida Institutional Review Board at PO Box 112250, Gainesville, FL 32611 or 352-392-0433. If you have any questions about this survey or about Florida Sea Grant, you may contact me by telephone at (352) 392-6233 or by E-mail at boatsurvey@ifas.ufl.edu

We are most grateful for your assistance in this important project.



Bob Swett, Ph.D.
Extension Specialist
Boating and Waterway Management
Florida Sea Grant
P.O. Box 110405
University of Florida
Gainesville, FL 32611

Appendix 5. Reminder card sent to the sample of vessel owners invited to participate in the Internet-based survey.

Dear Boat Owner / Operator

Florida Sea Grant recently sent you an invitation to participate in an Internet survey about recreational boating in Florida. Your answers will help our continuing efforts to develop boater products that enhance the recreational boating experience. You are one of a few boaters that were invited to participate, so your response is very important to us. If you haven't already done so, could you please take a few moments to complete our Internet survey? The survey can be accessed at the following Internet site: www.boatersurvey.ufl.edu/survey. The survey code that will allow you to complete the survey is printed below your name on the other side of this card. We are most grateful for your assistance in this important project.

Sincerely

Robert Swett, Ph.D.
University of Florida
boatsurvey@ifas.ufl.edu

Appendix 6. Reminder card sent to the sample of vessel owners invited to participate in the mail surveys.

Dear Boat Owner / Operator

Florida Sea Grant recently sent you a survey about recreational boating in Florida. Your answers will help our continuing efforts to develop boater products that enhance the recreational boating experience. You are one of a few boaters that were invited to participate, so your response is very important to us. If you haven't already done so, could you please take a few moments to complete the survey and return it to us? If you have already completed and returned the survey, thank you. We are most grateful for your assistance in this important project.

Sincerely
Robert Swett, Ph.D.
University of Florida
boatsurvey@ifas.ufl.edu

Appendix 7. Makes and models of the vessels in which Survey 1 (vessels ≥ 16 feet) respondents spend most of their boating time.

1948 Garwood wood utility speed boat
1953 Chris craft no cabin
1970 Mako-Perdue-Dean
1974 Searay
1978 Century
1979 Crestliner
1979 Pursuit
1980 Aquasport
1981Monark/MAKA
1982 Cajun
1985 PROLINE
1986 Randall Craft Bass Boat
1989 Action Craft Bayrunner
1989 Beltrum
1990 AMC Fish Hawk
1993 Sea Cat
1993 Welcraft
1994 Silver King
1994 Sunbird Fish & Ski
1995 Chris craft
1996 Seadoo XP
1997 Cobia 214
2005 Hydra-Sport
2005 Rinker 320
85-ton circa 1871 schooner in Maine
87 VIP Sea Squirt
91 Proline
99 Actioncraft/1720SE
99 Chaparral SS Sportboat
Action Craft
Action Craft Bay Runner
Action Craft/Flatsmaster
Adventure Craft
Alberg
Albin
Allied Trihull
AlumaCraft
Aluminum Bass Boat
Alumiweld
Alura 30
Angler
Angler Open Fisherman
Angular/Center Console
Aqua Sport
Aquasport
Aquasport 200
Aquasport 22.2 Family Fisherman
Aquasport 22-2
Aquasport 225
Aquasport Open Fisherman
Aquasport Osprey
Aquasport Osprey CC
Aquasport TM 290
Aquasport/215 Explorer
Arriva
Aultra
Baja 190
BAJA 272
Bass Attacker
Bass boat
Bass Tracker
Bass Tracker Pro 17
Bass Tracker Pro Team 17
Bass Tracker/1993
Bayliner
Bayliner 2705
Bayliner 3270
Bayliner Capri
Bayliner Cierra
Bayliner Contessa
Bayliner Saratoga
Bayliner Sun Bridge
Bayliner Trophy
Bayliner Trophy center console
Bayliner Trophy with cuddy cabin
Bayliner/Capri
Bayliner/Cierra
Bayliner/Trophy
BENETAU, CC 40
Benetear Oceanis 390
Bennington GS2100
Bertram
Bertram Sportfish Cruiser
Blackfin 24 Fisherman
Blackwatch 24
Blazer
Boston Whaler
Boston Whaler Dauntless
Boston Whaler Jet
Boston Whaler Montauk
Boston Whaler Outrage
Boston Whaler Rampage
Boston Whaler Revenge
Boston Whaler/ Ventura
Boston Whaler/Montauk 17
Buddy Davis Sportsfish
Buskin
C Hawk
C&C
Cajun Bass boat
Canoe
Cape Dory
Cape Dory Typhoon
Cape Horn
Cape Horn Center Console
Capehorn
Caravelle Center Console
Carolina skiff
Carver
Carver - 455MY
Carver Montigo
Carver, 410 Sport Sedan
Casrolina Skiff Sea Chaser
Catalina
Catalina 22
Catalina 27
Catalina 30
Catalina Sloop
Century
Century 1800 CC
Century 1850
Century 2300
Century 25
Chapparal
Chapperall/180SL
Checkmate
Checkmate Diplomat
Chesapeake 17 kayak
Chris Craft
Chris Craft 230 SL Cuddy
Chris Craft Commandore 1970
Chris Craft Cuddy Cabin
Chris Craft Motor Yacht
Chris Craft Sport Fish
Chris Craft walk around cuddy
Chris Craft Commander
Cigarette
Cobalt
Cobia 17vbr
Cobia bow rider
Cobia Center console
Cobia Cuddy
Cobia Cuddy cabin
Cobia Robalo
Cobia/WAC
Coleman
Compac 16
Contender
Contenter 25
Contest sloop
Correct Craft (Ski Nautique)
Correct Craft Dominique
Creekcraft
CREST
Cruisers Inc. Bar Harbor III
Cruisers Yachts/Tiara
Cruisers, Inc. Sea Devil
Cruisers/Aria 3020
Crusader
Dixie 821
Dolphin
Dolphin open console
Donzi Regatta
Doral 250 SC
Drifter
Durbeck
Duricraft Croppie (flat bottom)
Dusky
Dusky 203
Dusky 233
Ebbtide/Mystique
Elite
Endeavour 32
Fabuglas Runabout
Fiesta
Fiesta 20

