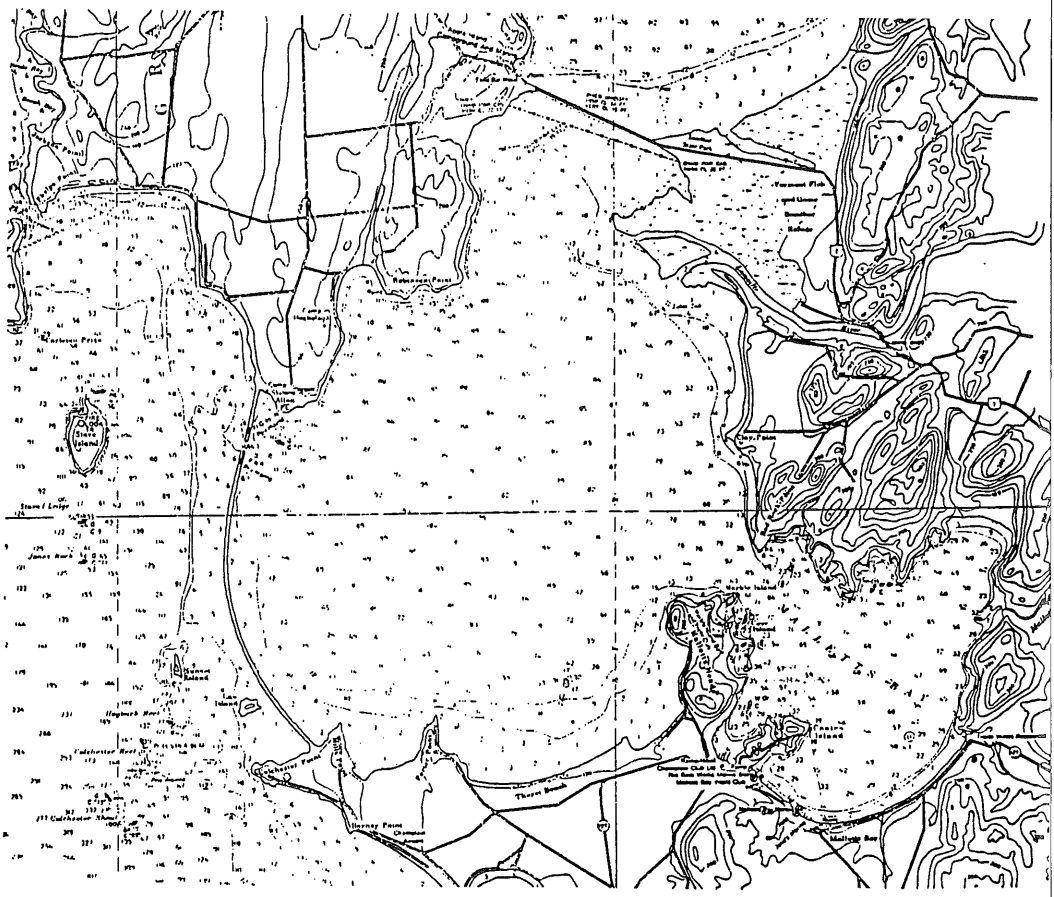
Demonstration Report No. 6E

Survey Implementation and Analysis - Malletts Bay Recreation Resource Management Plan

Lake Champlain Basin Program



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This demonstration report is the sixth in a series of reports prepared under the Lake Champlain Basin Program. Those in print are listed below.

Lake Champlain Basin Program Demonstration Reports

1. *Case Study of the Town of Champlain.* Yellow Wood Associates. October 1993.

2. *(A) Demonstration of Local Economic/Other Community Impacts.* Community Case Studies for Economic Plan Elements. The City of Vergennes, Vermont. Economic and Financial Consulting Associates, Inc. October 1993.

   (B) Demonstration of Local Economic/Other Community Impacts. Community Case Studies for Economic Plan Elements. Appendix. The City of Vergennes, Vermont. Economic and Financial Consulting Associates, Inc. October 1993.

3. *The Archeology on the Farm Project.* Improving Cultural Resource Protection on Agricultural Lands: A Vermont Example. Jack Rossen. May 1994.

4. (A) *The 1992 Fort Ticonderoga-Mount Independence Submerged Cultural Resource Survey. Executive Summary.* Arthur Cohn. May 1995.

   (B) *The 1992 Fort Ticonderoga-Mount Independence Submerged Cultural Resource Survey.* Arthur Cohn. May 1995.

5. *Implementation, Demonstration, and Evaluation of BMPs for Water Quality: Application Methods ("Manure Injections") for Improved Management of Manure Nutrients.* Bill Jokela, Sid Bosworth and Don Meals. September 1995.

6. (A) *Malletts Bay Recreation Resource Management Plan.* T.J. Boyle and Associates, Resource Systems Group, Associates in Rural Development and Engineering Ventures. October 1995.

   (B) *Malletts Bay Recreation Resource Management Plan. Executive Summary.* T.J. Boyle and Associates. October 1995.

   (C) *Review and Relevant Studies. Malletts Bay Recreation Resource Management Plan.* T.J. Boyle and Associates. October 1995.

   (D) *Natural and Built Resources Inventory: Data Documentation. Malletts Bay Recreation Resource Management Plan.* Associates in Rural Development. October 1995.

   (E) *Survey Implementation and Analysis. Malletts Bay Recreation Resource Management Plan.* Resource Systems Group. October 1995.

   (F) *Institutional Review and Analysis. Malletts Bay Recreation Resource Management Plan.* Engineering Ventures. October 1995.

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RESOURCE SYSTEMS GROUP, INC.

Malletts Bay Recreation Resource Management Plan

Final Report: Survey Implementation and Analysis

Prepared for:

Town of Colchester, VT

April 1995

White River Junction, Vermont

MALLETTS BAY RECREATION RESOURCE MANAGEMENT PLAN

SURVEY IMPLEMENTATION AND ANALYSIS

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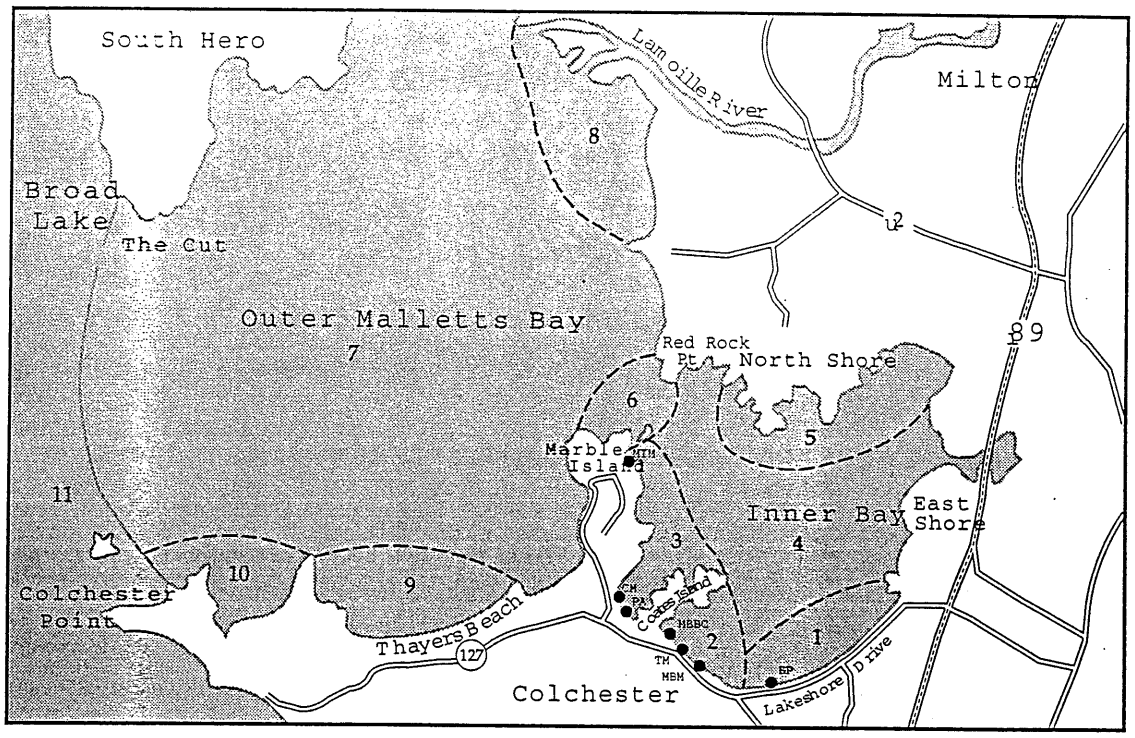


BP = Bayside Park CM = Champlain Marina MBBC = Malletts Bay Boat Club MBM = Malletts Bay Marina PA

MALLETTS BAY RECREATION RESOURCE MANAGEMENT PLAN

SURVEY IMPLEMENTATION AND ANALYSIS

1.0 INTRODUCTION AND PURPOSE

Resource Systems Group designed and implemented a series of surveys and counts in order to develop an understanding of a range of issues involving recreational use of Malletts Bay during the summer months of 1994. Questions posed during project scoping provided the focus of this data collection effort. The primary questions are:

- How many boats can utilize Malletts Bay?
- What and where are current and future access needs for all recreational users?
- What use capacity constraints might exist for various recreational uses of Malletts Bay?

In addition, the following secondary questions were addressed in the data collection effort:

- What is the typical mix of uses (fishing, sailing, powerboating, etc.) on Malletts Bay?
- What is the typical contribution of peak boat usage on Malletts Bay from each of 3 user groups: shorefront residents, marinas, and the public access?
- What are the general perceptions of crowding on Malletts Bay?
- How often do user conflicts occur and where do they occur?
- Where do people go when they boat on Malletts Bay; where do they tend to spend the most time?
- What is the spending behavior of Malletts Bay boaters?

The survey and count program involved the selection of 6 intensive surveying days in the summer, plus additional data collection on other days. The program is described as follows:

- distribution of a self-administered questionnaire to users of Malletts Bay (User Surveys) on the 6 intensive survey days, targeting boaters who access the Bay in each of 3 ways: via the public access; via a marina; or via a shorefront property;
- aerial boat tallies twice per day (11:30 a.m. and 3:30 p.m.) on the 6 intensive survey days (Use Counts);
- boat tallies at the Vermont Fish & Wildlife Public Access area on the 6 intensive survey days plus one additional day (Use Counts);
- collection of traffic count data from a pneumatic tube counter placed at the public access egress for 6 weeks in the summer (Use Counts);
- collection of continuous traffic recording data for the entire summer from 2

sites in Colchester operated by the Vermont Agency of Transportation;

- collection of weather data from the Burlington International Airport;
- implementation of a telephone-based General Attitude Survey.

This report discusses this extensive survey effort, and has the following parts:

- Survey and Count Design and Administration
- Analysis of Survey Results
  - Tendencies of Boat Usage on Malletts Bay
  - Analysis of User Surveys
  - Analysis of the General Attitude Survey
- Insights for Recreation Management Planning

2.0 SURVEY AND COUNT DESIGN AND ADMINISTRATION

Data gathering for this project has 2 basic components: the User Survey and a set of Use Counts.

2.1 PURPOSE OF USER SURVEY

A User Survey was designed and conducted as an integral component of the data collection effort for the Malletts Bay Recreation Management Plan during the 1994 summer. The purpose of the User Survey was to gather quantitative and qualitative information from those who boat on Malletts Bay. Specifically, the User Survey was designed with the intention of understanding various aspects of recreational activity on Malletts Bay, among which the following are but a few examples: the nature and duration of activity, the type of craft used for recreation, the overall quality of the recreational experience, the perception of crowding, and the frequency with which each type of recreational activity is pursued. The relevance of the data with respect to perceived crowding on the Bay and user conflicts will be explored later in this report.

2.2 USER SURVEY DESIGN AND ADMINISTRATION

The User Survey was conducted as a self-administered questionnaire which targeted shorefront residents and users of Malletts Bay who access the water via the Vermont Fish & Wildlife Public Access Area or one of the following marinas: Champlain Marina, Malletts Bay Boat Club, Malletts Bay Marina, Marble Island Marina or The Moorings. Shorefront residents were comprised of those persons dwelling along the North Shore, or Braeloch area, and all remaining shorefront residents along the southerly and easterly shores of Malletts Bay.

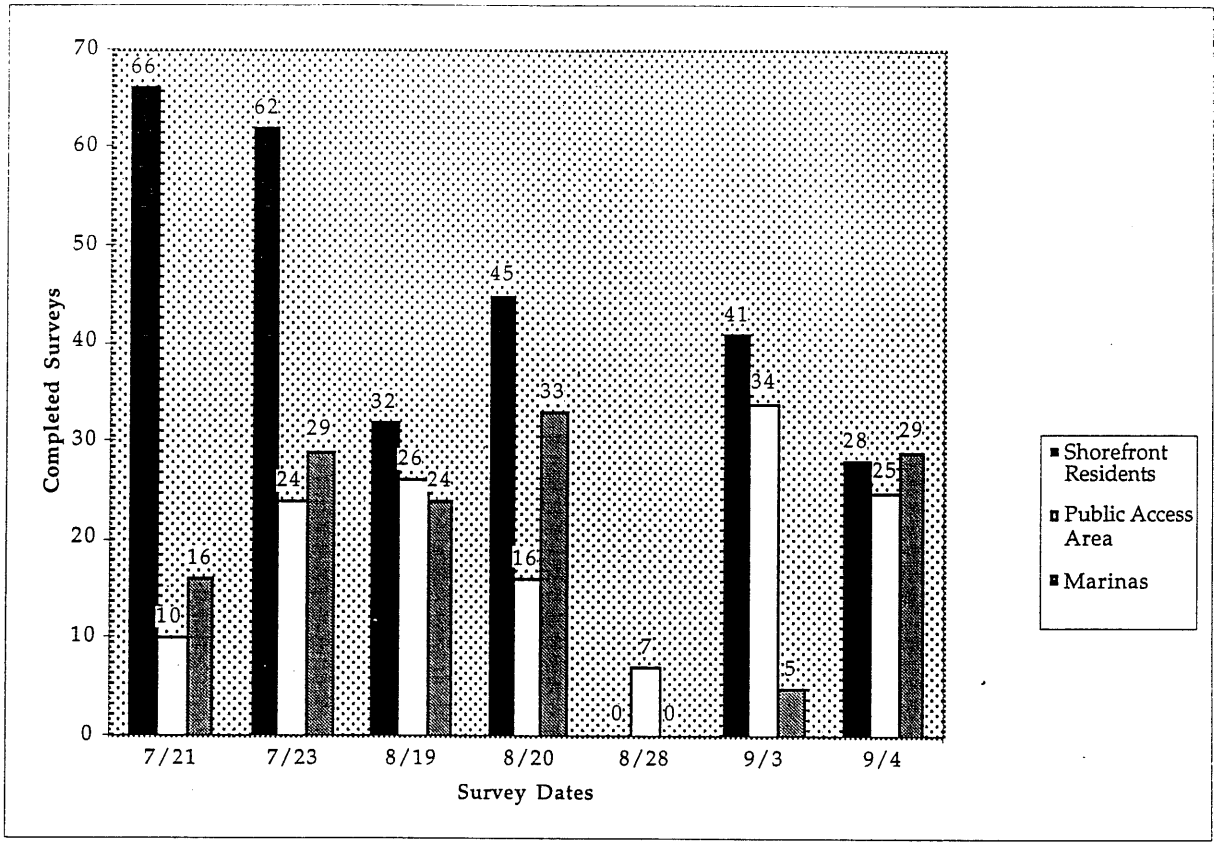
User Surveys were distributed to the target audiences for each of the following survey dates: July 21 and 23, August 19 and 20, and September 3 and 4. Since most management problems were presumed to take place on days of intense use, we intentionally chose to survey weekend days for 4 of the 6 survey days. It was also felt to be important to survey on a holiday weekend (September 3 and 4). The two weekday days, July 21 and August 19, were chosen to provide a data set for lower use days. An additional survey date of August 28 was conducted at the Vermont Fish & Wildlife Public Access site only.

The User Surveys were distributed in a variety of ways in order to facilitate the administration process and maximize response rates. All shorefront residents received their surveys at their homes in one of two ways: Self-addressed and stamped surveys were mailed to residents of the North Shore area one or two days prior to the survey dates. Self-addressed and stamped surveys were hand-delivered to all other shorefront residents on the day of the survey dates. Two local students were employed to deliver the surveys.

Survey administration at the Public Access point and at each of the marinas was conducted differently. Survey stations equipped with surveys, maps, clipboards, pencils and a drop box for completed surveys were deployed at each of the marinas and at the Public Access. Assistants were hired to attend to the survey stations, where they were available to answer questions about the survey and encourage the participation of those who used the Bay for recreation on that day. After speaking with various marina owners and conducting a pre-test survey, it was decided to appoint one person to attend the Public Access survey station from 9:00 am to 7:00 pm, while assigning another person to "float" between marinas from 2:00 pm to 7:00 pm.

The User Survey took approximately 3 to 5 minutes to complete. A total of 552 completed surveys from the 6 survey days were received, and the responses are shown by survey date in Figure 1.

Figure 1: Number of Completed User Surveys



The response rates to the surveys varied by survey group (shorefront, public access, and marina) and by date, but ranged from 24% to 33%. Total aggregate survey response rate for the 6 survey days was 27%. Response rates for the Shorefront Residents were significantly lower than for the Public Access and Marina User Groups. This is due to the fact that the Public Access and Marina surveys were conducted primarily as an intercept survey, where boaters were handed a survey by a survey assistant. The presence of an individual requesting information from people who had just completed or were just beginning their boating trip motivated a higher response rate for these User Groups.

The Shorefront Residents, on the other hand, received their surveys at their homes, either in the mail or hand-delivered to the doorstep. Also, Shorefront Residents may or may not have boated on a particular day. These two factors combined to reduce response rate from this sub-population.

Table 1 shows the response rates by user class and date.

Table 1: Survey Response Rates by User Group and Date

Date/User Group	Shorefront Residents	Public Access Area	Marinas	Total
21-Jul	25%	53%	52%	29%
23-Jul	23%	55%	68%	33%
19-Aug	12%	76%	73%	25%
20-Aug	17%	57%	75%	28%
3-Sep	15%	89%	42%	25%
4-Sep	11%	64%	78%	24%

According to Wagenaar and Babbie: "There are no strict standards for determining an acceptable response rate. High response rates increase the probability that the respondents accurately represent the sample, thus reducing the chance of response bias. But a demonstrated lack of response bias is more crucial than the response rate itself."[1]

It is important to determine whether any bias in the data was introduced due to a "lack of response" by any important sub-population of Malletts Bay boaters. Sources of such bias could be:

- bias from non-inclusion of specific members of the target population (boaters on Malletts Bay);
- bias from a strong correlation between characteristics of non-respondents and variables of interest (e.g. if a particular boating group, say jet skiiers, were somehow systematically excluded from the survey sample, and a key variable of interest was jet skiiers perception of crowding)
- bias from the type of information sought (e.g. a survey may not be completed by someone who felt the information from the survey would be used against them in some way, perhaps to regulate their activities);
- bias from the method of data collection (e.g. a postal inquiry may be ignored by people who are very busy);

It appears unlikely that any key boating populations were neglected in the sampling approach. The 3 major sources of boaters – those accessing Malletts Bay from private shorefront residences, from marinas, or from the Fish & Wildlife Public Access Area – were covered by the survey sample. Some smaller sub-populations may have gone unsurveyed, such as non-shorefront residents who rent moorings from shorefront residents, but it is not reasonable to suspect that their views on Malletts Bay boating would differ significantly from the views of the other user groups.

The survey sampling method appears to have reached the key boating groups; no major boating group was neglected in the survey sample. It also appears unlikely that a particular

[1] "The Practice of Social Research". 3rd Edition. Wagenaar and Babbie. Page 115.

class of boaters – e.g. jet skiiers or powerboaters – would be more or less inclined to respond to a recreation survey.

