

Prepared for:

National Oceanic and Atmospheric Administration
National Marine Fisheries Service

Programmatic Environmental Impact Statement

Appendix K: Cultural Impact Assessment

Final PEIS for Hawaiian Monk Seal Recovery Actions

March 2014



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**APPENDIX K
CULTURAL IMPACT ASSESSMENT
FOR THE
HAWAIIAN MONK SEAL
PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT**

National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Pacific Island Regional Office

Portions prepared under contract by:
Pacific Legacy, Inc

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1.0 INTRODUCTION

1.1 PROJECT OVERVIEW

This Cultural Impact Assessment has been prepared as part of efforts undertaken by National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS), Pacific Islands Regional Office (PIRO), Protected Resources Division (PRD) to comply with National Environmental Policy Act of 1969 (NEPA). This document is intended to inform the cultural impact analysis section of the Hawaiian Monk Seal Programmatic Environmental Impact Statement (PEIS). It will assist NMFS in the identification and mitigation of potential adverse impacts of monk seal recovery actions, as detailed in the PEIS, on Native Hawaiian traditional and cultural practices and resources.

This Cultural Impact Assessment was prepared in compliance with the statutory requirements of NEPA. To the maximum practicable extent the document also follows the specifications of the State of Hawai‘i Revised Statute (HRS) Chapter 343 Environmental Impact Statements law, as laid out in the State of Hawai‘i Department of Health’s Office of Environmental Quality Control (OEQC) Guidelines for Assessing Cultural Impacts as adopted by the Environmental Council, State of Hawai‘i, on 19 November 1997.

1.2 RELEVANT STATUTES AND AGENCY REGULATIONS

Under relevant national statutes and regulations, federal agencies have the responsibility to ensure effective stewardship of the cultural resources that may be impacted by their actions. The Code of Federal Regulations (Federal Code) implements these federal statutes. Prior to implementing the monk seal recovery actions proposed in the PEIS, NMFS is required to comply with both NEPA and the National Historic Preservation Act (NHPA). This Cultural Impact Assessment addresses the cultural requirements of NEPA. The requirements for NHPA Section 106 consultation as stipulated in the NHPA are addressed in a separate document presented in Appendix B of the PEIS.

1.2.1 National Environmental Policy Act

NEPA, as codified in 42 U.S.C. §§ 4321 et seq., § 4331(a)(4) (2012), requires, in part, the consideration, discussion, and analysis of possible impacts to cultural resources as part of the human environment. It enjoins federal agencies to use all practicable means to preserve important historic, cultural, and natural aspects of our national heritage (NEPA 42 USC § 4331 Sec. 101). For this PEIS, the NEPA requirement is implemented through the Federal Code provisions for environmental impact statements, 40 C.F.R. §§ 1502, § 1502.16(g) (2012).

According to the Federal Code, the PEIS is required to discuss the potential impacts that all of the proposed alternatives may have on cultural resources, including analysis of the proposed actions, any unavoidable adverse impacts if the proposals are implemented, the relationship of the short-term uses of the environment to the maintenance and enhancement of long-term use, and any irreversible or irretrievable commitment of resources involved in the proposals if they are implemented.

2.0 PROJECT BACKGROUND

2.1 HAWAIIAN MONK SEAL RECOVERY PROGRAM

NMFS is the federal agency responsible for management of Hawaiian monk seals, under the Endangered Species Act (ESA) (16 United States Code [U.S.C.] 1531 et seq.) and the Marine Mammal Protection Act (MMPA) (16 U.S.C. 1361 et seq.). NMFS funds, permits, and conducts research and enhancement activities on Hawaiian monk seals in the Northwestern Hawaiian Islands (NWHI) and main Hawaiian Islands (MHI).

Populations of the Hawaiian monk seal (*Monachus schauinslandi*) have experienced a prolonged decline. In 1976, NMFS listed Hawaiian monk seals as “endangered” under the ESA (41 Federal Register [FR] 51611) and “depleted” under the MMPA. NMFS implements recovery activities (research and enhancement) for Hawaiian monk seals to promote the conservation and recovery of the species population to levels at which ESA protection is no longer needed. NMFS has proposed new research and enhancement activities for Hawaiian monk seals and analyzed a reasonable range of alternatives in a draft Programmatic Environmental Impact Statement (PEIS), published in August 2011. These activities include monitoring, tagging, limited on-site medical treatment and the temporary translocation of seals between islands to enhance juvenile survival. This Cultural Impact Assessment will help to inform the Final PEIS and will be included as an appendix.

The intent of the PEIS is to evaluate, in compliance with NEPA (42 U.S.C. 4321 et seq.) and the NOAA Administrative Order (NAO) 216-6, the potential direct, indirect, and cumulative impacts on the human environment of the alternative approaches to implementing recovery actions, including research and enhancement activities and the subset of actions requiring permits, under the Hawaiian monk seal recovery program. The intent of this Cultural Impact Assessment is to assess the potential impacts of the actions proposed in the PEIS on cultural resources, practices, and beliefs, and to identify measures to minimize the adverse impacts of the proposed alternatives.

Several actions in the PEIS may have the potential to affect cultural resources and traditional practices within the Hawaiian archipelago. Cultural resources and the traditional practices associated with their use may be located both along the shoreline and within inshore waters. The present project focuses on identifying Native Hawaiian concerns regarding the potential impacts of the NMFS Hawaiian monk seal recovery actions on cultural resources and traditional practices significant to Native Hawaiians.

2.2 HAWAIIAN MONK SEAL

The Hawaiian monk seal is among the rarest of all marine mammals. It is endemic to the islands of the Hawaiian chain and found nowhere else on earth. Hunted to the brink of extinction in the late 19th century, Hawaiian monk seals have been declining in population since the late 1950s. The monk seal population is currently declining overall. While the larger monk seal population in the NWHI is shrinking, the population within the MHI is growing. At present, the majority of monk seals live in six main breeding subpopulations located within

the NWHI on Kure Atoll, Midway Islands, Pearl and Hermes Reef, Lisianski Island, Laysan Island, and French Frigate Shoals. Smaller breeding sub-populations also occur on Mokumanamana (Necker) and Nihoa Islands. Monk seals have also been observed at Gardner Pinnacles and Maro Reef. Monk seals are also found within the MHI where births have occurred on many of the major islands. As a general rule, Hawaiian monk seals are relatively solitary and do not congregate in large groups as do other seal species such as sea lions and harbor seals. Monk seals occupy a range of marine and coastal habitats. They frequent the waters surrounding atolls, islands, and areas farther offshore on reefs and submerged banks. Monk seals are also found using deepwater coral beds as foraging habitats. They often haul-out on land to rest during the day, and prefer sandy, protected beaches surrounded by shallow waters when pupping.

Hawaiian monk seals are apex predators within the coral reef environment. They are primarily benthic foragers, feeding along the sea bottom on a variety of prey including fish, cephalopods, and crustaceans, although their diet varies depending upon location, sex, and age. Recent research undertaken by NMFS has attempted to estimate the food consumption of the current population of Hawaiian monk seals within the MHI and to compare the families of fish found in the monk seal diet and those targeted by recreational and subsistence fisheries (Sprague et al., 2013). The findings of the study indicate that although monk seals consume some of the same fish species as traditional subsistence fishers, the amount of these resources consumed is minimal when compared with that consumed by apex predatory fish.

2.3 PROJECT AREA

The Project Area for the PEIS encompasses the range where Hawaiian monk seals are found throughout the Hawaiian Archipelago, including the MHI, the NWHI, and Johnston Atoll (Figure 1). It includes portions of the open-ocean and near-shore environment where monk seals may be found, as well as the shore zone of the islands, islets and atolls that make up the Hawaiian Archipelago and Johnston Atoll. For the purposes of NEPA, the shore zone generally includes those terrestrial areas 5 meters inland from the line where the shore meets the sea. In addition, secondary use areas, such as research field camps in the NWHI, are also considered for inclusion.

2.3.1 Main Hawaiian Islands

The eight main islands of the Hawaiian chain include the high volcanic islands of Hawai‘i, Maui, Kaho‘olawe, Lāna‘i, Moloka‘i, O‘ahu, Kaua‘i and Ni‘ihau, which rest at the southeastern end of the archipelago. The areas within these MHI potentially affected by the monk seal recovery actions address in the PEIS include the shoreline areas and the immediate offshore zone.

2.3.2 Northwestern Hawaiian Islands

The NWHI consist of those islands, atolls, rocks, reefs and shoals that lie to the northwest of the MHI. Also known as the Leeward Islands, the NWHI extend approximately 1,240 miles (2,000 kilometers) from the island of Nihoa in the southeast to Kure Atoll in the northwest (Figure 2).

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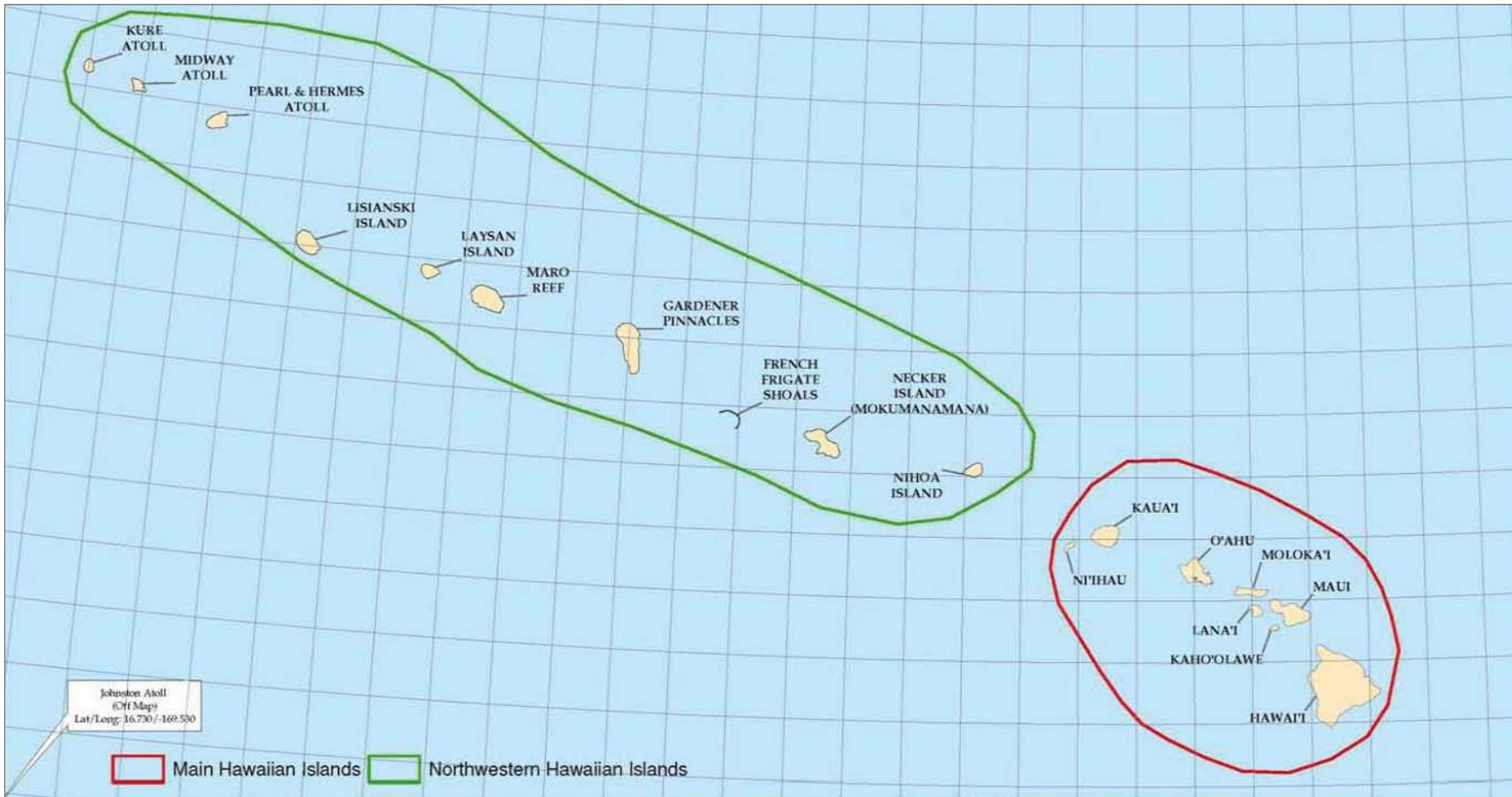


Figure 1. Project area for the Monk Seal Programmatic Environmental Impact Statement (map courtesy NOAA).

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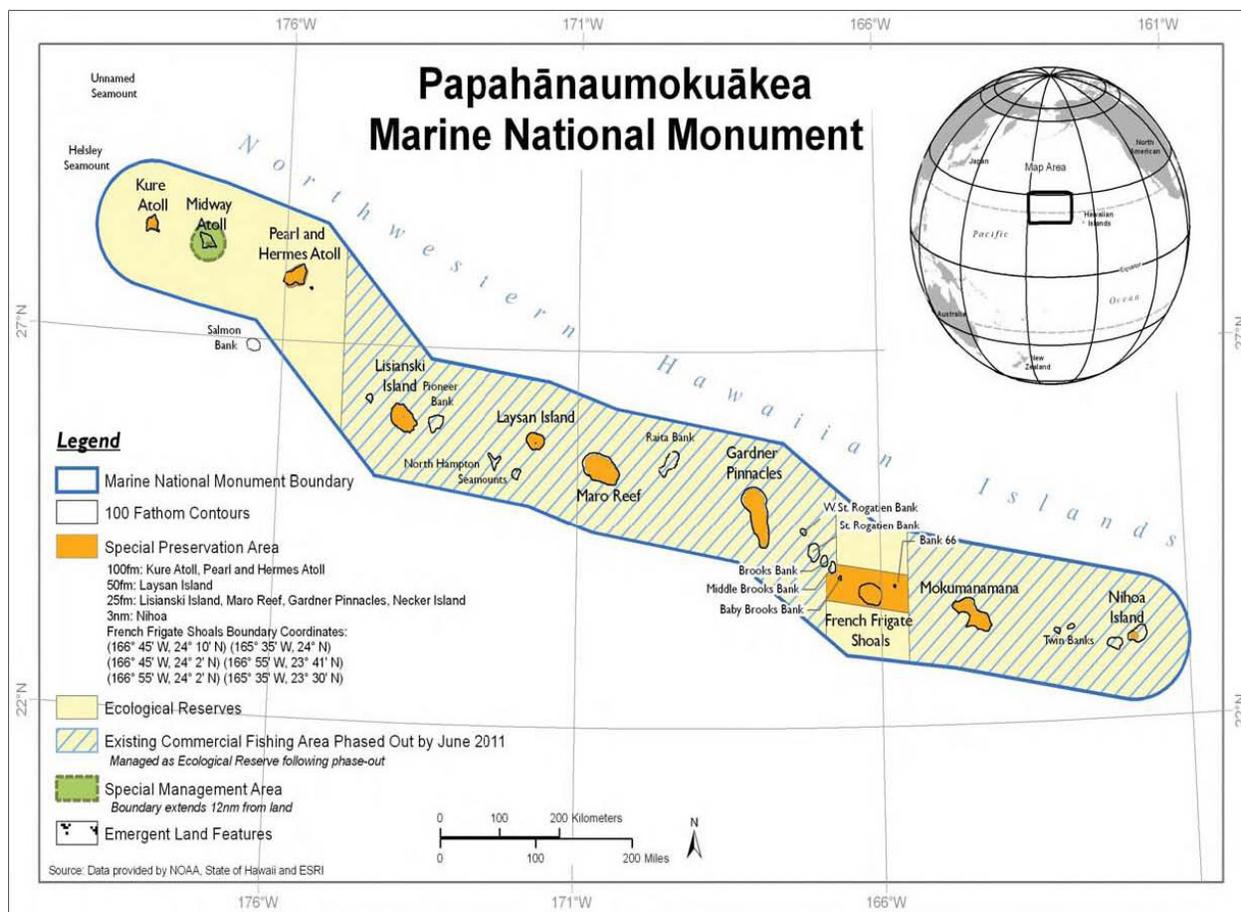


Figure 2. Northwestern Hawaiian Islands (map courtesy NOAA).

In 2006, the entire NWHI were included within the Papahānaumokuākea Marine National Monument, which was created by Presidential Proclamation 8031 on June 15, 2006 under the authority of the Antiquities Act of 1906 (16 U.S.C. §§ 431-433). The Monument, which encompasses an area of approximately 142,948 square miles (370,234 square kilometers), includes the ten main islands and atolls that make up NWHI and the surrounding waters. Its boundaries begin 125 miles west of the main Hawaiian Island of Kaua‘i. Papahānaumokuākea Marine National Monument is the largest protected area in the United States, as well as the world’s largest fully protected marine area. On 30 June 2010, the World Heritage Committee of the United Nations Educational, Scientific and Cultural Organization (UNESCO) unanimously inscribed Papahānaumokuākea as a mixed (i.e., cultural and natural) site. The management of the Monument is under the co-trusteeship of the NOAA, the U. S. Fish and Wildlife Service and the State of Hawai‘i.

2.4 PREVIOUS STUDIES

Several previously existing studies were taken into consideration in preparing this Cultural Impact Assessment. The two studies described below were particularly significant.

2.4.1 Cultural Significance Report and Previous PEIS Cultural Impact Analysis

As part of ongoing efforts to understand cultural knowledge and concerns regarding Hawaiian monk seals, NMFS funded a report under contract, entitled *Historic and Contemporary Significance of the Endangered Hawaiian Monk Seal in Native Hawaiian Culture*, 2011. The report was prepared by John Kittinger, Trisann Māhealani Bambico, Trisha Kehaulani Watson, and Edward W. Glazier (Kittinger et al. 2011; the results of this research were also published in Kittinger et al. 2011 and Watson et al. 2011). This report is included as Appendix J of the Final PEIS, and served as a reference for the section of the Draft PEIS analyzing potential cultural impacts.

2.4.2 Relevant Associated Cultural Impact Assessments

In 2008, the State of Hawai‘i Department of Land and Natural Resources (DLNR), Division of Aquatic Resources prepared a Cultural Impact Assessment associated with the proposed implementation of the Papahānaumokuākea Marine National Monument Management Plan (MMP), and the Environmental Assessment (EA) for proposed MMP activities. The development of the draft sanctuary management plan for the NWHI involved extensive consultation with the Native Hawaiian community and Native Hawaiian cultural practitioners (State of Hawai‘i 2008:22). This Cultural Impact Assessment has relevance for the present study as it outlines many of the Hawaiian cultural resources, beliefs and practices associated with the NWHI. Elements of this study have therefore been incorporated in the present report.

2.5 SCOPE OF WORK AND OBJECTIVES

The objectives of the present Cultural Impact Assessment were to assist NMFS in revising relevant sections of the Draft PEIS to produce the Final PEIS. This was undertaken, in part, to fulfill statutory obligations under NEPA to assess potential impacts to cultural resources during the planning and implementation of the Hawaiian Monk Seal Recovery Program. This report focuses on identifying Native Hawaiian concerns regarding the potential impacts of NMFS Hawaiian monk seal recovery actions on traditional cultural resources, beliefs and practices. Potential effects on historic properties and traditional cultural properties have been dealt with in a separate document (Final PEIS Appendix B) detailing the NHPA Section 106 consultation carried out in association with the monk seal recovery action PEIS.

The preparation of this Cultural Impact Assessment involved extensive research into the historic interactions between monk seals and Native Hawaiians, and the cultural significance that monk seals may have held within traditional Hawaiian society. Research was also undertaken to identify traditional Hawaiian activities that may be affected by monk seal recovery actions. A series of public meetings were conducted to elicit input from Native Hawaiian individuals and organizations and other concerned parties regarding the cultural resources, practices and beliefs potentially affected by the proposed actions.

Several sections of the Final PEIS reflect revisions to the Draft PEIS based upon the findings of this Cultural Impact Assessment. These sections include:

- Section 3.0 Affected Environment
- 3.4 Social and Economic Environment

3.4.6 Cultural Environment

Section 5.0 NEPA Compliance, Implementation, and Adaptive Management of the Preferred Alternative

5.6 Recommendations for Coordination with Stakeholders and Communities

5.6.1 Native Hawaiian and Community-Based Programs

Additional sections have been added to the Final PEIS to address the impacts of the proposed actions on cultural resources and traditional cultural practices. These include:

Section 4.0 Environmental Consequences

4.4 Steps for Determining Level of Impact

4.4.3 Impact Criteria for Socioeconomic Resources

Impact Criteria for Cultural Resources and Traditional Cultural Practices

4.9 Social and Economic Environment

4.9.4 Cultural Resources and Traditional Cultural Practices

Section 5.0

5.5 Mitigating Potential Impacts to Cultural Resources and Historical Properties

5.5.2 Training in the Recognition and Avoidance of Cultural Resources and Historic Properties

5.5.4 Northwestern Hawaiian Islands

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3.0 METHODOLOGY

The intent of this Cultural Impact Assessment is to identify cultural resources, and religious and/or traditional practices that may be affected by the actions proposed in the PEIS for Hawaiian monk seal recovery actions, to determine the potential adverse impacts of these actions, and to develop acceptable mitigation measures to avoid, offset, or minimize these impacts. Preparation of the Cultural Impact Assessment involved a combination of scholarly research and analysis, public consultation, and collaboration with various agencies, organizations and individuals.

3.1 ARCHIVAL RESEARCH

Archival research undertaken as part of this study involved a detailed examination of a variety of available resources. These resources included transcribed traditional *oli* (chants), *mele* (songs), *mo'olelo* (stories, legends, and traditional history), *'ōlelo no'eau* (proverbs and traditional sayings), traditional place names, accounts from early visitors to the islands, Hawaiian language newspaper articles, historic documents, maps and photos, archaeological reports, and other previous research reports.

Research was conducted at a range of relevant institutions as well as in the personal collections of the researchers. Sources Institutions and sources used include:

- State Historic Preservation Division Library – Archaeological reports and maps;
- Bishop Museum Library and Archives – Hawaiian Ethnographic Notes including Mary K. Pukui translations of Hawaiian newspaper articles of 1800s, photos, tape recordings, interviews, maps;
- University of Hawai'i at Hilo Esther Mo'okini Library Hawaiian Collection – Journals, books, maps, reports; and
- Online sources of Hawaiian Language Newspapers including Ulukau Hawaiian Electronic Library, Ka Pa'a Mo'olelo, University of Hawai'i Archives Digital Archives Collection – Land use, place names, *mo'olelo*.

The purpose of the research was to attempt to trace the historic interactions between monk seals and Native Hawaiians through time and to determine the cultural significance that monk seals held in traditional Hawaiian culture. The findings of this research are summarized briefly in Section 6.3 and presented in detail in Appendix B of this document.

3.2 PUBLIC CONSULTATION

As part of the consultation for this Cultural Impact Assessment, a series of community meetings were held at various venues on the islands of Moloka'i, Lāna'i, Maui, Hawai'i, and O'ahu. The purpose of these meeting was to provide the public with the opportunity to offer information on the cultural resources and traditional practices that may be affected by the recovery actions outlined in the monk seal PEIS and to enable Native Hawaiian organizations and other interested parties to assist in developing strategies for the mitigation of impacts resulting from these proposed actions. The results of these community meetings are discussed in Section 5.0.

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4.0 ACTIVITIES RELATED TO HAWAIIAN MONK SEAL RECOVERY

4.1 CURRENT ACTIVITIES

The existing permit issued to the NMFS Pacific Islands Fisheries Science Center (PIFSC) under the Marine Mammal Protection Act (MMPA-ESA Permit No. 10137-05) authorizes research and enhancement activities on Hawaiian monk seals. These activities, which include aerial, vessel, and ground surveys, sample collection, medical treatment, marking of animals, attachment of telemetry instruments, translocation and temporary captivity are listed in Table 2.10-1 of the PEIS. The PIFSC is authorized to undertake these activities each year through June of 2014, at which time the existing permit will expire.

4.2 ACTIVITIES PROPOSED IN PEIS

The proposed alternatives for Hawaiian monk seal recovery actions are addressed in detail in Sections 3.7 to 3.10 of the PEIS and in Table 2.10-1. They are briefly summarized below.

Proposed Alternatives

Alternative 1 involves the continuation of currently authorized activities past 2014. Research and enhancement activities allowed under this alternative are listed in Table 2.10-1 of the PEIS. No new activities or expanded scope of existing activities would occur under this status quo alternative. Under Alternative 1 the translocation of seals would only take place within the MHI or within the NWHI. There would be no translocation of seals from the NWHI to the MHI or from the MHI to the NWHI. Activities conducted under Alternative 1 include aerial, vessel and land-based surveys, and some handling and transportation of Hawaiian monk seals. Boats and land vehicles will be used to transport researchers and possibly animals. Researchers will cross beach and dune areas on foot to reach monk seal locations. Recovery activities will be conducted throughout the APE, in the MHI, NWHI, and on Johnston Atoll. Researchers will seasonally (typically April or May through August) occupy existing camp sites in the NWHI.

