

Visitors' Perceptions of Mokupapapa Discovery Center



**Research report prepared by:
People, Places & Design Research**

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January, 2010

Executive Summary

This research was conducted to assess audience perceptions of the key educational messages at the Mokupapapa Discovery Center, and to inform a process of revising the exhibits and/or developing new exhibits and interpretive programs. Since the designation of the Papahānaumokuākea Marine National Monument, there is a new story to tell and a renewed emphasis on conservation messages (awareness of how human actions threaten protected places like this). This study was designed to evaluate how well the current exhibits address this new focus and what are the implications for possible changes or enhancements to the exhibits.

Method

Face-to-face interviews were conducted with a random sample of 209 visitor groups at the end of their visits. Discovery Center staff and volunteers were trained to conduct the structured interviews, and the interviews took place over several seasons (April through November, 2009).

Results

Audience profile: About half of the visitors are Hawaii residents (primarily repeat visitors) and half are tourists (primarily first-time visitors). More than a third of the visitors groups (38%) include children. The audience is quite diverse in terms of age, education level and ethnicity.

Use of exhibits: The two most viewed exhibits are the aquarium (97%) and the map (83%). Most visitors also stop to look at the marine debris display (69%), the submarine room (64%) and the island/volcano simulation kiosk (61%). Some of the exhibits seem to appeal to a variety of types of visitors (aquarium, trash display, computer simulation kiosk), while the submarine control room is used more by families with children, and the map is used more by tourists, and adults without children. About half of the visitors (53%) encountered and talked with staff during the visit.

Affective reactions/satisfaction: The findings indicate that visitors enjoy the experience and see it as a worthwhile educational activity. About half of the visitors rated their experience at the Discovery Center as 'good,' while 39% said it was 'great.' The aquarium with live fish is clearly a highlight of the visit.

Awareness of the marine National Monument: Most visitors (59%) thought the center was explaining Hawaii or the Pacific in general. About 30% of visitors got the idea that it was about a specific area – the Hawaiian Archipelago or Northwestern Hawaiian Islands.

Conservation messages: The idea that human activity is negatively affecting the islands was a strong message (selected from a list of themes by 92% of visitors). Based on open-ended answers about negative effects it is obvious that the marine debris exhibit had a big impact on visitors. However, most people did not come away with specific ideas about what they could do personally to benefit the NWHI. Beyond “recycling” and “not littering,” visitors’ open-ended comments about conservation activities were pretty vague. Also, most people didn’t really understand more complicated concepts such as “what is a fragile ecosystem?”

Implications

Appealing to diverse audiences: The current mix of types of exhibits (live animals, computer interactives, film, pictures, and text panels) seems to work well for a variety of different audiences. There is something for everyone, and people are using these exhibits. It would seem to be especially important to encourage the local family audience with repeatable experiences (e.g., interactives where the outcome could be different on future visits), because they come here voluntarily (not just because they are delivered to Front Street by a cruise ship).

Room for improvement: Visitors’ ratings of the experience were mostly in the moderate range, which indicates that there is room for improvement. Although the Discovery Center is, and will continue to be, a modest experience in terms of size, it could be more engaging and inspiring.

Awareness of NWHI: Clearly something needs to be done to enhance the public’s awareness of the Papahānaumokuākea Marine National Monument (or at least the idea/location of the Northwestern Hawaiian Islands). It may be a challenge to figure out how to increase people’s awareness of a place that has a name that is difficult to pronounce and is hundreds of miles away from Hilo. It may require a combination of tactics such as revising the large wall map, adding a main message panel, and changing labels at various exhibits (especially the aquarium). Graphic labels would be especially helpful, so that the labels are interesting and understandable to a wide range of ages, languages, and education levels. It might be interesting and inspiring for visitors to hear the story of why President Bush created this Monument – the largest fully protected marine area in the world.

Interpretation about human impacts: Clearly the marine debris exhibit is effective, but visitors' perceptions of other conservation issues were vague ("what is a fragile ecosystem?" "what can you do to help?"), suggesting that some interpretive messages were not so compelling. Perhaps some "action suggestions" could be added to the marine debris exhibit, and also at other exhibits. "Action items" might include a list of several things that people or industry can do to reduce the threats to protected areas, or an interactive to identify what is a threat and what isn't. Another option would be to add a visitor comment/opinion station, asking people what they can do to protect the National Monument. This could be useful not only for people to make a commitment and feel as though they can do something, but also because visitors can read other people's comments and ideas (hopefully more than recycling and picking up trash).

Ultimately improvement in the effectiveness of interpretive messages needs some creative thinking about exhibit experiences, and perhaps testing of preliminary ideas with visitors.