It is, however, reasonable to assume that responses were received from individuals who feel intensely about recreation on Malletts Bay or at least have greater than a neutral interest in recreation issues in general. At least some of the non-respondents would be the complement of this group, namely, those individuals who do not have intense feelings or opinions about recreation on Malletts Bay. Thus, the survey responses are likely to be slightly biased toward more extreme views.

It is possible that some boaters declined to complete the survey because they were suspicious of how the results would be used. Spontaneous comments by some boaters who completed the intercept surveys indicate that this suspicion exists for some people. This did not lead to non-completion in the case of the intercept surveys. For the shorefront residents, however, this may be a source of bias.

Non-response bias from the method of data collection is a possible source of bias for this survey. Response rates from Shorefront Residents was significantly lower than for the other two User Groups, largely because they had to take a more active role in completing their surveys (there wasn't a survey assistant present motivating completion) and in sending it in (the completed survey had to be placed in a mailbox rather than simply handed over).

A copy of the User Survey, and an area map of Malletts Bay that was attached to each survey for reference, is attached as Appendix A.

2.3 USE COUNTS

The second step involved gathering data on the number of boats actively using Malletts Bay. This information is useful in exploring issues of perceived crowding and potential user conflicts. We gathered three forms of count data for cross-comparison: aerial counts of boats being actively used (as opposed to moored) on Malletts Bay; counts of boats entering Malletts Bay at the Vermont Fish & Wildlife Public Access Area; and counts of vehicles exiting the Vermont Fish & Wildlife Public Access Area.

It was initially intended that aerial photography would be used to enumerate the number of boats utilizing Malletts Bay for two separate time periods during each of our survey dates, a morning count at 11:30 am and an afternoon count at 3:30 pm. After testing this method, it was decided that a hand tally conducted from the air would yield more reliable data and reduce the chance of error. Photo interpretation proved to be very difficult; a clear distinction between active and moored boats could not always reliably be made.

Thus, aerial flights were conducted for the survey times as planned, but boat numbers were manually recorded as sighted while in the air. Flights were conducted at around 800' altitude. A special effort was made to distinguish between boats being actively used as opposed to permanently at a mooring. Boats under active use include those that were moving and those that were at temporary anchor. Some areas in Malletts Bay, such as Thayers Beach, tend to

be congregation points for boats to anchor in order for people to swim or picnic.

In addition to the aerial counts, boats entering Malletts Bay were counted at the Vermont Fish & Wildlife Public Access Area for each of our target survey dates. These counts were collected from 9 a.m. – 7 p.m. for each survey date. An assistant assigned to work at the Vermont Fish & Wildlife Public Access Area recorded the number and type of each boat using Malletts Bay.

Finally, vehicle count data were collected at the Vermont Fish & Wildlife Public Access Area for 6 weeks of the summer, beginning July 21. These data show the number of cars exiting the Vermont Fish & Wildlife Public Access Area parking lot at hourly intervals. This information was collected by pneumatic tube counter. The tube counter enabled a large quantity of data to be collected over a longer time frame. The longer time series data from the traffic counts provided the statistical basis for estimating the number of boats entering Malletts Bay at the Vermont Fish & Wildlife Public Access Area on the days for which boat tallies were not conducted.

2.4 STATISTICAL VALIDITY OF SURVEYS AND COUNTS

Since it is likely that the Recreation Management Plan will be based at least partly on the results of the survey analysis, it is critical to understand the proper uses and potential limitations of the data.

We received 552 completed User Survey questionnaires. For questions for which all of these surveys are relevant, this amount translates into a sampling margin of error of approximately ±4.2 percentage points at the 95% confidence level. This means, in theory, 19 times out of 20 the results from the 552 surveys will differ by no more than plus or minus 4.2 percentage points from what would be obtained were the full target population to be surveyed. Only 2 questions and issues can be analyzed under this realm of confidence:

- What is the ZIP CODE of your permanent residence?
- If another boat access point were added to the Bay, in which Area would you want it to be located?

Of the 552 completed User Surveys, 384 were from people who actually boated on one of the 6 survey days. The reason for the discrepancy is that we received 168 completed surveys from shorefront residents who did not boat on the specific survey days. The 384 completed surveys from boaters translates into a margin of error of ±5.0 percentage points at the 95% confidence level. The following survey questions can be analyzed under this realm of confidence:

- What type of boat did you use today?
- How many people were on the boat, including yourself?
- What was the primary activity of your boating trip?

- Please enter the approximate times that your boat trip began and ended today:?
- In which Area did your boating trip begin?
- In chronological order, which Areas did you boat to today?
- In which Area did you spend the most time?
- In which Area did you have the best conditions for your primary activity?
- Which Area was the most crowded?
- Did you experience any conflicts or problems with other users of Malletts Bay?
- How crowded did you feel while boating on Malletts Bay today?
- Indicate the amount and location of expenditures made for this boating trip.
- Briefly describe the most and least appealing aspects of your boating trip today.

For analyses relating to specific days and to specific conditions on specific days, margins of error is based on surveys received on those specific days. Table 2 shows the expected margin of error for day-specific statistical inferences.

Table 2: Margins of Error for Statistical Inferences at the 95% Confidence Level, for 6 Survey Days*

Survey Date	Completed Surveys	Statistical Margin of Error for Day
7/21	52	±13.5%
7/23	89	±10.5%
8/19	61	±12.5%
8/20	63	±12.5%
9/3	49	±14.5%
9/4	63	±12.5%

*Note: 7 surveys were collected on August 28. These are not analyzed separately.

As mentioned these confidence intervals apply to analyses involving specific conditions for specific days. If perceptions of crowding on a specific day were to be related to other conditions on that day, such as traffic counts or boat counts, the margins of error shown in Table 2 apply.

For example, our survey sample for August 20 indicates that 46% of the respondents perceived conditions to be crowded that day. The 12.5% margin of error at the 95% confidence level tells us that we can be 95% certain that the percentage of people perceiving crowded conditions on August 20 is between 33.5% and 58.5%. Thus, our statistical inferences relating to, or based upon, conditions of specific days are limited by these margins of error. For season-wide inferences, such as the average perceptions of crowding for the summer boating season, our margins of error are based upon the larger sample of 384 completed surveys that yield a ±5% margin of error.

To help make inferences on days other than the 6 intensive collection days, a set of linear regression models were developed. These models enable the estimation of activity on

Malletts Bay from other data, such as automobile traffic counts. The statistical validity of these models averages ±10 percentage points.

3.0 ANALYSIS OF SURVEY RESULTS

This section discusses the major findings from an analysis of the data collected from the User Surveys and Use Counts. This section begins with an estimate and a discussion of daily and peak hour boat usage of Malletts Bay for the period of June 30 – September 4, 1994. This part contains an estimate of the average duration of boat trips, the likely starting times of boat trips, and likely daily and peak hour boating usage of Malletts Bay. This provides the context for reviewing the more detailed data pertaining to the mix and location of uses, the perception of crowding, the prevalence of user conflicts, and the spending behavior of Malletts Bay boaters. Finally, the results of the General Attitude Survey are discussed.

3.1 TENDENCIES OF BOAT USAGE ON MALLETTS BAY

One of the key indicators of boating use on Malletts Bay is daily peak hour usage. Daily peaking is a useful concept employed frequently in the field of transportation analysis. It is useful as well in the area of water recreation planning since it is reasonable to assume many of the problems or conflicts will be most acute during hours of peak use. The following data were used to develop the estimate of daily peak usage:

- aerial tallies of boats on Malletts Bay;
- tallies of boats entering the Bay via the Vermont Fish & Wildlife Public Access Area;
- traffic counts of vehicles exiting the Vermont Fish & Wildlife Public Access Area;
- traffic counts of vehicles on Interstate 89 north of Exit 17;
- weather data for the Malletts Bay area.

As discussed previously, two aerial flights were conducted on each of the 6 intensive survey days for the purpose of tallying numbers and types of boats. After the first day it was determined that a simple hand tally was a far more accurate way of recording the data than that of taking photographs for re-interpretation at a later date. Table 3 shows the boat tallies on the 5 days for which accurate data were acquired.

Table 3: A.M. and P.M. Boat Tallies, Total and for Inner and Outer Malletts Bay

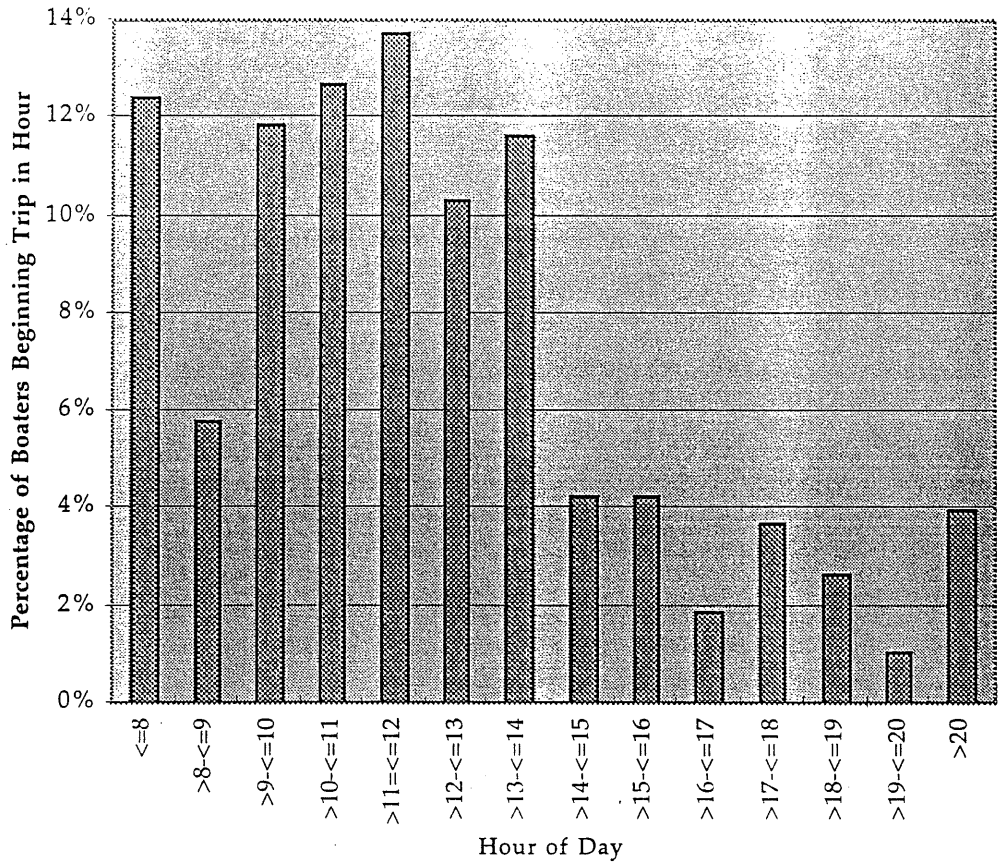
	11:30 AM			3:30 PM		
	Total AM Boat Count	Inner Bay AM Boat Count	Outer Bay AM Boat Count	Total P.M. Boat Count	Inner Bay PM Boat Count	Outer Bay PM Boat Count
SATURDAY 7/23	76	38	38	109	54	55
FRIDAY 8/19	90	40	50	149	61	88
SATURDAY 8/20	100	53	47	152	41	111
SATURDAY 9/3	94	46	48	133	60	73
SUNDAY 9/4	132	59	63	154	108	46

Discussions with the Colchester Police Harbormaster, Mike Cannon. and with marina operators suggested that weekend peak hour boat usage of Malletts Bay tends to occur between 3:00 p.m. and 4:00 p.m. Data collected from the survey indicate the likelihood of peaking slightly earlier – in the 2:30 -3:30 hour. Figure 2, based on the survey data from all target boating populations (marinas, Vermont Fish & Wildlife Public Access Area, shorefront residents), shows the hour when boat trips begin, by percentage of boaters.

Approximately 60% of early morning boaters (<8:00 access time) are anglers. After a lull in the 8:00-9:00 a.m. hour, there is a strong and consistent amount of boat ingress per hour from 9:00 a.m. until 2:00 p.m., with the 11:00-12:00 noon time slot being the most active accessing time. During the 9:00 a.m. to 2:00 p.m. time period 61% of all boat trips begin.

Of interest is the fact that the starting time profile for the 3 user groups – shorefront residents, marinas, and Vermont Fish & Wildlife Public Access Area – show the same general trend, with one exception. For boaters accessing Malletts Bay from the Vermont Fish & Wildlife Public Access Area, 23% (versus 12.3% for the total population) begin their trip earlier than 8:00 a.m. Of these boaters, over 75% are fishing as their primary activity.

Figure 2: Percentage of Malletts Bay Boating Trips, by Hour of Starting Time (n=384)



Other data from the survey show the average duration of boat trips to be between 3.5 and 5.5 hours. Figure 3 shows the average boat trip duration, by class of user. Combining the data from Figures 2 and 3 indicates that an average trip beginning after 10:00 a.m. would extend into the mid- to late afternoon.

Duration of use varied by type of activity pursued. Table 4 shows the average duration of boating trip, by type of activity. Anglers tended to spend the longest average time out on the water (5.8 hours), while those people jet skiing, canoeing/kayaking, or pursuing other types of recreation spent an average of 2-3 hours out on the water.

Figure 3: Average Duration of Malletts Bay Boat Trip, by User Class

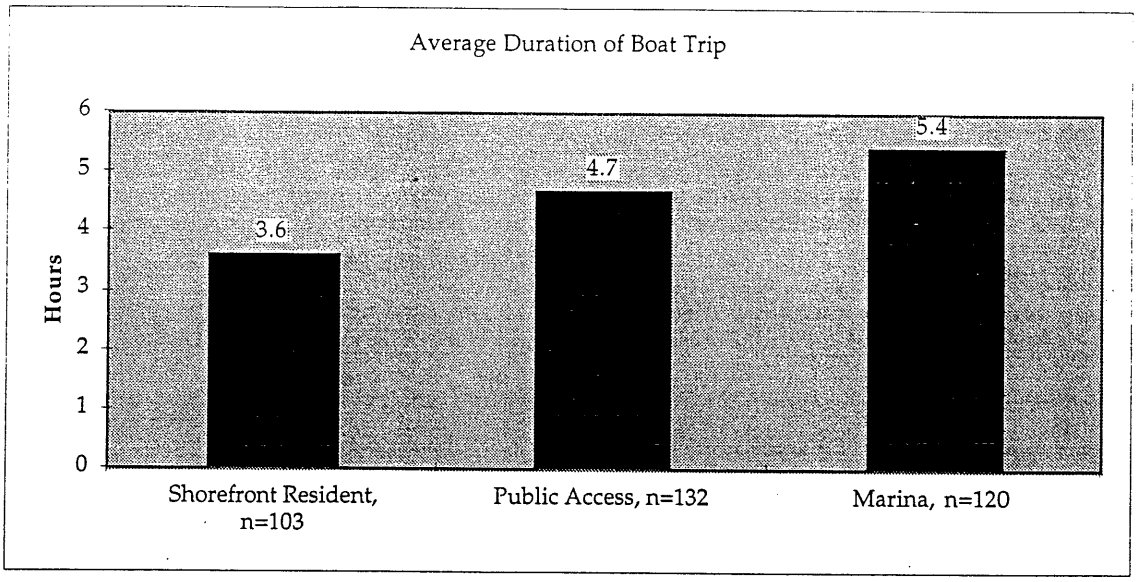


Table 4: Average Duration of Boat Trip on Malletts Bay, by Primary Activity

Activity	Average Duration of Boat Trip (Hours)	Number Sampled
Fishing	5.8	66
Touring/Cruising	5.3	95
Sailing	4.3	78
Nature Enjoyment	3.8	28
Jet Skiing	3.2	8
Other	3.0	21
Canoeing/Kayaking	2.1	12

For this analysis it was assumed that the aerial boat tallies, which were conducted between 3:00 and 4:00, reflect peak usage of Malletts Bay for those days. Unusual circumstances or special events, such as a sailboat regatta or a fireworks display, will move peaking to other times of the day.

The process of estimating daily peak boat usage of Malletts Bay for the entire summer involved the following steps:

1) Aerial count data (shown in Table 3) and the Vermont Fish & Wildlife Public Access Area boat count data were related with a simple scale factor, accounting for weekend and weekday differences (Peak Hour Boat Usage=f(Aerial Boat Counts); Aerial Boat Counts=f(Public Access Boat Counts).

2) A regression model was estimated that related the number of boats accessing Malletts Bay at the Vermont Fish & Wildlife Public Access Area to the vehicle

counts being logged at the egress road from this site. This also accounted for weekend and weekday variations. This enabled the estimation of the number of boats accessing Malletts Bay at the Vermont Fish & Wildlife Public Access Area point for the days on which vehicle counts were logged, but for which boat tallies were not available. (Public Access Boat Counts=f(Public Access Vehicle Counts (weekday and weekend adjustments)).

3) A regression model was estimated that related the Vermont Fish & Wildlife Public Access Area vehicle counts to the Vermont Agency of Transportation counter on Interstate 89 north of Exit 17 (#D092) and to two temperature variables: percent of possible sunshine and daily high temperature, also accounting for weekend to weekday variations. The Interstate 89 vehicle counts and the weather data provided the data foundation to extend estimates to the entire summer (Public Access Vehicle Counts=f(Interstate 89 Vehicle Counts[1], % Possible Sunshine, Daily High Temperature[2]).

This three step method is designed to make the most use of the limited data acquired from the 6 intensive survey days. It would clearly be most advantageous to base estimates of daily peak boat usage on a larger time series data set, but this was not possible within the scope of this project. Despite this limitation, the process helps describe a general picture of daily peak hour boat usage of Malletts Bay. Figure 4 shows the peak hour boat usage estimates that result from the three step estimation process described above.

The data also show general tendencies of boat use. For example, the data indicate that, on average, peak hour boat usage on weekends is 2-3 times greater than that of weekdays. The data also show that the busiest boating hour of any given week is likely to be 2:30 p.m. to 3:30 p.m. on a Saturday; during this hour there are likely to be approximately 170 boats under active use on the Bay (as opposed to moored at a permanent mooring). For weekdays, the corresponding number of active boats on Malletts Bay during the peak hour averages 80.

The data also indicate that, on average, about one-third of peak boat usage is due to boats from each point of access – Vermont Fish & Wildlife Public Access Area, marina, and shorefront resident. A higher percentage of shorefront resident boat trips start during hours that, accounting for an average trip duration of around 3-1/2 hours, would contribute to the peak usage (47% for shorefront residents, 43% for marinas, and 42% for Vermont Fish & Wildlife Public Access Area). The effect of this is offset by the fact that boaters starting from either marinas or from the Vermont Fish & Wildlife Public Access Area tend to spend a longer period of time out on the water (5.4 and 4.7 hours respectively).

Figure 5 shows an estimate of peak hour usage along with an estimate for total cumulative boats active on Malletts Bay. Figure 6 is meant to be representative of an average Saturday

[1]Interstate 89 vehicle counts for June to September, 1994 were obtained from the Vermont Agency of Transportation for their continuous counter #D092)

[2]Weather data for June to September, 1994 are from the National Weather Service Office at Burlington International Airport. "Local Climatological Data, Monthly Summary".

on Malletts Bay, where one would anticipate a maximum number of boats active during any one hour to be around 170. On this typical day, a cumulative number of 400 boats would likely have used the Bay actively during some part of that day.