Fiesta Pontoon Boat
Fisher
Fisher Marsh Hawk
Fisher outboard
FISHERMAN
Float boat 20
Florida Skiff
Formula Open Fish
Four Winns Horizons 210
FourWinns Quest 207
FourWinns Vista
Frenzy
FunWay
Gheenoe
Gheenoe Classic
Glacier Bay
Glasstream
Glastron
Glastron Bowrider
Glastron open bow
Godffre
Grady White
Grady White - Trophy Pro
Grady White 226 Seafarer
Grady White 247
Grady White 247CC
Grady White Explorer
Grady White Express
Grady White Marlin
Grady White Offshore
Grady White overnighter
Grady White Overnighter 20
Grady White Sailfish
Grady White Tournament
Grady White Voyager 24
Grady White with cuddy cabin
Grady White 222 Fisherman
Grady-White
Grampian
Grumman
Grumman Sportboat 1950
Gulfstar Hirsh 45
Hans Christians Cutter Rig
Harris Float Boat
Hatteras
Hatteras convertible
Hatteras CPMY
Hatteras Motor Yacht
Herreshoff America
Herreshoff Cat
HEWES
Hewes Bayfisher
Hobie
Home built P.M. design 1958
Homemade
Honda Aquatrax
Huckins Neptune
Hunter
Hunter 212 Centerboard Sailboat
Hunter Legend 35.5
Hurricane
Hurricane (w/cabin)
Hurricane Deck Boat 1999
Hurricane Fundeck
HW2 Showboat
Hydra sport
Hydra_Sport Vector CC
Hydrasport
Hydrodyne/Grand Sport
Hydrosport 475
Hydrosport bass boat
Hydrosport VL 185
Hydrosports 260
Hydrostream Vamp
Indian River Flats Boat
International Skimmer
Invader
Irvette
Irwin
Irwin 43
Irwin Sloop
Island Gypsy
Island Packet
Island Packet Cutter
Island Packet 27
Islander
Johnson
Jon Almond
Kadey Krogen
Kencraft - Challenger
Kennercraft tunnel hull
Key West
Key West 1520
Key West 1900 Sportsman
Key West Stealth
Landau
Landau DX 18
Larson Bowrider
Lonestar
Lowe
Lowe Bass Boat
Lowe, Landau pontoon
Lowe's
Lowes pontoon
Luhrs Tournament 320 Conv
Lund
Lund Rebel
Lyncraft Center Console
m3
MacGregor 25
MacGregor 26
Maine Cat 30
Mainship Sedan Bridge
Mako
Mako 19 CC
Mako 1979
Mako 221
Mako 260
Mako Center console
Mako Cudy
Mako Flats boat
Mako Open Fisherman
Malibu 1979
Marathon
Marathon Cruiser
Marine Trader Trawler
Marlin Sport
Mastercraft Pro Ski
Mastercraft Prostar
Mastercraft Tristar
Maverick
Maxum SR20
McGregor
Bruhrs 342
Mistral Sailboard
Mitchell
Mitchell Bowrider
Monarch Alum.
Monark
Montera
Morgan
Morgan 1971
Morgan 34
Morgan sloop
MTX
Nacra Inter 17
Nassau
Necky Looksha
Nelson Craft (made in Titusville)
Oasis
Ocean
O'Day
O'Day 27
O'Day 37 Center Cockpit
Offshore Center Console
Old Town/Discovery 17
Osborn 1991
Palm Beach 30
Paramount 1987
Parker - W.A. Cuddy
Parti Kraft
Party Craft
Party Craft pontoon
Pathfinder tunnel hull
PDQ Sailing Catamaran
Pearson 1972
Pearson 31
Pearson 323
Phantom
Phoenix
Phoenix Conv.
Playbuoy
Polar 2300 Center Console
Pontoon Starcraft
Privateer
Pro Line Center Console
ProCraft
Procraft 1995
Proline
Proline 206
Proline 211
Proline 24 Double console
Proline 32 Express Cruiser
Proline CC
Proline Center Console
Proline Center-console 18
Pro-Line Cuddy

