

PUBLIC PERCEPTION AND ATTITUDES ABOUT THE HAWAIIAN MONK SEAL

Survey Results Report



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Final

Prepared by:



SUSTAINABLE RESOURCES GROUP INTN'L, INC.

111 Hekili Street, Suite A373

Kailua, HI 96734

Tel/Fax: 808-356-0552 • www.srgii.com

Prepared for:



Protected Resources Division
NOAA Fisheries Service Pacific Islands Regional Office
1601 Kapiolani Blvd., Suite 1110
Honolulu, HI 96814
Tel: 808-944-2200 • www.fpir.noaa.gov/

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Acronyms and Abbreviations

DLNR	Department of Land and Natural Resources
MHI	Main Hawaiian Islands
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NWHI	Northwestern Hawaiian Islands
OMB	Office of Management and Budget
PIRO	Pacific Islands Regional Office
PRA	Paperwork Reduction Act

1.0 INTRODUCTION

The Hawaiian monk seal (*Monachus schauinslandi*) (subsequently referred to as monk seal) is listed as endangered under the Endangered Species Act and is also protected under the Marine Mammal Protection Act and Hawai'i State laws. The monk seal population is estimated to have fewer than 1,200 individuals and is currently declining at a rate of 4% annually. Although monk seal populations across the Hawaiian Islands in general are decreasing, the numbers of monk seals in the main Hawaiian Islands (MHI) are increasing. As the population of both monk seals and humans in the MHI grows, the probability of human-seal interactions may also increase. Human-seal interactions can have negative results for both the human and the seal. Some of the main threats to seals directly related to human activity are: entanglement in fishing nets and other marine debris; fishing hooks becoming lodged in monk seal's mouths or throats; and general disturbance by people. Monk seals are very sensitive to human contact. They have been known to avoid beaches for breeding where people have disturbed them. While it is uncommon, a few human-seal encounters have resulted in humans being injured.

In order to effectively develop education and outreach campaigns aimed at minimizing harmful human interactions with monk seals in the wild, more information is needed about people's current knowledge and opinions regarding monk seals. This project investigated the knowledge, attitudes, beliefs, and behaviors of targeted groups (beach-going residents and tourists, fisher people, and commercial operators) regarding the endangered Hawaiian monk seal in order to inform a strategic outreach campaign. The first step was developing and administering a set of surveys, and analyzing the results.

This report describes the survey methodology and summarizes the survey results. The results are being used to develop an education and outreach plan aimed at minimizing negative human-seal interactions (see companion report, *Strategies for Education and Outreach Regarding the Hawaiian Monk Seal*). They may also assist managers in the development and assessment of management strategies for dealing with human-seal interactions.

2.0 METHODS

2.1 Survey Development

Surveys were developed in close coordination with the Pacific Island Regional Office (PIRO) of the National Marine Fisheries Service (NMFS) to ensure that questions covered topics of interest based on current knowledge and anecdotal evidence. Five different surveys were developed, three for in-person distribution and two for distribution by mail (Appendix A: Surveys). The surveys included questions on general knowledge about monk seals, personal behavior when encountering monk seals, opinions on management of human-seal interactions, and thoughts on educational outreach. The in-person surveys included: *Survey for Individuals Long Version* (50 questions), *Survey for Individuals Short Version* (18 questions) and *Survey for Fisher People Short Version* (20 questions). The questions in the short versions of the survey were drawn from the long version. The *Survey for Individuals Short Version* was used to gather information from targeted survey respondents not willing to complete the long survey as well as from individuals outside the survey selection who expressed interest in participating. Questions

regarding perceived knowledge about monk seals, appropriate behavior around monk seals and demographics were included in the short version. The *Survey for Fisher People Short Version* was intended specifically to capture the knowledge and opinions of self-identified fisher people not willing to complete the long survey. The *Survey for Fisher People Short Version* included all fishing related questions in the long version along with questions regarding perceived knowledge about monk seals and demographics.

The *Survey for Commercial Boat Tour Operators* and *Survey for Lodging Operators* were aimed at determining the knowledge and opinions of the commercial operators, as well as the amount and type of information they are conveying to clients. These surveys, which were distributed by mail, are essentially the same survey, with some very minor wording changes specific to each industry. In order to maintain consistency across all surveys, the 44 questions contained in each of these two surveys were taken from the *Survey for Individuals Long Version* and modified slightly. The surveys included questions on general knowledge about monk seals, what information is being conveyed to clients, fishing related questions, opinions on management of human-seal interactions, and thoughts on educational outreach.

2.2 Survey Approval

Due to the Paperwork Reduction Act (PRA) of 1995, the survey collection required approval of the Office of Management and Budget (OMB) (Appendix B: OMB PRA Supporting Statement). The approval process involved two public comment periods and some minor revisions to the survey questions. The initial justification was submitted to OMB on June 16, 2010, and permission to conduct the information collection was received on October 19, 2010. The OMB control number for the survey is #0648-0617.

2.3 Survey Administration

Surveys were administered between November 1, 2010 and January 30, 2011. The effort consisted of five separate surveys, each a paper booklet questionnaire, administered in two ways (Appendix A: Surveys). The questions on each survey were similar in nature but directed at different target audiences. Surveys were distributed to both tourists and residents on five of the MHI: Hawai'i, O'ahu, Maui, Moloka'i and Kaua'i. Target audiences included, but were not limited to, fishers, surfers, beach goers, divers, operators and patrons of commercial water sports tours, and hotel managers operating in areas of high monk seal activity. These members of the public were considered most likely to encounter Hawaiian monk seals in the wild.

All questionnaires were given a code in order to track distribution and return rates. Questionnaires were distributed in-person and by mail to randomly chosen members of the target audience. Methods of submittal included on-site return to those conducting the survey and one-on-one interviews. Surveys were conducted at several areas on each of the five islands (Appendix C: Survey Data). To ensure a variety of respondents were captured, in-person surveys were conducted at different locations at different times of the day and on different days of the week. The locations were chosen in coordination with NOAA staff and volunteers, based on the amount of monk seal activity and locations of frequent human-seal interactions. Survey administrators spent a minimum amount of time at each of the predetermined locations, usually between four and eight hours. At the majority of sites, administrators would spend 30 minutes at one section of beach/shoreline distributing surveys and then double back to

collect them before moving on to the next section. At other sites, one administrator would pick a spot at the end of the parking area near the beach/shoreline entrance to distribute the surveys and the other administrator would maintain a presence on the beach/shoreline to collect them. Survey administrators were local residents, with in-depth knowledge of the island, population, and language idiosyncrasies. Since the *Survey for Individuals Long Version* was the primary survey of interest for information collection, a minimum number of those surveys were allocated to be completed in different areas of each island. The short surveys and fisher surveys were distributed opportunistically to people willing to participate in the survey but unwilling to complete the long version or to others who expressed interest in participating.

All survey respondents were told that participation was voluntary and were given an assurance of confidentiality. In addition to the verbal assurance given to participants of the in-person surveys and written assurance in the cover letter of the mailed surveys, the surveys themselves contained the following statement: "All data will be protected and will not be released for public use except in aggregate statistical form and without providing and personally identifying characteristics." As required, the OMB control number was included on all survey material.

2.3.1 In-Person Surveys

In-person surveys were conducted at beaches and popular fishing areas near known monk seal haul out, pupping, and molting locations, and at marinas. At each site, administrators walked along the shoreline/beach and approached every fifth person over the age of 16 about participating in the survey. Potential respondents were asked if they knew what a Hawaiian monk seal was. Those who replied "yes" were asked to participate in the survey. If they replied "no", the next eligible person was approached. Respondents were then asked if they were willing to complete a 15 minute survey. If the respondent agreed, they were given the *Survey for Individuals Long Version*. Most participants completed the survey by writing the answers themselves, but a small number asked to have the questions verbally presented. People who declined to complete the long version were asked if they would take a couple of minutes to answer "just a few questions" about monk seals. Based on the response to a qualifying question to determine if they fish regularly in Hawai'i, one of the two short surveys were administered, *Survey for Individuals Short Version* (if "no") or *Survey for Fisher People Short Version* (if "yes"). In order to increase response rates, participants completing the short surveys were given the choice of completing the surveys in writing or having the questions read to them and responses recorded. If the potential respondent refused altogether, they were recorded as a non-response. Each survey was given a code in order to track the location where it was completed.

In some cases people who were not randomly selected to participate expressed interest in completing the survey or in having their opinions noted. In these instances administrators either distributed the *Survey for Individuals Short Version* for them to complete, or engaged in a short discussion and took notes on their opinions and attitudes regarding monk seals.

