

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

**IMPORTANCE AND SATISFACTION RATINGS
BY RECREATING VISITORS TO THE
FLORIDA KEYS/KEY WEST 2007-08**

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National Ocean Service
National Oceanic and Atmospheric Administration
U.S. Department of Commerce



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Funding Partners:

NOAA/NOS

- Office of National Marine Sanctuaries (ONMS) HQ and Florida Keys National Marine Sanctuary
- National Centers for Coastal Ocean Science
- Coral Reef Conservation Program

The Nature Conservancy's Florida Keys Program

Working Partners:

The Monroe County Tourist Development Council (TDC)

ONMS/TSPD

- Project Leadership
- Develop survey sample design/questionnaires
- Provide estimation of visitation
- Provide economic analysis
- Provide Report

Bicentennial Volunteers, Inc.

- Recruit volunteers for winter tourist interviews

Local Chamber of Commerce/TDC

- Provide list of sample sites for customer survey
- Enlist business support to survey at sites

University of Massachusetts-Amherst, Human Dimensions of Marine and Coastal Ecosystems Program

- Manage tourist survey efforts
 - o Data collection
 - o Database construction
 - o Quality analysis/quality control of data
 - o Provide data analysis
 - o Produce reports

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Introduction

This is the second report in a series on visitors to the Florida Keys/Key West as part of the project entitled “Linking the Economy and Environment of the Florida Keys/Key West 2007-08.” The first report, “Visitor Profiles: Florida Keys/Key West 2007-08,” provides detailed profiles of visitors in terms of the number of visitors by mode of access (auto, air, cruise ship and ferry), activity participation by district (Key Largo, Islamorada, Lower Keys and Key West), intensity of activity (days), demographic profiles (age, race/ethnicity, sex, household income, household type, party size, party type, education, employment status, and disabilities), and spending patterns (per person per day and per person per trip). This report is referenced under Leeworthy, Loomis and Paterson (2010).

The third report in the series, “Economic Contribution of Recreating Visitors to the Florida Keys/Key West 2007-08,” provides estimates of the market economic impacts of visitors on both the Monroe County and South Florida economies in terms of sales, output, income and employment. This report is referenced under Leeworthy and Ehler (2010).

In addition, since this study is a 12-year replication of the study done in 1995-96, separate reports will summarize comparisons over the 1995-96 to 2007-08 period. The results of these comparisons will be posted on the following url: <http://sanctuaries.noaa.gov/science/socioeconomic/FloridaKeys/recreation/96-08>.

This report includes ratings given by visitors on the importance of, and satisfaction derived from 25 natural resource attributes, facilities and services. For presentation, a technique called “importance-performance” or “importance-satisfaction” is used. This technique is a simple but useful way in which to summarize and provide an interpretation of visitor ratings. We hope that businesses will find the information useful in marketing applications and in improving the delivery of services and facilities to visitors. Similarly, we believe that government agencies responsible for managing natural resources or providing facilities and services will find the information useful when taking the customer-satisfaction approach in their endeavors.

Mailback Survey. The information reported here was obtained from the mailback portion of the Auto, Air Cruise Ship and Ferry Surveys conducted during December 2007 to November 2008. Over 2,800 on-site interviews were conducted during this twelve-month sampling period on the highway (U.S. 1), the Key West airport, at the cruise ship docks in Key West, and at the ferry terminal in Key West. There were 453 respondents to the mailback portion of the survey out of 2,854 total on-site interviews, for a response rate of

15.87 percent (19.48 percent during the summer and 13.78 percent during the winter). Response rates varied by mode of access (auto, air, cruise ship, and ferry), age, household income, race/ethnicity, and whether the visitor was foreign or domestic. Generally, response rates were higher for older

visitors, visitors that were White Not Hispanic, and for domestic visitors. An analysis on possible non-response bias was conducted and it was found that although there were significant differences in response rates by the socioeconomic factors cited above, these factors were not generally significant and did not have high explanatory power for most responses. It was concluded that there was the possibility of some non-response bias, but that sample weighting might adjust for the problem, making it insignificant. For details on the sampling methods, methods of estimating, and sample weighting, see Leeworthy (2010).

Importance-Satisfaction Analysis. For many years, the U.S. Forest Service and many other federal, state, and local agencies that manage parks and/or other natural resources have used the National Satisfaction Index (NSI) for measuring visitor satisfaction. Satisfaction is a complex feature of the recreation/tourist experience and it is now agreed upon by most researchers that “Importance-Performance” or “Importance-Satisfaction” is a much more complete measure and provides a much simpler interpretation than the NSI. First described in the marketing literature by Martilla and James (1977), it has been described and/or used in such studies as Guadagnolo (1985), Richardson (1987), Hollenhorst, Olson, and Fortney (1992), Leeworthy and Wiley (1994, 1995, and 1996), and Leeworthy et al (2004).

The satisfaction mailback questionnaire was divided into two sections to obtain the necessary informa-

tion for the importance-satisfaction analysis. The first section asks the respondent to read each statement and rate the **importance** of each of the 25 items as it contributes to an ideal recreation/tourist setting for the activities they did in the Florida Keys/Key West area. Each item is rated or scored on a one to five scale (1-5) with one (1) meaning “Not Important” and five (5) meaning “Extremely Important.” The respondent was also given the choices of answering “Not Applicable” or “Don’t Know.” The second section asks the respondent to consider the same list of items they just rated for importance and to rate them for how **satisfied** they were with each item at the places they did their activities in the Florida Keys/Key West area. Again, a five point scale was used with one (1) meaning “Terrible” and a score of five (5) meaning “Delighted.” Respondents were also given the choices of answering either “Not Applicable” or “Don’t Know.”

In this report, the collected data is presented in several ways. First, the means or average scores are reported along with the estimated standard errors of the mean, the sample sizes (number of responses), and the percent of respondents that gave a rating. This latter measure is important because many respondents provide importance ratings for selected items but may not have had a chance to use a resource, facility, or service and therefore do not provide a satisfaction rating. This might lead to biases in comparing importance and satisfaction. However, in past applications, we have found that the analysis is robust with respect to this problem, i.e., it has no sig-

nificant impact on the conclusions (see Leeworthy and Wiley 1994, 1995, and 1996) and Leeworthy et al (2004).

The second method of presentation is the bar charts showing the mean scores for each item for importance and satisfaction. It is important to note that while both importance and satisfaction are measured on a one to five scale, the scales have different meanings are not really directly comparable. They do, however, communicate relative importance/satisfaction relationships across the different items. But some find this harder to work with than the simpler analytical framework provided next.

The most useful analytical framework provided in importance-satisfaction analysis is the four-quadrant presentation. The four

quadrants are formed by first placing the importance measurement on the vertical axis and the satisfaction measurement on the horizontal axis (see Figure 1). An additional vertical line is placed at the mean score for all 25 items on the satisfaction scale and an additional horizontal line is placed at the mean score for all 25 items on the importance scale. These two lines form a cross hair. The cross hair then separates the importance-satisfaction measurement area into four separate areas or quadrants. This allows for interpretation as to the “**relative importance**” and “**relative satisfaction**” of each item. That is, if everyone gave high scores to all items in the Florida Keys/Key West area, we would still be able to judge the relative importance and satisfaction and establish priorities.

