

## Summative Evaluation of *Vanishing Wildlife*



Prepared for the Monterey Bay Aquarium  
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## EXECUTIVE SUMMARY

### INTRODUCTION

The purpose of this summative evaluation was to document visitors' use and impressions of *Vanishing Wildlife* immediately upon viewing the exhibit and, again, several months after their visit. In addition, staff members wanted to determine if the exhibit motivates visitors to perform specific conservation actions once they leave the aquarium. By collecting data three different ways (through timing and tracking observations, on-site exit questionnaires, and telephone questionnaires), and then comparing the results with data from Monterey Bay Aquarium (MBA) exit surveys, the evaluators were able to present a more complete picture of visitors' experiences during, and as a result of, their visit to *Vanishing Wildlife*.

### RESEARCH QUESTIONS

The objectives of the study were to answer the following research questions:

- Who visits *Vanishing Wildlife*?
- How do visitors use the exhibit?
- What impressions, messages, or ideas do visitors take away from the exhibit?
- What do visitors recall from the exhibit two to three months after they visit?
- Do visitors pick up a *Seafood Watch* card or an *Ocean Allies* card while visiting the exhibit? If so, do they perform the desired conservation actions?
- How do visitors' on-site responses compare with their responses several months later?

### PRINCIPAL FINDINGS

#### **Who visits *Vanishing Wildlife*?**

According to MBA exit surveys, 82 percent of all aquarium visitors see *Vanishing Wildlife* sometime during their visit; in addition, these visitors are representative of aquarium visitors as a whole. For example, visitors who claim to have limited knowledge about the threats facing ocean wildlife are just as likely to visit the exhibit as are visitors who say they have a greater knowledge of these threats. In general, *Vanishing Wildlife* attracts a wide range of aquarium visitors, including those who do not see themselves as particularly knowledgeable about ocean conservation.

In this study, there were only slight demographic differences between visitors in the timing and tracking sample, the on-site questionnaire sample, and the telephone questionnaire sample. Additionally, visitors participating in the evaluation study were demographically similar to visitors who participated in the MBA exit surveys. However, statistical tests comparing the on-site respondents with telephone respondents revealed differences between the two samples in terms of gender, age, and visiting with children.

Half (51%) of visitors in the on-site sample said they were involved with a conservation group compared with two-fifths (43%) of those in the telephone sample. However, this difference did not prove to be statistically significant. In addition, 41 percent of visitors from the on-site sample who were involved with a conservation group cited an organization listed on the *Ocean Allies* card compared to 32 percent of those from the telephone sample.

Although visitors' level of concern for ocean wildlife was nearly identical between the two samples, their involvement with a conservation group related to whether or not they performed certain conservation actions at home. For example, while one-fifth of all visitors considered conservation issues when purchasing seafood, those who belonged to a conservation organization were twice as likely to consider conservation issues compared to visitors who did not belong. Similarly, visitors who said they belonged to a conservation group expressed a greater concern for ocean wildlife than visitors who did not belong.

### **How do visitors use *Vanishing Wildlife*?**

Overall, visitors spent an average of over 5.5 minutes in *Vanishing Wildlife*, stopping at an average of four of the 16 stops available (not including the conservation cart, which was closed during part of the study). Eighty percent of visitors stopped at the Outer Bay exhibit, for an average of 72 seconds. Visitors were also drawn to the interactives: 80 percent stopped at the seafood interactive, 60 percent stopped at the fishing interactive, and 50 percent stopped at the shark products interactive. As expected, the static text panels were typically the least-visited components. In summary, most visitors' experience of *Vanishing Wildlife* consisted primarily of stopping at the Outer Bay exhibit and one or more of the interactives.

In addition to the live animals and interactives around the Outer Bay exhibit, *Vanishing Wildlife* features three animal alcoves: a shark alcove, a tuna alcove, and a sea turtle alcove, each containing static text panels as well as interactives. More than half of all visitors stopped in the shark alcove (57%), 44 percent stopped in the tuna alcove, and 40 percent stopped in the sea turtle alcove. One-quarter of all visitors stopped in all three alcoves (25%).

Once visitors stopped at an interactive, they tended to use more than one activity. For example, at the tuna flappers, more than half of all visitors who stopped there used all three activities, while nearly half of the visitors who stopped at the seafood interactive used all three activities. At the tuna and shark videos, the majority of visitors who stopped pushed one of the three available buttons. Although it might appear as though visitors used the videos less thoroughly than the interactives, the time needed to view one video is roughly equivalent to the time needed to use all three activities at the seafood interactive and tuna flappers. Therefore, visitors actually spent as much time at the videos as they did at these two interactives.

When it was open, the conservation cart drew fewer visitors (17%) than the interactives did. However, visitors spent more time at the cart on average (78 seconds) than they did at the Outer Bay exhibit (72 seconds).

### **What impressions, messages, or ideas do visitors take away from *Vanishing Wildlife*?**

When asked what they learned from the exhibit, 40 percent of on-site respondents said they never realized the extent to which ocean wildlife is threatened (the most common response). Visitors were also asked why they found a particular element in the exhibit most memorable. Respondents most often said a particular element was memorable because it raised their consciousness about threats to ocean wildlife (18%).

### **What do visitors recall from *Vanishing Wildlife* two to three months after their visit?**

Most of the respondents (79%) who were phoned two to three months after their visit recalled hearing or seeing something about conservation at the aquarium; many of these visitors were able to name something specific, including information about types of seafood to purchase (39%) and species at risk (38%). Three-quarters of the respondents who visited *Vanishing Wildlife* recalled seeing the exhibit. These respondents were most likely to recall the shark and/or shark-finning exhibits (16%), the interactive food displays (15%), and the information about sea turtles caught in nets (13%).

Visitors' recall of conservation information at the aquarium was positively influenced by a combination of three factors: their participation in a conservation group, their level of concern for ocean wildlife, and whether they picked up a *Seafood Watch* card.

### **Do visitors pick up a *Seafood Watch* card or an *Ocean Allies* card while visiting the exhibit? If so, do they perform the desired conservation actions?**

Two printed handouts are available for visitors to pick up in the exhibit: a *Seafood Watch* card and an *Ocean Allies* card. The *Seafood Watch* card provides information on which types of seafood visitors should buy, while the *Ocean Allies* card provides recommendations for joining a conservation group. The percentage of visitors who picked up these cards varied greatly among the three samples. However, these differences are not surprising given that on-site and telephone respondents could have picked up *Seafood Watch* cards at other places in the aquarium and not just in *Vanishing Wildlife*. If so, this would partially account for the differences in card ownership observed between visitors who were selected for the timing and tracking study and visitors who were selected for the on-site interview. The modest sample size may have also contributed to these differences.

For the *Seafood Watch* card, 28 percent of observed visitors, 40 percent of on-site respondents, and 35 percent of telephone respondents picked up a card, for an average of approximately one-third of all visitors. For the *Ocean Allies* card, 23 percent of observed visitors, 16 percent of on-site respondents, and 24 percent of telephone respondents picked up a card, for an average of approximately one-fifth of all visitors.

On-site respondents' age most directly predicted whether they took a card; older visitors were more likely than younger visitors to pick up a card. Slightly more than half of telephone respondents who took a *Seafood Watch* card said they used it (51%), and most referred to it while shopping or eating in a restaurant. In contrast, 10 percent of the telephone respondents who took an *Ocean Allies* card said they had used it, and none of these respondents actually joined a conservation group by using the card.

When purchasing seafood, most telephone respondents (65%) cited personal preferences (such as taste, quality or freshness) when selecting the type of seafood they would buy. This figure was nearly identical to the percentage of on-site respondents who cited personal preferences over conservation concerns. However, respondents who belonged to a conservation group, had a high level of concern for ocean wildlife, and took an *Ocean Allies* card were more likely to consider conservation concerns when purchasing their seafood.

### **How do visitors' on-site responses compare with their responses several months later?**

The most memorable aspects of the exhibit were roughly the same for both on-site and telephone respondents. On-site respondents were most likely to recall the interactives and videos in general, while telephone respondents were most likely to recall the shark and shark-finning exhibits, the interactive food displays, and the information about sea turtles caught in nets.

In addition, telephone respondents' level of concern for ocean wildlife (mean=7.90 on a 10-point scale) was nearly identical to on-site respondents' level of concern (mean=7.86), suggesting that visitors' level of concern did not erode over the two to three months since they last visited the aquarium. Telephone respondents were also as likely to consider conservation concerns when buying seafood (21%) as on-site respondents were (20%).

## **DISCUSSION**

One goal of this study was to determine how thoroughly visitors are using *Vanishing Wildlife*. Overall, visitors stopped at one-fourth (26%) of the exhibit components available—a percentage that is consistent with the level of use seen on the lower floor of the aquarium's nearshore wing. As expected, the live animals in *Vanishing Wildlife* attracted the most visitors, with 80 percent of visitors stopping at the Outer Bay exhibit. Again, this percentage is similar to the percentage of visitors who stop at the Kelp Forest exhibit on the lower floor of the nearshore wing.

However, the non-living exhibits in *Vanishing Wildlife* also attract visitors. A quarter of the visitors observed in this study stopped in all the main areas of the exhibit, with 57 percent stopping in the shark alcove, 44 percent in the tuna alcove, and 40 percent in the sea turtle alcove. In addition, visitors who stopped at an interactive often stayed long enough to use more than one activity. Finally, visitors' high recall of the information presented at the interactives, both during and after their visit, suggests that these components effectively communicate their content. In fact, many on-site respondents said the interactives were among the most memorable aspects of the exhibit.

The conservation cart is also an appealing feature of the exhibit. Although only 17 percent of visitors stopped at the cart when it was open, those who stopped spent more time there on average than did visitors to the Outer Bay exhibit in *Vanishing Wildlife*. This suggests that staffed interpretive carts can compete with live animals for visitors' attention.



Another goal of this study was to determine the impact of *Vanishing Wildlife* on visitors' conservation awareness, knowledge and behavior. This impact is difficult to measure, since aquarium visitors in general tend to know more and are more concerned about ocean conservation issues than the public at large. In addition, half of the on-site respondents in this study already belonged to a conservation group, as did two-fifths of the telephone respondents. These and other influences suggest that aquarium visitors have a high incoming interest in conservation issues, making it difficult to determine what role the exhibit played in motivating visitors to perform conservation actions at home.

Nevertheless, it's clear that *Vanishing Wildlife* increased visitors' awareness and knowledge of the specific threats facing ocean wildlife. For example, upon leaving the exhibit, many visitors reported being more aware of the environmental impact of fishing practices and seafood production. Forty percent said they never realized the degree to which ocean wildlife is threatened, and some were surprised to learn about problems facing specific species. Fewer than 15 percent of visitors said they were already familiar with this information.

In addition, when asked to identify what they found most memorable about the exhibit, visitors said the memorable aspects were those that raised their awareness about the threats to ocean wildlife, provided new or surprising information, or highlighted the impact of consumer seafood choices.

More importantly, visitors' heightened awareness stays with them months after their visit, as does their level of concern. During telephone interviews, the majority of respondents (79%) recalled hearing or seeing information about conservation during their aquarium visit. When asked what in particular they recalled, most (39%) mentioned information about which types of seafood to purchase, followed closely by information about specific species at risk (38%). Both of these topics are featured in *Vanishing Wildlife*.

Assessing the impact of the *Seafood Watch* and *Ocean Allies* cards on visitors' behavior in this study was challenging given the limited sample sizes and the differences observed between the on-site and telephone samples. Nevertheless, in comparing the data from the timing and tracking observations, the on-site questionnaires, and the telephone questionnaires, approximately one-third of visitors picked up a *Seafood Watch* card while approximately one-quarter picked up an *Ocean Allies* card. This finding suggests that conservation-related handouts are an attractive option for many people, especially older visitors, who are more likely than younger visitors to pick up these handouts during their visit.