A. Profile of the Audience

This first section of the report summarizes the demographic characteristics of the audience, as an important context for interpreting subsequent analyses and findings about visitor perceptions. It also presents a profile and comparison of two audience segments: Hawaii residents and tourists. The key points are:

- The Discovery Center audience consists of equal proportions of Hawaii residents and tourists from out-of-state. Similarly, about half are visiting for the first-time and half are repeat visitors.
- Most visitor groups (62%) consist of adults without children. However, one can't ignore the sizeable family audience (38%), especially families with preschool-aged children (23%).
- The Discovery Center serves a more diverse audience than is seen in many museums. There are visitors of all ages, all education levels, and various ethnic identities.
- There are some significant differences between the residents and the tourists: Hawaii residents are slightly younger, less educated, more ethnically diverse, and more likely to bring children to the Center.

A. Profile of the Audience

OVERVIEW: About half of the Discovery Center visitors are Hawaii residents. The proportions of first-time and repeat visitors are about equal. Most of the visitor groups consist of adults only, although 38% of groups include children under age 18. Among adults, all age groups and educational levels are represented.

SEGMENTATION: Comparisons between Hawaii residents and tourists from out-of-state will be highlighted throughout this report. Interpretation of results is aided by recognizing that there are demographic differences between these audience segments. Residents are more likely to bring children to the Center (50% vs. 27%), they are less educated (46% vs. 74% college graduates), and they are more ethnically diverse (46% vs. 84% White).

| | Overall Sample (n=209) | Hawaii Residents (n=102) | Tourists (n=105) |
|---|------------------------------|--------------------------------|---------------------|
| <u>Residence:</u> | | | |
| Hawaii | 49% | | |
| other U.S. | 41% | | |
| other countries | 10% | | |
| <u>Familiarity with Center:</u> | | | |
| | | | ** |
| first-time visitors | 53% | 24% | 91% |
| occasional repeat visitors ¹ | 22% | 31% | 8% |
| frequent repeat visitors | 25% | 44% | 1% |
| <u>Group composition:</u> | | | |
| | | | ** |
| adults-only | 62% | 50% | 73% |
| family with children | 38% | 50% | 27% |
| <u>Ages of children:</u> | | | |
| any preschoolers (0-5) | 23% | 31% | 14% |
| school-aged children only (6-17) | 14% | 18% | 11% |
| <u>Group Size:</u> | | | |
| | | | ** |
| one | 22% | 27% | 17% |
| two | 41% | 29% | 53% |
| three | 21% | 28% | 14% |
| four or more | 16% | 17% | 15% |

(**) Asterisks indicate statistically significant differences (p<.05) between sets of figures. For example on this page, there is a substantial difference in the proportion of first-time and repeat visitors when comparing the two segments of residents vs. out-of-state visitors. The figures should be read as percents of the column heading, e.g., 91% of tourists are visiting the Center for the first-time.

¹ Occasional repeat visitors are those who have been to the Center up to six times (most visited once or twice before). Frequent repeat visitors have visited ten or more times (some have been 50-100 times).

| | <u>Overall Sample</u> (n=209) | <u>Hawaii Residents</u> (n=102) | <u>Tourists</u> (n=105) |
|------------------------------------|----------------------------------|------------------------------------|----------------------------|
| <u>Gender:</u> | | | |
| man | 46% | 44% | 48% |
| woman | 54% | 56% | 52% |
| <u>Age:</u> | | | |
| 18-29 | 24% | 29% | 18% |
| 30's | 27% | 30% | 24% |
| 40's | 18% | 15% | 22% |
| 50's | 16% | 14% | 18% |
| 60+ | 15% | 12% | 18% |
| <u>Education:</u> | | | |
| high school | 13% | 16% | 10% |
| some college | 27% | 38% | 16% |
| college graduate | 33% | 27% | 40% |
| graduate school | 27% | 19% | 34% |
| <u>Ethnic identity:</u> | | | |
| Native Hawaiian / Pacific Islander | 15% | 25% | 5% |
| American Indian / Alaska Native | 3% | 5% | 1% |
| Asian | 13% | 23% | 5% |
| White | 65% | 46% | 84% |
| Hispanic/Latino | 3% | 2% | 4% |
| African American/black | 0 | 0 | 0 |
| other / mixed | 1% | 1% | 1% |

(++) Plus signs are used in this report to indicate patterns of differences which are not quite statistically significant (milder differences, which may have occurred by chance), but which suggest a trend and may have some intuitive value in some circumstances.