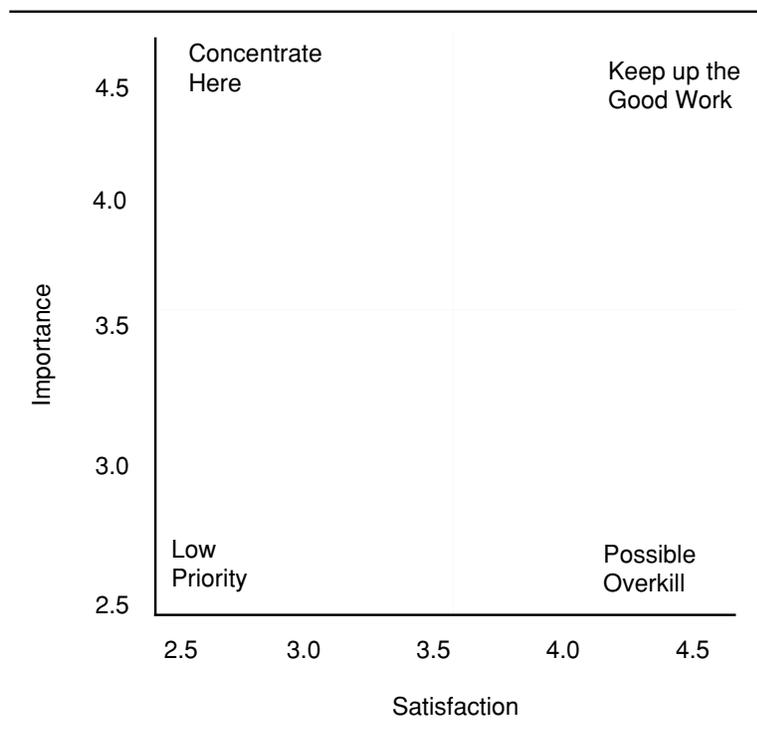


Figure 1 Importance/Satisfaction Matrix

The use of the four quadrants provides a simple but easy-to-interpret summary of results. Scores falling in the upper left quadrant are relatively high on the importance scale and relatively low on the satisfaction scale. This quadrant is labeled “**Concentrate Here.**” Scores falling in the upper right quadrant are relatively high on the importance scale and also relatively high on the satisfaction scale and are labeled “**Keep up the Good Work.**” Scores falling in the lower left quadrant are relatively low on both the importance and satisfaction scale and are labeled “**Low Priority.**” And, finally, scores in the lower right quadrant are relatively low on the importance scale but relatively high on the satisfaction scale and are labeled “**Possible Overkill.**”

This report is divided into four sections. In section one, the importance-satisfaction analysis is presented for 25 items by season (e.g., December 2007 – May 2008, June 2008 – November 2008, and a weighted annual average for December 2007 – November 2008).

In section two, information is presented on 12 of the 25 items for which visitors who had visited the Florida Keys at least five years ago were asked to give retrospective satisfaction ratings. That is, these visitors were asked to rate how satisfied they were with these 12 items five years ago. We then test for whether there has been a statistically significant increase or decline in the satisfaction with these items.

In sections three and four, we present the same type of information presented in sections one and two for all recreating visitors for

the sub-sample of “Overnight Visitors”. This was done so one could make comparisons with the regularly implemented surveys by the Monroe County Tourist Development Council.

Importance-Satisfaction Analysis: All Visitors by Season

For presentation purposes, the 25 items that visitors were asked to rate are organized into four categories. In the survey, the order of the items was mixed. Each of the items is given a letter rather than a number and so are labeled A through Y. Items A through G are labeled “**Natural Resources.**” These seven (7) items are either natural resources or attributes of natural resources such as clear water. Items H through M are labeled “**Natural Resource Facilities.**” These six (6) items are either facilities that provide access to natural resources or areas or features that provide public access to natural resources. Items N through V are labeled “**Other Facilities.**” These nine (9) items are either facilities or features of facilities that are not directly related to natural resources but are indirectly related since they represent items associated with the general infrastructure of the area. Items W through Y are labeled “**Services.**” These three (3) items are either services or features of a service provided to visitors. We considered separate analyses for each group but rejected this approach in favor of establishing the relative importance of each item with respect to all items. The organization into four categories was done simply as an aid to those users that have responsibilities in separate areas.

Importance/Satisfaction Matrix Code Descriptions, Graphs of Means, and Descriptive Statistics, December 2007 – May 2008

Code from Matrix - Description	Graph of Mean	Mean	Standard Error	N	% Rated
<u>Natural Resources</u>					
A. Clear water (high visibility)		4.02	0.0578	215	86
		4.01	0.0526	210	84
B. Amount living coral on reefs		3.90	0.0793	192	77
		3.80	0.0761	123	49
C. Many different kinds of fish and sealife to view		3.67	0.0684	206	83
		3.91	0.0535	154	62
D. Many different kinds of fish and sealife to catch		2.55	0.1068	169	68
		3.80	0.0926	76	31
E. Opportunity to view large wildlife		3.70	0.0756	207	83
		3.53	0.0771	151	61
F. Large numbers of fish		3.26	0.0903	186	75
		3.66	0.0696	124	50
G. Quality of beaches		4.25	0.0548	231	93
		3.65	0.0542	197	79
<u>Natural Resource Facilities</u>					
H. Parks and specially protected areas		3.98	0.0631	226	91
		3.82	0.0510	180	72
I. Shoreline access		3.97	0.0659	219	88
		3.46	0.0617	194	78
J. Designated swimming/beach areas		4.01	0.0643	223	90
		3.52	0.0620	186	75
K. Mooring bouys near coral reefs		2.76	0.1102	157	63
		3.88	0.0906	68	27
L. Marina facilities		2.28	0.1005	147	59
		3.82	0.0861	70	28
M. Boat ramps/launching facilities		2.06	0.0990	144	58
		3.51	0.1177	52	21
<u>Other Facilities</u>					
N. Historic preservation (historic landmarks, houses, etc.)		3.93	0.0616	232	93
		4.12	0.0392	192	77
O. Parking		3.54	0.0703	216	87
		3.20	0.0757	188	76
P. Public transportation		2.61	0.0926	189	76
		3.62	0.0748	108	43
Q. Directional signs, street signs, mile markers		3.74	0.0675	236	95
		3.73	0.0472	231	93
R. Condition of bike paths and sidewalks/walking paths		3.70	0.0713	218	88
		3.67	0.0565	182	73
S. Condition of roads and streets		3.75	0.0590	236	95
		3.64	0.0438	236	95
T. Availability of public restrooms		4.07	0.0663	237	95
		3.45	0.0636	204	82
U. Cleanliness of streets and sidewalks		3.99	0.0525	239	96
		3.71	0.0447	235	94
V. Uncrowded conditions		3.59	0.0730	229	92
		3.57	0.0531	225	90
<u>Services</u>					
W. Maps, brochures, and other tourist information		3.62	0.0739	231	93
		4.10	0.0453	214	86
X. Customer service and friendliness of people		4.39	0.0471	238	96
		3.99	0.0438	238	96
Y. Value for the price		4.29	0.0524	237	95
		3.44	0.0536	232	93

Figure 2 Importance/Satisfaction Matrix Code Descriptions, Graphs of Means, and Descriptive Statistics, December 2007 – May 2008