Unfortunately, not all visitors who picked up these cards performed the desired conservation actions. For example, 70 percent of on-site respondents who picked up a *Seafood Watch* card and 37 percent of on-site respondents who picked up an *Ocean Allies* card said they planned to start using their cards. However, when visitors were telephoned two to three months later, only half of those who picked up a *Seafood Watch* card had actually used it, while a mere 10 percent of those who picked up an *Ocean Allies* card had used theirs.

In addition, roughly one-fifth of both on-site and telephone respondents said they primarily took conservation concerns into account when buying seafood. This finding suggests that neither the exhibit nor the *Seafood Watch* card were successful in persuading visitors to put these concerns at the forefront. Likewise, none of the visitors who picked up an *Ocean Allies* card ended up joining a conservation group. Clearly, good intentions do not always lead to concrete action.

There are several possible reasons for the difference in usage between the two cards. First, the *Seafood Watch* card relates more to people's daily lives than the *Ocean Allies* card does. Hence, it's likely that visitors had more opportunities to use the *Seafood Watch* card once they left the aquarium. In addition, many visitors who picked up an *Ocean Allies* card (41% in the on-site interview and 32% in the telephone interview) already belonged to one of the organizations listed on the card. These visitors may have been less willing to join another group listed on the card.

Nevertheless, the *Seafood Watch* card appears to have increased visitors' knowledge and awareness. For example, the likelihood that visitors' would recall seeing conservation information at the aquarium was positively influenced by a combination of three factors: their participation in a conservation group, their level of concern for ocean wildlife, and whether they picked up a *Seafood Watch* card. In addition, visitors' recollections of seeing conservation information at the aquarium centered primarily on which types of seafood to purchase, as well as species at risk. Both of these topics are addressed by the *Seafood Watch* card.

Assessing the impact of *Vanishing Wildlife* on visitors' behavior becomes even more difficult when one considers the multiple sources of conservation information that visitors are exposed to—both at the aquarium and at home. For example, when asked to identify the most serious problems facing ocean wildlife, almost all the telephone respondents (99%) cited pollution, followed by overfishing (73%)—even though overfishing was the key threat presented in the exhibit.

As expected, then, *Vanishing Wildlife* appears to add to or reinforce visitors' pre-existing knowledge, perceptions and attitudes about ocean conservation issues rather than supplanting them. It introduces visitors to a conservation issue they're not familiar with (namely, destructive fishing practices) and presents them with a relatively popular action for improving the situation (namely the *Seafood Watch* card). In addition, the exhibit attracts a wide range of aquarium visitors (including those who aren't particularly informed about conservation issues) and provides a memorable experience—one that stays with the majority of visitors for at least several months after their visit.

## INTRODUCTION

The purpose of this summative evaluation was to document visitors' use and impressions of *Vanishing Wildlife* immediately upon seeing the exhibit and, again, several months after their visit. In addition, staff members wanted to determine if the exhibit motivated visitors to perform specific conservation actions once they left the aquarium.

The specific objectives of the evaluation were to answer the following research questions:

- Who visits *Vanishing Wildlife*?
- How do visitors use the exhibit?
- What impressions, messages, or ideas do visitors take away from the exhibit?
- What do visitors recall from the exhibit two to three months after they visit?
- Do visitors pick up a *Seafood Watch* card or an *Ocean Allies* card while visiting the exhibit? If so, do they perform the desired conservation actions?
- How do visitors' on-site responses compare with their responses several months later?

## METHODS

To understand visitors' reactions to the exhibit, the evaluators used three research methods, including unobtrusive timing and tracking of visitors inside the exhibit; on-site exit interviews with visitors; and telephone interviews conducted with visitors two to three months after they had seen the exhibit. The results were then compared with data collected from MBA exit surveys.

### *Timing and Tracking Observations (n=133)*

Aquarium staff and volunteers unobtrusively timed and tracked visitors inside the exhibit, recording visitors' behavior, time spent at specific elements, and their observed demographic characteristics.

### *On-Site Questionnaire (n=302)*

Following a standardized questionnaire, interviewers conducted one-to-one interviews with visitors as they exited *Vanishing Wildlife*.

### *Telephone Questionnaire (n=150)*

Visitors intercepted after leaving the exhibit were telephoned at home two to three months after their visit. Aquarium interviewers gathered phone numbers and RK&A conducted the interviews.

## DATA ANALYSIS AND METHOD OF REPORTING

The observational and interview data are quantitative and were analyzed statistically using SPSS/PC+, a statistical package for personal computers. Frequency distributions were calculated for all categorical variables (e.g., gender and first visit). To examine the relationship between two categorical variables, cross-tabulation tables were computed to show the joint frequency distribution of the two variables, and the chi-square statistic ( $X^2$ ) was used to test the significance of the relationship.

Summary statistics, including the mean (average), median (data point at which half the responses fall above and half fall below), and standard deviation (spread of scores: “±” in tables), were calculated for the timing and tracking data.<sup>1</sup> To compare the means of two visitor subsets (e.g., visitor groups with and without children), ANOVA and Mann-Whitney U tests (the nonparametric equivalent to an ANOVA) were calculated.

The level of significance was set at 0.05 because of the moderate sample size. When the level of significance is set to  $p = 0.05$ , any relationship that exists at a probability ( $p$ -value) of  $\leq 0.05$  is “significant.” When a relationship has a  $p$ -value of 0.05, there is a 95 percent probability that the relationship being explored truly exists; that is, in 95 out of 100 cases, there really would be a relationship between the two variables (e.g., gender and direction through the exhibit). Conversely, there is a five percent probability that the relationship does not really exist; in other words, in five out of 100 cases, a relationship would appear purely by chance. In this report, only statistically significant results are discussed.

Verbatim responses to open-ended questions were analyzed qualitatively. They were reviewed, and as patterns were detected, categories were developed and similar responses were grouped together. Responses were tallied, and in most cases the percentages and frequencies are reported in tables. Percentages within tables may not always add up to 100 percent, due to rounding. The findings within each table are usually presented in descending order, starting with the most frequent occurrence.

Finally, multiple regression analyses were conducted to determine the relationship between certain variables and visitors’ behavior. The regression analysis defines the variable or combination of variables that best predicts which type of visitor would be most likely to perform a specific behavior. In a stepwise regression, all regression variables (such as gender and age) are tested for significance against the behavior, and the variable that makes the largest contribution to predicting a visitor’s behavior is the first step in the regression. Among the remaining variables, the one that makes the second largest contribution to explaining the behavior is entered next. The process continues until no variables with a statistically significant relationship remain. The resulting regression model represents the combination of variables that best predicts (or explains) the behavior.

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<sup>1</sup> For the timing and tracking data, medians are reported in addition to means because, as is typical, the number of components used and the time spent by visitors were distributed unevenly across the range. For example, whereas most visitors spent a relatively brief amount of time with the exhibit components, a few visitors spent an unusually long time. When a distribution of scores is extremely asymmetrical (i.e., “lopsided”), the *mean* is strongly affected by the extreme scores and, consequently, falls farther away from the distribution’s central area. In such cases, the *median* is the preferred measurement because it is not sensitive to the values of scores above and below it—only to the number of such scores.

## FINDINGS

The findings are presented in five main sections:

- I. Characteristics of the Samples
- II. Timing and Tracking Observations
- III. On-Site Questionnaire
- IV. Telephone Questionnaire
- V. Comparisons Between On-Site and Telephone Interviews

### I. CHARACTERISTICS OF THE SAMPLES

The following table compares the demographics and characteristics obtained from visitors in each of the three samples with data obtained from the aquarium's monthly exit surveys. The data reported for the monthly exit surveys are from March through July 2002. This period corresponds to the duration of the study. On-site and telephone responses were tested for statistically significant differences and the differences are noted.

	<i>Timing and Tracking</i> (n=133)	<i>On-Site</i> (n=302)	<i>Telephone</i> (n=150)	<i>Exit Survey</i> (n=1,000)
<u><i>Gender</i><sup>2</sup></u>				
Male	46%	54%	43%	44%
Female	54%	46%	57%	56%
<u><i>Age</i><sup>3</sup></u>				
18 to 24	9%	12%	5%	11%
25 to 44	63%	50%	43%	50%
45 to 64	23%	34%	43%	33%
65 and older	5%	4%	10%	6%
<u><i>Visiting With Children</i><sup>4</sup></u>				
Yes	51%	40%	52%	36%
No	49%	60%	48%	64%
<u><i>Education Level</i></u>				
Some high school	---	3%	0%	3%
H.S. graduate	---	8%	9%	6%
Some college	---	26%	24%	18%
College graduate	---	33%	38%	39%
Post-graduate degree	---	29%	30%	33%
<u><i>MBA Member</i></u>				
Yes	---	18%	19%	11%
No	---	82%	81%	89%

<sup>2</sup> Statistically significant differences between on-site sample and telephone sample ( $p=0.019$ ,  $df=1$ ,  $x^2=5.475$ ).

<sup>3</sup> Statistically significant differences between on-site sample and telephone sample ( $p=0.048$ ,  $df=2$ ,  $x^2=6.064$ ).  
Age was split into three categories for this test.

<sup>4</sup> Statistically significant differences between on-site sample and telephone sample ( $p=0.013$ ,  $df=1$ ,  $x^2=6.153$ ).

	<i>Timing and Tracking</i> (n=133)	<i>On-Site</i> (n=302)	<i>Telephone</i> (n=150)	<i>Exit Survey</i> (n=1,000)
<u><i>First Visit to MBA</i></u>				
Yes	---	41%	---	53%
No	---	59%	---	47%
<u><i>Last Visit MBA</i></u>				
Past 12 months	---	28%	---	27%
1 to 2 years	---	19%	---	18%
More than 2 years	---	53%	---	55%
<u><i>Belong to Conservation Organization</i></u>				
Yes	---	51%	43%	---
No	---	49%	57%	---
<u><i>Belong to Ocean Allies Organization<sup>5</sup></i></u>				
Yes	---	21%	14%	---
No	---	79%	86%	---

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<sup>5</sup> “*Ocean Allies Organizations*” is a subset of the Conservation Organizations and includes the six organizations listed on the *Ocean Allies* card. See Appendix D for a list of these organizations.

## II. TIMING AND TRACKING OBSERVATIONS

Observers timed and tracked 133 visitors ages 18 years and older during spring and summer 2002.<sup>6</sup>

### VISIT CHARACTERISTICS

The sample of observed visitors included more summer visitors (59%) than spring visitors (41%) (Table 1).

**Table 1**  
**Month and Season of Visit**

<b>Characteristic</b>	<b>%</b>
<b>Month (n=133)</b>	
March	14.3
April	13.5
May	12.8
June	24.8
July	34.6
<b>Season (n=133)</b>	
Spring	40.6
Summer	59.4

The sample of visitors included approximately equal percentages of weekday visitors (49%) and weekend visitors (51%) (Table 2).

**Table 2**  
**Day of Visit**

<b>Day of Visit (n=133)</b>	<b>%</b>
Weekday	48.9
Weekend	51.1

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<sup>6</sup> Ages of observed visitors were estimated.

## VISITOR DEMOGRAPHICS

The sample of visitors included more females (54%) than males (46%) (Table 3). The majority of visitors (63%) were between 25 and 44 years old.

**Table 3**  
**Visitor Demographics (Observed)**

<b>Characteristic</b>	<b>%</b>
<b>Gender (n=132)</b>	
Male	46.2
Female	53.8
<b>Age group (n=133)</b>	
18 to 24 years of age	9.0
25 to 44	63.2
45 to 64	23.3
65 years or older	4.5

Half of visitors (51%) were visiting *Vanishing Wildlife* in groups with children, one-third were visiting in adult-only groups, and 16 percent were visiting alone (Table 4).