2.3.2 Mail Surveys

Two versions of the survey were distributed by mail to commercial tour boat operators and lodging operators. A list of commercial boat operators licensed to conduct tours and offer charters in the five

MHI was obtained from the Department of Land and Natural Resources (DLNR) Division of Boating and Ocean Recreation. From that list, businesses were randomly chosen for each island. A list of lodging operators in the five MHI was obtained from the Department of Business, Economic Development and Tourism. Lodging operations located in areas of known monk seal activity with a minimum of 100 rooms were selected as potential respondents. From that list, establishments were randomly chosen for each island. In order to maximize the response rate for mail surveys, the implementation was based on the Dillman Tailored Design Method (2009), which consists of multiple contacts.¹ The initial mailing included the questionnaire, a pre-addressed stamped envelope and a detailed cover letter. Addresses were handwritten on colored envelopes. A follow-up thank you postcard was sent nine days after the questionnaire. The postcard expressed appreciation for participating and indicated that if the completed questionnaire has not yet been mailed, it was hoped that it would be returned soon. A final mailing was sent to all of those who had not responded within 18 days containing a letter of explanation and a pre-addressed stamped postcard with a few questions to answer in order to assess non-response bias. Each survey was coded in order to determine which businesses would receive follow-up mailings.

2.3.3 Talk Story and Comments From Others

One goal of this project was to gather as much information as possible on what attitudes, beliefs and perceptions regarding monk seals exist. Several techniques were used to collect more information than only what might be captured by administering the surveys. Administrators encouraged respondents to write any additional comments they might have on the survey. In order to collect as much information as possible, administrators took notes on conversations with people who voiced their opinions. During the first few days of survey administration it became clear that people not chosen as part of the random scheme wanted to express their thoughts. In response, additional short surveys were administered to these individuals. In addition, administrators talked with off duty lifeguards to gather information about their experiences and Jim Howe, Operations Chief of the City and County of Honolulu's Ocean Safety and Lifeguard Services Division was interviewed.

2.4 Data Analysis

Descriptive statistics were used to analyze the data. Since the overall goal of the project is to use the results to develop effective messages for education and outreach regarding human-seal interactions for people likely to come in contact with monk seals, the data analysis focused on determining the range and prevalence of knowledge, opinions, and misconceptions regarding monk seals. In order to capture the wide range of opinions of the target audiences, the data collection focused on ensuring a large sample size and a relatively even distribution of surveys over the selected sites. The data are quantitatively summarized, but the results should not be used to provide inferences about the entire population of residents and visitors to Hawai'i within a certain confidence level. For example, the information collection is not intended to give the ability to draw a conclusion that 95% of all recreational fishers have a certain opinion, but rather to determine what the prevalent opinions among recreational fishers are.

¹ Dillman, D., J. Smyth and L. Christian. (2009) *Internet, Mail and Mixed-Mode Surveys: The Tailored Design Method*. New York: John Wiley & Sons.

Summary statistics were calculated for all questions within the survey. Summary statistics consisted of frequency counts and proportion data for each question within a given survey. These statistics were calculated for several groupings of the data:

- *Total data*: combined long, short and fisher peoples' surveys (all in-person surveys for individuals)
- *Total data by island*: combined long, short and fisher peoples' surveys split apart by island of residence (all in-person surveys for individuals)
- *Fisher people*: all surveys with a response of "yes" to the question "do you fish regularly" (all in-person surveys for individuals have this question)
- *Fisher people by island*: all fisher's surveys and/or a response of "yes" to the question "do you fish regularly" split apart by island of residence (all in-person surveys for individuals have this question)
- *Non-fishers*: long or short survey types with an answer of "no" to the question "do you fish regularly" (did not include short fishers surveys)
- *Lodging and commercial tour operators*: respondents to the commercial operator survey or postcard

To calculate summary statistics for each question, we pooled all surveys (excluding commercial surveys) and created a database-like file from which analyses were performed. The R statistical package (<http://r-project.org>) was used to create summary statistics and answer additional questions of interest that related two or more variables within each survey. Summary results are found in Appendix C: Survey Data.

3.0 RESULTS AND ANALYSIS

The information collection met its goal of gathering information on attitudes, beliefs and perceptions about monk seals from the target audiences. Respondents across the MHI completed 764 in-person surveys, 26 mail surveys, and 26 postcard surveys (Section 3.1). In addition to survey results that were analyzed statistically, comments by survey participants provide additional insights.

3.1 Response Rates

As described in the OMB documentation, the survey methodology was designed to result in an 80% response rate. The OMB submission planned for distribution of 525 surveys. However, a total of 872 surveys were distributed in-person, and 764 were completed, equaling a response rate of 87% (Table 3-1). 100 surveys were distributed by mail, and 26 surveys and 26 postcards were completed (Table 3-2). The response rate for the mail survey was 52%. The response rate for the in-person intercept surveys was higher than anticipated, while the response rate for surveys conducted by mail was lower than the 80% desired. The response rate for mail surveys is often lower than other methods, but this was considered to be the best method for collecting information from lodging and commercial tour operators. Dillman et al. (2009) considers a response rate above 50% a high response rate for mail surveys. Table 3-1 lists survey sites and the number of surveys collected at each.

Table 3-1. Response Rates: In-Person Surveys

Island	Long Survey for Individuals	Short Survey for Individuals	Short Survey for Fishers	Total Completed	Total Number of Refusals	Response Rate
Hawai'i	61	59	60	180	39	82%
O'ahu	101	62	27	190	29	87%
Maui	99	11	21	131	9	94%
Moloka'i	31	8	2	41	11	79%
Kaua'i	92	68	62	222	20	92%
Total	384	208	172	764	108	87%

Table 3-2. Response Rates: Mail Surveys

Island	Survey for Lodging Operators	Survey for Commercial Tour Operators	Total Distributed	Surveys Completed	Postcards Completed	Response Rate
Hawai'i	11	12	23	6	7	57%
O'ahu	12	9	21	3	6	43%
Maui	11	11	22	7	7	64%
Moloka'i	2	3	5	1	1	40%
Kaua'i	14	10	24	9	5	58%
Total	50	45	100	26	26	52%

Table 3-3. Survey Sites

Locations Surveyed	Number of Surveys Completed	Number of Refusals
Hawai'i		
Kohala Area Including: Papikou, Keokea, Kapaau, Mahukona, Kawaihae, Spencer's Beach, Hapuna and Anaehoonalu.	38	10
Kona Area Including: Kapupulehu, Kiholo, Old Airport, Kailua, Kahaluu, Napoopoo, Honaunau, Hookena, Honokohau (Marina) and Banyan's	90	17
Hilo Area Including: Onekahakaha, Suisan, King's Landing, Richardson Beach Park and Lelewi Beach Park.	52	12
Total (Hawai'i)	180	39
O'ahu		
Sunset Beach to Hale'iwa	41	8
Waikiki and Ala Moana	47	10
Sandy's Beach to Baby Makapu'u	35	6
Yokohama Bay to South Waianae	28	0
Barber's Point Area Including: Oneula Beach Park, White Plains Beach/ Kalaeloa, Nimitz Beach and Barbers Point Beach Park.	39	5
Total (O'ahu)	190	29

Locations Surveyed	Number of Surveys Completed	Number of Refusals
Maui		
Lahaina	15	2
Hookipa	27	0
LaParouse to Kihei	45	4
Kahului	26	3
West Maui	18	0
Total (Maui)	131	9
Moloka'i		
Kaluakai, Pukoo, Kaunakakai Wharf, Maurice Point	19	5
Hale O Lono, Rock Point, Moomomi, Halawa, Kamalo Wharf	15	4
Kalaupapa	3	0
Kawekiu	4	2
Total (Moloka'i)	41	11
Kaua'i		
North: Ke'e to Kalihiwai including: Makua Beach (Tunnels), Ha'ena Beach Park, Lumaha'i Beach and Hanalei Bay.	48	4
South: Poipu, Waimea, Salt Pond, Kaloa, Hanapepe	62	9
East: Nawiliwili, Kalupaki, Lihue, Wailua, Kapaa, Kealia	50	5
West: Waimea, Salt Pond, Polihale and Kekaha	62	2
Total (Kaua'i)	222	20
Total (All Islands)	764	108

3.2 In-Person Surveys

Given that the in-person surveys were administered to certain target audiences (beach-going residents and tourists as well as fisher people) opinions and demographic characteristics are assumed to be representative of these groups, not necessarily the larger population. Although the two short versions of the survey contained questions taken from the long survey, each of the short surveys contained different questions. The percentage results of the in-person survey are presented based on the number of respondents that answered that particular question.

3.2.1 Demographics

Of the respondents asked to specify, 67% were male and 33% were female (n=382).² In terms of residency, 92% were either full or part-time residents of Hawai'i and 8% were not (n=373). The high percentage of respondents that were residents is likely due to the screening of potential respondents with the question "Do you know what a monk seal is?" and giving surveys to only those that answered yes. Table 3-4 illustrates race data for all respondents as compared to the 2010 Hawai'i census.

² The *Survey for Individuals Short Version* and the *Survey for Fisher People Short Version* did not include questions about sex or residency.

Respondents were asked to “mark all that apply”, which correlates to census data on “race alone or combo”, as opposed to having respondents choose just one race. Two significant differences are evident from this comparison. There were significantly less Asian survey respondents than are represented in the overall Hawai‘i population. The percentage of Native Hawaiian and Other Pacific Islanders that were surveyed was significantly higher than the overall population. This could be due, in part, to the higher percentage of Native Hawaiians and Pacific Islanders that engage in fishing activities in the areas where the surveys were conducted, or in beach/shore activities in general.