Proline DC
Pro-Line DC
Proline sport
Proline Sportsman
Prosport
Prosport CC
Prosport DC20
Prowler 32
Pursuit
Pursuit Open Bow
Ranger
Ranger 370 Bass Boat
Ranger Bass
Ranger Bass boat
Ranger Commanche Bass Boat
Regal
Regal 170
Regal 1996
Regal 202
Regal 242
Regal bow rider
Regal Cuddy SLR
Regal Leisure Cat
Regal SS
Regal XR2
Regal-World Cat
Renken Cuddy
Riviera Cruiser
Robalo
Robalo 1800
Sabre Critchfield
Scout
Scout 16'
Sea Fox
Sea Fox Center Console
Sea Hunter
Sea Myth
Sea Nymph Bass Boat
Sea Ox
Sea Pearl
Sea Pro
Sea Ray
Sea Ray 180OB
Sea Ray Bow Rider Series
Sea Ray Sundancer
Sea Ray Weekender 1994
Sea Wolf Center Console
Seabird
Seachaser
Seacraft
Seacraft CC
Seacraft Center Console
Seacraft Classic
SeaCraft Seafari
Seadoo
Seadoo Explorer
Seadoo Sportster
Seagull Nautica catamaran
Seagull/ Nautico' 14
SeaPro - center console
Seapro 235
Searay
SeaRay Bowrider
Searay Express
SeaRay Sundancer
Searay310 express cruiser
Sears John boat
SeaVee
Seavee 28 cc
Shadow
Shamrock
Shamrock 20 1988
Shamrock Cuddy
Shamrock Kingfisher
Shamrock Stalker
Shoal Cat
shrimp boat
Silverton Flybridge
Skinny Water
Speed Craft
Speedcraft
Sport Craft
Sport-Cat 25
Sportcraft 210 Fisherman
Sports Craft
Starcraft
Starrat-Jenks
Starwind
Stilson 44
Stingray
Stratos
Stratos Bass Boat
Streaker/Blue Water 1700
Stumpknocker
Sun Tracker
Sunbird
Sunbird Quiet Rider
Sundowner
Sunfish
Suntracker 28
Supra Launch SSV
Swedish made sloop
Sweetwater 2020
Sylvan
Sylvan 1990
Sylvan Pontoon
TCraft
Trophy
Tiara
Tiberias
Tom Sawyer Runabout
Topaz
Tracker
Tracker Pro Deep-V17
Traveler Sea Nymph
Tremblay
Trojan
Trojan Sport Fisherman
Trojan Sportfisher FB
Trophy Hull
Trophy/Bayliner
Twin Vee Hawaiian Fisherman
U-20 Step Lift Wellcraft
Ultimate Concepts catamaran
US #1 Hull
Velocity
Vendeta
Victoria
Viking Convertible
Wahoo
Weers
Wellcraft
Wellcraft Bowrider
Wellcraft C190 Center Console
Wellcraft Coastal 3300
Wellcraft Open Fisherman
Wellcraft Scarab
Whiteline
WINDROSE
Yamaha
Yamaha exciter 270
Yamaha/Waverunner FXcruiser

Appendix 8. Makes and models of the vessels in which Survey 2 (vessels ≥ 26 feet) respondents spend most of their boating time.