Alternative 2: Under Alternative 2, presently authorized activities as permitted under the existing permit (10137) will continue until 2014. However, once the present permit expires the only research and enhancement activities carried out would be those that either do not require a new permit or are allowed under the provisions of the MMPA's MMHSRP (Title IV, 16 U.S.C. 1421) and the permit held by the MMHSRP. No new permit would be issued to replace 10137 when it expires

Alternative 3: Alternative 3 is the preferred alternative and encompasses the range of actions considered most promising for fostering monk seal recovery in the next several years. Under Alternative 3, all activities currently permitted would continue, and new permissions would be granted with expanded scope and methods, with restrictions and mitigation. Additional actions would include increased handling of Hawaiian monk seals. Alternative 3 would also include a seal behavior modification program intended to prevent or reduce human-monk seal interactions. Also under Alternative 3 the scope and number of seal translocations would also be expanded (see PEIS Section 3.9). This would include

the translocation of Hawaiian monk seals within the MHI or within the NWHI, as well as the translocation of a limited numbers of seals from the MHI to the NWHI. As a result, boat and land vehicle activity, as well as shoreline activities, would be greater under Alternative 3 than under Alternatives 1 or 2.

Alternative 4: This alternative would encompass all of the activities permitted under Alternative 3 with the addition of the option for temporary translocation of weaned pups from the NWHI to the MHI as described in Section 3.10 of the PEIS. The increased capture and transport of the seals under Alternative 4 would result in increased boat and land vehicle traffic, as well as pedestrian traffic to and from the capture site.

4.3 TASKS ASSOCIATED WITH PROPOSED ALTERNATIVES

1. Translocation

This activity involves the temporary or permanent translocation of weaned pups, juveniles and sub-adults, and adult males within or between subpopulations within the species range. For Alternatives 1 and 2, this includes translocations within the NWHI and within the MHI, but not between the NWHI and the MHI. Alternative 3 also includes translocations from the MHI to the NWHI. Under Alternative 4 this also includes temporary translocations from the NWHI to the MHI.

Tasks Involved: Translocation within the NWHI and (under Alternative 4) from the NWHI to the MHI

Capture of the seal:

Seals are captured by manual physical restraint, herding (sometimes with plywood boards), and placed in nets or cages for transport. The removal cage (for adults) or net (for pups) is transported to the capture site by boat and is hand-carried from the boat to the seal's location on the beach. Depending on the size of the seal, two to four NOAA staff will be present to carry the cage or carrier and to monitor the seal. There is no large-scale movement of sand or digging.

Transport to the release site:

The captive seal is then hand-carried to the release site or to the waiting boat for transport to the release site.

Release of the seal:

The capture process is reversed at the release site, whether from a net or cage. The captive seal is hand-carried from the boat to the release site. Pups are typically released on the beach above the water-line. Depending on the size of the seal, two to four NOAA staff will be present to carry the cage or net and to monitor the seal.

Translocation within the MHI and (under Alternative 4) from the MHI to the NWHI

Capture of the seal:

Seal cages are typically transported to the capture site by truck. As a seal is usually translocated from an area of human population to a more remote locale, the capture site is likely to have nearby vehicle parking for the truck, as in the case of a beach park, or at least nearby access to a

paved road. No off-road vehicle access is involved. The cage (for adults) or net (for pups) is hand-carried from the truck to the seal's location on the beach. Depending on the size of the seal, two to four NOAA staff will be present to carry the cage or carrier and to monitor the seal. There is no large-scale movement of sand or digging.

Transport to the release site:

The captive seal is hand-carried to the waiting truck or boat for transport to the release site. The cage is typically not carried a long distance due to its weight. As the release site is usually remote, seals are often transported by boat.

Release of the seal:

The capture process is reversed at the release site, whether from a net or cage. The captive seal is hand-carried from the boat to the release site. Pups are typically released on the beach above the water-line. Depending on the size of the seal, two to four NOAA staff will be present to carry the cage or net and to monitor the seal.

2. Carcass Removal

Removal of a deceased animal in the MHI involves collection of the carcass and its transport to a necropsy facility. The site is accessed according to the same process outlined above for translocation via truck for a populated area or boat for a remote area. When the site is remote, two to four NOAA staff may be required to hike from the road, producing cross-country pedestrian traffic.

This activity in the NWHI involves access to the site and carcass removal by boat or on foot. Some necropsies are conducted where carcasses are found in the NWHI (without transporting the carcass).

3. Other Activities

Other activities proposed in the Alternatives (see Chapter 2 of the PEIS), including disentanglement, health assessment, etc., may involve pedestrian traffic or boat traffic to access the seals. The sites would be accessed according to the same process outlined above for translocation via truck for a populated area or boat for a remote area. When the site is remote, two to five NOAA staff may be required to hike from the road, producing cross-country pedestrian traffic.

This activity in the NWHI involves access to the site by boat.

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5.0 NATIVE HAWAIIAN AND COMMUNITY CONSULTATION

5.1 THE CONSULTATION PROCESS

The community consultation for this Cultural Impact Assessment consisted primarily of a series of public meetings held on various islands. These meetings were intended to provide the public with the opportunity to offer information and raise concerns regarding the cultural resources and traditional practices that may be affected by the proposed Hawaiian monk seal recovery actions. The results of these meetings were combined with the results of interviews and consultations undertaken as part of the original Draft PEIS.

5.2 FINDINGS FROM PREVIOUS CONSULTATIONS

As has been mentioned (Section 2.4.1), a series of unstructured ethnographic and oral history interviews were conducted with thirty Native Hawaiian community members, cultural practitioners and *kūpuna* to gather information on the role that monk seals played in traditional Hawaiian culture and to document the views of these informants regarding the potential impacts of monk seal recovery actions. The results of these interviews were presented and discussed in the report included as Appendix J of the Final PEIS (Kittinger et al. 2011).

The authors of this study found substantial differences in the views of the various individuals interviewed. “While some Native Hawaiian community members hold positive views about the monk seal, others view the monk seal negatively and do not associate any cultural significance to the species historically or in modern times” (Kittinger et al. 2011:17). Their conclusion was that, “Respondents exhibited a plurality of views regarding the monk seal, ranging from hostility or ambivalence to strong feelings of conservation and stewardship. This suggests lack of a consensus in the Native Hawaiian community regarding the monk seal and heterogeneity in perceptions and socio-cultural values associated with the species” (Kittinger et al. 2011:16).

5.2.1 Concerns Expressed

A number of concerns were expressed by individuals consulted during this previous study. While the most commonly expressed concern was the impacts of monk seal presence on traditional subsistence fishing, there were other concerns raised as well.

Traditional Subsistence Fishing

The authors of the 2011 study (Kittinger et al. 2011) found that the most commonly mentioned conflicts between humans and Hawaiian monk seals centered on traditional subsistence fishing practices. The report mentions that, “Monk seals are viewed by Native Hawaiian fishers and their families as direct competitors, in that they preferentially take fish specifically targeted by fishers. Many respondents believe that when interactions occur, they inhibit the ability of fishers to provide food for the household. Other fishers cite the aggressive behavior of monk seals as a major problem. Common interactions include seals taking fish off of lines or out of fishers’ nets, but increasingly seals are interacting with boats and fishermen directly – in some cases fishers have been bitten by monk seals. These interactions are viewed by some as impacting cultural fishing practices, and are further compounded by existing regulations that restrict fishing and the depleted condition of fisheries resources in the MHI” (Kittinger et al. 2011:18).

Cultural Integration

Another source of concern raised during informant interviews was the restrictive nature of Federal regulations regarding Hawaiian monk seals. Several of those interviewed felt that Federal regulations restricted the ability of Native Hawaiians to interact with monk seals as part of their natural environment. It was expressed that only through direct interaction could monk seals be integrated into contemporary Hawaiian culture. “Among respondents who view the species negatively, the belief that the monk seal is not endemic is exacerbated by the prohibitions against interacting with the seal. Some respondents state the perspective that modern cultural knowledge cannot be generated because the monk seal “cannot be touched and used for anything.” Restrictions on use have precluded indigenous communities from perpetuating cultural traditions for other protected species such as sea turtles. Ancient cultural knowledge is believed to be nonexistent due to the recent arrival of the monk seal in the MHI, but respondents also suggested that modern knowledge of the seal will accrue with the current generation that is interacting with the monk seal. A key question among this group is how seals will be integrated into Hawaiian culture and what will the cultural exchange be with the species in the modern context” (Kittinger et al. 2011:18).

5.2.2 The Question of Stewardship

The authors of the study found that positive reactions to monk seal presence were more common in relatively isolated rural communities. They note some communities have taken on themselves the role of stewards, looking after the health and wellbeing of their resident monk seal population. The report notes that, “In a few unique places in the archipelago monk seals are regarded as a natural part of the ecosystem and human-monk seal conflicts appear to be minimal. These areas tend to be rural and fairly isolated communities that are characterized by a higher degree of self-sufficiency, and where familial traditions and local decision-making processes are preserved. On Ni‘ihau Island, for example, monk seals became established in the 1970s. Community members discussed the social impacts associated with monk seal colonization (e.g., increased presence of sharks), and ultimately decided to act as stewards of the animals. As a result, a sub-population has become established and residents have developed a stewardship ethic towards the species. A similar situation is occurring in the isolated Kalaupapa community on Moloka‘i Island, where another sub-population is thriving in the MHI, and where community residents largely leave seals alone. In these communities, fishers and other ocean users will move away from areas where seals are visible in order to minimize interactions” (Kittinger et al. 2011:18).

5.3 COMMUNITY MEETINGS

As part of the preparation of the present Cultural Impact Assessment, a series of community meetings were announced and held on six of the eight MHI (the exceptions were Ni‘ihau and Kaho‘olawe). The purpose of these meetings was to seek community input on the proposed Hawaiian monk seal recovery actions as presented in the Draft PEIS. Information sought included potential adverse effects to historic properties and/or traditional cultural properties, as well as information on potential impacts to cultural resources and practices that might result from implementation of Hawaiian monk seal recovery actions. The press release announcing these meetings is included in Appendix A of this document.

These meetings were planned, convened, and facilitated by Dr. Paul Cleghorn from Pacific

Legacy. Members of NMFS staff participated in each meeting, providing information and responding to concerns expressed by those attending.

5.3.1 Meeting Schedule

All meetings were held at public venues (elementary, middle or high schools) between 6:00 and 8:00 pm to allow them to be attended by individuals who worked or attended school during the day. The meetings were held at eleven venues on six islands.

Moloka'i

Kaunakakai (29 October 2012) Moloka'i High School

Lāna'i

Lāna'i City (30 October 2012) Lāna'i High and Elementary School

Kaua'i

Waimea (7 November 2012) Waimea High School
Kapa'a (8 November 2012) Kapa'a Middle School

Maui

Hāna (14 November 2012) Hāna High School
Lāhainā (15 November 2012) Lāhaināluna High School

Hawai'i

Hilo (27 November 2012) Hilo High School
Kona (28 November 2012) Kealakehe Elementary

O'ahu

Wai'anae (11 December 2012) Wai'anae High School
Wai'alua (12 December 2012) Wai'alua High and Intermediate School
Waimānalo (13 December 2012) Waimānalo Elementary and Intermediate School

5.3.2 Summary of Community Meetings

It was found that each meeting possessed its own tenor, and often its own particular area of interest, depending upon the individuals attending. The greatest number of concerns and the strongest opposition to the actions proposed in the DPEIS were expressed at meetings in Kapa'a, Hāna, and Lāhainā.

Moloka'i (Kaunakakai, 29 October 2012)

Only three members of the public attended the Moloka'i meeting. NMFS staff provided the background information on the project, as well as information on seal behavior, especially as it relates to seal movement and seal observations on Moloka'i. No concerns were expressed or issues raised.

Lāna'i (Lāna'i City, 30 October 2012)

A total of four members of the public attended the Lāna'i meeting. Numerous concerns were raised, and NMFS staff spent time answering questions and addressing concerns.

Kaua'i (Waimea, 7 November 2012)

A total of four members of the public attended the Waimea, Kaua'i meeting. The meeting was lively and productive. The group was more interested in discussing traditional activities than historic resources.

Kaua‘i (Kapa‘a, 8 November 2012)

A total of 16 members of the public attended the Kapa‘a, Kaua‘i meeting. The meeting started out with several attendees expressing displeasure regarding the poor advertising of the meeting. They felt it should have been on all of the radio stations and in the newspaper. A tape recording was made of the meeting because NOAA had been informed that some of the people intended to present their views in ‘*olelo Hawai‘i* (the Hawaiian language), and the tape was made so that these presentations could later be translated by Pacific Legacy staff. Only one young boy (approximately 10 to 12 years old) presented a statement in ‘*olelo Hawai‘i*. There was a great deal of anger and frustration expressed at the meeting, but the attendees would not allow NMFS staff to provide them any numbers or information. They accused NOAA of not listening to the people. The main sentiment brought away from the meeting was that the meeting participants strongly feel that the translocation of seals will alter their lifestyle and they are adamantly opposed to any activity that would increase the number of seals in their area.

Maui (Hāna, 14 November 2012)

A total of 18 members of the public attended the Hāna, Maui meeting. Some participants expressed their frustration that this was the third or fourth meeting held on Maui regarding monk seals, and it does not seem that NOAA is listening to the feelings of the community. They felt that repeatedly coming into the community and asking the same questions, without addressing their answers, was insulting to the community. There is deep frustration that NOAA keeps coming back asking the same questions and wanting to do the same things without acknowledging that the community is opposed to these actions. This sense of a federal agency not listening permeated the meeting.

The community is adamant that they do not want any new seals brought into the area and are not happy about the seals that are already here. The overriding sentiment appeared to be that the community wants seals to be taken from the MHI to the NWHI. This point, with slight variations (relocate seals anywhere but here) was repeated many times. It is their sincere belief that monk seals are not native to the area and are causing adverse impact to their lives. Minimally they would like to see no actions taken regarding existing seal populations -- let nature run its course. If the seals survive, ok if they perish, ok.

There is a strong sense by a least some members of the community that the seal recovery program is a means for the U.S. Federal Government to exert greater control over the people of Hawai‘i. There is a strong lack of trust and a strong sense of suspicion. The overriding sentiment was that the community objects to a federal agency coming into their home telling them what to do.

Maui (Lāhainā, 15 November 2012)

A total of six members of the public attended the Lāhainā, Maui meeting. The general feeling of the attendees was that monk seals should not be translocated into the MHI. There was concern that an increase in Hawaiian monk seal populations would result in an increase in sharks and shark attacks. As one attendee expressed it, “We understand that seals are having survival problems and we are sorry for this. BUT, we need to be more concerned with the survival and quality of life of Hawaiians.”

Hawai'i (Hilo, 27 November 2012)

A total of seven members of the public attended the Hilo, Hawai'i Island meeting. The initial emphasis of public questions was on seal biology and seal populations. This discussion focused mainly on the management of species. There were a number of questions regarding carrying capacity and concern that by attempting to increase the monk seal population within the MHI NOAA was placing the interests of seals before the interests of fishermen. It seemed to be a productive meeting with many participants satisfied with the answers to their questions and concerns. Many useful suggestions were made by participants regarding what NOAA could do to educate and involve the public.

Hawai'i (Kona, 28 November 2012)

A total of four members of the public attended the Kona, Hawai'i Island meeting. The meeting consisted of about an hour long conversation about possible scenarios of human - seal interactions at the time of the first Polynesian settlement. Also, other general aspects about Hawaiian prehistory and adaptation to the land were discussed. All very interesting topics, but none of them pertained to the issues at hand.

O'ahu (Wai'anae, 11 December 2012)

A total of six members of the public attended the Wai'anae, O'ahu meeting. There was some discussion regarding the impact of seals on traditional fishing practices, and fishermen indicated that they had seen seals go after some of the same fish as subsistence fishers using hook and line.

O'ahu (Waialua, 12 December 2012)

A total of three members of the public attended the Waialua, O'ahu meeting. One attendee was a NOAA staffer unassociated with the project, while the remaining two were a Hawai'i State staffer and a State Representative. The meeting consisted of an informal discussion about the NOAA program with the State Official's representative. No issues were raised.

O'ahu (Waimānalo, 13 December 2012)

A total of five members of the public attended the Waimānalo, O'ahu meeting. Most of the concerns expressed in the meeting related to seals interfering with subsistence and commercial fishing activities. It was pointed out by one of the participants that commercial fishing grew out of traditional subsistence fishing practices.

5.4 IDENTIFIED CULTURAL RESOURCES AND CUSTOMARY PRACTICES

Participants attending the public meetings identified several cultural resources and customary practices that they felt would be affected by the proposed Hawaiian monk seal recovery actions.

5.4.1 Cultural Resources

Participants in the community meetings identified a number of types of cultural properties that might be affected by the activities proposed in the PEIS. These included:

- Coastal *heiau* (religious sites)
- Ko'a* (fishing shrines)
- Traditional stacked stone walls
- Sand dunes containing buried cultural deposits

Iwi kāhiko (ancient human remains)
Fishponds
Fishing Villages

5.4.2 Cultural Practices

Participants in the community meetings also identified a number of cultural practices, and by inference cultural resource areas, that might be affected by the activities proposed in the PEIS. These included:

Traditional Gathering Activities

Limu (seaweed) collecting
‘Opihi (limpet) collecting
Hau‘ukeuke (an edible sea urchin) collecting
Wana (sea urchin) collecting
Crabbing
Ula (lobster) collecting

Traditional Gathering Resource Areas

Limu (seaweed) collecting sites
‘Opihi (limpet) collecting sites
Hau‘ukeuke (sea urchin) collecting sites
Wana (sea urchin) collecting sites
Crabbing sites
Ula (lobster) holes

Traditional Fishing Activities

Throwing net
Hook and line
Spear fishing
Trolling

Traditional Fishing Resource Areas (some individuals felt that these might be threatened by the increased presence of seals)

Moi holes
Āholehole fishing areas
Menpache fishing areas

One fisherman on O‘ahu said that he has seen monk seals go after red and pink snapper (*Ōpakapaka* and *Onaga*). With the *Onaga*, he said that the seal would repeatedly toss the fish into the air and hit it again and again. Once the fish is pretty pulverized it is swallowed whole. Another fisherman has witnessed seals consuming puffer fish, trigger fish, and *Ōpakapaka/Onaga*.

They also noted that a detailed study of traditional fishing practices within the Hawaiian Islands has been undertaken by Kepā and Onaona Maly. The report of this study, *Ka Hana Lawai‘a a me Nā Ko‘a o Nā Kai ‘Ewalu* (A History of Fishing Practices and Marine Fisheries of the Hawaiian Islands Compiled From Native Hawaiian Traditions), includes information

obtained through archival research into Native Hawaiian traditions, historical accounts, government communications, *kama'āina* testimony and ethnography (Volume I), as well as oral history interviews with *kūpuna* and *kama'āina* (Volume II) (Maly and Maly 2003). It was suggested that NOAA use this report as a reference in understanding and mitigating for subsistence gathering and fishing.

In addition to traditional marine resource use, there are traditional activities related to the gathering of terrestrial plants that live near the shore for medicinal and other uses. Two examples that were raised during community meetings are:

Heialoa, a vine or creeper that has a yellow flower used for the treatment of a variety of ailments including cancer.

Name unknown, possibly *koko'olau*, a woody bush with a yellow flower, the root of which is used to treat sore throats.

5.5 ISSUES RAISED DURING COMMUNITY MEETINGS

The community meeting held throughout the islands elicited a wide range of public comments and concerns. A number of the concerns expressed did not deal directly with cultural or historic resource issues, but were more informational questions regarding human and monk seals interactions. The following concerns were expressed during the various community meetings. During the meetings, NMFS staff engaged in dialogue regarding the concerns and offered additional perspectives and information. Many of these concerns/questions are addressed in responses to comments of the Draft PEIS provided in the Final PEIS. It is important to note that some of the concerns outlined here involve assumptions based in incorrect information, or state information as fact that is not supported by any evidence. The meeting(s) at which each concern was raised has been noted in parenthesis. Different individuals attending different meetings sometimes expressed similar concerns. In these cases the concerns have been synthesized into one.

5.5.1 Concerns Not Directly Related To Cultural Resources or Practices

(Note: A comprehensive Comments Analysis Report is provided in Appendix C of the Final PEIS. The report provides a summary of all public comments NMFS received regarding the Draft PEIS and provides responses to those comments. Many of the concerns presented below are addressed in the Comments Analysis Report.)

General Concerns

Concern: What are NOAA's goals for monk seal recovery? (Hilo)

Concern: We do not know enough about the impact that the translocation of monk seals from the NWHI to the MHI will have. (Lāhainā)

Concern: What impact is the present population of the MHI having on fish populations and the natural environment? (Hāna)

Concern: Will coral reefs be impacted by monk seal translocations to the MHI? (Hāna)

Concern: Brackish water estuaries are nutrient/algae rich, which provide food for small fish, which are eaten by larger fish and so on. A seal coming into this area will have a tremendous impact on this fragile system. (Hāna)

Concern: A fisherman stated that he had been at a meeting where there was proposed a bag limit of two menpache (squirrel fish) per certain period. He felt that this was being proposed to leave more menpache for seals. He wants to know what the carrying capacity for seals is in the MHI. (Hilo)

Concern: One participant asked what is monk seals' feeding behavior at night? Fish sleep at night, so it is easier for them to be caught by seals at night. Seals haul out onto the shore during the day. (Lāhainā)

Concern: If a large population of seals congregates on one island, say Ni'ihau, and they become a problem for the owner, there would be a serious problem. What would NOAA do about this? (Hilo)

Concern: If NOAA's target is to ultimately have a monk seal population of 500 seals in the MHI (20 years out) we will need an extensive educational program for locals as well as tourists for everyone's safety. (Lāhainā)

Concern: In 1994, 21 aggressive male seals were translocated from Laysan Island in the NWHI to the MHI. Did the federal agency responsible for this action have the appropriate permits for this action? When NOAA has been asked this question before, there was no response. (Hilo)

Concern: The individual asking the previous question also wanted to know what impact these 21 male seals have on the local seal population? (Hilo)

Concern: What is the proposed ratio of males to females for the translocations proposed in the DPEIS? (Hilo)

Concern: Concern was expressed that adult seals who grew up in the MHI, after translocation to the NWHI will return to the MHI. (Hilo)

Concerns Regarding the Specifics of the PEIS

Concern: The DPEIS does not directly address the cumulative impacts of its proposed actions. (Lāna'i)

Concern: A concern was raised regarding the designation of critical habitat. The question was, once a critical habitat is identified, how does this affect traditional practices such as fishing? (Lāna'i)

Concern: Concern was expressed that the community really does not know what kind of numbers are to be considered for Monk seal relocation. How many seals make up the resident populations within the MHI? How many are being considered for relocation? Why is relocation necessary -- most think that "being in the wild out in the NWHI" would be preferable to being in areas where there is human activity. (Lāna'i)

Concern: The Draft PEIS needs to consider and evaluate economic, social, and cultural aspects of the project. What is the status of these considerations? (Hilo)

Concerns Regarding Seal Survival

Concern: If seals are translocated into the MHI from the NWHI and raised without the danger of shark predations, when they are taken back to the NWHI they will not have the survival skills to handle sharks. They will quickly become shark bait and be killed. (Lāhainā)

Concern: With larger numbers of seals being brought into the MHI there will be a greater risk of barges and other vessels hitting seals. Shipping companies should be required to obtain inadvertent take permits. (Hilo)

Concerns Regarding Public Safety

Concern: If more seals are brought to the MHI, will this will attract more sharks, which in turn could cause a greater number of shark attacks, posing a safety issue for humans. There was also the suggestion that there are a growing number of sharks and shark attacks. (Waimea, Kapa‘a, Hāna, Lāhainā)

Concern: The increase in the number of seals in the MHI will result in an increase in interactions between humans and seals with a resulting increase in the risk to public safety (e.g., seals biting humans). (Lāhainā, Hilo)

Concerns Regarding Monk Seal/Human Interaction

Concern: There was an instance where a family group went to the beach of a day of activities and someone came forward waving their arms and telling them that there was a seal present and that the group would have to leave. (Waimea)

Concern: Seals can and have hauled themselves out on boat launch sites, and vessels on trailers had to leave without launching. The seals need to be herded away. (Waimea)

Concern: If at the beach, a seal bites a child, then the father gets a gun and kills the seal, is the father liable for prosecution? (Kapa‘a)

Concern: A few participants expressed the concern that monk seals are becoming more aggressive towards fishers and divers, stealing fish and intimidating people. (Waimānalo)

Concern: Fishers are afraid to report hooking of seals, as there is a general conception that fishers are bad and that their nets and hooks harm seals. This fear is being fostered by NOAA. (Waimānalo)

5.5.2 Concerns Regarding Cultural Resources and Practices

(Note: A comprehensive Comments Analysis Report is provided in Appendix C of the Final PEIS. The report provides a summary of all public comments NMFS received regarding the Draft PEIS and provides responses to those comments. Many of the concerns presented below are addressed in the Comments Analysis Report.)