**Table 4**  
**Group Composition**

<b>Group Composition (n=133)</b>	<b>%</b>
Adults and children	51.1
One or more other adult(s)	33.1
Alone	15.8



## VISITORS' USE OF THE EXHIBIT

This section presents data on the percentage of visitors who stopped at the various components and their observed behavior at those components. It also presents median time spent at some specific components. The percentage of visitors who stopped was examined against selected demographic and visit characteristics.<sup>7</sup> Only statistically significant differences are reported.

During the period of this study, the conservation cart was open only half the time due to special events programming located in other areas of the aquarium. Hence, only 56 percent of the visitors who were observed during this part of the study had an opportunity to stop at the cart. Please refer to Appendix C for a floorplan showing the location of the exhibit components included in the study.

### *Total Time Spent*

Visitors spent an average of five minutes and 44 seconds in *Vanishing Wildlife* and a median time of four minutes and 41 seconds (Table 5).<sup>8</sup> Timing data from the conservation cart was not used to calculate the average or median time that visitors spent in the exhibit since not all visitors had an opportunity to visit the cart.

**Table 5**  
**Total Time Spent in the Exhibit**  
**(n=125)**

	<b>Mean</b>	<b>±</b>
Total sample	5 min., 44 sec.	4 min., 52 sec.
	<b>Median</b>	<b>±</b>
Total sample	4 min., 41 sec.	4 min., 52 sec.

---

<sup>7</sup> Statistical tests examining the number of behaviors observed against demographic and visit characteristics could not be run because the sample was too small to support these tests.

<sup>8</sup> The sample used to calculate mean and median times did not include time spent at the cart, since not all visitors had an opportunity to visit the cart and because stopping at the cart greatly increases visitors' time in the exhibit.

*Time Spent at Selected Components*

In addition to recording the total time visitors spent in the exhibit, observers also recorded the time visitors spent at four individual components: the Outer Bay exhibit, the conservation cart, the tuna videos, and the shark videos. Among these four components, visitors spent the most time at the conservation cart, followed closely by the Outer Bay exhibit (Table 6).

**Table 6**  
**Time Spent at Selected Components**

<b>Component</b>	<b>Exhibit Type</b>	<b>Median Time</b>
Conservation cart	Staffed cart	78 secs (1 min, 18 secs)
Outer Bay exhibit	Live Animals	72 secs (1 min, 12 secs)
Shark videos	Video	31 secs
Tuna videos	Video	27 secs

*Total Stops Made*

One method of gauging visitors' experience in an exhibit is to count the number of stops they make. For this study, a "stop" was defined as a visitor standing for four seconds or longer in front of a given component. Observers recorded visitors' behavior at a possible 16 components plus the conservation cart. However, because the conservation cart was open only half the time, we used 16 stops to calculate the average number of stops made. Visitors stopped at an average of slightly more than four components for an average of 26 percent of possible stops (Table 7).

**Table 7**  
**Stops at Exhibit Components**  
*(n=133)*

<b>Mean Number of Stops</b>		<b>±</b>
Total sample	4.2	3.1 stops
<b>Mean Percentage of Stops</b>		
Total sample	26.3%	

*Stops Made at Specific Areas*

More than half of all visitors stopped in the shark alcove (57%), 44 percent stopped in the tuna alcove, and 40 percent stopped in the sea turtle alcove. One-quarter of all visitors stopped in all three alcoves (25%).

**Table 8**  
**Specific Areas Visited**

<b>Area</b>	<b>%</b>
Shark Alcove (intro, products, videos, help)	57.1
Tuna Alcove (intro, flappers, videos, help)	43.6
Turtle Alcove (intro, windows, help)	39.8
All Three Alcoves	24.8

*Stops Made at Specific Components*

The majority of visitors stopped at the Outer Bay exhibit (81%) and the seafood interactive (59%). Approximately half of visitors (48%) stopped at the shark products interactive. More than a third of visitors (38%) stopped at the tuna videos and the sea turtle interactive. The “How You Can Help” panel in the sharks area was the most popular of the seven text panels studied, with 17 percent of visitors stopping to read it. The remaining components are listed in Table 9.

**Table 9**  
**Percentage of Visitors Who Stopped at Specific Components**

<b>Exhibit Name</b>	<b>Exhibit Type</b>	<b>%</b>
Outer Bay exhibit	Live Animals	80.5
Seafood interactive	Interactive	59.4
Shark products	Interactive	48.1
Tuna videos	Video Program	37.6
Sea turtle interactive	Interactive	37.6
Fishing interactive	Interactive	27.8
Shark videos	Video Program	25.6
Card kiosks	Handouts	18.0
Shark help panel	Text Panel	17.3
Tuna flappers	Interactive	15.8
Shark introduction panel	Text Panel	12.0
Tuna introduction panel	Text Panel	10.5
Sea turtle introduction panel	Text Panel	9.8
Sea turtle help panel	Text Panel	7.5
Tuna help panel	Text Panel	6.0
Sea turtle introduction panel	Text Panel	3.0

All stops were examined against demographic and visit characteristics (gender, age, visit group composition, season, day of visit) and the following differences were found statistically significant. Spring visitors were more likely to stop at the Outer Bay exhibit and at the shark videos compared to summer visitors (Table 10). These differences may be due to variations in crowding between the two seasons. In addition, adults visiting with children were more likely to stop at the fishing interactive, the tuna flappers, and the tuna videos compared to adults visiting with other adults and, particularly, adults visiting alone (Table 11).

**Table 10**  
**Differences in Stops by Season**

<b>Stops</b>	<b>Spring %</b>	<b>Summer %</b>
Outer Bay exhibit	90.7	73.4
Shark videos <sup>2</sup>	37.0	17.7

<sup>1</sup> $\chi^2 = 6.120; df = 1, p=.013$   
<sup>2</sup> $\chi^2 = 6.289; df = 1, p=.012$

**Table 11**  
**Differences in Stops by Group Composition**

<b>Stops</b>	<b>Alone %</b>	<b>Adults only %</b>	<b>Adults and Children %</b>
Fishing interactive <sup>1</sup>	9.5	20.5	38.2
Tuna flappers <sup>2</sup>	0.0	11.4	23.5
Tuna videos <sup>3</sup>	19.0	29.5	48.5

<sup>1</sup> $\chi^2 = 8.363; df = 2, p=.015$   
<sup>2</sup> $\chi^2 = 7.649; df = 2, p=.022$   
<sup>3</sup> $\chi^2 = 7.760; df = 21, p=.021$

## Use of Interactives

### Seafood Interactive



At the seafood interactive, visitors lift three plates of faux food (a plate of shrimp, a tuna fish sandwich, and a plate of tuna sashimi and sushi) to reveal the hidden costs of fishing for these foods. The seafood interactive attracted 59 percent of visitors and was the most popular of the interactives. Approximately half of the visitors (48%) who stopped lifted all three plates. One-fifth (22%) lifted two plates, one-tenth (11%) lifted one plate, and one-fifth (19%) did not lift any of the plates. Thirty percent of all visitors who stopped at the seafood interactive took a *Seafood Watch* card (Table 12).

**Table 12**  
**Plates Lifted at Seafood Interactive**

<b>Activities (n=79)</b>	<b>%</b>
No plates lifted	19.0
1 plate lifted	11.4
2 plates lifted	21.5
3 plates lifted	48.1
<i>Seafood Watch</i> card	30.4

Fishing Interactive



At this interactive, visitors slide panels to reveal the solutions to three fisheries problems. The panels show how sea turtles can escape from shrimp nets when a trap-door is added to the net; how fishing regulations are needed to prevent the overfishing of sharks; and how reducing the number of tuna boats can reduce overfishing of tunas.

Twenty-eight percent of all visitors stopped at this interactive. Among visitors who stopped, more than one-third (38%) used all three activities, one-fifth (22%) used two activities, more than one-quarter (27%) used one activity; 14 percent who stopped did not use any of the activities. Twenty-three percent of all visitors who stopped at the fishing interactive took an *Ocean Allies* card (Table 13).

**Table 13**  
**Panels Used at Fishing Interactive**

Activities (n=37)	%
No panels used	13.5
1 panel used	27.0
2 panels used	21.6
3 panels used	37.8
<i>Ocean Allies</i> card	22.7

## Tuna Flappers

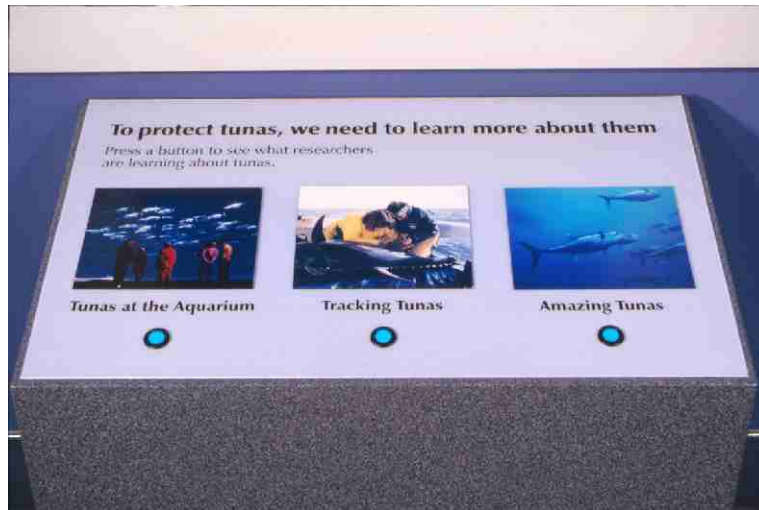


At the tuna flappers, visitors spin three rotating panels to see the problems that tunas face from fishing. Sixteen percent of all visitors stopped at this interactive. The majority of visitors (57%) who stopped used all three activities: one-fifth (19%) used two activities, 14 percent used one activity, and one-tenth (10%) did not use any of the activities (Table 14). Although well used by those visitors who stopped there, the tuna flappers interactive was the least visited of all the interactives.

**Table 14**  
**Panels Rotated at Tuna Flappers**

<b>Activities (n=21)</b>	<b>%</b>
No panels rotated	9.5
1 panel rotated	14.3
2 panels rotated	19.0
3 panels rotated	57.1

## Tuna Videos



At this interactive, visitors push buttons to select from three different videos about tuna research and conservation. Thirty-eight percent of all visitors stopped at this interactive. Three-quarters (74%) of those who stopped pushed one of the three buttons. Sixteen percent did not push any buttons, which means they stood and watched a video that was already playing. The remaining visitors (10%) pushed either two (6%) or three buttons (4%) (Table 15).

**Table 15**  
**Buttons Pushed at Tuna Videos**

<b>Buttons (<i>n</i>=50)</b>	<b>%</b>
No buttons pushed	16.0
1 button pushed	74.0
2 buttons pushed	6.0
3 buttons pushed	4.0



## Shark Products



At this interactive, visitors slide levers to reveal the problems associated with four different types of shark products: souvenir jaws, health foods and supplements, shark meat, and shark-fin soup. Almost half (48%) of all visitors stopped at this interactive. More than one-third (38%) of those who stopped used all four activities. Nineteen percent used three activities, nine percent used two activities, 23 percent used one activity, and 11 percent did not use any of the activities (Table 16).