Table 3-4. Race Distribution of Survey Participants

Race	Monk Seal Survey	2010 Hawaii Census
Asian	22%	38.8%
Native Indian or Native Alaskan	6%	0.6%
Black or African American	2%	3.2%
Native Hawaiian	37%	9.2%
Other Pacific Islander	17%	
Caucasian	44%	30.2%

72% of all respondents were employed at least part time, 12% were students, and 16% identified themselves as retired, unemployed, homemaker or other (n=378). Education level ranged from those with some high school to people with a graduate degree (n=751). The distribution of respondents across the spectrum was representative of the population characteristics as recorded by the 2000 Hawai‘i census (Table 3-5).

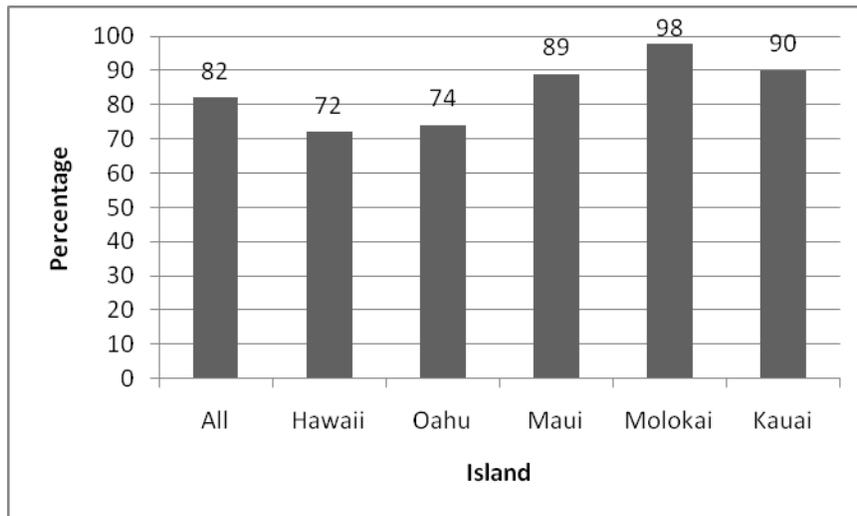
Table 3-5. Educational Level of Survey Participants

Educational Level	Monk Seal Survey	2000 Hawaii Census
Less than 9th Grade	N/A	7.2%
Some High School	11%	8.2%
High School Diploma	31%	28.5%
Some College No Degree	24%	21.8%
Two Year Degree	13%	8.1%
Four Year Degree	13%	17.8%
Some Grad School but No Degree	4%	N/A
Graduate Degree	4%	8.4%

3.2.2 Monk Seal Encounters

82% of survey respondents have seen a monk seal in the wild, and the numbers differ slightly by island (n=763) (Figure 3-1). 38% have seen them at least 2-5 times in the past five years and 33% have seen them over 10 times in the past five years (n=627). Sightings of monk seals both on land and in the water were common, with 76% of respondents indicating the monk seal was on the shore and 56% indicating the monk seal was in the water. In the majority of sightings, the person was on the shore, however 34% of respondents have seen a monk seal while they were in the water (n=548).

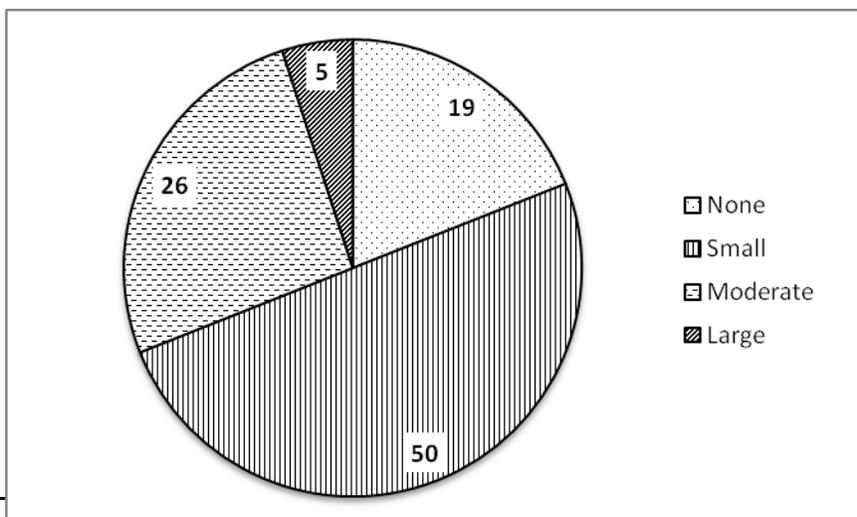
Figure 3-1. Respondents: Have You Seen a Monk Seal in the Wild?



3.2.3 Perceived Level of Knowledge About Monk Seals

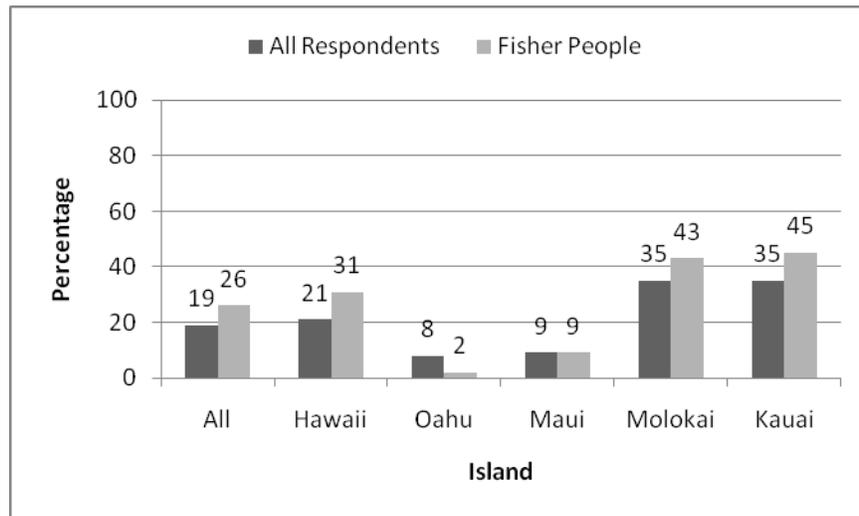
Assessing people’s self-perceptions about their level of knowledge about monk seals is important for designing and targeting educational material, especially if misconceptions need to be addressed. Figure 3-2 displays responses for all survey participants combined (n=764).

Figure 3-2. Respondents: What is Your Level of Knowledge About the Monk Seal?



In response to the question *Do you think monk seals are native to the Hawaiian Islands*, 63% answered yes they are native, 19% believed that monk seals are not native, and 18% were unsure (n=382). The negative response to this question was highest for the islands of Kaua'i and Moloka'i where 35% of the respondents on each island indicated they thought that monk seals were not native to the Hawaiian Islands (Figure 3-3). In general, a higher percentage of fisher people believed that monk seals were not native, with the highest percentages on Kaua'i and Moloka'i. Of the respondents that indicated that monk seals are not native, 32% believed they had a large amount about monk seals and 20% believed they had a moderate amount of knowledge.

Figure 3-3. Respondents: Monk Seals are Not Native to the Hawaiian Islands



Respondents were asked if they believe the monk seal population has been increasing or decreasing over the past 20 years (n=764). While a total of 58% of respondents indicated that the population was decreasing, either significantly or generally, only 20% of those respondents replied that the population was significantly decreasing. A total of 35% of respondents believe that the monk seal population is either stable or increasing. Some respondents with this belief conveyed that this perception is rooted in the knowledge that their older family members (fathers and grandfathers) rarely saw monk seals, and now they are seeing monk seals on a regular basis. When comparing respondents self-reported level of knowledge with their perception of the population, 45% of respondents that indicated they have a large amount of knowledge about monk seals, answered that the population was increasing, either slightly or significantly. 40% of those who claimed a 'moderate' amount of knowledge about monk seals indicated that the population was increasing, either slightly or significantly. A distribution of responses by island is useful for determining where the message of the decline of the monk seal population has been received (Table 3-6).

Table 3-6. Respondents: Perception of the Monk Seal Population Size

	Significantly Declining	Slightly Declining	Stable	Slightly Increasing	Significantly increasing	Unsure
Hawai'i	22%	38%	12%	12%	1%	15%
O'ahu	32%	30%	5%	14%	4%	15%
Maui	10%	25%	12%	31%	5%	17%
Moloka'i	19%	17%	10%	37%	7%	10%
Kaua'i	15%	23%	11%	19%	17%	15%

71% of respondents said they were aware that there are some legal protections in place for monk seals (n=764). Many respondents indicated that this knowledge was acquired by observing monk seals being roped off, reading the signs placed nearby, and sometimes from conversations with the Monk Seal Response Team volunteers. Other educational and outreach messages from State or Federal agencies did not appear to be a significant source of this knowledge. The majority of respondents indicated that protection of the monk seal is important by their response to two questions. For the first question, *How well do you believe the monk seal is protected under current regulations*, a majority of people answered 'well protected' or 'protected but not enough'. Only 10% of respondents believe that the monk seal is 'over-protected' (n=327). For the question, *Protection of the Hawaiian monk seal is not very important because there are many types of seals throughout the world*, 90% of respondents disagreed with that statement (n=382). 80% of respondents had heard of the Endangered Species Act, and nearly half (42%) indicated they were either somewhat familiar or very familiar with the regulation (n=384). However, 42% do not believe that violations of the Endangered Species Act are regularly enforced (n=341).