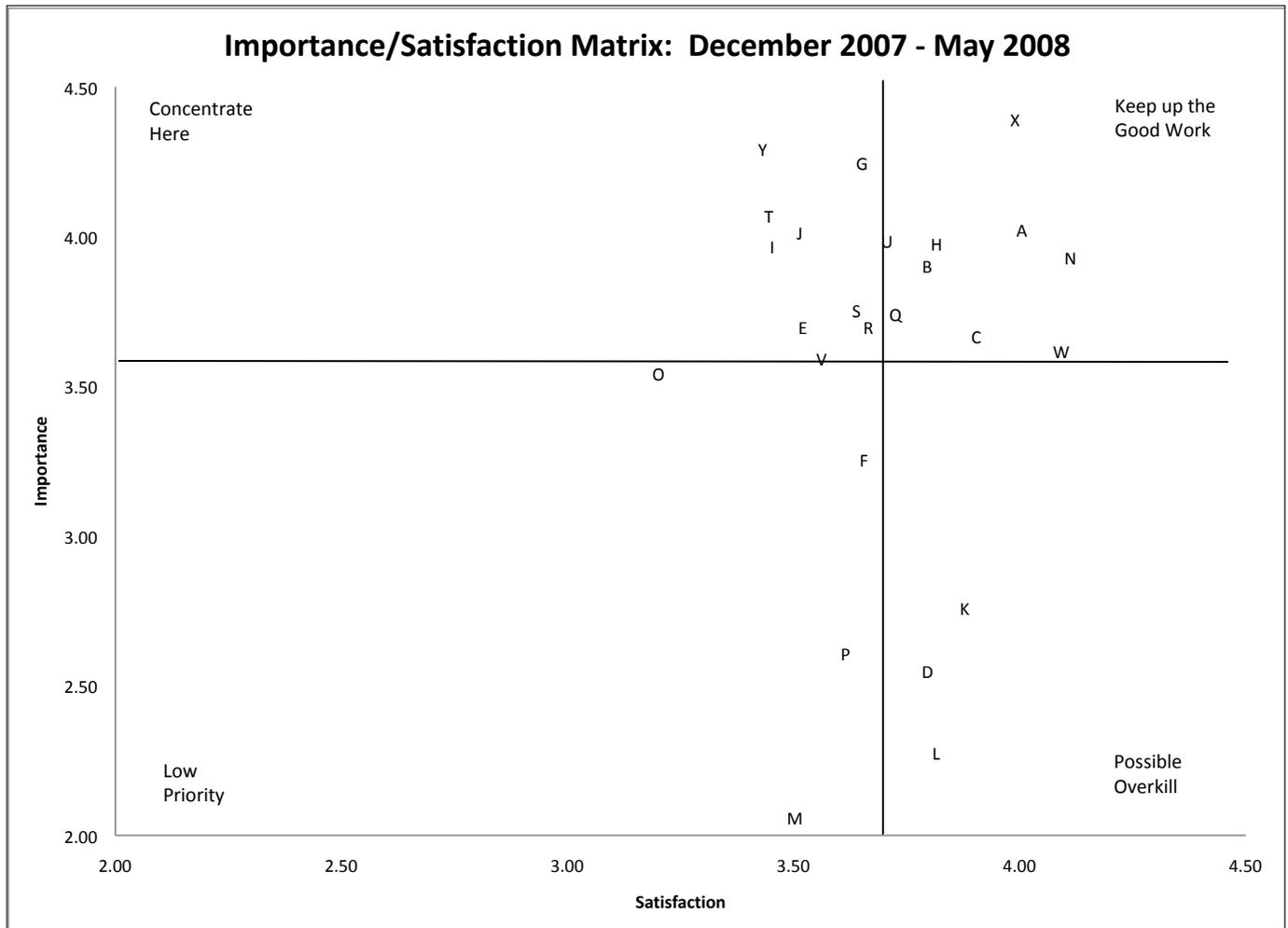


Figure 2 Importance/Satisfaction Matrix Code Descriptions, Graphs of Means, and Descriptive Statistics, December 2007 – May 2008

December 2007 – May 2008. There were 249 respondents in total to the winter season survey. In none of the cases did 100 percent of all respondents give ratings for any one item. Figure 2 summarizes the importance-satisfaction results for the summer season; the last column reports the percent of respondents that provided a rating on the item. Generally, as was discussed earlier, a lower percent of respondents provide satisfaction ratings for a given item than provide importance ratings. The four-quadrant analysis places nine items in the “**Concentrate Here**” quadrant. They are E. Opportunity

to view large wildlife, G. Quality of beaches, I. Shoreline access, J. Designated swimming/beach areas, R. Condition of bike paths and sidewalks/walking paths, S. Condition of roads and streets, T. Availability of public restrooms, V. Uncrowded conditions, and Y. Value for the price.

Importance/Satisfaction Matrix Code Descriptions, Graphs of Means, and Descriptive Statistics, June 2008 – November 2008

Code from Matrix - Description	Graph of mean	Mean	Standard Error	N	% Rated
Natural Resources					
A. Clear water (high visibility)		4.07	0.0634	195	96
		3.90	0.0567	190	93
B. Amount living coral on reefs		3.96	0.0803	177	87
		3.70	0.0731	128	63
C. Many different kinds of fish and sealife to view		4.01	0.0690	186	91
		3.73	0.0649	152	75
D. Many different kinds of fish and sealife to catch		2.81	0.1192	166	81
		3.56	0.0863	75	37
E. Opportunity to view large wildlife		3.75	0.0783	188	92
		3.28	0.0800	130	64
F. Large numbers of fish		3.66	0.0891	173	85
		3.49	0.0719	129	63
G. Quality of beaches		4.17	0.0741	197	97
		3.36	0.0763	162	79
Natural Resource Facilities					
H. Parks and specially protected areas		4.07	0.0622	195	96
		3.88	0.0613	150	74
I. Shoreline access		3.79	0.0778	192	94
		3.38	0.0780	159	78
J. Designated swimming/beach areas		3.77	0.0832	192	94
		3.33	0.0815	155	76
K. Mooring bouys near coral reefs		3.53	0.1044	153	75
		3.79	0.0822	78	38
L. Marina facilities		2.60	0.0967	149	73
		3.76	0.0666	80	39
M. Boat ramps/launching facilities		2.61	0.1111	143	70
		3.77	0.0812	62	30
Other Facilities					
N. Historic preservation (historic landmarks, houses, etc.)		3.78	0.0764	197	97
		3.98	0.0599	159	78
O. Parking		3.29	0.0819	185	91
		3.34	0.0854	146	72
P. Public transportation		2.18	0.0971	180	88
		3.30	0.1240	81	40
Q. Directional signs, street signs, mile markers		3.60	0.0761	201	99
		3.70	0.0478	189	93
R. Condition of bike paths and sidewalks/walking paths		3.47	0.0819	186	91
		3.68	0.0622	141	69
S. Condition of roads and streets		3.57	0.0678	201	99
		3.66	0.0516	194	95
T. Availability of public restrooms		4.02	0.0629	201	99
		3.35	0.0622	176	86
U. Cleanliness of streets and sidewalks		3.82	0.0714	201	99
		3.67	0.0534	195	96
V. Uncrowded conditions		3.57	0.0752	192	94
		3.63	0.0573	192	94
Services					
W. Maps, brochures, and other tourist information		3.36	0.0777	198	97
		3.82	0.0547	175	86
X. Customer service and friendliness of people		4.19	0.0623	202	99
		3.99	0.0481	201	99
Y. Value for the price		4.19	0.0586	201	99
		3.45	0.0551	199	98

Figure 3 Importance/Satisfaction Matrix Code Descriptions, Graphs of Means, and Descriptive Statistics, June 2008 – November 2008

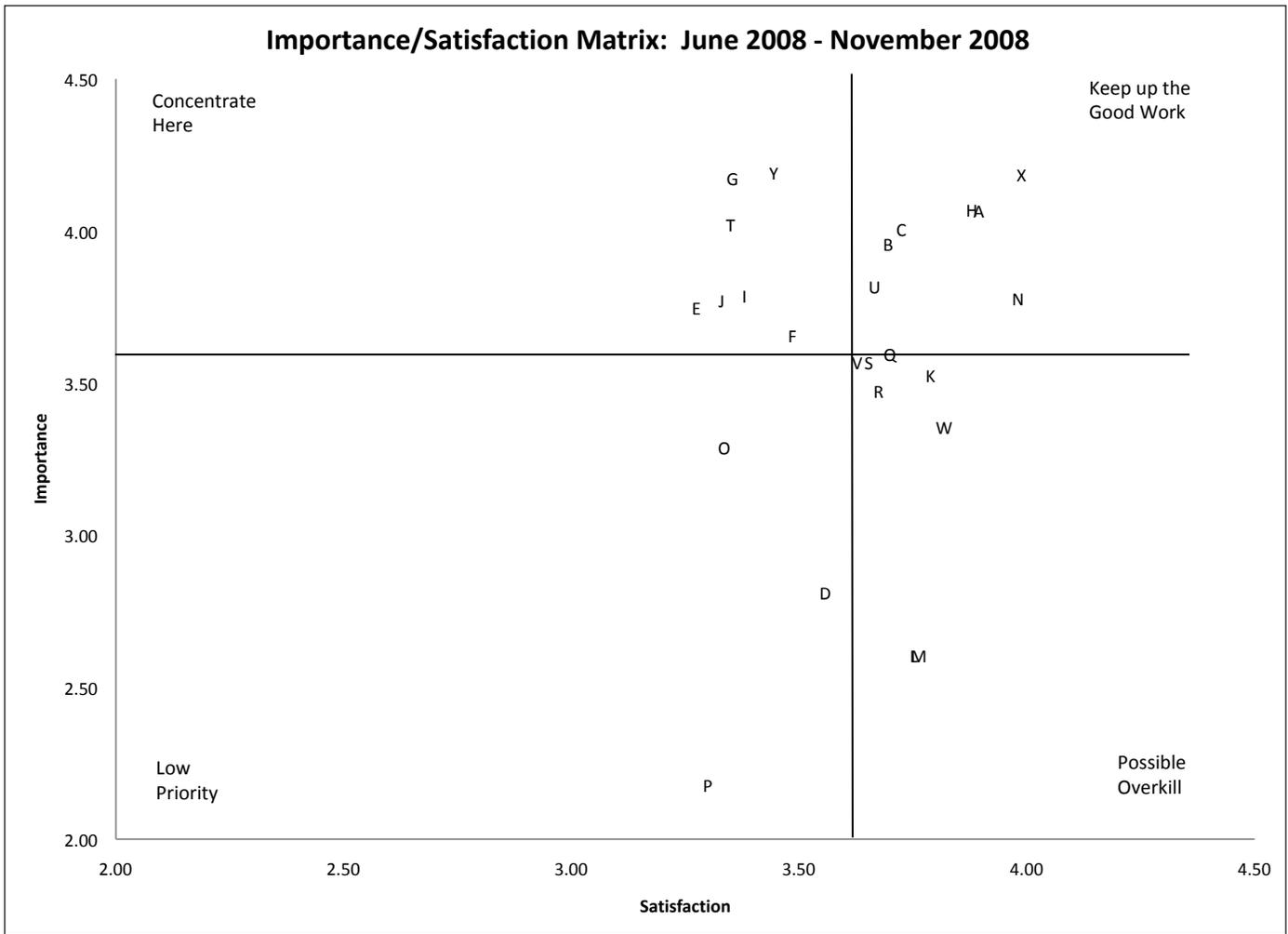


Figure 3 Importance/Satisfaction Matrix Code Descriptions, Graphs of Means, and Descriptive Statistics, June 2008 – November 2008

June 2008 – November 2008.