Concerns include that the increased number of seals in the MHI may impact traditional fishing practices, reduce catches, and attract monk seals to fishponds.

Concerns Regarding Traditional Fishing

Concern: The increase in monk seal populations resulting from the translocation of seals to the MHI will adversely impact subsistence fishing resources, including ocean and reef fish, *'opihī* (limpets), lobster, *he'e* (octopus), crab, and *limu* (seaweed). Part of the concern is with long term impacts, which the individuals concerned were not confident are fully known. (Kapa'a, Hāna, Waimānalo)

Concern: Another question raised was whether, if a monk seal is translocated to a specific beach or shore line area, does this prevent fishers from carrying on the traditional practice of fishing (including hook and line fishing as well as throw-net fishing) at that locale? This concern was brought up on more than one occasion during community meetings. (Lāna'i)

Concern: A similar question was, if a seal approaches a fisher's camp (fishing and camping being considered cultural practices), does the fisher need to move his camp or can the fisher stay because it is the seal that is approaching him? (Hilo)

Concern: Monk seals will patrol a beach area (swimming back and forth opposite the beach) before landing. Fishers are convinced that this patrolling scares off fish, so that people fishing there will haul in their lines and leave. (Waimea)

Concern: The fishing of *akule* in Hāna Bay by surround them is a traditional practice unique to Hāna. This is not practiced every year and the numbers of *akule* have dwindled. There is a concern that greater numbers of monk seals will impact this practice. (Hāna)

Concern: Monk seals can take fish off lines and off diver's strings. (Wai'anae)

Concern: There have been occasions where a group of commercial fishers was conducting surround catches when a couple of large monk seals come into the area and scare the fish away. The current changes and the catch opportunities are lost. (Waimānalo)

Concerns Regarding Historic Properties

Concern: One participant asked that if a fishpond is on the National Register of Historic Places and a monk seal enters the pond, where does the jurisdiction lie, with the NHPA and the protection of the historic property or with the Endangered Species legislation and the protection of the seal? A variation to this was the question of, if a monk seal enters a fishpond what is the best way to remove the seal and minimize impact to the pond. It was suggested that NMFS staff and volunteers be trained in removing seals from fishponds. (Hāna, Lāhainā)

Concern: What happens when a seal arrives at a Traditional Cultural Property, such as Mo'okini or Moku Ula, and becomes a problem. (Lāhainā)

5.5.3 General Comments Made During the Community Meetings

Among the general comments made by individuals attending the community meeting were the following.

A mother with several children did not want the seals translocated to the MHI, nor does she want any interference with the natural behavior of seals -- no moving, herding, harassing. Some participants expressed the sentiment that we should leave the seals alone and not intervene. Let nature take its course. There was concern expressed that the proposed action was a form of animal husbandry that used methods to manage a species rather than allowing nature to take its course.

A fisherman from Kaua'i stated his feeling that NOAA was putting the welfare of seals above the welfare of people. Other participants questioned whether NOAA was placing a higher priority on seals than on fishermen.

Some individuals expressed a strong feeling that the translocation of seals will have an impact on the total lifestyle of Native Hawaiians.

An elderly man from Kaua'i (born 1926) expressed his strong opposition to relocating seals from NWHI to the MHI. He said that this will deplete the fish populations. He suggested that seals translocated to islands in the south. There was a very strong feeling among some participants in the community meetings that if translocation is needed, the seals should be translocated elsewhere. Some of the possibilities suggested included Christmas Island, the Line Islands, Palmyra, Johnson, and Micronesia.

It was expressed by some individuals that while NOAA may consider the monk seals to be endangered, Hawaiians may see them as invasive. That monk seals are not native to the MHI, that they will destroy marine resources, and do not belong here.

Some participants stated that monk seals are not a part of the Hawaiian's cultural heritage.

One participant said that, we understand that seals are having survival problems and we are sorry for this. But, we need to be more concerned with the survival and quality of life of Hawaiians. There seems to be more effort to protect seals (and tourists) than there are to protect Hawaiians.

There seemed to be a general feeling among many participants in the community meetings that the public was unaware of the rules governing monk seal and human interactions. Many individuals felt that NOAA needed to make a greater effort to communicate and explain these rules to the general public.

It was also felt that misinformation is the biggest problem. Various numbers have been heard about how many seals are present in the MHI; how many are to be translocated there; what is the target number of seals in the MHI; people having to move or not use an area because of a seal's presence. People need proper information and meeting participants felt that it is NOAA's responsibility to furnish that information.

5.6 MITIGATION MEASURES RECOMMENDED DURING COMMUNITY MEETINGS

A number of possible mitigation measures were recommended by individuals attending the community meetings. These included:

Education of NOAA Staff and Volunteers

It was recommended that all personnel associated with the undertaking go through an orientation program that would include training in:

- Recognition and identification of cultural sites.
- Proper behavior around identified sites.
- How to report the presence of newly discovered sites.
- Getting seals out of fishponds.

This training may need to be repeated every so many years.

Public Education and Involvement

It was suggested that there is a need for a series of presentations by NOAA regarding what is allowed in terms of human/ monk seal interactions. This would include the restrictions on approach to seals, both in the water and hauled out, people's rights of access to beaches occupied by monk seals, and use of marine resources when monk seals are present. There was a general feeling that NOAA needed to create an educational process to inform the local public. This could also extend to education of *malahini* (visitors), which might include a video on airplanes for tourists coming to Hawai'i regarding proper behavior around whales, seals, etc.

It was recommended that NOAA work with local fishers and other beach users to determine and clarify the proper behavior around seals. It should empower ocean users to take care of seals through an educational program. NOAA also needs to provide clarification to the public of all laws and regulations governing seals and other endangered species. Education is the key. NOAA needs to determine and then communicate what impact seals (and other species such as turtles) have on the ecosystem. We need to look at the entire ecosystem and the role of the seals in this. Are there benefits from the seals? Maybe seals go after and consume invasive species. We need more community education. We need to foster a community management system.

5.6.1 Consultation

It was suggested that NOAA have a cultural representative for each *moku* (district) on each island. Input should be sought from each *moku* individually.

It was also suggested that if a seal needs to be removed from a sensitive cultural area, such as a fishpond, that NOAA contact the *kahu* (caretaker) of that site or a community contact/expert to get direction about such things as the best way to access the site, where to stage activities, where

to place the cage for the seal, etc. A protocol should be developed to govern this community consultation prior to an activity, and a list of community contacts should be developed.

Change in Fishing Rules

Upon learning that one of the reasons why monk seals are not surviving well in the NWHI is over-competition from *ulua* (jacks), it was suggested that fishing for *ulua* in the NWHI be allowed to lower the numbers of this predictor fish. The feeling was that this would solve many

problems; more fish for Hawaiians, better habitat for seals in the NWHI, and finally the possible resettling of seals away from the MHI.

Measures Not Directly Related to Cultural Concerns

During the community meeting a number of suggestions and recommendations were made that did not directly relate to the protection of historic properties or cultural practices. These included:

NOAA needs to follow up with people who call NOAA to report a seal issue.

NOAA needs to provide greater public involvement in working with seals (tagging, vaccinating, etc.) and in the initial viewing of critter cam footage to include more than just High School students.

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6.0 ASSESSMENT OF CULTURAL IMPACTS

The NEPA requires NMFS, as part of its PEIS, to consider the potential impacts that the proposed Hawaiian monk seal recovery actions may have on cultural resources. This includes consideration of any unavoidable adverse impacts to cultural resources or traditional cultural practices should the proposals put forward in the PEIS be implemented.

A range of cultural resources and traditional cultural practices have the potential to be affected by monk seal recovery actions proposed under the PEIS. These potential impacts can take two forms: 1) impacts resulting directly from the conduct of the recovery actions themselves, and 2) impacts resulting from the activities of seals influenced by the recovery actions, for example, seals that have been translocated or seals that have been intervened with using seal behavior modification techniques.

Three categories of activities under the proposed Hawaiian monk seal recovery plan have the potential to affect cultural resources and traditional practices:

1. Increased off-road land pedestrian traffic in remote areas to access the seals.
2. Increased vessel traffic to access the seals on remote beaches.
3. Increased human-seal interactions due to the translocation of seals (particularly from the NWHI to the MHI under Alternative 4).

6.1 POTENTIAL EFFECTS TO CULTURAL RESOURCES

Cultural resources that may be affected by activities associated with Hawaiian monk seal recovery are present in both shoreline areas (these include coastal plants and seaweeds traditionally gathered for their edible and medicinal properties), and offshore areas (these include marine fauna traditionally fished or gathered).

Among the resources located within the shoreline portion of the APE (25 meters inland from the line where the shore meets the sea) are native strand plants that are traditionally gathered for their medicinal properties. These fragile shoreline plants (such as *hinahina*, *pa'u o Hi'iaka*, and *kauna'oa*) could be accidentally damaged by pedestrian activities associated with monk seal observation, handling and translocation.

Cultural resources present within the inshore portion of the project area (waters up to 300 meters off from the shoreline) include fish, shell fish, and other marine organisms traditionally collected for food. These resources are much less likely to be directly affected by monk seal recovery activities, though it is possible that patches of edible *limu* (seaweed) could be disturbed during boat landings.

The increased presence of Hawaiian monk seals within the MHI as a result of translocation (particularly translocation from the NWHI to the MHI as proposed under Alternative 4) or other recovery actions has the potential to affect marine resources. Monk seals feed on some of the fish and shellfish species that were traditionally collected by Hawaiian fishers (Sprague et al., 2013). There has been public concern that increased Hawaiian monk seal presence within the MHI could result in a depletion of fish stocks, directly impacting the livelihood of those practicing traditional subsistence fishing. A detailed analysis of the impacts of all PEIS

alternatives on subsistence fishing is presented in Section 4.9.2 of the PEIS. The analysis concluded that all alternatives, including Alternative 4, were likely to have negligible impact on subsistence fishing.

6.2 POTENTIAL EFFECTS TO TRADITIONAL CULTURAL PRACTICES

Due to the temporary and transient nature of the physical activities associated with Hawaiian monk seal recovery as proposed in the PEIS, it is unlikely that customary practices such as fishing, gathering, swimming, or surfing will be significantly affected by recovery activities themselves.

Some concern has been expressed that an increase in Hawaiian monk seal populations due to the translocation of seals (primarily the temporary translocation of seals from the NWHI to the MHI under Alternative 4) and other recovery actions will adversely affect traditional subsistence fishing activities. There has also been concern that subsistence fishers would have their activities disrupted by the presence of federally protected monk seals occupying the shorelines of their chosen fishing grounds. Again, these concerns were considered in a detailed analysis of the impacts of all PEIS alternatives on subsistence fishing (Section 4.9.2 of the PEIS). The analysis concluded that all alternatives, including Alternative 4, were likely to have negligible impact on subsistence fishing.

6.3 THE HAWAIIAN MONK SEAL AS A CULTURAL RESOURCE

Considering the research and analysis presented by Reeve et al. in Appendix B of this document, available archaeological evidence indicates that for much of the period from the arrival of the first Polynesian voyagers up until Western contact, the Hawaiian monk seal was not abundant within the MHI, and there was little direct contact between monk seal populations and human populations. Extensive ethnohistoric research also presented in Appendix B supports this supposition regarding monk seal presence and human interaction in the MHI, and asserts that traditional cultural significance of Hawaiian monk seals was minimal as a result. Kittinger et al. (2011, 2012) ascribe a greater level of cultural significance than that indicated by the authors of Appendix B. However, Kittinger and co-authors also conclude traditional cultural significance varied extensively from place to place in the MHI, and in general, the significance of Hawaiian monk seals was very limited compared to that of other living marine resources, such as sharks or sea turtles.

With relatively limited research on the subject conducted to date, it is likely that researchers and Hawaiian cultural practitioners will continue to explore the traditional and contemporary cultural significance of Hawaiian monk seals. However, considering the information available at present, including the available research and input from the community meetings described in Section 5, NMFS has assumed that the cultural significance of Hawaiian monk seals was, and is, relatively limited for the purposes of this impact assessment. As a result of this apparent limited significance, assessing potential impacts on monk seals as a cultural resource was not prioritized in preparation of this Cultural Impact Assessment. Rather, priority was placed on assessing the potential impacts on the wide variety of cultural resources and practices that are well known and broadly accepted to have strong cultural significance.

6.4 EFFECTS OF PROPOSED ALTERNATIVES

Alternative 1 - Status Quo

Alternative 1 involves the continuation of currently authorized monk seal recovery activities past 2014. These include activities, such as monitoring and some sample collection that do not involve the capture and handling of seals, as well as activities that do involve the capture and handling of seals, such as marking, measuring, sample collection, de-worming, disentanglement, removal, and translocation. Under this alternative, the translocation of seals only takes place within the MHI or within the NWHI. There is no translocation of seals from the NWHI to the MHI or from the MHI to the NWHI.

Activities conducted under Alternative 1 (as described in Section 4.2) include aerial, vessel, and land-based surveys, and some handling and transportation of Hawaiian monk seals. Boats and land vehicles will be used to transport researchers and possibly animals. Researchers will cross beach and dune areas on foot to reach monk seal locations. Recovery activities will be conducted throughout the APE, in the MHI, NWHI, and on Johnston Atoll. Researchers will seasonally (typically April or May through August) occupy existing camp sites in the NWHI.

Direct impacts to cultural resources that could occur under Alternative 1 within the MHI include the disturbance, damage, or destruction of coastal plants (such as *hinahina*, *pa'u o Hi'iaka*, and *kauna'oa*) that are used in *lā'au lapa'au* (traditional medicine). This could occur if researchers drive over or walk through areas where these plants grow. Training of researchers and volunteers to recognize and avoid native strand flora should serve to mitigate these potential impacts.

Activities involved in the observation or translocation of monk seals, as conducted under Alternative 1 are unlikely to directly impact marine resources (fish, shellfish and other marine organisms) that are traditionally gathered for food. The only exception is the possibility that boat landings could disturb beds of *limu kohu* (*Asparagopsis sanfordiana*), *limu loloa* (*Gelidium spp.*), and other edible sea weeds that were traditionally gathered along the shoreline. Again, this potential impact can be mitigated by training researchers and volunteers to recognize and avoid these resources.

As part of its Hawaiian monk seal recovery program and other community coordination efforts, NMFS has developed a network of Hawaiian cultural practitioners and *kūpuna* (elders) to advise NMFS on cultural matters and to conduct cultural protocols during Hawaiian monk seal response and other monk seal management and recovery-related activities. This network of culturally knowledgeable individuals can assist in developing a cultural awareness training program for monk seal researchers and volunteers.

Permits are presently required for access to conduct Hawaiian monk seal research and enhancement activities within the limits of the Papahānaumokuākea Marine National Monument. Any activities associated with monk seal recovery actions undertaken within the NWHI must comply with Monument regulations and the terms and conditions of Presidential Proclamation 8031. Monument regulations state that “permittees [must] attend a cultural briefing on the significance of Monument resources to Native Hawaiians” and that there are “prohibitions against the disturbance of any cultural or historic property” (NOAA 2008b).

Under the terms of the Monument permit, researchers and volunteers involved in monk seal recovery actions are required to coordinate their activities with Monument staff to insure that they do not adversely impact any of the Monument's cultural resources. Within the NWHI, existing camp sites will be used and established cultural protocols put in place by the Monument will be followed.

As noted above, impacts of Alternative 1 on subsistence fishing are expected to be negligible (see Section 4.9.2 of the PEIS).

Alternative 2 - No Action

Under Alternative 2, presently authorized activities as permitted under the existing permit (10137) will continue until 2014. After 2014 there would be no permitted field research to monitor Hawaiian monk seal populations, implement de-worming, conduct translocation, etc. During the execution of the current permit through 2014, the potential impacts to cultural resources and traditional practices would be the same as for Alternative 1, and the same precautions are would be adopted. After the current permit expires, activities would be limited to remote observation and some collection of samples from materials left by monk seals. No monk seal translocation or handling would occur. Therefore, after 2014, Alternative 2 would involve less boat and land vehicle traffic, and less shoreline activity. The likelihood that shoreline resources would be directly impacted would be greatly reduced. Cultural awareness training for researchers and volunteers involved in monk seal recovery actions would still be conducted to help mitigate potential direct impacts. As noted above, impacts of Alternative 2 on subsistence fishing are expected to be negligible (see Section 4.9.2 of the PEIS).

Alternative 3 - Limited Translocation (Preferred Alternative)

Under Alternative 3 currently authorized activities under Alternative 1 would be continued and additional activities would be conducted. These additional actions would include increased handling of Hawaiian monk seals for vaccination, deworming, and other activities. Alternative 3 would also include a seal behavior modification program intended to prevent or reduce human-monk seal interactions. This program would serve to mitigate some of the potential impacts of translocation and other recovery actions on cultural resources and customary practices by reducing interactions between seals and people engaged in cultural practices such as subsistence fishing and other ocean use activities. Also under Alternative 3 the scope and number of translocations would be expanded. This would include the translocation of monk seals within the MHI or within the NWHI, as well as the translocation of a limited numbers of seals from the MHI to the NWHI. As a result, boat and land vehicle activity, as well as shoreline activities, would be greater under Alternative 3 than under Alternatives 1 or 2. The direct impacts of this increased activity on cultural resources could be successfully mitigated through the implementation of the training program described under Alternative 1. As noted above, impacts of Alternative 3 on subsistence fishing are expected to be negligible (see Section 4.9.2 of the PEIS).

Alternative 4 - Enhanced Implementation

Alternative 4 would encompass all of the activities permitted under Alternative 3, as well as two-stage translocation of Hawaiian monk seal pups from NWHI to MHI, and then back to the NWHI when the seals reach the age of two to three years. This project would be implement using a decision framework described in Appendix F of the PEIS. The increased capture and

transport of the seals under Alternative 4 would result in increased boat and land vehicle traffic, as well as pedestrian traffic to and from capture sites. The mitigation measures indicated under Alternatives 1 and 3 should ensure that impacts to cultural resources remain minimal to negligible. As noted above, impacts of Alternative 4 on subsistence fishing are expected to be negligible (see Section 4.9.2 of the PEIS).

6.5 SUMMARY OF IMPACTS

As described above, the research and enhancement activities proposed under Alternatives 1, 2, 3, and 4 could result in minor direct and indirect impacts on cultural resources and traditional cultural practices within the affected environment. Current and proposed research and enhancement activities would occur infrequently in limited areas along the shorelines of both the MHI and the NWHI. Due to the restricted nature of these activities, the direct impacts would also be limited and considered minor adverse at most. The mitigation measures mentioned above and described in Section 7 would serve to further minimize these potential impacts.

Impacts of all alternatives on subsistence fishing are expected to be negligible (see Section 4.9.2 of the PEIS).

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7.0 MITIGATION MEASURES

The potential impacts to cultural resources and customary practices from Hawaiian monk seal recovery actions proposed in the PEIS prepared by NOAA NMFS were found to be minimally adverse (see Table 4.10-10 of the PEIS). These potential impacts are expected to be significantly mitigated by the implementation of a series of measures outlined below.

7.1 TRAINING IN THE RECOGNITION AND AVOIDANCE OF CULTURAL RESOURCES

At least one NMFS staff and volunteer trained in recognition and avoidance of cultural resources will accompany every team conducting monk seal recovery activities in the field. These personnel will receive training in the recognition of shoreline cultural resources such as strand dwelling plants utilized in traditional medicine or edible sea weeds that were traditionally gathered along the shoreline. Such resources could be minimally impacted by pedestrian or boat traffic associated with monk seal recovery related activities. Personnel on hand with knowledge of these resources would allow NMFS teams to recognize and avoid impacting them. Participants in this training would include selected NMFS staff involved in the planning and carrying out of monk seal recovery actions as well as specific trained volunteers and NMFS-funded coordinators participating in the Marine Mammal Response Network. This training may be conducted in conjunction with training in the recognition and avoidance of historic properties, presented in the report of the NHPA Section 106 consultation, which is included as Appendix B of the Final PEIS.

7.2 COORDINATION WITH STAKEHOLDERS AND COMMUNITIES

NMFS intends to further develop and maintain close coordination with fishers, Native Hawaiians and other stakeholders to facilitate implementation of the proposed Hawaiian monk seal recovery actions. Ocean-oriented stakeholders and community members, such as fishers, surfers, Native Hawaiian practitioners, coastal property managers, etc., are among those most likely to encounter monk seals or most likely to have unique knowledge or experience that would be useful for successful implementation of the proposed activities in the MHI. This community collaboration will serve to foster consideration of traditional Hawaiian conservation and management practices, and enhanced incorporation of Native Hawaiian cultural practices and protocols in the NMFS Hawaiian monk seal recovery program. Native Hawaiian cultural practitioners may be included in the Hawaiian Monk Seal Recovery Team (see Section 5.6.2 of the PEIS) and will be involved in both the Main Hawaiian Islands Hawaiian Monk Seal Management Plan (see Section 6.6.3 of the PEIS) and in Partnership Grants (see Section 5.6.5 of the PEIS) as available funding allows.

7.3 OUTREACH AND COLLABORATION WITH SUBSISTENCE FISHERS

NMFS has a tradition of working with fishers in Hawai'i on a variety of issues related to fisheries management and conservation, and has recently begun partnering with government agencies, non-government organizations, and individual fishers to develop collaborative efforts supporting monk seal recovery in the MHI. Through its Protected Species Cooperative Conservation program, NMFS has awarded a grant (under Section 6 of the Endangered Species

Act) to the Hawai‘i Department of Land and Natural Resources (DLNR) to support Hawaiian monk seal (and sea turtle) conservation activities, including outreach and response coordination activities with local fishers.

NMFS has also recently developed a set of guidelines and recommendations for fishers to help prevent and mitigate monk seal interactions with fisheries. As a result of recent meetings and correspondences with individual fishers based on Kaua‘i, Moloka‘i and Maui, NMFS has plans to enhance its collaboration with fishers to protect seals from hooking and entanglement as well as to reduce seal depredation and other adverse impacts on fishing gear and catch. One initiative under consideration is a pilot program intended to partner with a small group of boat and shore-based fishers to document and mitigate fishery-seal interactions associated with the various types of fishing gear and methods used extensively in the MHI.

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APPENDIX A
ANNOUNCEMENT OF COMMUNITY MEETINGS

**COMMUNITY INPUT SOUGHT ON
NOAA'S PROPOSED
HAWAIIAN MONK SEAL RECOVERY ACTIONS***

NOAA Fisheries and Pacific Legacy, Inc., are holding a series of community meetings seeking community input on proposed Hawaiian Monk Seal Recovery actions. Specifically, we are seeking information on potential adverse effects to historic properties and/or traditional cultural properties (e.g., archaeological sites), as well as information on potential impacts to cultural resources and practices (e.g., fish ponds and fish pond operation) that may result from implementation of actions proposed in the Draft Programmatic Environmental Impact Statement (PEIS) for Hawaiian Monk Seal Recovery. Examples of the proposed actions include capture, veterinary treatment, transportation, and release of monk seals on shorelines throughout the Hawaiian archipelago. Input from community meetings around the State will be incorporated into a revised Cultural Impact Assessment for the PEIS and will form an important component of NOAA's compliance with the National Historic Preservation Act Section 106. The Draft PEIS is available for review at:

<http://www.nmfs.noaa.gov/pr/permits/eis/hawaiianmonkseal.htm>

MEETING SCHEDULE

(all meetings to be held between 6:00 - 8:00 pm)

Moloka'i

Kaunakakai (29 October 2012) Moloka'i High School

Lana'i

Lāna'i City (30 October 2012) Lāna'i High and Elementary School

Kaua'i

Waimea (7 November 2012) Waimea High School
Kapa'a (8 November 2012) Kapa'a Middle School

Mau'i

Hāna (14 November 2012) Hāna High School
Lāhainā (15 November 2012) Lāhaināluna High School

Hawai'i

Hilo (27 November 2012) Hilo High School
Kona (28 November 2012) Kealakehe Elementary

O'ahu

Wai'anae (11 December 2012) Wai'anae High School
Waialua (12 December 2012) Waialua High and Intermediate School
Waimānalo (13 December 2012) Waimānalo Elementary and Intermediate School

* THE PURPOSE OF THESE MEETINGS IS TO GATHER INPUT AND CONSULT WITH INTEREST PARTIES FOR THE PREPARATION OF A CULTURAL IMPACT ASSESSMENT (CIA) AND COMPLIANCE WITH THE NATIONAL HISTORIC PRESERVATION ACT SECTION 106 FOR THE HAWAIIAN MONK SEAL PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT.