3.2.4 Human-Monk Seal Interactions

Respondents were asked about a series of different behaviors and whether they were appropriate around monk seals (n=760). Most respondents indicated that viewing monk seals from 100 feet away and photographing them were appropriate. The other activities listed, such as touching, feeding, swimming close to, shooting, fishing around, yelling, and allowing dogs to interact were considered inappropriate behavior around monk seals by the majority of respondents. 13% felt that fishing around monk seals was appropriate behavior.

Respondents were asked a series of questions regarding interactions with monk seals (n=764). When asked about humans interacting with monk seals on land, 55% felt that it is dangerous for both the seal and the person, but 12% indicated that it depends on the situation. When asked about humans interacting with monk seals in water, 37% felt that it is dangerous for both the seal and the person, 30% felt that it is dangerous for the person only and 17% said it is either safe or depends on the situation. When asked about dogs interacting with monk seals, 61% felt that it is dangerous for both the dog and the seal, but 10% said that it was safe or depends on the situation.

Respondents were asked what they would be likely to do if they encountered a monk seal. They answered similarly for sightings both on land and in the water: less than 30% of people would report a

sighting, 28% would report it to a lifeguard, and 21% would report it to the authorities. In conversations with administrators, people indicated that they only felt it necessary to notify authorities about a monk seal sighting if the seal was in distress. In addition, 57% of respondents indicated that they would report a monk seal sighting, whether injured or not, to DLNR, 17% to NOAA, 11% to lifeguards, and 15% to other (e.g. Coast Guard, police) (n=282).

Respondents were asked what they thought they would do if they encountered a monk seal tangled in a net (n=383). Only 27% said that they would do nothing, whereas 65% indicated that they would call the authorities. A relatively high percentage of people, 42%, said that they would try to cut the seal free.

3.2.5 Restricting Human Activity around Monk Seals

Just over half (56%) of all respondents indicated that certain human activities should be prohibited around monk seals, while 27% of respondents felt that they should not (n=382). The next question in the survey listed some common beach/shoreline activities and respondents were asked to mark which they felt should be prohibited around monk seals (n=347). The activities can be grouped into three categories. The first category, non-motorized sports (beach-going, swimming, surfing, snorkeling/diving and kayaking), all had a response rate of less than 20% of people that thought these should be prohibited. The second category, motorized sports (motor boating, jet skis, and motorized towing activities), had a response rate of between 33-39% of people who thought these should be prohibited. The third category included different types of fishing: spear fishing, hook and line fishing, and fishing with nets. While only 34% of people thought spear fishing and hook and line fishing should be prohibited, 47% indicated that fishing with nets should be prohibited in the presence of monk seals.

Respondents were asked if they agree with the current practice of closing a portion of the beach surrounding monk seals when seals are present (n=762). 66% of respondents agree with this practice, 19% do not, and 13% were unsure. When asked if they thought it is appropriate to close sections of beach area that are heavily used by monk seals during the height of birthing season, 56% said yes, 20% said only if the mom and pup are present, and 15% said no (n=384). The next survey question asked if blocking off areas of a beach the respondent frequents during periods of monk seal birthing would be considered a hardship (n=555). In response, 29% said yes, 55% said no, and 10% said only in certain instances (e.g. subsistence fishing).

3.2.6 Education and Outreach

Respondents were asked to indicate the different ways they learned what to do when encountering monk seals (n=381). Newspapers, magazines, radio, internet, aquarium or zoo, State programs, law enforcement each accounted for less than 10%; television for 17%; school for 14%; Federal programs for 13%; lifeguards for 12%; word of mouth for 44%; and other (most listed common sense) for 19%. 14% of respondents indicated they had no knowledge about what to do when encountering a monk seal.

Respondents were asked to rank the effectiveness of a variety of educational methods (n=344) (Table 3-7). Although a large percentage of respondents answered “not sure” to the question on the effectiveness of different methods of delivering educational messages, some conclusions can be drawn especially when combined with comments respondents made to administrators and what current

literature states. The response rates for the effectiveness of delivering information by social media and school presentations were low; current literature indicates that these are very effective methods for reaching a large number of people. Several respondents, particularly women, commented to administrators that they thought information about monk seals should be taught in schools. They indicated that children, especially younger ones, often repeat the things they have learned at school in social and home environments. If a majority of people are currently obtaining their information by word of mouth, as discussed in the previous question, then reaching even one third of a target audience via a conventional method, such as printed materials or public service announcements, may be effective in delivering messages to a wider audience than these results may imply.

Table 3-7. Respondents: How Effective Are Different Educational Methods?

Educational Method	Not at all Effective	Somewhat Effective	Very Effective	Not Sure
Educational brochures and pamphlets	13%	39%	12%	36%
TV public service announcements	7%	26%	8%	59%
Radio public service announcements	9%	31%	12%	48%
Print public service announcements	13%	39%	15%	33%
Internet	8%	31%	11%	51%
Signs	5%	24%	8%	64%
Newspaper	13%	39%	12%	36%
Boater training courses	16%	26%	18%	39%
Workshops or community meetings	15%	35%	19%	31%
Social media (Facebook, Twitter)	10%	24%	17%	50%
School presentations	5%	23%	13%	59%

Respondents were asked to rate how likely they would be to read informational signs or pamphlets placed in certain locations (n=342) (Table 3-8). Respondents indicated that they would be most likely to read signage at parks and beaches as well as shops where they would purchase or rent gear to use at the beach. Although the responses are likely skewed a bit because the majority of survey respondents were residents, the results still provide valuable information about how likely people would be to read signs placed in certain areas. A relatively high percentage of respondents indicated that they would be likely to read informational signage in a variety of places.

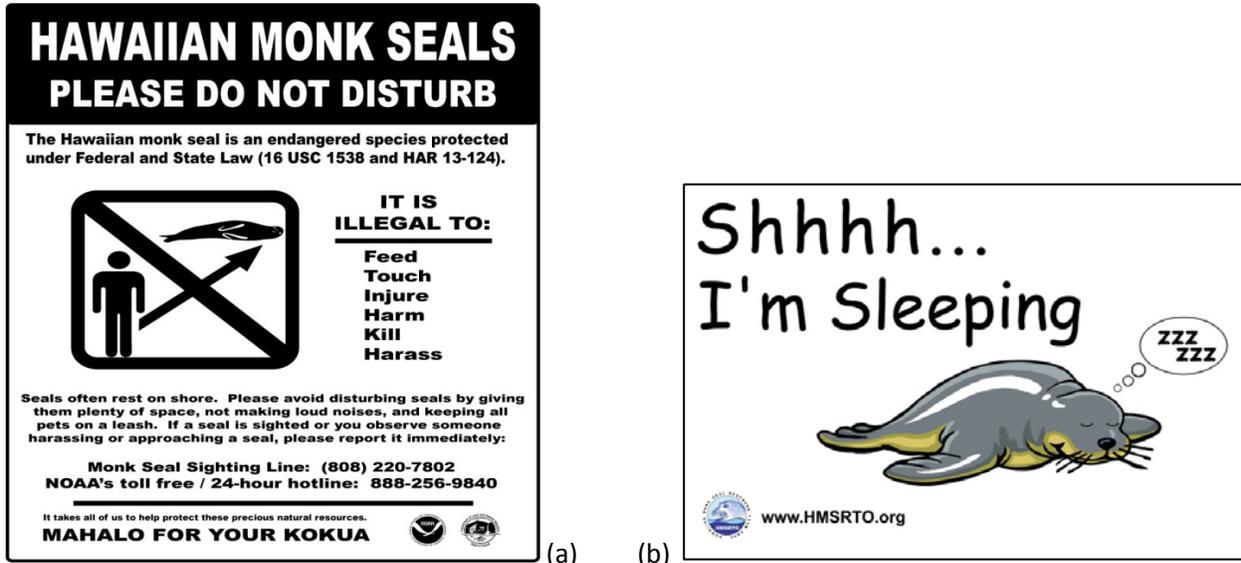
Table 3-8. Respondents: Where Would You be Likely to Read Informational Signage?

Signage Location	Not at all Likely	Somewhat Likely	Very Likely	Doesn't Apply to Me
At parks and beaches in the parking lot	13%	32%	49%	6%
At parks and beaches near the shoreline	8%	30%	58%	4%
Near life guard stands	18%	32%	41%	9%
On city buses	24%	31%	27%	17%
In airports	24%	36%	32%	8%
With information given when renting a car	28%	31%	30%	11%
In hotel lobbies	24%	35%	30%	11%

At fishing supply shops	16%	32%	41%	11%
At marine recreation gear rental shops	9%	33%	48%	9%

Respondents were asked if one of two signs presented would be likely to convince them not to disturb the seal. 68% said that one of them would work and 19% indicated both signs would be equally effective (n=584). 77% of respondents that identified a preferred sign, chose the one that NOAA currently uses as being the most effective (n=379) (Figure 3-4a). Several people felt the current sign was too busy and the other sign was too simple (Figure 3-4b). They thought a combination would be more effective.