There were 204 respondents in total to the summer season survey. As in the winter survey, in no cases did 100 percent of visitors rate any particular item for importance or satisfaction. Figure 3 summarizes the importance-satisfaction results for the winter season. The four-quadrant analysis places seven items in the “**Concentrate Here**” quadrant. They are E. Opportunity to view large wildlife, F. Large numbers of fish, G. Quality of beaches, I. Shoreline access, J. Designated swimming/beach areas, T. Availability of public restrooms, and Y. Value for the price.

Importance/Satisfaction Matrix Code Descriptions, Graphs of Means, and Descriptive Statistics, December 2007 – November 2008

Code from Matrix - Description	Graph of Mean	Mean	Standard Error	N	% Rated	
Natural Resources						
A. Clear water (high visibility)		4.05	0.0428	410	91	
		S	3.96	0.0386	400	88
B. Amount living coral on reefs		I	3.93	0.0563	369	81
		S	3.75	0.0527	251	55
C. Many different kinds of fish and sealife to view		I	3.84	0.0493	392	87
		S	3.81	0.0425	306	68
D. Many different kinds of fish and sealife to catch		I	2.69	0.0804	335	74
		S	3.67	0.0635	151	33
E. Opportunity to view large wildlife		I	3.72	0.0543	395	87
		S	3.40	0.0559	281	62
F. Large numbers of fish		I	3.46	0.0642	359	79
		S	3.56	0.0504	253	56
G. Quality of beaches		I	4.21	0.0454	428	94
		S	3.51	0.0465	359	79
Natural Resource Facilities						
H. Parks and specially protected areas		4.02	0.0444	421	93	
		S	3.85	0.0395	330	73
I. Shoreline access		I	3.88	0.0508	411	91
		S	3.42	0.0490	353	78
J. Designated swimming/beach areas		I	3.90	0.0522	415	92
		S	3.43	0.0506	341	75
K. Mooring bouys near coral reefs		I	3.16	0.0788	310	68
		S	3.83	0.0607	146	32
L. Marina facilities		I	2.45	0.0702	296	65
		S	3.79	0.0534	150	33
M. Boat ramps/launching facilities		I	2.35	0.0762	287	63
		S	3.67	0.0689	114	25
Other Facilities						
N. Historic preservation (historic landmarks, houses, etc.)			3.86	0.0486	429	95
	S		4.05	0.0349	351	77
O. Parking	I		3.42	0.0539	401	89
	S		3.27	0.0566	334	74
P. Public transportation	I		2.39	0.0679	369	81
	S		3.49	0.0685	189	42
Q. Directional signs, street signs, mile markers	I		3.67	0.0507	437	96
	S		3.72	0.0336	420	93
R. Condition of bike paths and sidewalks/walking paths	I		3.59	0.0542	404	89
	S		3.67	0.0417	323	71
S. Condition of roads and streets	I		3.66	0.0448	437	96
	S		3.65	0.0335	430	95
T. Availability of public restrooms	I		4.05	0.0458	438	97
	S		3.40	0.0446	380	84
U. Cleanliness of streets and sidewalks	I	3.91	0.0437	440	97	
	S	3.69	0.0345	430	95	
V. Uncrowded conditions	I	3.58	0.0523	421	93	
	S	3.60	0.0389	417	92	
Services						
W. Maps, brochures, and other tourist information		3.49	0.0538	429	95	
		S	3.96	0.0358	389	86
X. Customer service and friendliness of people		I	4.29	0.0388	440	97
		S	3.99	0.0324	439	97
Y. Value for the price	I	4.25	0.0392	438	97	
	S	3.44	0.0383	431	95	

Figure 4 Importance/Satisfaction Matrix Code Descriptions, Graphs of Means, and Descriptive Statistics, December 2007 – November 2008

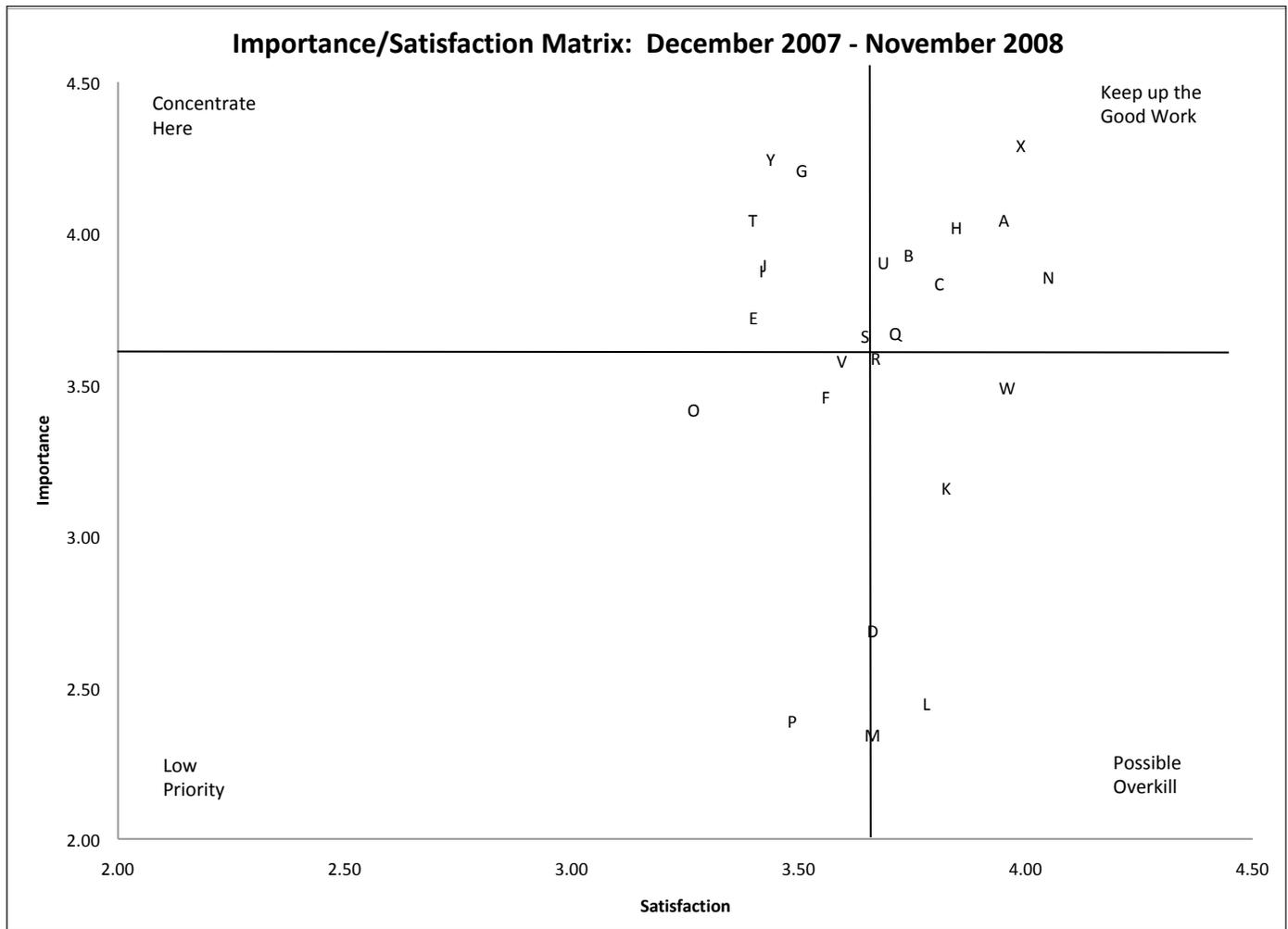


Figure 4 Importance/Satisfaction Matrix Code Descriptions, Graphs of Means, and Descriptive Statistics, December 2007 – November 2008

December 2007 – November 2008. For the entire year, there were 453 respondents. The results presented in Figure 4 are weighted annual averages. The four-quadrant analysis places seven items in the “**Concentrate Here**” quadrant. They are E. Opportunity to view large wildlife, G. Quality of beaches, I. Shoreline access, J. Designated swimming/ beach areas, S. Condition of roads and streets, T. Availability of public restrooms, and Y. Value for the price.