For further information or to request sign language interpretation or other auxiliary aids, please contact Paul Cleghorn at cleghorn@pacificlegacy.com, (808) 263-4800 (phone), or (808) 263-4300 (fax). These meetings are accessible to people with disabilities.

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NOAA FISHERIES

PRESS RELEASE

COMMUNITY INPUT SOUGHT ON NOAA'S PROPOSED HAWAIIAN MONK SEAL RECOVERY ACTIONS*

NOAA Fisheries is holding a series of community meetings seeking community input on proposed Hawaiian monk seal recovery actions. Specifically, we are seeking information on potential adverse effects to historic properties and/or traditional cultural properties (e.g., archaeological sites), as well as information on potential impacts to cultural resources and practices (e.g., fish ponds and fish pond operation) that may result from implementation of actions proposed in the Draft Programmatic Environmental Impact Statement (PEIS) for Hawaiian Monk Seal Recovery. Examples of the proposed actions include capture, veterinary treatment, transportation, and release of monk seals on shorelines throughout the Hawaiian archipelago. Input from community meetings around the State will be incorporated into a revised Cultural Impact Assessment for the PEIS and will form an important component of NOAA's compliance with the National Historic Preservation Division Section 106. The Draft PEIS is available for review at: <http://www.nmfs.noaa.gov/pr/permits/eis/hawaiianmonkseal.htm>

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Kona (28 November 2012)

Hilo High School
Kealahou Elementary

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Wai'anae (12 December 2012)
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Wai'anae High School
Wai'anae High & Intermediate School
Waimānalo Elementary & Intermediate School

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APPENDIX B
THE HAWAIIAN MONK SEAL IN TRADITIONAL HAWAIIAN CULTURE

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Pacific Island Regional Office

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1.0 INTRODUCTION

To support the National Marine Fisheries Service (NMFS) in preparation of a Cultural Impact Assessment for the Hawaiian Monk Seal PEIS, extensive research and analysis was undertaken to better understand the role that monk seals may have played in traditional Hawaiian society. As part of this research, a thorough examination was made of both archaeological and archival resources. The evidence of seal remains recovered from archaeological excavations conducted within the Hawaiian Islands was examined. Dictionaries and other references were scoured to identify the various Hawaiian language terms used for the Hawaiian monk seal, as well as for other types of seals. A search was made of references to seals in traditional oli (chants) and mo'olelo (stories, legends, and traditional histories), as well as in the accounts of early Western visitors, articles in Hawaiian language newspapers, and other historic documents. A review of more contemporary references to Hawaiian monk seals and their significance was also conducted. The results of this research and analysis are presented below.

2.0 THE EARLY PRESENCE OF MONK SEALS IN THE HAWAIIAN ISLANDS

The Hawaiian monk seal (*Monachus schauinslandi*) is among the most evolutionarily ancient of the living members of the Phocidae family of true seals (Culliney 2006:108). They appeared in the eastern North Atlantic approximately 15 million years ago and then dispersed westward to the Caribbean and Central America (Lowry et al. 2011:397, Fyler et l. 2005:1276). Biologists continue to debate when monk seals may have reached the Hawaiian Islands, with estimates ranging from 15 million to 3.5 million years ago (Lavigne 1998:1, Fyler et l. 2005:1276). One of the closest relatives to the Hawaiian monk seal was the now-extinct Caribbean monk seal. It is likely that the ancestors of the Hawaiian monk seal moved from the Caribbean Sea into the Pacific Ocean through the Central American Seaway, which was located near the present Isthmus of Panama, and which closed approximately 3 million years ago (Lavigne 1998:1, Fyler et l. 2005:1276). At some time following their entry into the Pacific, a founder population of monk seals established itself in Hawai'i (Culliney 2006:109).

While the prevailing opinion among marine mammal scientists and the National Marine Fisheries Service is that monk seals have occupied the entire Hawaiian archipelago since the time of their initial arrival, direct physical evidence of their presence within the MHI is limited (Ragen 1999:184). This limited evidence has led to some debate as to whether monk seal populations occupied the waters of the MHI at the time of the arrival of the first Polynesian voyagers (Ragen 2003:1).

Bishop Museum zoologist Alan Ziegler, who analyzed the faunal remains recovered from numerous archaeological excavations conducted within the MHI (with the exception of Lāna'i, Kaho'olawe and Ni'ihau) between 1986 and 1999, found no monk seal bones in any of the midden assemblages he examined (one exception, the upland Lapakahi site, is noted below; Sara Collins, pers. comm.). This led him to state, in his 2002 book *Hawaiian Natural History, Ecology, and Evolution* (2002) that, "The absence of skeletal material from both paleontological and archaeological sites on the MHI suggests that, for obscure reasons, the species [Hawaiian monk seals] may always have been scarce in the vicinity of large young islands of the

archipelago, preferring instead the small sandy atolls” (Zeigler 2002:244).

There exists no biological reason why monk seals would prefer the “small sandy atolls” of the NWHI to the “larger young islands” of the MHI. Both the NWHI and the MHI possess a somewhat similar range of marine habitats including beaches on which to haul out and sheltered reefs in which to hunt for food (Ragen 1999:184 and Ragen 2003:1). It has been estimated that if monk seals were distributed throughout the Hawaiian archipelago prior to the arrival of the first Polynesians, “they may have comprised a metapopulation of perhaps 13, 14, or more colonies” (Ragen 1999:184). Given these estimates, how do we account for the scarcity of monk seal remains in paleontological and archaeological assemblages as noted by Zeigler?

The lack of paleontological evidence for the presence of Hawaiian monk seals within the MHI is not surprising. Given their aquatic nature, and the fact that they seldom haul out further inland than the high tide line, it seems unlikely that the skeletal remains of Hawaiian monk seals would have been naturally incorporated into the terrestrial fossil assemblage. Monk seal carcasses are more likely to have been carried by the tide back into the sea where they would have been consumed by predators and their bones scattered over the sea bottom to be ground to sand by the action of the waves or incorporated into the bottom sediments (Ragen 1999:184).

The relative scarcity of monk seal bones in archaeological assemblages is more problematic and requires more detailed investigation. If monk seal populations were relatively abundant within the MHI at the time of the arrival of the first Polynesians, the animals would have offered a readily available food source that would be expected to be exploited by these early settlers, as well as by their descendants. One would therefore expect to find monk seal remains among the food debris excavated at traditional Hawaiian residence structures, particularly at those sites dating from the early settlement period. To date, monk seal remains have only been recovered from two confirmed traditional archaeological contexts. As discussed below (and summarized in the conclusions presented in Section 8), more detailed analysis reveals factors and considerations that may in part account for the relative absence of documented archaeological evidence of monk seal presence within the MHI at the time of first Polynesian arrival.

3.0 EVIDENCE OF MONK SEAL REMAINS IN ARCHAEOLOGICAL DEPOSITS

In the preparation of this report, an effort was made to identify all of the instances in which Hawaiian monk seal remains have been recovered from archaeological excavations within the MHI. As has already been mentioned, Dr. Alan Zeigler, the staff zoologist at the Bernice Pauahi Bishop Museum, made identifications of faunal assemblages from a number of archaeological excavations conducted in the MHI (with the exception of Lāna‘i, Kaho‘olawe and Ni‘ihau) between 1986 and 1999. The faunal remains were from archaeological sites excavated by researchers from the Bernice Pauahi Bishop Museum, Cultural Surveys Hawai‘i, Inc., the International Archaeological Research Institute, Inc., and Paul H. Rosendahl, Inc. None of the assemblages examined by Dr. Zeigler (with the exception of the upland Lapakahi site discussed below) was found to contain any seal bone or bone that could be identified as marine mammal (Sara Collins, pers. comm.).

The authors of this study also consulted Dr. Sara Collins, an archaeologist and authority on human and faunal osteology who has examined and identified the remains from numerous

archaeological excavations in Hawai‘i. Dr. Collins indicated that she had never come across any seal bone in any of the collections she has examined. She noted, however, that it is possible that seal bone could be present among the literally millions of bone fragments identified as “medium mammal” or “large mammal” recovered from excavations over the decades since attempts were first made to identify faunal remains in archaeological assemblages.

Dr. Marshall Weisler has conducted analyses of excavated faunal material from early deposits at all archaeological sites on the western third of Moloka‘i Island (which now possesses a small but viable Hawaiian monk seal population) and has found no seal remains (Weisler 2013, pers. comm.). He is of the opinion that if monk seals were present when Hawaiians resided along the shoreline of West Molokai, then the bones of monk seals should be present within the archaeological deposits, but they are not. Although the monk seal population within the MHI may never have been very large, one would still expect to find a bone or two in the early deposits which were extensively excavated on West Moloka‘i (Weisler 2013, pers. comm.).

After extensive inquiry, which included a search of the available literature and consultation with various members of the archaeological community in Hawai‘i, a total of four instances were found in which identified seal bones are known to have been recovered from archaeological deposits.

- A single seal rib bone was reported from a pre-Contact house site in upland North Kohala (Lapakahi) on the island of Hawai‘i.
- A single sternum was excavated from the site of Nu‘alolo Kai on the island of Kaua‘i.
- Seal phalanges were recovered from a post-Contact deposit at a Hawaiian house site in coastal North Kohala.
- A complete seal carcass was found in a pit during excavation of a subsurface cultural deposit in Wailuku on the island of Maui.

Lapakahi

Excavations conducted by Dr. Paul Rosendahl at Site 7402, a large earthen residential platform in upland Lapakahi in the district of North Kohala on the island of Hawai‘i yielded a portion of a single rib bone identified as belonging to a Hawaiian monk seal. The site is situated in the midst of upland agricultural fields traditionally used for the cultivation of dryland crops. It consisted of an earthen platform with an L-shaped windbreak wall along its rear. The entire structure measures approximately 15 by 6 meters. Excavations into the interior of the platform revealed the presence of multiple fire hearths and yielded an abundance of cultural material suggesting that the platform served as the foundation for a pole and thatch occupation structure (Rosendahl 1972:247-263). The single seal bone was recovered from one of the wall trenches. Also recovered from the site were bones of the Polynesian rat (*Rattus exulans*), dog (*Canus familiaris*), pig (*Sus scrofa*), numerous unidentified medium-sized mammal bones, and the bones of domestic chicken (*Gallus, gallus*) and medium sized duck (Rosendahl 1972: 257-258). A single radiocarbon date recovered from 10 to 15 centimeters below ground surface yielded a range at one standard deviation of A. D. 1418 to 1618, 1466 to 1666 and 1538 to 1738, placing the occupation of the structure within the pre-Contact period somewhere between A. D. 1418 and 1738.

The excavations in upland Lapakahi were undertaken in association with the University of

Hawai'i. In Chapter V of his dissertation (Rosendahl 1972: 325), Rosendahl indicates that Dr. Alan Ziegler identified the mammal and bird remains from the Lapakahi midden. Some of the mammal bone recovered from the site appeared to represent debitage (wastage) from the manufacture of bone artifacts. Given this evidence of bone tool manufacture, it is possible that the single seal rib bone was brought onto the site to serve as raw material for tool making rather than as food. Seal bone is denser than that of land mammals such as dog and pig, but not as dense as other marine mammals like whales or dolphins (Sara Collins 2013, pers. comm.). It can be used in the manufacture of bone fishhooks or similar items.

Nu'alolo Kai

The valley of Nu'alolo Kai is located on the remote Na Pali coast of the island of Kaua'i. In 1958, 1959, 1960, and 1964 researchers from the Bernice Pauahi Bishop Museum under the direction of Dr. Kenneth Emory conducted excavations at Site 50-30-01-196, set of stone faced terraces located beneath the sheltering overhang of the valley's eastern cliffs. Due to its location, in the rain shadow of these cliffs, excavators found the site to possess excellent preservation conditions, and managed to recover perishable objects such as wood and textiles. Their excavations encountered buried structural floors, fire hearths and other subsurface features, as well as numerous traditional artifacts. The cultural deposit at Site 196 extended to a depth of nearly 2 meters below the ground surface (Graves et al. 2005:1). In the early 1990s, archaeologists from the University of Hawai'i compiled a comprehensive computerized inventory of the cultural materials recovered from the site, including many objects not previously documented (Graves et al. 2005:1). Radiocarbon dates suggest that the earliest occupation of the site may have taken place around A.D. 1290 to 1450 (Graves et al. 2005:37). The presence of historic artifacts in the upper most levels indicates that the site continued in use up into the post-Contact period.

The Site 196 complex was originally divided during excavation into four major architectural features (K2, K3, K4 and K5). The bulk of the Bishop Museum excavations were conducted in K3, a complex located toward the center of the site that consists of at least two and possibly four terraces separated by stone faced retaining walls (Graves et al. 2005:4). During the excavation, soil was sifted through ¼ inch screens so as to recover artifacts and faunal remains (Graves et al. 2005:6). Recent analysis of the faunal material excavated by both the Bishop Museum and later by the University of Hawai'i conducted by Dr. Julie Field identified a single monk seal bone from the site. This bone, an adult sternum, was recovered from somewhere between the surface and 29 inches depth in unit H5 of site K3. The sternum was unmodified. Existing dates associated with this level of the deposit puts it very late, at or after A.D. 1700 (Field 2013:pers. comm.).

The upland Lapakahi site and Site 196-K3 at Nualolo Kai appear to be the only known archaeological sites within the MHI dating from the period prior to Western contact at which seal remains have been found.

North Kohala

Hawaiian monk seal bones were also recovered by archaeologist Dr. Robert Rechtman at a Hawaiian household in coastal North Kohala that appears to date from the historic period (1850s to 1860s). The identification of the remains was made with the assistance of several pinniped experts, including Thomas Wake. Rechtman notes that, "A single front right

intermediate phalanges of a juvenile monk seal was found during data recovery excavations at SIHP [State Inventory of Historic Places] Site 25006, a mid-nineteenth century house site situated along the North Kohala coastline in Kukuipahu Ahupua'a. This site appears to have been a Hawaiian household based on design and cultural material present. The bone was recovered near a hearth feature, but does not appear to represent dietary remains. Rather, this item seems to have been used in conjunction with ritual or ceremonial activity as it has been modified with the incision of a stick-figure image on its flat ventral side (Rechtman in prep.). Any interpretation of this incised image and its possible significance must await further analysis and investigation by Rechtman.

Wailuku

An entire articulated monk seal carcass was discovered during data recovery excavations of a buried cultural deposit (State Inventory of Historic Places site number 50-50-04-4127) conducted in 1996 prior to road improvements along Lower Main Street in Wailuku on the island of Maui. The work was conducted by Eric M. Fredericksen and Demaris L. Fredericksen (Fredericksen and Fredericksen 1996). These excavations uncovered two cultural layers that were overlaid by one to two meters of imported fill soil associated with the historic Kahului Railroad and the paving of Lower Main. The articulated skeleton of a juvenile Hawaiian monk seal was found within an elongated basin-shaped excavated pit (Test Unit 2A, Feature 8). The fill of the pit consisted of clean sand and did not contain any cultural material. The skull of the seal appeared to have been severely fractured, perhaps by a blow to the head. "There was no evidence that indicated that the seal had been collected for food. Rather, it appears that the seal had been laid on its back or left side and intentionally buried" (Fredericksen and Fredericksen 1996:21, 50).

The pit in which the remains of the seal rested appeared to have been dug down from the lower levels of Layer I, a 15 to 19 centimeter deep disturbed soil layer containing a mix of pre-Contact and historic material, and into Layer II, an undisturbed pre-Contact deposit dated to between AD 1570 and 1780 (Fredericksen and Fredericksen 1996:19,49). In the area of the feature, the upper 8 to 12 centimeters of Layer I contained pieces of coal and fragments of early 20th century bottle glass. Food debris and indigenous artifacts (a basalt abrader and a fragment of volcanic glass) were also found in Layer I (Fredericksen and Fredericksen 1996:19). It is not clear from the archaeological evidence exactly when the pit containing the seal remains was dug, but it seems probable that it may have been excavated some time in the early historic period. The juvenile monk seal, its skull crushed, appears to have been placed in the hole and buried over. Whether any meat was removed from the carcass prior to its deposition is also uncertain.

3.1 Analysis

Confirmed archaeological evidence of Hawaiian monk seal presence within the MHI prior to Western contact is limited. It consists of a single monk seal rib bone excavated at an upland house site and a sternum recovered from a coastal occupation deposit. Neither of these bones was recovered from particularly early contexts. The inland Lapakahi site may date to somewhere between A.D. 1418 and 1738, while the Nu'alolo Kai deposit appears to date at or after A.D. 1700. The monk seal remains recovered could derive from individuals belonging to a resident population within the MHI or they could represent stray animals that found their way down to the MHI from the NWHI. The Nu'alolo Kai sternum could alternately be from an animal caught by Kaua'i residents fishing up in the NWHI.

The question of butchery adds another complication to the archaeological equation, and may in part account for the scarcity of Hawaiian monk seal remains in traditional archaeological contexts. An adult Hawaiian monk seal measures from approximately 6 to 7 feet in length and can weigh between 300 to 500 pounds. Even a juvenile seal would be difficult to carry for any distance. It seems unlikely therefore, given its size and weight, that a seal killed for food would be transported from the shoreline where it was killed to the hunter's place of residence for butchering. It is more likely that the seal carcass would be butchered on the beach and only the meat carried to the consumption site. Alternately, an *imu* (earth oven) could have been dug into the sand and the entire carcass cooked in situ. It is unlikely, given wave disturbance and other natural factors, that such a preparation site would survive archaeologically. This butchering strategy may help to account for the scarcity of monk seal remains at traditional occupation sites.

In contrast to the relative scarcity of seal remains from Hawaiian sites, seal bones have been found at 174 archaeological sites in Aotearoa (New Zealand), the only other Polynesian island group where seals are endemic (Smith 1989:78). Seal populations are presently (and appear in the past to have been) much more abundant in Aotearoa than in the Hawaiian archipelago, and thus would be more common in the archaeological record. Ethnographic data and archaeological reconstructions of pre-Contact butchering methods in Aotearoa suggest that seal flesh was commonly separated from the bones at kill sites prior to transportation or preservation (Smith 1985:11-15). Seal bones would therefore not be expected to be found at consumption sites located at a considerable distance from the kill site, though fresh seal meat on the bone was apparently transported over shorter distances (Smith 1989:81). There are also indications that certain seal species had a much greater geographic distribution in the pre-Contact period than at present. It has been suggested that human predation was a contributing factor to this shrinkage of their natural ranges (Smith 1989:100-101).

Direct human predation appears to be a major factor in observed changes in the distribution of seal populations in Aotearoa. Seals of various ages were actively hunted, particularly juveniles and subadults. This appears to have led to the extirpation of local populations in several areas (Smith 1989:101). A similar scenario may have occurred with monk seals in the MHI. It seems probable that on their arrival in Hawai'i, the early Polynesian voyagers found a native population of Hawaiian monk seals occupying the MHI. This resident population of seals would have offered a ready source of easily obtainable protein. As suggested by Timothy Ragen (Ragen 1999:185), intensive hunting by humans, as well as disturbance by other recently introduced land mammals (such as the Polynesian dog), may have led to a dramatic drop in seal numbers and the eventual local extirpation of the resident seal population in the MHI. A somewhat similar scenario has been offered to explain the extinction of the various species of native ground birds that were present within the MHI prior to human arrival.

Given the estimated small size of any such an indigenous seal population, it appears possible that intensive hunting over a period of one or two generations might have killed off, or driven away, any pre-existing native population of Hawaiian monk seals. The archaeological evidence of this extirpation would be limited to sites dating to the very early period of human occupation of the archipelago.

Up until recently it was the general opinion of the archaeological community that the initial

Polynesian settlement of the Hawaiian Islands took place some time between approximately 300 and 750 AD (Kirch 2011;3). This estimation was based upon radiocarbon dates recovered from what were considered to be early colonization period layers present within a small number of coastal sites. Recent refinements to the radiocarbon chronology have led to the reevaluation of this estimate. It is presently believed that the initial Polynesian discovery and colonization of the archipelago may have occurred between approximately 1000 and 1200 AD (Kirch 2011;3). The only identified archaeological sites within the MHI which may date to this early colonization period are the Bellows dune site (O18) at Waimānalo, O‘ahu (Pearson 1971); the Pu‘u Ali‘i (H1) sand dune site at South Point, Hawai‘i Island, and the nearby Waiahukini Shelter (H8) at Waiahukini, Hawai‘i Island (Emory and Sinoto 1969). None of these sites have been found to contain monk seal remains.

4.0 TRADITIONAL PERSPECTIVES ON THE HAWAIIAN MONK SEAL

The archaeological evidence would seem to indicate that for much of the period from the arrival of the first Polynesian voyagers up until Western contact the Hawaiian monk seal was not abundant within the MHI, and there was little direct contact between monk seal populations and human populations. This conclusion seems to be supported by the ethnohistorical evidence.

The consumption of seal meat is not mentioned in either traditional or early historic accounts of Hawaiian cultural practices, suggesting that it did not form a significant component of the Hawaiian diet. While traditional *kapu* (prohibitions) restricted the consumption of certain food items at certain times of the year or by certain segments of the population (pork and some varieties of bananas were among the foods prohibited to women: Malo 1951:29), there is no evidence in the traditional literature to suggest that seal meat was considered *kapu*. Monk seal remains do not appear in Hawaiian material culture as raw materials for tools or other objects. There are no traditional artifacts that are known to have been made from seal bone, skin or teeth. While dog tooth ornaments were fairly common (Buck 1964:553-561) and both porpoise (Buck 1964:546) and whale (Buck 1964:535-538) teeth are known to have been made into neck ornaments, there are no recorded instances of seal teeth being worn as ornamentation. Seal bone may have been used in the manufacture of fishhooks and other bone tools (as was dog, pig, whale and even human bone), but if so, no such tools have been directly identified.

The absence of images of monk seals in traditional Hawaiian petroglyphs can not necessarily be taken as an indicator of their physical absence from the MHI. Although certain animals, such as dogs, turtles and, to a lesser extent, chickens, appear commonly as motifs in Hawaiian rock art, other domestic animals, such as pigs, appear only rarely, if at all (Cox and Stasack 1970:19). There are no known petroglyph depictions of dolphins or whales, and only one possible symbol representing a shark (Cox and Stasack 1970:68), and yet these animals, particularly the shark, appear commonly in the traditional literature, and are known to have been both hunted and revered by traditional Hawaiian society (Reeve 1991).

Even if a local population of Hawaiian monk seals did not exist within the MHI during the pre-Contact period, it would be reasonable to expect that the existence of monk seals would have been known to the early Hawaiians. Archaeological evidence for an early Polynesian presence on the islands of Nihoa and Mokumanamana (Necker) in the NWHI suggests that the early

voyagers explored (and settled) at least a portion of the Leeward Chain and would have come in contact with the resident population of monk seals. The occupation of the higher of the Leeward Islands appears, however, to have taken place relatively early in the Polynesian settlement of the Hawaiian Archipelago and not to have been very prolonged. Following this initial period, contact with monk seals may have been restricted to a relatively small number of fishermen visiting the fishing grounds of the NWHI from Kaua‘i and Ni‘ihau.

To further investigate the role (if any) that monk seals may have played in traditional Hawaiian culture prior to Western contact, an examination was made of Hawaiian language sources.

4.1 Hawaiian Terms for Monk Seal

If the existence of the Hawaiian monk seal was generally known to the pre-Contact human population of the MHI then one would expect there to be one relatively standardized name used to refer to these marine mammals. This does not appear to have been the case. Instead, when one examines the range of Hawaiian dictionaries and other language sources one finds a variety of words used to refer to seals. Since, however, all of these written sources date to the post-Contact period, after the traditionally oral language was transformed into a written one, it becomes even more difficult to determine which terms may have been traditional and which came into use after Western contact when Hawaiian sailors were introduced to seals resident in the NWHI and on the western coast of America.

In attempting to determine the common term(s) used in the Hawaiian language to refer to the Hawaiian monk seal, it is important to look at the earliest published Hawaiian texts, as well as the range of words and definitions presented in the various dictionaries prepared since the early years of Western contact.