**Table 16**  
**Levers Used at Shark Products**

Activities (n=64)	%
No levers used	10.9
1 lever used	23.4
2 levers used	9.4
3 levers used	18.8
4 levers used	37.5

## Shark Videos

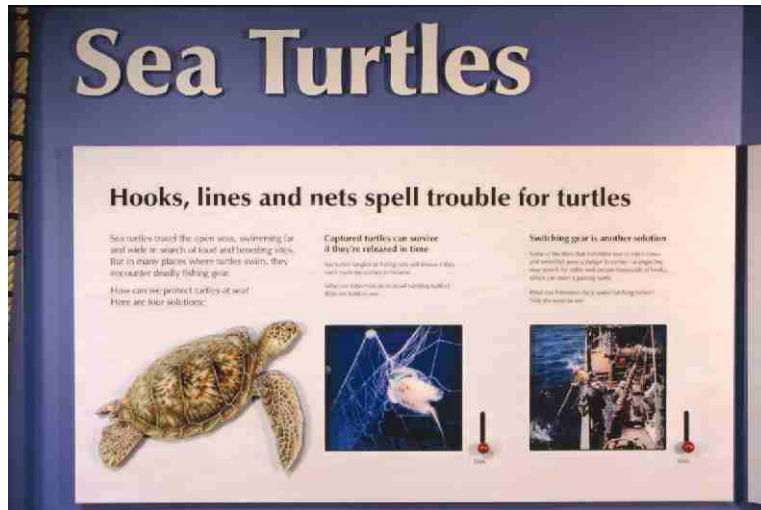


At this interactive, visitors push buttons to select from three different videos about shark conservation. Twenty-six percent of visitors stopped at this interactive. Half (53%) pushed one button. One-quarter (24%) did not push any buttons, which means they stopped to watch a video that was already playing. The remaining one-quarter of visitors pushed either two buttons (18%) or three buttons (6%) (Table 17).

**Table 17**  
**Buttons Pushed at Shark Videos**

<b>Buttons (<i>n</i>=34)</b>	<b>%</b>
No buttons pushed	23.5
1 button pushed	52.9
2 buttons pushed	17.6
3 buttons pushed	5.9

Sea Turtle Interactive



At this interactive, visitors slide levers, lift handles, or push buttons to see how fishermen can avoid catching sea turtles. Almost half (48%) of all visitors stopped at this interactive. Two-fifths (40%) of those who stopped used all four activities. Eight percent used three activities, 24 percent used two activities, 20 percent used one activity, and 8 percent did not use any activities (Table 18).

**Table 18**  
**Activities Used at Sea Turtle Interactive**

Activities (n=50)	%
No activities used	8.0
1 activity used	20.0
2 activities used	24.0
3 activities used	8.0
4 activities used	40.0

Conservation Cards (Seafood Watch and Ocean Allies)



Visitors had two opportunities in *Vanishing Wildlife* to pick up a *Seafood Watch* card (at the seafood interactive and at the card kiosks). They also had opportunities to pick up an *Ocean Allies* card (at the fishing interactive and at the card kiosks). More than a quarter of visitors (28%) picked up a *Seafood Watch* card at one of these two stops (Table 19). More visitors picked up a *Seafood Watch* card from the seafood interactive (20%) than from the card kiosks (11%). Slightly fewer visitors (23%) picked up an *Ocean Allies* card. More visitors picked up an *Ocean Allies* card from the card kiosks (19%) than from the fishing interactive (8%).

**Table 19**  
**Cards Taken by Visitors**

<i>Seafood Watch</i>	From Interactive %	From Card Kiosks %	Total Visitors %
Yes	19.5	10.5	27.8
No	80.5	89.5	72.2
<i>Ocean Allies</i>	From Interactive %	From Card Kiosks %	Total Visitors %
Yes	7.5	18.8	22.6
No	92.5	81.2	77.4

## *Conservation Cart*



During this part of the study the conservation cart was closed much of the time. Only 75 out of 133 visitors (56.4%) had an opportunity to visit the cart. Of these visitors, 12 (16%) actually stopped there. These visitors were similar in gender, age and group composition to visitors who did not stop at the cart.

### III. ON-SITE QUESTIONNAIRE

Over a six-month period, volunteers interviewed 302 visitors as they exited *Vanishing Wildlife* over a six-month period. An additional 142 visitors were approached but declined to participate for a refusal rate of 32 percent. Interviewers administered three-quarters of the surveys (76%) over a weekend and one-quarter (24%) during a weekday (Table 20).

**Table 20**  
**Data Collection Conditions**

<b>Condition (n=302)</b>	<b>%</b>
<b>Month</b>	
February	3.0
March	6.0
April	31.5
May	9.6
June	25.2
July	24.8
<b>Day</b>	
Weekday	75.8
Weekend	24.2
<b>Cart</b>	
Closed	51.7
Open	48.3

## VISITOR DEMOGRAPHICS

More than half of the respondents (54%) were male. Half of the respondents (50%) were between the ages of 25 and 44, one-tenth (12%) were under 25, and two-fifths (38%) were over 44. The mean age was 41. Over half of the respondents (63%) held a college degree, while over one-quarter (30%) held a post-graduate degree (Table 21).

**Table 21**  
**Demographic Characteristics**

<b>Characteristics</b>	<b>%</b>
<b>Gender (n=294)</b>	
Male	54.4
Female	45.6
<b>Age (n=300)</b>	
Under 25	11.7
25 to 34	21.7
35 to 44	28.0
45 to 54	22.3
55 to 64	12.0
65 and over	4.3
<b>Education (n=301)</b>	
Some high school	3.0
High school graduate	8.0
Some college	25.9
College degree	33.2
Post-graduate degree	29.9

## OTHER VISITOR CHARACTERISTICS

Sixty percent of respondents were visiting the aquarium without children. The majority of respondents were not aquarium members (82%). However, slightly more than half (51%) are involved with a conservation organization. (Appendix A lists the names of these conservation organizations.)

**Table 22**  
**Other Visitor Characteristics**

<b>Other Characteristics</b>	<b>%</b>
<b>Visiting with Children (<i>n</i>=300)</b>	
Yes	39.7
No	60.3
<b>Aquarium Member (<i>n</i>=301)</b>	
Yes	17.9
No	82.1
<b>Conservation Organization Involvement (<i>n</i>=301)</b>	
Yes	51.2
No	48.8



## VISITATION TO AQUARIUM AND *VANISHING WILDLIFE*

The majority of respondents (86%) were visiting *Vanishing Wildlife* for the first time. Over half of these respondents (59%) had previously visited the aquarium; 53 percent of this group had visited the aquarium more than two years ago (Table 23).

**Table 23**  
**Aquarium Visitation**

<b>Aquarium Visitation</b>	<b>%</b>
<b>First Visit to the Aquarium (n=302)</b>	
Yes	59.3
No	40.7
<b>Last Visit to the Aquarium (n=179)</b>	
Within past 12 months	27.9
1 to 2 years ago	19.0
More than 2 years ago	53.1

**Table 24**  
***Vanishing Wildlife* Visitation**

<b>First Visit to <i>Vanishing Wildlife</i> (n=296)</b>	<b>%</b>
Yes	85.5
No	14.5

## VISITOR EXPERIENCES

Respondents were asked to complete the following sentence while thinking about the exhibit: “I never realized that . . .” (Table 25). Two-fifths of respondents (40%) did not realize the extent to which ocean wildlife is threatened, and many of these visitors said they learned about specific species that are in danger. In addition, 16 percent were surprised to learn amazing facts about the tunas.

**Table 25**  
**Visitor Realizations**

<b>Realizations (n=292)</b>	<b>n</b>	<b>%</b>
Extent of threats to ocean wildlife	118	40.3
Tuna are endangered	41	14.0
Sharks are endangered	37	12.7
Extent of endangerment (general)	27	9.2
Sea turtles are endangered	10	3.4
Cod are endangered	2	0.7
American lobsters are endangered	1	0.3
Information about tunas	46	15.8
Size of tuna	32	11.0
General information about tuna	14	4.8
Already familiar with the information presented	43	14.7
Information about sharks and shark finning	30	10.3
Environmental impact of food choices	28	9.6
Netting/shrimping practices	27	9.2
Effect on sea turtles	15	5.1
Netting practices (general)	7	2.4
Trapdoor for sea turtles	5	1.7
Products	19	6.6
Product information (general)	6	2.1
Use in foods (soup, fish & chips)	4	1.4
Process	3	1.0
Monetary cost	6	2.1
Harmful fishing practices	8	2.7
Multiple factors threatening ocean wildlife	6	2.1
Information about farmed versus wild fish	4	1.4
Number of different species that can live together	4	1.4
Lack of public awareness	3	1.0
Canning process	2	0.7
Programs that study tunas	2	0.7
Relationship among tunas, sharks, and turtles	2	0.7
General information about sea turtles	1	0.3
It is so interesting	1	0.3
No sunfish in tank	1	0.3
Ocean is a renewable resource	1	0.3
Size of sunfish	1	0.3
That MBA had an exhibit on this topic	1	0.3

When asked to identify the most memorable aspect of the exhibit (aside from the live animals), 28 percent of respondents mentioned the interactives that focused on food (namely, the seafood and shark products interactives). Other responses included the videos (18%), the shark area (17%), and the live animals or their tank (11%).

**Table 26**  
**Most Memorable Aspect of the Exhibit\***

<b>Aspect (n=282)</b>	<b>n</b>	<b>%</b>
<b>Interactives</b>	<b>80</b>	<b>28.3</b>
Food interactive activities	65	23.0
Interactive (general)	15	5.3
<b>Videos</b>	<b>51</b>	<b>18.1</b>
Tunas	20	7.1
Sharks	15	5.3
Videos (not specific)	13	4.6
Sea turtle	2	0.7
MBARI	1	0.4
<b>Shark Area</b>	<b>49</b>	<b>17.4</b>
Information about shark products/finning	29	10.3
Shark exhibit overall	20	7.1
<b>Fish/live animals (Outer Bay exhibit)</b>	<b>31</b>	<b>11.0</b>
Fish tank	27	9.6
Information about filling the tank	4	1.4
<b>Pictures</b>	<b>24</b>	<b>8.7</b>
Animals in nets	14	5.0
Slaughter scenes	3	1.1
Illustration of shark parts	2	0.7
Pictures (not specific)	2	0.7
Sharks	1	0.4
“Fins hanging on a line”	1	0.4
Turtles	1	0.4
<b>Sea Turtle Area</b>	<b>17</b>	<b>6.0</b>
Trap door in nets	11	3.9
Sea turtle exhibit	6	2.1
<b>Tuna Area</b>	<b>12</b>	<b>4.3</b>
<b>Information in general</b>	<b>11</b>	<b>3.9</b>
All of it	7	2.5
Fishing techniques	5	1.8
Tuna research	4	1.4
Educational displays	3	1.1
Human greed/wastefulness	3	1.1
Informational cards	3	1.1
Conservation cart	2	0.7
Fishing nets	2	0.7
Divers	1	0.4
Doing school work	1	0.4
Easy to understand the presentation	1	0.4
Emotional response	1	0.4
Question and answer introduction	1	0.4

\* Percentages exceed 100 as some respondents offered more than one response.

When asked *why* the exhibit element they cited was most memorable, most respondents (18%) said that this element raised their consciousness about the extent of wildlife endangerment (Table 27). Others said the element was memorable because it included information that was new or educational (15%), because it explained the effects of consumer buying habits (12%), or because the overall presentation at that element was good or realistic (12%). In addition, seven percent of visitors said the element was memorable because of the emotional reaction they had to the information presented.

**Table 27**  
**Why Exhibit Element Was Memorable\***

<b>Why Memorable (<i>n</i>=244)</b>	<b><i>n</i></b>	<b>%</b>
Raised consciousness about extent of endangerment	44	18.0
New/educational information	37	15.2
Learned the effects of food/consumer choices	30	12.3
Good/realistic presentation	28	11.5
Personal Interest	19	7.6
Personal interest (general)	5	2.0
Likes sea turtles	3	1.2
Likes sharks	3	1.2
Likes seafood	2	0.8
Likes ocean wildlife	2	0.8
Is a seafood chef	1	0.4
Involved in organic food production	1	0.4
Likes diving	1	0.4
Likes sushi	1	0.4
Emotional reaction to information	17	7.0
Extreme level of waste	14	5.8
Shark finning	8	3.3
Information about level of waste	6	2.5
Conservation suggestions	11	4.5
Interactive activities	10	4.1
Good for children	8	3.3
Netting practices and their effects	8	3.3
Aesthetics of the "tuna tank" (Outer Bay exhibit)	5	2.0
Multiple reasons for endangerment	5	2.0
Overall memorable	5	2.0
Time spent	3	1.2
Information about fishing	3	1.2
Confusing	1	0.4
Lack of public information	1	0.4
Dire outlook	1	0.4

\* Percentages exceed 100 as some respondents offered more than one response.