Cautionary Note. The results presented here are not intended as any policy statement about what either business or governments should or should not be doing. The interpretive framework for the importance-satisfaction is simply intended as a helpful guide in organizing the ratings given by visitors.

Satisfaction with Selected Items: Current Ratings versus Ratings Five Years Ago

As discussed in the Introduction, a sub-sample of visitors was asked to provide a retrospective rating for 12 of the 25 items presented in the importance-satisfaction analysis. The sub-sample of visitors was based on the answer to the following question: Had you visited the Florida Keys more than five years ago? Forty-two (42) percent answered YES to this question. This sub-sample was then asked to provide the retrospective rating for the 12 items. Table 1 presents the 12 items, summarizes the mean scores along with the estimated standard errors of the mean, and lists the sample size (or number of responses for each item). Also provided are the results of statistical tests for the difference in mean scores between the current rating and the rating for each item five years ago. A YES in the last column of Table 1 indicates that there was a statistically significant difference in the two mean scores for an item. A paired t-test was done using PROC MEANS in SAS Version 9.1. Differences in the scores were first calculated and tests for normality were conducted. The differences were all normally distributed, making the paired t-test appropriate. The differences noted here were significant at least at the 95 percent confidence level. There were significant declines in satisfaction ratings for two (2) of the 12 items and a significant increase in satisfaction for two (2) item. For eight of the items, there was no significant difference.

A Comparison of Satisfaction Ratings on 12 Selected Items: Current Ratings versus Five Years Ago – All Visitors.

Item	Mean	Stderr	N	Significant Difference ¹
Clear water (high visibility)				YES
Current rating	3.89	0.0606	144	
Five years ago	3.99	0.0587	133	
Amount of living coral on reefs				NO
Current rating	3.61	0.0758	94	
Five years ago	3.83	0.0840	95	
Opportunity to view large wildlife				YES
Current rating	3.24	0.0819	102	
Five years ago	3.55	0.0825	101	
Uncrowded conditions				YES
Current rating	3.66	0.0606	149	
Five years ago	3.42	0.0700	151	
Condition of roads and streets				NO
Current rating	3.61	0.0551	154	
Five years ago	3.53	0.0609	146	
Cleanliness of streets and sidewalks				NO
Current rating	3.57	0.0565	151	
Five years ago	3.48	0.0625	152	
Shoreline access				NO
Current rating	3.42	0.0736	130	
Five years ago	3.39	0.0771	126	
Quality of beaches				NO
Current rating	3.46	0.0761	129	
Five years ago	3.60	0.0724	129	
Customer service and friendliness of people				NO
Current rating	3.96	0.0494	157	
Five years ago	3.87	0.0580	155	
Historic preservation (historic landmarks, houses, etc.)				YES
Current rating	4.04	0.0664	112	
Five years ago	3.92	0.0640	118	
Parks and specially protected areas				NO
Current rating	3.82	0.0638	122	
Five years ago	3.81	0.0652	117	
Value for the price				NO
Current rating	3.42	0.0613	152	
Five years ago	3.48	0.0664	153	

Table 1 A Comparison of Satisfaction Ratings on 12 Selected Items: Current Ratings versus Five Years Ago – All Visitors.

Key Findings – All Visitors
Satisfaction Ratings: Current
versus Five Years Ago

- *Clear water (high visibility).* Significant decline.
- *Amount of living coral on reefs.* No difference.
- *Opportunity to view large wild life.* Significant decline.
- *Uncrowded conditions.* Significant increase.
- *Condition of roads and streets.* No difference.
- *Cleanliness of streets and sidewalks.* No difference.
- *Shoreline access.* No difference.
- *Quality of beaches.* No difference.
- *Customer service and friendliness of people.* No difference.
- *Historic preservation (historic landmarks, houses, etc.).* Significant increase.
- *Parks and specially protected areas.* No difference.
- *Value for the price.* No difference.

Importance- Satisfaction Analysis: Overnight Visitors by Season

For presentation purposes, the 25 items that overnight visitors were asked to rate are organized into four categories. In the survey, the order of the items was mixed. Each of the items is given a letter rather than a number and so are labeled A through Y. Items A through G

are labeled “**Natural Resources.**” These seven (7) items are either natural resources or attributes of natural resources such as clear water. Items H through M are labeled “**Natural Resource Facilities.**” These six (6) items are either facilities that provide access to natural resources or areas or features that provide public access to natural resources. Items N through V are labeled “**Other Facilities.**” These nine (9) items are either facilities or features of facilities that are not directly related to natural resources but are indirectly related since they represent items associated with the general infrastructure of the area. Items W through Y are labeled “**Services.**” These three (3) items are either services or features of a service provided to visitors. We considered separate analyses for each group but rejected this approach in favor of establishing the relative importance of each item with respect to all items. The organization into four categories was done simply as an aid to those users that have responsibilities in separate areas. Of the 453 total respondents to the survey, 388 indicated that they spent one or more nights in the Florida Keys/Key West.

Importance/Satisfaction Matrix Code Descriptions, Graphs of Means, and Descriptive Statistics, December 2007 – May 2008: Overnight Visitors.

Code from Matrix - Description	Graph of Mean	Mean	Standard Error	N	% Rated	
<u>Natural Resources</u>						
A. Clear water (high visibility)		4.02	0.0676	193	87	
		3.92	0.0588	189	85	
B. Amount living coral on reefs		3.87	0.0903	171	77	
		3.68	0.0758	114	51	
C. Many different kinds of fish and sealife to view		3.72	0.0815	184	83	
		3.90	0.0594	145	65	
D. Many different kinds of fish and sealife to catch		2.61	0.1165	154	69	
		3.79	0.0989	72	32	
E. Opportunity to view large wildlife		3.72	0.0812	186	83	
		3.54	0.0771	142	64	
F. Large numbers of fish		3.38	0.0975	168	75	
		3.62	0.0745	118	53	
G. Quality of beaches		4.22	0.0615	210	94	
		3.61	0.0586	188	84	
<u>Natural Resource Facilities</u>						
H. Parks and specially protected areas		4.04	0.0675	203	91	
		3.87	0.0538	170	76	
I. Shoreline access		4.05	0.0656	198	89	
		3.47	0.0670	183	82	
J. Designated swimming/beach areas		3.96	0.0730	202	91	
		3.48	0.0669	177	79	
K. Mooring bouys near coral reefs		3.03	0.1212	140	63	
		3.89	0.0949	64	29	
L. Marina facilities		2.44	0.1157	131	59	
		3.76	0.1037	63	28	
M. Boat ramps/launching facilities		2.28	0.1156	128	57	
		3.50	0.1227	49	22	
<u>Other Facilities</u>						
N. Historic preservation (historic landmarks, houses, etc.)			3.91	0.0688	209	94
	4.15		0.0474	173	78	
O. Parking	3.48		0.0814	196	88	
	3.23		0.0792	178	80	
P. Public transportation	2.45		0.1045	170	76	
	3.49		0.0886	97	43	
Q. Directional signs, street signs, mile markers	3.82		0.0675	213	96	
	3.76		0.0518	209	94	
R. Condition of bike paths and sidewalks/walking paths	3.72		0.0743	195	87	
	3.65		0.0648	168	75	
S. Condition of roads and streets	3.66		0.0672	213	96	
	3.61		0.0504	213	96	
T. Availability of public restrooms	3.95		0.0740	214	96	
	3.45		0.0674	187	84	
U. Cleanliness of streets and sidewalks	3.95	0.0602	215	96		
	3.65	0.0521	213	96		
V. Uncrowded conditions	3.51	0.0803	208	93		
	3.49	0.0578	206	92		
<u>Services</u>						
W. Maps, brochures, and other tourist information		3.53	0.0779	209	94	
		4.00	0.0468	198	89	
X. Customer service and friendliness of people		4.34	0.0526	215	96	
		3.98	0.0506	214	96	
Y. Value for the price		4.21	0.0594	213	96	
		3.28	0.0564	214	96	

Figure 5 Importance/Satisfaction Matrix Code Descriptions, Graphs of Means, and Descriptive Statistics, December 2007 – May 2008: Overnight Visitors.