In its traditional form ‘*ōlelo* Hawai‘i is a spoken, rather than a written, language. Although various early Western explorers, beginning with Captain Cook, compiled rough vocabularies of Hawaiian words, it was not until the arrival of the Protestant missionaries in the early 1800s that any systematic attempt was made to translate the rich complexities of the spoken language onto a written page. The earliest Hawaiian dictionaries were prepared at Lāhaināluna Seminary which was founded in 1831 for the Christian education for young Hawaiian men. In 1845 the press at Lāhaināluna published Joseph S. Emerson and Artemis Bishop’s *He Hoakaolelo No Na Huaolelo Beritania I Me Kokua I Na Kanaka Hawaii E Ao Ana Ia Olelo*, a collection of English words and phrases with definitions in Hawaiian (Emerson and Bishop 1845).

In their book, Emerson and Bishop provide two definitions for the English word “seal”. The first of these, which appears to refer to the marine mammal, is “he ilio o ke kai” (Emerson and Bishop 1845:141). The Hawaiian *he* is the demonstrative used at the beginning of a phrase (Pukui and Elbert 1971:58), *‘ilio* is the word for dog (Pukui and Elbert 1971:92), *o* can be translated as “of” (Pukui and Elbert 1971:252), *ke* is the demonstrative often translated as “the” (Pukui and Elbert 1971:130), and *kai* means the sea (Pukui and Elbert 1971:107). Thus the term *he ‘ilio o ke kai* could roughly be translated as ‘the dog of the sea’.

The second definition given by Emerson and Bishop is “he wepa kapili palapala”. This term, which can be translated literally as ‘the wafer joining together paper’, appears to refer to the

wafer of wax (seal) affixed to official documents. The Hawaiian word *wepa* is a transliteration of the English word wafer (Emerson and Bishop 1845:179). The definition given by Emerson and Bishop for the verb seal is “e hoopaa i ka wepa” (the making fast by means of the wafer), while the noun for sealing wax is “he kepau kapili palapala me he wepa la” (the resin that joins together paper with the wafer) (Emerson and Bishop 1845:141). The secondary usage of the word seal in the English language to refer to a wax or printed seal affixed to a document can result in confusion for unwary individuals seeking early definitions for the Hawaiian names given to monk seals.

The most comprehensive of the early dictionaries published at Lāhaināluna was *A Dictionary of the Hawaiian Language*, compiled by Lorrin Andrews’ in 1865. In preparing his dictionary of roughly 15,000 words, Andrews, who was head of Lāhaināluna at the time, drew primarily on the writings of native Hawaiian speakers, as well as word lists and vocabularies compiled by his fellow missionaries and native scholars such as Samuel Kamakau (Andrews 1895:iv-v).

In its section of “English-Hawaiian Vocabulary”, Andrews’ dictionary gives the definition of seal as “he ilio o ke kai” (Andrews 1865:546), using the same term employed by Emerson and Bishop. The term “he ilio o ke kai”, however, does not appear in the “Dictionary of the Hawaiian Language” section of Andrews’ work, nor is there any reference to seal under any form of the Hawaiian word “ilio”.

As with Emerson and Bishop, Andrews lists the word “Seal” twice. The first definition, “he ilio o ke kai”, appears to refer to the marine mammal, while the second, “e hoopaa i ka wefa” (*e ho’opa’a ka wefa*), literally ‘to make fast by means of the wafer’, refers to a wax or paper seal placed or printed on a document (Andrews 1865:546).

In 1887, *An English-Hawaiian Dictionary* was prepared by Howard R. Hitchcock (who also served as Principal of the Lāhaināluna Seminary) at the request of the Board of Education of the Kingdom of Hawai’i for use in the public schools. This dictionary gives the primary definition of the noun seal as “Ilio o ke kai”, echoing both Emerson and Bishop, and Andrews (Hitchcock 1968:182). Secondary definitions listed include the terms “He sila” (literally “the seal”, with *sila* being a Hawaiian adaptation of the English word seal) and “hoailona pai” (Hitchcock 1968:182). The Hawaiian word *hō’ailona* or *ailona* means a sign, symbol, emblem, or token of recognition (Pukui and Elbert 1971:10), while the word *pa’i* means to slap, clap or to print (Pukui and Elbert 1971:278). This would suggest that the term *hō’ailona pa’i* refers to printing a symbol or affixing a seal. The verb seal is translated by Hitchcock as “E sila” (Hitchcock 1968:182), which suggests that, at least in this case, the post-Contact word *sila* refers to a wax or paper seal, not to the animal. Hitchcock’s is the first dictionary in which the term *kila* or *sila* occurs. Neither word appears in the original 1865 versions of Lorrin Andrews’ *A Dictionary of the Hawaiian Language*.

In 1922, Lorrin Andrew’s original dictionary was revised by the Reverend Henry Hodges Parker and republished under the direction of the Board of Commissioners of Public Archives of the Territory of Hawai’i. This new version incorporated definitions prepared by the missionary Lorenzo Lyons (1807-1886) and various other sources into the body of the original Andrews Dictionary. It also included the revision of many definitions and the inclusion of diacritical marks (Andrews 1922:iii-iv). This revised dictionary no longer contains an “English-Hawaiian Vocabulary”, so there is no direct definition provided for the English word seal. As

with Andrews' original dictionary, the term "he ilio o ke kai" does not appear among the Hawaiian words, nor is there any reference to seal under any form of the word "ilio".

In 1940, Henry P. Judd published *The Hawaiian Language*, which contained a Hawaiian-English Vocabulary (Judd 1940). This vocabulary included neither *he 'ilio o ke kai*, *'ilio o ke kai*, nor any term beginning with *'ilio* other than simply "ilio" meaning dog (Judd 1940:97).

Five years later, a English-Hawaiian, Hawaiian-English vocabulary was compiled by Henry P. Judd, Mary Kawena Pukui and John F. G. Stokes. In the English-Hawaiian vocabulary the authors differentiate seal "mammal" from seal "die". They provide two definitions for the word seal (mammal), "*'ili'o ho'lo i Kauaua*" and "*uwa'lo*" (Judd et al. 1945:167). In their Hawaiian-English vocabulary, Judd, Pukui and Stokes translate "*uwalo*" as "to cry out" (Judd et al. 1945:311). They do not include "*'ili'o ho'lo i Kauaua*" in the Hawaiian-English vocabulary. In the English-Hawaiian vocabulary the terms given for seal (die) are "*ki'la*" and "*hōailō'na pa'i*", while to seal is given as "*ki'la*" (Judd et al. 1945:311).

In their *Hawaiian Dictionary*, first completed in 1957, Hawaiian language scholars Mary Kawena Pukui and Samuel Elbert give the term for both seal "1. Emblem" and "2. Mammal". The term for seal (emblem) is given as "*Kila*" (Pukui and Elbert 1971:135), which is translated in the Hawaiian-English portion of the dictionary as "also Sila. Seal, deed, patent; sealed; to fix a seal" (Pukui and Elbert 1971:139). Alternate terms are "*uwepa*", "*ho'opa'a*", "*kuni*", and "*hulu*" (Pukui and Elbert 1971:135).

The term for seal (mammal) is given as "*'Īlio-holo-i-kauaua*" (Pukui and Elbert 1971:135). In the Hawaiian-English portion of the dictionary this is translated as "seal", literally "dog running in the toughness" (Pukui and Elbert 1971:93). The term, as they translate it, appears to be a combination of *'ilio*, the word for dog (Pukui and Elbert 1971:92); *holo* meaning "to run, sail, ride, go" (Pukui and Elbert 1971:72); *i* the participle "to, at, in, on, by, because of, due to, by means of" (Pukui and Elbert 1971:87); and *kauaua*, a term not directly found in the dictionary, but possibly a combining of *ka*, "the one" or "of" and *uaua*, "tough, sinewy, glutinous, viscid" (Pukui and Elbert 1971:335).

'Īlio-holo-i-kauaua is today the most common term in contemporary *'ōlelo Hawai'i* used to refer to the monk seal. It is often translated as "the dog that runs in the rough seas" (Watson et al. 2011:390), though there is nothing in Pukui and Elbert's original translation to suggest that *kauaua* should be rendered as either rough or rough seas. This translation seems to derive more from a desire to explicate the somewhat confusing original translation, than from any linguistic reality. In their *Hawaiian Dictionary*, Pukui and Elbert provide the following Hawaiian terms for rough sea, "*kai ko'o*" and "*'ōkaikai*" (Pukui and Elbert 1971:130). Under the term rough, "as sea or wind", they give "*pikipiki'ō*", "*'ālo'alo'a*", "*lo'alo'a*", "*la'ola'o*", "*hālo'alo'a*", "*āulu*", "*olohi'a*", "*pūkalakī*", "*kū'ulukū*", "*nalunalu*", "*'ōnalunalu*", "*puleileho*", and "*maleuwō*" (Pukui and Elbert 1971:130). None of these terms appear related to *kauaua*.

Pukui and Elbert's *Hawaiian Dictionary* is the first instance in which the term *'ilio-holo-i-kauaua* occurs in a Hawaiian language dictionary. It appears possible that Mary Kawena Pukui encountered the term when translating articles in Hawaiian language newspapers (see Section 4.1.4). The Hawaiian texts of these newspaper articles would not have included diacritical

marks indicating how the words were to be pronounced. The word would have appeared in print simply as "ilioholoikauaua". The word *uaua* can be pronounced one of four ways; as *uaua*, meaning either "tough, sinewy, glutinous" or "a variety of taro" (Pukui and Elbert 1971:335); as *u'au'a*, meaning "a tapa dyed with 'ōlena (turmeric) or noni" (Pukui and Elbert 1971:335); as *'ua'ua*, a variant spelling of *'uwā'uwā*, which itself is an intensification of *'uwā*, which means "to shout, cry out, sound loud" (Pukui and Elbert 1971:346); or *'u'a'u'a* an intensification of *'u'a*, which means "useless, vain, to no profit" or "a coarse mat or tapa" (Pukui and Elbert 1971:334).

It is intriguing to recall that a slightly earlier Hawaiian vocabulary also prepared with the help of Mary Kawena Pukui (Judd et al. 1945) gives as an alternate name for the monk seal the word *uwalo*. This word it then translates as "to cry out" (Judd et al. 1945:311). The definition for *uwalo* (also given as *ualo*) provided by Pukui and Elbert is "to call out, as for help; to resound" (Pukui and Elbert 1971:346). This is very similar to the translation of word *'ua'ua*, which is an intensification of the word *'uwā*, "to shout, cry out, sound loud" (Pukui and Elbert 1971:346). Given the sonorous bark for which the monk seal is well known, it seems possible that an alternate interpretation of *kauaua* is *ka-'ua'ua*, the one that cries out.

The historian Abraham Fornander, who was fluent in Hawaiian and married to a chiefess of O'ahu, translates the phrase "holo i ka uaua" as "running at the voice" (see Section 5.4.3). It appears that he is interpreting the word used in the phrase as *'ua'ua*, rather than *uaua*. His translation also suggests that "ka-uaua" might be translated as "the voice". It is possible that this same version of the word appears in the name *'ilioholoikauaua*, and that this name for the Hawaiian monk seal might be translated as "the dog running (to, at, in, on, or by) the voice".

Although the terms mentioned above are the only ones that appear in the English-Hawaiian section of Pukui and Elbert's *Hawaiian Dictionary*, Another term that appears in the Hawaiian-English section is "hulu". Among the ten possible definitions given for this word is "8. Seal, named for its valuable fur. *Rare*" (Pukui and Elbert 1971:84). One of the more common definitions of *hulu* is "fur, wool, fleece, human body hair" (Pukui and Elbert 1971:84). This is the first appearance of the definition of seal for the word *hulu*. In his 1865 dictionary, Lorrin Andrews defines *hulu* as "a feather of a bird", "a bristle of a hog", "the hair of the body", "wool" (Andrews 1865:225). Parker's revision of Andrews' dictionary translates it as "a feather or feathers", "every kind of hair excepting the hair of the head", "wool", and "fleece" (Andrews 1922:214). Judd translates *hulu* as "feather, wool" (Judd 1940:96), while Judd, Pukui and Stokes translate *hulu* as "feathers, wool, hair in general" (Judd et al. 1945:244). Hitchcock gives as the Hawaiian term for fur, "Hulu palupalu" (Hitchcock 1968:93), (*palupalu* meaning soft) (Pukui and Elbert 1971:288).

In explaining the use of this evidently rare term, Pukui and Elbert suggest that the word *hulu* was used to refer to the seal due to "its valuable fur". This might suggest that the use of *hulu* to refer to seals developed during the early historic period, and that the word was used in reference to arctic fur seals that were being hunted at that time for their pelts. Sealing vessels often stopped in the Islands to re-provision, and Hawaiians were taken on as sailors on many of these vessels. It seems unlikely that the term *hulu* is a traditional name for the Hawaiian Monk

seal, which, being a resident of the tropics, does not possess the dense under-fur that characterizes its arctic cousins.

Some possible support for this suggestion can be found in Rev. Henry Hodges Parker’s 1922 revision of Lorrin Andrews 1865 dictionary, which defines the noun “Ohulu (ō’-hū’-lu)” as meaning “A seal hunter”, “O, to spear, and hulu, fur or feathers” (Andrews 1922:478). Pukui and Elbert provide a similar translation for “‘ō hulu”, “Seal hunter; to spear seals. *Lit.*, spear fur” Pukui and Elbert 1971:256). In contrast, Andrews’ original 1865 dictionary defines “Ohulu” as “a person that sails or goes on the ocean; he kanaka *ohulu* no ka moana” (Andrews 1865:82). There is no mention in this earlier version of seal hunting. This definition seems to have been added to the dictionary by Parker, though it is not clear what his source was.

In recent years the Hawaiian Lexicon Committee has attempted to compile a list of Hawaiian words that have been created, collected, and approved by the Committee from 1987 through 2000. Their *Māmaka Kaiao: A Modern Hawaiian Vocabulary*, gives the Hawaiian word for seal as “Sila” (Kōmike Hua’ōlelo, 2003:349). The fur seal is identified as “Sila pūhuluhulu”, while the monk seal is identified as “Sila Hawai’i”. As with a number of words in the *Māmaka Kaiao*, these appear to be recent creations derived in part from their English equivalents.

In comparing the various words found in Hawaiian vocabularies and dictionaries since 1845, it appears that the earliest documented terms used to refer to monk seals are *he ‘ilio o ke kai* and *‘ilio o ke kai* (**Error! Reference source not found.**). Later alternate names include *uwalo*, *‘ilioholoikauaua*, and *hulu*.

Table 1. Terms for Seal Found in Hawaiian Dictionaries and Vocabularies

Year	Source	Term	Possible Translation
1845	Emerson and Bishop, <i>He Hoakaolelo No Na Huaolelo Beritania</i>	he ilio o ke kai	the dog of the sea
1865	Lorrin Andrews, <i>A Dictionary of the Hawaiian Language</i>	he ilio o ke kai	the dog of the sea
1887	Howard R. Hitchcock, <i>An English-Hawaiian Dictionary</i>	ilio o ke kai	dog of the sea
1922	Lorrin Andrews, <i>A Dictionary of the Hawaiian Language</i> revised by Henry Parker	none	none
1945	Judd, Pukui and Stokes, <i>Introduction to the Hawaiian Language</i>	‘ili’o ho’lo i Kauaua	uncertain
1945	Judd, Pukui and Stokes, <i>Introduction to the Hawaiian Language</i>	uwa’lo	“to cry out”
1957	Pukui and Elbert, <i>Hawaiian Dictionary</i>	‘ilio-holo-i-kauaua	“dog running in the toughness”
1957	Pukui and Elbert, <i>Hawaiian Dictionary</i>	hulu	“seal, named for its valuable fur”
2003	Hawaiian Lexicon Committee, <i>Māmaka Kaiao</i>	sila	“seal (Sila pūhuluhulu, fur seal; Sila Hawai’i, monk seal)”

4.2 Place Names

In their various publications related to monk seals (Kittinger et al. 2011, Kittinger et al. 2012, Watson et al. 2012), Kittinger and his fellow authors identify a number of place names that they suggest are in some way associated with Hawaiian monk seals (**Error! Reference source not found.**). Many of these names include the word *‘ilio*. In most cases, however, it seems more

reasonable to suggest that the names refer to or are in some way associated with dogs rather than seals.

Table 2. Place Names Identified by Kittinger et al. as Referring to Monk Seals

Place Name	Physical Feature	Location	Possible Translation	Association with Hawaiian Monk Seals
‘Īlio-pi‘i	Cape and bay	Kalaupapa, Molokai	“climbing dog” (Pūkui et al., 1974;56)	Modern observation of seals in the area
Lae o Ka ‘Īlio	Cape	Hā‘ena, Kaua‘i	Cape of the dog	Modern observation of seals in the area
Ka-lae-o-ka-‘ilio	Cape	Northwest Moloka‘i	The cape of the dog	Similarity to name of cape at Hā‘ena, Kaua‘i
Ka-lae-o-ka-‘ilio	Cape	Kaupō, Maui	The cape of the dog	No known association
Kāne‘ilio	Cape	Waianae, O‘ahu	“dog Kāne”	No known association
Pu‘uanahulu	Hill	Kona, Hawai‘i Island	“ten-day hill”	No known association
Holoikauaia	Atoll	Pearl and Hermes Atoll	running in the roughness	Modern name given to the island

‘Īlio-pi‘i

The name of this small cape and associated bay on the Kalaupapa peninsula of Moloka‘i can be translated as meaning literally “climbing dog” (Pūkui et al., 1974). It has been mentioned as possibly having been named for the Hawaiian monk seal (Kittinger et al. 2011:15). The suggested evidence for this is the contemporary presence of seals in the area. Kittinger and his fellow authors state that, “The historical name seems appropriate, as monk seals commonly pup on beaches in this area in modern times” (Kittinger et al. 2011:15). The fact that the formerly populous, but now lightly populated Kalaupapa Peninsula, which is also a Federally protected National Historic Park, has become a common birthing area for Hawaiian monk seals is not surprising. The contemporary presence of monk seals in this area, however, does not necessarily infer that monk seals were present there during the pre-Contact period or that the area was named after them.

Since the place name ‘Īlio-pi‘i refers to a cape and bay, it might be suggested that the area is more likely to be associated with seals than dogs. The traditional origins of such place names, however, are not always so simply perceived. The name of such a *wahi pana* (storied place) may come from some legendary or mythological or poetic association. An example of an unrelated but perhaps similar poetic association can be found in a traditional *hula ala‘apapa* (a form of dramatic hula) that comes from the epic story of Hi‘iaka, sister of the volcano goddess Pele, and her journey to Kauai. In describing the windward side of the island of O‘ahu the *hula mele* states:

Ua holo-wai na kaha-wai;
 Ua ko-ká wale na pali.
 Aia ka wai la i ka ilina, he ilio,
 He ilio hae, ke nahu nei e puka

Full run the streams, a rushing flood;
 The mountain walls leap with the rain.
 See the water climbing its bounds like a dog,
 A raging dog, gnawing its way to pass out. (Emerson 1909:59)

Lae o Ka 'Īlio

In his book *Hā'ena: Through the Eyes of the Ancestors*, Carlos Andrade identifies a cape on the rural north shore of Kaua'i Island near Hā'ena as being associated with the Hawaiian monk seal. The traditional name of this cape (*lae*) can be literally translated as "the cape of the dog". The place name is also known in its abbreviated form, Ka-'īlio, which translates as "the dog" (Pukui et al. 1974:69). Andrade writes that Lae o Ka 'Īlio, which he translates as "the headland of the dog," "refers to the endangered Hawaiian monk seal known to Hawaiians as 'īlio hele i ka uaua (dog running in the rough seas). Residents saw seals there even in the days before the federally established laws now protecting them caused a dramatic increase in their numbers in the main Hawaiian islands" (Andrade 2008). Here again the association of the place name with seals rather than dogs is related to the historically recent observation of monk seals in the area rather than any traditional association.

Kittinger and his fellow authors state that, "'Īlio-pi'i on Moloka'i and Lae o Ka 'Īlio on Kaua'i, are historical names that likely reference places where monk seals were common in historical times" (Kittinger et al. 2011:15). As has been pointed out, there appears to be no direct evidence for this association other than the fact that monk seals have been noted in these areas in modern times. They also note that various other places throughout the archipelago may warrant more research to determine whether they are associated with the Hawaiian monk seal. The locations of these "places with names that potentially reference monk seals" are shown on a map in their 2012 paper (Kittinger et al. 2012:Figure1). Among the place names included are Lae o Ka 'Īlio on northwest Moloka'i; Ka Lae o Ka 'Īlio at Kaupō, Maui; Kane'īlio point on the Wai'anae coast of O'ahu; Kū'īlioloa, also in Wai'anae; Ka'ō'io point on the windward coast of O'ahu; and Pu'uanahulu in North Kona on Hawai'i Island.

Ka Lae o Ka 'Īlio

Also known as 'Īlio and Ka-'īlio (Pūkui et al., 1974:72), 'Īlio Point, Lae o Ka 'Īlio is a headland on the northwestern coast of Moloka'i. Its name can be translated as "the cape of the dog" (Pūkui et al., 1974:72). Kittinger and his co-authors suggest that it is "possible the site was named for the frequent presence of monk seals, like its counterpart on Kaua'i" (Kittinger 2011:16). Moloka'i *kupuna* (elder) Harriet Ne, however, has stated that the point gained its name for its association with an ancient legend of a red dog (Ne et al. 1992, DLNR 2009).

Ka Lae o Ka 'Īlio

Another Lae o Ka 'Īlio marked in the Kittinger map is located at Kau-pō on Maui. Here again there is no known association between this cape, whose name can be translated as "the cape of the dog" (Pūkui et al., 1974:72), with the Hawaiian monk seal.

Kāne'īlio

Kāne'īlio, a point on the Waianae coast of O'ahu, also appears on the Kittinger map. The place name, which literally means "dog Kāne", is said to be the site of a *heiau* (temple) "dedicated to Kū-'īlio-loa, a legendary giant man-dog" (Pukui et al. 1974:84). Kittinger and his fellow authors state that, "mo'olelo about this site [the heiau, which is also shown on their map] reference a dog that would bark at the ocean when enemies were coming." They admit that, "Respondents that identified this site said that although the name has 'īlio (dog) in it, it does not necessarily mean it was named after the monk seal" (Kittinger et al. 2011:15).

Kū‘īlioloa

Kū‘īlioloa is the name of the *heiau* located at the extreme tip of Kāne‘īlio point on the Wai‘anae coast of O‘ahu. The name also appears on Kittinger’s map. The literally translation of the name of this *heiau* is “long dog of Kū” (Pukui et al. 1974:129). The *heiau* appears to be “named for a legendary dog who protected travelers: later the qualities of a bad dog were unfairly attributed to him” (Pukui et al. 1974:129). Located along the coast, the *heiau* is surrounded on three sides by water (McAllister 1933:113). According to Elspeth Sterling and Catherine Summers, authors of *Sites of Oahu*, Kū‘īlioloa Heiau was partially destroyed by the U. S. Army which constructed a concrete bunker on the site during World War II. Its remains were still visible in 1954 (Sterling and Summers 1978:69). In the late 1970s, the *heiau* was rebuilt by the Wai‘anae community.

Historian Samuel Mānaiakalani Kamakau notes that “Lonoka‘eho came from Kahiki with his big dog Kū‘īlioloa” (Kamakau 1991:111). There are many traditions concerning Kū‘īlioloa who is sometimes described as “a dog with a human body and supernatural powers” (Beckwith 1970:347).

Pu‘uanahulu

The hill of Pu‘uanahulu, located on the inland slopes of the North Kona district of Hawai‘i Island, also appears on the Kittinger map. The hill, whose name means literally “ten-day hill,” is “perhaps named for a supernatural dog of that name” (Pukui et al. 1974:195). “The body of Anahulu, a supernatural dog that was changed to stone by Pele” rests in a sea pool along the Kona coast near Ka Lae o Ka ‘Īlio (Pukui et al. 1974:72). The *pu‘u* (hill) of the supernatural dog Anahulu does not appear to be associated with the Hawaiian monk seal.

Holoikauaua

Holoikauaua is a modern Hawaiian name for the Pearl and Hermes Atoll is mentioned by Kittinger et al. The name is not an ancient one, but it was given to the atoll following the establishment of the Papahānaumokuākea Marine National Monument, in reference to the Hawaiian monk seals that frequent the area. The Monument Management Plan states that, “The name Holoikauaua celebrates the Hawaiian monk seals that haul out and rest here (USFWS et al. 2008).