Figure 3-4. Monk Seal ‘Do Not Disturb’ Signage



3.2.7 Fisher People Responses to Survey Questions

A total of 64% of respondents indicated that either they or someone in their household fish regularly (n=738). The vast majority of the time it was the respondent who fished regularly, so this section details that data as responses by fishers. The survey responses for fisher people were analyzed separately in order to see if there were differences from non-fishers (fishers n=469, non-fishers n=269). In addition, those who responded ‘yes’ to the question if they or someone in their household fish regularly were asked a separate series of questions related to fishing. For many questions, the responses were not significantly different between fisher people and the respondents that do not fish regularly. Some of the exceptions are noted here.

A majority, 66%, fish, in part, to provide food to their family. While 22% said that they fish for recreation only, 33% fish for both recreation and to provide food. Less than 10% of those surveyed sell part of their catch to provide income. 89% of fishers have seen a monk seal in wild at some point within the past five years as compared with 72% of the non-fishers. Fishers self perception about their level of knowledge was higher than non-fishers (Figure 3-5).

Just over one quarter of fishers surveyed believe that monk seals are not native to the Hawaiian Islands (Figure 3-6). Fishers from Kaua’i, which represent a large portion of those who believe monk seals are not native, stated that they believe monk seals are native to the Northwestern Hawaiian Islands (NWHI),

but not to the MHI. Further conversations with fishers expressing this idea led to them to clarify that they believe that monk seals only belong in the NWHI and that the seals are being transported to the MHI in part to enhance the species population.

Figure 3-5. Fisher People vs. Non-Fishers: What is Your Level of Knowledge About the Monk Seal?

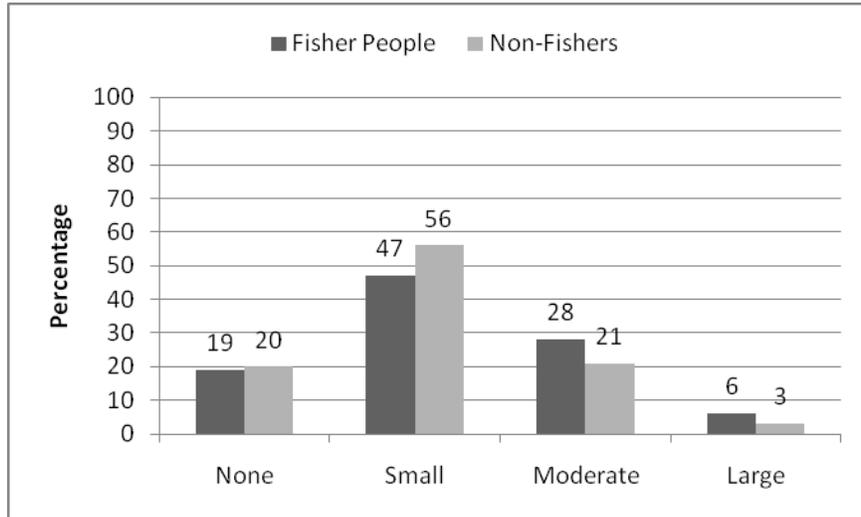
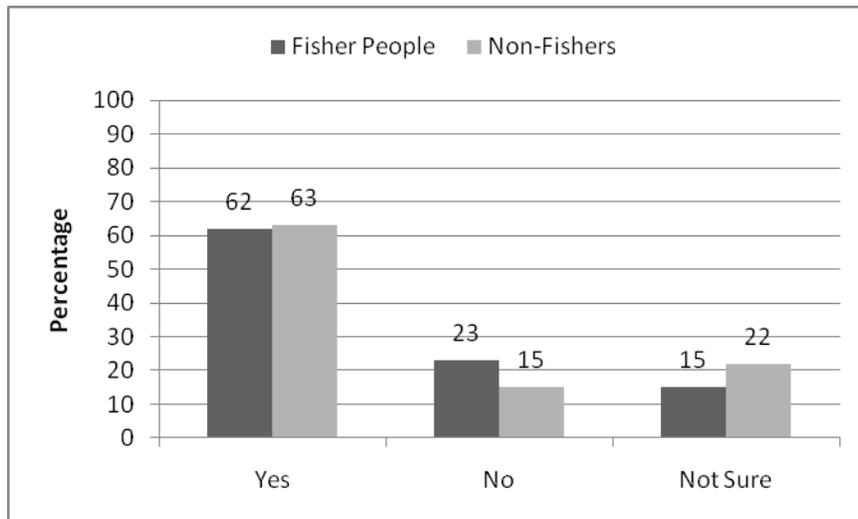
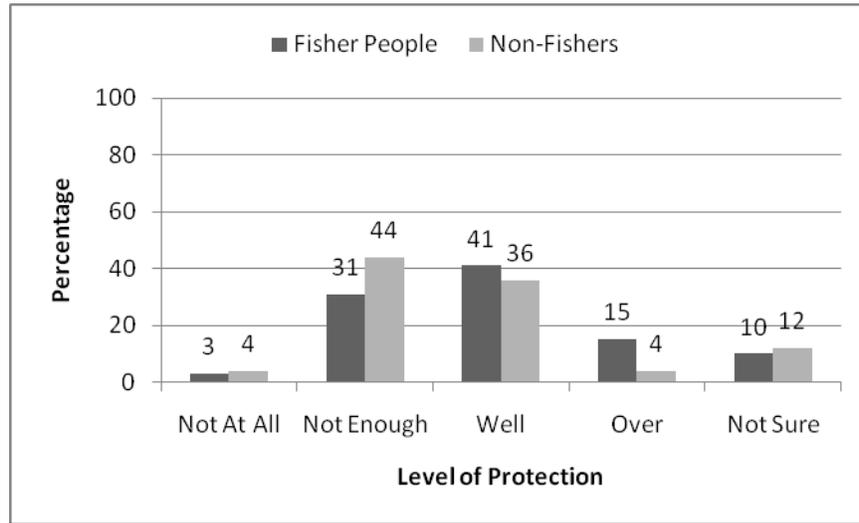


Figure 3-6. Fisher People vs Non-Fishers: Are Monk Seals Native to the Hawaiian Islands?



When asked *How well do you believe the monk seal is protected under current regulations*, a majority of general respondents answered ‘well protected’ or ‘protected but not enough’. This was also true of fisher people. 4% of non-fishers believe that the monk seal is ‘over-protected’, while 15% of fisher people do (Figure 3-7). However, a higher percentage of fishers from Moloka’i and Kaula’i indicated that they believe the monk seal is over-protected, 43% and 31% respectively.

Figure 3-7. Fisher People vs. Non-Fishers: How Well Are Monk Seals Protected Under Current Regulations?



A majority of fishers indicated that fishing is not be appropriate around monk seals (Table 3-9). The data supports what fisher people told administrators, that if a monk seal was present in an area when fishers arrived to fish, the fisher would move to another location.

Table 3-9. Fisher People: Is Fishing Appropriate Around Monk Seals?

	All	Hawai'i	O'ahu	Maui	Moloka'i	Kaua'i
Yes	16%	17%	8%	23%	18%	15%
No	84%	83%	92%	77%	81%	85%

However, when asked if certain types of fishing should be prohibited around monk seals, the majority of fishers said no. Fishers and non-fishers felt differently about the types of fishing that should be prohibited around monk seals (Table 3-10).

Table 3-10. Fisher People vs. Non-Fishers: Type of Fishing that Should be Prohibited around Monk Seals

	Spear fishing	Fishing with hook and line	Fishing with nets
Non-fishers	44%	48%	58%
Fishers	25%	24%	38%

Table 3-11 and Table 3-12 illustrate fisher's responses, by island, to questions about whether they believe the presence of monk seals reduces their catch and that an increase in the number of monk seals will reduce catch.

Table 3-11. Fisher People: Does Presence of Monk Seals Reduce Fish Catch?

	All	Hawai'i	O'ahu	Maui	Moloka'i	Kaua'i
Yes	43%	32%	32%	36%	67%	53%
No	32%	26%	40%	46%	19%	23%
Unsure	25%	42%	28%	18%	14%	24%

Table 3-12. Fisher People: Will Increased Number of Monk Seals Reduce Fish Catch?

	All	Hawai'i	O'ahu	Maui	Moloka'i	Kaua'i
Yes	40%	43%	29%	26%	70%	50%
No	37%	31%	42%	53%	17%	30%
Unsure	23%	26%	29%	20%	13%	20%

Table 3-13 illustrates what respondents would do if a monk seal became hooked on their line while fishing.

Table 3-13. Fisher People: What Action Would You Take if Monk Seal is Hooked on a Fishing Line?