Figure 4: Estimated Daily Peak Hour Boat Usage on Malletts Bay, June 30-September 9, 1994

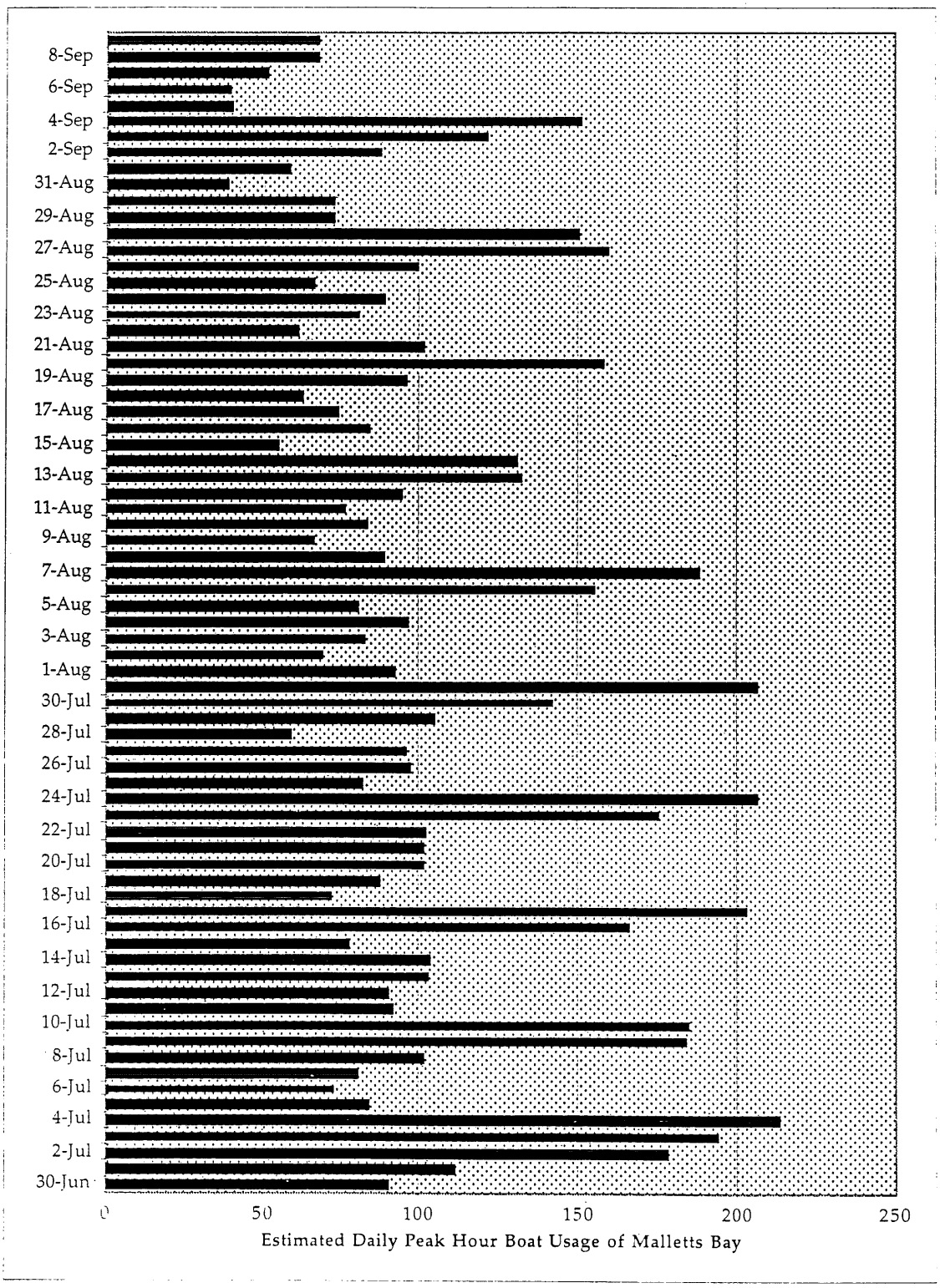
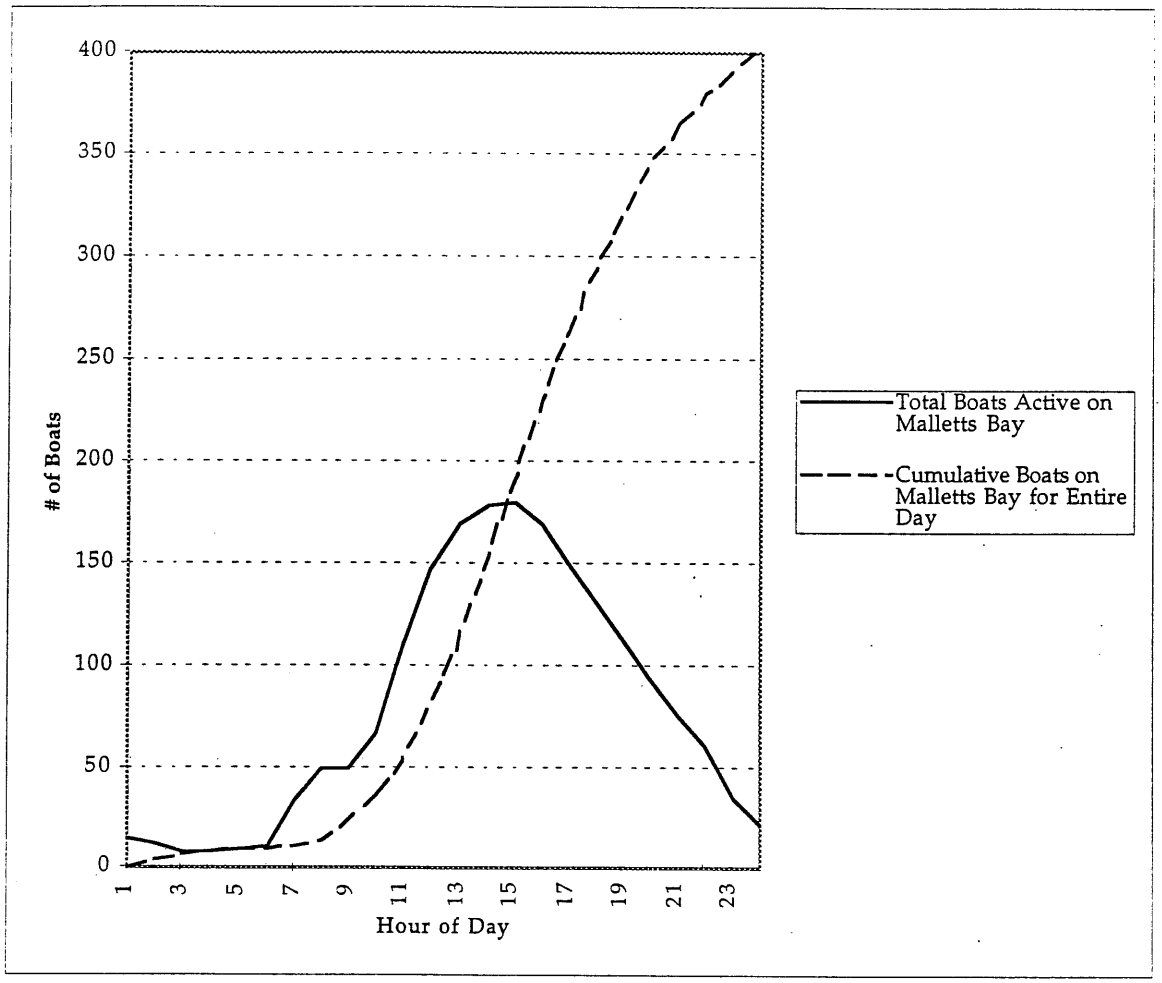


Figure 5: Total Active Boats and Cumulative Boats on Malletts Bay for a Typical Summer Saturday



3.2 ANALYSIS OF USER SURVEYS

This section provides an analysis of some key questions surrounding the users of Malletts Bay. Specifically, the following are discussed:

- What is the permanent place of residence of Malletts Bay users?
- What is the average boat occupancy, by boat type?
- What is the typical mix of activities on Malletts Bay?
- What is the typical mix of boats on Malletts Bay?
- How do users perceive the crowding of Malletts Bay?
- What is the degree of conflict between users of Malletts Bay?
- Geographically:
  - Where do conflicts tend to occur?

- Where do users tend to spend the most time?
- Where do users think the best place would be for an additional public access?
- What are the spending patterns of Malletts Bay users?

Permanent Place of Residence of Malletts Bay Users

Table 5 shows the breakdown of respondents, by their permanent place of residence.

Table 5: Permanent Place of Residence of Malletts Bay Boaters, as a Percentage of All Malletts Bay Boaters (n=384)

Permanent Place of Residence	% of Malletts Bay Boaters	Number of Responses
Colchester	30%	116
Other Vermont	60%	231
Other U.S.	6%	21
Canada	4%	16

Vermonters are the primary users of Malletts Bay. Use by Canadians will tend to be higher than estimated during the 2 week Canadian summer holiday in July.

Average Boat Occupancy of Malletts Bay Users

Table 6 shows the average number of people on board boats, by type of boat.

Table 6: Average Boat Occupancy (n=381)

Boat Type	Average Occupancy	Number of Responses
Non-Motorized (Canoe, Rowboat, Etc.)	1.6	25
Sailboard	1	5
Sailboat	3.6	87
Motor/Powerboat	3.2	254
Jet Ski	1.5	6
Other	2.3	5

Typical Mix of Activities on Malletts Bay

Figure 6 shows the results of responses to the question: What was the primary activity of your boating trip? Figure 6 shows the differences in response by user class, as defined by mode of access: shorefront resident, Vermont Fish & Wildlife Public Access Area, or marina.

Figure 6 shows some fairly expectable results. Fishing is the most predominant activity pursued by Malletts Bay boaters accessing the bay via the Vermont Fish & Wildlife Public

Access Area. "Touring/Cruising" appears popular among all 3 classes, while sailing is not strongly pursued by Vermont Fish & Wildlife Public Access Area boaters. In the "Other" category are uses such as sailboarding, snorkeling/scuba, and jet skiing.

Figure 7 combines the data in Figure 6 to provide a view of average activity mix of Malletts Bay. "Touring/Cruising", Sailing, and Fishing account for around 65% of all uses on Malletts Bay. The "Other" category accounts for around 10% of all uses, and includes uses such as snorkeling/scuba, rowing, jet skiing, and research. Slightly more than 2.1% of all respondents reported that jet skiing was their primary activity, and none of these were shorefront residents.

Figure 6: Primary Activity by User Class, Expressed as a % of All Class Users (black=Shorefront Residents; white=Vermont Fish & Wildlife Public Access Area; gray=Marina)(n=378)

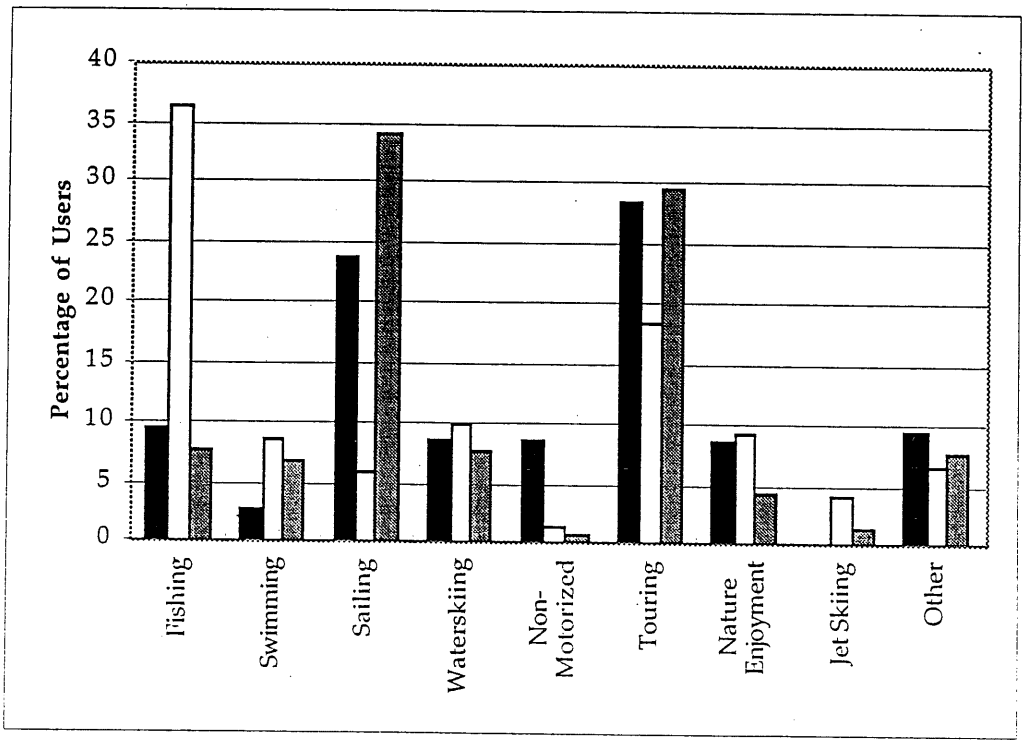
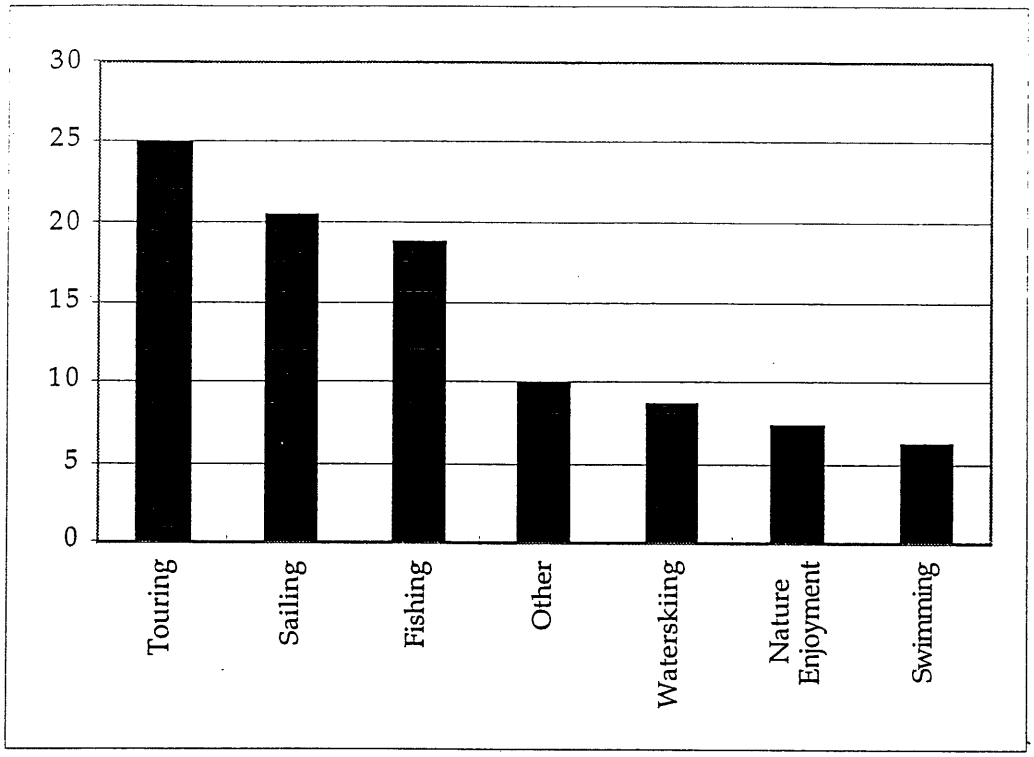


Figure 7: Primary Activity of Boating Trips, as a Percentage of All Users of Malletts Bay (n=378)



Typical Mix of Boats on Malletts Bay

Figure 8 shows the typical mix of boats used by the 3 user classes. Not surprisingly, powerboat is the leading category for each user class. The marina users are the most likely to use a sailboat and the shorefront residents are the most likely to use a non-motorized craft.

Figure 8: Type of Boat Used by User Class, as a Percentage of All Class Users (black=Shorefront Resident; white=Vermont Fish & Wildlife Public Access Area; gray=Marina) (n=382)

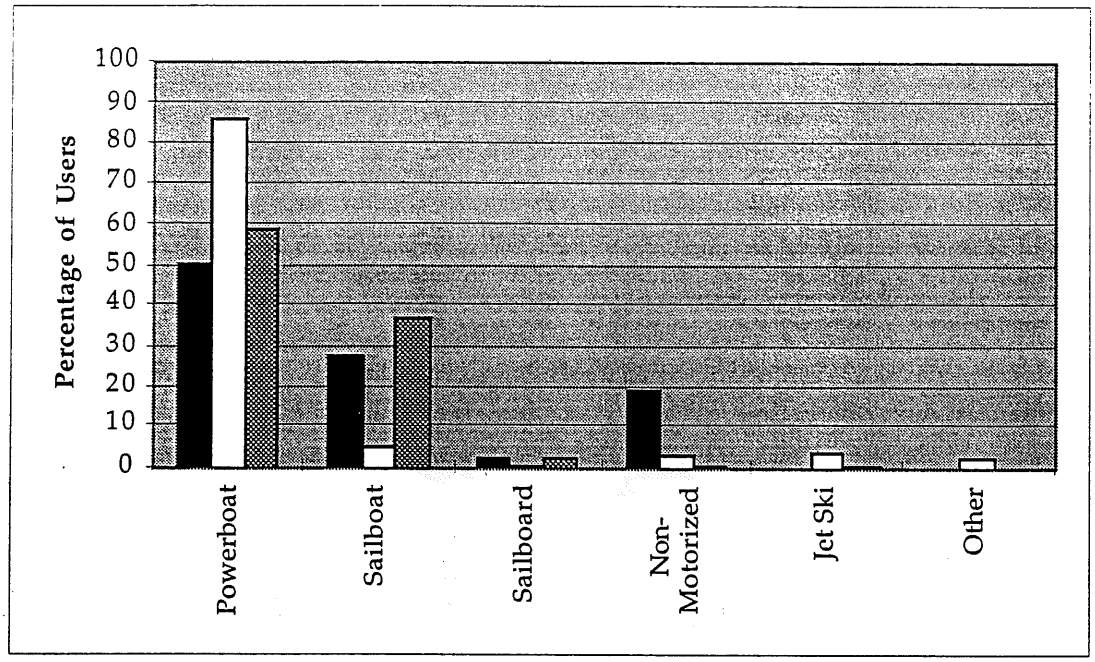
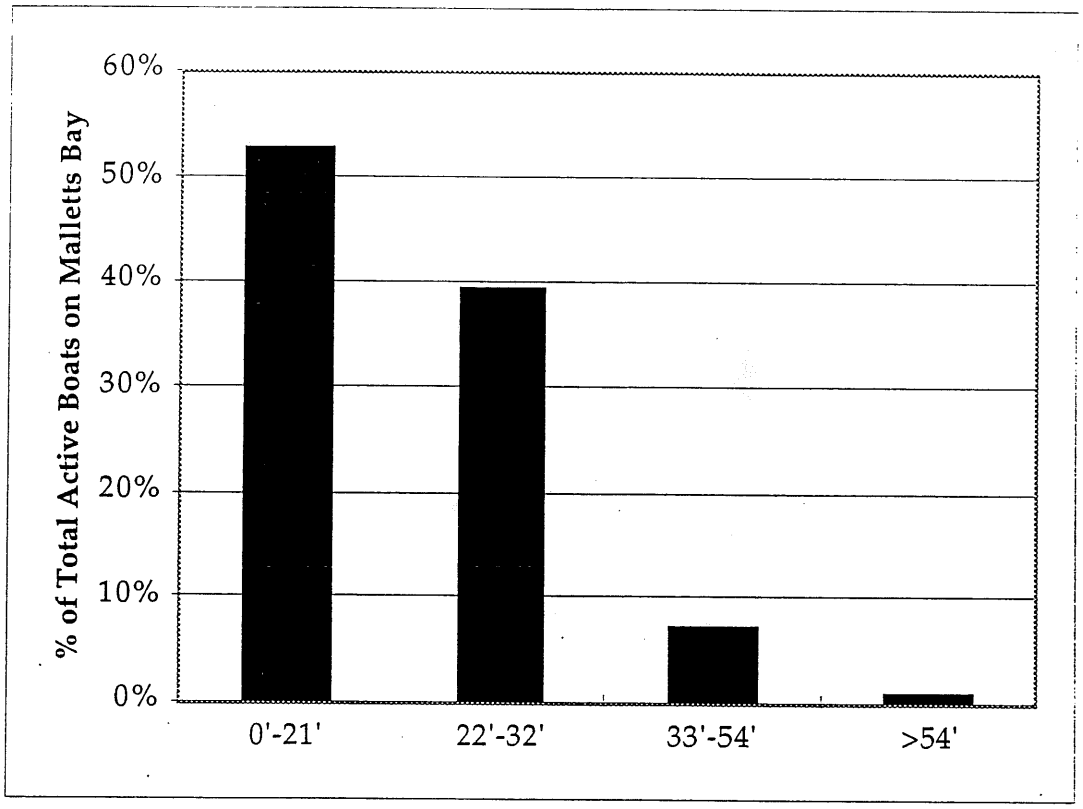


Figure 9 shows how the boats in active use on Malletts Bay sort according to length of craft. Over half of all boats (53%) are 21 feet in length or less, while around 8% are greater than 32' in length. This information can be contrasted with earlier boat count data reported in the Lake Champlain Boat Study[1]. That study contrasted boat counts conducted in 1980 and 1992, and counted moored and docked boats in addition to active boats. These total counts indicated that, in 1992, 47% of all boats on Malletts Bay were in the smallest size class, 0'-21'; 49% were in the 22'-32' size class; and 3.4% were in the 33'-54' size class.