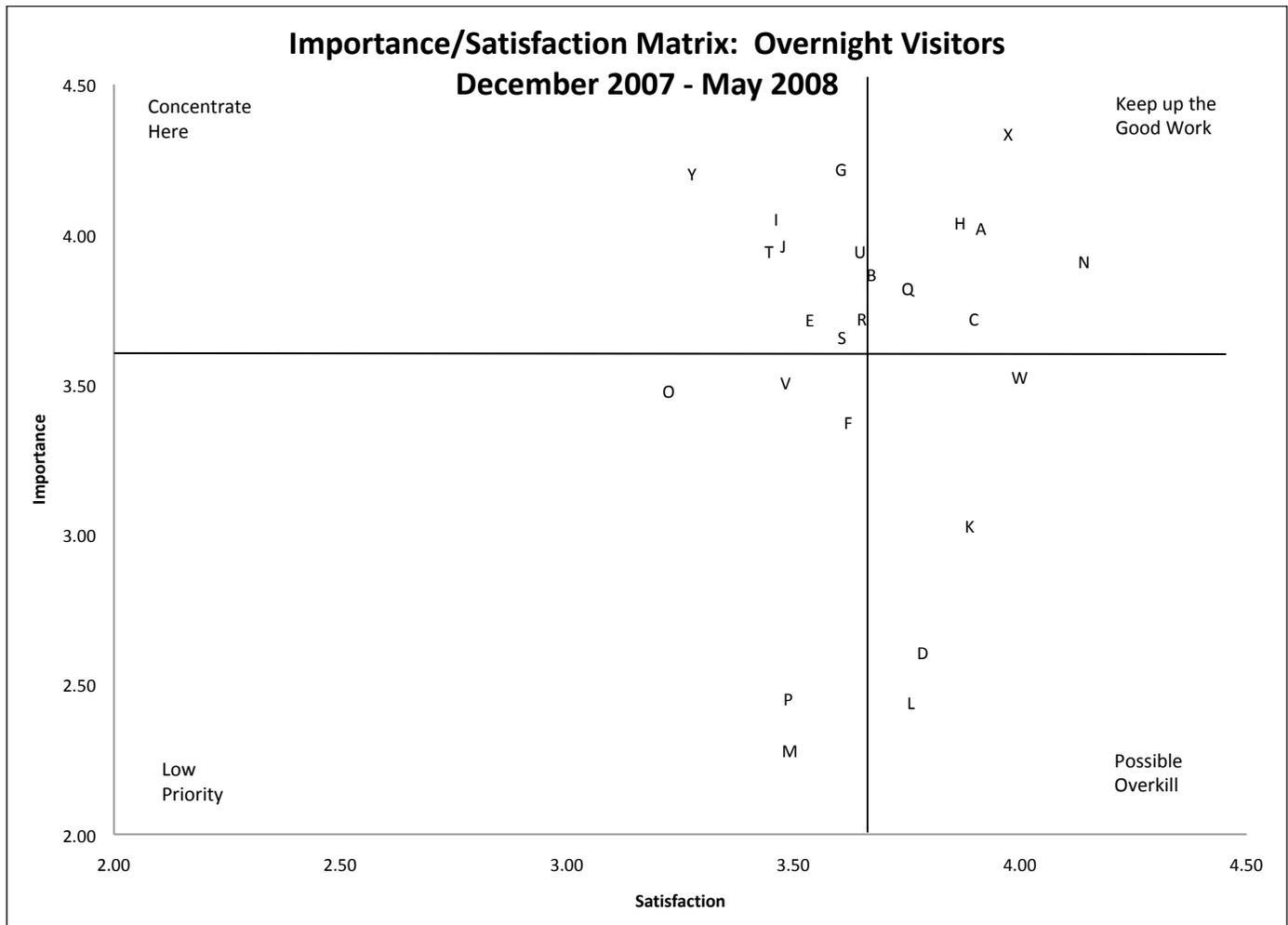


Figure 5 Importance/Satisfaction Matrix Code Descriptions, Graphs of Means, and Descriptive Statistics, December 2007 – May 2008: Overnight Visitors.

December 2007 – May 2008. There were 223 respondents in total to the winter season survey by overnight visitors. In none of the cases did 100 percent of all respondents give ratings for any one item. Figure 5 summarizes the importance-satisfaction results for the winter season for overnight visitors; the last column reports the percent of respondents that provided a rating on the item. Generally, as was discussed earlier, a lower percent of respondents provide satisfaction ratings for a given item than provide importance ratings. The four-quadrant analysis

places nine items in the “**Concentrate Here**” quadrant. They are E. Opportunity to view large wildlife, G. Quality of beaches, I. Shoreline access, J. Designated swimming/beach areas, R. Condition of bike paths and sidewalks/walking paths, S. Condition of roads and streets, T. Availability of public restrooms, U. Cleanliness of streets and sidewalks, and Y. Value for the price.

Importance/Satisfaction Matrix Code Descriptions, Graphs of Means, and Descriptive Statistics, June 2008 – November 2008: Overnight Visitors.

Code from Matrix - Description	Graph of mean	Mean	Standard Error	N	% Rated
<u>Natural Resources</u>					
A. Clear water (high visibility)		4.04	0.0691	162	98
		3.82	0.0611	158	96
B. Amount living coral on reefs		4.05	0.0807	151	92
		3.69	0.0795	115	70
C. Many different kinds of fish and sealife to view		3.98	0.0738	157	95
		3.70	0.0705	133	81
D. Many different kinds of fish and sealife to catch		2.75	0.1311	141	85
		3.52	0.0936	66	40
E. Opportunity to view large wildlife		3.75	0.0844	158	96
		3.32	0.0864	112	68
F. Large numbers of fish		3.71	0.0947	146	88
		3.49	0.0812	113	68
G. Quality of beaches		4.11	0.0828	162	98
		3.38	0.0814	141	85
<u>Natural Resource Facilities</u>					
H. Parks and specially protected areas		4.10	0.0688	159	96
		3.99	0.0609	127	77
I. Shoreline access		3.76	0.0873	156	95
		3.35	0.0842	132	80
J. Designated swimming/beach areas		3.79	0.0927	160	97
		3.37	0.0861	136	82
K. Mooring bouys near coral reefs		3.67	0.1132	127	77
		3.90	0.0852	67	41
L. Marina facilities		2.60	0.1058	122	74
		3.74	0.0738	68	41
M. Boat ramps/launching facilities		2.56	0.1225	118	72
		3.71	0.0885	50	30
<u>Other Facilities</u>					
N. Historic preservation (historic landmarks, houses, etc.)		3.81	0.0873	160	97
		4.04	0.0557	132	80
O. Parking		3.30	0.0844	152	92
		3.32	0.0934	125	76
P. Public transportation		2.22	0.1047	152	92
		3.22	0.1350	73	44
Q. Directional signs, street signs, mile markers		3.62	0.0817	163	99
		3.77	0.0445	154	93
R. Condition of bike paths and sidewalks/walking paths		3.45	0.0913	149	90
		3.62	0.0674	119	72
S. Condition of roads and streets		3.57	0.0763	163	99
		3.63	0.0609	157	95
T. Availability of public restrooms		3.97	0.0676	163	99
		3.33	0.0690	145	88
U. Cleanliness of streets and sidewalks		3.82	0.0787	162	98
		3.55	0.0621	158	96
V. Uncrowded conditions		3.64	0.0752	160	97
		3.58	0.0664	156	95
<u>Services</u>					
W. Maps, brochures, and other tourist information		3.32	0.0832	162	98
		3.99	0.0537	144	87
X. Customer service and friendliness of people		4.16	0.0648	163	99
		3.93	0.0569	162	98
Y. Value for the price		4.17	0.0675	162	98
		3.35	0.0590	161	98

Figure 6 Importance/Satisfaction Matrix Code Descriptions, Graphs of Means, and Descriptive Statistics, June 2008 – November 2008: Overnight Visitors.