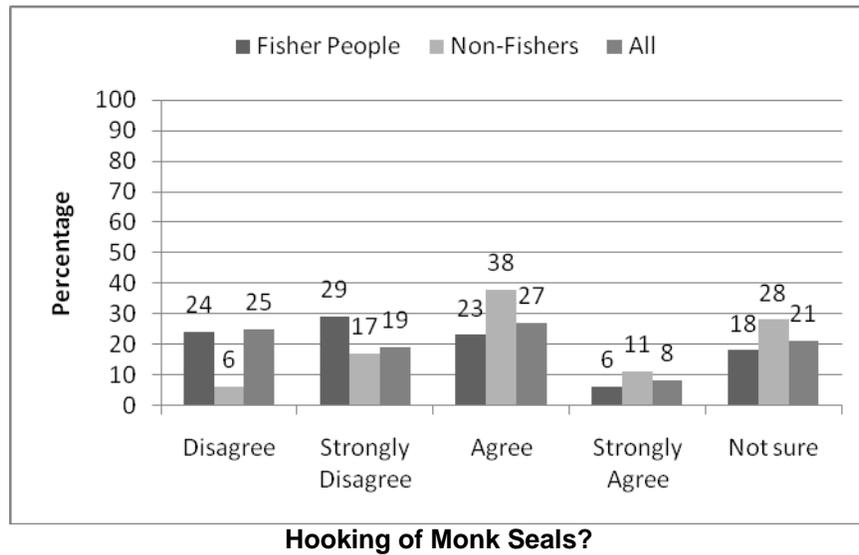
	Cut the Line	Try to Get the Hook Free	Call the Authorities	Try to Scare the Seal Away
Hawai'i	44%	50%	15%	3%
O'ahu	57%	37%	38%	2%
Maui	69%	22%	18%	1%
Moloka'i	70%	26%	9%	4%
Kaua'i	53%	41%	20%	3%
Total for All Islands	56%	37%	21%	3%

About a third (34%) of fisher people indicated that they would be willing to use barbless hooks in order to reduce the possibility of hooks becoming stuck in the mouths on monk seals. 41% said they would not, 12% said they would only if required by law, and 13% were not sure. Table 3-14 presents results, by island, about whether fishers thought that using barbless hooks would affect catch.

Table 3-14. Fisher People: Do Barbless Hooks Affect Fish Catch?

	All	Hawai'i	O'ahu	Maui	Moloka'i	Kaua'i
Yes	54%	42%	39%	64%	57%	63%
No	15%	20%	15%	14%	13%	12%
Only For Certain Species	16%	28%	17%	8%	22%	12%
Unsure	15%	10%	29%	14%	9%	11%

All respondents were asked if they agree or disagree that regulations for hook and line fishing should be enacted to reduce/prevent hooking of monk seals (Figure 3-8).

Figure 3-8. Respondents: Should Regulations for Hook and Line Fishing be Enacted to Prevent

3.3 Mail Surveys

The responses given by both lodging operators and commercial tour operators were very similar and the results have been grouped. The survey questions were nearly the same as the survey for individuals with slight wording changes to reflect that the questions were targeted at determining what information is being conveyed to clients, as well as the personal knowledge and opinions of the operators. The sample size for the mail surveys was much smaller than the in-person surveys with only 26 surveys (44 questions) and 26 postcards (4 questions) returned completed (Section 3.1). Even with the small sample size, the results provide information indicating what type of messaging and outreach should be directed towards operators in these industries.

3.3.1 Demographics

90% of operators indicated that the majority of their clients were visitors to Hawai'i (n=52). The main activities their clients engage in are diving, snorkeling, swimming, boogie boarding, lounging on the beach, and fishing (n=26). A smaller amount of their clients (39%) also surf.

3.3.2 Monk Seal Encounters

96% of operators indicated that their clients have observed a monk seal in the wild (n=26). Lodging and tour operators said 12% of clients reported seeing monk seals at least one time, 39% reported seeing monk seals at least 2-5 times, 19% have seen them 6-10 times, and 19% have seen them over 10 times in the past year (n=26). Sightings of monk seals both on land and in the water were common, and sightings on land were only slightly more prevalent, 81% and 69% respectively (n=25). In the majority of sightings, the person was on the beach (shore), however operators indicated that 20% of the time the client was in the water (n=25). Lodging and tour operators were asked if they make a point of trying to locate monk seals for clients to view. 92% responded that they do not and 8% that they do (n=26).

Operators were then asked if they discuss information about monk seals with their clients. 54% only discuss monk seals with clients if they ask or if they see monk seals (n=52). 21% indicated that they do discuss monk seals with many clients, 10% rarely discuss monk seals with clients and 15% never discuss monk seals with clients.

3.3.3 Perceived Level of Knowledge About Monk Seals

Operators were asked to gauge their level of knowledge about the monk seal (n=52) (Figure 3-9). This information is important for assessing the accuracy of information potentially being conveyed to tourists, their primary clientele.

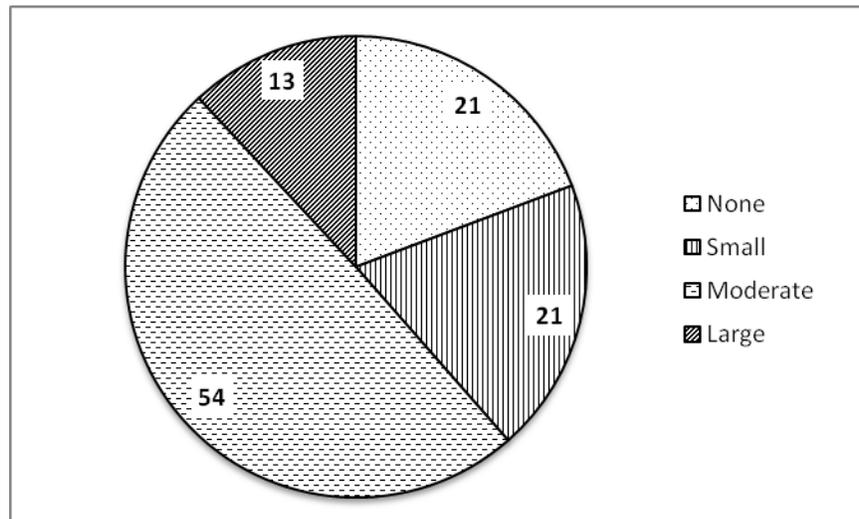


Figure 3-9. Operators: What is Your Level of Knowledge About the Monk Seal?

In response to the question *Do you think monk seals are native to the Hawaiian Islands*, 58% of operators answered yes they are native, 8% believed that monk seals are not native, and 34% were unsure (n=26). Of those who indicated that they have an average and/or large amount of knowledge about monk seals only 9% believe that monk seals are not native.

Operators were asked if they believe the monk seal population has been increasing or decreasing over the past 20 years. 31% indicated that the population was significantly decreasing and another 15% believe it is decreasing slightly (n=26). A total of 35% of respondents believe that the monk seal population is either stable or increasing. 19% were not sure of the population status. 60% of operators that indicated they have a large amount of knowledge about monk seals, answered that the population was increasing, either slightly or significantly. 36% of those who claimed a 'moderate' amount of knowledge about monk seals indicated that the population was increasing, either slightly or significantly.

85% of operators said they were aware that there are some legal protections in place for monk seals (n=26). When asked *How well do you believe the monk seal is protected under current regulations*, 77% answered 'well protected' and 15% answered 'protected but not enough' (n=26). Only 8% of

respondents believe that the monk seal is 'over-protected'. For the question, *Protection of the Hawaiian monk seal is not very important because there are many types of seals throughout the world*, 100% of respondents disagreed with that statement (n=26). 96% of operators had heard of the Endangered Species Act, and 77% indicated they were either somewhat familiar or very familiar with the regulation (n=26). When asked if violations of the Endangered Species Act are regularly enforced, 35% said yes, 23% said no and 42% were unsure (n=26).

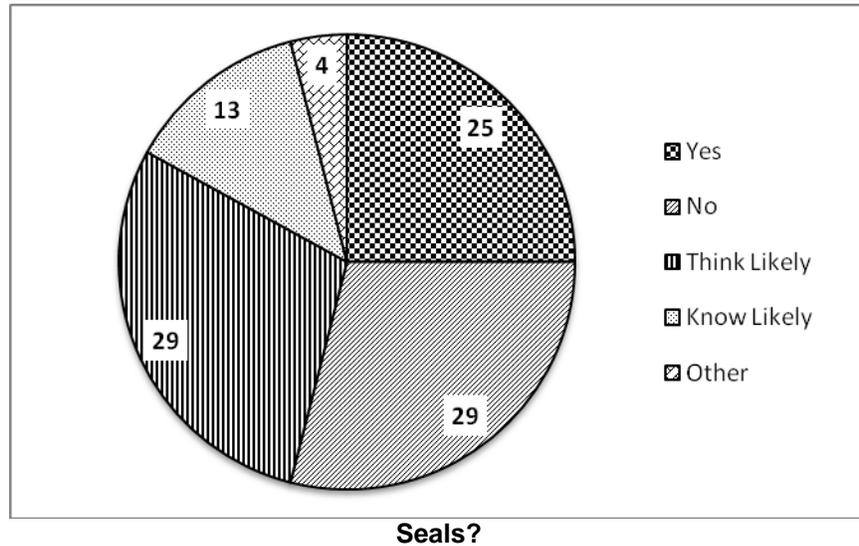
3.3.4 Human-Monk Seal Interactions

Operators were asked about a series of different behaviors and whether they were appropriate around monk seals (n=26). Most respondents indicated that viewing monk seals from 100 feet away and photographing them were appropriate. The other activities listed, such as touching, feeding, swimming close to, shooting, fishing around, yelling, and allowing dogs to interact were considered inappropriate behavior around monk seals by the majority of respondents. Only 4% felt that fishing around monk seals was appropriate behavior. Operators were asked a series of questions regarding interactions with monk seals. When asked about humans interacting with seals on land, 73% feel that it is dangerous for both the seals and the person, but 19% indicated that it depends on the situation and 4% thought it was safe (n=26). When asked about humans interacting with seals in water, 65% feel that it is dangerous for both seal and person, 8% felt that it is dangerous for the person only, 4% feel that it is dangerous for the seal only, and 15% said that it depends on the situation (n=26).