## CONSERVATION CART

During this portion of the study, the conservation cart was open only half the time due to special events programming taking place elsewhere in the aquarium. Hence, only half (52%) of the visitors who were approached had an opportunity to stop at the cart. Even so, among the respondents who were interviewed when the conservation cart was open, 17 percent said they had visited the cart (Table 28).

**Table 28**  
**Use of Conservation Cart**

<b>Cart Stop (n=146)</b>	<b>%</b>
No	82.9
Yes	17.1

## CONSERVATION CARDS (*Seafood Watch* and *Ocean Allies*)

Two-fifths (41%) of the respondents said they took either a *Seafood Watch* card or an *Ocean Allies* card, while an additional six percent said they took one or both of the cards on a previous visit (Table 29).

**Table 29**  
**Cards Taken**

<b>Took Card (n=302)</b>	<b>%</b>
No	53.0
Yes	41.1
Already had one	6.0

Since one of the study's objectives was to identify factors that might influence a visitor to pick up a card, RK&A conducted a stepwise multiple regression analysis to determine the characteristics that best predict whether a visitor will perform this simple behavior. (For an explanation of this analysis, please see the section titled "Data Analysis and Method of Reporting" on page 2.)

Eight variables were included in these analyses: gender, age, education, concern for ocean wildlife (introduced later in this report), participation in conservation organizations, visiting in a group with or without children, aquarium membership, and repeat visitation to the aquarium.

Age was the factor most positively related to a visitor taking a card. Older visitors were more likely to take a card than younger visitors (Table 30). Visitors' level of concern for ocean wildlife also related positively to their taking a card, but was less of a factor than age.

The analysis was run a second time, removing age as a predictor and thus testing the remaining seven variables for significance. In this scenario, the factors that best predicted whether a visitor would pick up a card was their involvement with a conservation group and their level of concern for ocean wildlife. However, the relationship between these variables and the likelihood that a visitor will pick up a card is weak, indicating that other factors, like age, may play a more important role.

**Table 30**  
**Multiple Regression Models for Taking a Card**

Regression Analysis	Significant Variables	R Square	Model F	df	Sig. F
A. All variables	Age	.198	11.930	1,292	p=.001
	Age + Concern	.239	8.792	2,292	p=.000
B. All variables except age	Conservation organization	.027	8.113	1,293	p=.005
	Conserv. org. + Concern	.042	6.394	2,293	p=.002

### Type Of Card Taken

Respondents had the opportunity to take both a *Seafood Watch* card and an *Ocean Allies* card. Over one-third of the respondents (40%) said they took a *Seafood Watch* card, while 16 percent took an *Ocean Allies* card (Table 31). This finding was in marked contrast to the results obtained from the timing and tracking observations, in which almost equal numbers of visitors picked up the two cards (28% for *Seafood Watch* and 23% for *Ocean Allies*). However, these differences are not surprising given that on-site and telephone respondents could have picked up *Seafood Watch* cards at other places in the aquarium and not just in *Vanishing Wildlife*. If so, this would partially account for the differences in card ownership observed between visitors who were selected for the timing and tracking study and visitors who were selected for the on-site interview. The modest sample size may have also contributed to these differences.

**Table 31**  
**Type of Card Taken By On-Site Respondents**

Card (n=302)	%
<i>Seafood Watch</i>	39.7
<i>Ocean Allies</i>	16.2

Separate multiple regression analyses were run to determine which variables best predicted whether a visitor would pick up a *Seafood Watch* card and which variables best predicted whether they would pick up an *Ocean Allies* card. (For an explanation of these analyses, please see the section titled “Data Analysis and Method of Reporting” on page 2.) Eight variables were included in the analyses: gender, age, education, concern for ocean wildlife, participation in conservation organizations, visiting in a group with or without children, aquarium membership, and repeat visitation to the aquarium.

Age and gender significantly related to a visitor taking a *Seafood Watch* card. For example, women and older visitors were more likely to take a *Seafood Watch* card, while only age was predicative for the *Ocean Allies* card (Table 32). However, again, the relationship between these variables is weak, indicating that other factors may play a more important role.

**Table 32**  
**Multiple Regression Models for Taking Specific Cards**

Regression Analysis	Significant Variables	R Square	Model F	df	Sig. F
<i>Seafood Watch</i> card	Age	.039	11.782	1,292	p=.001
	Age + Gender	.053	8.045	2,292	p=.000
<i>Ocean Allies</i> card	Age	.022	6.500	1,292	p=.011

### Uses of Cards

Respondents who took a card or cards from the exhibit were asked how they intended to use them (Table 33). The majority of respondents (72%) who took a *Seafood Watch* card said they planned to start using it, while roughly a third (38%) said they would simply read or file the card.

**Table 33**  
**Intended Uses for *Seafood Watch* Card\***

Use of Card (n=121)	%
Start using it	71.7
Read it/file it	38.3
Give it to someone	14.2
Other	5.8
Educate others	
See if it works in other countries	
Don't eat seafood	
Not sure yet	4.2

\* Percentages exceed 100 as some respondents offered more than one response.

In contrast to the *Seafood Watch* card, only 37 percent of respondents who took the *Ocean Allies* card said they planned to start using it. Almost half (49%) said they would either read or file it. Twenty-nine percent were uncertain about what they might do with the card (Table 34).

**Table 34**  
**Intended Uses for *Ocean Allies* Card\***

<b>Use of Card (n=49)</b>	<b>%</b>
Read it/file it	49.0
Start using it	37.4
Not sure yet	28.6
Other	12.2
Already belong to several groups	
Refer to website addresses	
Use with children	
Give it to someone	10.2

\* Percentages exceed 100 as some respondents offered more than one response.



## CONSERVATION ACTIONS

Respondents were asked what factors they consider when buying seafood in a store or restaurant. Most respondents (66%) said they considered “personal preferences” (e.g., taste, quality, freshness, or price) when purchasing seafood, while 20 percent took conservation concerns into account (Table 35).

**Table 35**  
**Considerations When Buying Seafood—All Visitors**

Considerations ( <i>n</i> =301)	%
Personal preferences	66.0
Conservation concerns	19.5
Don't eat seafood	12.1
Other (health issues, sport sponsorships)	2.4

Visitors who took an *Ocean Allies* card when visiting the exhibit were more likely to give a conservation-related response when asked about their seafood buying habits (33%) compared to visitors who did not take an *Ocean Allies* card (18%). Similarly, visitors who were involved with a conservation organization were twice as likely to give a conservation-related response (27%) compared to visitors who were not involved with a conservation organization (13%). Surprisingly, visitors who picked up a *Seafood Watch* card were no more likely to give a conservation-related response than visitors who did not pick up this card.

**Table 36<sup>9</sup>**  
**Considerations When Buying Seafood—Visitors Who Took an *Ocean Allies* Card**

Considerations <sup>1</sup> ( <i>n</i> =290)	<i>Ocean Allies</i> Card	No <i>Ocean Allies</i> Card	Total
	%	%	
Personal preferences	48.9	71.0	67.6
Conservation concerns	<b>33.3</b>	<b>17.6</b>	20.0
Don't eat seafood	17.8	11.4	12.4

Considerations <sup>2</sup> ( <i>n</i> =290)	Organization Involvement	No Organization Involvement	Total
	%	%	
Personal preferences	60.3	75.0	67.6
Conservation concerns	<b>26.7</b>	<b>13.2</b>	20.0
Don't eat seafood	13.0	11.8	12.4

<sup>1</sup> $\chi^2 = 8.724, df = 2, p = 0.013$

<sup>2</sup> $\chi^2 = 9.035, df = 2, p = 0.011$

<sup>9</sup> For the purposes of statistical tests, respondents who gave an “other” response were excluded. The numbers in bold indicate a statistically significant difference between the two samples.

During the interview, respondents were asked to rate their level of concern for ocean wildlife on a 10-point scale, with 1 being “not at all concerned” and 10 being “very concerned.” As shown in Table 37, visitors said they were concerned about ocean wildlife, with an average rating of 7.9.

**Table 37**  
**Concern for Ocean Wildlife**  
**(n=301)**

<b>Rating Scale (1 to 10)</b>	<b>Average</b>
(1) Not at all concerned to (10) Very concerned	7.86 (±1.77)

A multiple regression analysis was run to determine which variables best predict a visitor’s level of concern for ocean wildlife. (For an explanation of this analysis, please see the section titled “Data Analysis and Method of Reporting on page 2.) Seven variables were included in this analysis: gender, age, education, participation in conservation organizations, visiting in a group with or without children, aquarium membership, and repeat visitation to the aquarium. The variable that best predicted visitors’ level of concern for ocean wildlife was participation in a conservation organization (Table 38). Still, the relationship between these variables was weak, indicating that other factors may play a more important role.

**Table 38**  
**Multiple Regression Model for Visitors’ Level of Concern for Ocean Wildlife**

<b>Regression Analysis</b>	<b>Significant Variables</b>	<b>R Square</b>	<b>Model F</b>	<b>df</b>	<b>Sig. F</b>
Level of Concern	Conservation organization	.039	11.953	1,292	p=.001

Finally, the vast majority of respondents (93%) interviewed outside the exhibit said that they could not think of any products they had at home that contained ingredients from sharks (Table 39).

**Table 39**  
**Shark Products at Home**

<b>Total (n=296)</b>	<b>%</b>
No	92.9
Yes	7.1

#### IV. TELEPHONE QUESTIONNAIRE

Aquarium staff and volunteers gathered 300 telephone numbers from visitors so RK&A could conduct telephone interviews. An RK&A interviewer administered a questionnaire to 150 of these visitors over the telephone approximately two to three months after they had visited *Vanishing Wildlife*. Half of the interviews were conducted with spring visitors and half were conducted with summer visitors. All of the visitors contacted agreed to participate in the interview.

#### VISITOR DEMOGRAPHICS

More than half of the respondents were female (57%), and over the age of 44 (53%). The mean age was 45 years for the sample. Over half (67%) of the respondents had at least a college degree, while over one-quarter (30%) had a post-graduate degree (Table 40).

**Table 40**  
**Demographic Characteristics**

<b>Characteristics</b>	<b>%</b>
<b>Gender (n=150)</b>	
Female	57.3
Male	42.7
<b>Age (n=150)</b>	
Under 25	4.7
25 to 34	23.3
35 to 44	19.3
45 to 54	26.7
55 to 64	16.0
65 and over	10.0
<b>Education (n=149)</b>	
High school graduate	9.4
Some college	23.5
College degree	37.6
Post-graduate degree	29.5

## OTHER VISITOR CHARACTERISTICS

Over half of respondents (52%) were visiting the aquarium with children (Table 41). The majority (81%) are not members of the aquarium, and over half (57%) are not involved with a conservation organization. (Appendix B lists conservation organizations in which respondents are involved.)

**Table 41**  
**Other Characteristics**

<b>Other Characteristics</b>	<b>%</b>
<b>Visiting with Children (<i>n</i>=148)</b>	
Yes	52.0
No	48.0
<b>Aquarium Member (<i>n</i>=147)</b>	
Yes	19.0
No	81.0
<b>Conservation Organization Involvement (<i>n</i>=150)</b>	
Yes	42.7
No	57.3

## VISITATION TO AQUARIUM AND *VANISHING WILDLIFE*

At the time of the telephone interview, the majority of the respondents (89%) had not revisited the aquarium since they'd been approached to participate in the study. (Table 42). Of those who had revisited the aquarium, half had visited only once while the other half had visited more than once.