B. Visitors' Use of the Exhibits

This section gives an overview of the proportion of visitors who looked at selected exhibits or talked with staff. There are also analyses of exhibit use by various audience segments (for example, residents vs. tourists and families vs. adult-only groups). Highlights of these findings are:

- The aquarium was the most highly used exhibit – 97% of visitors stopped to look at it. The large map on the wall was also highly used (83% of visitors). Three other exhibits (debris, submarine room, computer kiosk) were viewed by at least 60% of visitors.
- About half of the visitors said they had encountered and talked with a staff member. People who stopped at the map were more likely to talk with staff than those who didn't stop here.
- There were some differences in use by various audience segments. For example, families with children were more likely than adults to use the submarine room, and less likely to stop at the map.

B.1. How much did visitors see?

OVERVIEW: Nearly all visitors stop to look at the aquarium with live fish. The vast majority (83%) look at the large map, and most (61%-69%) see the trash exhibits, the submarine room, and the computer kiosk. The map is used more by tourists, men, and adult-only groups. The submarine room is used more by families (79%) compared to adult-only groups (54%).

Which of these exhibits did you stop at?

| | Overall | Residents | Tourists |
|--|---------|-----------|----------|
| the aquarium | 97% | 98% | 95% |
| large map on the wall showing chain of islands | 83% | 75% | ** 90% |
| pile of trash, or large mural of trash | 69% | 72% | 67% |
| submarine control room, with robotic arms | 64% | 78% | ** 50% |
| computer simulation of geology and volcanoes | 61% | 69% | ** 55% |

AQUARIUM



TRASH





Who was more likely to stop at the MAP?

- ** 93% of men
76% of women (68% of women with kids vs. 84% of women without kids)
- ** 88% of adult-only groups
76% of family groups with children (only 67% of *local* families stop here)
- ** 88% of people who talked with staff
76% of people who didn't talk with staff



Who was more likely to stop at the SUBMARINE ROOM?

- ** 79% of families with children
54% of adult-only groups



Who was more likely to stop at the COMPUTER SIMULATION?

- ++ 72% of young adults (age 18-29)
- 60% of families with children
- 64% of middle-aged adults (age 30-49)
- 51% of older adults (age 50+)

B.2. Did visitors speak with staff?

OVERVIEW: About half of the visitors said they had talked with a staff member during the visit, and this proportion was about the same among residents and tourists. People who stopped to look at the map were most likely to speak with staff (or, among the people who talked with staff, more of them were shown or used the map).

Did any staff or volunteer talk with you about the exhibits?

| | <u>Overall</u> | <u>Residents</u> | <u>Tourists</u> |
|-----|----------------|------------------|-----------------|
| yes | 53% | 49% | 56% |
| no | 47% | 51% | 44% |

Who was most likely to talk with staff?

** 57% of those who stopped at the map
35% of those who didn't stop here

++ 56% of men
42% of women

C. Reactions to the Exhibits

This section presents information about visitors' opinions of the experience – ratings, what's worthwhile about the visit, what they enjoyed, and what they would want to see again if they return to the Center. The key findings are:

- Visitors' ratings of their experience today indicate a satisfying experience for most, and a superlative for some (more people said it was 'good' than said it was 'great').
- Visitors gave higher ratings on the question of "how worthwhile are these exhibits?" Residents consider them to be more worthwhile than tourists (repeat visitors may be more loyal).
- The most appealing exhibit is the aquarium with live fish – 43% like it best, and it was mentioned most often as the exhibit people would like to see again on a return visit.

C.1. Ratings of the experience

OVERVIEW: About half of the visitors rated their experience at the Discovery Center as “good,” 39% said it was “great,” and 13% said it was just “okay.” Families were somewhat more likely than adults without children to give a rating of “great” (48% vs. 34%). When asked to give a separate rating of how *worthwhile* these exhibits are, the ratings tended to be higher, especially among residents (59% ‘high’ ratings). This finding suggests a sense of loyalty among residents – they believe the Center is worthwhile and important even if it isn’t a “wow” experience for them. People believe the exhibits are worthwhile primarily for the educational value, although most of their explanations seemed general and vague.

Rate your experience today:

| | <u>Overall</u> | <u>Residents</u> | <u>Tourists</u> | <u>Families</u> | <u>Adults</u> |
|-------------|----------------|------------------|-----------------|-----------------|---------------|
| great | 39% | 41% | 37% | 48% | 34% |
| good | 48% | 43% | 53% | 44% | 50% |
| okay / fair | 13% | 16% | 10% | 7% | 16% |

How worthwhile are these exhibits (on a scale of 1 to 10)? ²

| | <u>Overall</u> | <u>Residents</u> | <u>Tourists</u> | <u>Families</u> | <u>Adults</u> |
|--------------|----------------|------------------|-----------------|-----------------|---------------|
| High (9-10) | 52% | 59% ** | 45% | 60% | 48% |
| Medium (7-8) | 39% | 28% | 49% | 33% | 42% |
| Low (1-6) | 10% | 13% | 7% | 7% | 10% |

What’s worthwhile about them?