The greater ease with which smaller boats are launched may account for the higher prevalence of them in this study, although we also show a higher prevalence of boats in the highest 2 length classes.

[1]Lake Champlain Boat Study. Vermont Department of Forests, Parks, and Recreation in cooperation with the New York Office of Parks, Recreation, and Historic Preservation and U.S. Coast Guard. March, 1993.

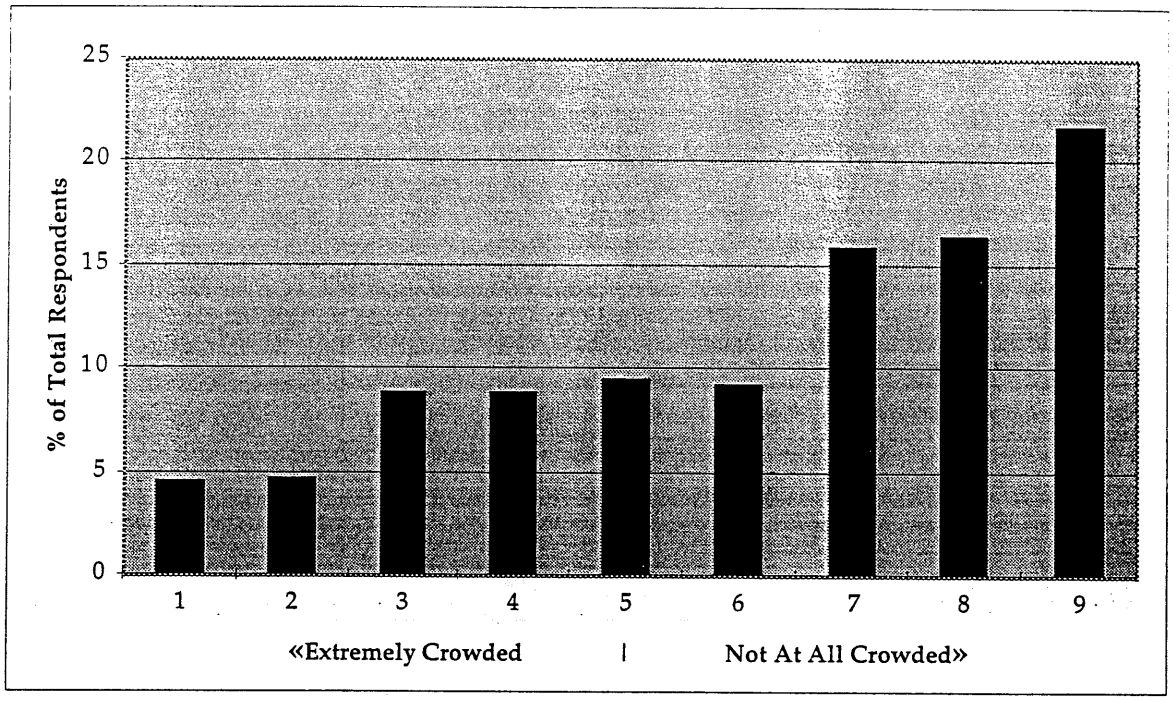
Figure 9: Percentage of Boats in Active Use on Malletts Bay by Length of Boat (n=323)



Perceptions of Crowding on Malletts Bay

Every respondent to the User Survey was asked about their perceptions of crowding while boating on Malletts Bay that day. They were asked to rank their perception of crowding on a scale of 1-9 with 1 representing "extremely crowded" and 9 representing "not at all crowded". Figure 10 shows how all survey respondents answered this question.

Figure 10: Perceptions of Crowding, Expressed as a Percentage of All Survey Respondents (n=359)



A similar crowding scale has been used in many other studies of water recreation, as reported in the Vermont Lakes and Ponds Recreation Management Study.[1] This study suggests that two of the nine scale points indicate an uncrowded situation (8 and 9), while the remaining 7 indicate some degree of crowding.

Using this as a benchmark, the Malletts Bay survey data indicate that 38% of users experienced no crowding while 62% experienced some degree of crowding. Seventeen percent (17%) experienced a severe degree of crowding (1, 2, or 3). The 62% factor perceived crowding on Malletts Bay over the 1994 summer places Malletts Bay in the "High Normal" crowding range when compared to responses to this scale question in 35 other studies. Zwick concludes the following:

> "When over 65 percent of the visitors feel crowded, there is a definite problem. At this stage, managers and interest groups may wish to take action to reduce use levels without wating for the time and funds necessary for a complete carrying capacity study. If visitor impacts are an important part of the experience, it makes sense to freeze use levels immediately when crowding reaches 65% or greater."[2]

For the 6 intensive survey days, we have correlated perceptions of crowding with estimated boating activity on Malletts Bay for those days. Figure 11 correlates the percentage of survey

[1] "Vermont Lakes and Ponds Management Study". Zwick, et al. December, 1990.
[2] Ibid. Page 72.

respondents who perceived crowded conditions (Rank<8) with estimates of peak boat usage on Malletts Bay for that day. The data upon which Figure 11 is based are not ample enough to draw solid conclusions from; however, the trends are reasonable, indicating higher perceptions of crowding with heavier peak hour boat use. The August 20 date is a statistical outlier with high peak boat usage and relatively low perceptions of crowding.

Figure 11: Correlation of Perceptions of Crowding with Estimated Peak Boat Usage on Malletts Bay (n=65)

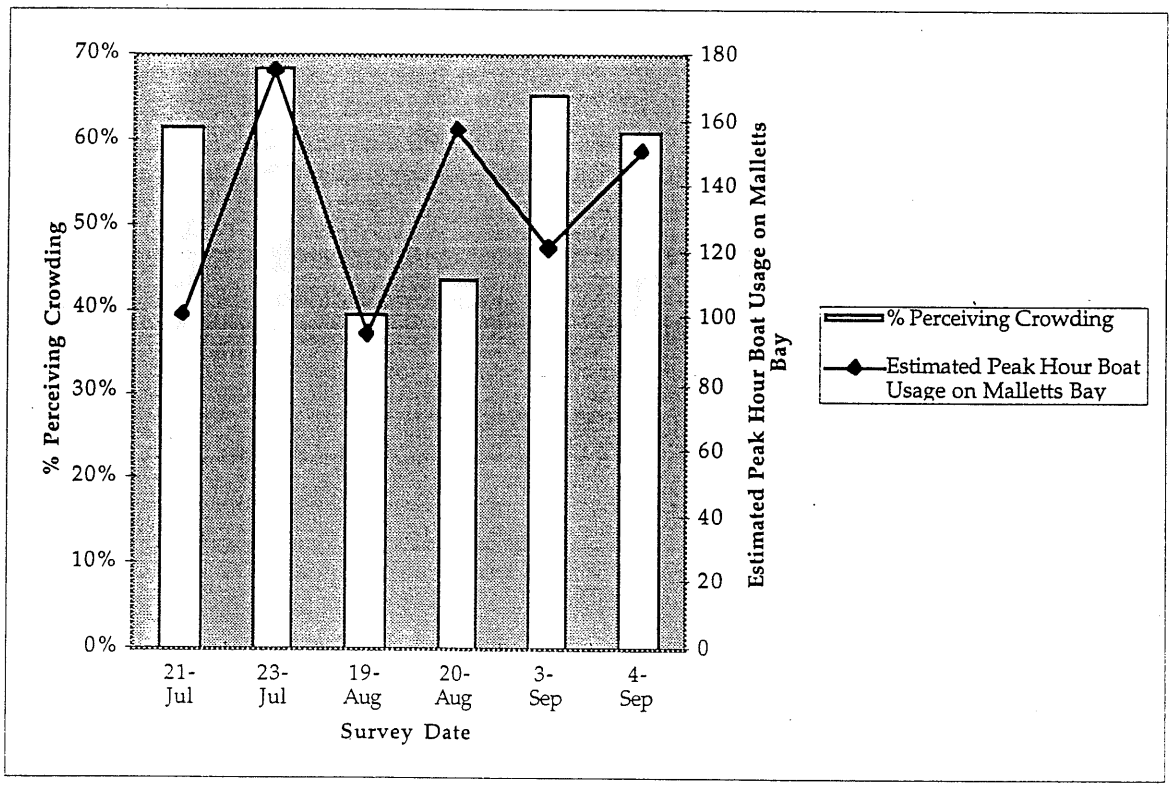


Figure 12 describes the activity of those people perceiving crowded conditions. People touring, fishing, and sailing are the most likely to perceive crowded conditions, but the prevalence of crowded perceptions is not significantly different from the prevalence of these types of activities. As a whole, the data do not indicate that any one type of use is more likely to perceive crowding that any other. None of the respondents pursuing sailboarding or jet skiing perceived crowded conditions on any of the days.

Figure 12: Percentage of Respondents Perceiving Crowded Conditions, by Primary Activity (n=221)

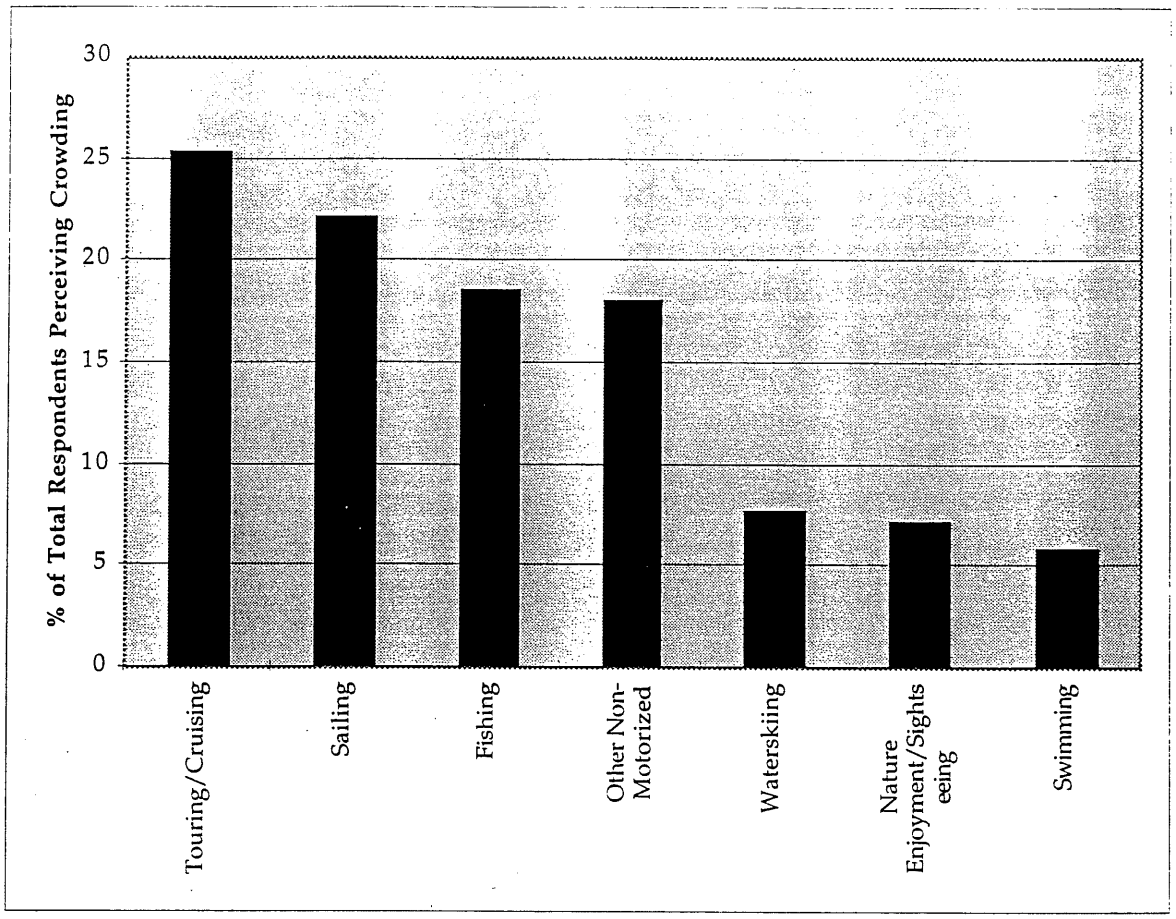
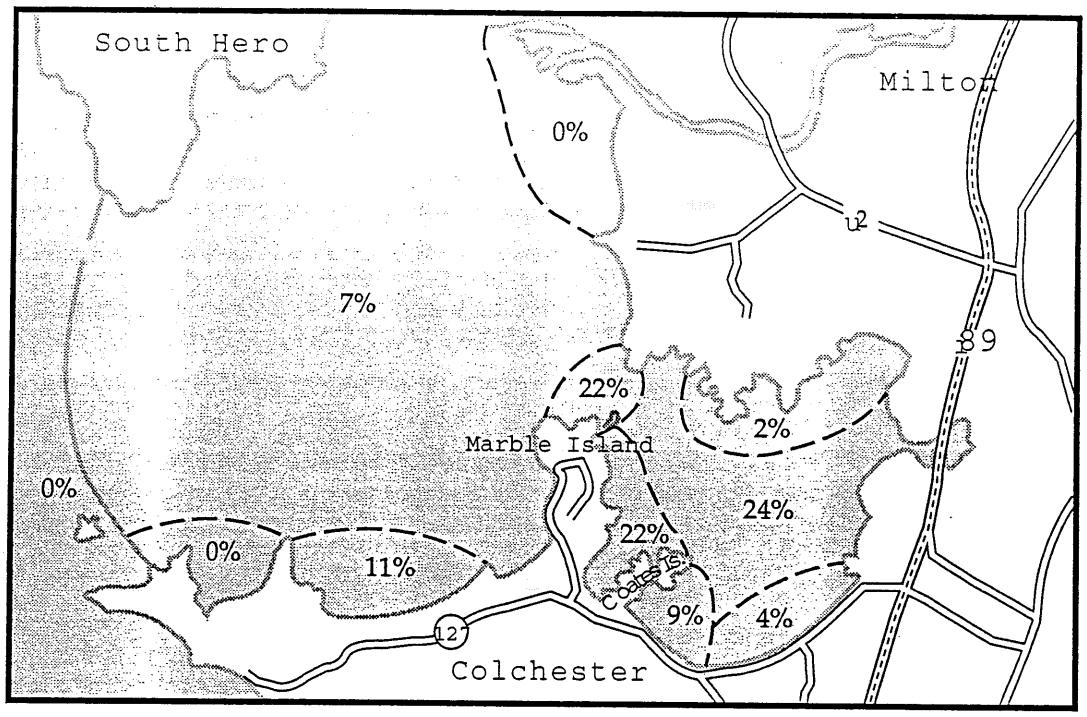


Figure 13 shows the location where crowding is perceived. The area with the highest incidence of crowding is the interior fairway area of the Inner Bay, with 24% of the reported crowding occurring here. Twenty two percent of reported crowding occurs in the choke point between Marble Head and Red Rock Point; another 22% of reported crowding occurs proximate to the Vermont Fish & Wildlife Public Access Area. A relatively high percentage of reported crowding, 11% occur in the Thayers Beach area.

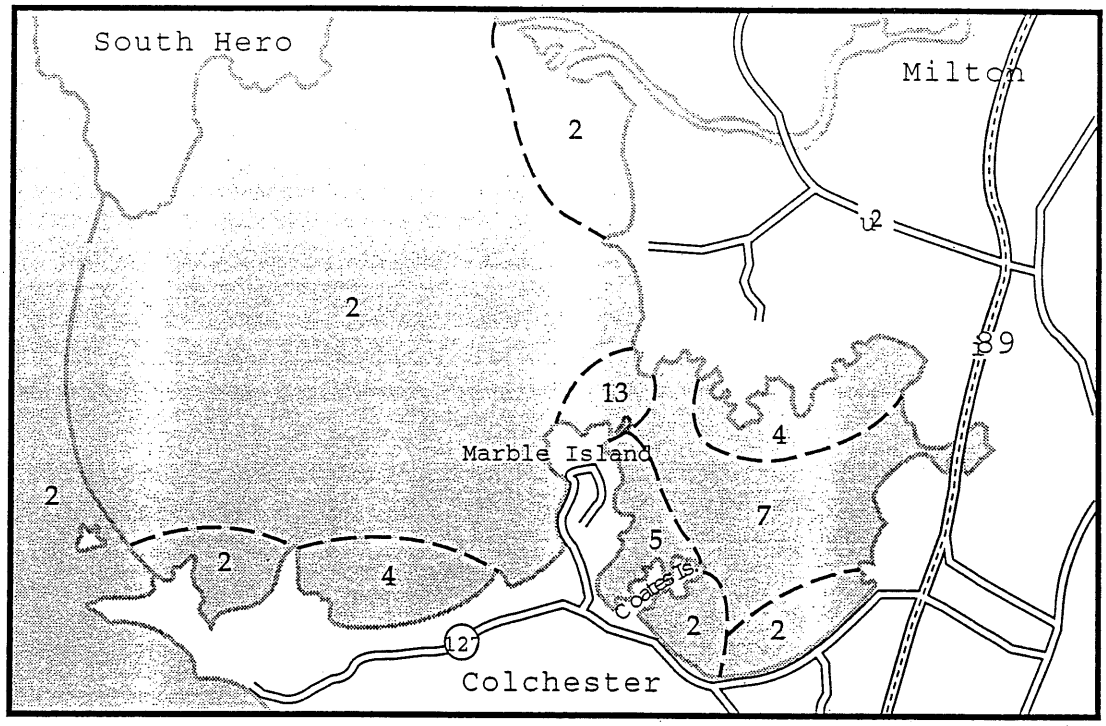
Figure 13: Areas on Malletts Bay Where Crowding is Perceived by Boaters



Conflicts Between Users of Malletts Bay

Approximately 20% of survey respondents reported having a conflict or a problem with other users of Malletts Bay. Figure 14 shows the locations of reported conflicts by the number of survey respondents reporting. As with perceived crowding, the areas with highest incidence of conflicts are the passage area from the Inner Bay to the Outer Bay (13 reported conflicts) and the Inner Bay fairway area (7 reported conflicts). The densely-used area between Coates Island and Marble Island, where the Fish & Wildlife Public Access is located, is also an area of frequent boating conflict.