There appears to be no direct evidence to suggest that any of the place names identified by Kittinger and his fellow authors are associated with the Hawaiian monk seal. The present study has been unable to find any place name within the MHI that can be directly related to monk seal presence during the traditional period or to any tradition or legend related to the Hawaiian monk seal.

4.3 References to Monk Seals in Traditional Literature

If a resident population of Hawaiian monk seals was present in the MHI throughout the pre-Contact period, one might expect to find mention of monk seals in oral literature of ancient Hawai‘i. Although much of this literature was lost in the transition of ‘ōlelo Hawaii from a spoken to a written language, much of it survived. An examination of the surviving written *oli* (chants not for dancing), *hula* (chants for dancing) and *mo‘olelo* (stories, mythologies, legends and historical narratives) have yielded few definitive references seals. Only one *mo‘olelo* was found that mentions the Hawaiian monk seal (see below). Much of Hawaiian traditional literature was never written down and has been passed through the generations within

individual families. These stories remain to a large extent inaccessible to the general researcher. As Kittinger and his fellow authors discovered during their interviews, “several respondents also noted that much of the information we sought about monk seals was deliberately kept *hūnā*, or secret, in keeping with tradition and because such knowledge had been improperly used in the past” (Kittinger et al. 2011:10).

The Kumulipo

The *ko‘ihonua*, the great genealogical chants, trace back the ancestry of the *ali‘i ‘ōhana* (chiefly families) of Hawai‘i through the generations. The most well known of these genealogical chants is the Kumulipo, which begins at the creation of the world and enumerates many of the plants and animals that were part of the Hawaiian cosmos. The Kumulipo mentions both land and sea creatures, often linking a land plant or animal with one from the sea.

Hanau ka ‘A‘ala‘ula noho i kai
Kia‘i ia e ka ‘Ala‘ala-wai-nui noho i uka (Beckwith 1972:188)

Born was the ‘Ala‘ala moss living in the sea
Guarded by the ‘Ala‘ala mint living on the land (Beckwith 1972:59)

Although the chant includes reference to other marine mammals, the *nai‘a* (porpoise) in line 138 and the *palaoa* (whale) in line 251, the monk seal does not appear in any of its known names among the animals mentioned in the Kumulipo. Kittinger and his fellow researchers, however, have suggested the seal is referred in the sixth stanza of the chant.

The Kalākaua text reads:

He ‘iole ko uka, he ‘iole ko kai
He ‘iole holo i ka uaua (Beckwith 1951:201)

The folklorist Martha Beckwith translated these lines as:

A rat in the uplands, a rat by the sea
A rat running beside the wave (Beckwith 1951:88)

The line “He ‘iole holo i ka uaua” has been taken to refer to monk seals due to its similarity to the term *‘ilioholoikauaua*. The word *‘iole*, which appears in this line refers not to the dog (*‘ilio*), but to the Polynesia rat (*‘iole*) (Pukui and Elbert 1971:125). Thus the line has been translated by Beckwith as “A rat running beside the wave” (Beckwith 1951:88). Kittinger, Bambico, Watson and Glazier suggest that, “the description of the *ioleholoikauaua* as “a rat running beside the wave,” is reminiscent of monk seals and the description of the monk seal in this section of the Kumulipo is also consistent with other descriptions and perceptions of monk seal behavior found in Hawaiian language sources” (Kittinger et al. 2011:14).

An alternate translation of the line is given by Hawaiian scholar Rubelite Kawena Johnson.

A rat for the upland, a rat for the shore,
A determined rat running tough. (Johnson 2000:23)

This line of the chant is but one of a series metaphorical references to the nibbling of rats. As Beckwith explains it in her commentary to the poem, “Kupihea is probably right in interpreting the spread of the rat family from upland to shore and their nibbling habits as symbolic of the rise of new lines of chiefs under whom taboos multiplied. Especially it refers perhaps to the land to landlords and these again to subordinate overseers, each taking toll from the crops...” (Beckwith 1951:86). This interpretation would tend to suggest that it is the *‘iole* (rat) with its attendant symbolic meaning that is referred to here rather than the monk seal. The line’s apparent connection to the Hawaiian monk seal is simply due to a similarity in the use of words and not a deliberate reference.

The Kumu Honua

A similar confusion of words has led Kittinger and his fellow authors to suggest that the Hawaiian monk seal is also mentioned in the traditions associated with Hawai‘i-Loa and with the creation of the first man, Kumu Honua (there is some question as to whether this creation tradition was strongly influenced by Christian mythologies introduced in the years following Western contact; Barrera 1969). Judge Abraham Fornander, in his *Collection of Hawaiian Antiquities and Folklore* (traditional *mo‘olelo* gather from Hawaiian authors to be used as source material in the writing of his multi-volume *Account of the Polynesian Race*) includes the “Legend of Hawaii-loa” which was “compiled and condensed in English from Kepelino and S. M. Kamakau”. As part of this *mo‘olelo* he refers to the tradition of Kumu Honua and describes the animals that were created to keep company with this first man in the Hawaiian Eden.

Among the animals enumerated in the legend as dwelling in peace and comfort with Kumu Honua in Kalani i Hauola were:

Ka puua nui Hihimanu a Kane (the large Hihimanu hog of Kane); ka ilio nui niho oi a Kane (the large sharp-toothed dog of Kane); ka ilio holo i ka uaua a Lono (the dog running at the voice of Lono); ka puua maoli (the common hog); ka ilio alii a Kane (the royal dog of Kane); na moo (lizards); na moo niho nui, niho oi, wawaka a Kane (the sharp, long toothed, iridescent lizard of Kane)... (Fornander 1919:273-274)

Fornander translates “ka ilio holo i ka uaua a Lono” as “the dog running at the voice of Lono.” Although *‘ilioholoikauaua* is one of the Hawaiian terms used for seal, its use here suggests that it appears in the legend as a descriptive of a dog rather than a seal. The god Lono is traditionally associated with lightning and the sound of rolling thunder (Beckwith 1970:41), thus the voice of Lono may be a poetic reference to thunder.

Interestingly, Fornander’s early translation of the phrase “holo i ka uaua”, “running at the voice”, suggests that the word used in the phrase is *‘ua‘ua*, rather than *uaua*, and that “ka-uaua” might be translated as “the voice”. It is possible that this same version of the word appears in the term used to refer to the Hawaiian monk seal, *‘ilioholoikauaua*.

Hi‘iaka

Another proposed reference to the Hawaiian monk seal in traditional *mo‘olelo*, as suggested by Kittinger, Bambico, Watson and Glazier, comes from The Epic Tale of Hi‘iakaikapoliopele as translated by Puakea Nogelmeier, professor of Hawaiian language at the University of Hawai‘i at Mānoa (Nogelmeier, 2006). This *mo‘olelo*, originally printed in the Hawaiian language newspaper *Hawai‘i Aloha* and then in the *Ka Na‘i Aupuni* between July 1905 and November 1906,

recounts the journey of Hi‘iakaikapoliopole, sister of the volcano goddess Pele, and her companion Wahine‘ōma‘o, from Hawai‘i Island to Kaua‘i to find and bring back Pele’s lover Lohiau. As Hi‘iaka and her companion are passing along the Ko‘olau coast of the island of O‘ahu, she points out a rock formation, “shaped like an ‘ilio, a dog, with the head, the body, and all the features of a dog?” (Nogelmeier 2006). Hi‘iaka explains that:

That is no stone carved by man, but rather the rock form of one of our uncles, one I mentioned to you. That is Kauhike‘imakaolani. He is the ‘ilio hā that Kane brought from Kahiki, and he is always seen yonder, at Ka‘ō‘io Point [Ka lae o ka ‘ō‘io, the point of the bone fish, which marks the boundary between the districts of Ko‘olau Poko and Ko‘olau Loa (Pukui et al. 1974:72)], that high spot before one reaches the flatlands on the way to Kāne‘ohe. The third place where he’s often seen is at the mouth of Nu‘uanu Valley, where one enters Kahaukomo (Nogelmeier, 2006).

When Wahine‘ōma‘o asks what is an ‘ilio hā, Hi‘iaka responds that, “‘Īlio hā is like saying ‘ilio kāhā, an oversized, hulking dog, the same way a pig can be oversized. It means it is huge, heavy, plump, and fleshy. But this dog-uncle of ours you see there has the body of a massive dog, and the largest expanse of his fur is on his head and neck ...” (Nogelmeier 2006).

Kittinger and his fellow authors see this description of the ‘ilio kāhā (“huge, heavy, plump, and fleshy”) as reminiscent of the physical appearance of the Hawaiian monk seal. In their *Hawaiian Dictionary*, Mary Kawena Pukui and Samuel Elbert define the word kāhā as “Large, fat, plump, as of a well-fed dog” (Pukui and Elbert 1970:103). This suggests that the term was used to refer to large dogs. There is nothing else in the *mo‘olelo* to suggest that the ‘ilio hā was a monk seal rather than “a massive dog”.

Mo‘olelo of Pinao and Kamālama

There is at least one extant *mo‘olelo* which does make mention of the Hawaiian monk seal. Unlike the previously mentioned *oli* and *mo‘olelo*, which were set down in writing during the early historic period, this tradition was passed down orally and only recorded relatively recently. Included in the Appendix to the *Historic and Contemporary Significance of the Endangered Hawaiian Monk Seal in Native Hawaiian Culture* is the partial transcript on an interview in which a *kupuna* from the district of Ka‘ū on the island of Hawai‘i relates a *mo‘olelo* regarding a seal that was told to her by her father-in-law (Kittinger et al. 2011:31).

The authors of the report indicate that, “The following is an oral tradition and story (*mo‘olelo*) from a *kupuna* interviewed on Hawai‘i Island, near Ka Lae o ka ‘Īlio (“the cape of the dog”), about the monk seal. Names and some information have been withheld to protect the identity of the respondent” (Kittinger et al. 2011:31).

I’m from Ka‘ū [Hawai‘i Island], but originally I come from Moloka‘i, from the area called Kalama‘ula. I relocated here [to Ka‘ū] because of my husband. My husband was a cowboy by trade. Today I’m going to share with you a little *mo‘olelo*, a little story that comes from the opposite end called Ka Lae. A lot of people call this area South Point, but it’s really Ka Lae. Now in this area, there was this young woman and her name was Kamālama. And Kamālama had a good friend who she loved dearly and his name was Pinao. Well Pinao and Kamālama were always happy together. They loved each other dearly. But one day, Kua, the Shark God, he’s traveling the *moana*, the ocean. He sees her

[Kamālama] [heart fluttering motion]. Hū [oh] my goodness, he loves this young lady. No. She don't want him at all. Kua is very upset; and so Kua causes a *pō'ino*. He puts a curse on this young lady, Kamālama, and Pinao. And, Kamālama no longer stays as a woman; but she withdraws to the ocean and she becomes an 'aukai, a sea-god or a seal. And poor Pinao. Pinao who stands so very tall; now begin to bear wings and he begin to flutter and fly. He becomes a dragonfly. Auē! They no longer can be together. And whenever Kamālama come up to the white sand, at this particular beach, she's not able to embrace her good friend Pinao. And Pinao, he comes and he flutters down upon her, and he is no longer able to hold her anymore. Well, the god Kū, finally comes to realize what is happening; and he feels love and compassion for this young couple, for this young man and this young lady. And so what happens: Kū decides that this should not happen, that Kua's jealousy gets in the way. And so, the god Kū decides to make a new rule, and he says: when Nā Huihui [reference to the star cluster Nā-Huihui-a-Makali'i, otherwise known as Pleiades, whose rise & fall in the Hawaiian night skies marks the start and end of the Makahiki Season, generally from end Oct/beg Nov to end Jan/beg Feb] all the stars shine during these particular months then this young man and this young lady will be able to have the... This young man and this young lady will be able to share this time to Kū, to take on their human forms again, so that they will no longer be this dragonfly, nor will she be this 'aukai, this seadog or this seal of the ocean. And so from the months of October, November, December [until] part of February, they then take on this form, and they come back to who they really were; and they're able to enjoy each other's company, and to embrace each other once again. And so this is the short story of Pinao and Kamālama. I'm not sure if that's what you was looking for. I doubt if you're going to find it in any books, like you do [the *mo'olelo* of] Kauila because I heard this, again, from my father-in-law. When he was here, he was busy sharing things. And he was trying to recall things and I didn't realize what he was doing is recalling because he was going to go on his journey [pass away]. He was going to leave us. And so, um, most of the stories that I am sharing every now and then, I haven't seen it in any book. So, and, I haven't shared this, except for my own family. This is the first time I've shared it outside" (Kittinger et al. 2011:31-32).

The narrator of this *mo'olelo* states of Kamālama that after her transformation she "no longer stays as a woman; but she withdraws to the ocean and she becomes an 'aukai, a sea-god or a seal." The word used, 'aukai, means "to travel or swim by sea; seafaring; sailor" (Pukui and Elbert 1971:29, the word does not appear in Andrews 1865 dictionary, the term 'ilio 'aukai refers to a "sea dog, experienced sailor", or a "warship", Pukui and Elbert 1971:93). The term 'aukai, "to travel or swim by sea; seafaring" seems an apt description for a seal, though whether it is being used in the tale as a poetic descriptor or as a true name is uncertain.

Pinao is the Hawaiian word for dragonfly, while the name *ka mālama* can be roughly translated as the one who cares for (Pukui and Elbert 1971:214). Kamalama without the diacritical mark over the ā is the name of a star and means literally "the light", (Pukui and Elbert 1971:116).

The shark god Kua, mentioned in the story of Pinao and Kamālama appears in the *mo'olelo* of Kaehuikimanoopuuloa (the little *ehu* colored shark of Pu'uloa) as related by Thomas G. Thrum in his *More Hawaiian Folk Tales*. Thrum translated and condensed the story from a version published in the Hawaiian language newspaper *Au Okoa* for November 24, 1870. Here he is described as "Kua, king-shark of Kona" (Thrum 1923:295). It is Kua who guides Kaehuikimanoopuuloa and his companions on their travels to distant Kahiki (Thrum 1923:303). A version of the same story is told by Padraic Colum in his *Legends of Hawaii* (Colum 1937:89).

5.0 HISTORICAL PERSPECTIVES ON THE HAWAIIAN MONK SEAL

There is little evidence to suggest that the Hawaiian monk seal formed an important component of traditional Hawaiian culture. The early Western visitors to the MHI make no direct reference to them, nor do they appear in the works of early Hawaiian historians. With increasing Western contact, however, Hawaiians became acquainted with seals, both in the NWHI and along the western coast of America. From the early historic period onward references to seals begin to appear in Hawaiian language newspapers.

5.1 Early Hawaiian Historians

None of the early Hawaiian historians working to document their traditional culture in the first generations following Western contact make any direct mention of the Hawaiian monk seal. In his book *Mo'olelo Hawai'i* (translated from the Hawaiian by Nathaniel B. Emerson in 1898) the Hawaiian historian David Malo lists and describes the various domestic and wild animals present within the Islands before Contact. In describing these creatures, both indigenous and Polynesian introduced, he makes mention of the pig, dog, wild and domestic fowls, other wild birds, the bat, and various insects (Malo 1951:46). In describing fish and other sea animals he mentions the sea turtle, the shark, dolphins and whales, but makes no reference to seals (Malo 1951:47).

5.2 Hawaiian Language Newspapers

A number of Hawaiian language newspapers were published from the 1830s to the early 1900s. These newspapers, printed in 'ōlelo Hawai'i, provide a vast reservoir of information concerning Hawaiian culture. Since relatively few books, other than basic grammars and school texts, were published in the Hawaiian language at that time, the newspapers served as almost the sole outlet for any Hawaiian writing in his or her native tongue. As such, they functioned as repositories for traditional legends and cultural histories, venues for the discussion of current political issues, and resources on government laws and policies. Over the last decade, efforts have been undertaken by a number of organization and individuals to make the information contained in these newspapers available to the general public.

In order to determine how often and in what contexts references to seals appear in Hawaiian language newspapers, a search was made of the existing online databases of published newspapers. A list of articles found to contain references to seals is contained in **Error! Reference source not found.**

Table 3. Articles From the Hawaiian Language Newspapers that Contain Any Reference to Seals, Listed in Chronological Order

Year	Source	Hawaiian Term	Possible Translation
1841, 3 August	Ka Nonanona	sila	seal
1859, 19 October	Ka Hae Hawaii	Iliokai, ilio o kai	seadog, dog of [the] sea
1864, 17 December	Ka Nupepa Kuokoa	ilioholoikauaua	dog running in the useless (not used to describe a seal)
1865, 25 May	Ka Nupepa Kuokoa	sila	seals
1865, 29 June	Ka Nupepa Kuokoa	ilioholoikauaua	dogs running in the rough seas
1867, 1 November	Ke Alaula	'ilio-holo-ika-	dog-running-in-the-rough-seas

		uaua	
1876, 19 February	Ka Nupepa Kuokoa	ʻĪlioholoikauaua	dog-running-in-the-rough-seas
1876, 5 August	Ka Nupepa Kuokoa	ʻīlio holo- ikauaua	dog-running-in-the-rough-seas
1894, 19 March	Ka Makaainana	ilioholoikauaua	dog-running-in-the-rough-seas
1924, 25 September	Elua Nupepa Kuokoa	uwalo	to cry out

A search of Hawaiian language newspapers revealed several references to seals, which were referred to by various names. In most cases the articles that mention seals refer either to sealing voyages or describing an account of travels in the arctic (one reference is contained in a Hawaiian translation of Jules Verne's *Twenty Thousand Leagues Under the Sea*). There do not appear to be any articles that directly address seals in traditional Hawaiian culture or the presence of seals within the MHI.

Kittinger, Bambico, Watson and Glazier identify one article, published in the February 1834 issue of the paper *Ka Lama Hawai'i* and entitled *No Kekahi Aoao Kahiko* (Concerning an Ancient Way of Life), which they propose, "suggests that monk seal furs were collected as part of customary tribute to the land managers (Konohiki)" (Kittinger et al 2011:12). The specific portion of the article that they cite for this interpretation reads:

No kekahi aoao kahiko.

Eia kekahi mea kupanaha a makou; o ke kukini. Ina i oleloia he mau kukini; apopo, holo; alaila, hele mai la kanaka he nui loa me ka waiwai, a pili a mau iho la, alaila, hele aku la ua mau kanaka la elua a hiki i ka Pahuku. Kukini mai la ua mau kanaka la, a hopu i ka pahu kekahi, alaila, eo ae la nana. Olioli iho la ka poe i ko. Aka, o ka poe i eo, mihi iho la lakou i ke eo ana. Ina e olelo ke Konohiki i na makaainana, apopo kakou koele a pau, a ahiahi iho, hoike i ka waiwai: Alaila, hana iho la lakou i ua mau mea nei a ke Konohiki i olelo mai ai, o ka puua, o ka ilio, o ke kapa, o ke olona, o ka hulu, o ka upena, o kela mea keiamea a pau. Oia ka waiwai, a makou i hoike ai i ka wa kahiko.

It has been translated as:

Concerning an ancient way of life.

Here is something wondrous for us: runners. If some runners said: tomorrow, is a race; and then a multitude of persons came with money, and continued to place bets down, and then, two of these persons then ran until they reached the goal. These people then raced, and grabbed the baton, and then, it was won for him. The people were then joyful for the triumph. But, as for the persons who lost, they apologized for losing. If the Konohiki said to the citizens, tomorrow we all walk until the evening to show the tribute: and then, they lay down these things the Konohiki requested: pig, dog, cloth, fiber, fur, fishing net, everything. These are the goods that we exhibited in ancient days.

(<http://www.nupepa.org/gsd12.5/cgi-bin/nupepa?e=q-0nupepa--00-0-0--010-TX--4--hulu+%22Eia+kekahi+mea+kupanaha%22---text--0-1-1haw-Zz-1---20-about-%5bhulu+%22Eia+kekahi+mea+kupanaha%22%5d%3aTX--0013hulu+%22Eia+kekahi+mea+kupanaha%22-1-0000utfZz-8-00&a=d&c=nupepa&cl=search&d=HASH67c54d1f7df0e3ea4c2663.4>)

A more appropriate translation of the list of offerings requested from the *maka'āinana* (common people) by the *konohiki* (land manager) would be 'o ka puua (pigs), 'o ka 'ilio (dogs), 'o ke kapa (bark cloth), 'o ke olonā (cord of olonā fiber), 'o ka hulu (feathers, these would have been the

brightly colored feathers of forest birds woven into the cloaks and helmets of the chiefs), ‘o ka‘upena (fishing nets). Bird feathers are known to have been part of the duty collected by chiefs. This seems more likely than the pelts of monk seals.

The earliest known article in a Hawaiian language newspaper to mention seals appears in an August 1841 issue of the paper *Ka Nonanona* in an article entitled No Ka Ulu Moku Imi Aina (About the Land Exploration Fleet). The article tells of the arrival in the Islands of the ships of the U.S. Exploring Expedition under Captain Wilkes, and of the Expedition’s travels in the Antarctic, which the writer describes as “filled with ice, no people, just walruses and seals were the animals that belonged there”. In this article the words used for the Antarctic seals is “sila”.

The newspaper *Ka Nonanona* for 3 August 1841 has an article entitled:

No Ka Ulu Moku Imi Aina.

I ka malama o Okatoba 1841, hiki mai la ka ulu moku ini aina no Amerikahuipua, ma Honolulu nei. Eha moku, o ka moku nui, (i ka Winisani, a me ka Pikaka) a elua hoi moku nuku iho, o ka Naia, a me ka Malolo a o Kali Wilika ko lakou alii nui. Ua imi aina na ulu moku nei ma ka huina loa, a ua ike lakou i ka aina nui malaila, i ka la 13 o Ianuari, 1840, ma ka latitu 65°20 lonitu 104°24. Popilikia i a ko lakou holo ana ma kela moana hema, no ka nui loa i ka hau; me he mau moku aina nui la, e lana wale ana, a e hui kau ana, ua hau paa nei ma kela wahi. Ili ka Pikaka i ka moku hau, a mai nahaha loa: ua pakela no nae no ke akamai loa o kona kapena o Hudesona. Holo kokoke i kela aina hema ka Winisani i 1700 mile a ike pinepine; lakou i ka aina; he aina pali, paupu i ka hau, aole kanaka, he mau walerusa, a me na sila wale no ko laila holoholona. Pau keia; Holo mai aku la keia ulu moku imi aina, a i keia mai la iho nei i ka la 15 o Iune, hoi hou mai la ka Pikaka, o Hudesona ke alii a me ka Pulolo. Ua huli lakou i kekahi pae aina; (Kinimila ka inoa ma ka olelo Enelani.) aia ma ka poaiwaena, ma ke komohana hema mai ia nei aku. He pae moku liilii kela, he haahaa, a he ano loa ka holo ana o na moku ma kela wahi, no ka ike ole ia o na wahi papau a me na moku liilii. Aka, ua pau i ka huliia a me ka palapalaia na wahi pilikia olaila e ko ka Pikaka a.

About the Land Exploration Fleet.

In the month of October 1841, the land exploration fleet arrived from the United States of America, here in Honolulu. There were four ships, the large ships, (the Vincennes, and the Peacock) as well as two nose diving ships, the Dolphin, and the Flying Fish and Charles Wilkes was their high commander. The fleet explored land in it’s entire length, and they saw great lands there, on the 13th day of January, 1840, in the latitude 65°30’ longitude 104°24’. Their progression was troubled upon that Anarctic [sic.] ocean, because of the expanse of the ice; like great big islets, just floating, haphazard, icelocked [sic.] in that place. The Pikaka was run aground on an iceberg, and very nearly wrecked: we escaped because of the good judgment of his Captain Hudson. The Vincennes approached that arctic land which is 1700 miles and they frequently saw land; a precipice, filled with ice, no people, just walruses and seals were the animals that belonged there. This is done.

http://ulukau.org/collect/nupepa/index/assoc/HASH41b7.dir/004_0_001_003_009_01_ful_18410803.pdf

An article in an October 1859 issue of *Ka Hae Hawai‘i*, entitled No Ke Kakau Hoike Ana I Na Moku (Regarding writing bonds for vessels) appears to be a discussion of government requirement for seagoing vessels, some of which are involved in the hunt for whales and seals (“a whaling vessel and a sea_dog investigating vessel”). The two terms for seal used in this article are “iliokai” (literally sea dog) and “ilio o kai” (dog of [the] sea). This usage is similar to

Emerson and Bishop's 1845 phrase "he ilio o ke kai" and Lorrin Andrews' 1865 dictionary's "he ilio o ke kai" (see Section 5.4.1). The article reads:

Ha'awina XXIV

No Ke Kakau Hoike Ana I Na Moku

...waia okohola, a no ka imi ana i na iliokai, ma ka moa o ka mea nona kekahi hapa o ia moku, ina he kanaka kupa ia a he kanaka kupa ole paha, a ina e noho paa aha oia iloko o keia Aupuni....