Operators were asked, *If a client told you that they saw a monk seal would you be likely to report it?* 48% of people indicated that they would report a sighting, 31% would not and 13% were not sure (n=52). When asked if they know who to report monk seal sightings to, 62% said yes. Of those who answered yes, 43% would report it to DLNR and 57% would report it to NOAA (n=14).

Operators were asked, *Have clients ever reported encountering a monk seal while doing activities in the water?* 46% answered yes, 19% answered no and 35% answered not sure or the question did not apply to their operations (n=26). Respondents were then asked to quantify how often in the past year clients had reported encountering monk seals in the water. 23% indicated that it had happened only one time, 23% indicated that it had happened between two and five times and 8% indicated that it had happened six times or more (n=26). 46% said that none of their clients had reported encounters during the past year. Operators were queried about whether they give instructions to clients about what to do if they encounter monk seals (n=26) (Figure 3-10). Some operators only provide this information if they think or know encounters are likely.

Operators were asked what they would do if a client reported encountering a live monk seal tangled in a net. No one answered that they would do nothing, 84% indicated that they or their staff would call the authorities, 44% said they would have the client call the authorities, and 12% said that they would try to cut the seal free (n=26).

Figure 3-10. Operators: Are Clients Given Instruction About What To Do When Encountering Monk

3.3.5 Restricting Human Activity around Monk Seals

Half (50%) of all operators indicated that certain human activities should be prohibited around monk seals, while 31% felt that they should not (n=26). The next question in the survey listed some common beach/shoreline activities and operators were asked to mark which they felt should be prohibited around monk seals (n=26). The activities can be grouped into three categories. The first category, non-motorized sports (beach-going, swimming, surfing, snorkeling/diving and kayaking), all had a response rate of less than 20% of people that thought these should be prohibited. The second category, motorized sports (motor boating, jet skis, and motorized towing activities), had a response rate of 27-50% of people who thought these should be prohibited. The third category included different types of fishing: spear fishing, hook and line fishing, and fishing with nets. While only 27% of people thought spear fishing and hook and line fishing should be prohibited, 50% indicated that fishing with nets should be prohibited in the presence of monk seals.

Operators were asked if they agree with the current practice of closing a portion of the beach surrounding monk seals when seals are present. 88% of respondents agree with this practice, 4% do not, and 8% were unsure (n=26). When asked if they thought it is appropriate to close sections of beach area that are heavily used by monk seals during the height of birthing season, 52% said yes, 40% said only if the mom and pup are present, and 8% said no (n=26). The next survey question asked if blocking off areas of a beach that your clients frequent during periods of monk seal birthing would be considered a hardship. In response, 32% said yes, 60% said no, 4% said only in certain instances, and 4% were not sure (n=25).

3.3.6 Education and Outreach

Operators were asked where they learned what to do when encountering monk seals. Internet, magazines, and the aquarium or zoo were ranked the lowest, with 8% of people or less receiving their information from these sources (n=25). 16-24% of people indicated that they gained their knowledge from television, newspapers, school, law enforcement agents and lifeguards. Federal programs (40%), State programs (40%) and word of mouth (36%) were the most common forums for providing knowledge. 12% of respondents indicated they had no knowledge about what to do when encountering a monk seal.

Respondents were asked to rate five different methods for conveying monk seal conservation issues to their clients (n=25) (Table 3-15).

Table 3-15. Operators: How Effective Are Methods of Conveying Information to Clients?

Method	Not at all effective	Somewhat effective	Very effective	Not sure
Educational brochures and pamphlets provided to clients	4%	38%	54%	4%
Personal presentations given to clients	8%	16%	68%	8%
Showing videos to clients	12%	20%	60%	8%
Print materials displayed where clients could view them	4%	40%	52%	4%
Posting information on social media (Facebook, MySpace, Twitter)	8%	44%	36%	12%

Operators were asked if one of two signs presented would be likely to convince client not to disturb the seal (Figure 3-4). 85% indicated that yes one of them would work, 12% indicated both signs would be equally effective, and 3% were not sure (n=26). 68% of respondents that identified a sign, chose the one that NOAA currently uses as being the most effective (n=26). In terms of other materials and trainings that might be provided by NOAA or the State, 85% of operators would be willing to provide or display educational materials to clients about monk seals if they were provided free of charge (n=26). 65% of operators indicated that they would be willing to participate in a training/educational workshop for lodging and commercial tour operators regarding monk seal issues, what activities can be conducted around monk seals without disturbing them and how to communicate conservation issues to clients (n=26).

3.3.7 Fishing Questions

52% of operators (n=25) indicated they have clients who fish and answered a series of fishing related questions. The results in this section are based on their responses only (n=13). Only 15% of operators believe that if monk seals are present in an area clients will catch less fish, 46% were not sure, and 31% did not believe this to be the case. When asked if the monk seal population increases do you believe that your clients will catch less fish, 7% said yes, 64% said no and 29% were not sure. Figure 3-11 illustrates how operators thought they would respond if a monk seal became hooked on a client's line while they were fishing. 31% of operators would be willing to provide barbless hook to clients at any

time, 15% would only where monk seals are present, 15% said they would only if required by law, 23% would not, and 15% answered not sure. When asked the follow up question *Do you believe using hooks without barbs will affect fish catch?* 31% said yes, 15% said no, 8% thought that it would only affect certain types of fish and 46% were not sure. Operators were asked if they agree or disagree that regulations for hook and line fishing should be enacted to reduce/prevent hooking of monk seals (Figure 3-12).

Figure 3-11. Operators: What is Response to Monk Seal Hooked on Client’s Line?

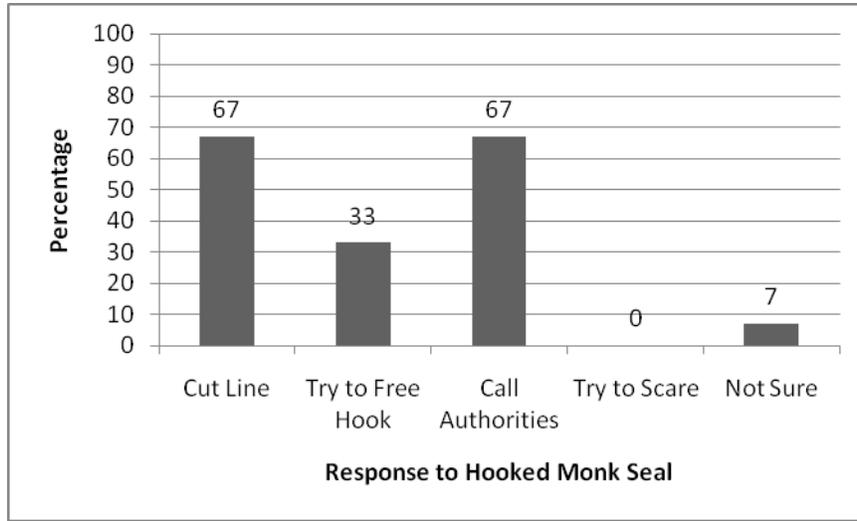
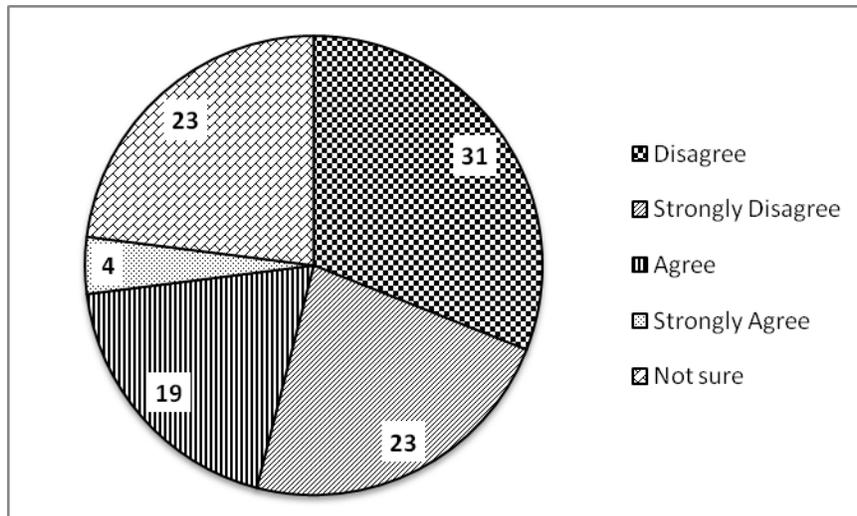


Figure 3-12. Operators: Should Regulations for Hook and Line Fishing be Enacted to Prevent Hooking of Monk Seals?