- 46% educational, informative, interesting (general answers)
- 15% seeing the fish, the film, the photos, the beauty
- 14% ocean conservation awareness, learning about ecosystem issues
- 10% I learned something new (especially about island formation)
- 8% good for children
- 6% hands-on activities
- 6% general positive: well done, clear interpretation, accessible, awesome
- 6% it’s free
- 2% negative comment (needs more hands-on, no time to read)
- 4% other
- 3% blank, no answer

² Interpreting visitors’ ratings on 10-point scales is based on years of experience with museum visitors, using follow-up questions to ask what their ratings mean, or why they gave a particular number. Consistently over time and a variety of settings, we have found that ‘9’ or ‘10’ means an excellent experience which is completely positive, a ‘7’ or ‘8’ means a moderately positive rating which can be accompanied by some misgivings or not-so-enthusiastic support, and a ‘6’ or lower number indicates a disappointing experience or one with substantial misgivings. The highest ratings we’ve seen (national award winning, and very popular among visitors) have been in the range of 75%-80% high ratings (9+10).

Sample of answers: *What's worthwhile?*

Educational, seeing the actual fish and beauty of wildlife in film

Educational

Teaching people about NWHI and species found there

Awareness of what's happening in our oceans and islands

Explanations are quite good, and the layout

Lots of information

Learning about the environment and fish

Trash exhibits are good for awareness, albatross exhibit

I didn't know what an atoll was

I like the fish, informative

We really love it here and we are regulars, the place is wonderful for kids

Overview and understanding of reefs and fish and what we saw in the water

Satellite map shows entire chain, very hands-on facility

It's enough to bring my family back again

Kids get to see the aquarium, it's free

Education

The pictures and information

Facts, understanding, some of the pictures show things that you wouldn't see in person

Hands-on display

Inspires people to take care of the Hawaiian reefs and resources

It is worthwhile if you are devoted and want to read the information

I liked learning about the geology of the atolls and the Hawaiian Islands

C.2. What people liked most

OVERVIEW: The aquarium with live fish is clearly the highlight of the visit. Other exhibits (film, submarine, marine debris, map, kiosk) were also mentioned to a lesser extent.

What did you like the most here?

| | |
|-----|--|
| 43% | aquarium, live fish |
| 14% | film, video |
| 12% | submarine, Pisces, robotic arm |
| 11% | marine debris |
| 11% | map of Hawaiian archipelago |
| 10% | kiosk about island formation, volcanoes |
| 9% | information (especially about conservation issues) |
| 4% | everything |
| 3% | Hawaiian chanting, music |
| 2% | artistic mural |
| 2% | program room displays |
| 2% | photos, pictures |
| 2% | animal models, shark, ray, albatross |
| 9% | other (globe, peepholes, displays, geology, interactive, atoll, etc) |

Sample of answers:

Aquarium, trash picture, how islands were formed

Aquarium, robotic arm

Aquarium

The examples and debris found

The displays

They were all great

Interpretation

Aquarium

Satellite map

Touch screens, video

Free admission

I like that it's not too big, great for children, will come back again

The aquarium and the control room is fun

The aquarium and wall map

I like the fish tank

Aquarium, theater, the overhead sounds, replicas of shark

Trash displays to show people what we are doing to ocean

Room with the movie in it, the photos

Film about coral reefs

Hot spot kiosk

The detailed information

It teaches the kids why to recycle

C.3. Repeatability of the experience

OVERVIEW: About three-quarters of the visitors indicated that they would like to see some of the exhibits again (higher among residents, lower among tourists). Again, the aquarium stands out as the exhibit people most want to see if they return.

If you came back again, is there an exhibit that you would like to see again or spend more time at?

| | <u>Overall</u> | <u>Residents</u> | <u>Tourists</u> | <u>Families</u> | <u>Adults</u> |
|-----|----------------|------------------|-----------------|-----------------|---------------|
| yes | 73% | 83% ** | 64% | 80% | 71% |
| no | 27% | 17% | 36% | 20% | 29% |

(if yes) *Which one?*

| | |
|-----|---|
| 30% | aquarium |
| 10% | submarine, robotic arm |
| 10% | film, video |
| 9% | all of them |
| 5% | map on wall |
| 4% | program room |
| 4% | marine debris |
| 3% | kiosk about how islands formed |
| 2% | suggestions (more hands-on, touch tank, more info about . . .) |
| 1% | mural, photos, models |
| 5% | other |