Figure 14: Areas of Boating Conflicts on Malletts Bay (45 out 76 conflicts reported)



By far the most-cited problem involved excessive speed, large wakes, poor boating etiquette, and specific problems with jet skis. Table 7 breaks out responses into the 3 categories most often mentioned. Problems with jet skis were reported 23 times out of the total of 75 responses to this question. Verbatim responses to this question are supplied in Appendix B to this report; Appendix B also sorts the responses by activity and Area where conflicts occurred.

Table 7: Categorization of Open-Ended Responses to Description of Conflict, by Category of Complaint (n=60 out of a total of 75)

Category of Complaint»	Boating Etiquette/Excessive Speed/Problem with Wakes	Problems with Jet Skis	Problems with Crowded Conditions/Congestion
Number Responding	33	23	4

Table 8 tabulates the types of boats that experienced conflicts against the type of boat with which conflict was experienced. Of the 66 cases where a conflict with a specific type of boat was mentioned, 58% were with powerboats and 36% were with jet skis. Powerboats represent approximately 66% of total boat usage on Malletts Bay, whereas jet skis represent about 2% of boat usage.

Table 8: Survey Responses of Boat Conflicts, by Type of Boat in Conflict

Complaints From/Conflict With»	Non-Motorized (Canoe, Kayak, Etc.)	Sailboard	Sailboat	Motor/ Powerboat	Jet Ski	Other
Non-Motorized (Canoe, Kayak, Etc.)	0	0	0	4	4	0
Sailboard	0	0	0	0	1	0
Sailboat	0	2	0	8	7	1
Motor/Powerboat	0	1	0	26	12	0
Jet Ski	0	0	0	0	0	0
Other	0	0	0	0	0	0
Total Conflicts With:	0	3	0	38	24	1

Other Locational Issues

The following location-related information was obtained from Malletts Bay boaters:

- ▲ Where do users think the best place would be for an additional Vermont Fish & Wildlife Public Access Area (Figure 15);
- ▲ Where do boat trips begin and where do boaters spend the most time (Figures 16 and 17).

Figure 15 shows the preferences for additional Vermont Fish & Wildlife Public Access Area sites on Malletts Bay. Approximately 18% of the respondents indicated no preference or a preference for no additional access sites. Two sites claimed over 13% of preferences: the north shore; and the shoreline off of Lakeshore Drive.

Figure 15: Preferred Locations for New Public Access Site on Malletts Bay (n=262)

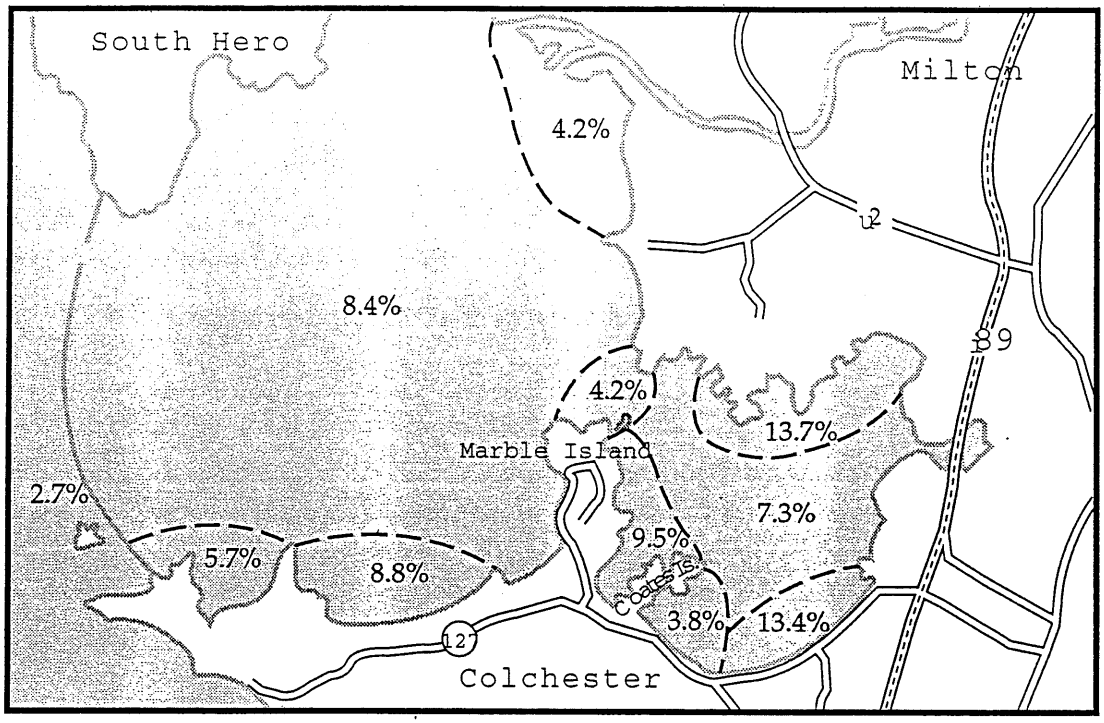


Figure 16 shows where boats trips on Malletts Bay begin.

Figure 16: Beginning Location of Malletts Bay Boating Trips (n=365)

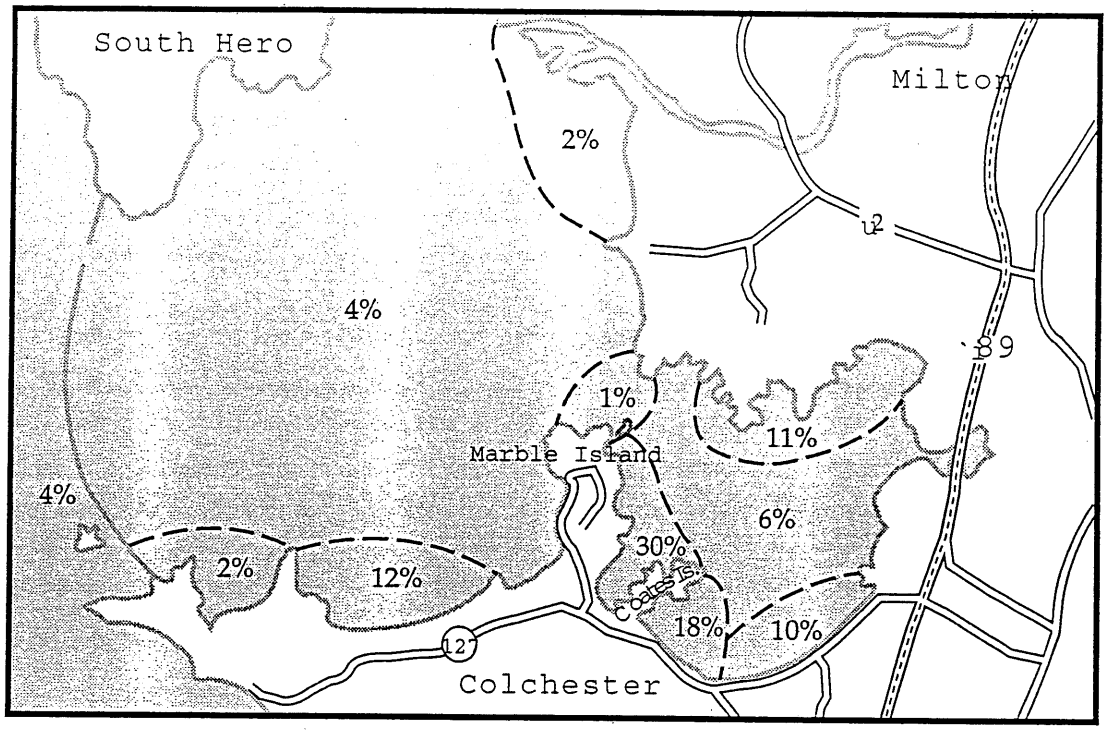
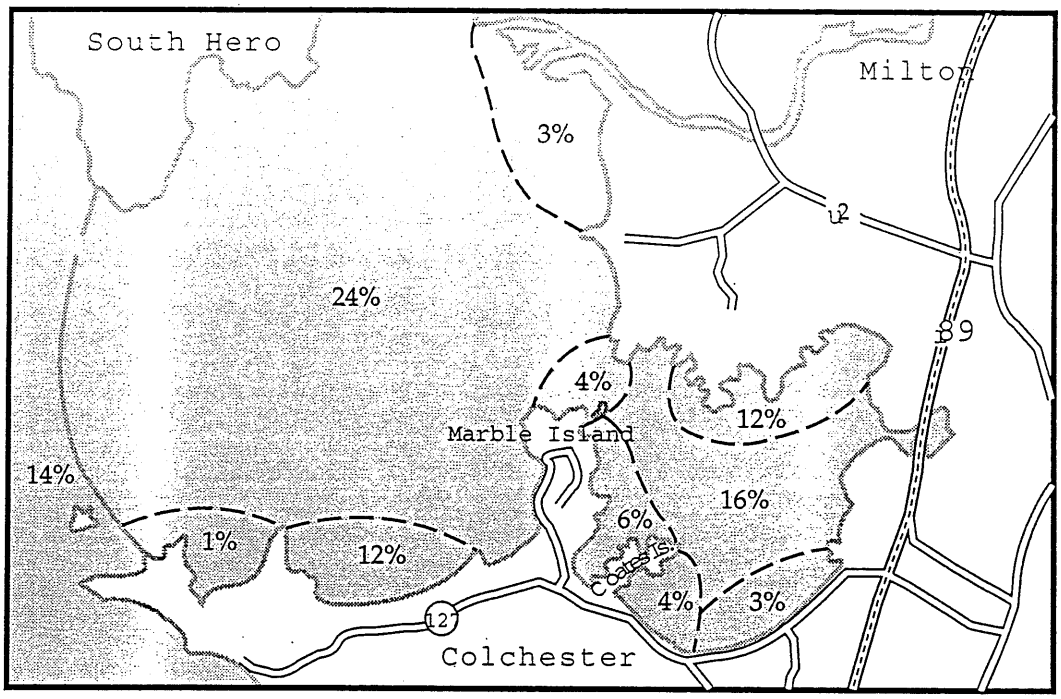


Figure 17 indicates that the large section of Outer Malletts Bay is the location where boaters spend the longest time. The fairway area of the Inner Bay (Area 4) is the place of longest duration for 16% of Malletts Bay boaters.

Figure 17: Area in Which Longest Time Was Spent (n=379)



Spending Patterns of Malletts Bay Users

Table 9 classifies Malletts Bay boaters according to the amount of expenditures they made for boating, fishing, food and lodging, and other miscellaneous expenditures for their boating trip. The data in Table 9 are further broken out by the place of expenditure – either in Colchester or outside of Colchester.

Table 9: Percentage of Malletts Bay Boaters Making Expenditures for Their Boating Trip, by Place of Expenditure (n=384)

Expenditure Class	% of Boaters Spending $ in Colchester	% of Boaters Spending $ Outside of Colchester
$0	38.0	79.4
$0-<=$10	15.4	5.2
>$10-<=$50	27.1	9.6
>$50	19.5	5.7

Table 9 shows that 62% of boaters will expend some money on a boating trip while they are in Colchester: about 21% of boaters expend some money in places outside of Colchester.

Boaters were asked to specify the category of expenditure as being for Boating and Fishing, Food and Lodging, or Other/Miscellaneous. Table 10 provides the mean expenditures within

each category, both within and outside of Colchester, for all boaters, inclusive of those who didn't spend any money as part of their boating trip, as well as for those who made expenditures.

Table 10: Average Expenditures Made By Malletts Bay Boaters, by Expenditure Class, In and Outside of Colchester

	All Boaters (n=384)		Boaters Who Made Expenditures (n=267)	
	In Colchester	Outside of Colchester	In Colchester	Outside of Colchester
Boating and Fishing	$20.04	$3.99	$28.82	$5.75
Food and Lodging	$19.16	$5.41	$27.56	$7.78
Other/Miscellaneous	$6.36	$2.14	$9.14	$3.07

Table 11 shows the mean amount of dollars expended per boating trip, providing this information for all boaters and just for those boaters who spend money on their boating trip.

Table 11: Average Dollars Spent Per Malletts Bay Boating Trip, In Colchester and Outside of Colchester

	For All Boaters: Mean $ Spent on Boating Trip (n=384)	For Boaters Who Spend Money on their Boating Trip: Mean $ Spent on Boating Trip (n=267)
In Colchester	$46	$73
Outside of Colchester	$11	$30

An average boat trip on Malletts Bay results in $57 of direct expenditures, with $46 being spent directly in Colchester. Table 12 provides an estimate of the total expenditure by Malletts Bay boaters for the 1994 summer boating season, June 1-September 4.

Table 12: Estimate of Total Direct Expenditures by Malletts Bay Boaters for Summer, 1994

	Cumulative Boats per Day	Expenditures per Boat	Days in the 1994 Summer	Total Spent
Weekends	400	57	28	$638,400
Weekdays	175	57	68	$678,300
				$1,316,700

For 1994, it is estimated that over $1.3 million of direct expenditures were made by Malletts Bay boaters. Over 80% of this amount was spent in Colchester.

Concerns and Comments About Recreational Use of Malletts Bay

Each survey provided the opportunity for respondents to write an open-ended response regarding their concerns and comments about recreational use of Malletts Bay. The

verbatim responses from the 171 surveys which responded to this inquiry are provided in Appendix C to this report. A review of the responses indicated 7 main categories of concern: Boating Etiquette/Safety/Speed; Environmental Conditions; Congestion/Crowding; Jet Skis; Noise; Public Access/Infringement on Private Property Rights; and Regulation. Table 13 shows the total number of responses within each category.

Table 13: Number of Responses by Category of Response to Open-Ended Question on Concerns About Malletts Bay

Category of Concern	Number of Responses
Boating Etiquette/Safety/Speed	34
Environmental Conditions	60
Congestion/Crowding	24
Jet Skis	48
Noise	41
Public Access/Infringement on Private Property Rights	23
Regulation	19

Environmental Concerns were the most frequently-cited type of concern. Typical concerns were algae and aquatic weed growth and dumping of holding tanks by boats. Concerns about jet skis were the second most-cited concern. A comment about jet skis was often accompanied by a complaint about noise, which was the third most-cited concern.

4.0 GENERAL ATTITUDE SURVEY

4.1 PURPOSE AND ADMINISTRATION

A General Attitude Survey was third component of the data collection effort for the Malletts Bay Recreation Management Plan. The target population of the General Attitude Survey were people who are not immediately associated with Malletts Bay as marina-users or shorefront residents. The purpose of the General Attitude Survey was to assess this population's predilection to use or not use Malletts Bay for recreation, and to understand their reasons.

The General Attitude Survey was conducted as a telephone survey which targeted residents of the eight Chittenden County municipalities within ten miles of Malletts Bay (Colchester, Burlington, Milton, Westford, Essex, Winooski, South Burlington, and Williston). The survey sample was drawn in proportion to the town populations, and town-specific telephone numbers were randomly generated by a computer. Table 14 depicts how the number of respondents from each municipality closely approximates the representation of each municipality when compared to the total population for the area.

Table 14: Number of Persons Surveyed for the General Attitude Survey by Municipality

Municipality	1990 Population	% Total Population	Survey Respondents	% of Total Respondents
Burlington	39,127	37%	33	40%
Colchester	14,731	14%	19	23%
Essex	16,498	16%	7	8%
Milton	8,404	8%	7	8%
S. Burlington	12,809	12%	11	13%
Westford	1,740	2%	0	0%
Williston	4,887	5%	3	4%
Winooski	6,649	6%	3	4%
Total	104,845	100%	83	100%

The General Attitude Survey was conducted on the evening of Thursday, November 10 from the hours of 5:00 to 9:00 pm. One hundred and five households in the target area were contacted. Telephone respondents were assured of the fact that their numbers were acquired randomly and that all of their responses would remain confidential. Eighty-three surveys were completed during the course of the evening, a 79% response rate. The sampling rate provides a margin of error of 10.75% at the 95% confidence level. The survey contained seven questions and took approximately 3 minutes to conduct. The survey format is provided in Appendix D.

4.2 GENERAL ATTITUDE SURVEY RESULTS

This section describes the frequency with which people responded to the choices for each question. General comments and attitudes voiced by respondents will be described thereafter.

Question 1: What Town do you live in?

Table 14 shows the distribution of answers to this question.

Question 2: Have you heard of Malletts Bay on Lake Champlain?

When asked whether or not they had ever heard of Malletts Bay before, the overwhelming majority of people responded that they had. 92% of the people surveyed, 76 out of 83, had heard of Malletts Bay before.

Question 3: Have you ever used Malletts Bay for recreation?

Of those surveyed, 59% of respondents (n=49) had used Malletts Bay for recreation.

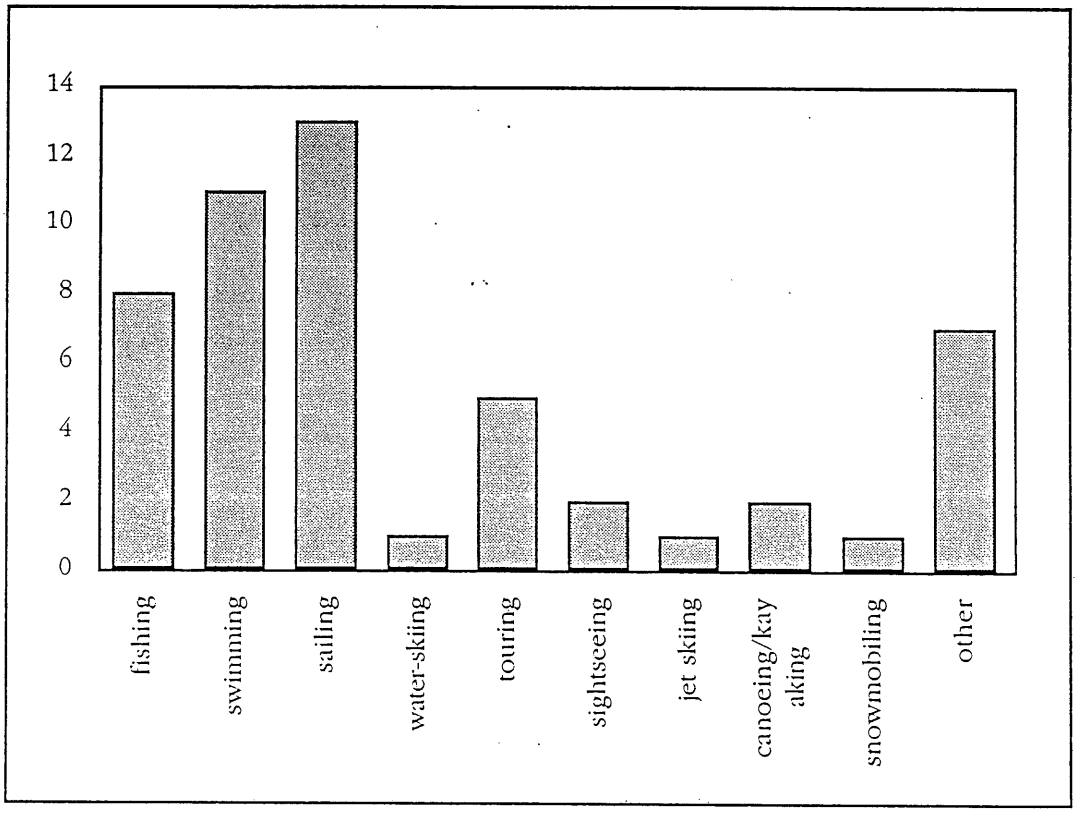
Question 3a: Which of the following best describes why you have not used Malletts Bay for recreation?