3.4 Additional Information Gathered

3.4.1 Comments

Survey participants were encouraged to write additional comments on the survey or express them to the survey administrators. In addition, comments made by people who chose not to complete the survey but interacted with the survey administrators were also recorded.

As previously mentioned, many respondents indicated that they did not see any reason to report sightings of monk seals unless the seal was in distress. Many thought that question was strange and did not belong on the survey. A very large number of people said, “why would we call anyone about a monk seal sighting?” Other people said that they did not see a need to report monk seal sightings because the Monk Seal Response Team almost always showed up to the site where monk seals were.

One prevalent theme of respondents from Kauaʻi was that monk seals are not native and people felt they did not belong there. The phrases “it’s not native” and “we don’t like the seals” were said often. A few respondents expressed that they were certain seals were not native because they are not mentioned in *hulas*, *mele*, or *ʻoli*. Some people said that they believed that monk seals were native to the NWHI, but not the MHI. People expressed that they knew monk seals were being brought to the MHI from the NWHI to increase the seal population, but that it was a bad policy by NOAA because they were affecting fisher people’s ability to catch fish and would eventually be taking away rights to access certain fishing areas.

Fishers had a variety of comments. Fishers from Kauaʻi and Molokaʻi were the most vocal. Net fishermen on Kauaʻi complained about monk seals stealing fish from their nets. Fishers complained of monk seals stealing fish off the dive lines that hold their fish. One fisher from Maui mentioned that he thought fisher people that fished to feed their families should be allowed to scare monk seals away. The same fisher mentioned he is not concerned about hooks getting stuck in the mouths of seals because they are not interested in the bait he uses, or the type of fish he catches from shore. Several fishermen were concerned about maintaining their fishing rights and thought that the protection of monk seals was going to jeopardize their rights. Subsistence fishers on Molokaʻi were also very concerned that protection of monk seals would eventually lead to loss of some of their fishing rights.

Many fishers also had positive comments to share. When questioned about fishing around monk seals, the use of barbless hooks, and seals becoming entangled in nets, they said that they had been raised to think of all creatures of the sea as important and that when monk seals are present at areas where they come to fish, they simply choose another location, or choose a spot away from the seals.

Several non-fishers had positive comments about monk seals. Tourists at Poipu enjoyed seeing the monk seal that hauls out there. A guide from Kayak Kauai mentioned that he frequently sees monk seals lying on the beach at Miloliʻi where they stop for lunch on guided tours. He said that the seals do not bother them and they do not bother the seals, but his clients enjoy seeing them.

Many comments from people on Molokaʻi indicated that they felt approaching monk seals on land and playing around monk seals in the water was appropriate. Administrators of the surveys on Molokaʻi

noted that they received a number of comments indicating that some people in the community do not believe that habituation of monk seals is dangerous for people or for the seal.

3.4.2 Discussion with Ocean Safety Personnel

Survey administrators had several opportunities to interview off-duty lifeguards as well as speak with Jim Howe, Operations Chief of the City and County of Honolulu's Ocean Safety and Lifeguard Services Division. Since monk seals often appear on beaches manned by lifeguards, it is important to understand what these first responders, whose focus is on the safety of beach-goers, know about monk seals and what they convey to the public.

NOAA has agreements with the Ocean Safety divisions across the MHI to put up temporary signs near lifeguard stands when monk seals are present on beaches where they are stationed. Mr. Howe stressed that the responsibility of Ocean Safety personnel is to warn people of hazards at the beach, and in most cases monk seals do not present as a hazard. He did acknowledge, however, that as the population of monk seals in the MHI increases, the likelihood of human-seal interactions, which are potentially hazardous, increases. He feels that Ocean Safety and Lifeguard Services will need to develop standard protocols for dealing with "problem seals" (i.e. monk seals that may harm people), but that unless they are deemed a hazard, the protection of monk seals from harassment or injury by humans and dogs, is NOAA's responsibility.

All lifeguards are currently required to undergo risk management training, which includes a module on monk seals developed by David Schofield, NOAA Marine Mammal Response Coordinator. The module includes information concerning monk seals as a hazard, as well as information about the status of the species and conservation efforts. When dealing with the public, lifeguards are only required to inform people that monk seals are large animals that can cause injury. They are not required to engage in any conversations regarding monk seal conservation or protection, although it is not prohibited. The lifeguards that were interviewed indicated that when a monk seal is present, and they have the time, they provide conservation information to individuals that inquire. Several lifeguards felt that the monk seals can be a (major) annoyance to them doing their jobs properly, due to people inquiring about seals and ensuring that the animal is not presenting as a hazard to people. The biggest issue Ocean Safety has at the beach regarding monk seals is people not willing to keep dogs on leash and away from seals. In general, Ocean Safety does not see monk seals as a problem (hazard), so they try not to make a big deal about them. Mr. Howe indicated that the Monk Seal Response Team volunteers seem to be very effective at arriving at the scene of haul outs, taking responsibility for protection of the seals, and keeping the public at an appropriate distance.

Interviews with lifeguards confirmed that their knowledge of population status, regulations, and conservation efforts was correct, which means they are likely disseminating accurate information to the public. Lifeguards obtained this information through their Ocean Safety training, from word of mouth (e.g. family and friends), and the media (e.g. internet). Lifeguards did not think most activities should be prohibited around seals, except for motorized activities. Their rationale focused on the possibility of the vessel hitting a seal in the water and a person getting injured by being thrown off, not necessarily the protection of the seal. When asked about the signage, and shown examples (Figure 3-4), lifeguards

thought a combination of the two would be most effective. The current sign used by NOAA is too busy, while the other sign is too simplistic.

Mr. Howe commented extensively on public outreach and educational methods, based on previous experience, especially with sharks. Ocean Safety has spent a lot of time teaching people that sharks are a hazard and also informing them about conservation. In his experience permanent signs at the beach are not useful since there are too many signs there already. Temporary signs are highly effective, although there is possibility they will be stolen. The internet is a valuable tool and can get essential information to people before they come to the beach. Mr. Howe believes it is important to target education efforts to specific populations (i.e. military, residents, and visitors), and that each requires a different type of message for it to be effective. Information on monk seals can be included in the military's base orientation to Hawai'i. Education in schools is critical, although the results may take time to manifest. He indicated that after the shark modules were introduced in schools, it took 12 years before a shift in thinking was noticed among residents. The "exploding myths" concept worked well to educate residents about sharks, and could be used for monk seals. Guidebooks are key places to reach the visitor population, since many visitors use them and they have a long 'shelf life'.

4.0 RECOMMENDATIONS

While education and outreach regarding monk seals should be directed at all residents and visitors in Hawai'i, limited time and resources dictate that certain target audiences and messages are given priority. The results of this survey will be used to inform education campaigns and key messages about human-seal interactions.

Recommendations for education and outreach messages are described in a complimentary report titled *Strategies for Education and Outreach Regarding the Hawaiian Monk Seal* (in development). That report includes recommendations on the types of messages that should be utilized, examples of what those messages may include, and recommendations on the most effective method for delivery based on the results of the survey.

APPENDIX A: SURVEYS

Survey for Individuals Long Version

Survey for Individuals Short Version

Survey for Fisher People Short Version

Survey for Commercial Tour Operators

Survey for Lodging Operators

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APPENDIX B: OMB PRA SUPPORTING STATEMENT

As part of the OMB approval process, a supporting statement must be prepared, detailing the reasons why the information collection is necessary, for what purpose the information will be used, justifications for the questions asked, responses to the public comment period, and the burden placed on small businesses and the public for taking the time to respond.

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APPENDIX C: SURVEY DATA

Summary results are provided as an electronic appendix to this report and can be opened with either a standard text editor (wordpad, notepad, textedit) or the free R software (<http://www.r-project.org/>). Additionally, Microsoft Excel files are provided for the total data, fishers, and commercial operator surveys. Data files include:

Folder/File Name	Description
All Survey	
In-person Surveys Data Results	Data results for three surveys; <i>Survey for Individuals Long Version</i> , <i>Survey for Individuals Short Version</i> and <i>Survey for Fisher People</i> combined
In-person Surveys Raw Data	Raw data for three surveys; <i>Survey for Individuals Long Version</i> , <i>Survey for Individuals Short Version</i> and <i>Survey for Fisher People</i> combined
In-person Surveys Question Key	Key for how questions were labeled for data analysis
Commercial Operators Survey	
Commercial Operators Data Results	Data results for two surveys; <i>Survey for Commercial Tour Boat Operators</i> and <i>Survey for Lodging Operators</i> combined
Commercial Operators Raw Data	Raw data for two surveys; <i>Survey for Commercial Tour Boat Operators</i> and <i>Survey for Lodging Operators</i> combined
Commercial Operators Question Key	Key for how questions were labeled for data analysis
Fishers Survey	
Fishers Data Results	Data results for all questions answered by fishers from both the <i>Survey for Individuals Long Version</i> and the <i>Survey for Fisher People</i> combined
Fishers Question Key	Key for how questions were labeled for data analysis

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