D. Perceptions of Interpretive Messages

This section contains information about visitors' perceptions of the main educational messages presented in the Discovery Center. Did visitors understand that these exhibits are about a specific place, the Marine National Monument? Did visitors get any conservation messages or ideas about how they can help with preservation efforts? Highlights of the results are:

- Few visitors understood that this Center is about a specific place – only 3% mentioned the Monument *top-of-mind*, and 11% named the Northwestern Hawaiian Islands. However, when presented with a statement, 'this area is already protected,' many visitors (63%) thought or guessed the exhibits did show that idea.
- Visitors clearly got some conservation messages – such ideas were most frequently mentioned as the main theme of the exhibits (45% of open-ended responses). Also, when given a list of seven themes and asked which ones the exhibits explained, visitors most often selected the two conservation-related themes: 'human actions are affecting the NWHI' and 'fragile ecosystems.' Most of visitors' comments about negative human impacts referred to trash and pollution, suggesting that the marine debris display had a big effect on visitors.
- The vast majority of visitors (80%) believe that 'there is something you or I can do to benefit the NWHI.' Some people (44%) said that they would likely behave differently as a result of seeing these exhibits (e.g., recycle more, pick up trash at the beach).

D.1. Perceptions of the main idea

OVERVIEW: Conservation awareness was the top theme cited by visitors (45% “got” that message). The next most cited theme was education about marine life. Only a small proportion of visitors (8%) mentioned the NWHI or Monument.

What’s the main idea or theme of the exhibits here?

| | |
|-----|---|
| 45% | increase awareness about conservation issues (coral, trash) |
| 30% | educate about oceans, marine life |
| 14% | Hawaiian islands, how they formed, natural history |
| 11% | education |
| 6% | Northwestern Hawaiian Islands |
| 2% | National Monument, refuge |
| 1% | other |
| 1% | don’t know |

Sample of answers:

Natural history of Hawaiian Islands

Trash in ocean, wildlife in Hawaii, very broad

Knowledge about NWHI

Preserving our marine life, also the coral

How islands were formed and the garbage

Fish

Education

Show people fish and be aware of the environment

Coral and sea health

The aquatic life

Hidden Hawaiian Islands

Educate the public

Teach tourists about natural beauty of Hawaii

How island chain was formed

Ocean education

The islands

Wildlife refuge in NWHI

Promote health of archipelago

Education about preservation

Ecological protection

Oceanography

Education on the ocean, Hawaiian Islands and animals

D.2. Did people understand that it's about a specific place?

OVERVIEW: Most visitors (59%) thought the exhibits were about Hawaii or the Pacific, in general. Some said it was about the Hawaiian Archipelago or Hawaii. Only 11% identified the Northwestern Hawaiian Islands as the subject of these exhibits, and 3% referred to the marine sanctuary.

Did you think the exhibits here were about a specific area or place or were they about Hawaii and the Pacific in general?

| | <u>Overall</u> | <u>Residents</u> | <u>Tourists</u> | <u>Saw Map</u> | <u>Didn't See</u> |
|-------------------------------|----------------|------------------|-----------------|----------------|-------------------|
| specific place | 41% | 39% | 42% | 45% | ** 22% |
| Hawaii and Pacific in general | 59% | 61% | 58% | 55% | 78% |

(if specific) *What place?*

| | |
|-----|-------------------------------------|
| 13% | Hawaiian Archipelago, islands |
| 11% | Northwestern Hawaiian Islands |
| 9% | Hawaii |
| 3% | national monument, marine sanctuary |
| 2% | atolls |
| 2% | other |
| 1% | don't know |

D.3. What did visitors find out about the Northwestern Hawaiian Islands?

OVERVIEW: Most visitors (60%) claimed that they knew of the NWHI before coming to the Center. Awareness is higher among residents and repeat visitors compared to tourists and first-time visitors. Most visitors (61%) said they had learned something interesting or surprising about NWHI from these exhibits. Visitors mentioned surprise/interest in the marine debris, how the islands were formed, and how large an area it is, among other things.

These exhibits are intended to be about the Northwest Hawaiian Islands – a chain of small islands. Had you heard of that name before?

| | <u>Overall</u> | <u>Residents</u> | <u>Tourists</u> | <u>Repeat</u> | <u>1st-time</u> |
|-------------------|----------------|------------------|-----------------|---------------|----------------------------|
| yes, heard of it | 60% | 77% ** | 43% | 74% ** | 49% |
| no, haven't heard | 40% | 23% | 57% | 26% | 51% |

Did you find out anything interesting or surprising about the NWHI from these exhibits?

| | <u>Overall</u> | <u>Residents</u> | <u>Tourists</u> | <u>Talked w/ Staff</u> | <u>Didn't Talk</u> |
|-----|----------------|------------------|-----------------|------------------------|--------------------|
| yes | 61% | 53% ** | 69% | 66% ++ | 52% |
| no | 39% | 47% | 31% | 34% | 48% |

What?