**Table 42**  
**Aquarium Repeat Visitation**

<b>Aquarium Repeat Visitation</b>	<b>%</b>
<b>Repeat Visit (n=149)</b>	
Yes	10.7
No	89.3
<b>Number of Repeat Visits (n=14)</b>	
Once	50.0
More than once	50.0

When asked how many total visits to *Vanishing Wildlife* respondents had made at the time of the telephone survey, the majority of respondents (85%) had made one visit (Table 43).

**Table 43**  
**Total Visitation of Exhibit**

<b>Visitation of <i>Vanishing Wildlife</i> (n=150)</b>	<b>%</b>
1 visit	85.3
2 visits	8.0
3 or more visits	6.6

## VISITOR RECALL OF CONSERVATION INFORMATION

The majority of respondents (79%) recalled hearing or seeing information about conservation at the aquarium (Table 44).

**Table 44**  
**Recall of Conservation Information at Aquarium**

<b>Recall (n=150)</b>	<b>%</b>
Yes	78.7
No	21.3

Respondents were asked what in particular they remembered hearing or seeing about conservation at the aquarium. Almost two-fifths (39%) of the respondents recalled hearing or seeing information about types of seafood to purchase (Table 45). Slightly fewer respondents (38%) recalled hearing or seeing information about specific species at risk.

**Table 45<sup>10</sup>**  
**Topics Recalled About Conservation at the Aquarium (n=122)**

<b>Topics</b>	<b>n</b>	<b>%</b>
Types of seafood to purchase	35	28.7
Seafood information (general)	27	22.1
<i>Seafood Watch</i> card	8	6.6
Information about species at risk	34	27.8
Species at risk (general)	9	7.4
Tunas	8	6.6
Sea turtles	5	4.1
Sharks	4	3.3
Alaskan salmon	1	0.8
California monk seals	1	0.8
Anchovies	1	0.8
Jellyfish	1	0.8
Rockfish	1	0.8
Sea otters	1	0.8
Shrimp	1	0.8
Whales	1	0.8
Couldn't recall anything about conservation	32	26.2
Information on overfishing	11	9.0
Types of fishing	10	8.2
Netting/shrimping	8	6.6
Fishing (general)	2	1.6
Disposing of waste material	8	6.6
Conservation information and activities	7	5.7
Exhibits for children	5	4.1
Friendly fishing practices	5	4.1
Guide tour	4	3.3
Hands-on activities	4	3.3
Information on creation of new habitats	2	1.6
Pamphlet	2	1.6
Educational area	1	0.8
Elkhorn Slough exhibit	1	0.8
Erosion	1	0.8
Rainforest	1	0.8
Waste	1	0.8

<sup>10</sup> The 90 respondents who recalled seeing something about conservation at the aquarium were asked a follow-up question to determine precisely what they recalled. The 32 respondents who did not recall seeing anything about conservation were not asked this follow-up question. They are included in this table for comparison purposes only.

A multiple regression analysis was conducted to determine which variables best predict whether a visitor would recall conservation information from his or her visit to the aquarium. (For an explanation of this analysis, please see the section titled “Data Analysis and Method of Reporting on page 2.) Eight variables were included in this regression analysis: gender, age, concern for ocean wildlife, participation in conservation organizations, visiting in a group with or without children, aquarium membership, whether a visitor took a *Seafood Watch* card, and whether a visitor took an *Ocean Allies* card.

Three variables predicted whether visitors would recall conservation information during their aquarium visit; first, involvement with a conservation organization; second, taking a *Seafood Watch* card during the visit; and third, their level of concern for ocean wildlife (Table 46).

**Table 46**  
**Multiple Regression Models for Visitors’ Recollection of Conservation**

<b>Regression Analysis</b>	<b>Significant Variables</b>	<b>R Square</b>	<b>Model F</b>	<b>df</b>	<b>Sig. F</b>
Recall conservation during visit	Conserv. org.	.037	6.569	1,145	p=.011
	Conserv. org + <i>SF</i> Card	.067	6.226	2,145	p=.003
	Conserv. org + <i>SF</i> Card + Concern	.103	6.542	3,145	p=.000

When asked if they recalled seeing *Vanishing Wildlife*, three-quarters (75%) of the respondents said they recalled seeing the exhibit (Table 47).

**Table 47**  
**Recall of *Vanishing Wildlife***

<b>Recall (n=140)</b>	<b>%</b>
Yes	75.0
No	25.0

Sixteen percent of respondents said information about sharks and shark finning was the most memorable aspect of the exhibit (Table 48). Other popular responses included the interactive seafood displays (15%) and information or pictures of sea turtles trapped in shrimp nets (13%).

**Table 48**  
**Most Memorable Aspect of Exhibit**

<b>Topics (n=93)</b>	<b>n</b>	<b>%</b>
Sharks/shark-fin practices	15	16.1
Interactive food displays	14	15.1
Sea turtles in nets	12	12.9
Non-exhibit-related aspects	10	10.8
Jellyfish	8	8.6
Octopuses	1	1.1
Puzzle	1	1.1
General presentation/information	9	9.7
Information about food choices	8	8.7
Information about food choices (general)	6	6.5
“Seafood Watch”	2	2.2
Information about species extinction	8	8.6
Pictures	8	8.6
Fish tank (Outer Bay exhibit)	7	7.5
Fishing information	5	5.4
Conservation information	4	4.3
Good for children	4	4.3
Guides	3	3.2
Environmental/health hazards	3	3.2
Information about tuna	3	3.2
Videotapes	3	3.2
Diver	2	2.2
Pamphlets	2	2.2
Cultural perspectives about the environment	1	1.1
Information about marine ecosystems	1	1.1
Protected areas	1	1.1
Size of exhibit	1	1.1
Whale blubber	1	1.1

\* Percentages exceed 100 as some respondents offered more than one response.



When asked *why* the exhibit element they cited was most memorable, most respondents said that they had a personal interest in the subject matter (19%). Others said their children had a good time at that particular element (12%), that they learned new and/or different information (11%), or that the presentation was exceptionally good or realistic at that element (11%).

**Table 49**  
**Why the Exhibit Element was Memorable**

<b>Why Memorable (n=81)</b>	<b>n</b>	<b>%</b>
Personal Interest	15	18.3
Likes sea turtles	3	3.7
Fisherman	2	2.5
Likes seafood	2	2.5
Personal interest	1	1.2
Knows people that use shark supplements	1	1.2
Likes ocean wildlife	1	1.2
Likes shark-fin soup	1	1.2
Likes sharks	1	1.2
Lives near ocean	1	1.2
Trip to Hawaii	1	1.2
Practices environmental law	1	1.2
Children had a good time	10	12.3
New/different information	9	11.1
Realistic/good presentation	9	11.1
Extreme level of waste	8	9.8
Level of waste (general)	4	4.9
Shark finning	3	3.7
Tuna	1	1.2
Emotional reaction to information	6	7.4
Showed serious concerns/raised awareness	6	7.4
Overall memorable	5	6.2
Graphic pictures	4	4.9
Interactive activities	4	4.9
Health concerns	2	2.5
Size of tank (Outer Bay exhibit)	2	2.5
Disagreed with information presented	1	1.2
Guide tour	1	1.2
Netting practices	1	1.2
Videotapes	1	1.2

\* Percentages exceed 100 as some respondents offered more than one response.

## TYPE OF CARD TAKEN

Over one-third (35%) of the telephone respondents took a *Seafood Watch* card, while approximately one-fifth (24%) took an *Ocean Allies* card (Table 50). Forty percent of the respondents did not recall taking either card.

**Table 50**  
**Type of Card Taken\***

Type of Card (n=150)	%
<i>Seafood Watch</i>	35.3
<i>Ocean Allies</i>	24.0
No Card Taken	60.0

\* Percentages exceed 100 as some respondents took more than one card.

## USES OF CARDS

Over half of the respondents (51%) who took a *Seafood Watch* card reported using it (Table 51). The majority of respondents said they referred to it while shopping or ordering in restaurants (Table 52). Most respondents who did not use the *Seafood Watch* card said they had not had an opportunity to use it (n=6). Others said they found the card confusing (n=4), did not eat seafood (n=4), or could not name a specific reason for not using the card (n=4).

**Table 51**  
**Use of *Seafood Watch* Card**

Use (n=57)	%
Yes	50.9
No	49.1

**Table 52**  
**How *Seafood Watch* Card Was Used**

Uses (n=29)	n
Refers to it while shopping/eating in a restaurant	23
Shares it with friends	2
Uses in classroom	2
Keeps in wallet	1
Read it and threw it away	1

**Table 53**  
**Reasons For Not Using *Seafood Watch* Card**

<b>Reasons (<i>n</i>=27)</b>	<b><i>n</i></b>
No opportunity to use the card	6
Confusing	4
Do not eat seafood	4
No reason	4
Does not recall picking up card	3
Forgot about it	2
Lost it	2
“I’m a fisherman”	1
Loaned to a friend	1

Almost 90 percent of the respondents who took an *Ocean Allies* card had not yet used it; in fact, 13 of these visitors did not even recall taking a card. (Table 55). The 10 percent of visitors who had used their cards said they used them in the following ways: one gave it to a co-worker; one used it in a classroom; and two referred to it. Some (*n*=5) said they had simply not had an opportunity to use their cards. None of the visitors said they had joined an ocean conservation group.

**Table 54**  
**Use of *Ocean Allies* Card**

<b>Use (<i>n</i>=39)</b>	<b>%</b>
Yes	10.3
No	89.7

**Table 55**  
**Reasons For Not Using *Ocean Allies* Card**

<b>Reasons (<i>n</i>=30)</b>	<b><i>n</i></b>
Does not recall taking card	13
No reason	6
No opportunity to use the card	5
Misplaced it/lost it	3
Does not want to join another group	2
Gave it away	1

## CONSERVATION ACTIONS

Respondents were asked what factors they consider when buying seafood at a store or restaurant. Upon giving an answer, they were then asked if they had any *other* considerations they took into account. This section reports on telephone respondents' *first* response to this question (which is comparable to the on-site questionnaire data), as well as their combined first and second responses.

Most visitors (53%) responded first by citing "personal preferences" (taste, quality, freshness or price). Twenty-one percent of respondents cited conservation-related issues, while 19 percent of respondents said they did not eat seafood (Table 56).

**Table 56**  
**Primary Considerations when Buying Seafood\***

<b>Factors (n=150)</b>	<b>%</b>
Personal preference	53.3
Conservation-related	20.7
Do not eat fish	18.7
Other	9.3

\* Percentage is greater than 100 as some respondents offered more than one answer.

Combining initial and secondary responses reveals that the majority of visitors (80%) take personal preferences into account, while two-fifths (40%) of them consider conservation-related issues (Table 57). Respondents who said they "do not eat fish" were not asked for a second response to this question. When asked a second time if there was anything else they consider when making purchases, about half (47%) said "no."

**Table 57**  
**All Considerations for Buying Seafood\***

<b>Factors (n=150)</b>	<b>%</b>
Personal preference	80.3
Conservation-related	39.6
Do not eat fish (first response only)	18.7
Other	18.1
No second response given	47.3

\* Percentage is greater than 100 as some respondents offered more than one answer.

A multiple regression analysis was conducted to determine which factors influence whether respondents gave a conservation-related response when asked about their seafood buying habits. (For an explanation of this analysis, please see the section titled “Data Analysis and Method of Reporting on page 2.) Eight variables were included in this regression analysis: gender, age, concern for ocean wildlife, participation in conservation organizations, visiting in a group with or without children, aquarium membership, whether a visitor took a *Seafood Watch* card on his or her visit, and whether a visitor took an *Ocean Allies* card on his or her visit.

Three variables predicted whether a visitor would consider conservation issues when purchasing seafood (Table 58): first, visitors who belong to conservation organizations; second, whether a visitor took an *Ocean Allies* card on his or her visit; and third, a visitor’s level of concern for ocean wildlife.