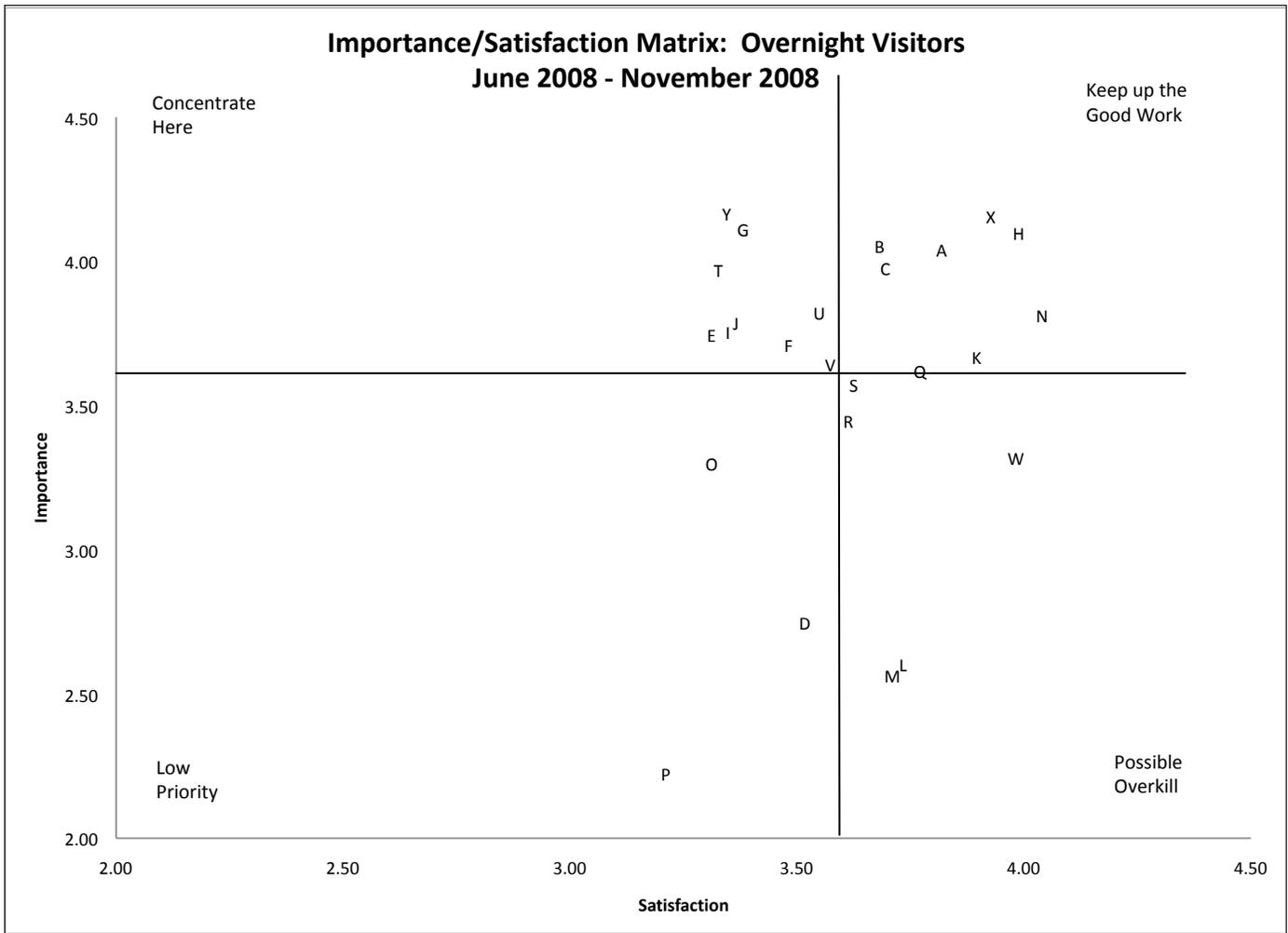


Figure 6 Importance/Satisfaction Matrix Code Descriptions, Graphs of Means, and Descriptive Statistics, June 2008 – November 2008: Overnight Visitors.

June 2008 – November 2008. There were 165 respondents in total to the summer season survey by overnight visitors. As in the winter survey, in no cases did 100 percent of visitors rate any particular item for importance or satisfaction. Figure 6 summarizes the importance-satisfaction results for the summer season. The four-quadrant analysis places nine items in the “**Concentrate Here**” quadrant. They are E. Opportunity to view large wildlife, F. Large numbers of fish, G. Quality of beaches, I. Shoreline access, J. Designated swimming/beach

areas, T. Availability of public restrooms, U. Cleanliness of streets and sidewalks, V. Uncrowded conditions, and Y. Value for the price.

Importance/Satisfaction Matrix Code Descriptions, Graphs of Means, and Descriptive Statistics, December 2007 – November 2008: Overnight Visitors.

Code from Matrix - Description	Graph of Mean	Mean	Standard Error	N	% Rated	
Natural Resources						
A. Clear water (high visibility)		I	4.03	0.0482	355	91
		S	3.87	0.0423	347	89
B. Amount living coral on reefs		I	3.96	0.0608	322	83
		S	3.68	0.0549	229	59
C. Many different kinds of fish and sealife to view		I	3.85	0.0555	341	88
		S	3.80	0.0464	278	72
D. Many different kinds of fish and sealife to catch		I	2.68	0.0876	295	76
		S	3.64	0.0686	138	36
E. Opportunity to view large wildlife		I	3.73	0.0584	344	89
		S	3.43	0.0578	254	65
F. Large numbers of fish		I	3.55	0.0685	314	81
		S	3.55	0.0553	231	60
G. Quality of beaches		I	4.17	0.0504	372	96
		S	3.50	0.0490	329	85
Natural Resource Facilities						
H. Parks and specially protected areas		I	4.07	0.0482	362	93
		S	3.93	0.0403	297	77
I. Shoreline access		I	3.91	0.0541	354	91
		S	3.41	0.0526	315	81
J. Designated swimming/beach areas		I	3.88	0.0581	362	93
		S	3.43	0.0535	313	81
K. Mooring bouys near coral reefs		I	3.36	0.0851	267	69
		S	3.90	0.0631	131	34
L. Marina facilities		I	2.53	0.0783	253	65
		S	3.75	0.0622	131	34
M. Boat ramps/launching facilities		I	2.43	0.0845	246	63
		S	3.62	0.0748	99	26
Other Facilities						
N. Historic preservation (historic landmarks, houses, etc.)		I	3.86	0.0546	369	95
		S	4.10	0.0362	305	79
O. Parking		I	3.39	0.0587	348	90
		S	3.27	0.0603	303	78
P. Public transportation		I	2.34	0.0741	322	83
		S	3.37	0.0775	170	44
Q. Directional signs, street signs, mile markers		I	3.73	0.0524	376	97
		S	3.76	0.0348	363	94
R. Condition of bike paths and sidewalks/walking paths		I	3.59	0.0583	344	89
		S	3.64	0.0469	287	74
S. Condition of roads and streets		I	3.62	0.0504	376	97
		S	3.62	0.0388	370	95
T. Availability of public restrooms		I	3.96	0.0507	377	97
		S	3.39	0.0483	332	86
U. Cleanliness of streets and sidewalks		I	3.89	0.0485	377	97
		S	3.61	0.0400	371	96
V. Uncrowded conditions		I	3.57	0.0555	368	95
		S	3.53	0.0436	362	93
Services						
W. Maps, brochures, and other tourist information		I	3.43	0.0570	371	96
		S	4.00	0.0352	342	88
X. Customer service and friendliness of people		I	4.25	0.0413	378	97
		S	3.96	0.0378	376	97
Y. Value for the price		I	4.19	0.0445	375	97
		S	3.31	0.0408	375	97

Figure 7 Importance/Satisfaction Matrix Code Descriptions, Graphs of Means, and Descriptive Statistics, December 2007 – November 2008: Overnight Visitors.