- 13% marine debris, how animals are affected
- 12% how islands formed, what's an atoll, erosion
- 9% how expansive an area, how far north it extends
- 8% existence and location of these islands
- 7% abundant wildlife, different fish, facts about animals
- 7% how many islands there are
- 3% unique ecosystems, each island is unique
- 3% history, WWII, Midway
- 2% human history, cultural aspects
- 2% protected area
- 3% other

Sample of answers (find out anything interesting or surprising about NWHI?)

*The trash in the ocean was interesting, albatross stomach contents
I didn't realize the expanse and how far it went
Battle of Midway
Names of fish and what is native to Hawaii
I didn't know what an atoll was
Marine debris
That the atolls are there and eroding away and getting smaller
There are more islands than I thought
Baby bird that died and turtle that got caught in the net
Age of the islands
Isolation of the islands
I didn't know there was a unicorn fish
The formation and geology of the Hawaiian islands (hot spot)
I didn't realize there were so many coral reefs
They are protected
More detail on the NWHI
There's concern about the health of the coral reef ecosystem in that region
Just how each one is its own little universe
That they stretched all the way to Russia
Pile of trash, amazingly shocking
How large of an area it actually is
Didn't realize they go so far north
I didn't know there were that many islands
The bird guano history in the islands
The Laysan eggs, I had no idea that they harvested them
That these islands existed
The satellite view of where they are
The geological formation
The names of them
The movies of the NWHI, Midway is part of island chain
The problem with trash in the ocean and on the islands, in the bird's stomach
The volcano right off the coast is just underground
I didn't realize how many fish there were
How sacred and untouched they are
There is a lot of litter
Diverse ecosystem
That they support 54% of the apex predators*

D.4. Perceptions of various interpretive themes

OVERVIEW: Visitors' perceptions of interpretive themes were also assessed using a list of topics (a different approach from open-ended recall³). Nearly everyone thought the exhibits showed 'how human actions are affecting the islands.' Other frequently recognized themes were 'fragile ecosystems' and 'unique species.' The least noticed topic was 'people have a long history in NWHI.' Hawaii residents showed higher awareness of the theme 'a sacred place with cultural significance' compared to tourists. The idea that 'this area is protected' ranked fifth out of the seven topics, indicating that this message is less salient (the marine debris display has a great impact on visitors' perceptions, and it's probably hard to conceive how this area could be protected and covered with trash at the same time). Some audience segments were more likely than others to understand about the safe haven: repeat visitors (70%), men who looked at the map (80%), and people with graduate school education (75%).

Which of these ideas or themes did the exhibits show and explain?

| | <u>Overall</u> | <u>Residents</u> | <u>Tourists</u> |
|---|----------------|------------------|-----------------|
| Human actions today are affecting the NWHI | 92% | 94% | 90% |
| About fragile ecosystems | 83% | 83% | 82% |
| Whether there are unique species in the NWHI | 77% | 75% | 78% |
| How an Hawaiian atoll is formed | 68% | 66% | 69% |
| That this area is already protected, a safe haven | 63% | 64% | 62% |
| It's a sacred place with cultural significance | 62% | 70% ** | 53% |
| That people have a long history in the NWHI | 55% | 58% | 51% |

Who thought exhibits showed SAFE HAVEN?

- ** 70% of repeat visitors
- 56% of first-time visitors
- ** 80% of men who saw the map
- 58% of women who saw the map
- 34% of people who didn't look at the map
- ** 75% of graduate school educated
- 56% of college graduates
- 66% of people with some college
- 46% of high school educated

³ Lists of suggested answers help visitors to recognize ideas that they may not have been able to articulate or think of in a 'top-of-mind' way. Such recognition is a legitimate measure of their thoughts and perceptions, but it does also lead to some guessing and possibly over-representation of the effectiveness of the interpretive experience.

OVERVIEW: If they recognized the theme 'fragile ecosystems,' visitors were asked to define it. About one-quarter expressed a clear understanding that a fragile ecosystem is more vulnerable to change or human activity than other ecosystems in general. Some people mentioned negative impacts such as trash or loss of species. Some people said coral were fragile ("because they break easily if you step on them").