Cruiser Yacht Express
Powerquest Avenger
1967 Columbia 31 - Charles Morgan Design
1977 Columbia 8.7
1979 Ericson
1985 Silverton
1987 Scarab
1989 Donzi Blackwidow
1996 Maxum
1997 Cape Horn
2000 Rinker Captiva
2003 Formula 37 SS
286 Cruisers
2860 WA Pro Sport
Action Craft
Active Thunder
Adventure Craft
Albemar 6
Albin Express Cruiser
Albin Sundeck Trawler
Albin Trawler
Alden
Alden / Zephyr
Aluminum canoe
Alwin Vega
Aquaglass Fish and Ski
Aquasport
Aquasport 290 Express
Awesome Cat
Back Country
Baha Weekender
Bayliner
Bayliner 2655 Cerra
Bayliner Ciera
Bayliner Ciera 2855
Beneteau 430
Beneteau Oceanis
Bertram
Bertram 35 Sportfish
Bertram 39
Bertram Fly Cruiser
Bertram Flybridge Cruiser
Bertram Open Fisherman
Blackfin
Bluewater Coastal Cruiser
Boston Whaler
Boston Whaler 255 Conquest
Boston Whaler Conquest
Boston Whaler Outrage
Brewer 12.8
Brewer Cutter rig
Burger Flush Deck Cruiser
C&C 37 sailboat
Cabo Fly Bridge
CAL
Cal 39
Californian Motor Yacht
Camper Nicholson
Cape Dory
Cape Horn
Carolina Classic
Carroll Marine Tripp 26
Carver
Carver 325 Aft Cabin Motor Yacht
Carver 350 Mariner
Carver 455 Aft Cabin
Carver 466
Carver 570 Voyager Pilothouse
Carver Aft Cabin
Carver Mariner
Carver Motor Yacht
Carver Voyager
Cat Limbo Marine
Catalac
Catalina
Catalina 25
Catalina 27
Catalina 30
Catalina 30 MK II
Catalina C 380
Catalina C400MKII
Catalina Sloop
Celebrity 31
Century
Century 2600
Century 2600 WA
Chaparral Signature
Chapperall
Cheoy Lee Ketch
Chris Craft
Chris Craft 320 Express
Chris Craft Catalina
Chris Craft Commander
Chris Craft Corinthian
Chris Craft Fly Bridge
Chris Craft Scorpion
Cobia 260 Walk-Around
Cobia 27 Walk around
Cobia CC
Cobia Center Console
Cobia Fishing boat
Coboa CC
Columbia 8.7
Columbia Yacht Club
Contender
Contender 25
Contender 27
Contender 31
Contender 31 Open
Contendy Cuddy
Contest 29
Corbin
Cranchi Atlantique
Crownline Cruiser
Cruiser
Cruisers Inc. Rogue
Cruisers Yachts 4450
Cruisers, Inc. 400 Express
CSY 44
CSY 44 Cutter
CT35 Sundeck Trawler
Custom wood ketch
DeFever 1990
Donzi
Downeast Cutter
Edgewater
Eggharbor Sport Fisherman
Egret
Eliminator Daytona
Endeavor Cat
Ericson
Ewin Mark II
Express Yachting, Ltd Scout
Fairline 52 Squadron
Fairline Squadron
Formula
Formula Thunderbird
Fountain
Fountain Fever
Four Winns
Four Winns 328 Vista
Freedom Center cockpit
Frers Custom
Gemini 105 catamaran
Glastron Cruiser
Grady White
Grady White Marlin
Grady White Sailfish
Grand Banks 36
Grank Banks 36
Grumman
Gulfstar Aux
Gulfstar Motorsailer
Hacker Craft
Harbor Master 450 Coastal
Hatteras
Hatteras 55 SF
Hatteras Convertible
Hatteras Motor Yacht
Hatteras Sedan Cruiser
Hatteras Sport Deck
Heritage Kayak
Hobie Power CC
Holiday Mansion
Homemade (Replica 1750 Dutch)
Horizon 39 Ketch
Huckins Sports Cruiser
Hunter
Hunter 27
Hunter 28.5
Hunter 30
Hunter 31
Hunter 37 Cutter
Hunter 43
Hunter 434
Hunter Legend