This question was asked of the 25 people who did not choose to go to Malletts Bay. Of the reasons given, 2 people said that Malletts Bay was not convenient or that there was poor Vermont Fish & Wildlife Public Access Area, 9 people responded that they preferred to recreate somewhere else, and 13 people mentioned other reasons. Of those who responded with other reasons, 5 people said that they were not aware of what opportunities or facilities were available for them at Malletts Bay. The other 8 respondents did not go to Malletts Bay for various personal reasons.

Question 4: What is the primary activity you engage in when you go to Malletts Bay?

When asked what activity they primarily engage in when they visit Malletts Bay, many respondents answered that they sometimes visit for multiple reasons. Someone who visits Malletts Bay for the day to sail may also swim, for example. Figure 18 depicts only the primary activity mentioned. A list of other activities will be added to this information.

Figure 18: Frequency of Responses to General Attitude Survey to Type of Recreatonal Activity Pursued on Malletts Bay



Additionally, people go to Malletts Bay to engage in recreational activities which are not

water-oriented. Golf, camping, tennis, cycling, running, picnicking, and softball were other activities mentioned by respondents.

Question 5: How well suited is Malletts Bay for your primary activity?

Most people felt that Malletts Bay was well suited for their primary recreational activity. Thirty-one people (61%) found Malletts Bay well suited, thirteen people found it to be average, and six found it to be not well suited for their activity.

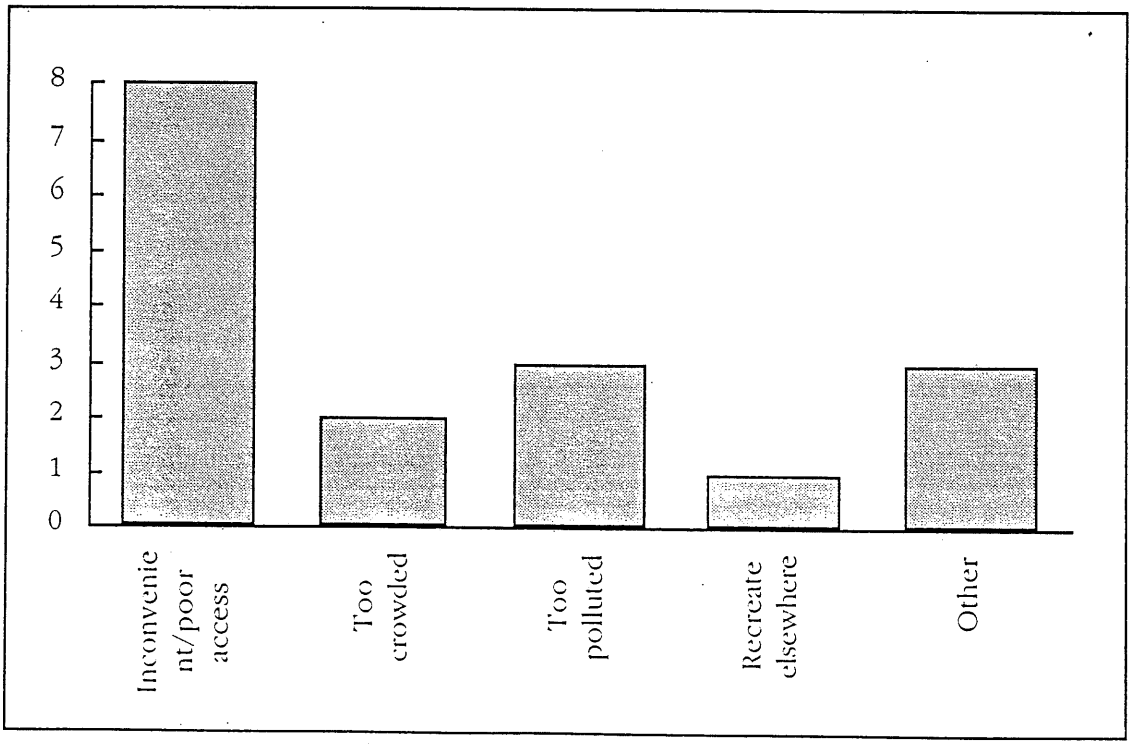
Question 6a: What is the main reason Malletts Bay is well-suited to your primary activity?

Most people cited convenience/good access as the primary reason why Malletts Bay was well suited to their primary activity. Twenty-one people (67%) responded that this was their primary reason. Two people chose scenic beauty/clean water as their reason, while one person cited the area's good services.

Question 6b: Why is Malletts Bay not well suited to your primary recreational activity?

The responses to this question were much more varied than were those by people who found Malletts Bay well-suited to their activities. People who did not find Malletts Bay well-suited to their primary recreational activity cited the following reasons, as depicted in Figure 19.

Figure 19: Reasons Given for Why Malletts Bay is Not Well Suited to a Primary Recreational Activity (by Number of Respondents)



Question 7: Do you have any recommendations for improving Malletts Bay for recreation?

Answers to this question were varied as well. People recommended improving the quality of water in the Bay, to improving the general look and feel of the area by improving roads and adding more public spaces. Increasing the amount of public land along the waterfront was a common suggestion. Ideas to that end ranged from: eliminating camps along the water, making the waterfront more like that in Burlington, adding a park near the Vermont Fish & Wildlife Public Access Area point, adding a bike path that would connect with the one in Burlington, and adding/improving Vermont Fish & Wildlife Public Access Area points for boats.

Impressions and Conclusions of General Attitude Survey

Based upon the responses to the preceding questions and the general comments that people have made, people generally know about and like to visit Malletts Bay. However, the general attitude survey did reveal that people felt that there was room for improvement. One important finding of the survey revealed that people would frequent the area more often if they had more knowledge of activities and amenities offered them. The perception that use of the Bay and its facilities is largely private, or limited to residential owners, was common. Recommendations for improving and increasing the amount of Vermont Fish & Wildlife Public Access Area space in the Malletts Bay area only supports this idea. Additionally, people enjoy visiting the area for a variety of reasons, of which convenience and scenic beauty are a part. Furthermore, people who choose to recreate at Malletts Bay often engage in more than one activity, many of which are non-water related.

5.0 INSIGHTS FOR RECREATION MANAGEMENT PLANNING

A key question which led the design of the survey program is: how many boats can utilize Malletts Bay? This is a key policy issue that requires the judgment of many stakeholders. This survey analysis can inform this decisionmaking process.

A central piece of information relates to the perceptions of crowding as reported by boaters. The relationship between peak usage and perceptions of crowding can yield an estimate of what percentage of the boating population would perceive it to be crowded at what different levels of use.

It is important to point out that, according the the Vermont Lakes and Ponds Recreation Management Study (Zwick et al, 1990), Malletts Bay is already experiencing carrying capacity limits as indicated by the prevalence of perceptions of crowding. Sixty-two percent of boater respondents experienced some degree of crowding during their boat trip. Zwick, et al recommend a management study at this level. At crowding perceptions experienced by 65% of boaters, the Management Study recommends the freezing of use levels.

Thus, according to one study, the quality of boating on Malletts Bay is approaching a crisis

situation. The survey data and regression model discussed in this section can assist in showing how perceptions of crowding by boaters may change at different peak hour usage levels.

A regression equation was estimated to mathematically relate the perception of crowding to peak hour boat usage. For the equation, the percent of boaters perceiving crowded conditions (answering 1-7 on the crowding scale provided in the survey) is the dependent variable. There are 3 independent variables: peak hour boat usage of Malletts Bay; daily high temperature; and the percent of possible sunshine. The regression statistics are as follows:

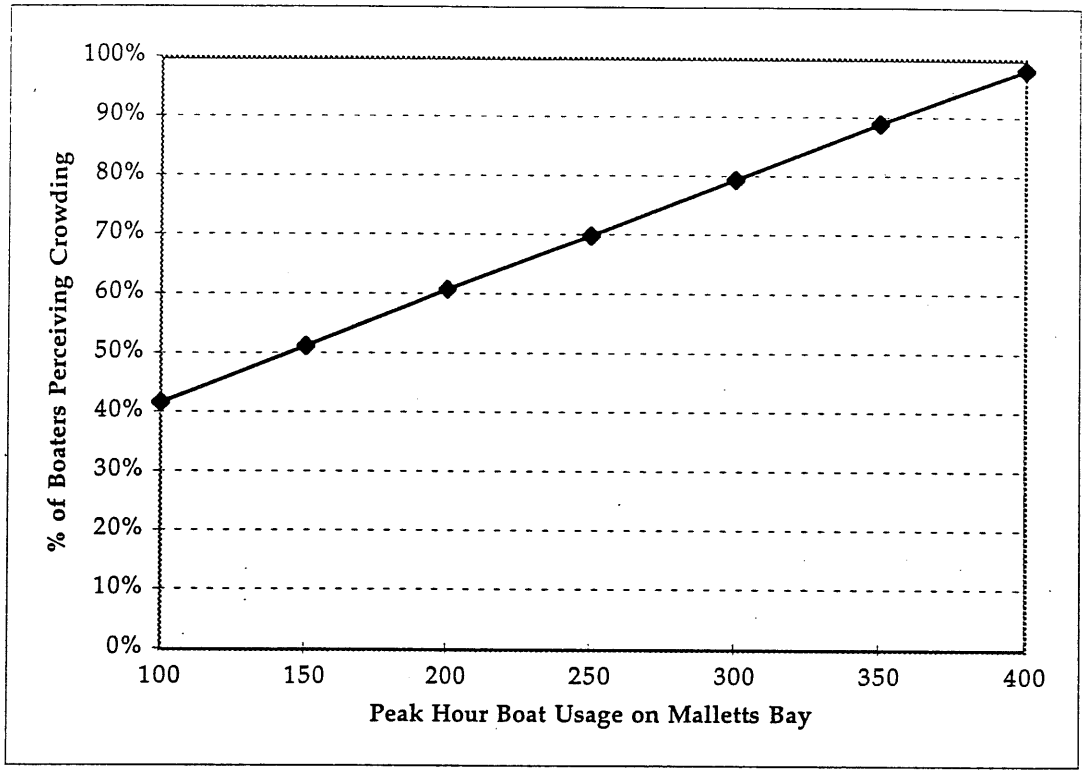
SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.792424257
R Square	0.627936203
Adjusted R Square	-0.488255188
Standard Error	16.07815554
Observations	5

	Coefficients	*Standard Error*	*t Stat*
Intercept	-113.7164314	356.317663	-0.319143403
% Possible Sunshine	1.174166379	2.180140116	0.538573815
High Temp	0.824644949	3.063432235	0.269189878
Est. Peak Boat Usage	0.188350451	0.314213093	0.599435401

For the 1994 summer on Malletts Bay, the average % of Possible Sunshine was 61% and the average high temperature was 79 degrees. Holding these 2 factors constant and varying the number of boats using Malletts Bay during a peak usage hour yields the relationship shown in Figure 20.

Figure 20: Estimated Boaters Perceiving Crowded Conditions as a Function of Daily Peak Boat Usage



The graph in Figure 20 is an estimate, and the following caveats are necessary:

- The data set is extremely scant with only 5 days of obervations upon which to base the mathematical relationship; clearly more days of data would be necessary to build confidence in the estimate.
- It is likely that other relationships are in effect on Malletts Bay that cause a non-linearity in the relationship between peak hour usage and perceived crowding. This means that there could be some inter-relating factors that would lead to a higher perception of crowding with lower peak usage, or vice versa. An example of this would be caused by the exceeding of noise or wake thresholds at some critical density of boats on Malletts Bay; every additional boat on Malletts Bay past this threshold would have a disproportionate impact on crowding. Since there are many important factors that contribute to perceptions of crowding that are not represented in the regression equation, such non-linearities are not represented.

There are long-term consequences of perceived crowding. First, a boater on Malletts Bay who perceives crowding may decide not to boat on Malletts Bay again because of that one experience, particularly if that experience is their first boating trip on Malletts Bay. This is referred to as displacement. Thus, there may be in effect a process that selects for boaters with progressively higher tolerances of crowding. Users less tolerant of crowding are displaced to other areas to seek their recreational experience there. As a result of this, the mix of users of Malletts Bay may shift over time to those uses most compatible with

crowded conditions.

APPENDIX A: USER SURVEY AND MALLETTS BAY AREA MAP

Malletts Bay Recreation Management Plan

HOW WAS YOUR DAY ON MALLETTS BAY? This questionnaire is an effort to gather information about the quality of your boating experience on Malletts Bay. This information will be used by the Town of Colchester to develop a Recreation Management Plan for Malletts Bay.

Please take five minutes to complete this questionnaire. Your participation will help the Town determine where problems currently exist, where they may exist in the future, and what policies may help solve recreation problems. Your responses are confidential. Thank you for your interest and participation.

Q-1 What is the ZIP CODE of your permanent place of residence? _____

Q-2 What type of boat did you use today (if applicable, enter length and motor horsepower)?

❑	NON-MOTORIZED (CANOE, ROWBOAT, ETC.)	❑	SAILBOARD
❑	MOTOR/POWER BOAT:____FEET ....._____HP	❑	JET SKI
❑	SAILBOAT: _____FEET _____ HP	❑	OTHER_____

Q-3 How many people were on the boat, including yourself? _____

Q-4 What was the primary activity of your boating trip? (Check one)

❑	FISHING	❑	WATERSKIING	❑	NATURE ENJOYMENT/ SIGHTSEEING
❑	SWIMMING	❑	CANOEING/KAYAKING	❑	JET SKIING
❑	SAILING	❑	SNORKELING/SCUBA	❑	OTHER_____
❑	SAILBOARDING	❑	TOURING/CRUISING		

Q-5 Please enter the approximate times that your boat trip began and ended today:

BEGAN:	ENDED:

Questions 6-12 deal with the route of your boat trip today. Please refer to the Area Map to get the appropriate Area number for each question. Enter '0' if a question does not apply.

	AREA NUMBER(S)
Q-6: In which Area did your boating trip begin (if it began outside Malletts Bay, enter "11")?	
Q-7: If another boat access point were added to the Bay, in which Area would you want it to be located?	
Q-8: In chronological order, which Areas did you boat to today? (list all areas)	
Q-9: In which Area did you spend the most time?	
Q-10: In which Area did you have the best conditions for your primary activity?	
Q-11 Which Area was the most crowded?	

Q-12 Did you experience any conflicts or problems with other users of Malletts Bay (Check one):

❑ YES. IF YES, IN WHICH AREA DID YOU EXPERIENCE THE WORST PROBLEM? _____ ❑ NO

IF YES, briefly describe the worst problem you experienced in the Area entered above:

_____

IF YES, what was the type of boat they were using? (Check one)

❑	NON-MOTORIZED CANOE, KAYAK, OR ROWBOAT	❑	MOTOR/POWER BOAT
❑	SAILBOAT	❑	JET SKI
❑	SAILBOARD	❑	OTHER_____

Q-13 On a scale from 1 to 9, with 1 representing extremely crowded and 9 representing "not at all crowded", how crowded did you feel while boating on Malletts Bay today?(Circle appropriate number)

1 2 3 4 5 6 7 8 9

Q-14 Indicate the amount and location of expenditures made for this boating trip. Answer all that apply.

	In Colchester/Malletts Bay	Outside of Colchester/Malletts Bay
Boating and Fishing Expenditures (incl. fishing tackle, parking, fees, gas & oil, repairs & parts, etc.)	$ _____	$ _____
Food and Lodging (incl. groceries, , ice, restaurant, hotel/motel, etc.)	$ _____	$ _____
Other/Miscellaneous	$ _____	$ _____

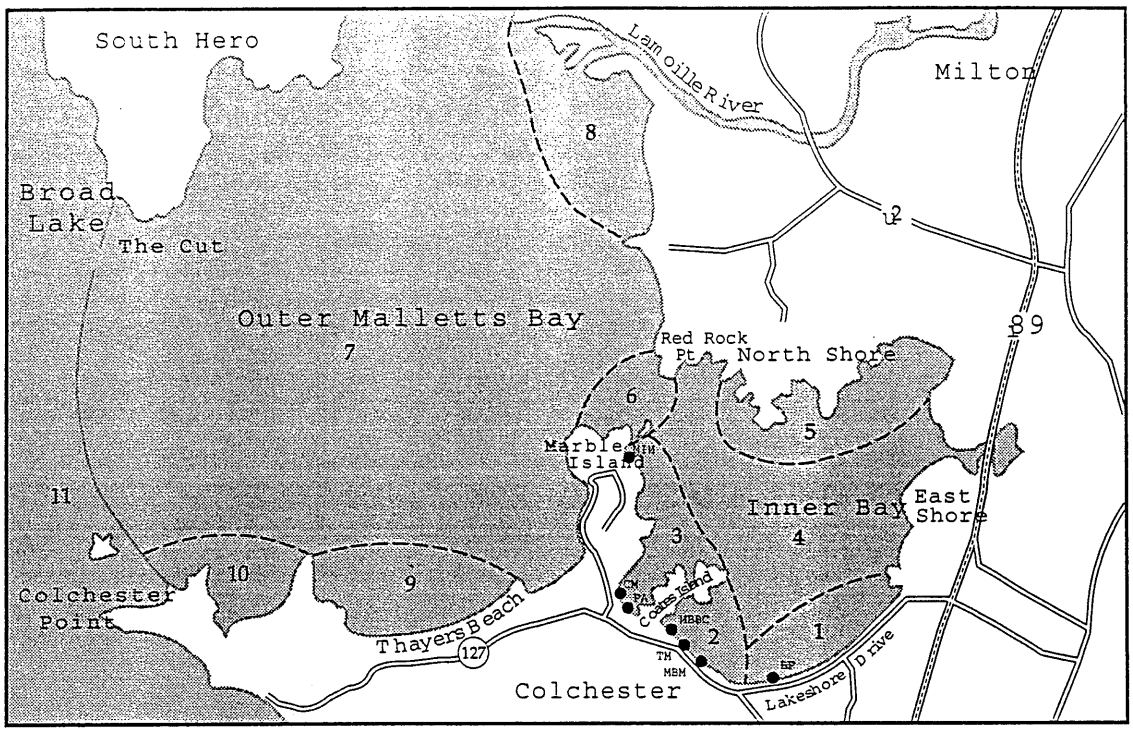
Q-15 Briefly describe the most and least appealing aspects of your boating trip today:

Most Appealing: _____

Least Appealing:_____

Q-16 Briefly describe any concerns or comments you have about recreational use of Malletts Bay:_____

Area Map of Malletts Bay



BP = Bayside Park CM = Champlain Marina MBBC = Malletts Bay Boat Club MBM = Malletts Bay Marina PA

APPENDIX B: OPEN-ENDED RESPONSES REGARDING USER CONFLICTS ON MALLETTS BAY

POWERBOAT WAKES
WAVES COMING IN THE MARINA AT MARBLE ISLAND. IT'S TERRIBLE
ALMOST HAD A BOAT COLLISION
BOATERS WITH ZERO SKILLS, NO WAVE ZONES, NOT BEING FOLLOWED IN AREA 6
TERRIBLE WAKES AT LESS THAN 50 FEET WHEN YOU ARE TRYING TO FISH
FISHING ON THE DOCK, KIDS NOT PROPERLY WATCHED
MOTOR BOAT NOISE
LOADING & UNLOADING BOAT
DOCK IS CROWDED
WHILE FISHING A SHORELINE, HAVING WATER SKIERS SKI BETWEEN MY BOAT AND SHORE
TOO MUCH TRAFFIC
POWER BOAT WAKE - NO SLOWING TO PASS
MOTOR BOAT WAKES
POWER BOAT WAKES FROM ZONE 6 & 4 / SUGGEST - SPEED LIMIT TO MALLETS HEAD 6 MPH
FISHING BOAT ANCHORED IN CUT
SMALL MOTORBOAT ANCHORED IN THE CUT FISHING. SMALL MOTORBOATS AND JET SKIS LEAVING A WAKE WHERE BOATS ARE ANCHORED
JET SKIS
SEVERAL BOATS, CHOPPY WATERS, MOSTLY DUE TO MY INEXPERIENCE IN BOATING (NOT REALLY A MAJOR PROBLEM)
MALLETS BAY AREA CROWDED WHEN LAUNCHING AND RETURNING
POORLY MARKED MOORING OFFSHORE. OFTEN I HAVE ALMOST FOUND MOORINGS WELL OUTSIDE THE NO WAKE ZONE. THIS IS EXTREMELY HAZARDOUS
4 FOOT SEAS
SPEEDS OF POWER BOATS AND WAKE
LONG LINES
JET SKI
LARGE MOTOR BOAT EXCESSIVE SPEED WEEKENDS ARE WORSE
JET SKIS HATE JET SKIS
SOME JERK IN A 24 FT BOAT PASSED WITHIN 30 FT OF MY BOAT AT A HIGH SPEED, I WAS TROLLING AT 3 MPH. IT MAKES IT TOUGH FOR SMALL CRAFT WHEN LARGE CRAFT ARE INCONSIDERATE
WHILE WINDSURFING, A BOAT CAME WITHIN 8 FEET OF ME. I HAD TO MOVE OUT OF ITS WAY
JET SKI IN TOO CLOSE TO SHORE