Pauku 636. Ma ke kakau hoike ana i kekahi moku, e like me ka olelo a ka pauku maluna ae nei, e koi aku ka Luna Dute Nui, i ka mea nana i noi mai ao ke kakau hoike ana, e haawi mai oia i palapala hoopaa me na hope kupono i ka manao o ka Luna Dute Nui, no na dala aole emi mai malalo o na haneri elua, aole hoi oi oku i elua tausani, e hoohalikeia e ka Luna Dute Nui me ka nui o na tona o ka moku; e olelo ana ia palapala hoopaa, e hanaia ka palapala hoike i ke kakau ana no ka moku, ana i haawiaa'i wale no, aole hoi e kuaiia, a e haawi lilo ole ia, a e hooliloia paha ma ke ano e ae, i kekahi kanaka; a ina e lilo ia moku a pau, a o kekahi hapa paha o ka moku, ina aole ia he moku okohola a moku imi ilio o kai, no kekahi haole a mau haole paha i kupa ole ma keia Aupuni, a ina paha e poino, a i lawe pioia paha e kekahi enemi, a i hoopauia i ke ahi, a i wawahiia ka moku paha,....

Article XXIV.

Regarding writing bonds for vessels

...disgraced whaling, and for searching for the seadog, in the ocean of the one for whom is half of the vessel, if a citizen or not a citizen, and if permanently residing in this Kingdom.

Paragraph 636. In bond writing for a vessel, similar to the language of the paragraph directly above, the Chief Customs Officer requires, of the one who request the bond writing, to give him an insurance policy with equitable legal surety as is the will of the Chief Customs Officer, for a sum not less than \$200.00, and not too exceed \$2,000.00, to be matched by the Chief Customs Officer with the larger part of the tonnage of the insurance policy shall be done in writing for the vessel, only for what he was awarded, not to be sold, and not to be granted absolutely, or conveyed in a different manner, to a person; and if the entire vessel is transferred, or half of the vessel, or if it is not a whaling vessel and a sea dog [dog of (the) sea] investigating vessel, for a foreigner or foreigners not citizens in this Kingdom, or if damaged, or if abducted by an enemy, and consumed in a fire, or ship-wrecked,....

<http://www.nupepa.org/gsd12.5/cgi-bin/nupepa?e=q-0nupepa-00-0-0--010-TX--4--waia+okohola--text--0-1l--1haw-Zz-1---20-about-%5bwaia+okohola%5d%3aTX--0013waia+okohola-1-0000utfZz-8-00&a=d&c=nupepa&cl=search&d=HASH4055713b8bf3231b1dce80.3>

An article in a December 1864 issue of *Ka Nupepa Kuokoa* entitled *Ka Lā'au Ka-umaka e pau ai ka Niniaole O Nā Maka Hū'alu Pepe'ekue O W.H. Kalae-O-Kaena* (The Beloved Medicine that cured the waterlessness of the thick viscous membrane covering the eye of W.H. Kalae-O-Kaena (loose skin over the eyeball; slight viscous membrane covering the eye) is the first instance where we encounter the term "ilioholoikauaua". Interestingly, this article does not directly refer to the Hawaiian monk seal, or any other kind of seal. Instead, the term "ilioholoikauaua" appears to be a poetic or proverbial epithet referencing to a despised or ill thought of individual. The entire article is couched in a strongly poetic and allusive style (common to some forms of Hawaiian discourse). It is either saying that the individual is as despicable as a seal, or more likely, that he is like a dog running in *ka 'u'a'u'a*, where the word 'u'a'u'a is an

intensification of ‘u‘a, which means “useless, vain, to no profit”. It seems likely that the phrase is being used here to characterize the individual as useless. The article reads:

Ka Lā‘au Ka-umaka e pau ai ka Niniaole O Nā Maka Hū‘alu Pepe‘ekue O W.H. Kalae-O-Kaena:

E Ka Nūpepa Kū‘oko‘a E; Aloha ‘oe: -- Ua ‘ikea iho ma kou ‘ao‘ao 3 o ke Kahua kaua o ka lā 27 o ‘Okatoba, Helu 44 o ka Buke III o ke “Kilohana Po‘okela o ka Lāhui Hawai‘i.” Aia ma laila ka pehina (throwing/pelting, as of rain) mai nei a W.H. Kalaeokaena, i nā pōhaku ‘elekū pukapuka o nā hekili ku‘i-pāmalō a ua ‘lioholoikauaua lā, ‘alu‘alu pāpā‘i niho kekē o Koholāloa; e hāhā pō‘ele lā i ua i‘a lā o ka ‘āina āna (W.H.K.) e noho lā; me he lhuana lā e mana‘o ana e hina o ‘Aiwohikupua, i ka hele wahi ‘ana a kani ka pola o ka malo; ‘ū! e olo ho‘i! Hina lā ana kei! A ‘o paha e olo ka hina o ke ‘A‘ali‘ikūmakani o Ka‘ū iā ‘oe, e nā lā‘auohala kumu Pūhala ne‘ine‘i.

The Beloved Medicine that cured the waterlessness of the thick viscous membrane covering the eye of W.H. Kalae-O-Kaena (loose skin over the eyeball; slight viscous membrane covering the eye) Dear Independent Newspaper; Greetings to you: -- It was observed in your 3rd page of the war section on the 27th day of October, Number 44 of Book III of the “Foremost Champion for the Hawaiian Nation.” There was W.H. Kalaeokaena’s raining of the hole riddled basalt rocks [bullets] of the roaring thunder-with out rain [gun] upon this dog-running-in-the-rough-seas; the misshapen crab claw of Koholāloa, ignorantly groping for this fish on the land where he (W.H.K.) lives; like the lhuana wind thinking to topple over ‘Aiwohikupua, going somewhere until the flap of the loincloth sounds; ‘ū! resounding! glorious toppling! and perhaps resounding the steady blowing of the ‘A‘ali‘ikūmakani wind of Ka‘ū to you, the hala leaves of the grove of the low-lying hala trees.

(<http://www.nupepa.org/gsd12.5/cgi-bin/nupepa?e=q-0nupepa--00-0-0--010-TX--4--Kalaeokaena--text--0-11--1haw-Zz-1---20-about-%5bKalaeokaena%5d%3aTX--0013Kalaeokaena-1-0000utfZz-8-00&a=d&c=nupepa&cl=search&d=HASHa71eb66cb3f9760b697503.1>)

An 1865 article in *Ka Nupepa Kuokoa* entitled *Ka Pepehi Kohola Ana Me Ka Mahu* for which there is no present English translation appears to concern the hunting of whales. It refers to, “na kohola a me na sila”, which very roughly translates as “the whales with the seals”. Here again, the word for seal is “sila”, a local adaptation of the original English word. The article reads:

Ua ike iho makou maloko o na nupepa Sekotia i ka nui o ka pomaikai i loa i na kanaka nona na moku mahu huila mahope ma ka lawaia kohola ana. Ua ikeia ua holo aku mai ke aina aku o Dunedi (Dundee) eono moku mahu ma na wahi hau e alualu ai i na kohola a me na sila (seal). Ua hoi mai lakou me na tona aila 645, a 107 1/2 tona pakahi, o ka hiku o ka moku ua poholo ma ia holo ana; oia he umikumamalua moku mahu a he umikumamaono moku pea i hoounaia mai Pitaheke (Peterhead) aku, ua hoi mai lakou me na tona aila 388, aneane 38 tona aila ka oi o na moku mahu pakahi mamua o na moku pea.

(<http://www.nupepa.org/gsd12.5/cgi-bin/nupepa?e=q-0nupepa--00-0-0--010-TX--4--Dundee+sila--text--0-11--1haw-Zz-1---20-about-%5bDundee+sila%5d%3aTX--0013Dundee+sila-1-0000utfZz-8-00&a=d&c=nupepa&cl=search&d=HASHdaad27d6549274be043d7d.2>)

A June 1865 article in *Ka Nupepa Kuokoa* is entitled *He ‘Aumoku hou, e holo ana ka Wēlau ‘Ākau* (A new fleet, sailing to the North Pole) contains the first known instance in a Hawaiian language newspaper where seals are referred to as ‘lioholoikauaua. The article discusses a British expedition to the North Pole and describes the arctic landscape. “Just snow is what is

seen there, no plants; the polar bear is still important, with the dogs-running-in-the-rough-seas (seals), and the sea elephants”. The article reads:

He ‘Aumoku hou, e holo ana ka Wēlau ‘Ākau.

Ke ho‘omākaukau nei o Kapena Osbone (Osborne) o nā Moku manu wā o Beritania e holo i ka Wēlau ‘Ākau. Ua makemake ‘ia i ‘elua mau moku māhu li‘ili‘i me nā kākāna he 120, a i ka Makahiki 1866 e hiki mai ana e holo ai ia. I loko o ke kau e holo aku lākou i ke Kaikū‘ono o Bafine ma ke komohana o ‘Āina‘ōma‘ōma‘o, a hala loa aku i loko e like me ka lō‘ihi o kahi e hiki ai ke hele aku. I loko o kēia mau makahiki aku ‘elua, e holo ana lākou me nā wa‘apā a me nā koa na ka ‘ilio e kauō a hiki i ka Wēlau. ‘O kākou o ka po‘e ho‘i e noho nei i ka lā pumehana o Hawai‘i nei, kai ‘ike ‘ole i ke anu o ia wahi. Ua ‘emi iho ka waidālā o ka hō‘ailona māhu (thermometer) i kekahi manawa, i nā degere he 50 ma lalo o ka ‘ole. He hau wale nō ka mea ‘ike ‘ia ma laila, ‘a‘ole mea kanu; ‘o nā bea ke‘oke‘o na‘e ka mea nui, me nā ‘ilioholoikauaua, a me nā ‘elepani o ke kai. I loko nā kākāna o nā hale hau e noho ai me nā lōle hulu, a ‘o kākā lākou ‘ai o ka ‘i‘o momona me ka ‘aila a me kekahi mau mea ‘ē a‘e. Ma laila e lilo ai ka bia a me kekahi mau wai ona ‘ē a‘e i mea ‘o‘ole‘a me he pōhaka lā. I ka wā ho‘oilō, he pō lō‘ihi ko lākou no nā mālama he nui wale, i ahona iki i ka mahina, no ka mea, he kōnane maika‘i loa ka mahina ma laila, a me kekahi mālamalama ‘ano ‘ē ma laila ia kapa ‘ia ka Aurora Borealis (Aurora Borealis) a ‘o ka Mālamalama ‘Ākau. Ma ka Wēlau ma laila ka pō no nā mālama ‘eono, a me ka lā no nā mālama ‘eono. Inā e hiki ‘i‘o ‘o Kapena Osbone ma ia wahi, e kaulana nō kona inoa, no ka mea, ‘o ia ke kākāna mua i hiki ma laila.

A new fleet, sailing to the North Pole.

Captain Osborne is preparing the British battleships to sail to the North Pole. Two small steamships were wanted with 120 men, and in the coming year 1866 he will set sail. During the summer they will sail through Baffin Bay in the west of Greenland, and stay awhile in there like the length of one who comes and goes. Within these two years, they will go with sleds and guards for the dogs to tow until they arrive at the Pole. We are to be sure the ones living here in the warmth of Hawai‘i, unacquainted with the chill of this place. The mercury of the thermometer lowered once to 50 degrees below zero. Just snow is what is seen there, no plants; the polar bear is still important, with the dogs-running-in-the-rough-seas, and the sea elephants. Inside, the people stay in igloos with fur clothing, and as for their food it is rich meat and oil and other things. There, beer and alcoholic drinks become as hard as stone. In the winter, they have a long night for many months; the moon is a little better, because, the moon there has very good clear, bright moonlight; and there is a kind of strange light there named the Aurora Borealis otherwise known as the Northern Lights. At the Pole it’s night there for six months, and day for six months. If Captain Osborne actually goes there, his name will be truly famous, because, he will be the first man to go there.

<http://www.nupepa.org/gsd12.5/cgi-bin/nupepa?e=q-0nupepa--00-0-0--010-TX--4--%22elepani+o+ke+kai%22---text---0-11--1haw-Zz-1---20-about-%5b%22elepani+o+ke+kai%22%5d%3aTX--0013%22elepani+o+ke+kai%22-1-0000utfZz-8-00&a=d&c=nupepa&cl=search&d=HASH012b3f78fd6c3554bf830845.2>

An article in a November 1867 edition of the newspaper Ke Alaula, entitled Kokoke aku lākou i ka Wēlau ‘Ākau (They are approaching the North Pole) appears to concern another expedition to the North Pole. Once again the term “‘ilio-holo-ika-uaua” is used to refer to arctic seals (in this case probably the fur seal). The article has two references to seals. “Their clothing to keep warm was the pelt of the dog-running-in-the-rough-seas and the other slippery, furry animals.” “They catch on the seashore the dogs-running-in-the-rough-seas and the sea elephants.” The article reads:

Kokoke aku lākou i ka Wēlau ‘Ākau.

I ka noho ‘ana o lākou i ka moku, holo a‘e kekahi po‘e o lākou i ka ‘ākau ha[u] aku ma luna o nā holopapa i kauō ‘ia e nā ‘īlio. Ke ‘ike lā ‘oukou ma ke ki‘i ma luna a‘e nei i ke ‘ano o ka ho‘okaulua ‘ia o nā ‘īlio, a ho‘ohui ‘ia lākou e kauō i ka holopapa. Noho iho ke kanaka ma luna o ka papa, a kauō māmā loa ‘ia ‘o ia e nā ‘īlio ma luna o ka hau pa‘a. I kekahi manawa ‘elima a ‘eono ‘īlio kā i ho‘opa‘a ‘ia i ka papa; i kekahi ho‘i he nui aku – he ‘umikūmāmāhā a ‘umikūmāmāono paha. Holo aku kekahi po‘e o lākou i ka ‘ākau a hiki i ka latitu 82° 30’. I laila ‘ike aku lākou i ka Moana Anu ‘Ākau. ‘Akahi nō a launa kokoke aku kekahi i ka wēlau ‘ākau e like me kēia – 450 wale nō mile koe a loa‘a aku nō. Akā, ‘a‘ole nō he kanaka i hiki aku i laila, no ke anu loa – make e ma‘i nō i ke anu. ‘A‘ole i loa‘a iā lākou he wahi meheu no Sir Ioane Feranekelina. Ma hope loa mai ua loa‘a ‘ia i kekahi po‘e ‘ē a‘e. ‘Elua a ‘ekolu paha o kēia po‘e a Kauka Kaina i loa‘a i ka ma‘i a make; ho‘okahi i loa‘a i ke anu ma kekahi wāwae a ‘oki ‘ia aku ka wāwae; lilo ho‘i ‘elua manamana wāwae o kekahi. ‘O ko lākou kapa e mehana ai, ‘o ka ‘ili o ka ‘īlio-holo-ika-uaua a me nā holoholona huluhulu pahe‘e ‘ē a‘e, e like me kā nā kānaka i hō‘ike‘ike ‘ia ma ke ki‘i ma luna a‘e nei.

They are approaching the North Pole.

When they were staying on the ship, a group of them went to the icy north on top of the sled dragged by the dogs. You see in the picture above the disposition of the harnessed dogs, and they are united to drag the sled. The people sit on top of the sled, and he is quickly sled by the dogs on top of the hard snow. One time five maybe six dogs were secured to the sled; another time more – fourteen maybe fifteen. Some of them went to the north until the latitude 82° 30’. There they saw Arctic Ocean. It was the first time someone approached the end of the north pole like this – just 450 miles left until the end. But, there was no person that could go there, because of the extreme cold – becoming deathly ill because of the cold. They didn’t find a trace of Sir John Franklin. A long time afterward, it was reached by other people. Two maybe three of these groups and Doctor Kaina got sick and died; one got frostbite on a foot and the foot was cut off; and two toes of one was lost as well. Their clothing to keep warm was the pelt of the dog-running-in-the-rough-seas and the other slippery, furry animals, like the men shown in the picture directly above.

(<http://www.nupepa.org/gsd12.5/cgi-bin/nupepa?e=q-0nupepa-00-0-0--010-TX--4--%22ilio+holo%22---text---0-1l--1en-Zz-1--20-about-%5b%22ilio+holo%22%5d%3aTX--0013%22ilio+holo%22-1-0000utfZz-8-00&a=d&c=nupepa&cl=search&d=HASHea9612c97115b1ddea12bb.1>)

It continues:

...kou holoholona i mālama loa ai. ‘Ai nō ho‘i ‘o Kauka Kaina i ka ‘īlio a me nā ‘iole i loa‘a iā lākou ma luna o ka moku. Loa‘a iā lākou ma nā ‘ae kai nā ‘īlio-holo-i-ka-uaua a me nā ‘elepani kai. He maka‘u nā kama‘āina Ekimo i kēia holoholona nui, akā make nō ia lākou i kekahi manawa. I ka ho‘i ‘ana mai o Kauka Kalina i Piledelepia, ho‘opuka ‘o ia he buke mo‘olelo o nā mea āna i ‘ike ai ma ia ‘āina anu, a ua piha ia buke i nā ki‘i nani loa. Eia mai ke ki‘i o ka ‘elepani-kai.

...your animal to attend. Doctor Kaina also eats dogs and rats they found on the ship. They catch on the seashore the dogs-running-in-the-rough-seas and the sea elephants. The local Eskimo are afraid of this big animal, but they also sometimes kill it. When Doctor Kaina returned from Philadelphia, he published a story book of the things he saw in this frozen land, and this book was filled with very beautiful pictures. Here is the picture of the sea elephant.

<http://www.nupepa.org/gsd12.5/cgi-bin/nupepa?e=q-0nupepa--00-0-0--010-TX--4--Ekimo+Piledelepia---text--0-11--1haw-Zz-1---20-about-%5bEkimo+Piledelepia%5d%3aTX--0013Ekimo+Piledelepia-1-0000utfZz-8-00&a=d&c=nupepa&cl=search&d=HASHHea9612c97115b1ddea12bb.2>

A February 1876 article in *Ka Nupepa Kuokoa* was one of a series that consisted of a Hawaiian translation of Jules Verne's book *Twenty Thousand Leagues Under the Sea*. In this section of the book, the harpooner Ned Land speaks with disgust of the food they eat on the *Nautilus*. One of these foods is broiled seal meat, "the broiled meat of the dog-running-in-the-rough-seas".

The newspaper *Ka Nupepa Kuokoa* (Buke XV, Helu 8, Feberuari 19, 1876) for 19 February 1876:

"Ba," i uilani a'e ai o Nede me nā 'ano huhū: "he aha kāu i mana 'o ai no nā mea a kākou e ai ai ma'anei? He ake honu, he lālā manō, a me nā 'i'o kō'ala 'a o ka 'Īlioholoikauaua."

"Ba," queried Ned in anger: "what are the things you think we eat here? Turtle liver, shark fin, and the broiled meat of the dog-running-in-the-rough-seas."

An August 1876 article in *Ka Nupepa Kuokoa* consists of another chapter in the Hawaiian translation of Jules Verne's *Twenty Thousand Leagues Under the Sea*. Here Captain Nemo shoots "a large animal, a vicious otter, an animal somewhat like the dog-running-in-the-roughseas." The article reads:

He 'Iwakālua Tausani Legue Ma Lalo O Ke Kai! Nā Mea Kupanaha O Ka Moana! Ke Ala O Ka Mea Huna A 'O Ka Mea Pohihihi O Ka 1866! Mahele 1, Mokuna XVI, He Ululā 'au Moana.

Aia ma kēia wahi, he mea e ka lehulehu o nā i'a li'ili'i o kēlā me kēia 'ano, i kūpono 'ole no ke kī 'ana me nā pōkā. A no ka lelehu loa o nā i'a li'ili'i, ua hiki pono 'ole ia'u ke 'ike aku i nā mea nui; akā, 'o Kapena Nimo, ua 'ike akula nō ia i kekahi holoholon[a] nui, he otera ka 'ino, he holohona 'ano like me ka 'īlio holo-ikauaua; a 'o ke kī koke akula nō ia no ia o ua Kapena Nimo, a mae ana ua holoholona nei. He 'elima kapua'i kona loa, a he mea ho'i i makemake nui ia, no ka nani o kona hulu. 'O nā kapa i hana 'ia no loko mai o ia 'ano hulu, he \$400.00 ke kumukū'ai. Ua 'ike nuai ia nā kapa o kēia 'ano ma nā mākeke o Rusia a me Kina. 'O kahi noho nui o kēia 'ano holoholona, aia ma ka Moana Pakipika 'Ākau.

20,000 Leagues Under The Sea! The Wonders of the Ocean! The Path Of Secret And Mystery of 1866! Section 1, Chapter XVI, A Fleet At Sea.

In this place is something of a multitude, a variety of little fish, for which it is illegal to shoot with bullets. And because of the very duskiness of the little fish, I couldn't properly see the larger things; but, Captain Nimo then saw a large animal, a vicious otter, an animal somewhat like the dog-running-in-the-roughseas (seal); and Captain Nimo then shot it, and this animal slumped over. It is five foot long, and something for which it is greatly desired, is the beauty of its coat. Blankets made from this type of fur is a costly \$400.00. Blankets of this type are largely seen in the markets of Russia and China. The place where this type of animal mainly inhabits is the North Pacific Ocean.

<http://www.nupepa.org/gsd12.5/cgi-bin/nupepa?e=q-0nupepa--00-0-0--010-TX--4--%22ilio+holo%22---text--0-11--1en-Zz-1---20-about-%5b%22ilio+holo%22%5d%3aTX--0013%22ilio+holo%22-1-0000utfZz-8-00&a=d&c=nupepa&cl=search&d=HASH01fba361bed4c4d8cd0da842.1>

In this article published in a March 1894 edition of *Ka Maka‘āinana* the term ‘ilio holo i ka uaua, which is used elsewhere to refer to directly to seals, is employed for its secondary meaning. The writer plays on meaning of the word ‘u‘a‘u‘a (useless, vain, to no profit) and the word *holo* (run), as well as the physical image of the seal. “This is our time to demonstrate our unity, there is no time for us to run; else indeed the Kingdom officials and possibly the learned persons below them, truly without a nation, but, released to that group, will then slacken in their moral resolve like the dog-running-in-the-rough-seas. But, as for the nation, it will transform and separate; and then, truly be taken unto the depths of the ocean, and properly arranged there.” The term ‘ilio holo i ka uaua is used as a poetic metaphor for someone lacking in moral resolve. The article reads:

Mai Pūlama Aku.

‘O ia nō kēia mākou e uwalo aku nei i nā hoa maka‘āinana a pau, mai pūlama aku i nā hana a kēia po‘e no ka mea pili i ka pono koho balota no nā ‘elele i ka ‘aha hana kumukānāwai a lākou. Ua lohe ‘ia mai aia kā nā po‘e o na Kona a me Ka‘ū, Hawai‘i, ke pikokoi nui lā e kākau inoa ma lalo o ka ho‘ohiki a ua po‘e pākaha nei, a mākou nō ho‘i i hō‘ai‘ai aku ai ma ka helu i hala i ka waiwai ‘ole o ko ka lāhui kumu hana aku pēlā, no ka mea, ke ho‘okō, ‘o ka ‘āpono ‘ana nō ia iā lākou nei, a lilo kā lākou nei ‘ino i hana mai ai iā kākou i mea maika‘i. ‘O kā mākou ho‘i e makemake nei, ‘o ia nō ko kākou kū mai nō i ka wā, ‘oiai, aia iā Amerika Huipū ‘ia ka hana. No ka mea, ua ‘oia‘i‘o loa nō kā mākou i ho‘omahu‘i aku ai inā kākou e kōkua ‘ole aku, ‘a‘ale loa lākou e ‘ike ‘ia mai a huli ke ao nei. ‘O ko kākou wā kēia e hō‘ike ai i ko kākou lōkahi, ‘a‘ohe manawa e aku nō kākou; a inā nō ‘o nā po‘e lawelawe ‘oihana Aupuni a po‘e na‘aua[o] paha ma lalo o lākou, ‘a‘ohe nō ia o ka lāhui, akā, e ho‘oku‘u aku nō i kēlā po‘e a ‘alu‘alu aku i ko lākou pono e like lā me nā ‘ilio holo i ka uaua. Aka, no ka lāhui ho‘i, e unuhi mai nō a ka‘awale; a laila, lawe aku nō a kai hohonu, ho‘okuene pono iho ‘ana i laila.