Hunter Sloop
Hurricane
Hurricane deck boat
Hurricane Sun Deck
IMP 330 Eleganza
Intrepid
Intrepid 30
Irwin
Irwin 32.5 CC Ketch
Irwin 40 Citation
Irwin Classic 32
Irwin Ketch
Irwin Sloop
Island Packet
Island Packet 31
Island Packet 38
Jefferson Marlago
John Almond
Kadey Krogen trawler
kayak
Krogen Trawler
Lancer
Lazzara motor yacht
Ludens
Luhrs
Luhrs FlyBridge Cruiser
Luhrs Tournament
Magnum Marina
Mainship
Mainship Aft Cabin
Mainship III
Mainship Mark II
Mainship Pilot
Mainship Pilot 34
Mainship Trawler
Mako 262
Mako 282
Mako Bay Shark
Mako CC
Mako Open Fisherman
Maquit 1963 (one-off)
Marina 95
Marine Trader Europa
Marine Trawler
Marlargo
Marlin
Matthews Motor Yacht
Maverick
Maxim Sun Cruiser
Maxum 2800 SCR
Maxum 3000 SCR
Maxum 4600 SCB
Meridian
Monza
Moody
Morgan
Morgan 1971
Morgan 38
Morgan 382
Morgan Classic 28
Morgan Out Island
Morgan Out Island Sloop
Morgan Sloop
Narutic Star 22 Bay Boat
Navigator - Classic
Neptunus 1995
North American Center
Console
Novetek
Ocean Alexander
Ocean Alexander 456 Classico
Ocean Yacht Sunliner
O'Day
Old Town Canoe
Pacemaker Sportfish
Pacific Seacraft
Panga Marine
Parker 180
Pathfinder CC
PDQ Capella
PDQ Powercat/MV34
Pearson 300
Pearson 323
Pearson 35
Pearson Ketch 365
Permacraft Sport Fisher
Phinn Schooner
Piro
Pontoon boat
Post/Sportfish
Powercat Euphoria
President Sundeck
Pro Cat
ProLine
Proline 25 Walk
Proline 26 Sport
Proline 27
Proline 2950
Proline 2950 Walk
ProLine D/C
Prosports Prokat
Prout Snowgoose
Pursuit 2870 WA
Pursuit 2870 Walkaround
Pursuit 2880 Open
Pursuit Offshore 3000
Rampage 31 Express
Ranger I91
Regal 2950
Regal Commodore 3060
Regulator 26
Rinker
Rinker Fiesta Vee
Rinker Fiesta Vee 270
Riviera 2002
Riviera 3000
Rivolta
Robalo
Robalo 232
Robalo 2330
Royal Commodore 3260
Sea Doos and Tiger Sharks
Sea Fox
Sea Fox 287
Sea Harvester
Sea Pro 1900
Sea Ray
Sea Ray 280
Sea Ray 310 Express Cruiser
Sea Ray 320 DA
Sea Ray 380
Sea Ray 380 AC
Sea Ray 390 SDSF
Sea Ray 450
Sea Ray Aft Cabin
Sea Ray Amberjack
Sea Ray Bowrider
Sea Ray Bridge
Sea Ray Cruiser
Sea Ray EC 410
Sea Ray Express
Sea Ray Express Bridge
Sea Ray Express Cruiser
Sea Ray Power
Sea Ray Sedan Bridge
Sea Ray Sundancer
Sea Ray Sundancer 310
Sea Ray Sundancer 33
Sea Ray Sundancer 380
Sea Ray Weekender
Sea Sundancer
Sea Vee
Seadoo 1996 GS model
Seafarer sloop
Shamrock
Silverton
Silverton 38c
Silverton 392
Silverton 410
Silverton Convertible
Sovereign CC
Sport Fisherman
Stamas 290 Tarpon
Stamas Tarpon
Stapleton Open Fish
Strike Sport fish
Striker
Sunfish
Suntracker Party Hut
Tartan
Tartan 338
Tartan Piper
Tartan Sloop
Tartan Standard
Tiara
Tiara 2700 Open
tiara 29 Open
Tiara 3100
Tiara 3100 Open
Tiara 3300 Open
Tiara 35 Express
Tiara 3800
Tiara 41 Open
Tiara Convertible
Tiara Open
Tiara Open Express
Tiara Pursuit Outboard 2870
Tiera
Tiera Open

Tracker Party Hut
Trawler
Triton CC Bass Boat
Trojan
Trojan 28 FB Sedan
Trojan Sport Fish
Tullycraft
US Yacht 1980
Vega
Ventura
Venture 34
Viking Sport Fish
Viking Sportfish Convertible
Watkins
Watkins Seawolf 29
Wauquiez Hood 38
Wellcraft
Wellcraft 32 Sportsman
Wellcraft 400
Wellcraft CC
Wellcraft Coastal
Wellcraft Excel
Wellcraft Scarab Sport
Wellcraft SE
Wellcraft St. Tropez
Wellcraft V 21
Whaler/Outrage
Whitewater
Whitewater 28 Open
World Class Catamaran
TE 270

Science Serving Florida's Coast

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