SAILBOATS CUTTING ACROSS FISHING LINES
NON BOATERS PARKING IN LAUNCH RAMP
LARGE BOATS AT HIGH SPEED TOO CLOSE TO SMALL ANCHORED FISHING BOATS
JET SKIS TOO CLOSE TO ANCHORED VESSEL
JET SKIS - WAKES, NOISE
TOO MANY "CRAZY'S" IN CONTROL OF POWER BOATS
BOAT WAKES: HUGE
TOO MANY JET SKIS
CANADA BOAT HAVE NO COMMON SENSE
JET SKI NOISE
JET SKIS COMING VERY CLOSE & FAST-VERY LOUD AND ANNOYING
NO CANVAS REPLACE
NO WAKE VIOLATORS-LAMOILLE RIVER PEOPLE NOT WATCHING WHERE THEY ARE GOING
NO WAKE VIOLATIONS, VESSEL OPERATORS NOT PAYING ATTENTION TO US OR OTHER VESSEL
NO CONFLICTS WITH INDIVIDUALS BUT PROBLEMS CAUSED BY CONSTANT LARGE POWER BOATS WAKES AND NOISY JET SKIS
BOATERS LEAVING THE INNER BAY ARE NOT CAREFUL DRIVERS
BOATERS WITH POOR ETIQUETTE
JET SKIS AT HIGH SPEED NEAR THE SHORE. AS I WAS APPROACHING THE HARBOR/MOORING-DISREGARD FOR SEAMANSHIP
LACK OF SEAMANSHIP-ERRATIC HIGH SPEED BOATS CONVERGING & CAUSING HUGE WAKES
LARGE VERY LOUD HIGH SPEED POWER BOATS CAME VERY CLOSE TO MY SEA KAYAK
CAMP KINIYA-SKI BOAT DOES NOT STAY 200 FT AWAY FROM RAFTS & MOORINGS. CONSTANT ATTENTION IS REQUIRED TO AVOID AN ACCIDENT
SAFETY HAZARDS BY JET SKIS RENTAL IN AREA 1. RENTERS ARE MOST OFTEN YOUNG/INEXPERIENCED/INCONSIDERATE. THEY HUG SHORELINE CONSTANT ENGINE NOISE EVER-PRESENT. JET SKIS DON'T COME & GO, THEY STAY. THEY COME WITHIN 10 FT OF SWIMMERS. WHAT IS LEGAL DISTANCE
2 JET SKIS CROSSING OUR WAKE (COMING CLOSE TO US)
LARGE WAKES FROM LARGE & FAST MOVING BOATS
BOATS SPEEDING CLOSE TO SWIMMING AREA
EXCESS USE OF JET SKIS, PAIR OF BARKING DOGS, FREE RUN OF SEVERAL NEIGHBORS BEACHES BY KIDS ON JET SKIS
LACK OF CONSIDERATION IN AREA 10 EXCESSIVE SPEED 15/20 MPH WITH 30'/50' OF BEACH. LACK OF MOORING MARKERS

JET SKIING IN AND AROUND SWIMMERS & MOORED BOATS
AREAS 6 & 3 HARASSES BY JET SKIS. THERE IS NO EDUCATION PROGRAM TO TEACH RESPECT FOR OTHER BOATS AS PADDLE CRAFT
JET SKI ENCOUNTERS ROUTINE AND ALMOST ALWAYS A PROBLEM OR POTENTIAL PROBLEM
JET SKIS AT FULL SPEED WITHIN 100 FT OF OUR BOAT
POWER BOAT OPERATORS THAT DON'T KNOW PROPER NAUTICAL ETIQUETTE i.e. RIGHT OF WAY
HEAVY TRAFFIC AND WAKE ACTION
JET SKIS COME IN TOO CLOSE TO SWIMMING AREA
OTHER BOAT CUT ACROSS OUR BOW AT HIGH SPEED, LARGE WAKE NEARLY UPSETTING US
A BOAT IS MOORED 3-400 YDS NORTH OF THE END OF MILLS PT. SHOULD BE W/I 200 FT OF LAND. CAN'T SEE WELL AT NIGHT
CONGESTION
LACK OF CONSIDERATION FROM OTHERS BOATERS MOTOR BOATS COMING TOO CLOSE
LARGE MOTORIZED YACHTS AND HIGH POWER MOTOR BOATS WENT BY ME WHILE AT ANCHOR CAUSING HEAVY WAKES THAT ROCKED MY SMALL FISHING BOAT
HARASSED BY JET SKIERS
WATER SKIERS NOT STAYING SUFFICIENT DISTANCE FROM MOORED OR ANCHORED BOATS. ACTUALLY WAS USING MOORED BOAT TO TURN AROUND (WITH SKIER BEHIND)
PEOPLE GOING TOO FAST
IRRESPONSIBLE DRIVERS - CUTTING ACROSS THE BOW, SPEEDING
SPEEDING JET SKIS IN MARKED 5 MPH AREAS
2 JET SKIS CAME WITHIN 75 FT RUINING THE PEACE AND QUIET OF THE MORNING
JET SKIS COMING OUT OF MARBLE ISLAND USING POOR SEAMANSHIP

COMMENTS ON CONFLICTS, BY ACTIVITY TYPE AND AREA OF CONFLICT. NOTE A "." INDICATES THAT NO AREA NUMBER WAS GIVEN

FISHING

AREA	COMMENT
2	WATER SKIERS NOT STAYING SUFFICIENT DISTANCE FROM MOORED OR ANCHORED BOATS. ACTUALLY WAS USING MOORED BOAT TO TURN AROUND (WITH SKIER BEHIND)
3	BOATERS WITH ZERO SKILLS, NO WAVE ZONES, NOT BEING FOLLOWED IN AREA 6
3	FISHING ON THE DOCK, KIDS NOT PROPERLY WATCHED
5	TERRIBLE WAKES AT LESS THAN 50 FEET WHEN YOU ARE TRYING TO FISH

6	LARGE MOTORIZED YACHTS AND HIGH POWER MOTER BOATS WENT BY ME WHILE AT ANCHOR CAUSING HEAVY WAKES THAT ROCKED MY SMALL FISHING BOAT
6	SOME JERK IN A 24FT BOAT PASSED WITHIN 30FT OF MY BOAT AT A HIGH SPEED, I WAS TROLLING AT 3MPH. IT MAKES IT TOUGH FOR SMALL CRAFT WHEN LARGE CRAFT ARE INCONSIDERATE
6	LARGE BOATS AT HIGH SPEED TOO CLOSE TO SMALL ANCHORED FISHING BOATS
10	LACK OF CONSIDERATION IN AREA 10 EXCESSIVE SPEED 15/20 MPH WITH 30'/50' OF BEACH, LACK OF MOORING MARKERS
10	POORLY MARKED MOORING OFFSHORE. OFTEN I HAVE ALMOST FOUND MOORINGS WELL OUTSIDE THE NO WAKE ZONE. THIS IS EXTREMELY HAZARDOUS
.	LOADING & UNLOADING BOAT
.	DOCK IS CROWDED
.	WHILE FISHING A SHORELINE, HAVING WATER SKIERS SKI BETWEEN MY BOAT AND SHORE
.	TOO MUCH TRAFFIC
.	LONG LINES
.	SAILBOATS CUTTING ACROSS FISHING LINES
.	NON BOATERS PARKING IN LAUNCH RAMP
.	BOATS SPEEDING CLOSE TO SWIMMING AREA

SWIMMING

AREA	COMMENT
4	SEVERAL BOATS, CHOPPY WATERS, MOSTLY DUE TO MY INEXPERIENCE IN BOATING (NOT REALLY A MAJOR PROBLEM)
6	CONGESTION
9	JET SKIING IN AND AROUND SWIMMERS & MOORED BOATS
9	JET SKIS COMING VERY CLOSE & FAST-VERY LOUD AND ANNOYING
11	4 FOOT SEAS
.	JET SKIS - WAKES, NOISE

SAILING

AREA	COMMENT
1	JET SKI
4	JET SKIS AT FULL SPEED WITHIN 100 FT OF OUR BOAT
4	LACK OF CONSIDERATION FROM OTHEWR BOATERS MOTOR BOATS COMING TOO CLOSE
6	MOTOR BOAT WAKES
6	SPEEDS OF POWER BOATS AND WAKE
.	POWER BOAT OPERATORS THAT DON'T KNOW PROPER NAUTICAL ETIQUIOTTE ie RIGHT OF WAY
.	JET SKIS COME IN TOO CLOSE TO SWIMMING AREA
.	POWERBOAT WAKES
.	MOTOR BOAT NOISE
.	POWER BOAT WAKE - NO SLOWING TO PASS
.	POWER BOAT WAKES FROM ZONE 6 & 4 / SUGGEST - SPEED LIMIT TO MALLETS HEAD 6MPH
.	JET SKIS
.	JET SKIS HATE JET SKIS
.	TOO MANY JET SKIS
.	JET SKI NOISE
6+4	LARGE MOTOR BOAT EXCESSIVE SPEED WEEKENDS ARE WORSE
THE CUT	FISHING BOAT ANCHORED IN CUT

SAILBOARDING

AREA	COMMENT
5	LACK OF SEAMANSHIP-ERRATIC HIGH SPEED BOATS CONVERGING & CAUSING HUGE WAKES

WATERSKIING

AREA	COMMENT
.	ALMOST HAD A BOAT COLLISION
3	MALLETS BAY AREA CROWDED WHEN LAUNCHING AND RETURNING
4	JET SKI IN TOO CLOSE TO SHORE
6	BOAT WAKES:HUGE
11	WHILE WINDSURFING, A BOAT CAME WITHIN 8 FEET OF ME. I HAD TO MOVE OUT OF ITS WAY

CANOEING/
KAYAKING

AREA	COMMENT
5	2 JET SKIS CAME WITHIN 75 FT RUINING THE PEACE AND QUIET OF THE MORNING
6	LARGE VERY LOUD HIGH SPEED POWER BOATS CAME VERY CLOSE TO MY SEA KAYAK
6	AREAS 6 & 3 HARASSES BY JET SKIS. THERE IS NO EDUCATION PROGRAM TO TEACH RESPECT FOR OTHER BOATS AS PADDLE CRAFT
6	HARASSED BY JET SKIERS
9	LARGE WAKES FROM LARGE & FAST MOVING BOATS
1,4	SAFETY HAZARDS BY JET SKIS RENTAL IN AREA 1. RENTERS ARE MOST OFTEN YOUNG/INEXPERIENCED/INCONSIDERATE. THEY HUG SHORELINE CONSTANT ENGINE NOISE EVERPRESENT. JET SKIS DON'T COME & GO, THEY STAY. THEY COME WITHIN 10 FT OF SWIMMERS. WHAT IS LEGAL DISTANCE
3,6	NO CONFLICTS WITH INDIVIDUALS BUT PROBLEMS CAUSED BY CONSTANT LARGE POWER BOATS WAKES AND NOISY JET SKIS

TOURING/
CRUISING

AREA	COMMENT
2	HEAVY TRAFFIC AND WAKE ACTION
3	TOO MANY "CRAZY'S" IN CONTROL OF POWER BOATS
4	IRRESPONSIBLE DRIVERS - CUTTING ACROSS THE BOW, SPEEDING
5	JET SKIS AT HIGH SPEED NEAR THE SHORE. AS I WAS APPROACHING THE HARBOR/MOORING-DISREGARD FOR SEAMANSHIP
6	CANADA BOAT HAVE NO COMMON SENSE
7	BOATERS WITH POOR ETIQUETTE
7	PEOPLE GOING TOO FAST
8	CAMP KINIYA-SKI BOAT DOES NOT STAY 200 FT AWAY FROM RAFTS & MOORINGS. CONSTANT ATTENTION IS REQUIRED TO AVOID AN ACCIDENT
9	SMALL MOTORBOAT ANCHORED IN TEH CUT FISHING. SMALL MOTORBOATS AND JET SKIS LEAVING A WAKE WHERE BOATS ARE ANCHORED
.	2 JET SKIS CROSSING OUR WAKE (COMING CLOSE TO US)
.	A BOAT IS MOORED 3-400 YDS NORTH OF THE END OF MILLS PT. SHOULD BE W/I 200 FT OF LAND. CAN'T SEE WELL AT NIGHT
.	SPEEDING JET SKIS IN MARKED 5MPH AREAS
.	JET SKIS TOO CLOSE TO ANCHORED VESSEL
.	NO CANVAS REPLACE
.	NO WAKE VIOLATERS-CAMOILLE RIVER PEOPLE NOT WATCHING WHERE THEY ARE GOING
.	BOATERS LEAVING THE INNER BAY ARE NOT CAREFUL DRIVERS
8,4	NO WAKE VIOLATIONS, VESSEL OPERATORS NOT PAYING ATTENTION TO US OR OTHER VESSEL

NATURE ENJOYMENT/SIGHTSEEING

AREA	COMMENT
6	OTHER BOAT CUT ACROSS OUR BOW AT HIGH SPEED, LARGE WAKE NEARLY UPSETTING US
.	JET SKIS COMING OUT OF MARBLE ISLAND USING POOR SEAMANSHIP
.	EXCESS USE OF JET SKIS, PAIR OF BARKING DOGS, FREE RUN OF SEVERAI NEIGHBORS BEACHES BY KIDS ON JET SKIS

OTHER

AREA	COMMENT
.	JET SKI ENCOUNTERS ROUTINE AND ALMOST ALWAYS A PROBLEM OR POTENTIAL PROBLEM
.	WAVES COMING IN THE MARINA AT MARBLE ISLAND. IT'S TERRIBLE

APPENDIX C: CATEGORIZED OPEN ENDED RESPONSES ON CONCERNS ABOUT MALLETTS BAY

Boating Etiquette/Safety/Speed	Environmental Conditions	Congestion/Crowding	Jet Skis	Noise	Public Access/Infringement on Private Property	Regulation	Other	Comment
✓								SAFE BOATING PRACTICES AND A BETTER HANDLE ON POLLUTION BY BOATS (OWNERS)
✓								TOO MANY SPEED BOATS GOING TOO FAST, TOO CLOSE TO SMALLER BOATS, OR FISHING BOATS AT ANCHOR
	✓	✓						TRAFFIC, WEEDS
								A SIGHTSEEING BOAT SIMILAR TO THE ETHAN ALLEN ON L. CHAMPLAIN WOULD BE NICE FOR RESIDENTS & VISITORS
	✓	✓						ON SOME WEEKENDS, AS MANY AS 35-40 LARGE BOATS, MANY FROM CANADA MOOR OFF THAYERS BEACH FOR THE WEEKEND, ONE WONDERS ABOUT HOLDING TANKS, POLLUTION ETC IN THIS BAY
		✓						WEEKENDS ARE FILLED WITH TOO MANY BOATS-HAVE CHANGED MY BOATING TO WEEKDAY EVENINGS WHEN THE BAY IS LESS CROWDED
✓						✓		ENFORCEMENT AND SAFETY ARE GOOD. THEY NEED TO BE MAINTAINED. MOORING REGULATIONS SHOULD BE UP TO TOWNS, NOT THE STATE
	✓							WATER QUALITY
				✓		✓		CONCERNS: LACK OF TOWN CONTROL OF RAFTS AND MOORINGS; WIDELY LOUD BOAT ENGINE NOISE
					✓			BOATS COME IN AND ANCHOR OFF SHORE IN FRONT OF OUR PRIVATE BEACH SO THERE IS LITTLE CHANCE FOR PRIVACY-VERY ANNOYING! SIGNS TO KEEP OFF IGNORED OR TORN DOWN FREQUENTLY
			✓	✓				I HAVE BEEN HARASSED BY JET SKIERS AND THEY ARE TOO NOISY
	✓							WEEDS, ALGAE
	✓							SEWAGE DRAINAGE (FROM CAMPS & BOATS)
	✓				✓			BOATERS ON PRIVATE PROPERTY; ASIAN MILFOIL AND OTHER WEEDS
✓	✓		✓	✓				BOATS DUMPING TANKS. NOISY JET SKIS. BOATS TOO FAST TOO CLOSE TO SHORE OR ANCHORED BOATS
✓			✓	✓				JET SKIS-NOISE, POOR SEAMANSHIP

Boating Etiquette/Safety/Speed	Environmental Conditions	Congestion/Crowding	Jet Skis	Noise	Public Access/Infringement on Private Property	Regulation	Other	Comment
			✓					JET SKIS SHOULD BE BANNED
				✓				EXCESSIVE NOISE FROM POWER BOATS, ESPECIALLY JET SKIS TYPE
				✓				WE ENJOY QUIET TIMES WHICH ARE SOMETIMES SPOILED BY NOISY CRAFT
✓				✓				POWER BOATS INCREASE POLLUTION IN SOUND. WAVES & SPEED SHOULD BE BANNED. OUT OF STATE BOATS SHOULD BE CHARGED PROPERTY TAX USE
			✓	✓				STOP THE NOISE POLLUTION FROM THE JET SKIS THEY ARE HORRIBLE - GIANT MOSQUITO NOISE AT 90 DECIBELS. THEY WOULD BE BANNED IN A WORK PLACE AS HAZARDOUS TO YOUR HEARING. WHY ALLOW THEM ON THE LAKE!
			✓	✓				WE ENJOY A QUIET RETREAT. NOISIER CRAFT, ESPECIALLY JET SKIS ARE VERY DISTURBING
	✓							TOO MANY SAILBOATS & CRUISERS STILL DUMPING IN THE BRAE LOCK BAY
		✓						THERE IS TO MANY BOATS BEING ACCEPTED TO THE MARINA THERE AT THE BAY
✓	✓			✓				CIGARETTE BOATS & JET SKIS ARE OFFENSIVELY NOISY AND TRAVEL TOO FAST TO BE SAFE! SOMETHING HAS TO BE DONE ABOUT AQUATIC GROWTH i.e. MILFOIL
	✓					✓		CONCERN RE BOATERS COMING ONTO PRIVATE PROPERTY (CLEARLY POSTED) TO JUMP FROM CLIFFS, SWIM FROM RAFT OR WALK DOGS. WATER PURITY AN OCCASIONAL CONCERN BECAUSE OF BOATS DUMPING