What does fragile ecosystem mean, in terms of an island? (if yes to 'fragile'; n=172)

| | |
|-----|---|
| 24% | sensitive, vulnerable to human impacts |
| 22% | affected by trash, pollution |
| 18% | needs to be protected, threatened by human activity |
| 14% | coral reefs |
| 11% | potential loss of species: coral, birds, fish |
| 8% | balanced system, interconnected, food chain |
| 4% | eroding, breaking up |
| 2% | impacted by invasive species |
| 5% | other |
| 4% | blank |

Sample of answers

Bird populations

The food chain

The Monument, having to be a monument

Humans are impacting

The animal are affected by pollution and trash that hurts them

Beaches could be deteriorating, land is developed by humans

The coral reefs and their interconnectedness to everything

They're threatened

The ocean and pollution

Our impact on that ecosystem

There are many things that can jeopardize the health

Pollution affecting the reef

The balance is finely tuned, so if you take a predator away it will affect another animal

Marine pollution tangling up the animals

Easily ruined

Any change, even the slightest, can have effects

Resources are limited & loss of them shows up faster

That is threatened by humans and climate change

Coral is sensitive

Friendly ecosystem, where all species survive, on the brink of endangered

The coral reef and its balance

Erosion of an island, impacts of others close to it

If one thing goes it's going to affect something else

Conserve, Hawaii is a unique place, species found only here

Breaks easy, corals

Vulnerable to humans, trash and natural erosion

If not looked out for it could be damaged and disappear

OVERVIEW: People who identified the theme of 'human history' were asked to explain what they had seen about this topic. About one-third gave general answers about Hawaiians living there a long time ago, one-third cited some specific information (e.g., WWII, Kumulipo, guano mining, Polynesian influences), and one-third couldn't think of anything.

What kind of history would that be? (if yes to 'people have a long history'; n=114)

| | |
|-----|---|
| 28% | people lived there long ago, early Hawaiian culture |
| 14% | WWII, Midway |
| 11% | spiritual, sacred, place of worship, Kumulipo |
| 9% | fishing, guano mining, egg & feather collecting |
| 8% | Polynesians |
| 8% | travel, navigation, ship wrecks |
| 7% | other |
| 30% | blank |

Sample of answers

Midway was used before the war

People lived there

Hawaiian people

Battle of Midway, harvesting eggs, shipping ports

Picture of artifacts, early Polynesians

Religious, spiritual, traditional navigation

Worshipped there

WWII, roots go way back - Hawaiian history

Research there

Chanting

Ancient Hawaiian

Military bases

Ship wrecks and guano mining

Polynesian history

The natives, how they would navigate

Voyages, Hawaiians in area

Cultural-some areas of special significance

Hawaiian culture and artifacts

Midway atoll, Kalakaua's exploration for the Hawaiian kingdom

The World War II history

The war and bird feathers for hunting

Early settlers lived in the NWHI a long time ago

Polynesian influence

Because of the Kumulipo

Kapunas used to take care, fishing the reefs

Symbiotic relationship with nature

People lived on the islands a long time ago

D.5. Understanding human impacts on the islands

OVERVIEW: Most visitors (67%) agreed with the idea that human activities may have both positive and negative effects on the islands, while 30% thought human impacts would be entirely negative. Residents and tourists had similar perceptions. The marine debris display obviously had a big impact on visitors because “trash” and “pollution” dominated people’s examples of negative influences. In terms of positive impacts, visitors cited educational efforts (at the Discovery Center), that people are trying to preserve nature, and the volunteer clean-up efforts, among other things.

Do you think that human actions affecting those islands would be:

| | <u>Overall</u> | <u>Residents</u> | <u>Tourists</u> |
|------------------------------|----------------|------------------|-----------------|
| almost all negative | 30% | 38% | 31% |
| almost all positive | 3% | 2% | 5% |
| some negative, some positive | 67% | 70% | 64% |

What kinds of negative impacts are you aware of?

| | |
|-----|---------------------------------------|
| 56% | marine debris, trash |
| 32% | pollution |
| 15% | overfishing, hunting |
| 8% | damaging coral |
| 7% | cruise ships, boats, tourism |
| 4% | land development, habitat destruction |
| 4% | invasive species |
| 3% | global warming |
| 3% | overpopulation |
| 2% | military actions, bombs, airfields |
| 2% | lack of respect for animals |
| 8% | other |
| 2% | blank |

Sample of answers

Trash problem in ocean

Marine debris

What people are doing to the ocean

Trash, non-biodegradable plastics

Litter

Pollution, destruction of native plants, overpopulation

Environmental degradation

Fishing, harvesting, tourism

Waste, destruction of coral reefs

Sewage problem

Destroying habitats and species

What kinds of positive impacts are you aware of?

| | |
|-----|---|
| 28% | education, awareness, this center |
| 25% | trying to protect, conservation |
| 22% | clean-up efforts, pick up trash |
| 11% | research |
| 9% | National Preserves, sanctuaries |
| 7% | turtle recovery program, restoring native habitat |
| 6% | rules and regulations about fishing, etc. |
| 3% | coral etiquette |
| 3% | recycle, don't litter, no plastic |
| 7% | other |
| 9% | blank |