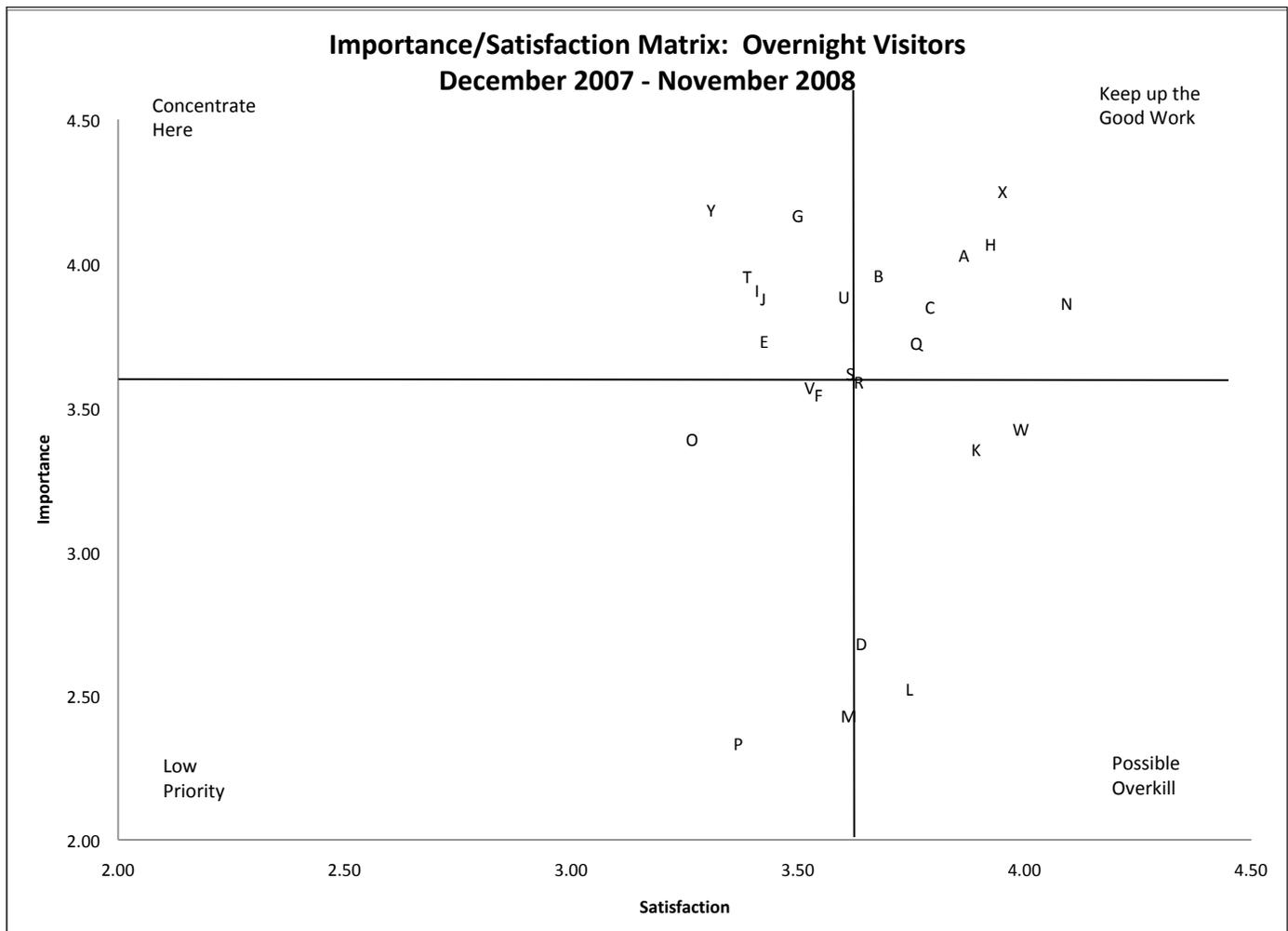


Figure 7 Importance/Satisfaction Matrix Code Descriptions, Graphs of Means, and Descriptive Statistics, December 2007 – November 2008: Overnight Visitors.

December 2007 – November 2008. For the entire year, there were 388 respondents to the survey by overnight visitors. The results presented in Figure 7 are weighted annual averages. The four-quadrant analysis places eight items in the “**Concentrate Here**” quadrant. They are E. Opportunity to view large wildlife, G. Quality of beaches, I. Shoreline access, J. Designated swimming/beach areas, S. Condition of roads and streets, T. Availability of public restrooms, U. Cleanliness of streets and sidewalks, and Y. Value for the price.

Cautionary Note. The results presented here are not intended as any policy statement about what either business or governments should or should not be doing. The interpretive framework for the importance-satisfaction is simply intended as a helpful guide in organizing the ratings given by visitors.

Overnight Visitors' Satisfaction with Selected Items: Current Ratings versus Ratings Five Years Ago

As discussed in the Introduction, a sub-sample of visitors was asked to provide a retrospective rating for 12 of the 25 items presented in the importance-satisfaction analysis. The sub-sample of visitors was based on the answer to the following question: Had you visited the Florida Keys more than five years ago? Forty-two (42) percent answered YES to this question. This sub-sample was then asked to provide the retrospective rating for the 12 items. Table 2 presents the 12 items, summarizes the mean scores along with the estimated standard errors of the mean, and lists the sample size (or number of responses for each item). Also provided are the results of statistical tests for the difference in mean scores between the current rating and the rating for each item five years ago. A YES in the last column of Table 2 indicates that there was a statistically significant difference in the two mean scores for an item. A paired t-test was done using PROC MEANS in SAS Version 9.1. Differences in the scores were first calculated and tests for normality were conducted. The differences were all normally distributed, making the paired t-test appropriate. The differences noted here were significant at least at the 95 percent confidence level. There were significant declines in satisfaction ratings for two (2) of the 12 items and a significant increase in satisfaction for two (2) item. For eight of the items, there was no significant difference.

A Comparison of Satisfaction Ratings on 12 Selected Items: Current Ratings versus Five Years Ago – Overnight Visitors.

Item	Mean	Stderr	N	Significant Difference ¹
Clear water (high visibility)				YES
Current rating	3.77	0.0683	120	
Five years ago	3.97	0.0661	113	
Amount of living coral on reefs				YES
Current rating	3.59	0.0868	82	
Five years ago	3.83	0.1003	80	
Opportunity to view large wildlife				YES
Current rating	3.27	0.0912	89	
Five years ago	3.56	0.0953	87	
Uncrowded conditions				NO
Current rating	3.60	0.0718	126	
Five years ago	3.55	0.0759	127	
Condition of roads and streets				NO
Current rating	3.62	0.0653	128	
Five years ago	3.56	0.0683	124	
Cleanliness of streets and sidewalks				NO
Current rating	3.55	0.0678	127	
Five years ago	3.46	0.0757	127	
Shoreline access				NO
Current rating	3.45	0.0855	111	
Five years ago	3.46	0.0846	107	
Quality of beaches				NO
Current rating	3.44	0.0816	113	
Five years ago	3.58	0.0790	109	
Customer service and friendliness of people				NO
Current rating	3.91	0.0588	132	
Five years ago	3.82	0.0661	129	
Historic preservation (historic landmarks, houses, etc.)				YES
Current rating	4.07	0.0659	99	
Five years ago	3.95	0.0685	99	
Parks and specially protected areas				NO
Current rating	3.92	0.0680	106	
Five years ago	3.83	0.0762	99	
Value for the price				YES
Current rating	3.36	0.0689	130	
Five years ago	3.54	0.0680	128	

Table 2 A Comparison of Satisfaction Ratings on 12 Selected Items: Current Ratings versus Five Years Ago – Overnight Visitors.

Key Findings – Overnight
Visitors Satisfaction Ratings:
Current versus Five Years Ago

- *Clear water (high visibility).*
Significant decline.
- *Amount of living coral on reefs.*
Significant decline.
- *Opportunity to view large wildlife.* Significant decline.
- *Uncrowded conditions.*
No difference.
- *Condition of roads and streets.*
No difference.
- *Cleanliness of streets and sidewalks.* No difference.
- *Shoreline access.*
No difference.
- *Quality of beaches.*
No difference.
- *Customer service and friendliness of people.* No difference.
- *Historic preservation (historic landmarks, houses, etc.).*
Significant increase.
- *Parks and specially protected areas.* No difference.
- *Value for the price.* Significant decline.

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