Don’t Bother.

This is what we declare to all of the fellow residents, don’t bother with the activities of this group because they are associated with the equal ballot election for the delegates in their constitutional labor convention. It was heard, there were the groups of Kona and Ka‘ū, Hawai‘i, largely gathering to register beneath the names of these crooks, and we also released in the list of offenses national concerns and such that are unbeneficial, because, when ratified, it will then be enforced by them, and their offenses will become worthless to our benefit. As for our needs, it’s for us to rise to the time, while the United States is reasonable. Because, our impersonation was incredibly accurate, if we didn’t render aid, they certainly wouldn’t have been seen until the day was over. This is our time to demonstrate our unity, there is no time for us to run; else indeed the Kingdom officials and possibly the learned persons below them, truly without a nation, but, released to that group, will then slacken in their moral resolve like the dog-running-in-the-rough-seas. But, as for the nation, it will transform and separate; and then, truly be taken unto the depths of the ocean, and properly arranged there.

<http://www.nupepa.org/gsd12.5/cgi-bin/nupepa?e=q-0nupepa--00-0-0--010-TX--4--%22ilio+holo%22---text---0-11-1en-Zz-1---20-about-%5b%22ilio+holo%22%5d%3aTX--0013%22ilio+holo%22-1-0000utfZz-8-00&a=d&c=nupepa&cl=search&d=HASH01c635aa1500b0d8bd2ec677.4>

An article by T. H. Poaha in *Elua Nupepa Kuokoa*, September 1924, describes the coast of California and refers to the presence of seals by the famous Cliff House. Here, interestingly, the word used for seal is “uwalo”, as given by Henry P. Judd, Mary Kawena Pukui and John F. G. Stokes in their 1945 English-Hawaiian vocabulary. The article reads:

Ma kela huakai makaikai, ua hoes aku la oia no ke Cliff House, kekahi o na wahi makaikai nui ia e na malihini, nani no kela wahi i ka nana aku; o ka mea ano nui ma keia wahi, o ia no ka makaikai ana i Ka pii mai o na uwalo mailoko mai o ke kai a noho iluna o kekahi pohaku nui.

The place name ‘Īliopi‘i appears occasionally in the Hawaiian language newspaper, but in each case it refers to the cape on Kalaupapa, Moloka‘i, and there is no reference to Hawaiian monk seals.

Although less than 10% of Hawaiian language newspaper articles have been transcribed and made searchable, it is still possible to draw some tentative conclusions based on the use of the various terms for seal in the articles to which we have access. The earliest known reference to seals appears in an article from 1841, four years prior to Emerson and Bishop’s vocabulary. The author of this article refers to seals by the Hawaiian version of their English name, “sila”. This might suggest that there was no generally agreed upon Hawaiian name for seal at that time.

Later articles give various names for seal; “iliokai” and “ilio o kai” (1859), “sila” (1865), “ilioholoikauaua” (1865, 1867, 1876, 1894), “uwalo” (1924). Most of these terms (or combinations of words similar to them) appear in the various Hawaiian dictionaries. It is interesting to note that the term ‘*ilioholoikauaua*, which is generally accepted today as the name for the Hawaiian monk seal, does not appear in use until the mid 1860s. None of the Hawaiian language articles identified mention the Hawaiian monk seal, and most make reference to either the Arctic or Antarctic seals.

5.3 Western Visitors

Beginning with the journals of Captain James Cook, the accounts of the early Western voyagers who visited Hawai‘i provide us with detailed descriptions of the natural and cultural landscape of the islands. Nowhere in of these accounts is there any mention of Hawaiian monk seals being either directly observed or reported in the MHI.

It was not until Western voyagers reached the NWHI that the first references to seals began to appear in their writings. In 1805 the Russian explorer Urey Lisiansky observed seals on a beach of the island that now bears his name, Lisianski Island near French Frigate Shoals (Lisiansky 1814). This appears to be the first record of the existence of the Hawaiian monk seal. Lisianski notes that four seals were killed and others were observed (Ragen 1999:186). In 1825 Benjamin Morrell, captain of the whaling ship *Tartar*, who provided the first detailed observations of most of the NWHI, reported what he thought were elephant seals on some of the islands (Morrell 1832:215-219; Ragen 1999:186). These were most likely monk seals. In 1827-28, the ship *Moller* documented seals on the newly discovered island of Laysan (Ragen 1999:186). The crews of ships wrecked in the NWHI, such as the *Parker* wrecked on Kure Atoll in 1842, the *Holder Borden* wrecked on Lisianski Island in 1844, and the *Signaw* wrecked on Kure Atoll in 1870, report taking seals for food, as did ships searching for guano deposits (the *Manuokawai* in 1857) or simply exploring the islands (the *Rodolph* in 1850) (Ragen 1999:186). The ship *General Siegel*, which was shark fishing in the NWHI in 1886 reports catching monk seals to use as bait (Ragen 1999:186).

5.4 Native Contact Between the MHI and the NWHI

While evidence appears to indicate that most of the native population of the MHI were not familiar with the Hawaiian monk seal prior to Western contact, the possibility exists that fishermen from some communities on Kaua'i and Ni'ihau may have encountered monk seals during fishing expeditions to the NWHI. That the knowledge of the existence of the NWHI was not widespread is evidenced by the reaction the small number of Hawaiians from the island of Kaua'i who accompanied the Western exploring expedition that first "discovered" the islands. In 1788, Captain Colnett of the *Prince of Wales* became the first Westerner to chance upon the island of Nihoa, the closest of the NWHI to the main islands of the chain. Colnett had with him on board the *Prince of Wales*, "some natives of Attowai [Kaua'i] who expressed great surprise that there should be land so near to these islands...of which not only themselves, but all their countrymen were totally ignorant" (Vancouver 1798:81-82).

According to the Robinson family who own the island of Ni'ihau, the residents of that island had the capability to travel to Ka'ula and Nihoa Islands by canoe, and some people from Ni'ihau would spend three months in the summer on Nihoa Island until the late 1800s (Iversen et al. 1990:23). However, analyses of 113 whalers' logs visiting the NWHI from 1791 to 1878 contain no reference to Native Hawaiian fishermen (Iversen et al. 1990:22).

In 1857, King Kamehameha IV sailed to the leeward island of Nihoa aboard the Schooner *Manuokawai*. The ship's log records that, "At 10 a.m. went ashore (got upset in the landing). The King and Governor [Kekūanaō'a] landed at the same time in a canoe...About a dozen seal were found on the beach and the King shot several of them" (Emory 1928:9). The Captain of the vessel, Captain Paty, gave the following account of their visit to Nihoa on April 27, 1857, "... on the sand beach ten or twelve hair seals were found; they didn't take much notice of us until His Majesty [King Kamehameha IV] had shot several, when they became more scared" (Kenyon and Rice 1959:216). On the king's return to Honolulu, he instructed Captain John Paty to survey the remainder of the NWHI and claim them for the government of the Kingdom of Hawai'i. During that voyage, Paty noted that the beaches of the islands abounded with seals. On Nihoa he found a dozen seals hauled out on the single beach (Paty 1857:42-43).

5.5 Historic Hunting of Monk Seals in the NWHI

The earliest commercial hunting of seals in the NWHI appears to have occurred soon after they were first described by Lisiansky. In 1824, the brig *Aiona* returned to Honolulu following a sealing expedition to the NWHI (Bailey 1952:4). The taking of seals for their fur and oil had been begun as early as the mid-1700s along the Pacific Coast of the Americas. Various seals in North Pacific waters, including the Guadalupe fur seals, northern fur seals, California sea lions, and Stellar sea lions were slaughtered by the thousands for their fur, blubber and other body parts, while northern elephant seals were targeted for their thick blubber which was boiled down for oil (Ellis 2003:161-178). Like whale oil, the oil obtained from the blubber of seals was used for lamp fuel, lubricants, cooking oil, soap and innumerable other products.

In 1859, the bark 249 tons *Gambia* went sealing in the NWHI. She left Honolulu on April 26, and cruised among the Leeward Islands, returning on August 7. The *Gambia* is reported to have obtained 240 barrels of seal oil, 1,500 skins, a quantity of shark fins and oil (Anonymous 1859; Cobb 1902:496-497, Ragen 1999:186). How accurate these numbers are, and whether all of this cargo was obtained in the NWHI is still in question.

Within a relatively short span of years, the population of Hawaiian monk seals in the NWHI had been reduced so drastically that the seal grounds were deserted as the population was not large enough to make hunting the seals commercially viable. Guano diggers, bird hunters, and

whalers further depleted the remnant seal population during the late 1800s and early 1900s (Kenyon and Rice 1959:215).

Historic Reports of Monk Seals in the MHI

It has been possible to find only one clearly documented early historic case of a Hawaiian monk seal being reported from the MHI. In 1900 a monk seal was seen at Hilo Bay on the island of Hawai‘i. “A sick or helpless seal was caught by the natives in Hilo Bay, Hawaii, towed ashore, killed and eaten. Unfortunately I was too late to secure any part of the animal for identification, but the natives assured me that solitary seals occurred on the coast about once in 10 years or so. They were very curious and asked many questions as to the habitat of the animal, its nature, food, and habits, about which they knew nothing” (H. W. Henshaw as quoted in Bailey 1952:5). The results of this encounter between native Hawaiians and the indigenous Hawaiian monk seal readily suggest why, at the time of Western contact, there was no resident population of monk seals in the MHI.

6.0 CONTEMPORARY PERSPECTIVES ON THE HAWAIIAN MONK SEAL

6.1 Contemporary Names

In his book *The Hawaiian Monk Seal*, Patrick Ching notes that, “on the island of Ni‘ihau, a privately owned island where Hawaiian is the primary language, there are at least two names for the seal. According to Keith Robinson, whose family owns the island, “one is *silā*, derived from the word seal, and the other is ‘*īlio-holo-kai*, meaning ‘the dog that runs in the sea’” (Ching 1994:7). While the term *silā* corresponds with the earliest documented name for seals found in the Hawaiian language newspapers, the latter term is similar to both the early dictionary term for monk seal, *he ‘īlio o ke kai*, and the later ‘*īlio-holo-i-kauaaua* (see Section 4.1).

In their 2011 report on the *Historic and Contemporary Significance of the Endangered Hawaiian Monk Seal in Native Hawaiian Culture*, prepared for NOAA, John Kittinger, Trisann Māhealani Bambico, Trisha Kehaulani Watson and Edward W. Glazier mention that, “Mo‘olelo (oral stories) with community elders (*kūpuna*) and native language speakers have confirmed” the use of the term *hulu* for the monk seal. Their informants also indicated “the use of the term *nā mea hulu* (the furry ones) for the monk seal species.” They indicated that, “Some respondents knew of other names for the monk seal, but declined to provide the names because of worries about how the names would be used” (Kittinger et al. 2011:11).

6.2 Monk Seals as Family ‘Aumākua

In their report of interviews conducted in 2011 under a grant from NOAA, Kittinger, Bambico, Watson and Glazier noted that; “Some interviewees described families on Hawai‘i and O‘ahu islands that consider the species to be ‘*aumākua*, the “family or personal gods, deified ancestors who might assume the shape of...[various animals]” (Pukui and Elbert, 1986 [1971]). ‘*Aumākua* are traditionally protected by their associated families and various cultural protocols are followed to steward the relationships between the family and their spiritual guardian. Notably, the monk seal is not named as a common ‘*aumākua* (Pukui and Elbert, 1986 [1971]), but this does not necessarily mean that the families have recently adopted this cultural association. ‘*Aumākua* can be associated with families for many generations, reaching far back into history, or can be recent additions based on events that carry special cultural meaning and significance.

Additionally, some communities have conducted spiritual ceremonies for monk seals during which the monk seal is recognized as part of the *‘ohana*, or family. Respondents have said that the details of such activities are deliberately kept *hūnā*, or secret” (Kittinger et al. 2011:16-17).

In further clarifying this, the authors indicate that it was difficult to obtain specific information on this aspect of human-monk seal relationships as one knowledgeable individual passed away before they could be interviewed while another refused to be interviewed.

6.3 Mythological Associations

Kittinger and his co-authors also reported that, “Some respondents shared *mo‘olelo* (oral traditions/stories) about monk seals that indicated a mythological association with the species. In one account from the island of Moloka‘i, a *kupuna* (community elder) told of a monk seal who appeared in the area in 1947 and washed up without a head. The *kupuna* indicated it was the work of Kauhuhu, the famed shark god of the area who patrolled the waters from Moananui to Pelekunu. Another *mo‘olelo* from Hawai‘i Island tells of a pair of lovers who suffered the wrath of the jealous shark god Kua [discussed in Section 4.3]. After his affections were spurned, he curses the woman, turning her into a monk seal and her male companion into a dragonfly so the two could not be together. The pair was later reunited in their human forms by the god Kū. These *mo‘olelo* indicate a historical cultural association with the monk seal, but appear to be limited to a few places where familial traditions have preserved the stories” (Kittinger et al. 2011:17).

6.4 Stewardship

The authors of the 2011 study go on to note that, “For some *kūpuna*, the specific origins of the animal [the Hawaiian monk seal] and its significance in Hawaiian culture are irrelevant, as the traditional Hawaiian sense of stewardship extends to all species and the environment. One respondent, for example, expressed, “whether they are *hānai* [adopted] or *hānau* [born of, as in a son or daughter], monk seals are part of the ocean and we, humans, have an obligation to protect them.” This perspective has also been shared by other community elders interviewed about the monk seal” (Kittinger et al. 2011:17).

6.5 The Monk Seal as Invasive Species

In contrast to the apparently symbiotic relationship between Hawaiians and monk seals suggested by some informants during the 2011 study, other individuals interviewed expressed a strongly negative reaction to monk seal presence. “Among these respondents, the seal is viewed as endemic to the NWHI but not to the MHI. Some respondents view the seal as an invasive species in the MHI and believe the seal should remain in the NWHI only. Respondents commonly cite the lack of Hawaiian cultural references to the seal in traditional chants, *hula* [dance] and other knowledge forms. Other respondents pointed to the lack of evidence that the monk seal was ever used for food, tools, weapons, fabrics, medicine, or combustible material. One respondent emphasized that, “everything in Hawai‘i had a common use... since there was no [use], then it must not be native.” Other respondents pointed to the lack of monk seal bones (*iwi*) found in archeological excavations or petroglyphs (*ki‘i pōhaku*) depicting monk seals. Respondents on Maui were not aware of any place names, sacred sites (*wahi pani*) or fishing shrines (*ko‘a*) named after the monk seal. They also mentioned that their *kūpuna* (elders) never mentioned the monk seal, and that they did not know of any families that regarded the monk seal as their *‘aumakua* (spiritual family guardian) (Kittinger et al. 2011:17).

7.0 IMPLICATIONS OF TRADITIONAL AND HISTORIC DATA

7.1 Multiple Names

The multiplicity of terms found in Hawaiian dictionaries, traditional *mo'olelo*, and Hawaiian language newspaper articles, would appear to suggest that there was not one generally accepted name for the Hawaiian monk seal. This, in turn, may indicate that monk seals were not widely or generally known to traditional populations.

The other marine and terrestrial mammals present within the archipelago prior to western contact are all generally identified by a single name. The domestic dog is known generally as *'ilio*, with variations on the name (*'ilio māku'e*, a native brown dog, *'ilio pe'elua*, a brindled dog, etc., Pukui and Elbert 1971:92-93) describing different types of dogs. The only traditional name for dog that does not include the word *'ilio*, *'apowai* also appears to relate to a specific type of dog ("a type of Hawaiian dog with solid grayish-brown body and nose tip and eyes of the same color, believed to love water and consequently offered as a sacrifice to *mo'o* water spirits", Pukui and Elbert 1971:27) and is not a general name. The same is true for the other mammals that accompanied the early Polynesian voyagers who initially settled the Hawaiian Islands such as the pig (*pua'a*; *pua'a hiwa* meaning a solid black pig, *pua'a 'ā'a* meaning a young female pig, etc., Pukui and Elbert 1971:114), and the Polynesia rat (*'iole*; *'iole nui* meaning a large rat, Pukui and Elbert 1971:125). The native bat, which the Polynesians found here on their arrival, was known alternately as *'ōpe'ape'a*, *pe'a*, or *pe'ape'a* (Pukui and Elbert 1971:11, the word *pe'a* is also one of the names for a sail, Pukui and Elbert 1971:297).

Of the other marine mammals found in Hawaiian waters, the whale was known either as *koholā* or *palaoa* (Pukui and Elbert 1971:175). Forms of both of these terms are found throughout much of Polynesia and appear related to the proto-Polynesian word *tafura'a* (Richards 2008:1) and the early Polynesian word *paraoa* (Richards 2008:2). The dolphin is referred to as *nai'a* or *nu'ao* (Pukui and Elbert 1971:117).

The voyagers who first encountered these islands would not have been likely to possess a traditional name for seals, as there are no seal populations native to the islands of southern Polynesia (though fur seals are known to visit Tonga on rare occasions, Richards 2008:5). The only other Polynesian group to encounter local seal populations, the Māori who settled Aotearoa (New Zealand), had various names for seal depending upon the species they belonged to (fur seals, elephant seals, leopard seals) and the locality. Rhys Richards notes that, "Different groups of Māori used different names for the same marine mammal from district to district. Moreover, this transference phenomenon has several parallels among fish and birds. Many inshore fishermen know that Māori names for some fish species change bewilderingly from coast to coast, and from place to place" (Richards 2008:5). It appears that as Māori populations spread along the coasts of the large islands of Aotearoa dialectic differences developed and names changed. None of the known Māori names (fur seals: *pakakē*, *pakakā*, *kekeno*, *kakerangi*, *kakeraki*, *karewaka*, *oioi*, *tūpoupou*, *puhina*, *mimiha*, *popoikore*, elephant seals: *whakāhao*, *whakāhau*, *whakāhu*, *kautakoa*, *pākahokaho*, *poutoko*, *kake*, *kaki*, *ihupuku*, leopard seals: *rāpoka*, *popoiangore*, *poipoiangori*, *popoikore*, Richards 2008:5), bear any similarity to the documented Hawaiian language terms for seal. The likelihood is that these names developed indigenously as the Māori encountered the various pinniped species. The same might be suggested for Hawaiian names.

Several of the Hawaiian terms documented identify seals by their resemblance to a more familiar animal, the *‘ilio* (the domestic dog), that had accompanied the early Polynesian voyagers who initially settled the Hawaiian Islands. It is interesting to note that several non-native mammals were given names based upon their rough similarity to the familiar dog. These include the skunk (*‘ilio hohono*, literally “bad-smelling dog” Pukui and Elbert 1971:93), the beaver (*‘ilio-hulu-pāpale*, literally “hat-fur dog” Pukui and Elbert 1971:93).

Though there is not enough existing evidence to conclusively determine whether monk seals were present within the MHI at the time of initial Polynesian settlement, the archaeological, linguistic and ethnographic evidence would seem to suggest that there was not a resident monk seal population extant within the MHI during the latter portion of the pre-Contact period. It is likely that contact between Native Hawaiians and monk seals during this period was limited to occasional encounters when far ranging individual would come down from the main population centers in the NWHI. Monk seals did not rise in the consciousness of Hawaiian culture until they were encountered in large numbers during the historic exploration of the NWHI.

8.0 CONCLUSIONS

Although monk seals appear to have been present within the Hawaiian archipelago as early as 3.5 million years ago, there is little direct evidence of human and monk seal interactions prior to Western contact, either in the archaeological record or the traditional literature.

Bones of Hawaiian monk seals are known to have been recovered from only four archaeological excavations conducted within the main Hawaiian Islands. Only two of these sites have been confirmed as dating from the period prior to Western contact. Although it has been suggested that this scarcity of seal remains from archaeological contexts may indicate that monk seals were not present within the MHI prior to the arrival of the first Polynesians (Zeigler 2002:244), it appears more likely that the Polynesian arrival itself resulted in a decrease in resident monk seal populations within the MHI (Ragen 1999:185).

Any tentative conclusions concerning monk seal presence in the MHI drawn from the archaeological evidence are complicated by several factors. Given its size and weight, if a monk seal was caught and butchered for food, it is most likely that the butchering would have taken place near to where the animal was killed, with the carcass being left on the beach and only the meat carried to the consumption site. Alternately, an *imu* (earth oven) could have been dug into the sand and the entire carcass cooked in situ. Either of these scenarios would have resulted in the bones of the animal not being transported to the occupation site and therefore not being incorporated into the archeological record.

Given the abundance of fragmentary and otherwise unidentified or unidentifiable medium mammal bones recovered from archaeological excavations conducted throughout the MHI, the possibility exists that seal bones recovered from some excavations have not been identified or categorized as such.

The scarcity of monk seal remains recovered from archaeological contexts may also simply reflect the relative abundance of monk seal populations. Given what we know of Hawaiian monk seal biology, seal populations present within the MHI at the time of first Polynesian contact would have consisted of only a few hundreds to no more than a few thousands of individuals. Their expected percentage representation within archaeological midden (food debris) assemblages would therefore be relatively small compared to the many thousands of individuals of other species of mammals, birds and fish that formed part of the early Hawaiian diet.

Identified archaeological sites dating from the early settlement period of Hawaiian prehistory, the time at which monk seals would be expected to be most numerous within the MHI, are relatively rare. The paucity of these sites would further decrease the sample size of potentially recovered monk seal remains.

While the archaeological evidence provides no definitive answer to the question of whether monk seals were present within the MHI at the time of Polynesian arrival, it does seem to indicate that they were not abundant within the MHI for much of period prior to Western contact. This conclusion is further supported by the ethnohistorical evidence.

The physical presence of monk seals within the MHI is not reflected in the material culture of Hawai'i at the time of contact. Neither the bones nor the teeth of the Hawaiian monk seal appear to have been used in the creation of traditional tools or ornaments.

Unlike the mammals that arrived in Hawai'i with the early Polynesian voyages, the dog (*'ilio*), pig (*pua'a*), and rat (*iole*), all of which were identified by a single Hawaiian name, seals were found to be referred to in *'ōlelo* Hawai'i (the Hawaiian language) by several different terms. Among these were *he 'ilio o ke kai* (the dog of the sea, also *'ilio o ke kai*), *'ilio-holo-kai* (the dog that runs in the sea), *'ilio-holo-i-kauaaua* (dog running in the toughness), *uwa'lo* (to cry out), *hulu* (fur; possibly a historic usage to refer to arctic fur seals), and *kila* or *sila* (an adaptation of the English word seal). With their furred bodies and bark-like calls, it is easy to see how seals were identified as the dogs of the sea. The range of different names used to refer to these animals, however, some of which were derived from the English term seal, might suggest that seals were not frequently encountered by the Hawaiians of the pre-Contact period.

References to seals in the traditional literature are relatively rare, and it is not until the historic period, when Hawaiian sailors began to take part in voyages to the arctic to capture fur seals for the China trade, and local vessels began actively hunting the newly discovered monk seal populations within the NWHI, that mentions of seals begin to appear with any regularity in Hawaiian language sources. Although the early accounts of Western visitors to the islands are replete with detailed descriptions of the various plants and animals they encountered, there appear to be no references to the presence of Hawaiian monk seals within the MHI. It is not until Western ships began visiting the NWHI that we begin to encounter descriptions of the monk seal. All of these archaeological, ethnographic and archival sources would appear to suggest that throughout most of the pre-Contact and into the early historic period monk seals were not common visitors to the MHI.

Although it has been suggested (Zeigler 2002:244, Ragen 2003:1) that the original range of the indigenous Hawaiian monk seal may not have extended down into the MHI, this does not seem reasonable given the similarity in the marine environments of the NWHI and the MHI. Both areas would have offered a similar range of suitable habitats, an abundance of available food resources, and a relative scarcity of predators, at least until the arrival of humans.

A more likely scenario is that, soon after the arrival for the first Polynesian voyagers, the seal population of the MHI became extinct, in much the same manner as many species of indigenous Hawaiian land birds, through a combination of human predation and the impacts of the terrestrial mammals (rats, pigs, and dogs) that accompanied the voyagers from their homeland in southern Polynesia (Ragen 1999:185). Monk seals hauled out onto the beaches of these newly discovered islands would have offered an easily obtainable food source for the first settlers. It is also well documented that, as its name might imply, the monk seal does not adapt well to disturbance from dogs or humans (Ragen 1999). Those monk seals resident within the MHI that were not killed for food would most likely have translocated themselves to the NWHI where they were much less likely to be threatened or disturbed. The relatively small monk seal population that occupied the MHI could have been extirpated within a few generations. While stray individuals undoubtedly occasionally found their way down from the NWHI, it appears probable that there was not a significant resident monk seal population in the MHI throughout much of the pre-Contact period.

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