**Table 58**  
**Multiple Regression Models for Considering Conservation When Buying Seafood**

<b>Regression Analysis</b>	<b>Variables</b>	<b>R Square</b>	<b>Model F</b>	<b>df</b>	<b>Sig. F</b>
Consider conservation issues when buying seafood	Conserv. org.	.070	11.854	1,145	p=.001
	Conserv. org. + <i>OA</i> Card	.120	10.925	2,145	p=.000
	Conserv. org. + <i>OA</i> Card + Concern	.146	9.245	3,145	p=.000

During the telephone interviews, respondents were asked to rate their level of concern for ocean wildlife on a 10-point scale, with 1 being “not at all concerned” and 10 being “very concerned.” Respondents were highly concerned about ocean wildlife, with an average rating of 7.9 (Table 59).

**Table 59**  
**Level of Concern for Ocean Wildlife**  
**(n=149)**

<b>Rating Scale (1 to 10)</b>	<b>Average</b>
(1) Not at all concerned to (10) Very concerned	7.90 (±1.75)

Respondents were also asked to identify the most serious problem facing ocean wildlife. Almost all respondents (99%) said that pollution posed the greatest threat to ocean wildlife, followed by overfishing (73%) (Table 60).

**Table 60**  
**Most Serious Problems Facing Ocean Wildlife\***

<b>Problems (n=145)</b>	<b>n</b>	<b>%</b>
Pollution	143	98.6
Pollution (general)	110	75.9
Fish boats leaking petroleum/oil spills	17	11.7
Trash and dumping	7	4.8
Water runoff	5	3.4
Plastics	3	2.1
Sound pollution by large ships	1	0.7
Overfishing	106	73.1
Overfishing (general)	81	55.9
Unsustainable fishing/illegal fishing	16	11.0
Netting	9	6.2
Human presence/interference	11	7.6
Cruise ships/large ships	7	4.8
Global warming	6	4.1
Resource exploitation	6	4.1
General disrespect for nature	5	3.4
Offshore drilling	4	2.8
Whaling/gaming	4	2.8
Coastal development	3	2.1
Extinction	3	2.1
Fishermen	3	2.1
Finning	3	2.1
Lack of public information/knowledge	3	2.1
Navy's experimentation with sonar	3	2.1
Beached whales and seals	2	1.4
Lack of protection for environment and wildlife	2	1.4
Department of Fish and Game policy	1	0.7
People eating the wrong foods	1	0.7
Too many to mention	1	0.7

\* Percentages exceed 100 as some respondents offered more than one response.

Respondents were also asked if they had shark products in their homes. The majority of respondents (83%) said they did not have any shark products. A few respondents (4%) required the interviewer to read from a list of products that contain shark ingredients. However, the majority of these visitors (83%) did not own any of these products. Most products that respondents did report having were either pet food or dog biscuits ( $n=17$ ) and Preparation-H ointment ( $n=10$ ).

**Table 61**  
**Shark Products**

<b>Read List (<math>n=147</math>)</b>	<b>%</b>
No	95.9
Yes	4.1
<b>Use (<math>n=147</math>)</b>	<b>%</b>
No	83.0
Yes	17.0

**Table 62**  
**Products Containing Shark Ingredients**

<b>Products (<math>n=28</math>)</b>	<b><i>N</i></b>
Pet food/dog biscuits	17
Preparation-H	10
Shark cartilage supplements	3
Body creams	1
Necklace with a shark tooth	1

## V. COMPARISON BETWEEN ON-SITE AND TELEPHONE RESPONSES

The on-site and telephone questionnaires included similar questions so that visitors' responses immediately after visiting the exhibit could be compared with visitors' responses two to three months after their visit. Although the samples were not identical, the demographic characteristics were similar enough that comparisons could still be made.

In comparing the two samples, more on-site respondents (51%) said they were involved with a conservation organization compared to the telephone respondents (43%) (Table 63), but the difference was not statistically significant. Average levels of concern for ocean wildlife were almost identical across the two samples (7.86 and 7.90, respectively).

Respondents to both surveys were asked what factors they take into account when buying seafood in a store or restaurant. Nearly equal percentages of on-site respondents and telephone respondents gave a conservation-related response to this question (20% and 21%, respectively).<sup>11</sup> Respondents in both samples were also asked if they had any products containing shark ingredients in their homes.<sup>12</sup> Considerably more telephone respondents said they owned products containing shark ingredients (17%) compared to on-site respondents (7%), perhaps because of differences in the interviewing methodology.<sup>13</sup>

Finally, both on-site and telephone respondents were asked to identify the most memorable aspect of *Vanishing Wildlife*.<sup>14</sup> The top three responses among on-site respondents were the interactive exhibits (most respondents cited the seafood interactive), the videos (some respondents specifically cited the tuna or shark videos), and the shark area (some respondents specifically cited information about shark products or finning). The top three responses among telephone respondents focused on sharks and shark-finning practices, the seafood interactive, and the images or information about sea turtles trapped in nets. On-site respondents' reasons for finding a particular element memorable were often content-based. For example, the exhibit raised their awareness about wildlife endangerment (18%) or gave them new information (15%). In contrast, telephone respondents gave more general reasons about why they found a particular element memorable, such as "personal interests" (19%) or that "the children had a good time" (12%).

Among on-site respondents who took a *Seafood Watch* card, almost three-quarters (72%) said that they would use the card. Among telephone respondents who took a *Seafood Watch* card and were interviewed several months after their visit, more than half said they had used it (51%), a fairly large proportion of "intended" users. For visitors who took an *Ocean Allies* card, more than one-third of those interviewed on-site said they would use it (37%), while one-tenth of telephone respondents actually reported using it (10%).

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<sup>11</sup> While telephone respondents were asked this question a second time, the comparison in Table 63 only includes their initial response, as this is most methodologically comparable to the on-site questionnaire.

<sup>12</sup> A few telephone respondents (4%) were read a short list of shark products if they were unsure about shark products.

<sup>13</sup> Some interview respondents (4%) were read a list of products that contain shark ingredients.

<sup>14</sup> Telephone survey respondents who could not recall the exhibit were not asked this question.



**Table 63**  
**Comparisons Between On-Site and Telephone Responses**

	<b>On-Site Questionnaire</b>	<b>Telephone Questionnaire</b>
<b>Belong to a Conservation Organization</b>	%	%
Yes	51.2	42.7
No	48.8	57.3
<b>Belong to <i>Ocean Allies</i> Organization<sup>15</sup></b>		
Yes	21.0	14.0
No	79.0	86.0
<b>Concern for Ocean Wildlife Not at all concerned (1)/Very concerned (10)</b>	Mean	Mean
Level of Concern	7.86	7.90
<b>Considerations When Buying Seafood</b>	%	%
Personal preferences	66.0	53.3
Conservation concerns	19.5	20.7
Don't eat seafood	12.1	18.7
Other	2.4	9.3
<b>Shark Products at Home</b>	%	%
Yes	7.1	17.0
No	92.9	83.0
<b>Most Memorable Aspect of Exhibit (Top three responses)</b>	%	%
Most Frequent Response	Interactive exhibits (28%)	Shark/Shark-fin practices (16%)
2 <sup>nd</sup> Most Frequent Response	Videos (18%)	Seafood interactive (15%)
3 <sup>rd</sup> Most Frequent Response	Shark area (17%)	Turtles in nets (13%)

<sup>15</sup> “*Ocean Allies* Organizations” is a subset of the Conservation Organizations and includes the six organizations listed on the *Ocean Allies* card. See Appendix D for a list of these organizations.

**Appendix A**  
**Conservation Organizations**  
**Mentioned by**  
**On-Site Respondents (n=153)<sup>16</sup>**

<b>Organization</b>	<b>n</b>
Aquariums	44
<b>Monterey Bay Aquarium</b>	<b>37</b>
<i>Steinhart Aquarium</i>	3
<i>Boston Aquarium</i>	1
<i>Colorado Aquarium</i>	1
<i>Long Beach Aquarium</i>	1
<i>Scripps Aquarium</i>	1
Sierra Club	29
The Nature Conservancy	28
<b>World Wildlife Fund</b>	<b>17</b>
Zoos	8
<i>San Diego Zoo</i>	3
<i>Columbus Zoo</i>	1
<i>Denver Zoo</i>	1
<i>Sacramento Zoo</i>	1
<i>San Francisco Zoo</i>	1
<i>Santa Barbara Zoo</i>	1
Greenpeace	7
Local organizations	7
Animal Shelter/Humane Society	6
<b>Audubon Society</b>	<b>6</b>
Foreign organizations	6
National Wildlife Federation	6
Society for the Prevention of Cruelty to Animals	6
National Geographic Society	5
Non-conservation organizations	4
People for the Ethical Treatment of Animals	4
Ducks Unlimited	2
<b>Environmental Defense</b>	<b>2</b>
Friends of the Smokies	2
National Parks Conservation Organization	2
Surfrider Foundation	2
Yosemite Park Fund	2
American Zoo and Aquarium Association	1

<b>Organization</b>	<b>n</b>
Angelos National Forest	1
Bass Masters Association	1
Botanic Gardens	1
California Academy of Sciences	1
California State Parks	1
Colorado Mountain Club	1
Cousteau Society	1
Defenders of Wildlife	1
Denver Museum of Nature and Science	1
Earth Save	1
East Bay Regional Parks Exploratorium	1
Friends of the Marine Mammals	1
Hawaii Grove	1
Kenya Wildlife Fund	1
Marsh 2000	1
Michigan United Conservation Club	1
Monterey Fishing	1
Museum of North Arizona	1
National Forest	1
<b>Natural Resources Defense Council</b>	<b>1</b>
Nature Center of Tennessee	1
Ontario Wildlife Federation	1
Open Spaces	1
San Joaquin Peace River Conservancy Trust	1
Save the Manatees	1
Save the Wildlife	1
Sea Turtle Conservation	1
Slovey Foundation	1
Troutfishing.org	1
Turkey Wildlife Federation	1
Turtle Bay Museum	1
Wildlife Way Station	1
<b>Total Responses</b>	<b>229</b>

<sup>16</sup> The organizations in bold type are listed on the *Ocean Allies* card.