Sample of answers

Scientific exploration is showing us the need for conservation

Clean-up efforts in NWHI, reducing trash

People trying to protect it

You can educate people on cruises about protecting the area

Education centers like this

Turtle recovery projects, clean-ups, nature reserves

That people are aware of the environmental degradation

Conservation

Clean-ups

Protecting the animals and trying to keep it clean

Just leave it alone

The research going on and learning about the marine and bird life

Making it a National Monument, stopping fishing

Cleaning up, rebuilding, rules and regulations

Educating the public

Preservation

Understanding human impacts (continued)

OVERVIEW: Eight out of ten visitors thought that something could be done to benefit the NWHI, but only four of ten thought they would be likely to change their own behavior. The primary suggested activity was education (the role of the Center), followed by basic actions such as recycling or picking up trash.

Is there anything that you or I could do for the benefit of the NWHI?

| | <u>Overall</u> | <u>Residents</u> | <u>Tourists</u> |
|-----|----------------|------------------|-----------------|
| yes | 80% | 82% | 78% |
| no | 20% | 18% | 22% |

Are you likely to do anything differently after seeing the exhibits here?

| | <u>Overall</u> | <u>Residents</u> | <u>Tourists</u> |
|------------|----------------|------------------|-----------------|
| yes | 44% | 49% | 39% |
| not really | 56% | 51% | 61% |

What?

| <u>Could do</u> | <u>Likely to do</u> | |
|-----------------|---------------------|---|
| 30% | 11% | educate, raise awareness |
| 12% | 9% | recycle |
| 12% | 5% | pick up trash, volunteer, join clean-ups |
| 9% | 4% | no littering, don't throw trash at beach |
| 6% | 4% | respect nature, protect, preserve (general answers) |
| 6% | 0 | support educational centers and research |
| 3% | 3% | avoid plastics |
| 3% | 2% | other specific 'green' actions (organic, lower consumption, etc.) |
| 3% | 0 | leave it alone |
| 2% | <1% | responsible fishing, enforce regulations |
| <1% | 4% | don't step on the reef |
| <1% | 2% | move here, visit NWHI, explore reefs |
| 3% | 2% | other |

Sample of answers

Cut down on waste, less consumption

Reduce our trash, recycle more

Clean-up effort

More education

Volunteer

More money to National Parks

Educate others

Promote need to clean it up

Leave it alone, end tourism

By cleaning up and not throwing trash

More publicity, more trash cans

Protecting nature

Exhibits to increase awareness

Recycle

Support conservation

Continue to teach the youth

Awareness

Dispose of trash responsibly

Tell people not to stand on reef

Teach our children not to litter

Continue recycling

Respect the environment

D.6. Do visitors have additional questions?

OVERVIEW: About one-quarter of the visitors had additional comments or questions at the end of the interview. Some wondered about the Discovery Center (who runs it?), some had specific informational questions about the content, and some gave suggestions for exhibits (e.g., touch tanks).

Do you have any questions about any of this?

Questions about interpretive content/exhibits (themes: human inhabitants, animals, island formation, trash, etc.)

What kind of human history in the monument?

Are all of the islands inhabited? Can you visit?

Are there people who live up there now?

Where is the Polynesian influence?

Turtle populations, ...everywhere, are they going up?

When do the banded coral shrimp in aquarium come out?

Movie room, wingspan of all

Where is the information on the turtles?

How do islands sink, geologically?

How long until new island is on the surface?

Where is the garbage patch? Show tectonic plates on map

Where is the island with all the trash?

Are they protected?

Yes, what is guano?

More explanation of wall map in relation to large wall mural

Is this protected area larger than the great barrier reef?

Questions about the Center /NOAA

Who funds center? How long has it been here?

How old is discovery center?

What exactly is the center about?

Who is paying for this?

Who runs this place?

Who runs this?

Who's funding this? Can you dive?

How are you funded?

How long has NOAA fisheries been in service?

How long has Mokuapapa been open?

Suggestions about the exhibits (themes: more hands-on for children, more live animals, etc.)

No, but need more fun stuff for children

More hands on stuff for kids, touch screens and tanks

More hands on stuff for kids like the sub

More for kids, everything seemed to be above their heads

When will you have more tanks?

More real ocean life, more live things

Touch tank

Share beach clean-up information

Maybe more on cultural significance

More about Hawaiian people and their history

More about the formation of the coral reefs

Robotic arms not always working?

More information on the island formation

More about the fish and coral

Maybe some films of what it's like on the islands

More plastic fish displays like at Lyman and identification

Put a sign on the back door