Boating Etiquette/Safety/Speed	Environmental Conditions	Congestion/Crowding	Jet Skis	Noise	Public Access/Infringement on Private Property	Regulation	Other	Comment
	✓		✓	✓				JET SKI NOISE, POLLUTION BY OIL ENGINE COOLANT & HUMAN WASTE
				✓		✓		MOORINGS AND RAFTS CAN BE PLACED ANYWHERE BY ANYONE; AND POORLY MUFFLED POWER BOATS LEADING TO LOUD ENGINE NOISE
	✓							WEED AND ALGAE NEAR MOUTH OF MALLETTS CREEK WEEDS HAVE GROWN WORSE EACH YEAR. NO FUN TO TRY AND SWIM WITH ALGAE AROUND YOUR NECK
✓				✓				THE VERY LOUD HIGH SPEED POWER BOATS THAT TRAVEL SHOW NO CONCERN FOR PADDLE CRAFT
	✓							A CHANNEL THROUGH THE SANDBAR BRIDGE SHOULD BE DREDGED. WATER PURITY TESTING SHOULD BE DONE BY ZONE AND THE RESULTS PUBLISHED
✓	✓		✓	✓				BOATERS DUMPING SEWAGE INTO LAKE. EXCESSIVE BOAT SPEED TOO CLOSE TO SHORE. NOISY JET SKIS
	✓							DUMPING OF HOLDING TANKS, THROWING OF GARBAGE OVERBOARD, INCREASE IN UNDESIRABLE WEED GROWTH
	✓				✓			WATER QUALITY IS A CONCERN, ALSO PUBLIC ACCESS
✓			✓	✓				LEVEL OF NOISE WITH POWERBOATS & JET SKIS AS WELL AS SPEED (TOO FAST)
✓		✓	✓					TOO MANY BOATS & JET SKIS ABOVE SPEED LIMIT TOO CLOSE TO SHORE
✓			✓					JET SKI & SUCH NOT KNOWING OR IGNORING THE SPEED LIMITS AROUND OTHER BOATS OR WITHIN 200 FT OF SHORE
✓								MOTOR BOATS & WATER SKIING - CLOSE TO SHORE & (SPEED) NON OWNER USE OF MOORING & ANCHORING - CLOSE TO SHORE
			✓					JET SKIS ARE VERY ANNOYING!
					✓			TOO MANY CANADIANS MOORING RIGHT OFF SHORE & OFTEN USING THE SHORE FOR SANITARY DISPOSAL

Boating Etiquette/Safety/Speed	Environmental Conditions	Congestion/Crowding	Jet Skis	Noise	Public Access/Infringement on Private Property	Regulation	Other	Comment
			✓	✓				JET SKIS CONTRIBUTE NOISE POLLUTION & SAFETY HAZARDS
✓				✓				EARLY MORN BASS FISHING. NOISY BOATS & FISHERMAN TOO CLOSE TO SHORE & CAMP. LARGE BOATS NOT FOLLOWING THE RULES i.e. EXCESSIVE SPEED & WAKE AROUND SMALL BOATS. RECOMMEND SPEED, NOISE, AND WAKE BE CONTROLLED AND ENFORCED.
✓	✓				✓			TOO MANY USING SHORE TO TIE UP. BLOCKS PASSAGE ALONG SHORELINE. MOTORBOATS TRAVELING TOO FAST CLOSE TO SHORE. FLUSHING OF TANKS AS LEAVING
			✓					I'D HATE TO SEE MANY MORE JET SKIS
		✓						GETTING MORE CONGESTED
		✓						INNER BAY IS OFTEN VERY CONGESTED
			✓	✓				INCREASED NOISE -JET SKIS & POWER BOATS
	✓	✓						MANY PEOPLE USE THE BAY, BUT LEAVE THEIR GARBAGE BEHIND!
						✓		COMMERCIAL MOORING ARE GETTING OUT OF CONTROL
							✓	DREDGE SANDBAR SO BOATS CAN GO UNDER BRIDGE & GET TO SAND BAR BEACH
	✓							I WOULD LIKE TO SEE THE "POTTY" PATROL ON DUTY AT THAYERS BAY DURING THE WEEK
					✓			KEEP MALLETTS BAY OPEN FOR ALL USES, BOTH RESIDENT AND NON RESIDENT
							✓	I CONSIDER IT EXCELLENT
✓								BIG POWER BOATS CREATING WAKES AT FULL SPEED - INCONSIDERATE - LACK OF KNOWLEDGE OF BOATING ETIQUETTE & SAFETY
	✓							PARKING ENVIRONMENTAL ISSUES. I FEEL USE OF THE BAY ADVANTAGEOUS PROVIDING SAFETY IS ASSURED - THESE PAST 31 YEARS HAVE NOTICED INCREASED USE BUT ALSO CARE AND CONSIDERATION OF OTHERS
	✓	✓	✓					POSSIBLE POLLUTION FROM LARGE MOORED GROUPS, JET SKIS ARE HAZARD TO BATHERS. THIS EVENING THERE WERE 47 MOORED BOATS AT SPAULDINGS WEST.
					✓			NEIGHBOR STEALS MY FLOATING BALLS REMOVED MY RADIATOR AS AN ANCHOR SUB LEASERS LETS SOMEONE USE MY MOORING A MESS!
			✓			✓		LACK OF CONTROL OF JET SKIS

Boating Etiquette/Safety/Speed	Environmental Conditions	Congestion/Crowding	Jet Skis	Noise	Public Access/Infringement on Private Property	Regulation	Other	Comment
						✓		MOORINGS & MAKING RULES FOR ALL OF COLCHESTER LAKE FRONT DOESN'T MAKE SENSE!
	✓	✓						WATER QUALITY, CROWDING IN SOME MOORING AREAS, WASTE DISCHARGE FROM TRANSIENT VESSELS
			✓					I'D HATE TO SEE MANY MORE JET SKIS
	✓							WEEDS AND ALGAE
				✓				NOISY CRAFT CREATE A NUISANCE
							✓	NONE
			✓					JET SKIS THEIR EFFECT ON PADDLE CRAFT BIRD & WILDLIFE
✓								BOATS (CAMP KINIYA MOTORBOATS & CANOES) HAVE COME TOO CLOSE TO OUR RAFT. THE CANOES HAVE ACTUALLY HIT SOME OF OUR GUESTS
				✓				NOISE POLLUTION
					✓			CONCERN RE BOATERS COMING ONTO PRIVATE PROPERTY TO JUMP FROM CLIFFS OR WALK DOGS. DUMPING AN OCCASIONAL PROBLEM
	✓				✓			WATER QUALITY IS A MAJOR CONCERN, ALSO PUBLIC ACCESS
			✓					FINES FOR JET SKI/WATER BIKE VIOLATIONS NEED TO BE HIGHER AS THEY ARE NOT A DETERRENT i.e. JET SKIS AT FULL SPEED UP MALLETTS CREEK
	✓		✓	✓				NOISE POLLUTION BY JET SKIS ETC., OIL POLLUTION (ENGINE COOLANT) & HUMAN WASTE POLLUTION
					✓			TOO MANY CANADIANS ANCHORING RIGHT OFF SHORE & USING THE SHORE LINE FOR A LATRINE
			✓	✓				JET SKI NOISE
	✓							DUMPING OF HOLDING TANKS, THROWING OF GARBAGE OVERBOARD, INCREASE IN UNDESIRABLE WEED GROWTH
							✓	OVERNIGHT VISITORS ANCHORING TOO CLOSE TO SHORE
			✓		✓			JET SKIS SUCK. INCONSIDERATE EARLY FISHERMAN COMING VERY CLOSE TO SHORE
	✓	✓						THE OILY SLICK ON WATER OBTAINED FROM THE BAY IS AN INDICATOR OF POLLUTION FROM TOO MANY MOTORIZED VESSELS. RECOMMEND THE WHOLE BAY OR THE RESIDENTIAL AREAS NOT BE ALLOWED GASOLINE ENGINES
							✓	HOME OWNERSHIP SHOULD HAVE FIRST CHOICE OF MOORINGS. NOT TO EXCEED 2 PER HOUSEHOLD

Boating Etiquette/Safety/Speed	Environmental Conditions	Congestion/Crowding	Jet Skis	Noise	Public Access/Infringement on Private Property	Regulation	Other	Comment
✓	✓		✓					THERE ARE SOME BIRD HABITATS (HERONS, DUCKS, MERGANSERS) THAT SHOULD BE RESTRICTED BY BOAT _ JET SKIS!!! MAYBE CERTAIN FOOTAGE SHOULD BE DETERMINED
✓								THERE ARE TOO MANY INEXPERIENCED BOATERS
		✓						GETTING CROWDED
✓								LACK OF ETIQUETTE ON BEHALF OF POWER BOATERS
			✓					MODIFY USE OF JET SKIS!!
	✓							PEOPLE LEAVING GARBAGE IN WATER AND ON BEACH
							✓	IT'S WAY OVERDUE, MALLETTS BAY DESPERATELY NEEDS RECREATIONAL ACTIVITIES DURING THE SUMMER MONTHS, IT WOULD HELP TOURISM
		✓						BOAT TRAFFIC IN AND OUT OF SPAULDING BAY ACCESS AREA
						✓		CONCERNED WITH OVER REGULATION BY NON BOATERS
			✓	✓				JET SKIS ARE A DREADFUL ANNOYANCE IN AREA 9. THEY ARE VERY NOISY & TIRESOME & USED MANY HOURS EVERY DAY JUST FOR KICKS
							✓	IT IS JUST PERFECT!!
		✓						TOO MANY MOORINGS
	✓				✓			PLEASURE BOATS ANCHORING FOR WEEKEND IN FRONT OF PROPERTY PEOPLE CONTINUE TO USE LAKE AND DUMPING CONCERNS
✓			✓					BOATS EXCEEDING 5 MPH OR MAKE A WAKE IN A NO WAKE ZONE, JET SKIS ALL OVER THE PLACE
							✓	I DO NOT SEE ANY PROBLEMS. MALLETTS BAY IS A GREAT PLACE TO BOAT AS LONG AS YOU ARE RESPONSIBLE
✓		✓						THE INNER BAY IS A ZOO OF INEXPERIENCED SPEED NUTS. I DON'T GO THERE, THEY DON'T OBEY THE RULES OF THE ROAD
		✓						CONGESTION
							✓	NONE
✓								ENFORCE REDUCE SPEEDS IN AREA 6 POWER BOATS
					✓			FEEL SHORE OWNERS WHO OWN PROPERTY & PAY HIGH TAXES SHOULD HAVE PREFERRED TREATMENT
✓								BOATS COME IN TOO CLOSE TO SHORE - CHILDREN SWIM THERE AND I DON'T WANT THEM HURT

Boating Etiquette/Safety/Speed	Environmental Conditions	Congestion/Crowding	Jet Skis	Noise	Public Access/Infringement on Private Property	Regulation	Other	Comment
			✓	✓				DO NOT LIKE NOISY JET SKIS
			✓	✓				JET SKIS ARE NOISY AND A NUISANCE
			✓	✓				EXCESSIVE NOISE FROM POWER BOATS, ESP THE JET SKIS TYPE
			✓					JET SKI BOATS SHOULD BE BANNED
				✓		✓		LACK OF TOWN CONTROL OF MOORINGS AND RAFTS; UNDULY LOUD BOAT AND ENGINE NOISE
	✓	✓				✓		EXCESSIVE BOATING INTERFERES WITH SWIMMING - FEAR TO USE ROW BOAT AND CANOES. ALSO THERE IS GASOLINE SCUM BY SHORE. BOATING NEEDS TO BE REGULATED
	✓							BOATERS ON OUR BEACH OR DOCKS, WEEDS LIKE ASIAN MILFOIL, GARBAGE DUMPED FROM BOATS
	✓							ALGAE, WEEDS
							✓	ON THE AVERAGE VERY LITTLE USE OF THE BAY MOST PEOPLE WITH BOATS HEAD OUT TO BROAD LAKE
	✓							THERE SEEMS TO BE MORE ALGAE THIS YEAR
	✓							SEWAGE DRAINAGE (CAMPS & BOATS)
					✓			THERE SHOULD BE MORE ACCESS FOR VISITORS TO THIS AREA - PICNIC - SHOPPING ET.
		✓	✓	✓				HATE THE SOUND OF JET SKIS - I DISLIKE HOW THE LARGE # OF POWER BOATS ANCHOR OFF THAYER'S BEACH! ALL WEEKEND EVERY WEEKEND
✓						✓		ENFORCEMENT AND SAFETY ARE GOOD. THEY NEED TO BE MAINTAINED. MOORING REGULATIONS SHOULD BE UP TO TOWNS NOT THE STATE!
			✓					AREAS 9&10 SOMETIMES 3 JET SKIS COMPETING & CONTORTING WITH EACH OTHER. RARELY IS THERE A DAY THAT ONE JET SKIER IS NOT OUT GUNNING HIS MACHINE FOR HOURS. EXTREMELY ANNOYING
		✓						OVER CROWDED
	✓							WATER QUALITY
	✓	✓						TOO CROWDED, WEEDS ARE BECOMING A PROBLEM
						✓		COAST GUARD AND STATE POLICE "SAFETY CHECKS" WITH NO PROBABLE CAUSE ARE A HUGE NUISANCE AND SHOULD BE STOPPED
✓	✓							SAFE BOATING PRACTICES AND A BETTER HANDLE ON POLLUTION BY BOATS (OWNERS)
								NOISE FROM JET SKIS, BAN COMMERCIAL FISHING (NOT

Boating Etiquette/Safety/Speed	Environmental Conditions	Congestion/Crowding	Jet Skis	Noise	Public Access/Infringement on Private Property	Regulation	Other	Comment
							✓	WE JUST LIVE HERE
✓			✓	✓				NEED TO REGULATE USAGE OF JET SKIS FOR NOISE AND SAFETY NEAR SWIMMING AND RESIDENTIAL AREAS
	✓		✓					WATER QUALITY - JET SKI & WATER SKIERS AMONG MOORED VESSELS
✓			✓					JET SKI OPERATORS SHOW NO RESPONSIBILITY WHEN USING THEIR MACHINES
						✓		GOOD HELP & CONTROL BY LOCAL/STATE POLICE. SHOULD BE ABLE TO CONTACT THEM DIRECTLY BY MARINE RADIO NOT VIA USCG!!
	✓							WATER QUALITY
	✓		✓	✓				INCREASE IN WEEDS IN INNER BAY - THOSE D... NOISY JET SKI TYPE THINGS!
				✓		✓		INADEQUATELY MUFFLED BOAT MOTORS; LACK OF TOWN CONTROL OF MOORINGS, RAFTS, ETC.
	✓							POLLUTION
	✓					✓		BOATERS ON OR TYING UP TO OUR PRIVATE PROPERTY; BEER BOTTLES AND WASTE DUMPED; SPREAD OF ASIAN MILFOIL AND OTHER WEEDS
			✓	✓				JET SKIS - NOISE POLLUTION - THEIR NOISE CAN RUIN THE ENJOYMENT OF THE BAY
	✓				✓			NOT ENOUGH MOORING SPACE FOR LANDOWNERS AROUND MALLETTS BAY. I DON'T WANT PEOPLE I DON'T KNOW CROSSING MY LAND TO GET TO THEIR MOORINGS. POLLUTION FROM TOO MANY PEOPLE
						✓		NEED MORE PUBLIC ACCESS, BETTER POLICING
					✓			MORE CONCERN SHOULD BE SHOWN FOR THE WISHES OF THE LAKESHORE OWNERS - WHO PAY DEARLY FOR THE "PRIVILEGE"
	✓				✓			PUBLIC ACCESS AND WATER QUALITY
	✓	✓	✓					WATER QUALITY APPEARS TO BE A CONTINUING PROBLEM FROM BEACH FIELDS THAT HAVE FAILED /WEEKEND MOTORBOAT TRAFFIC IS HEAVY IN AREA 9 WITH JET SKIS, SAILBOARDING, WATER SKIING AND TUBING/BOARDING TAKING PLACE PLUS TRANSIENT MOORING FOR THE ENTIRE WEEKEND
							✓	OUR SECTION WELL MANAGED AND NOT CROWDED
✓			✓	✓				WE CONTINUE TO OBJECT TO THE NOISE OF JET SKIS & THEIR BEHAVIOR

Boating Etiquette/Safety/Speed	Environmental Conditions	Congestion/Crowding	Jet Skis	Noise	Public Access/Infringement on Private Property	Regulation	Other	Comment
					✓			BUOY ACCESS SHOULD NOT BE PERMITTED FROM PUBLIC BOAT ACCESS AREA.
					✓	✓		BETTER PUBLIC ACCESS; BETTER MORE POLICING
	✓		✓					WATER QUALITY - JET SKI & WATER SKIERS AMONG MOORED VESSELS
	✓				✓			PEOPLE TRESPASS ACROSS NEIGHBOR'S PROPERTY TO MAINTAIN BOAT & MOORING IN FRONT OF OUR COTTAGE. GLOBAL CONCERN - BOATS WITH TOILETS - ILLEGAL DISCHARGE
	✓				✓			WATER QUALITY & PUBLIC ACCESS
			✓	✓				JET SKIS ARE VERY NOISY IN OUR AREA (PORTERS POINT)
	✓				✓			BOATERS TYING UP TO OUR PRIVATE PROPERTY (CLEARLY MARKED) WASTE DUMPED; SPREAD OF ASIAN MILFOIL & OTHER WEEDS
	✓							ALGAE & WEEDS
				✓		✓		INADEQUATELY MUFFLED BOAT MOTORS, LACK OF TOWN CONTROL OVER MOORINGS, RAFTS,ETC.
			✓					BAN JET SKIERS!
			✓					BAN JET SKIS!

APPENDIX D: GENERAL ATTITUDE SURVEY

Hello, my name is _____., and I'm calling on behalf of the Town of Colchester. We're conducting a survey to assist the Town in developing a Recreation Plan for Malletts Bay on Lake Champlain. It will take approximately 3 minutes to conduct the survey. May I ask you a few questions? I want to assure you that your telephone number was chosen randomly, and all of your responses are completely confidential.

Q-1) What Town do you live in?

- ❑ a) Burlington
- ❑ b) Winooski
- ❑ c) South Burlington
- ❑ d) Colchester
- ❑ e) Essex
- ❑ f) Milton
- ❑ g) Westford
- ❑ h) Williston

Q-2) Have you heard of Malletts Bay on Lake Champlain?

- ❑ YES (GO TO Q-3)
- ❑ NO **(if no, survey ends. Thank you.)**

Q-3) Have you ever used Malletts Bay for recreation?

- ❑ YES (GO TO Q-4)
- ❑ NO **(GO TO Q-3a)**

Q-3a) Which of the following best describes why you have not used Malletts Bay for recreation?

- ❑ a) Malletts Bay is not convenient/there is poor Vermont Fish & Wildlife Public Access Area.
- ❑ b) Malletts Bay is too crowded.
- ❑ c) I prefer to recreate elsewhere.
- ❑ d) Other (briefly describe) **(GO TO Q-7)**

Q-4) What is the primary activity you engage in when you go to Malletts Bay?

- ❑ a) fishing
- ❑ b) swimming
- ❑ c) sailing
- ❑ d) sailboarding
- ❑ e) water-skiing
- ❑ f) touring
- ❑ g) sightseeing
- ❑ h) jet skiing
- ❑ i) canoeing/kayaking
- ❑ j) snowmobiling
- ❑ k) ice fishing
- ❑ l) other

Q-5) How well suited is Malletts Bay for ___(from Q-4 above)___?

- ❑ a) Well Suited **(go to Q-6a)**
- ❑ b) Average **(go to Q-6b)**
- ❑ c) Not Well Suited **(go to Q-6b)**

Q-6a) What is the main reason Malletts Bay is well-suited to your primary activity?

- ❑ a) convenient/good access
- ❑ b) scenic beauty/clean water
- ❑ c) good services (for boats; food, beverages available)
- ❑ d) other

Q-6b) Why is Malletts Bay **not** well suited to your primary recreational activity?

- ❑ a) Malletts Bay is not convenient/poor access.
- ❑ b) Malletts Bay is too crowded.
- ❑ c) Malletts Bay is too polluted.
- ❑ d) I pursue my primary activity elsewhere. **(GO TO Q-6c)**
- ❑ e) Other

Q-6c) Where do you normally go?_____