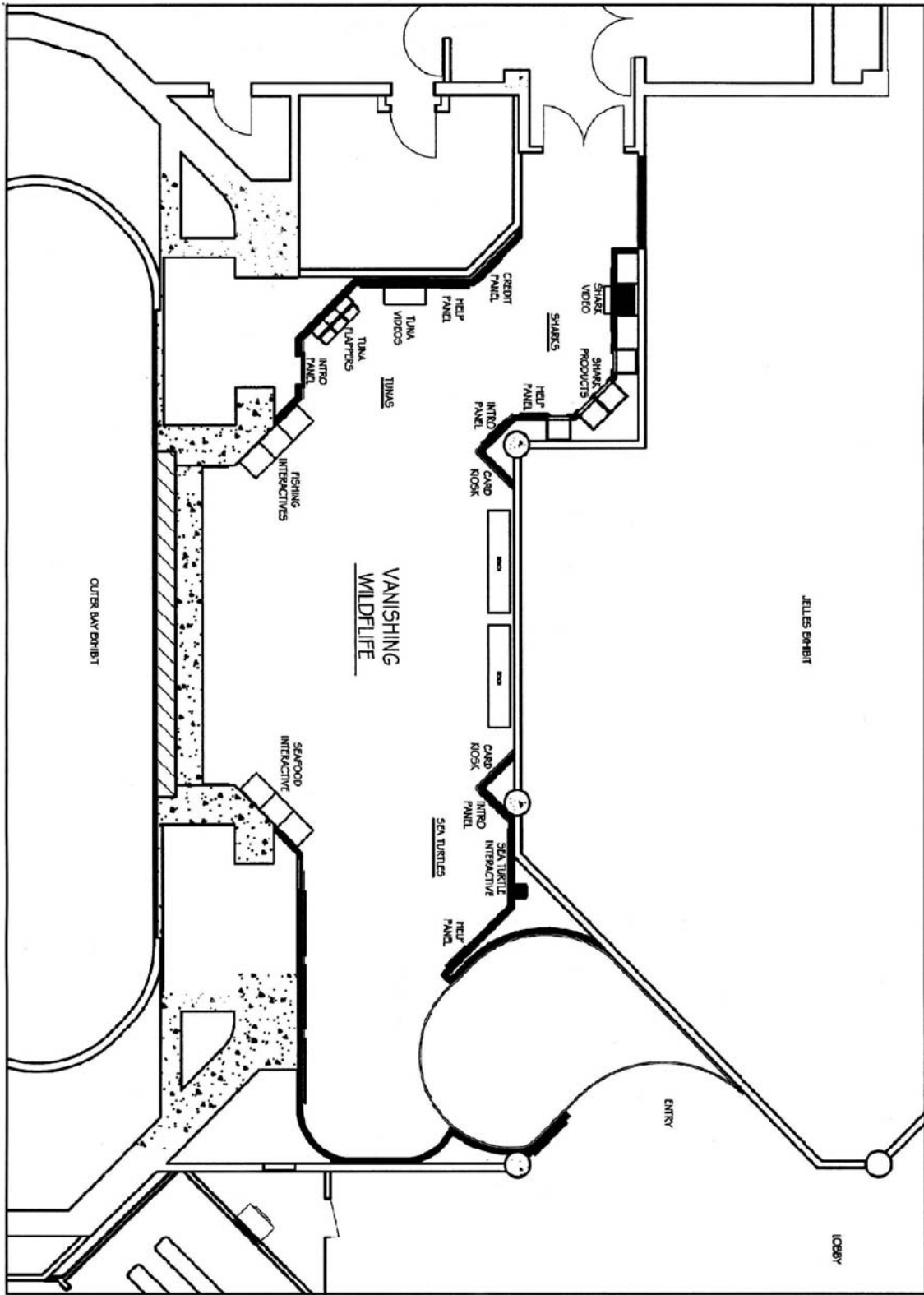
**Appendix B**  
**Conservation Organizations**  
**Mentioned by**  
**Telephone Respondents (n=59)<sup>17</sup>**

<b>Organization</b>	<b>n</b>
Sierra Club	16
<b>World Wildlife Fund</b>	<b>13</b>
The Nature Conservancy	10
Aquariums	8
<i>Monterey Bay Aquarium</i>	5
<i>Aquarium of the Pacific</i>	1
<i>Santa Barbara Aquarium</i>	1
<i>UC Santa Cruz Aquarium</i>	1
Zoos	5
<i>Bronx Zoo</i>	1
<i>Friends of the National Zoo</i>	1
<i>Los Angeles Zoo</i>	1
<i>St. Louis Zoo</i>	1
<i>San Diego Zoo</i>	1
Animal Shelter/ Humane Society	6
Non-conservation organizations	6
<b>Audubon Society</b>	<b>5</b>
<b>Natural Resources</b>	<b>3</b>
<b>Defense Council</b>	
Local organizations	2
Marine Mammal Center of Marin County	2
Wilderness Society	2
Arboretum	1
Backyard Wildlife Habitat Project	1
Botanic Gardens	1
California Academy of Sciences	1
California Native Plant Society	1
California Waterfowl Association	1
CALPIRG	1
Chesapeake Bay, “Save the Bay”	1

<b>Organization</b>	<b>n</b>
College Department of Environmental Sciences	1
Cousteau Society	1
Ducks Unlimited	1
Everglade Rescue	1
Greenbelt Alliance	1
Greenpeace	1
Heal the Bay	1
Historic Preservation	1
Hudson River Sloop Clearwater	1
Humpback Whale (Adopt- a-Whale Program)	1
Marin Agricultural Land Trust	1
National Parks	1
Natural History Museum	1
Natural Wildlife Federation	1
Northshore Animal League	1
People for the Ethical Treatment of Animals	1
San Diego Zoological Society	1
Save the Whale Foundation	1
Save Our Shores	1
Sea of Cortez	1
Society for the Prevention of Cruelty to Animals	1
Turtle Island Restoration Network	1
<b>Total Responses</b>	<b>113</b>

<sup>17</sup> The organizations in bold type are listed on the *Ocean Allies* card.

**Appendix C**  
**Floorplan of *Vanishing Wildlife***



## Appendix D Seafood Watch and Ocean Allies Cards



**Choices for Healthy Oceans**

Use This Guide to Make Choices for Healthy Oceans

**GREEN MEANS GO AHEAD**  
These fish and shellfish are caught or farmed in environmentally friendly ways.

**YELLOW MEANS PROCEED WITH CAUTION**  
These items are better choices than seafood on the red list, but they still have problems. Check the source carefully before you buy.

**RED MEANS AVOID**  
These fish need to recover from overfishing, or the fishing or farming currently harms the environment.

**To Learn More**  
Visit our website at [www.montereybayaquarium.org](http://www.montereybayaquarium.org) to get more information and the latest update of this guide.

Brought to you in partnership with:







**West Coast Seafood Guide**  
Good until Spring 2003

### BEST CHOICES

- Abalone (farmed)
- Catfish (U.S. farmed)
- Caviar (farmed)
- Clams (farmed)
- Crab, Dungeness
- Hallbut (Pacific)
- Lobster, Rock (CA, Australia)
- Mussels (farmed)
- Oysters (farmed)
- Sablefish/Black cod (AK, BC)
- Salmon (CA, AK; wild-caught)
- Salmon, canned
- Sard Dabs
- Sardines
- Sea Bass, White
- Shrimp/Prawns (trap-caught)
- Squid (CA market squid)
- Striped Bass (farmed)
- Sturgeon (farmed)
- Trapia (farmed)
- Trout, Rainbow (farmed)
- Tuna, Albacore/Yellowfin/Bigeye (troll/pole-caught)

### PROCEED WITH CAUTION

- Clams (wild-caught)
- Cod, Pacific
- Crab, Imitation/Surimi
- Crab, King (AK)
- Crab, Snow
- Lobster, American
- Mahi-Mahi
- Mussels (wild-caught)
- Oysters (wild-caught)
- Pollock
- Sablefish/Black Cod (CA, WA, OR)
- Salmon (OR, WA; wild-caught)
- Scallops, Bay/Sea
- Shark, Thresher (U.S. West Coast)
- Shrimp (U.S. farmed or wild-caught)
- Sole, English/Petrale/Dover
- Swordfish (U.S. West Coast)
- Tuna, Albacore/Yellowfin/Bigeye (longline or purse seine-caught)
- Tuna, canned

### AVOID

- Caviar, Beluga/Osetra/Sevruga
- Chilean Sea Bass
- Cod, Atlantic/Icelandic
- Crab, King (imported)
- Lingcod
- Monkfish
- Orange Roughy
- Rockfish/Rock Cod/Pacific Snapper
- Salmon (farmed/Atlantic)
- Sharks (except U.S. West Coast Thresher)
- Shrimp (imported)
- Sturgeon (wild-caught)
- Swordfish (Atlantic)
- Tuna, Bluefin

AK = Alaska  
BC = British Columbia  
CA = California  
OR = Oregon  
U.S. = United States  
WA = Washington

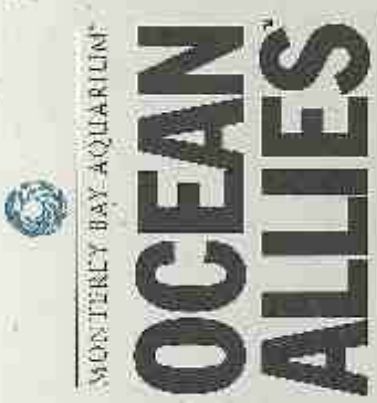
### Choices for Healthy Oceans

**Do You Love Seafood?**  
So do we, but some of our favorite fish are in trouble. They're overfished, or caught or farmed in ways that harm the environment.

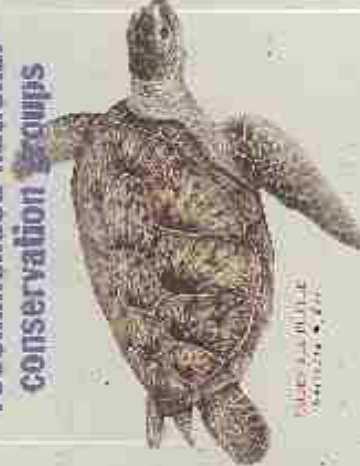
**You Have the Power**  
The wise choices you make when you buy seafood can help us enjoy fish now and forever.

**How to Use This Guide**  
Carry this convenient seafood guide to restaurants and grocery stores. Check the green, red and yellow lists before you buy.

© 2002 Monterey Bay Aquarium Foundation. Printed on recycled paper.



recommended national conservation groups



**The best thing you can do for ocean wildlife is join a conservation group**

It's easy to get involved, whether by donating or simply buying ocean wildlife. Fortunately, there's something you can do to help you in each corner of the world. These organizations are your links to the ocean's fish, laws and rules. They're the best way to help you make the right choices. With their power and influence, and your support, conservation groups can do much more than any one of us can alone.

**If you want to help ocean wildlife, consider joining a national conservation group.**

**Monterey Bay Aquarium**

The mission of the nonprofit Monterey Bay Aquarium is to inspire conservation of the oceans. Through exhibits, programs, publications and scientific research, we introduce people to the marine life of Monterey Bay and the world's oceans, and help them to become active ocean stewards.

886 Cannery Row, Monterey, CA 93940  
phone: (831)648-4880 or (800)840-4880 fax: (831)648-4810  
[www.montereybayaquarium.org](http://www.montereybayaquarium.org)

**Center for Marine Conservation**

The Center for Marine Conservation, a national nonprofit organization, seeks to conserve the diversity and abundance of ocean life through citizen action, science-based advocacy, and the promotion of sound conservation policies.

1725 DeSales Street, NW, Suite 600 Washington, DC 20036  
phone: (202)429-5609 fax: (202)872-0619  
[www.cmc-ocean.org](http://www.cmc-ocean.org)

**National Audubon Society/Living Oceans Program**

The National Audubon Society's Living Oceans Program mission is to restore abundant marine wildlife and healthy habitats in our oceans and along our coasts.

550 South Bay Avenue, Islip, NY 11751  
phone: (888)397-6649  
[www.audubon.org/campaign/lo](http://www.audubon.org/campaign/lo)

**World Wildlife Fund**

World Wildlife Fund works worldwide to preserve the abundance and diversity of life on Earth and, through its marine program, focuses on three strategies: restoring critically threatened fisheries; reducing pollutants that endanger marine life; and promoting integrated coastal management, including marine protected areas.

1250 24th Street, NW, Washington, DC 20037  
phone: (800)CALL-WWF fax: (202)293-9211  
[www.worldwildlife.org](http://www.worldwildlife.org)

**Natural Resources Defense Council**

NRDC is a national nonprofit organization with over 400,000 members, close to 100,000 of whom are in California, and a staff of lawyers, scientists, and other environmental specialists. NRDC works to preserve and restore the extraordinary diversity of ocean life and the quality of coastal waters by fighting pollution and promoting ecosystem protection.

40 West 20th Street, New York, NY 10011  
phone: (212)727-2700 fax: (212)727-1773  
[www.nrdc.org](http://www.nrdc.org)

**Environmental Defense**

Environmental Defense uses sound science, economics, and law to protect the natural environment and the environmental rights of all people, including future generations. The protection of ocean ecosystems is one of Environmental Defense's top priorities.

257 Park Avenue South, New York, NY 10010  
phone: (800)684-3322 fax: (212)505-2375  
[www.environmentaldefense.org](http://www.environmentaldefense.org)